

Additional Technical Information

G-Core 8.1.1

10.04.2024

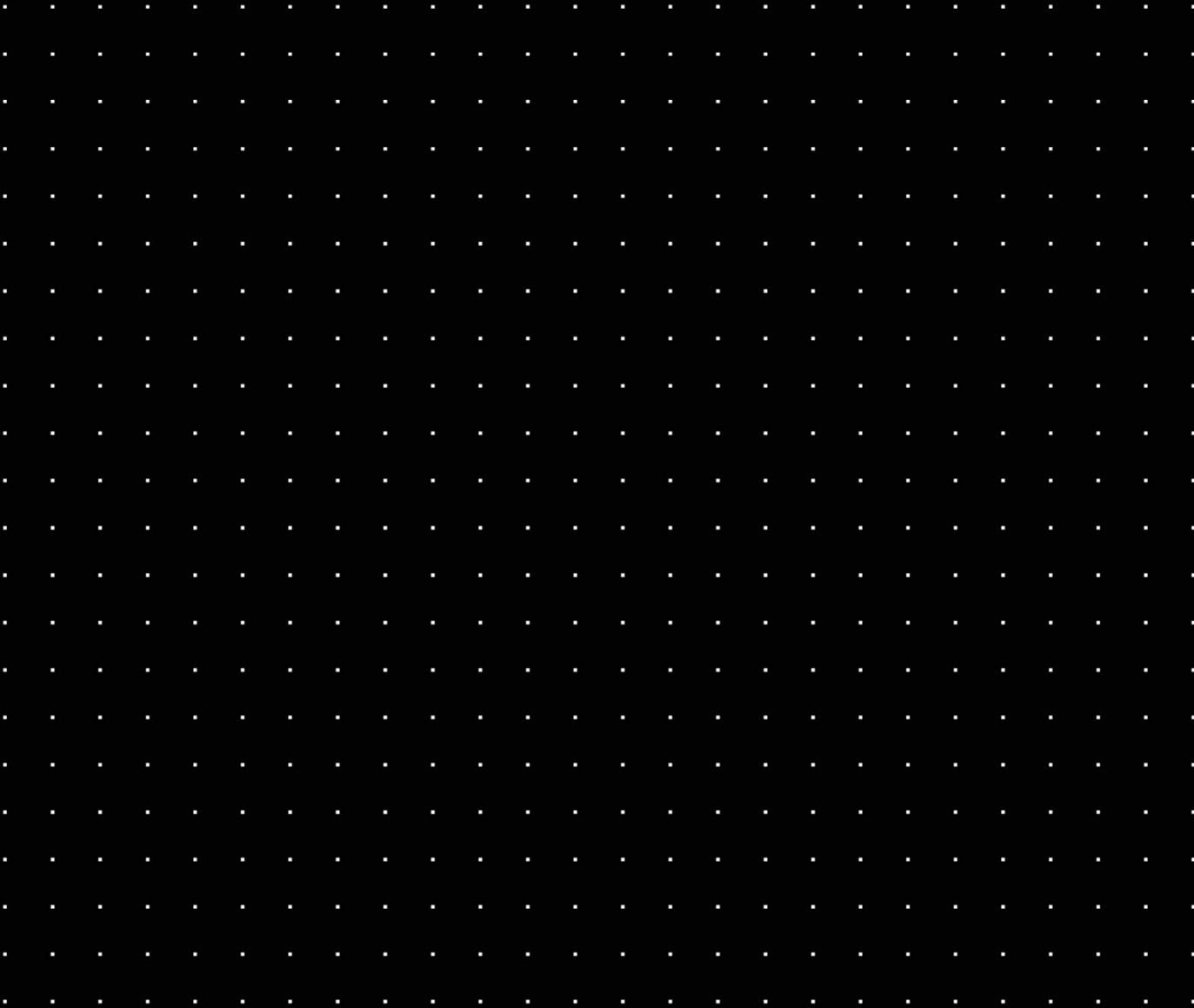


Table Of Contents

About This Documentation	25
Legal Notice	26
General	27
G-Core/Diagnostics	27
Configuration	27
Observed Connections	28
General Settings	29
Advanced Settings	32
Media Channels Settings	33
Registry Keys	34
Simple Network Management Protocol (SNMP)	35
Installation of the Windows SNMP Agents	36
SNMP Agent and Extension Agents	38
Windows SNMP Configuration	39
Management Information Base (MIB)	41
About MIB	41
GBMIB.mib	42
OnGuard Event and Recording Interface	50
G-OnEvent	50
Preconfiguration of the Lenel System	50
Installation	52
Uninstallation	56
Upgrading	56
Change Service	56
Communication	57
G-OnView	63
Installation	63
Uninstallation	64
Upgrading	64
Configuration	64
Using G-OnView	69
SQL Server	70
Port Assignments	71

MPEG / Video Export Authentication Method	75
Technical Background	76
Meta Data	76
Summary	77
Network Time Protocol (NTP)	78
Simple Network Time Protocol (SNTP)	78
Time Server	79
Windows and NTP	80
Setting Up the NTP Client XP and 2000	80
Setting Up an NTP Server in NT, 2000 and XP	81
Windows 7	82
W32tm.exe Commands	90
Solution Only for Windows 7	95
Run the Command File	97
Contents of the Command File	99
Fallback Recording Cache (FRC)	103
How to Start FRC	104
How FRC Works	104
How to Disable FRC	105
Vehicle Status Page	105
Displayed Data	106
Connected Server List	106
Connection Log	107
Configuration	107
Actions	110
Customer User Action	110
Definition of an Enumeration	110
Required Parameters	110
Optional Parameters	111
Definition of an Action Class	112
Required Parameters	113
Optional Parameters	114
Definition of an Action	114
Required Parameters	114
Optional Parameters	115
Definition of an Action Parameter	116

Required Parameters	116
Optional Parameters	116
Parameter Types	118
Database Field	127
Summary of the Examples	128
G-Core Actions Reference	131
ATM/ACS	131
Audio Control	136
Backup Actions	137
Camera Control	150
Camera Notification	174
Cash Management Actions	177
Device Information	183
Digital Contacts	186
Edge Recording	190
GPS & LPS	192
Imex	195
Lenel	199
Perimeter Protection	222
POS	226
Remote Export	234
Security Management Systems	238
SKIDATA	241
Supply Chain Security	244
System Actions	252
Video Content Analytics	279
Video Control	303
Viewer Actions	322
Viewer Notifications	339
About Plugins	346
Installation	346
Add a Plugin	347
Plugin Dialog	348
Plugins without Dialog	348
Plugins with Dialog	349
Delete a Plugin	349

Plugins	351
ACS Keba Passador	351
Installation	351
Add the Plugin	351
Configuration	352
Actions	353
Configuration of Event	354
Action Gate	356
Add the Plugin	357
Configuration	358
Connection	358
Filter	359
Behaviour	360
Description of Changes for GeViSoft GETAS	362
Areca	362
Installation	363
Add the Plugin	363
Configuration	363
Audio Back Channel	364
Installation	365
ABC Input	365
ABC Output	366
Configuration	366
Connection	367
Settings	367
BaroxSwitch	368
System Requirements	368
Installation	368
Plugin Settings	369
Configuration	369
IP Switch Operation Actions	370
CANBus	371
Introduction	371
Configuration	372
General Settings	372
Tracking Settings	373

CANBusData Action	373
Commend	374
Functionality	375
Usability	375
Translations	375
From Commend Server to G-Core	375
From G-Core to Commend Server	377
GeVisContactLAN	380
Installation	380
Add the Plugin	381
Configuration	381
Connection	381
Register Inputs and Outputs	382
GngMetaDataInjector	383
Installation	384
Add the Plugin	385
Set the VCA Source	386
Set the Channel	387
Channel Mapping	388
Metadata Representation	389
Lost Connection	392
GScopeMobileDIDO	394
Installation	394
Configuration	394
G-Scope-500 Pin Assignment	396
HTTP Command	398
Installation	398
Add the Plugin	398
Configuration	398
HUTH	400
Installation	400
Add the Plugin	401
Configuration	401
Messages	402
Journal	403
Installation	404

Add the Plugin	404
Configuration	404
Storage Location of Journal Files	406
MBeg	406
Add the Plugin	406
Configuration	406
MBeg and G-View	407
Media Channel Simulator	408
Installation	408
Configuration	411
Modbus	413
Creation of the Hardware Plugin in G-Set	413
Description of the Configuration Parameters	413
General Settings	414
Input Settings	414
Output Settings	416
Mapping of the G-Set I/O's with the Modbus I/O's	417
Serving a Large Modbus Device with Multiple Plugins ...	417
Manufacturer Specific Notes	417
RAID Controller Monitoring	417
Installation	418
Add the Plugin	418
Configuration	418
ScanConnect	419
Requirements	419
Configuration	419
Devices	420
TACI (Telnet Action Command Interface)	425
Options	427
Advanced Output	428
Selea	432
Functionality	433
Usage	433
Camera Settings	433
General Settings	433
FTP Connect	434

XML Connect	435
Actions Setting	436
Plugin Settings	437
Skidata2GB	438
Events	439
Software Architecture	440
Installation	440
Configuration	441
Actions	442
SMRP (Spot Monitoring Recording)	443
Installation	443
Configuration of the Server Connections	445
Configuration of the SMRP Viewer	445
Where Do I Find the Global Number of the SMRP Viewer?	446
How Do I Configure an SMRP Event?	447
How Do I Work with SMRP?	448
Telnet Action Command Interface (TACI)	449
Add the Plugin	449
Configuration	450
Uviscan	455
Functionality	456
Usability	457
Plugin Settings	457
Media Channel Simulator Settings	458
Received CustomActionEx Action	458
Received NPRRecognition Action	460
VCA Bridge	461
Enable VCA Bridge	461
Configuration	462
Actions of the VCA Bridge	464
IP-Camera Plugins	465
ArecontVision	465
Installation	465
Add the Plugin	465
Connection	466
Settings	467

Codec	467
Motion Detection	469
Digital Input	470
Image Settings	471
Supported Actions	473
Axis	474
Installation	475
Add the Plugin	475
PTZ Functionality	475
Connection	476
Streaming Behaviour	478
Dual Stream	479
Single Stream	479
Audio Support	480
Zipstream	482
Advanced	483
Enable Digital Input	483
Enable Synclost for Analog Inputs of Encoder Devices	485
Aspect Ratio to Use	485
Select Different Channel Sources from One IP Address	485
Disable and Fix Settings	486
Disable Settings	486
Fix Settings	487
VCA Bridge	487
Event Mapping	487
Compatibility Mode	488
Map Axis Event to G-Core Action	489
Map Event Parameter to Action Parameter	490
Axis Apps	491
Secondary Channel Function	492
Activate the Secondary Channel	493
Duplicate Mode	494
Individual Mode	495
Secondary Channel in the Axis Plugin	496
Supported Actions	497

PTZ Actions	497
Control or Light Source such as LED	498
Backlight Compensation	498
Day-Light	499
Camera Raw	499
Digital Inputs and Outputs	499
Axis Multihead	499
Basler	500
Installation	501
Add the Plugin	501
Configuration	501
Notes on Operation	503
Body Temperature Measurement	504
Introduction	504
Package Contents	505
Usage	505
Environmental Conditions	505
Limitations and Remarks	506
Limitations	506
Change Log	506
Known Bugs	507
Positioning of the System Components	507
Positioning the Camera	507
Positioning the Blackbody Calibration Unit (Cal- ibration Device)	509
The Capture Zone	509
Configuration of the Plugin	510
Head Tracker	510
Region Based Measurement	510
Atmospheric Transmission Adjustment	511
Temperature Deviation Correction	511
Plugin Settings	512
Head Tracker Settings	514
Configuration of the System Components	521
Calibration and Heat-Up	521
Installing the Camera	521
Configuring the Camera	522

Configuring the Capture Zone	524
Configuring the Reference Zone	525
Configuring the Blackbody	525
Bosch	525
Installation	526
Configuration	526
Connection	527
Streaming Behaviour	528
Single Stream	528
Dual Stream	532
Profile Settings	533
Disable GNG settings	533
Disable stream changes	534
Request URI once	535
Aspect Ratio to Use	535
Check if audio at G.726 sounds bad!	535
Advanced	536
Date and time	536
Event Handling	536
Explanation of OnvifNotificationMessage Action	539
Supported Actions	540
PTZ Actions	540
Camera Raw	540
Bosch VCD Settings	541
Presentation of Objects and Tracks	542
Camera and Video Control	542
Video Control Action	542
G-Cam/E2	543
Installation	544
Add the Plugin	544
Connection	544
Streaming Behaviour	546
Single Stream	546
Transport protocol selection	547
Dual Stream	550
Dynamic Stream Selection - DSS	552

PTZ Move	552
Advanced	553
Audio	553
Activity Detection	554
Digital Input	555
Supported Actions	555
PTZ Actions	555
Day-Night	555
Camera Raw	555
Digital Inputs and Outputs	556
Camera Text On/Off	556
Image Settings	557
G-Cam/E3	557
Installation	558
Add the Plugin	558
PTZ Functionality	559
Connection	559
Streaming	561
Streaming behavior	561
TV System	566
Streaming Control	567
Fisheye Mode	567
Secondary Channel Function	568
Duplicate Mode	570
Individual Mode	571
Secondary Channel with E3	572
Audio Support	574
Advanced	575
Edgerecording	575
IR Function	576
Absolute PTZ	577
Activation of Motion Detection and Tampering	581
Activation of Motion Detection (MD)	581
Activation of Tampering	581
Digital Input and Output Contacts	582
Supported Actions	583

PTZ Action	583
Day-Night	583
Camera Raw	584
Digital Inputs and Outputs	584
G-Cam/E4	584
Installation	585
Add the Plugin	585
PTZ Functionality	586
Connection	586
Streaming	588
Single Stream	588
Dual Stream	591
Dynamic Stream Selection - DSS	592
TV System	593
Streaming Control	594
Audio Support	594
Advanced	596
Edgerecording	596
IR function	597
Activation of Motion Detection and Tampering	602
Activation of Motion Detection (MD)	602
Activation of Tampering	603
Digital Input and Output Contacts	604
Supported Actions	605
Day-Night	606
Camera Raw	607
Digital Inputs and Outputs	607
Secondary Channel Function	607
Duplicate Mode	609
Individual Mode	610
Secondary Channel with E4	611
G-Cam E5	614
Installation	614
Add the Plugin	615
PTZ Functionality	615
Connection	615

Streaming	618
Streaming Behavior	618
TV System	623
Streaming Control	624
Audio Support	624
Advanced	626
Edgerecording	626
IR Function	627
Absolute PTZ	628
Activation of Motion Detection and Tampering	632
Activation of Motion Detection (MD)	632
Activation of Tampering	633
Video Analytics Integration	634
Configuration in the Camera User Interface	634
Configuration in G-Set	637
Digital Input and Output Contacts	640
Supported Actions	640
Day-Night	641
Camera Raw	642
Digital Inputs and Outputs	642
Secondary Channel Function	642
Duplicate Mode	644
Individual Mode	645
Secondary Channel with E5	646
G-Cam/EcoLine	649
Installation	650
Add the Plugin	650
Configuration	650
Connection	650
Camera and Streaming Settings	652
PTZ Functionality	653
Supported Actions	654
Examples for CameraRAWOutput	656
Special Features of the Camera	657
G-Cam/GNSD	658
Installation	658

Add the Plugin	658
Connection	659
Streaming Behaviour	659
Settings in the Camera Web Interface	661
Streaming Transfer	661
Audio	662
Motion Detection	663
Input Contacts	663
G-Cam P1	664
Connection	665
Streaming Behaviour	665
Image Settings	668
Quality Profile and Frame Rate Settings	669
Supported Actions	671
PTZ Actions	671
Camera Raw	671
Default Values	672
G-Cam/TopLine	673
Installation	674
Add the Plugin	674
Connection	674
Streaming Behaviour	675
Advanced	676
Multicast	678
Image Profiles	679
General	679
Exposure	680
Appearance	684
Day/Night	687
Encoder	690
Recording Stream	690
Live Stream	691
Firmware	692
Audio Support	693
Notes on Operation	693
Live Stream Reader	694

Function	694
Installation	695
Add the Plugin	695
Configuration	696
Transcoding	698
ONVIF	699
Installation	701
Add the Plugin	701
Connection	701
Streaming	702
Single Stream	702
Dual Stream	706
Audio Transmission	707
Profile Settings	708
Profiles	708
Other	710
Advanced	712
Date and Time	712
Edge Recording	713
Event Handling	728
Explanation of OnvifNotificationMessage Action	731
Explanation of Custom Action	733
Supported Actions	734
PTZ Actions	734
Camera Raw	735
Hanwha Devices	736
Wisenet Encoder Integration	736
Hanwha Area Zoom	737
ONVIF Profile S and Profile T Features	737
Panasonic Ex	740
Installation	741
Add the Plugin	741
Connection	742
Streaming Behaviour	743
Advanced	744
Advanced Settings	745

Audio Support	746
Multichannel Encoders	748
Procash 8000	748
Installation	749
Add the Plugin	750
Configuration	750
Simulation Server	751
Samsung	752
Installation	753
Add the Plugin	753
Connection	753
Streaming Behaviour	754
Media Channels and Digital Contacts	756
SmartphoneConnect	758
Installation	760
Requirements	760
Software Package Content	760
How to Install the IP-Camera Plugin	761
How to Install the Service	761
How to Start the Client	762
Licensing	762
Configuration	764
How to Set Up the SmartphoneConnect Service	764
How to Set Up the G-Core Connection	767
How to Set Up Events	770
Sony	774
Installation	774
Add the Plugin	774
Connection	775
Streaming Behaviour	777
Stream Settings	777
Storage and Live	778
Advanced	780
Enable Audio Input (Only G.711 64Kpbs)	780
Enable Motion Detection	781
Cameras with Infrared Light (IR Illuminator)	782

Digital Inputs and Outputs	783
PTZ Cameras	783
Error Messages	785
Sync Lost and Sync Detected	785
Error Message in the Live Stream	785
Additional Information for Newest Generation (7th) in Web Interface	785
Supported Cameras	788
Universal HTTP	789
Installation	790
Add the Plugin	791
Configuration	791
List of Supported Camera Manufacturers and Types	793
Bosch	793
Commend	793
Universal RTSP	794
Installation	795
Add the Plugin	795
Connection	796
Connection Settings	796
Transport Protocol Selection	798
Audio Support	800
Secondary Channel Function	800
Duplicate Mode	802
Individual Mode	803
Advantages and Disadvantages of Both Modes	803
Secondary Channel with RTSP Plugin	804
List of Supported Camera Manufacturers and Types	806
Troubleshooting	844
Message "Waiting for Images" and Blue Screen	844
Message "Authorization failed!"	845
Message "404 File not found!"	845
Message "200 OK"	846
Message "Unsupported video format"	846
Message "Unsupported Transport"	846
Message "501 Not Implemented"	847
General Failure Message "Sync Lost"	847

GeViScope/GeViSoft	848
Camera Cycles with MBeg/GCT (GeViSoft)	848
Standard Camera Cycles vs. Special Cycles	848
Using Standard Cycles	849
Using Special Cycles	849
Monitor Group vs. Individual Monitor	849
On Monitor Group	849
On Single Monitor	850
Working with Cycles	850
C-CURE 9000 (GeViScope)	850
Overview	850
Features	850
Installation	851
Installation Overview	851
Pre-Installation Steps	852
Installing the GeViScope Integration	852
Uninstallation	858
Maintenance	860
GeViScope Integration Server	866
Accessing the GeViScope Server Editor	866
Creating a GeViScope Server	867
Deleting a GeViScope Server	868
Configuring a GeViScope Server	869
GeViScope Video Camera Editor	877
Defining an Alarm for a Camera	886
Remove an Alarm	887
Customizing State Images	889
GeViScope Video Camera Viewer	889
GeViScope Playback Controls	893
Video View	894
Accessing the Video View Editor	895
Creating a Video View	896
Deleting a Video View	896
Configuring a Video View	897
Video View Viewer	898
Video Tour	899

Accessing the Video Tour Editor	901
Creating a Video Tour	901
Deleting a Video Tour	902
Configuring a Video Tour	902
GeViScope Journal Messages	905
GeViScope Limitations	906
DTE Peacock (GeViScope)	907
Installation	907
Configuration	908
Messages	909
Settings	909
GSCView	911
G-CIS (GeViSoft)	913
Functionality	913
Installation	915
Install G-CIS	915
Uninstall G-CIS	916
Comwin Protocol (ICX) vs. Softvideo	916
GeViSoft: Action Mapping	916
Actions	916
Working with Mapping Rules	917
Configuration	924
G-CIS	924
Commend	926
GeViSoft	927
Misc	933
Diagnostic	933
Setup Manipulations	934
Examples	934
Simple Configuration: Camera and Monitor Map- pings	935
Advanced Subscriber and Control Desk Con- figuration	935
Hot Monitor: Start a call from GSCView	937
Using Geutebrück Digital Outputs to Trigger COMMEND INTERNATIONAL Outputs	938
G-MakroPlayer (GeViSoft/GeViScope)	940

Server	940
APITestClient	942
G-SWM (IPP II Interface) (GeViScope)	944
System Architecture	944
Configuration	945
Detection of GeViSoft Connections	947
Detection and Allocation of SWM Hardware	948
Definition of Alarm Zones	949
Operation	949
Bundling of Cell Alarms to Zone Alarms	954
G-SWM.exe	956
G-SWMSetup.exe	956
GeMIP (GeViSoft)	957
How Does the MicroPoint System Work?	957
Installation	958
Configuration	959
Test Application	960
GeViSoft Actions for the MicroPoint System	961
GSCIPDialUp (GeViScope)	971
Installation	972
Configuration	972
Connections	972
Dial-up	973
CPA	974
Operation	977
Communication: GeViSoft → GeViScope	977
Communication: GeViScope → GeViSoft (CPA Measurement)	978
Expansion of CPA Logging	980
Number of Connection Attempts	980
Number of Measurement Attempts	980
Logging	980
Response Times	981
IOI43a/ab USB Alarm-I/O (GeViScope)	981
Installation	981
Configuration	982
Driver Installation	985

How to Install the Driver	987
Serial Port	991
Raytec Remote Control (GeViSoft)	996
Installation	997
Configuration	997
Control	999
Action Overview	1000
Remote Snapshot (GeViScope)	1003
Installation and Configuration	1003
Installation in GSCSetup	1005
Recording	1007
Pausing the Recording	1008
TMS-20 (GeViScope)	1008
Installation	1008
Configuration	1009
Messages	1010
Telecontrol	1012
American Dynamics Matrix	1012
Argovision (Lederer) Platon AFX	1014
Address Specifics	1016
BBV System	1016
Bosch (Old Philips) Protocol Integration	1018
Additional Remarks (Tested with Autodome 5 (600 series))	1021
Control of the OSD Menu of Bosch Autodomies	1021
Control of the Auto Pan Function of Bosch Autodomies	1022
Dennard Protocol	1023
Ernitec (ERNA) Protocol Integration Unilink	1025
Special Characteristics of Addressing	1029
GVD640	1030
JVC Dome TK-C675	1031
JVC Dome TK-C676	1034
Advanced TK-C676 Commands	1037
JVC Dome TK-C675/C676-m	1038
KDec-200	1038
KDec-200-m	1039

KDec-300	1039
KDec-300 Version 3.x	1041
Summary of the KDec-300 Version 3.3 Commands	1042
Explanation of the Variables	1046
MIC1-300	1047
Molynx Protocol	1048
Panasonic Protocol Integration (Extensions)	1051
Controlling the OSD Setup Menu	1051
Controlling Autopan	1052
Presets, Sequences, Patrols	1053
Special Functions	1053
Panasonic Domes WV-CS850/854E/CS600/CS650	1054
Panasonic Dome WV-CSR/BSR Series	1056
Panasonic Dome WV-CW964	1057
Pelco P Protocol	1058
Pan, Tilt, Zoom, Focus, Iris Commands	1058
Extended Command Set	1059
Pelco Pan/Tilt Heads	1061
Philips Protocol	1066
Roboscan Protocol Integration	1069
Samsung Speed Dome SCC-641(P)	1070
Sensormatic Dome Series SpeedDome Ultra IV / AD DeltaDome	1073
Sony Visca EVI-D 370/371	1076
Star MD200 Protocol Integration	1077
Wiring of IC-4855 RS232/485 Adaptor	1078
Thomson TS-RC11	1079
Address Specifics	1081
VarioTherm Protocol Integration	1082
Modes	1082
Functions	1082
VCL Dome	1084
Paths	1084
Privacy Zones	1084
Vicon Protocols (Standard/Extended)	1087
Standard VICON Functions	1087
Extended VICON Functions	1089

VISCA Protocol Integration 1090

About This Documentation

Current software version: G-Core 8.1.1.

The latest features and changes of the current software version are listed in the Release Notes.

i **Note that the illustrations in this documentation may not match those of your software version.**

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General

This chapter contains general additional technical information.

G-Core/Diagnostics

G-Core/Diagnostics is a service that is used to monitor local (running on the same computer) G-Core servers and to monitor the status using SNMP. The following values are monitored:

Value (G-Scope)	Description
Memory monitoring of the recorder	G-Core/Diagnostics receives information about the memory load from the G-Scope server. The value System page used in % is a combination of physical memory load and utilization of the page file and shows the actually used memory as a percent of the total available memory.
Monitoring the live stream	G-Core/Diagnostics queries the media channels in a definable interval and requests a live picture.
Monitoring the recording	The recording (storage) is checked at the same interval as the live stream. The two different monitoring methods are described in more detail in 2.3.1.
Monitoring the database depth (global)	This value is an estimation across all rings. If G-Core/Diagnostics calculates that the existing database capacity is insufficient to maintain the desired temporal depth of pictures, an error is generated.
Availability of the G-Core Server service	If the G-Core server can no longer be contacted by G-Core/Diagnostics, a message is sent.

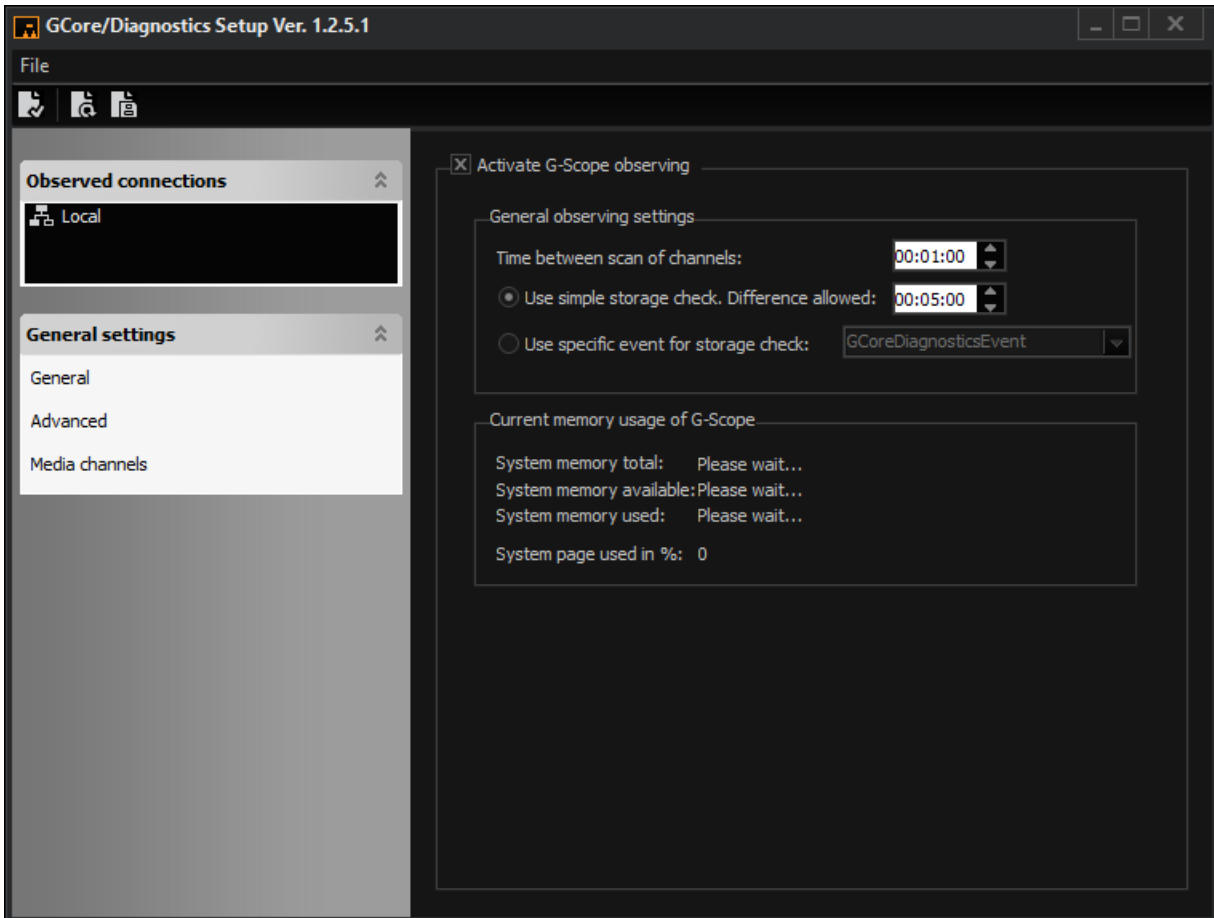
Configuration

The program `GCoreDiagnosticsSetup.exe` is used to configure the G-Core/Diagnostics. It can be found in the installation directory of G-Scope. Standard: `C:\Program files\Geutebrueck\G-Core\GCoreDiagnosticsSetup.exe`.

GENERAL

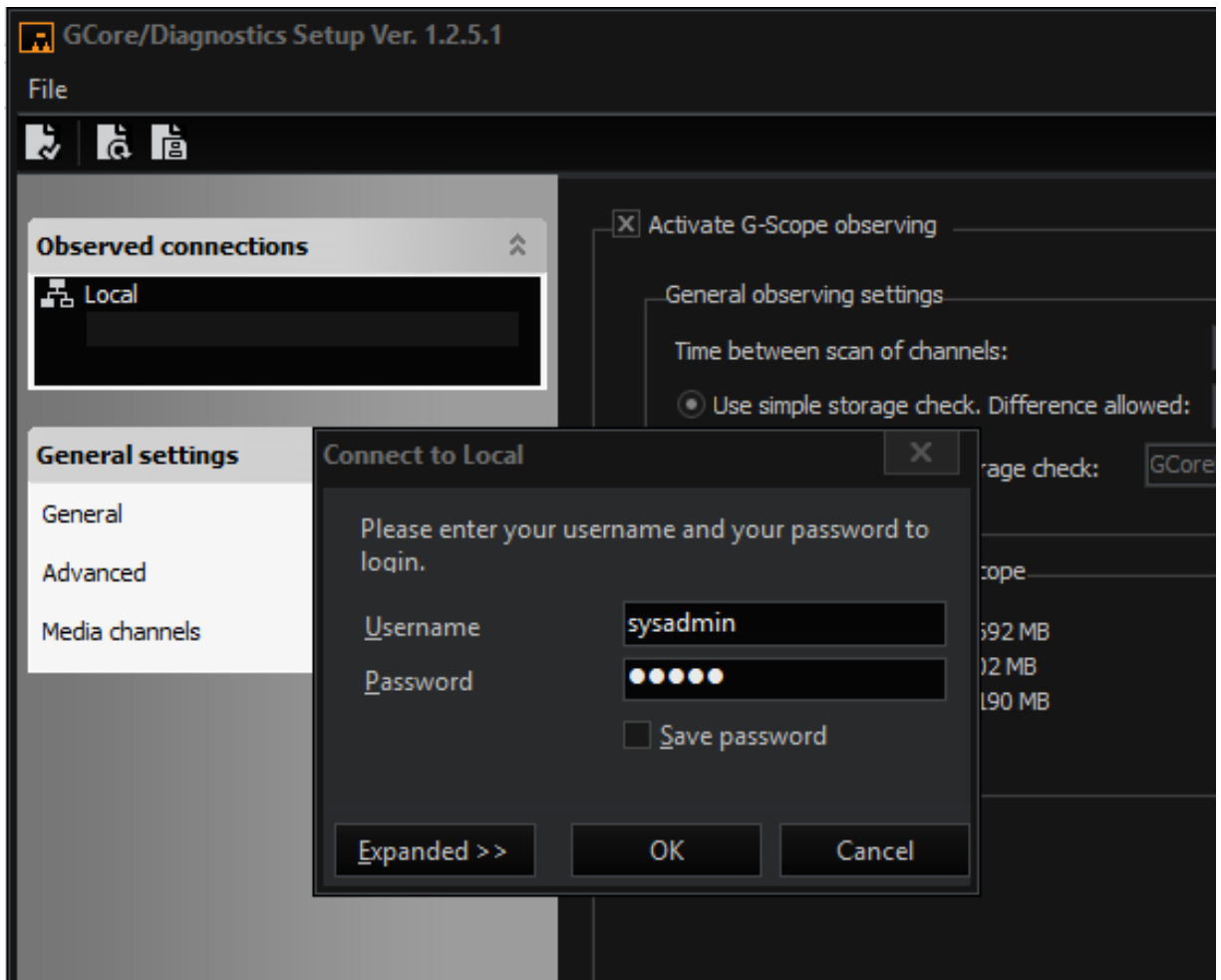
This program loads the file GCoreDiagnostics.gvsf from the directory C:\ProgramData\Gng\ and also saves changes there.

i **G-Core/Diagnostics can only be parametrized locally.**



Observed Connections

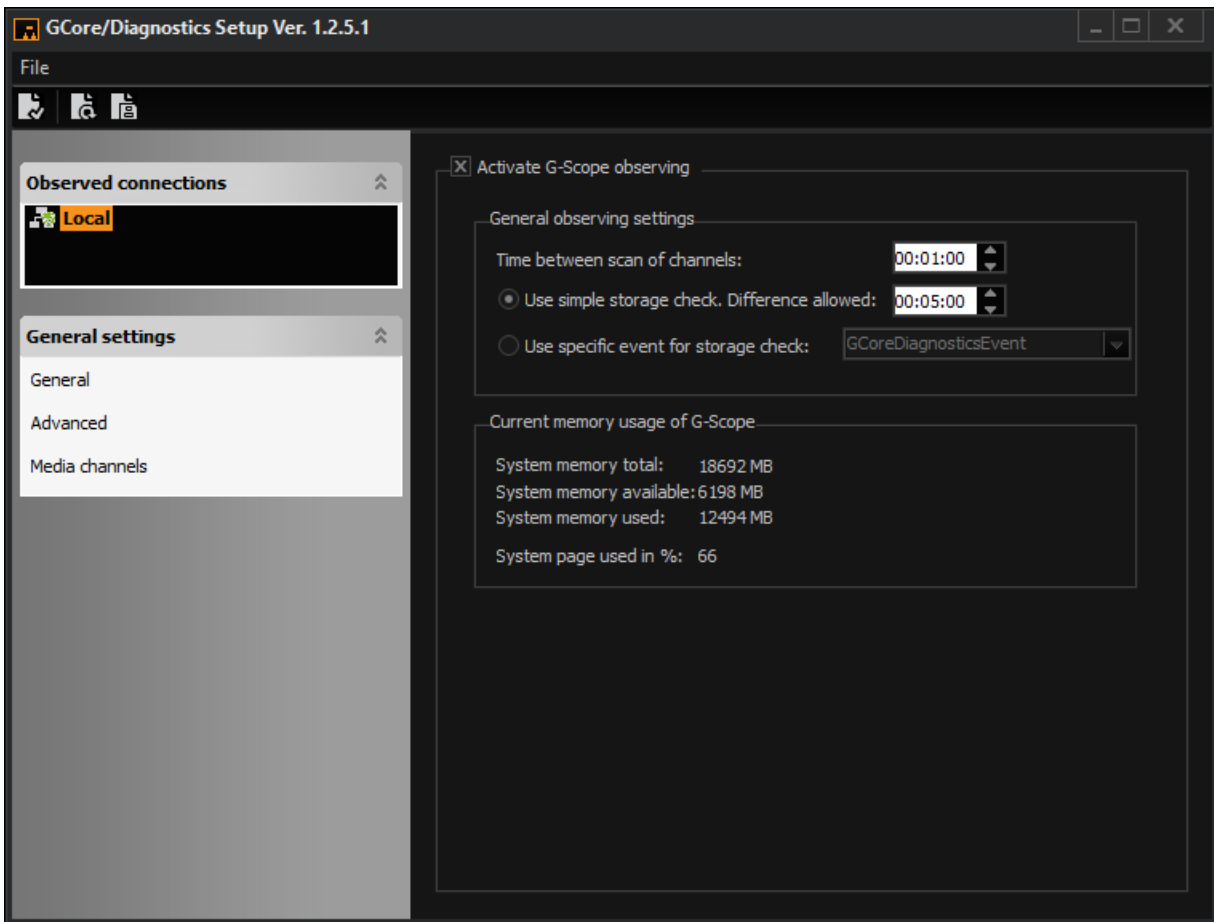
G-Core/Diagnostics can only monitor local (located on the same computer) G-Core servers. At the initial start-up, the **Username** and **Password** must be assigned. By double clicking on the connection **Local**, you will be prompted to make an entry.



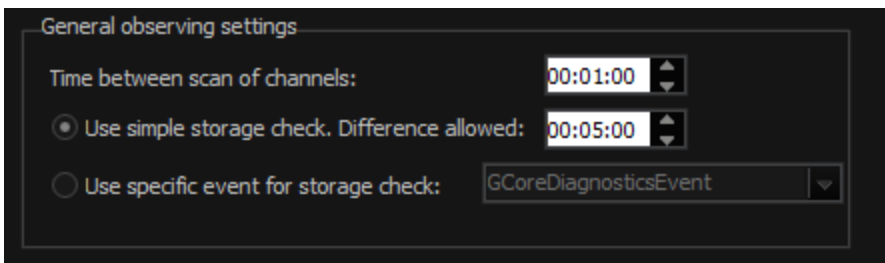
General Settings

By double clicking on your connection, G-Core/Diagnostics creates a connection to the server and loads the current setup.

GENERAL



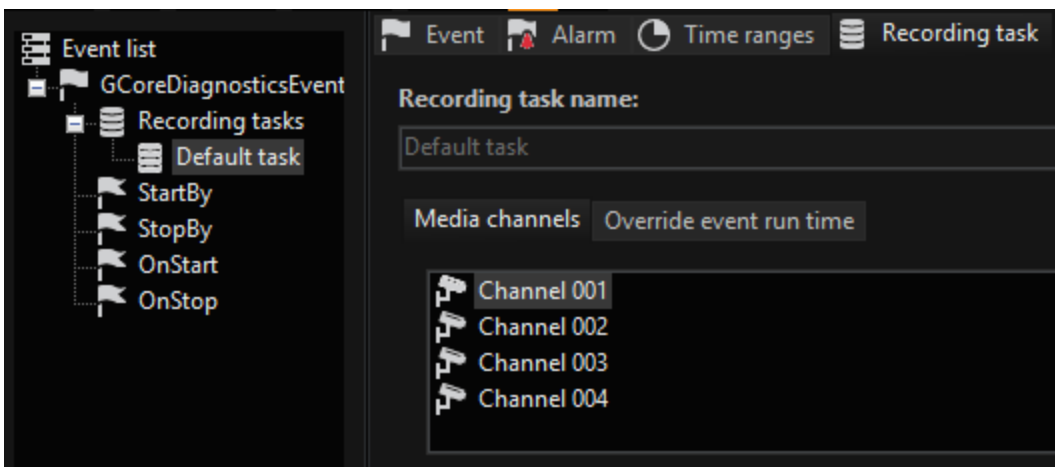
General Observing Settings



Name	Description
Time between scan of channels	With Time between scan of channels you set the duration waited until jumping to the next channel for checking. This means for 16 channels $16 * 5 \text{ minutes} = 80 \text{ minutes}$ for a complete check.

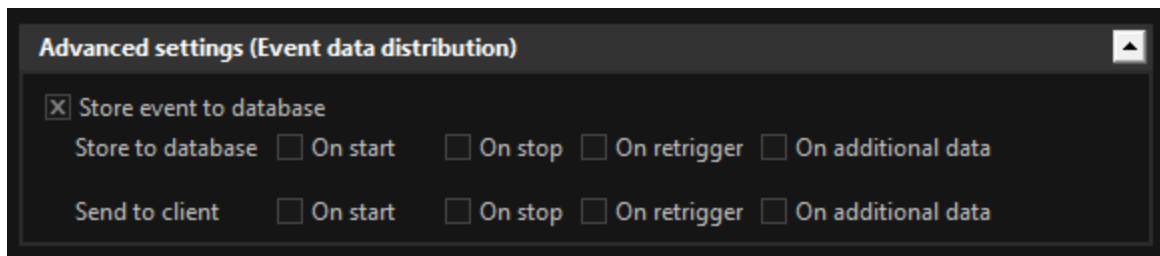
GENERAL

Name	Description
Use simple storage check	Use simple storage check is simple recording monitoring that works with the permanent recording. It is triggered when the last picture is older than the set duration. This mode can only be used when it has been ensured that a picture is recorded by the server every n seconds.
Use specific event for storage check	Use specific event for storage check uses an event that records all channels. This event must be created separately in G-Set. The event does not require start or stop criteria. The event must, however, record all channels that are to be monitored.



The event is then started and directly stopped again by the diagnostics. G-Core/Diagnostics now checks if the channel is being recorded. It is not necessary to permanently record for this type of monitoring!

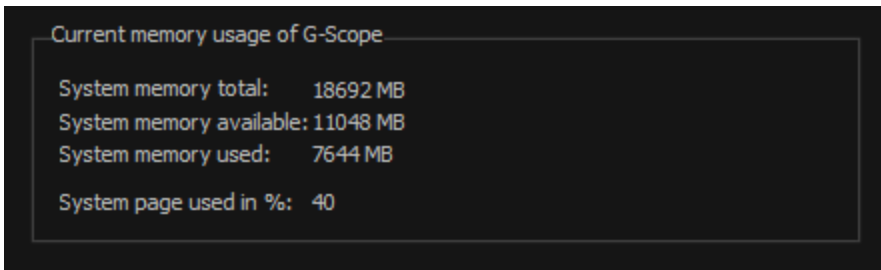
- i** It is recommended to configure the **Advanced Settings (Event data distribution)** in G-Set so that the event will not appear as live information within G-View on runtime. Nevertheless the Event itself will be seen in the eventlist of G-View.



GENERAL

In G-Set a desired buffer depth is specified for each ring (e.g. 10 days). Once this depth has been reached, this is called a fill level of 100%. If there are only pictures from the last 8 days in the database, then only 80% of the desired depth has been achieved. G-Core/Diagnostics will show this information with the SNMP values delivered.

Current Memory Usage of G-Scope

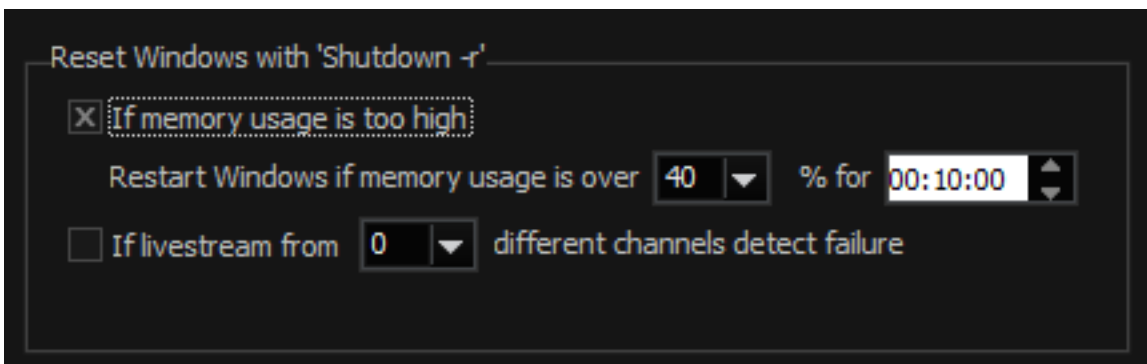


Name	Description
System memory total	Total usable memory (physical + virtual).
System memory available	Available memory.
System memory used	Memory in use.
System page used in %	Memory use as percentage.

i The information about the memory usage will be shown as SNMP value as well.

Advanced Settings

Reset Windows with 'Shutdown -r'

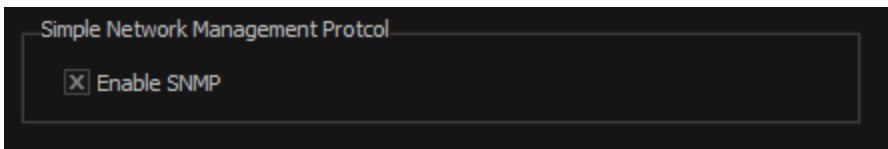


GENERAL

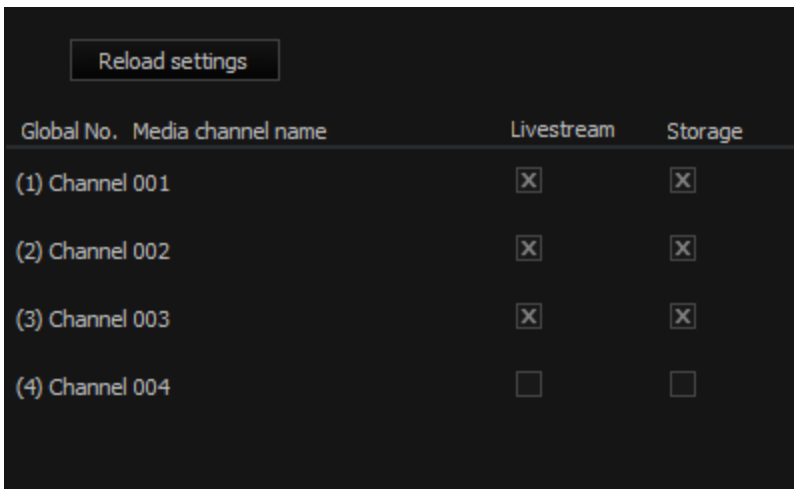
Name	Description
If memory usage is too high	Restart Windows if memory usage is over xx % for ...
If live stream from X different channels detects failure	This function can be used to restart G-Scope when, for instance, all channels of a device fails.

Simple Network Management Protocol

This check box is used to activate the SNMP function of G-Core/Diagnostics. A description of the MIB and the additionally required settings of Windows are described in the appendix.



Media Channels Settings



Global No.	Media channel name	Livestream	Storage
(1)	Channel 001	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(2)	Channel 002	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(3)	Channel 003	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
(4)	Channel 004	<input type="checkbox"/>	<input type="checkbox"/>

On this page of GCoreDiagnosticsSetup you can specify the G-Core live and storage diagnostics by setting which channels are to be monitored. In this example, channels 1 to 3 and the live stream and the recording are monitored.

Channel 4 are not monitored as no camera is connected yet. These cameras are also not activated for the interval cycle of the monitoring. There will also not be any information about these cameras in SNMP.

Registry Keys

Registry keys are used when their effects are only needed very rarely or in special projects. The registry keys are automatically generated in the Windows registry as soon as G-Core/Diagnostics is started once. Open the **Registry Editor**. The easiest way to do this is to go to **Start > Run** and enter **regedit**. Go to this subdirectory: [HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck\Gng\GCoreDiagnostics]

This is the description of the key:

Name	Description
LiveVideoHeight LiveVideoWidth	These two parameters specify in which resolution the live stream should be opened. The standard here is 352 x 288, corresponding to a Cif image. This value should not be changed, as performance loss can occur in conjunction with DLS dynamic live streaming.
UseCustomSetupPath CustomSetupPath	It is thus possible to determine the path in which the G-Core/Diagnostics setup (GCoreDiagnostics.gvsf) is stored. When the value UseCustomSetupPath is equal to zero, the parameter CustomSetupPath is not taken into account and the setup is always in the default path: C:\ProgramData\Gng\ When the UseCustomSetupPath is not zero, the setup is stored in the path specified in CustomSetupPath. Open a Windows Explorer and open the desired directory there. Copy the path from the Windows Explorer and paste it into the CustomSetupPath, e.g. C:\My Data\MyG-ScopeDiagFolder.
LiveTimeOut StorageTimeOut StorageTimeOutShouldBeFailure	With this it is possible to allow G-Core/Diagnostics to wait longer for an answer of the queried G-Core server. 1000 ms are the default wait time. If no pictures are delivered by the G-Core server in this time, G-Core/Diagnostics interprets this as an

Name	Description
	<p>error. In particular for systems with larger databases (>10 TB), the response can take longer. Thus a larger value can be entered here (LiveTimeout and StorageTimeout). To minimize error alarms, it is possible to decide that timeout errors are not sent as an error. (StorageTimeoutShouldBeFailure = 0).</p> <p>The StorageEventTimeout specifies how many milliseconds pass before the event is stopped. A duration of one second can lead to false alarms when checking IP cameras. The duration can be raised to up to 5 seconds here.</p>
ClientHeigth ClientLeft ClientTop ClientWidth	<p>These values specify the coordinates in which the G-Core/Diagnostics setup is opened. When these values are deleted, G-Core/Diagnostics setup starts in the center of the screen of the main monitor.</p>

Simple Network Management Protocol (SNMP)

The Simple Network Management Protocol (SNMP) defines a protocol that aims to simplify data transfer between network elements. Here SNMP AGENTS (= SNMP SERVER (GCore)) provide a certain set of variables that reflect the status of the network element (e.g. router, server, switch, printer, computer).

The variables can be queried and also influenced by (with the corresponding access rights for the variable value) the SNMP MANAGER (=SNMP CLIENT). While the SNMP AGENT is passive in the situation just described and waits for a query for one or more values from the manager, it is also possible for the SNMP AGENT to send a message into the network. This message is called an SNMP TRAP. When the SNMP AGENT is configured, it is defined to which devices the trap should be sent.

The following scenarios are possible with SNMP:

- Monitoring of network components
- Remote query, remote control and remote configuration of network com-

GENERAL

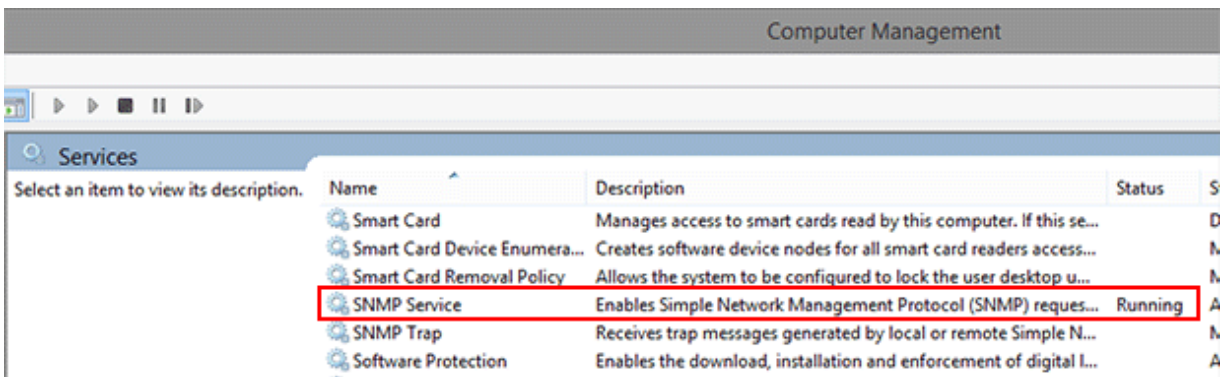
ponents

- Error recognition and reporting

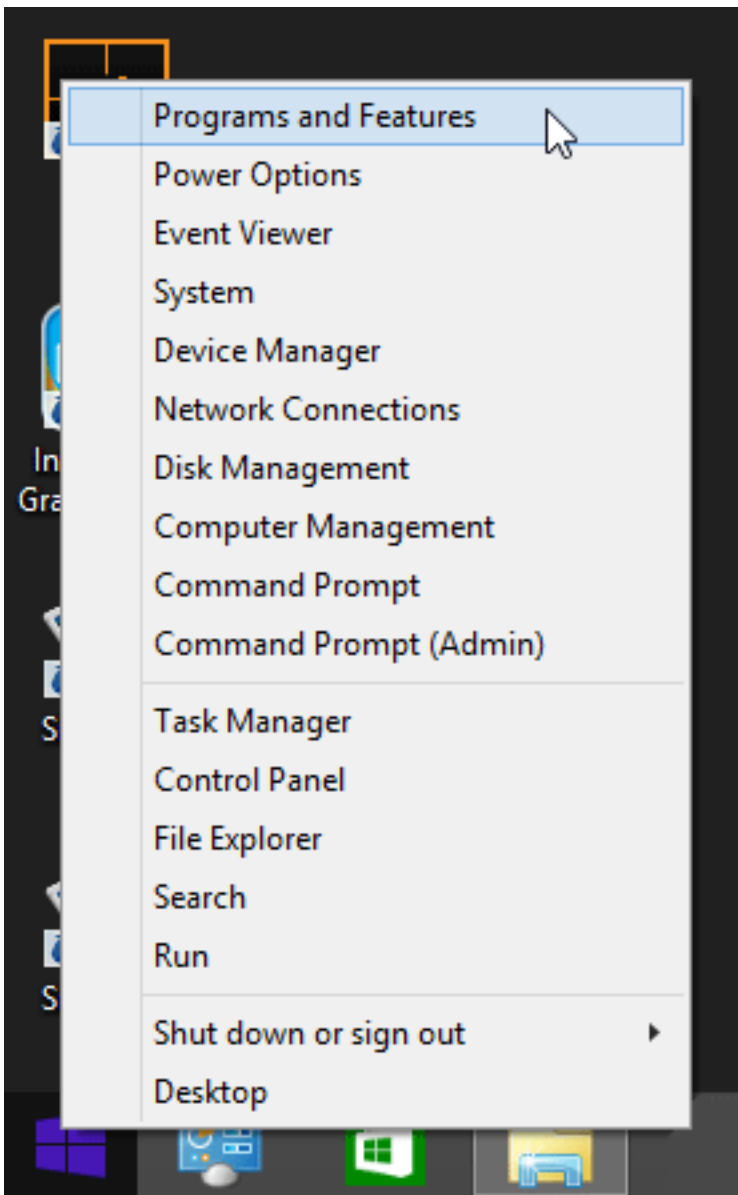
For G-Core/Diagnostics to be SNMP capable, the following files are required: GCoreDiagnosticsSnmp.dll and GCoreDiagnosticsSnmpNamespace.dll. These must be in the G-Core directory. The file GBMIN.mib is in the same directory. This file is required for the SNMP manager. It is not required for the functionality of G-Core/Diagnostics.

Installation of the Windows SNMP Agents

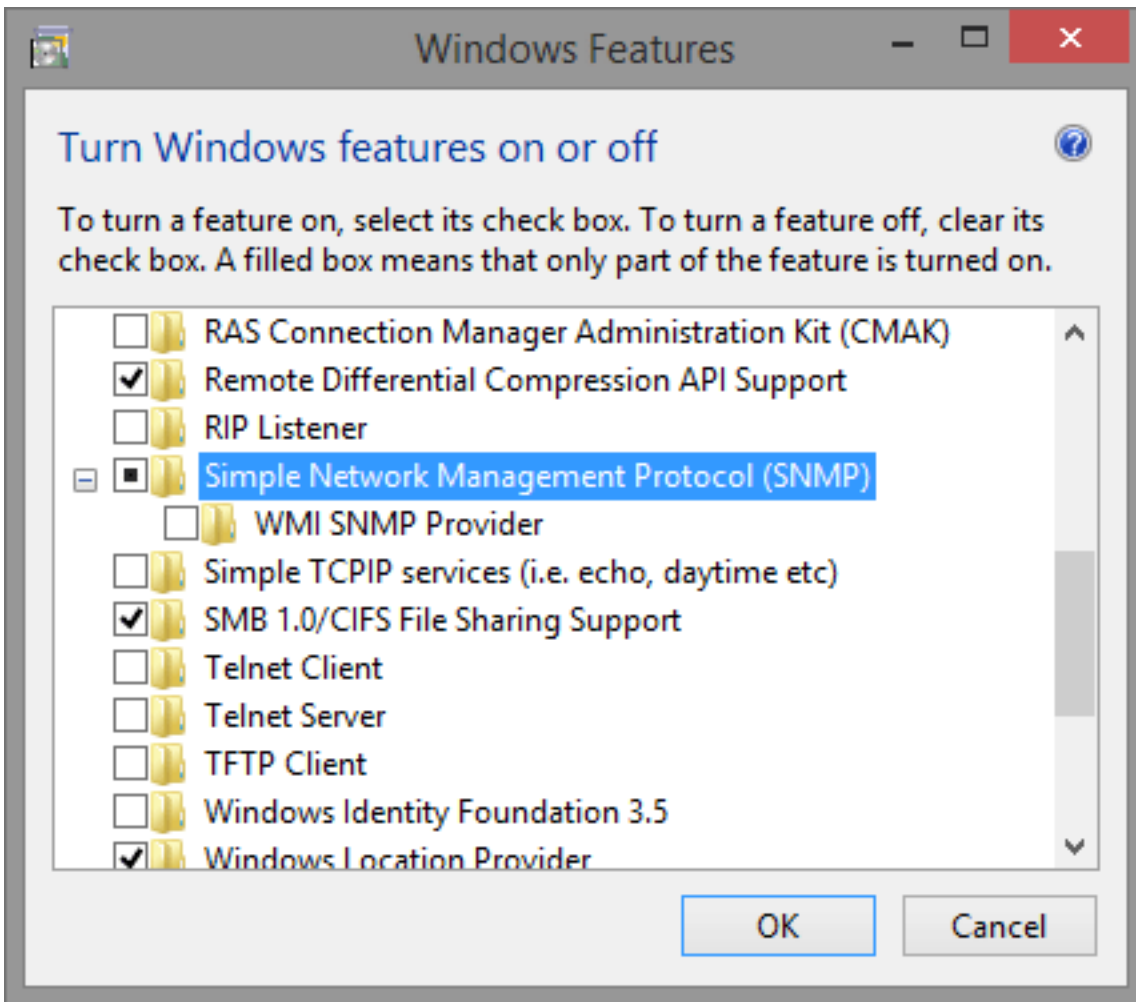
Windows operating systems already contain an SNMP Agent. If the SNMP Agent is already installed, then the entry **SNMP Service** can be found in the Windows system services.



If there is no such entry, the SNMP service must be installed via **Programs and Features**:



Add or Remove Programs > Add/Remove Windows Components > SNMP.



After successful installation, the SNMP service can be found in the Windows services.

It is now possible to establish a connection from an SNMP manager to the Windows SNMP agent and query information about the computer. During this procedure the basic information of the Windows operating system is made available.

SNMP Agent and Extension Agents

In addition to the basic information, it is possible to use the Windows SNMP Agent to make data from other programs (in our case, G-Core/Diagnostics) available for an SNMP manager.

So that the SNMP Agent can make this additional information from G-Core/Diagnostics available, the file "GCoreDiagnosticsSnmp.dll" must exist in the G-Core directory. At the runtime of G-Core/Diagnostics the following registry keys are set. When G-Core/Diagnostics is stopped these keys are automatically deleted again. This is normal and necessary behavior.

GENERAL

The following key must be set in the Windows registry when G-Core/Diagnostics is running:

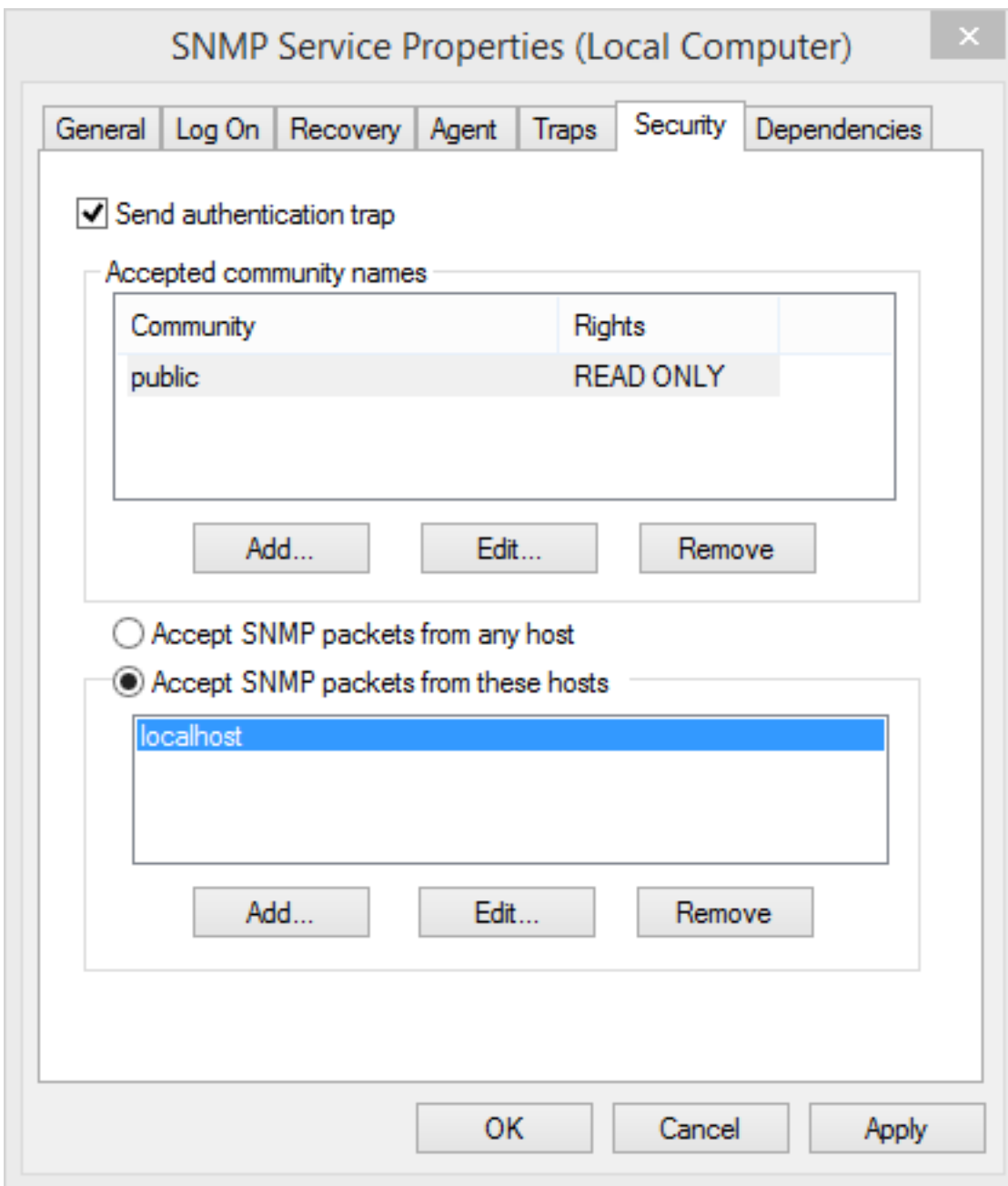
```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SNMP\Parameters\ExtensionAgent] "GCoreDiagnostics"="SOFTWARE\Geutebrueck\Gng\GCoreDiagnostics\SNMP\CurrentVersion"
```

and

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck\Gng\GCoreDiagnostics\SNMP\CurrentVersion] "PathName"="%gngpath%\GCoreDiagnosticsSnmp.dll"
```

Windows SNMP Configuration

After installation and registration of the extension DLLs, as part of the configuration it can be determined which machines can access the SNMP Agent and to which devices traps are sent. This is performed in the property dialog of the SNMP Service. (Accessed in the Windows services, right click on **SNMP Service** > **Properties**.)



In the tab **Security** of the property dialog you set which computers in the network can send queries to the SNMP agent. The lower section is decisive. Either all IPs are allowed (**Accept SNMP packages from any host**) or you can specify which computers can send a query to the SNMP agent (**Accept SNMP packages from these hosts**). In the latter case, the IP addresses of the querying hosts be must listed explicitly.

GENERAL

In the tab **Traps** it is specified to which computers an active message should be sent by the SNMP agent. The computers that are to receive a trap must be listed here explicitly.

i **G-Core/Diagnostics does not currently support traps. For this reason, these settings are not important at this time.**

Management Information Base (MIB)

About MIB

The Management Information Base (MIB) is a collection of managed objects structured as a tree. The MIB is not a database but rather defines the structure of the name space. The MIB is similar to the table of contents of the SNMP agent. The structure of the MIB tree is hierarchically structured starting from the root. Each leaf of the tree is identified by a unique object identifier (OID). Additionally, the data type and identifier is defined for each leaf. If an extension dll is integrated, then for the OID area that offers the extension dll an MIB extension must be developed that makes it possible to translate the OID into a value. In this sense the MIB is a library that assigns an OID an identifier and the data type. The newly developed MIB area must fit to the name space of the extension dll and can be fed into the SNMP manager, making it possible for the manager to translate the OID. From the MIB the manager knows then how it must interpret information from the agent.

The MIB area of a certain extension agent is determined by the manufacturer and must be adapted to the OIDs that are available as part of the extension dll. The notation of the MIB corresponds to Abstract Syntax Notation One (ASN.1). To avoid ambiguity, the manufacturer should reserve a so-called **private enterprise number** at www.iana.org, from which the manufacturer-specific subtree of the MIB spans. The manufacturer-specific part of the MIB begins at OID 1.3.6.1.4.1. [=iso(1).org(3).-dod(6).internet(1).private(4).enterprises(1)]

As the next number in the OID sequence the private enterprise number must then be appended, which serves as the root for the manufacturer-specific sub tree.

(Example 1.3.6.1.4.1.28106). The ID 28106 is registered with IANA to Geutebrueck.

<http://www.iana.org/assignments/enterprise-numbers>

Once the SNMP AGENT has been correctly installed, GCoreDiagnosticsSnmp.dll is integrated on the target system, and the properties of the SNMP service regarding trap targets and SNMP access rights have been adapted, an SNMP manager can access the GBSNMP values via the network. When the Windows Agent receives a query that relates to the Geutebrück sub tree, this is automatically forwarded to

GENERAL

GCoreDiagnosticsSnmp.dll. (During initialization of the DLL the Geutebrück private enterprise number is given to the Masteragent, ensuring that Geutebrück queries are forwarded to GCoreDiagnosticsSnmp.dll).

To ensure correct display in the SNMP MANAGER, the GBMIN.mib must be made available to the manager.

In the following the individual OIDs of the GBMIB.mib only for G-Core/Diagnostics are described. An extra copy of the MIB itself is stored during installation of G-Core/Diagnostics in the G-Core directory.

GBMIB.mib

The screenshot displays the MIB tree on the left and the query results on the right. The MIB tree is expanded to show the 'geutebrueckProducts' folder under 'private' > 'enterprise' > 'geutebrueckProducts'. The query results window shows a list of 38 OIDs and their values, including 'geutebrueckProducts' (1.3.6.1.4.1.28106.1.1.0) and 'geutebrueckProductsVersion' (1.3.6.1.4.1.28106.1.1.2.0).

This folder contains values which are set by the Geutebrueck software GCoreDiagnostics.exe

-- 1.3.6.1.4.1.28106.1.2

gCoreDiagnostics OBJECT IDENTIFIER ::= { geutebrueckProducts 2 }

-- 1.3.6.1.4.1.28106.1.2.1

gCoreDiagnosticsVersion OBJECT-TYPE

SYNTAX OCTET STRING

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Versionnumber of GCoreDiagnostics currently running."

GENERAL

::= { gCoreDiagnostics 1 }

-- 1.3.6.1.4.1.28106.1.2.2

gCoreOverallStatus OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Common error reporting contact for a bunch of error kinds.

0 = Value was not checked yet. State is unknown.

1 = Whole system is working fine.

This means

connectedToGCore,
memoryUsage,
databaseFillLevel,
liveErrorsPending and
storageErrorsPending

are all State = OK (1)

2 = System has at least one error (2) in

connectedToGCore,
memoryUsage,
databaseFillLevel,
liveErrorsPending or
storageErrorsPending

Updating will be done every 30 seconds."

::= { gCoreDiagnostics 2 }

-- 1.3.6.1.4.1.28106.1.2.3

gCoreDiagnosticsLastSeen OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

STATUS current

DESCRIPTION

GENERAL

"TimeTicks starts with start of GCoreDiagnostics.exe.
Starts with zero and will be updated every 30 seconds."

::= { gCoreDiagnostics 3 }

-- 1.3.6.14.1.28106.1.2.4

connectedToGCore OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Information if GCoreDiagnostics was able to connect to G-Scope.

0 = Value was not checked yet.

1 = Connection to G-Scope is established

2 = No connection to G-Scope"

::= { gCoreDiagnostics 4 }

-- 1.3.6.14.1.28106.1.2.5

reserved OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Reserved. This value is not defined yet."

::= { gCoreDiagnostics 5 }

-- 1.3.6.14.1.28106.1.2.6

memoryUsageGCore OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

GENERAL

"Current usage of working memory in percent.
Updating will be done once a minute."

::= { gCoreDiagnostics 6 }

-- 1.3.6.14.1.28106.1.2.7

databaseFillLevelGCore OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"This value gives information about the fill level of the database.
The value is given in percentage.
If the value is 95, the database has not reached it desired depth in time
which is set up in G-Set.
If the value is above 100, the database is working very well.
Updating will be done approximately every minute."

::= { gCoreDiagnostics 7 }

-- Folder with information about summary of live and storage errors.

-- 1.3.6.14.1.28106.1.2.8

alarmsGCore OBJECT IDENTIFIER ::= { gCoreDiagnostics 8 }

-- 1.3.6.14.1.28106.1.2.8.1

liveErrorsPendingGCore OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Summary of cameras which has pending errors in livestreaming."

::= { alarmsGCore 1 }

-- 1.3.6.14.1.28106.1.2.8.2

GENERAL

storageErrorsPendingGCore OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Summary of cameras which has pending errors in storage."

::= { alarmsGCore 2 }

-- Folder with information about every single channel in depth.

-- 1.3.6.1.4.1.28106.1.2.9

camerasGCore OBJECT IDENTIFIER ::= { gCoreDiagnostics 9 }

-- 1.3.6.1.4.1.28106.1.2.9.1

gCoreAvailableCameras OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Number of how much cameras (rows) are listed in table gCoreDiagnosticsChannelTable"

::= { camerasGCore 1 }

-- 1.3.6.1.4.1.28106.1.2.9.2

gCoreDiagnosticsChannelTable OBJECT-TYPE

SYNTAX SEQUENCE OF GCoreDiagnosticsChannelEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"A table of channels checked by GCoreDiagnostics and its states."

::= { camerasGCore 2 }

GENERAL

-- 1.3.6.14.1.28106.1.2.9.2.1

gCoreDiagnosticsChannelEntry OBJECT-TYPE

SYNTAX GCoreDiagnosticsChannelEntry

MAX-ACCESS not-accessible

STATUS current

DESCRIPTION

"gCoreDiagnosticsChannelEntry"

INDEX { gCoreMaschineName }

::= { gCoreDiagnosticsChannelTable 1 }

GCoreDiagnosticsChannelEntry ::=

SEQUENCE {

gCoreMaschineName

OCTET STRING,

gCoreChannelName

OCTET STRING,

gCoreStateLiveStream

Integer32,

gCoreStateStorageStream

Integer32,

gCoreChannelRecentlyChecked

TimeTicks,

gCoreNumberOfLiveErrors

Counter32,

gCoreNumberOfStorageErrors

Counter32

}

-- 1.3.6.14.1.28106.1.2.9.2.1.1

gCoreMaschineName OBJECT-TYPE

GENERAL

SYNTAX OCTET STRING

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Alias name of G-Scope connection at the GCoreDiagnosticsSetup."

::= { gCoreDiagnosticsChannelEntry 1 }

-- 1.3.6.1.4.1.28106.1.2.9.2.1.2

gCoreChannelName OBJECT-TYPE

SYNTAX OCTET STRING

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Channelname of checked channel."

::= { gCoreDiagnosticsChannelEntry 2 }

-- 1.3.6.1.4.1.28106.1.2.9.2.1.3

gCoreStateLiveStream OBJECT-TYPE

SYNTAX Integer32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Result if this channel works properly in live streaming at the moment.

0 = Channel was not checked yet.

1 = Channel works fine.

2 = Channel has error."

::= { gCoreDiagnosticsChannelEntry 3 }

-- 1.3.6.1.4.1.28106.1.2.9.2.1.4

gCoreStateStorageStream OBJECT-TYPE

SYNTAX Integer32

GENERAL

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Result if storage recording works properly at the moment.

0 = Channel was not checked yet.

1 = Channel works fine.

2 = Channel has error."

::= { gCoreDiagnosticsChannelEntry 4 }

-- 1.3.6.1.4.1.28106.1.2.9.2.1.5

gCoreChannelRecentlyChecked OBJECT-TYPE

SYNTAX TimeTicks

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"TimeTicks starts with start of GCoreDiagnostics.exe.

Starts with zero. Updating depends of settings in GCoreDiagnosticsSetup.exe."

::= { gCoreDiagnosticsChannelEntry 5 }

-- 1.3.6.1.4.1.28106.1.2.9.2.1.6

gCoreNumberOfLiveErrors OBJECT-TYPE

SYNTAX Counter32

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of errors detected in livestream since start of GCoreDiagnostics."

::= { gCoreDiagnosticsChannelEntry 6 }

-- 1.3.6.1.4.1.28106.1.2.9.2.1.7

gCoreNumberOfStorageErrors OBJECT-TYPE

SYNTAX Counter32

GENERAL

MAX-ACCESS read-only

STATUS current

DESCRIPTION

"Count of errors detected in stroage since start of GCoreDiagnostics."

::= { gCoreDiagnosticsChannelEntry 7 }

OnGuard Event and Recording Interface

The target of this interface is a software based integration between Geutebrück DVRs and Lenel OnGuard ACS. Therefore the project is divided into two parts. On one hand the G-OnEvent interface (to map between OnGuard ACS events and GSC ACS actions) and on the other hand G-OnView (where the Geutebrück CCTV system is considered as a video recording and presentation slave and Lenel as master).

The **G-OnEvent** (Geutebrück OnGuard ACS Event Interface) interface is designed as a GeViSoft SDK NET service client module, hence it is completely decoupled from the need to be run on the same machine as GeViSoft or/ and OnGuard, which leads to a maximum flexibility and scalability (e.g. GONGEV can be installed on a third machine to bridge between two sub networks). Nevertheless it is also possible and suggested to perform an installation on the same machine that runs GeViSoft or/ and OnGuard.

The **G-OnView** (Geutebrück OnGuard Recording Interface) interface is designed as a GeViScope SDK client module, hence it can access local GeViScope as well as remote GeViScope. The GONGREC is implemented based on Open Device / Open Video Recorder SDK of Lenel as an in-process COM-server.

G-OnEvent

Preconfiguration of the Lenel System

To retrieve the ACS events from the OnGuard system one need to configure the LS Linkage Server- and LS DataConduIT services. Both are part of the standard OnGuard server installation.



IMPORTANT: It is important that LS Linkage Server and LS DataConduIT are installed on the same machine to receive events.

The DataConduIT service uses the automatic single sign-on (SSO) mechanism for client authentication, i.e. it checks which Windows account has made the DataConduIT call and if the SSO succeeds, then the client is logged on to the system as the appropriate OnGuard user. Therefore one need to configure firstly SSO:

GENERAL

Add a user directory to map between the Windows and OnGuard users:

1. Start the OnGuard **System Administration** tool, select the **Administration** category and here the **Directories** sub field.
2. To add a directory simply click on the **Add** button, select **Windows Vista/XP Workstation** and chose an arbitrary **Name** with the **Domain** the computer belongs to.
3. To save the configuration, click **OK**.

Linking the user account (that is used for SSO) to a specific (local) account in the directory:

1. Chose in the OnGuard **System Administration** tool the **Administration** category again, but now select the **Users** sub field.
2. To add a link between a user in the directory and a new OnGuard user click onto **Add** and enter the information for the DataConduIT access user (**First Name, Last Name**).
3. Open the **Directory Account** tab, select **Link** and chose the local directory which was created in the former step.
4. Type in the **Value** field the name of the Windows user (this user needs administrator privileges on the system) that should gain access to the DataConduIT interface.
5. Click on **Search** to be aware that the entered user name really exists and select it and confirm with one click on **OK**.
6. Navigate to the **Permission Groups** tab and give the user administration privileges (**System: System Admin**).
7. Confirm the **Users** dialog finally with a click on **OK**.

To be able to receive events the LS Linkage Server service must be running:

1. If the **LS Linkage Server** does not start automatically at startup set the necessary service options in the Windows service dialog (**Startup typ: Automatic**).
2. Additional navigate to the **Administration** category (in the OnGuard **System Administration** tool) and select the sub field **System Options**.
3. Select the **Modify** button and enter as **Linkage Server Host** the name of the actual machine (where the LS Linkage Server service is running on).
4. Furthermore it is necessary to select **General software events** checkbox to receive software events.
5. Confirm the **System Options** dialog with the **OK** button.

GENERAL

6. Now both services (DataConduit and Linkage Server) can be handled with the Windows service manager tool.

Installation

Install G-OnEvent Together on a Machine with OnGuard

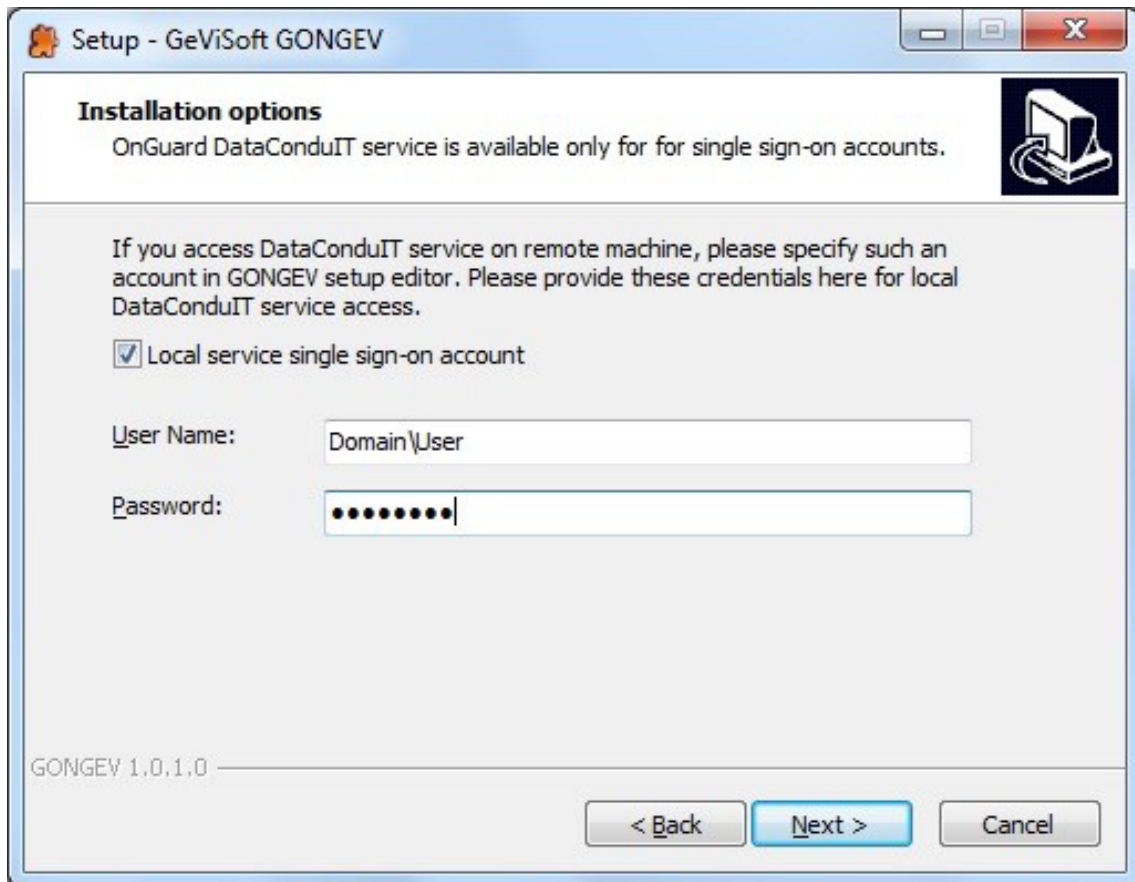
i We recommend to install G-OnEvent on the same machine with OnGuard. Because this kind of installation makes the modification of security relevant options essential.

Preinstallation Steps:

1. Start the **Computer Management** manager which is located among the Windows **Administrative Tools**.
2. Navigate to **Services and Application**, right-click on the **WMI Controller** and select **Properties**.
3. Select the **Security** tab and change the permissions for the **OnGuard** WMI accessibility.
4. You need to select the **OnGuard** folder and open the **Security** menu.
5. There add the Windows user that was mapped to the OnGuard user in the former section and select only **Enable Account**.

Installation:

1. Start the G-OnEvent installer (`gongev-1.0.1.0.exe`) to install the service and configuration tool (**G-OnEvent Setup Editor**) on the Lenel system.



2. Select the **Local service single sign-on account** field and inscribe the **User Name** and **Password** of the Windows user that was mapped - in the former steps - to the Lenel administration user.
3. Next you can start the installation.
4. After the installation the **G-OnEvent Setup Editor** starts automatically (if selected) and you can enter the appropriate connection options.
5. On the left side enter the information for the GeViSoft connection (**Host name**, **User name** and **Password**), next select the GSC actions that should be mapped to the OnGuard ACS events.
6. On the right side you will find the connection options for the Lenel system.
7. For the reason that we are running on the local machine there is no need to specify a user name, password or domain name. Just enter as host **localhost** or **127.0.0.1**.
8. Now the new settings can be confirmed and given to the service by a click on the **Apply** button.

Install G-OnEvent and OnGuard on Different Machines

i **We recommend to install G-OnEvent on the same machine with OnGuard. Because this kind of installation makes the modification of security relevant options essential.**

To receive the OnGuard ACS events asynchronously over the WMI interface firewall changes as well as on the server and client system have to be made.

Besides the firewall changes also modifications of the WMI privileges on the server and client system becomes necessary.

Firewall Configuration on the Server Side (OnGuard System):

1. Open the Windows Firewall with **Advanced Security** dialog.
2. Set all **Inbound Rules** for the **Remote Scheduled Task Manager** to **Enable Rules**.

Firewall Configuration on the Client Side (G-OnEvent System):

1. Open the Windows Firewall with **Advanced Security** dialog.
2. Set all **Inbound Rules** for the **Windows Management Instrumentation (ASync-In)** to **Enable Rules**.

WMI Configuration on the Server Side (OnGuard System):

1. Start the **Computer Management** manager which is located among the Windows **Administrative Tools**.
2. Navigate to **Services and Application**, right-click on the **WMI Controller** and select **Properties**.
3. Select the **Security** tab and change the permissions for the **OnGuard WMI accessibility**.
4. You need to select the **OnGuard** folder and open the **Security** menu.
5. There add the Windows user that was mapped to the OnGuard user in the former section and give them the privileges (**Full Write, Remote Enable**).

COM/WMI Configuration on the Client Side (G-OnEvent System):

1. Navigate to the **Component Service**, expand **Computer** and there right-click on **My Computer** and select **Properties**.
2. Click the **COM Security** tab and under **Access Permissions** click **Edit Limits** and add the Windows users we mapped in the former section to the Local-administrator user the **Remote Access** permission.

GENERAL

3. Navigate to the **Launch and Activation Permission** and click onto the **Edit Limits** button, here add the same user as above and give them the **Remote Start** and **Remote Activation** permissions.

After this configuration steps you can use the G-OnEvent installer to setup the G-OnEvent service and configuration tool on the client system (for this kind of installation it is not needed to select the **Local service single sign-on account** field). After the installation the configuration tool starts automatically – if selected (otherwise it can be found under **Start > Program > Geutebrück > GeViSoft > G-OnEvent Setup Editor**).

Enter the connection data for the OnGuard and GeViSoft system remote connection. The **User** name and **Password** on the right side (**Lenel connection**) should be identical with the Windows user information we configured before. Furthermore it is important to enter the **User** name in the kind of **Domain\User**. Finally just confirm the settings with the **Apply** button.

GONGEV settings

GeViSoft connection

Host: 192.168.0.1

User: sysadmin

Password: ●●●●●●●●●●

Lenel connection

Host: 192.168.0.1

User: LenelDomain\User

Password: ●●●●●

Settings

Send Geutebrück ACS actions

Send Lenel Raw actions

Send Lenel Security actions

Send Lenel Access actions

Send Lenel Fire actions

Send Lenel Intercom actions

Send Lenel Video actions

Apply Quit

Uninstallation

To remove the G-OnEvent service from the system use the **Control Panel > Programs and Features** tool. After removing the software the service should not be visible in the Control Panel Windows service dialog anymore.

Upgrading

If a new version of the G-OnEvent service is available and you plan to upgrade to this one, you just need to start the installer - all settings are maintained. After the installation you can use the **G-OnEvent Setup Editor** in the usual way to configure the service.

Change Service

From Remote to Local Lenel Service and Vice Versa Remote:

1. You need to go to the **Control Panel** and there in the subcategory **Services**.
2. First of all stop the service.
3. Then right-click on the service and open the **Properties** menu.
4. Select the **Log On** field and **This account**.
5. Next enter the **User name** and **Password** of the Windows user that was mapped to the Lenel administration user (see before) and start the service again.
6. Use the **G-OnEvent Setup Editor** (can be found under **Start > Program > Geutebrück > GeViSoft > G-OnEvent Setup Editor**) and change the **Host** field for the Lenel connection to **localhost** or **127.0.0.1**.
7. Now click the **Apply** button to give the new settings to the service.

From Local to Remote:

1. Follow the steps above to stop the service and change the service user account.
2. But in this case select **Local System account** and confirm with **OK**.
3. Start the G-OnEvent Setup Editor to respecify the connection options to the remote Lenel system.
4. Enter the **IP address**, the **User name** (see before) and the **Password** and confirm with **Apply**.

Communication

The communication between the G-OnEvent service and the Geutebrück systems is performed via GeViScope actions, broadcasted over the GeViSoft. The following actions are used:

Lenel Access Event

LenelAccessEvent (ID, Panel, Device, SecondaryDevice, CardNumber, AccessResult, Type, SubType, Description, SerialNumber, TimeStamp, AreaEnteredID, AreaExitedID, AssetID, CardholderEntered, Duress, ElevatorFloor, FacilityCode, IsReadableCard, IssueCode, ComServerHostName, EventText)

This action is fired on any access event in OnGuard system.

Parameter	Function
ID	The ID that uniquely identifies the type of this event.
Panel	The name of the panel where this event originated.
Device	The name of the device where this event originated.
SecondaryDevice	The ID of the secondary device where this event originated.
CardNumber	The badge ID for the card that was read, if available.
AccessResult	The level of access that was granted that resulted from reading the card.
Type	Event type i.e., duress, system, etc.
SubType	Event sub-type i.e., granted, door forced open, etc.
Description	A human readable, brief description of this event.
SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.

GENERAL

Parameter	Function
TimeStamp	Time stamp.
AreaEnteredID	The ID of the area that was entered, if any.
AreaExitedID	The ID of the area that was exited, if any.
AssetID	The ID of the asset related to this event, if any.
CardholderEntered	Whether entry was made by the cardholder.
Duress	Indicates whether this card access indicates an under duress/emergency state.
ElevatorFloor	The elevator floor on which the access event was generated, if any.
FacilityCode	The facility code for the card that was read, if available.
IsReadableCard	Whether the card could be read.
IssueCode	The issue code for the card that was read, if available.
CommServerHostName	Host name of the Communication server through which the event arrived.
EventText	Text associated with event

Lenel Fire Event

LenelFireEvent (ID, Panel, Device, SecondaryDevice, TroubleCode, Type, SubType, Description, SerialNumber, TimeStamp, CommServerHostName, EventText)

This action is fired on any fire event in OnGuard system.

Parameter	Function
ID	The ID that uniquely identifies the type of

Parameter	Function
	this event.
Panel	The name of the panel where this event originated.
Device	The name of the device where this event originated.
SecondaryDevice	The ID of the secondary device where this event originated.
TroubleCode	A trouble code associated with the fire event.
Type	Event type i.e., duress, system, etc.
SubType	Event sub-type i.e., granted, door forced open, etc.
Description	A human readable, brief description of this event.
SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
TimeStamp	Time stamp.
CommServerHostName	Host name of the Communication server through which the event arrived.
EventText	Text associated with event

Lenel Intercom Event

LenelIntercomEvent (ID, Panel, Device, SecondaryDevice, IntercomData, LineNumber, Type, SubType, Description, SerialNumber, TimeStamp, CommServerHostName, EventText)

This action is fired on any intercom event in OnGuard system.

Parameter	Function
ID	The ID that uniquely identifies the type of this event.
Panel	The name of the panel where this event originated.
Device	The name of the device where this event originated.
SecondaryDevice	The ID of the secondary device where this event originated.
IntercomData	Additional data for the intercom event that occurred.
LineNumber	The line number involved in the intercom event.
Type	Event type i.e., duress, system, etc.
SubType	Event sub-type i.e., granted, door forced open, etc.
Description	A human readable, brief description of this event.
SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
TimeStamp	Time stamp.
CommServerHostName	Host name of the Communication server through which the event arrived.
EventText	Text associated with event

Lenel Video Event

LenelVideoEvent (ID, Panel, Device, SecondaryDevice, Channel, Type, SubType, Description, SerialNumber, TimeStamp, StartTime, EndTime, CommServerHostName, EventText)

This action is fired on any video event in OnGuard system.

Parameter	Function
ID	The ID that uniquely identifies the type of this event.
Panel	The name of the panel where this event originated.
Device	The name of the device where this event originated.
SecondaryDevice	The ID of the secondary device where this event originated.
Channel	The physical channel the camera is connected to that is creating this event.
Type	Event type i.e., duress, system, etc.
SubType	Event sub-type i.e., granted, door forced open, etc.
Description	A human readable, brief description of this event.
SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
TimeStamp	Time stamp.
StartTime	The time the video event started
EndTime	The time the video event ended.
CommServerHostName	Host name of the Communication server through which the event arrived.
EventText	Text associated with event

Lenel Security Event

LenelSecurityEvent (ID, Panel, Device, SecondaryDevice, Type, SubType, Description, SerialNumber, TimeStamp, CommServerHostName, EventText)

GENERAL

This action is fired on any security event in OnGuard system, which are not handle via the actions described before.

Parameter	Function
ID	The ID that uniquely identifies the type of this event.
Panel	The name of the panel where this event originated.
Device	The name of the device where this event originated.
SecondaryDevice	The ID of the secondary device where this event originated.
Type	Event type i.e., duress, system, etc.
SubType	Event sub-type i.e., granted, door forced open, etc.
Description	A human readable, brief description of this event.
SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
TimeStamp	Time stamp.
CommServerHostName	Host name of the Communication server through which the event arrived.
EventText	Text associated with event

Lenel Raw Data

LenelRawData (TimeStamp, LenelData)

This action is fired on any security event in OnGuard system, all parameters are chained into a single string.

Parameter	Function
TimeStamp	Time stamp.
LenelData	Lenel OnGuard data.

Lenel Refresh Names

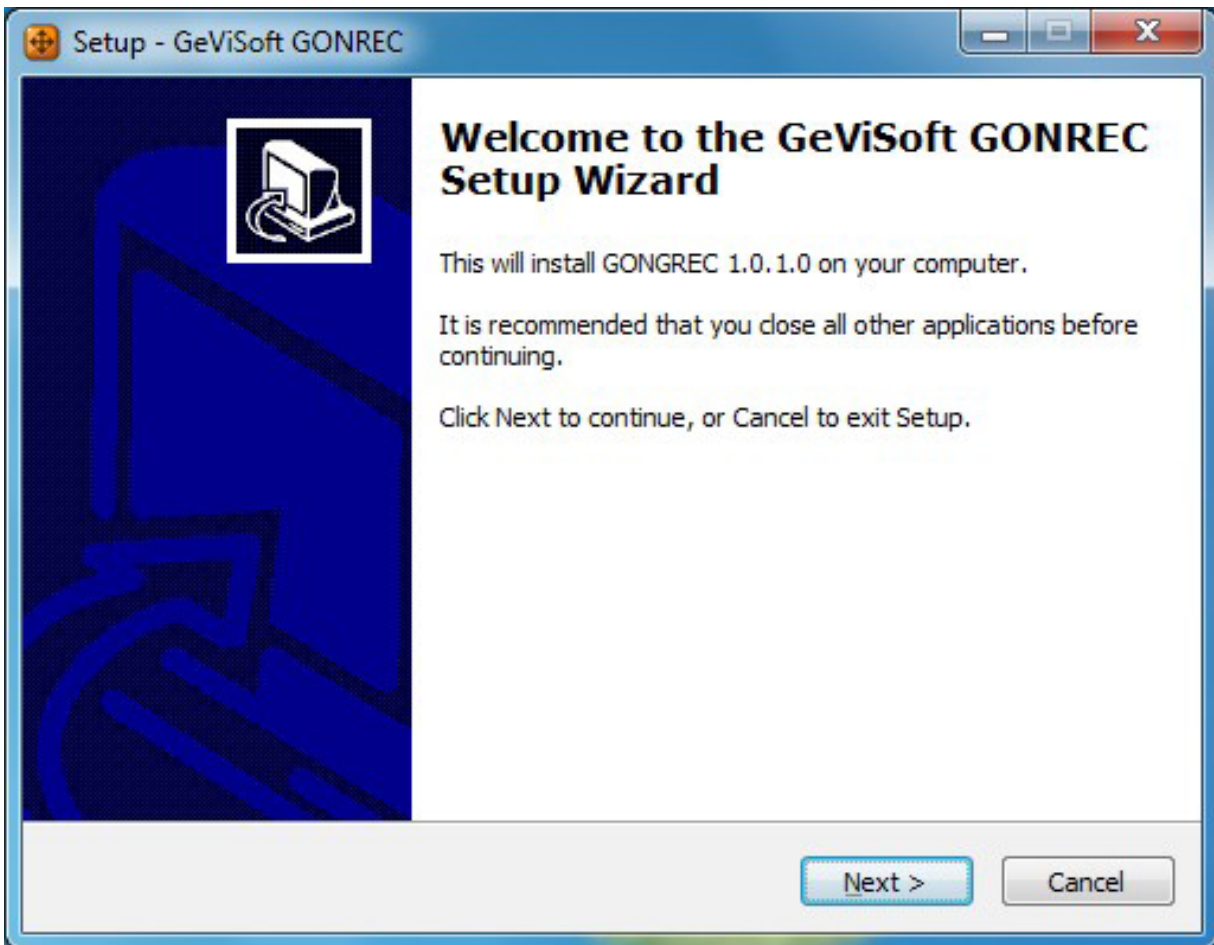
LenelRefreshNames ()

Use this action to refresh the names of OnGuard panels and devices.

G-OnView

Installation

Use provided installation package gongrec-1.0.1.0.exe (where 1.0.1.0 – the current version of GONGREC software), there is nothing special to care about:



Uninstallation

To remove the G-OnView.dll from the system use the **Control Panel > Programs and Features** tool. Check that G-OnView is not used by any Lenel components. You will need to reboot the system otherwise.

Upgrading

If a new version of the G-OnView is available and you plan to upgrade to this one, you just need to start the installer. Check that G-OnView is not used by any Lenel components. You will need to reboot the system otherwise.

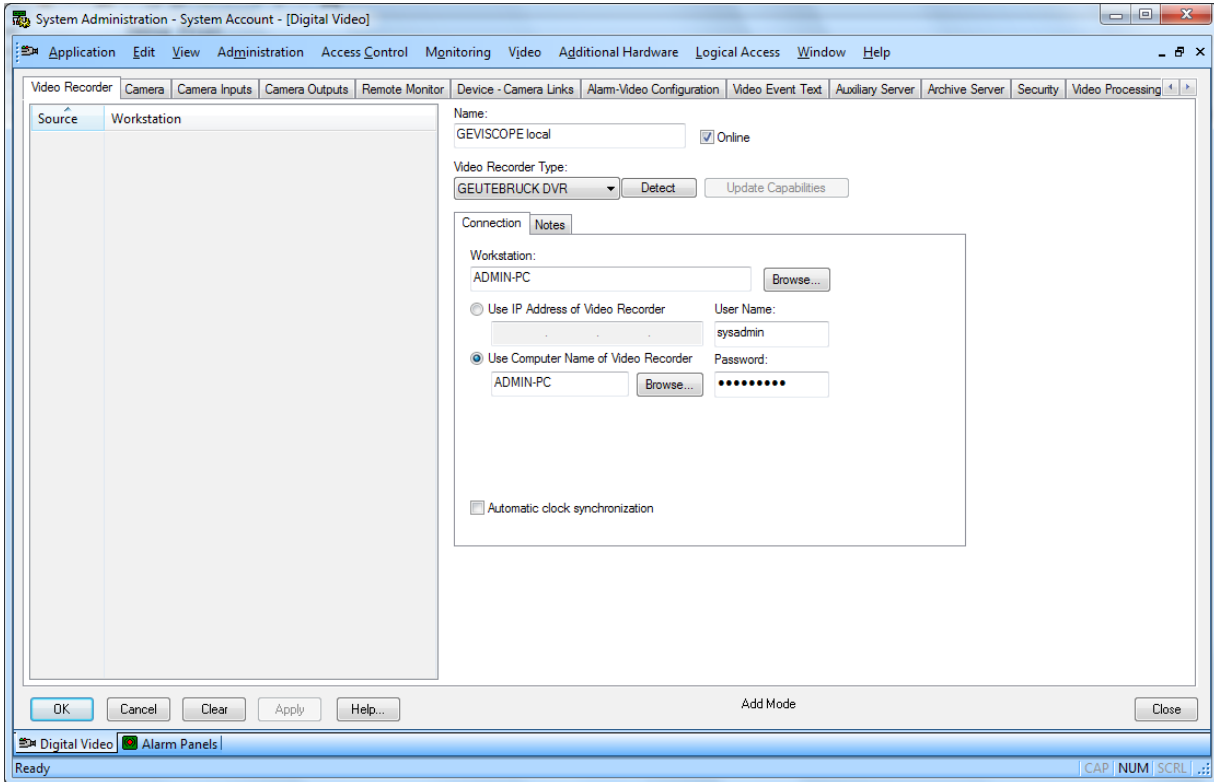
Configuration

The configuration of G-OnView is done over the **System Administration** (setup tool of Lenel).

GENERAL

Configure the Video Recorder

Open Video / Digital Video panel, click on **Add** and select **GEUTEBRUCK DVR** as Video Recorder Type:



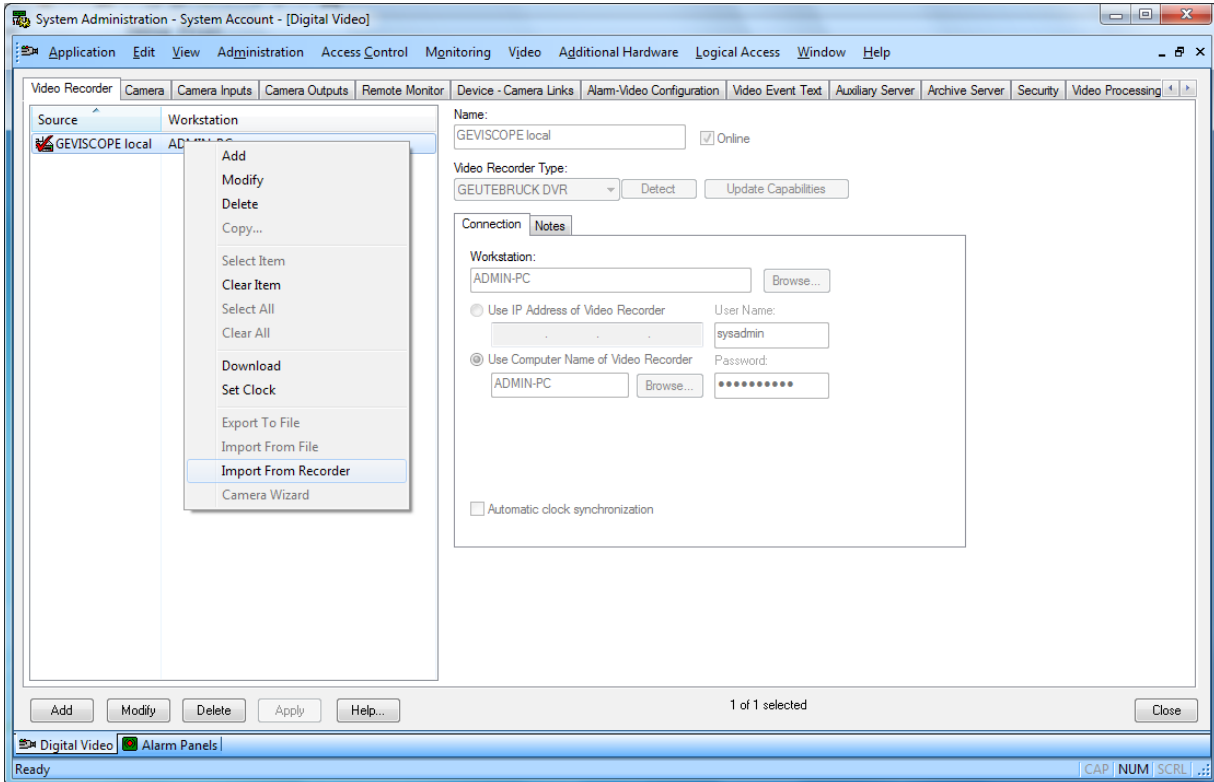
You should specify the following parameters:

Name	Description
Name	The custom name of the particular recorder
Workstation	The host running the assigned communication server (the messages from GeViScope will be retrieved over this service)
IP Address / Computer Name	The address of the corresponding GeViScope DVR
User Name / Password	The account data to connect to the GeViScope DVR
Automatic clock synchronization	This parameter is reserved for future use.

GENERAL

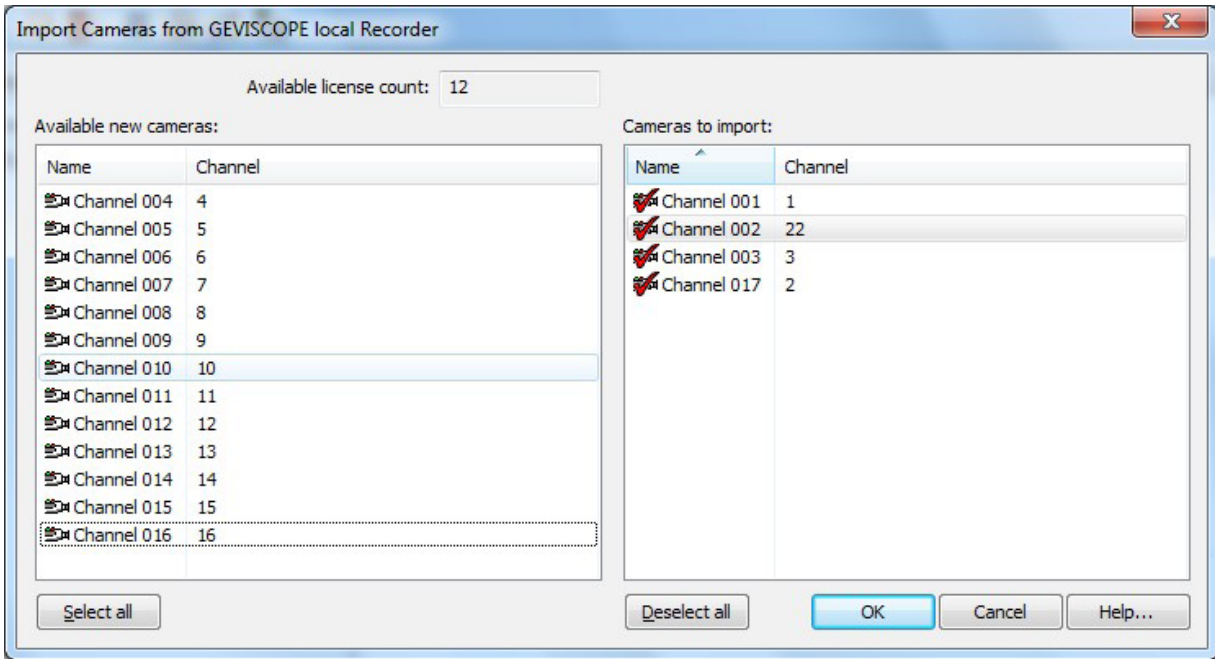
Configure the Cameras

As next step you should specify the cameras supported on this DVR. The simplest way is to import the settings from DVR using the corresponding context menu:

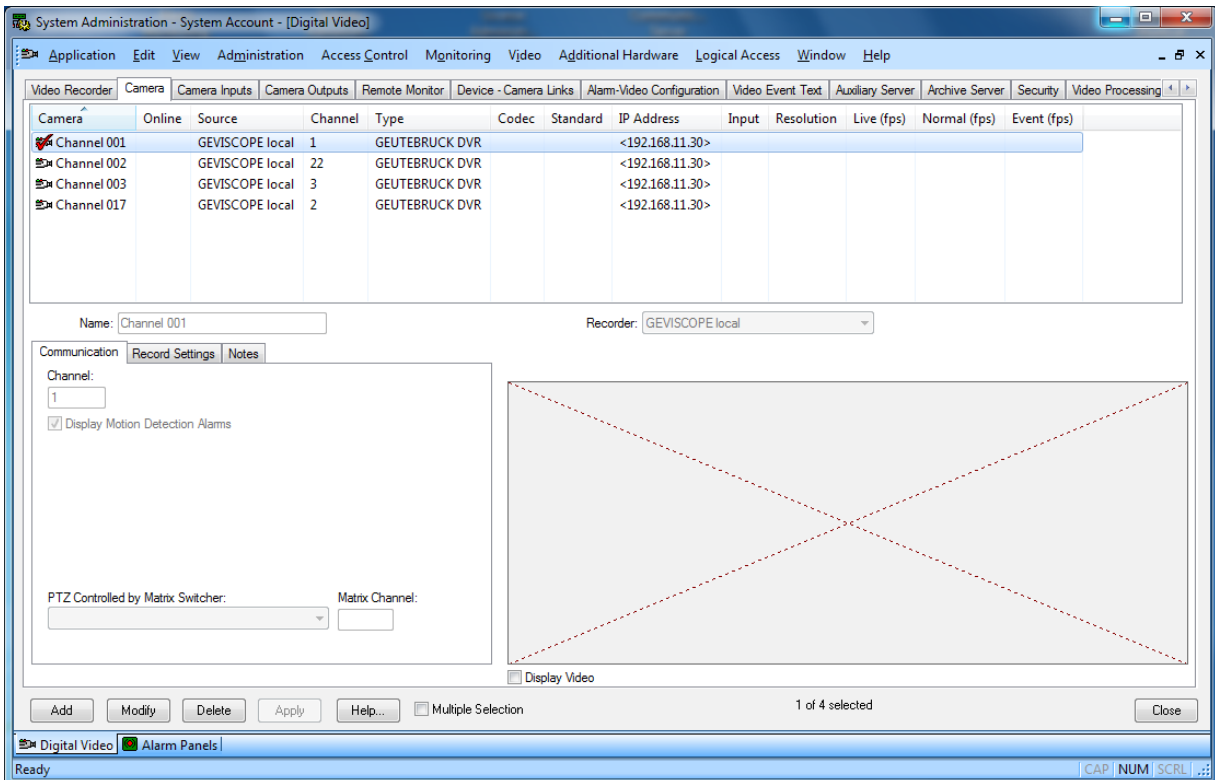


The import dialog lists all available cameras:

GENERAL



You can also specify the cameras manually on the Cameras panel:

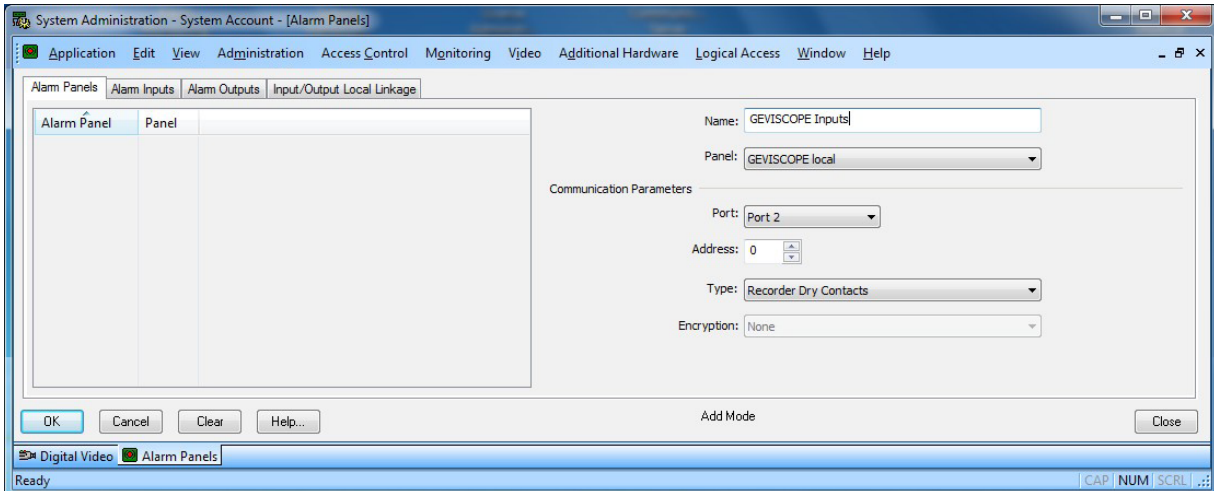


GENERAL

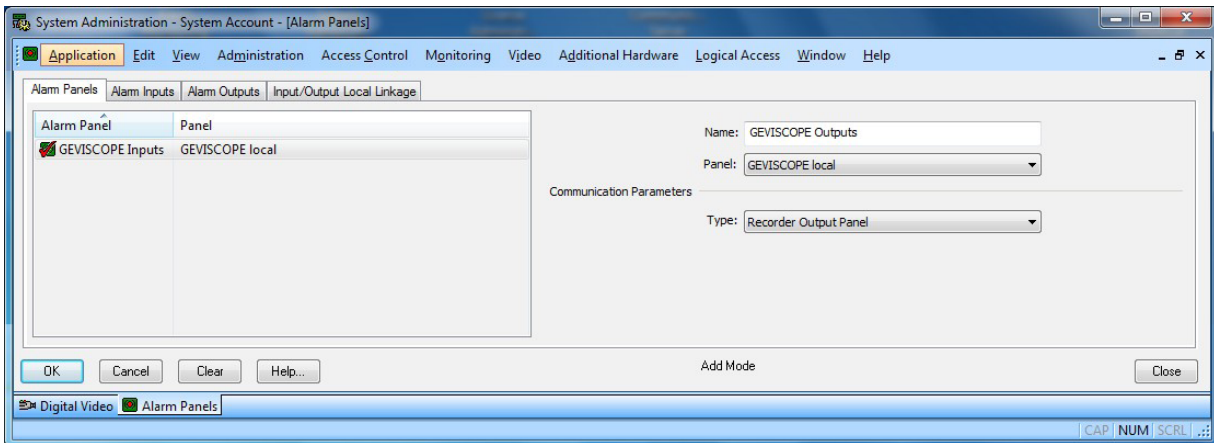
Configure the Input/Output Panels

In next step you should create the alarm panels, which handle the GeViScope inputs and outputs.

GeViScope Input:



GeViScope Output:



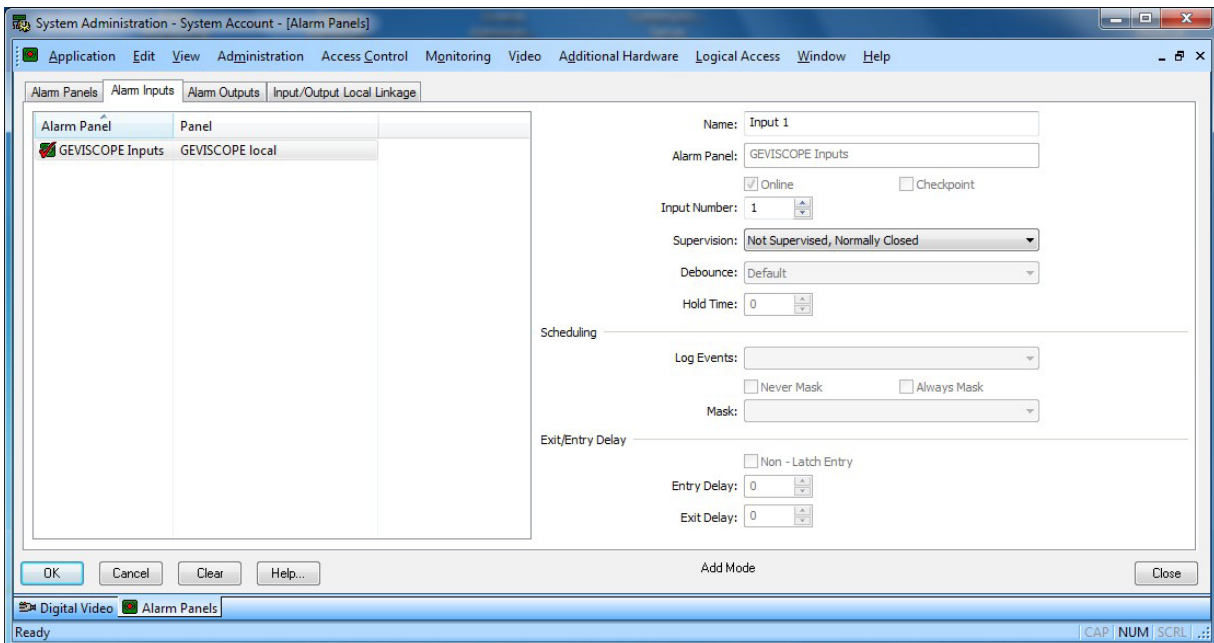
i Note that you can specify only one input and one output panel per GeViScope. Also note that only inputs and outputs in range from 1 to 16 are accessible via OnGuard.

Configure the Inputs and Outputs

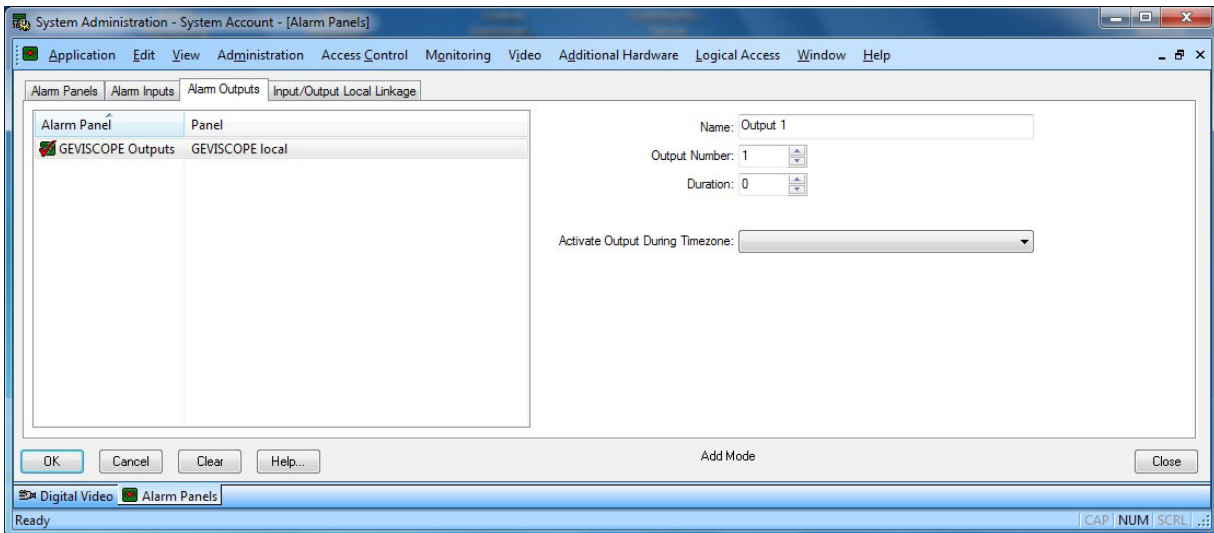
In next step you should create the corresponding inputs and outputs.

Input:

GENERAL



Output:

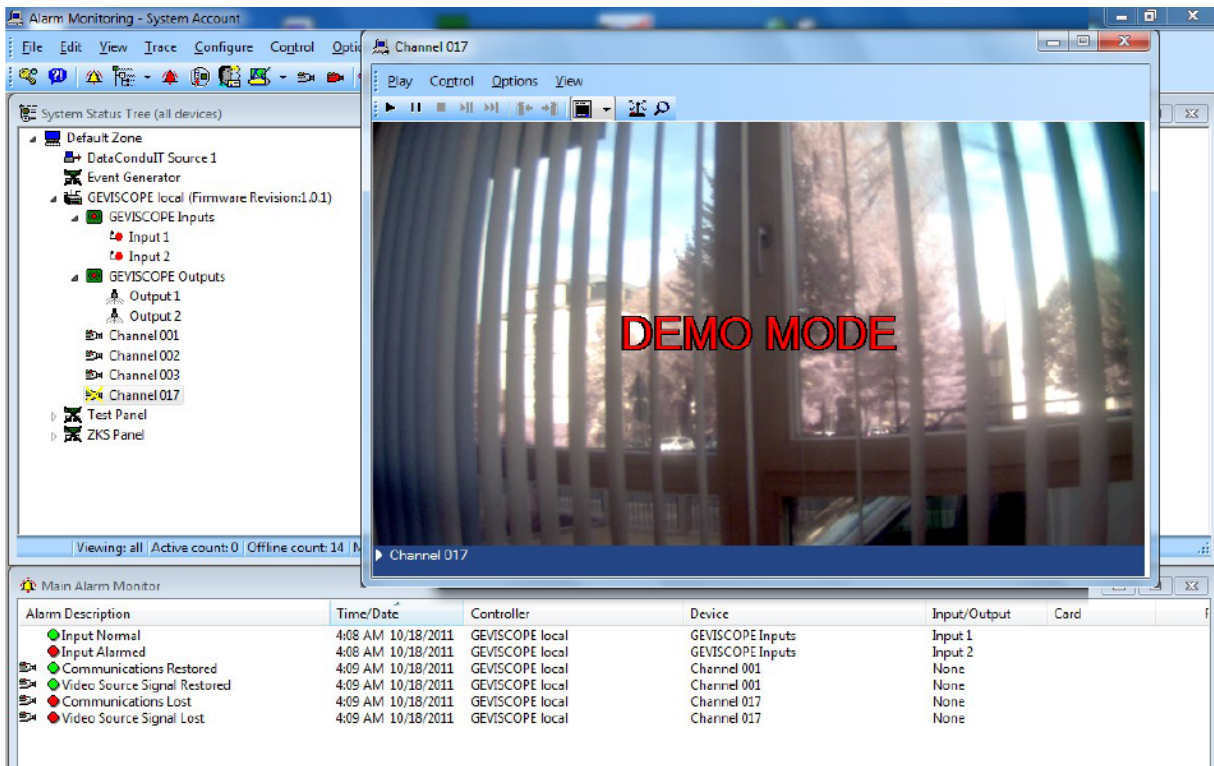


i Note that you cannot import digital contacts from GeViScope.

Using G-OnView

The G-OnView provides COM services which are available via any OnGuard monitoring program, we use Alarm Monitoring in our example:

GENERAL



You can use Geutebrück DVRs as any other DVR. G-OnView supports play live and recorded video, server and digital PTZ.

SQL Server

In order to use G-OnView, it should be registered OnGuard panel database. After the certification process this should be done by updating the OnGuard software. In the mean time you should the corresponding row to the OnGuard database manually.

Use some SQL editor (like SQL management studio) and execute the following SQL statement:

```

INSERT INTO PANELTYPE (PANELTYPEID, NAME, LNL_GUID, PANELCLASS, UI_TYPE,
DDFLDID, PANEL_PROPERTIES VALUES (300, 'GEUTEBRUCK DVR', '{15D67B90-5BCB-4B36-
AE50-5DCA0B05B942}', 4, 9, NULL,
0x3C003F0078006D006C002000760065007200730069006F006E003D00220031002E003000220020
0065006E0063006F00640069006E0067003D0022005500540046002D003100360022002000730074
0061006E00640061006C006F006E0065003D00220079006500730022003F003E000D000A003C0052
00650063006F007200640065007200200054007900700065003D0022004700450055005400450042
005200550043004B00200044005600520022002000560065007200730069006F006E003D00220038
002E00300022003E000D000A0009003C0041006400640072006500730073003E000D000A00090009
003C00490050002F003E000D000A00090009003C0044004E0053002F003E000D000A0009003C002F
0041006400640072006500730073003E000D000A0009003C00430072006500640065006E00740069
0061006C0073002F003E000D000A0009003C0044007200790043006F006E00740061006300740073
003E000D000A00090009003C0044007200790043006F006E007400610063007400730049006E0070
00750074002F003E000D000A00090009003C0044007200790043006F006E00740061006300740073
004F0075007400700750074002F003E000D000A0009003C002F0044007200790043006F006E0074
0061006300740073003E000D000A0009003C0049006D0070006F0072007400430061006D00650072
00610043006F006E006600690067002F003E000D000A0009003C0053006500740043006C006F0063
006B003E000D000A00090009003C004100750074006F0053006500740043006C006F0063006B004F
006600660042007900440065006600610075006C0074002F003E000D000A0009003C002F00530065
00740043006C006F0063006B002F003E000D000A003C002F005200650063006F0072006400650072
003E000D000A00);

```

Port Assignments

G-Core Ports

TCP Ports	
1900	DP/Multicast listen port for finding P1/E2 Cameras. Used to search for IP cameras.
5100	Used by SmartphoneConnect for connection from Config Client to the service.
6667	DP/Broadcast listen port for finding E3/GNSD Cameras. Used to search for IP cameras.
8080	Used by SmartphoneConnect for connection from the smartphone to the service (Control and Login).
8081	Used by SmartphoneConnect for connection from the smartphone to the service (Video and Audio).
8082	Used by SmartphoneConnect for connection from the G-Core Camera Plugin to the Service.

TCP Ports	
13003	Default G-Core server port.
13004	Media API DLL port (used for statistics).
13005	Used by remote plugins.
13007	Default port for GSCTACI - G-Core Telnet Action Interface.
13008	Default G-Core SAM (licence sever).
13010	Default port for ScanConnect (included TACI).
13020	Default port for GscDialAPF.
13030	Default port for Imex service.
13040	Info port used by several clients for http info.
13080	G-WEB Setup and G-OnEvent (if both are installed on the same machine a new port must be configured for G-OnEvent).
UDP Ports	
13050	Broadcast listen port for finding TopLine Cameras. Used to search for IP cameras.
13060	Broadcast listen port for finding Sony Cameras.
13061	Broadcast listen port for finding AV Cameras. Used to search for IP cameras.

G-SIM Ports

TCP Ports	
8090	G-SIM Server main port.
8091	G-SIM Server Sync.
8092	Process Data.

TCP Ports	
8098	G-SIM Server SAM proxy.
8099	HA receiving port.
13100 / 13110	AD Service ↔ G-Sim Agent and ManCon.
13180 / 13181	Export Service.
13210	ApplInstanceManager Service.
UDP Ports	
8099	HA Cluster port.

G-Link Ports

TCP Ports	
13011	Client/ Server connection.

GeViScope / re_reporter Ports

TCP Ports	
12003	Default Server port. Used for example by GscView and GscSetup. Must be available if GscView/GscSetup is used on remote viewing stations.
12004	Media API DII. Internal port for statistics purposes. Needs not to be opened.
12005	Remote plugin devices. Needs normally not to be opened. Reserved for special applications with external video sources.
12006	IP camera event port. Necessary for some IP cameras which are integrated in GscView.
12007	GeViScope Telnet Action Interface (TACI). Just necessary if

TCP Ports	
	external software interfaces GeViScope via the TACI interface.
12008	GeViScope License Port. Used to communicate between GSCSetup and License Service.
12010	New port for the new CAM2IP camera server product. Necessary for the transparent serial interface via network (for example dome control).
12011	New port for the new CAM2IP camera server product. Command port for that product.
12012	Port used to boot Cam2IP devices.
12013	Port used to communicate with a Cam2IP devices. Normal data transfer.
12020	Necessary if the APF (Alarm Push Function) of GeViScope is used.
12028	Default port for used for GscActionWebService plugin.
80	Necessary if the Web server function of GeViScope is to be used.

GeViSoft Ports

TCP Ports	
7700 / 7800	Base port of GeViSoft. All GeViSoft users (for example Multimap or GeViAPI clients need that port).
7701 / 7801	Device port. Necessary if there are remote IO clients in a GeViSoft system.
7703 / 7803	Setup port. Necessary if GeViSet runs remotely.
UDP Ports	
7704 / 7705	UDP communication between server → client and cli-

TCP Ports	
	ent → server. Normally not necessary.
Supplementary	OPC (RPC Ports)

Other IP Based Products

Port	Description
10001	XPort (Geutebrück serial line terminal server module - MBeg, VX3, CX3...).

MPEG / Video Export Authentication Method

Lots of CCTV-applications have the demand for an authentication of exported image data. This function is necessary because today it is quite simple even for the layman to manipulate the content by using widespread software tools from the multimedia domain. This compromises the probative force and authenticity of the image data. Henceforth one of the most important applications of such an authentication function is the securing of the utilization of exported image data in court.

With M4A G-Core/ GeViScope offers an authentication method for exported MPEG/ MP4/ H264 files. M4A uses state-of-the-art standardized digital signatures of the NIST (National Institute of Standards and Technology) which have been developed in collaboration with the NSA (National Security Agency). This method reveals content manipulations of the video data with very high reliability. The method applies fragile signatures which are destroyed by any manipulation. Destination of the G-Core/ GeViScope authentication method is the prevention of the following manipulations of an M4A signed video file:

- Content manipulations of individual images of a film or of complete sequences.
- Manipulations of the succession of images.
- Insertions of new images or sequences.
- Removals of images or sequences.

M4A additionally embeds meta data into the MPEG/ MP4/ H264 export data streams which may for example characterize the origin of the data. All this additional information is embedded in a standard compliant manor into the MPEG/ MP4/ H264 data stream. This allows the replay with any MPEG/ MP4/ H264-player or any player software without problems. For the evaluation of the digital signatures and meta data a specialized software is necessary because normal MPEG/ MP4/ H264-players do not offer such functions.

Technical Background

The M4A signature method represents a multistage algorithm:

1. Calculation of the signature of each individual image of an MPEG/ MP4/ H264 file.
2. Encryption of this signature with a secret private key (symmetric encryption).
3. Global sealing of the image signatures with a public key signature algorithm (asymmetric method).

In contradiction to a simple file based global signature M4A allows a detailed detection of compromised images based on the local signatures of each individual image. Furthermore this multistage signature approach increases the reliability in comparison with a global signature.

Henceforth the safety of the procedure is guaranteed due to:

- A very high technological barrier for the replication.
- The non availability of software tools in the multimedia marked.
- The nondisclosure of algorithmic details.
- The symmetric encryption of the image fingerprints.
- The nondisclosure of the private key of the global public key signature calculation which protects the individual image signatures.

This realizes a very high safety standard which forms for example as well the base for well accepted digital signature methods which are today in broad application (for example in electronic commerce or PGP).

Meta Data

The M4A method additionally allows the embedding of meta data into the MPEG/ MP4/ H264 files which may describe the origin of the image data. This meta data may be evaluated with the software tool which checks the authenticity. The following meta data is embedded into the MPEG stream transparently:

GENERAL

- Date and time of the export (local G-View/ GSCView PC time).
- Start/ end and date/ time range of the exported image data.
- Name of the G-Core/ GeViScope server which recorded the images.
- Camera name.
- User name which initiated the export.
- User comments which are acquired in a G-View/ GSCView export dialog.

Because of that direct embedding of the meta data one achieves a high protection against manipulations of that additional data compared with separate report files. This allows to verify the authenticity and the origin of a G-Core/ GeViScope MPEG/ MP4/ H264 export file.

The meta data is inserted into the MPEG/ MP4/ H264 file as encrypted XML strings. This allows a simple application dependent extensibility of this accompanying data.

Summary

The Geutebrück M4A method forms a fundamental pillar to protect the probative force of exported digital image data in MPEG/ MP4/ H264 format. The application of standardized and broadly accepted digital signature and encryption methods and an extremely high technical barrier in connection with secret encryption keys excludes manipulation attempts of exported Geutebrück MPEG/ MP4/ H264 files. Additional components like the embedding of meta data and text insertion into the image data allow the manipulation safe reconstruction of the origin of the images, the reason for the export and the general export conditions and recording parameters like date and time or event and alarm reasons.

This M4A method satisfies high demands in relation to the authenticity of digital data for forensic investigations. The additional possibility for the embedding of meta data forms for example a module of the so called Evidence Guidelines which define the admittance of CCTV data in court in UK.

It must be outlined that a technical method always just covers a partial aspect of a universal security chain. To have a 100% reliability of the data material the following points are essential as well:

- The reliability of the CCTV system operator.
- The operational conditions of the CCTV system especially in relation to access protection.

GENERAL

- The safety and reliability of the data transport from the CCTV system to the evidence checking institutions (police, court).

In relation to these components of a security chain in general an evaluation of the individual situation is necessary. M4A supports this for example based on the embedded meta data.

Network Time Protocol (NTP)

The Network Time Protocol (NTP) is a standard protocol for synchronizing clocks in computer networks. For synchronization, NTP uses the connectionless transport protocol UDP, whose port 123 is reserved for NTP.

NTP has existed since 1985 and was published as RFC 958. More information can be found [here](#). The current version is the revision 4. More information can be found in the [NTP Version 4 Release Notes](#).

Originally designed for UNIX-based operating systems, for some time it has been possible to also use NTP for Windows operating systems, which can reference the exact time from the Internet without any additional software. In addition, after a change in the registry database, they can also distribute the exact time as a server.

The NTP service synchronizes the local clock via NTP server signals. This synchronization takes place at configurable intervals. In the remaining time, NTP uses phase and frequency corrections to ensure that the time is as accurate as possible during the time when there is no connection with the server.

Simple Network Time Protocol (SNTP)

Besides NTP, there is also the Simple Network Time Protocol (SNTP). More information can be found here: [Simple Network Time Protocol \(SNTP\) Version 4 for IPv4, IPv6 and OSI](#).

SNTP is very similar to NTP, meaning that SNTP clients can also reference the time from NTP servers. However, only one time server is used for SNTP. For SNTP, there is no influence of phase and frequency of the local timer, so it requires less computational resources. Windows 2000 uses SNTP to keep the time on your local computer up to date. This is handled by the Windows service W32Time. In Windows XP and Windows Server 2003, the dynamic link library W32time.dll has been revised so that now NTP can be used for time synchronization.

More information and downloads can be found on the [NTP web site](#).

Time Server

A time server is a server that provides clients with the current time (time stamp). Typically, a time server gets its current time stamp from another, highly accurate time server, for example, from the atomic clock of the Physikalisch-Technische Bundesanstalt in Braunschweig.

Both the Physikalisch-Technische Bundesanstalt in Braunschweig, as well as other organizations operate public time servers that can be accessed via the Internet. Here is a small selection of time servers:

Name	Site	IP address	Location
ntpa2.kph	uni-mainz.de	134.93.132.118	Johannes Gutenberg-University, Institut für Kernphysik, Mainz
ntp1.sul	t-online.de	194.25.134.196	Deutsche Telekom AG
ntp1.sda	t-online.de	195.145.119.188	Deutsche Telekom AG
ntp1	ptb.de	192.53.103.108	Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, G
ptbtime1	ptb.de	192.53.103.108	Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, G
ntp2	ptb.de	192.53.103.104	Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, G
ptbtime2	ptb.de	192.53.103.104	Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, G
ntp1	belwue.de	129.143.2.23	BelWue
ntp2	belwue.de	129.143.2.33	BelWue
ntp6	space.net	195.30.0.29	SpaceNet AG
time	uni-potsdam.de	141.89.64.1	Uni Potsdam (Port 123 - UDP)
ntps1	gwdg.de	134.76.10.46	GWDC Göttingen

GENERAL

Name	Site	IP address	Location
ntp2	gwdg.de	134.76.98.232	GWDG Göttingen
ntp3	gwdg.de	134.76.249.201	GWDG Göttingen
swisstime	ethz.ch	129.132.2.21	ETH Zürich
atom	uhr.de	62.206.250.163	Forum für Zeitmessung, Berlin

i Thus, the official servers are not overloaded by constant queries if an NTP pool is used. More on the use of an NTP pool and specific instructions can be found [here](#).

Windows and NTP

As already mentioned, Microsoft still used SNTP under Windows 2000. For the previous versions of Windows, some software companies developed their own programs for time synchronization under Windows.

However, for modern authentication systems, such as those used in Windows 2000 and newer versions a time stamp is required. Therefore, NTP was introduced for use in the Windows environment.

For all setup work for an NTP client or NTP server, you must be logged on as an administrator.

Setting Up the NTP Client XP and 2000

In Windows XP, time synchronization was set up using **Control Panel > Date and Time**. After clicking on the tab **Internet Time** you could specify the server name (for example, `ntp.rz.tu-harburg.de`).

In Windows 2000 the configuration of time synchronization was performed by the W32Time service. To do so, you needed start a console with **Start > Run > CMD**.

In the console, the following was entered:

- `net stop w32time <ENTER>`
- `net time /setsntp:ntp.rz.tu-harburg.de <ENTER>`
- `net start w32time <ENTER>`

You could also write a batch file and add it to the autostart menu. Contents of the batch file would be, for instance `net tim \\servername /set /yes`, where a valid server was specified with "servername".

Setting Up an NTP Server in NT, 2000 and XP

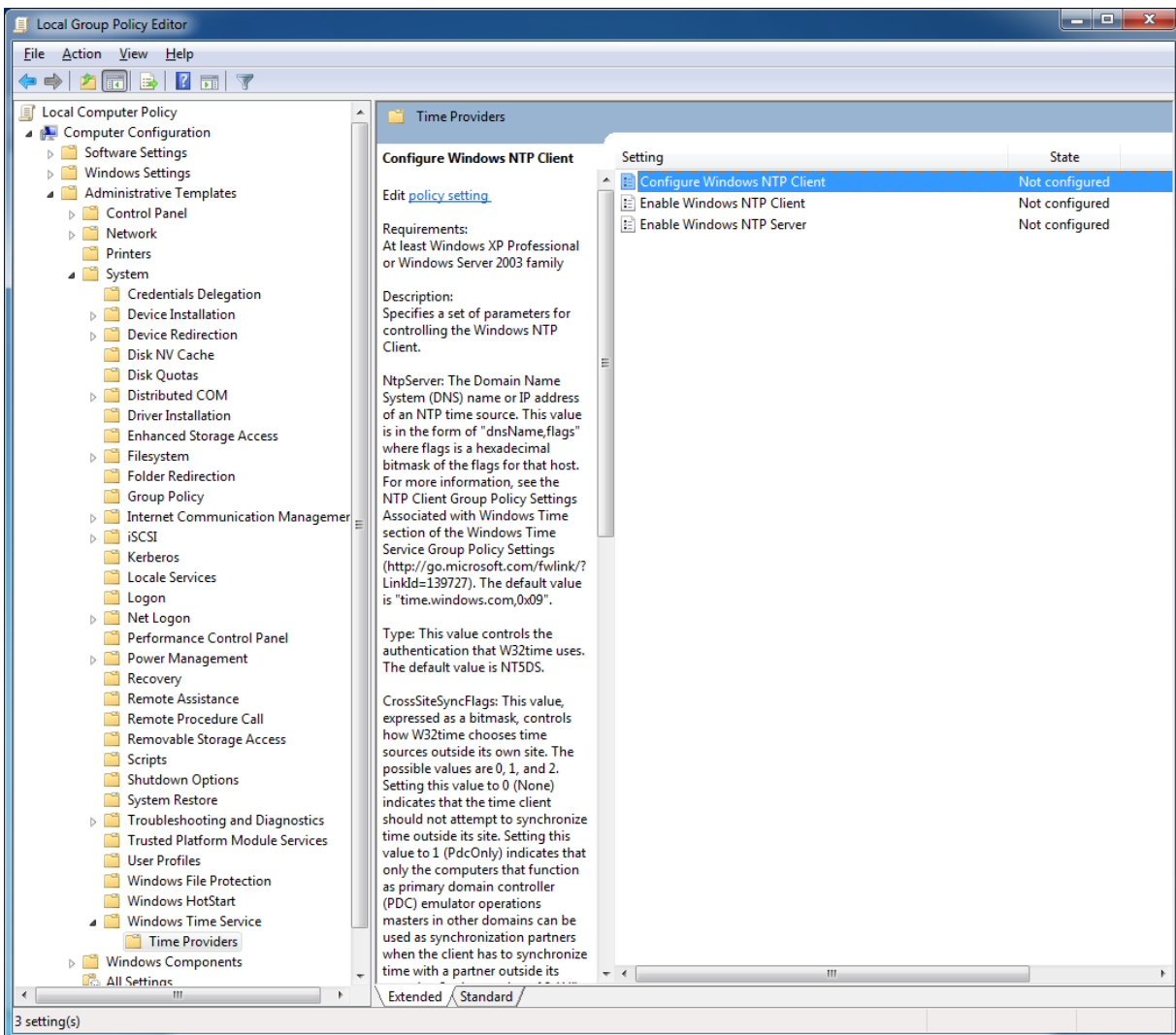
1. Start the registry editor (**Start > Run > Regedit**) and look for the entry `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\LanmanServer\Parameters`.
2. Right-click with your mouse in the right window and in the context menu that appears, click **New/DWORD value**.
 - For Windows 2000 and XP the entry should be: [New Value #1] REG_DWORD 0x00000000 (0)
 - For Windows NT, the entry would then be: [New Value #1] 0x00000000 (0)
3. Rename the new value to **TIMESOURCE**.
4. After the value has been created and renamed, you must enter the correct value for the DWORD value. Select the newly created value by right-clicking. In the context menu, click **Modify**.
 - The **Edit DWORD Value properties** window opens.
5. Select the base **Hexadecimal** and then replace **0** with **1** in the **Value** field.
6. Confirm the entry with **OK**. Close all programs and restart Windows.
7. To check the time server, start the console (`cmd.exe` or `command.com`).
8. In the console enter the command `net time` and press Enter. If the name of the local computer is returned, setting up the time server is complete.
 - In XP, the time server receives its value from the settings described above under **Date and Time**.
 - For NT and 2000, you must use the console. Then type the command: `net time /querysnTP`. If return is something similar to `servername,01`, then everything is fine.

If you receive an error message that the computer is not configured to use a specific SNTP server, then the time server must be set. In the console enter the command `net time /setsntp:time.windows.com` (for the SNTP server from windows.com) or `net time /setsntp:"time.windows.com lancom.workgroup"` (for two different time servers, which are separated by using a space character between them).

Windows 7

With the current Windows version Windows 7 it is possible to run the computer as either an NTP client and or an NTP server. It is necessary to set up the computer as an NTP server for a closed system that does not have access to a (Internet) time server.

In Windows 7, there are a number of restrictions that make it difficult to configure an NTP client or an NTP server. You can find the configuration dialogues in the Group Policy Editor under **Computer Configuration > Administrative Templates > System > Windows Time Service**.



Here you will find two entries: The **Global Configuration Settings** and (in the **Time Providers** folder) settings for the Windows NTP client configuration, the setting to **Enable Windows NTP Client** and the setting to **Enable Windows NTP Server**.

Global Configuration Settings

This dialog allows three settings: **Not Configured** (you do not use the configuration), **Enabled** (the settings are valid) or **Disabled** (the service is not used). You can also enter a comment.

In addition, the dialog provides a number of options.

Global Configuration Settings

Global Configuration Settings

Previous Setting Next Setting

Not Configured Comment:
 Enabled
 Disabled

Supported on: At least Windows XP Professional or Windows Server 2003 family

Options:

Help:

Clock Discipline Parameters

FrequencyCorrectRate 4

HoldPeriod 5

LargePhaseOffset 5000000

MaxAllowedPhaseOffset 300

MaxNegPhaseCorrection 172800

MaxPosPhaseCorrection 172800

PhaseCorrectRate 1

PollAdjustFactor 5

SpikeWatchPeriod 900

UpdateInterval 100

General Parameters

AnnounceFlags 10

EventLogFlags 2

LocalClockDispersion 10

These settings control the Windows Time service (W32time) for domain controllers. Several of these values are scalar, which means that they only have meaning in relation to one another and are not defined by specific unit measurements. For settings regarding time sync for domain member computers, see Configure a client computer for automatic domain time synchronization (<http://go.microsoft.com/fwlink/?LinkId=139706>).

Clock discipline parameters

FrequencyCorrectRate: Controls the rate at which the W32time corrects the local clock's frequency. Lower values cause slower corrections; larger values cause quicker corrections. Values that are too low can lead to overcorrection and instability. Values that are too high can lead to slow synchronization. Default: 4 (scalar).

HoldPeriod: Indicates how many potentially accurate time samples the client must receive in a series before subsequent time samples are evaluated as potential spikes. After a period of not receiving any usable time samples, a time client ceases to evaluate time samples for spikes as soon as the first potentially accurate time sample is received. When a series of time samples (as indicated by HoldPeriod) is received, the time client evaluates subsequent time samples for spikes. A time sample is considered to be a spike when the time difference between a time sample and the client's local clock is greater than that of the LargePhaseOffset value. Default: 5 time samples.

OK Cancel Apply

i The following explanations are excerpts from the Windows 7 help.

These settings control the Windows Time service (W32time) for domain controllers. Several of these values are scalar, which means that they only have meaning in relation to one another and are not defined by specific unit measurements. For settings regarding time sync for domain member computers, see [Configure a client computer for automatic domain time synchronization \(http://go.microsoft.com/fwlink/?LinkId=139706\)](http://go.microsoft.com/fwlink/?LinkId=139706).

Clock Discipline Parameters

Parameter	Description
FrequencyCorrectRate	Controls the rate at which the W32time corrects the local clock's frequency. Lower values cause slower corrections; larger values cause quicker corrections. Values that are too low can lead to overcorrection and instability. Values that are too high can lead to slow synchronization. Default: 4 (scalar)
HoldPeriod	Indicates how many potentially accurate time samples the client must receive in a series before subsequent time samples are evaluated as potential spikes. After a period of not receiving any usable time samples, a time client ceases to evaluate time samples for spikes as soon as the first potentially accurate time sample is received. When a series of time samples (as indicated by HoldPeriod) is received, the time client evaluates subsequent time samples for spikes. A time sample is considered to be a spike when the time difference between a time sample and the client's local clock is greater than that of the LargePhaseOffset value. Default: 5 time samples
LargePhaseOffset	Specifies the time variation from the client's local clock (phase offset) that a time sample must have to be considered a spike. Time samples that have time variations larger than the LargePhaseOffset

Parameter	Description
	value are considered spikes Default: 50,000,000 100-nanosecond units (ns), which is 5 seconds.
MaxAllowedPhaseOffset	Controls how W32time corrects the clock based on the size of the calculated time variation between the time sample and the client's local clock. If a response is received that has a time variation that is larger than this value, W32time sets the client's local clock immediately to the time that is accepted as accurate from the Network Time Protocol (NTP) server. If the time variation is less than this value, the client's local clock is corrected gradually. Default: 300 seconds
MaxNegPhaseCorrection	Controls the maximum allowable clock correction that can be made in a reverse direction. If a time sample is received that indicates a time in the past (as compared to the client's local clock) that has a time difference that is greater than the MaxNegPhaseCorrection value, the time sample is discarded. If this happens, the Windows Time source logs an event in the System log of Event Viewer. Default: 172,800 seconds
MaxPosPhaseCorrection	Controls the maximum allowable clock correction that can be made in a forward direction. If a time sample is received that indicates a time in the future (as compared to the client's local clock) that has a time difference greater than the MaxPosPhaseCorrection value, the time sample is discarded. Default: 172,800 seconds
PhaseCorrectRate	Controls how quickly W32time corrects the

Parameter	Description
	client's local clock difference to match time samples that are accepted as accurate from the NTP server. Lower values cause the clock to correct more slowly; larger values cause the clock to correct more quickly. Default: 7 (scalar)
PollAdjustFactor	Controls how quickly W32time changes polling intervals. When responses are considered to be accurate, the polling interval lengthens automatically. When responses are considered to be inaccurate, the polling interval shortens automatically. Default: 5 (scalar)
SpikeWatchPeriod	Specifies the amount of time that suspicious time samples are received from a time source before these time samples are accepted as accurate. Time samples are considered suspicious when the time difference between the time sample and the client's local clock is larger than the value of LargePhaseOffset. SpikeWatchPeriod is used in conjunction with HoldPeriod to help eliminate sporadic, inaccurate time samples that are returned from a peer. Default: 900 seconds
UpdateInterval	Specifies the amount of time that W32time waits between corrections when the clock is being corrected gradually. When it makes a gradual correction, the service adjusts the clock slightly, waits this amount of time, and then checks to see if another adjustment is needed, until the correction is finished. Default: 100 1/100th second units, which is 1 second.

General Parameters

Parameter	Description
AnnounceFlags	A bitmask value that controls how time service availability is advertised through NetLogon. Default: 0x0a hexadecimal. For possible values, see Config\AnnounceFlags Entry (http://go.microsoft.com/fwlink/?LinkId=139718).
EventLogFlags	Controls special events that may be logged to the Event Viewer System log. Default: 0x02 hexadecimal bitmask. For possible values, see NtpClient\EventLogFlags Subkey (http://go.microsoft.com/fwlink/?LinkId=139720).
LocalClockDispersion	Indicates the maximum error in seconds that is reported by the NTP server to clients that are requesting a time sample. (Applies only when the NTP server is using the time of the local CMOS clock.) Default: 10 seconds
MaxPollInterval	Controls the maximum polling interval, which defines the maximum amount of time between polls of a peer. Default: 10 in log base-2, which is 1,024 seconds. (Should not be set higher than 15.)
MinPollInterval	Controls the minimum polling interval that defines the minimum amount of time between polls of a peer. Default: 6 in log base-2, which is 64 seconds.

RODC Parameters

Parameter	Description
ChainEntryTimeout	Specifies the maximum amount of time that an entry can remain in the chaining table before the entry is considered to be expired. Expired entries may be removed when the next request or response is processed. Default: 16 seconds

Parameter	Description
ChainMaxEntries	Controls the maximum number of entries that are allowed in the chaining table. If the chaining table is full and no expired entries can be removed, any incoming requests are discarded. Default: 128 entries
ChainMaxHostEntries	Controls the maximum number of entries that are allowed in the chaining table for a particular host. Default: 4 entries
ChainDisable	Controls whether or not the chaining mechanism is disabled. If chaining is disabled (set to 0), the RODC can synchronize with any domain controller, but hosts that do not have their passwords cached on the RODC will not be able to synchronize with the RODC. Default: 0 Boolean.
ChainLoggingRate	Controls the frequency at which an event that indicates the number of successful and unsuccessful chaining attempts is logged to the System log in Event Viewer. Default: 30 minutes

Additional information on settings can be found in "Appendix A: Technical Reference Topics" (<http://go.microsoft.com/fwlink/?LinkID=128273>).

Configuring the Windows NTP Client

The dialog for Windows NTP client configuration is similar to the Global Configuration dialog.

The two dialogs for enabling the Window NTP client or server essentially have only three options: **Not Configured**, **Enabled** and **Disabled**. If you enable the client the computer can synchronize its system clock with NTP servers. You can disable this service if you wish to use an external time provider. If you enable the server, the computer can service the NTP requests from other computers in the network.

However, there are fewer, different options here.

 **The following explanations are excerpts from the Windows 7 help.**

GENERAL

Option	Description
NtpServer	The Domain Name System (DNS) or IP address of an NTP time source. This value is in the form of "dnsName,flags" where flags is a hexadecimal bitmask of the flags for that host. For more information, see the NTP Client Group Policy Settings Associated with Windows Time section of the Windows Time Service Group Policy Settings (http://go.microsoft.com/fwlink/?LinkId=139727). The default value is "time.windows.com,0x09".
Type	This value controls the authentication that W32time uses. The default value is NT5DS.
CrossSiteSyncFlags	This value, expressed as a bitmask, controls how W32time chooses time sources outside its own site. The possible values are 0, 1, and 2. Setting this value to 0 (None) indicates that the time client should not attempt to synchronize time outside its site. Setting this value to 1 (PDC only) indicates that only the computers that function as primary domain controller (PDC) emulator operations masters in other domains can be used as synchronization partners when the client has to synchronize time with a partner outside its own site. Setting a value of 2 (All) indicates that any synchronization partner can be used. This value is ignored if the NT5DS value is not set. The default value is 2 decimal (0x02 hexadecimal).
ResolvePeerBackoffMinutes	This value, expressed in minutes, controls how long W32time waits before it attempts to resolve a DNS name when a previous attempt failed. The default value is 15 minutes.
ResolvePeerBackoffMaxTimes	This value controls how many times W32time attempts to resolve a DNS name before the discovery process is restarted. Each time DNS name resolution fails, the amount of time to wait before the next attempt will be twice the previous amount. The default value is 7

GENERAL

Option	Description
	attempts.
SpecialPollInterval	This NTP client value, expressed in seconds, controls how often a manually configured time source is polled when the time source is configured to use a special polling interval. If the SpecialInterval flag is enabled on the NTPServer setting, the client uses the value that is set as the SpecialPollInterval, instead of the MinPollInterval and MaxPollInterval values, to determine how frequently to poll the time source. The default value is 3600 seconds (1 hour).
EventLogFlags	This value is a bitmask that controls events that may be logged to the System log in Event Viewer. Setting this value to 0x1 indicates that W32time will create an event whenever a time jump is detected. Setting this value to 0x2 indicates that W32time will create an event whenever a time source change is made. Because it is a bitmask value, setting 0x3 (the addition of 0x1 and 0x2) indicates that both time jumps and time source changes will be logged.

W32tm.exe Commands

In addition to configuration using the Group Policy Editor, you can also control the time synchronization service using the W32TM.exe file. Open the file in the console and use the wide range of command options.

w32tm [/? | /register | /unregister]

Command	Description
?	This help screen.
register	Register to run as a service and add default configuration to the registry.

Command	Description
unregister	Unregister service and remove all configuration information from the registry.

w32tm /monitor [/domain:<domain name>] [/computers:<Name> [,<Name>[,<Name>...]]] [/threads:<num>] [/ipprotocol:<4|6>] [/nowarn]

Command	Description
domain	Specifies which domain to monitor. If no domain name is given, or neither the domain nor computers option is specified, the default domain is used. This option might be used more than once.
computers	Monitors the given list of computers. Computer names are separated by commas, with no spaces. If a name is prefixed with a '*', it is treated as a PDC. This option might be used more than once.
threads	Specifies the number of computers to analyze simultaneously. The default value is 3. Allowed range is 1-50.
ipprotocol	Specify the IP protocol to use. The default value is to use whatever is available.
nowarn	Skip warning messages.

w32tm /ntte <NT time epoch>

Convert an NT system time, in (10^{-7}) s intervals from 0h 1-Jan 1601 into a readable format.

w32tm /ntpte <NTP time epoch>

Convert an NTP time, in (2^{-32}) s intervals from 0h 1-Jan 1900, into a readable format.

w32tm /resync [/computer:<computer>] [/nowait] [/rediscover] [/soft]

Tell a computer that it should resynchronize its clock as soon as possible, throwing out all accumulated error statistics.

Command	Description
computer:<computer>	Computer that should resync. If not specified, the local computer will resync.
nowait	Do not wait for the resync to occur; return immediately. Otherwise, wait for the resync to complete before returning.
rediscover	Redetect the network configuration and rediscover network sources, then resynchronize.
soft	Resync utilizing existing error statistics. Not useful, provided for compatibility.

w32tm /stripchart /computer:<target> [/period:<refresh>] [/dataonly] [/samples:<count>] [/packetinfo] [/ipprotocol:<4|6>]

Display a strip chart of the offset between this computer and another computer.

Command	Description
computer:<target>	The computer to measure the offset against.
period:<refresh>	The time between samples, in seconds. The default value is 2s.
dataonly	Display only the data no graphics.
samples:<count>	Collect <count> samples, then stop. If not specified then samples will be collected until Ctrl-C is pressed.
packetinfo	Print out NTP packet response message.
ipprotocol	Specify the IP protocol to use. The default is to use whatever is available.

```
w32tm /config [/computer:<target>] [/update] [/manualpeerlist:<peers>] [/syncfromflags:<source>] [/LocalClockDispersion:<seconds>] [/reliable:(YES|NO)] [/largephaseoffset:<milliseconds>]
```

Command	Description
computers:<target>	Adjusts the configuration of <target>. If not specified, then default is the local computer.
update	Notifies the time service that the configuration has changed, causing the changes to take effect.
manualpeerlist:<peers>	Sets the manual peer list to <peers>. Which is a space-delimited list of DNS and or IP addresses. When specifying multiple peers, this switch must be enclosed in quotes.
syncfromflags:<source>	Sets what sources the NTP client should sync from. <source> should be a comma separated list of these keyword:MANUAL – sync from peers in the manual peer list.DOMHIER – sync from an AD DC in the domain hierarchy.NO – sync from noneALL – sync from both manual and domain peers.
LocalClockDispersion:<seconds>	Configures the accuracy of the internal clock that w32 time will assume when it can't acquire time from its configured sources.
reliable:(YES NO)	Set whether this machine is a reliable time source. This setting is only meaningful on domain controllers.Here YES indicates machine as a reliable time service andNO indicates not a reliable time service.
largephaseoffset:<milliseconds>	Sets the time difference between local and network time which w32 time will consider a spike.

w32tm /tz

Display the current time zone settings.

w32tm /dumppreg [/subkey:<key>] [/computer:<target>]

Display the values associated with a given registration key. The default key is

HKLM\System\CurrentControlSet\Services\W32Time (the root key for the time service).

Command	Description
subkey:<key>	Displays the values associated with subkey.
computer:<target>	Queries registry settings for computer.

w32tm /query [/computer:<target>] [/source | /configuration | /peers | /status][/verbose]

Display a computer's windows time service information.

Command	Description
computer:<target>	Query the information of <target>. If not specified, the default is the local computer.
source	Display the time source.
configuration	Display the configuration of run-time and where the setting comes from. In verbose mode, display the undefined or unused setting too.
peers	Display a list of peers and their status.
status	Display windows time service status.
verbose	Set the verbose mode to display more information.

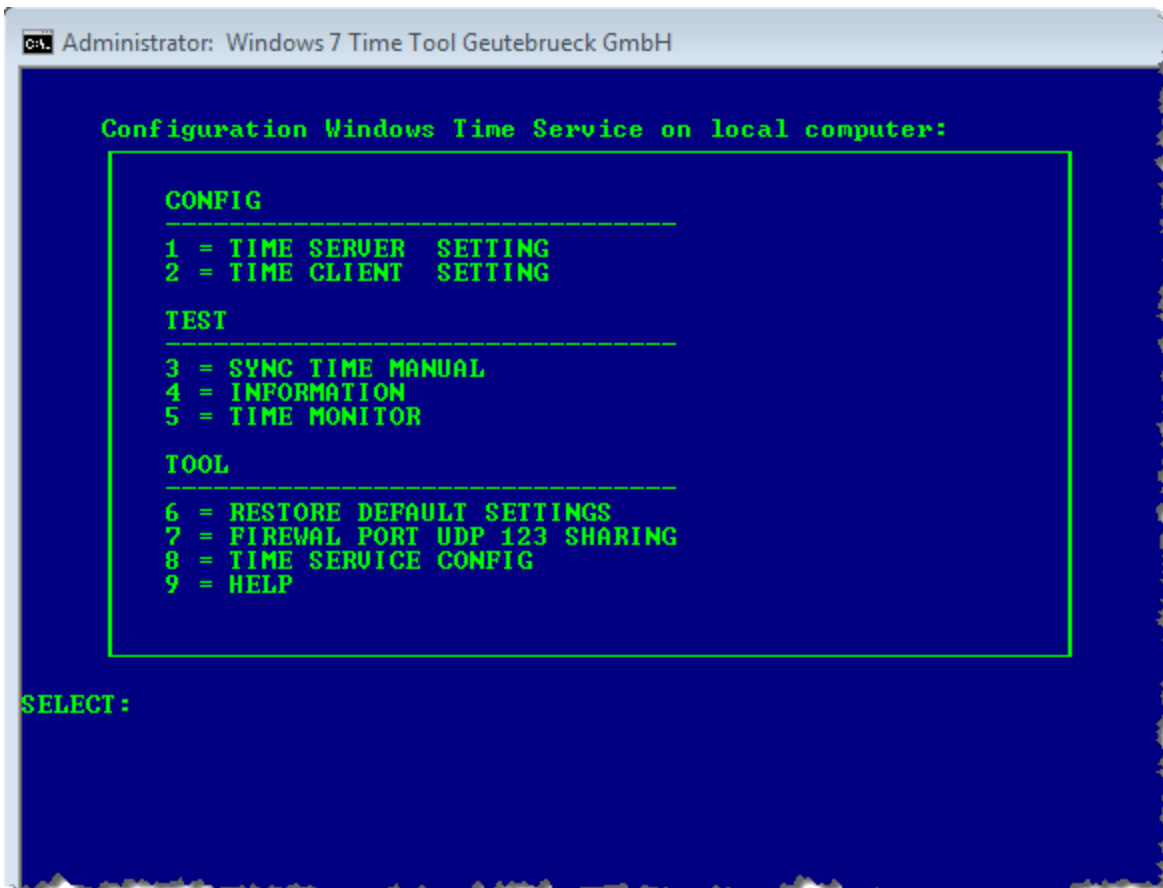
w32tm /debug {/disable | {/enable /file:<name> /size:<bytes> /entries:<value>[/truncate]}}

Enable or disable local computer windows time service private log.

Command	Description
disable	Disable the private log.
enable	Enable the private log.
file:<name>	Specify the absolute filename.
size:<bytes>	Specify the maximum size for circular logging.
entries:<value>	contains a list of flags, specified by number and separated by commas, that specify the types of information that should be logged. Valid numbers are 0-300. A range of numbers is valid, in addition to single numbers, such as 0-100,103,106. Value 0-300 is for logging all information.
truncate	Truncate the file if it exists.

Solution Only for Windows 7

Earlier, we recommended creating a batch file to avoid the need for error-prone (typos) text entry in the console. Here is an example of a very comfortable approach using a command file (cmd).



```
Administrator: Windows 7 Time Tool Geutebrueck GmbH

Configuration Windows Time Service on local computer:

CONFIG
-----
1 = TIME SERVER SETTING
2 = TIME CLIENT SETTING

TEST
-----
3 = SYNC TIME MANUAL
4 = INFORMATION
5 = TIME MONITOR

TOOL
-----
6 = RESTORE DEFAULT SETTINGS
7 = FIREWAL PORT UDP 123 SHARING
8 = TIME SERVICE CONFIG
9 = HELP

SELECT :
```

By entering the menu number and pressing the Enter key, the specified commands are executed.

Example If you wish to view the current configuration of the Window time service, press **8** and confirm with Enter. The current configuration appears.

To return to the selection menu, press any key.

Here is an excerpt for executing the commands:


```

Administrator: Windows 7 Time Tool Geutebrueck GmbH

Configuration Windows Time Service on local computer:

CONFIG
-----
1 = TIME SERVER SETTING
2 = TIME CLIENT SETTING

TEST
-----
3 = SYNC TIME MANUAL
4 = INFORMATION
5 = TIME MONITOR

TOOL
-----
6 = RESTORE DEFAULT SETTINGS
7 = FIREWAL PORT UDP 123 SHARING
8 = TIME SERVICE CONFIG
9 = HELP

SELECT:8
[SC] QueryServiceConfig ERFOLG

SERVICE_NAME: w32time
        TYPE               : 20  WIN32_SHARE_PROCESS
        START_TYPE          : 2    AUTO_START
        ERROR_CONTROL       : 1    NORMAL
        BINARY_PATH_NAME    : C:\Windows\system32\svchost.exe -k LocalService
        LOAD_ORDER_GROUP    :
        TAG                 : 0
        DISPLAY_NAME        : Windows-Zeitgeber
        DEPENDENCIES        :
        SERVICE_START_NAME  : NT AUTHORITY\LocalService
[SC] ChangeServiceConfig ERFOLG
[SC] StartService FEHLER 1056:

Es wird bereits eine Instanz des Dienstes ausgeführt.
[SC] QueryServiceConfig2 ERFOLG

Der Dienst "w32time" wurde für keine Start- oder Starttrigger...

```

Run the Command File

If you want to use this practical solution:

1. Open Notepad or another text editor.
2. Copy the contents of the box below into the editor.
3. Save the file as a CMD file. For example: TIMECONFIG.cmd.
4. Double-click to run the command file.

GENERAL



IMPORTANT: This file may only be run in Windows 7. Execute the file and the associated commands at your own risk!

GENERAL

```
For %%a In (0, 1, 2, 3, 4, 5, 6, 7, 8, 9) Do if %sel%==%%a Goto SELECT_%%a
echo SELECT ERROR !
pause>NUL
goto menu
```

```
:SELECT_1
rem server setting
echo Setting to Time Server and set local CMOS Clock ...
net stop w32time
set Key="HKLM\SYSTEM\CurrentControlSet\Services\W32Time"
reg add %key%\TimeProviders\NTPClient /v Enabled /t REG_DWORD /d "0" /f
reg add %key%\TimeProviders\NTPServer /v Enabled /t REG_DWORD /d "1" /f
reg add %key%\Config /v AnnounceFlags /t REG_DWORD /d "5" /f
reg add %key% /v Start /t REG_DWORD /d "2" /f
net start w32time
echo.
echo Press any key back to menu...
pause>NUL
GOTO :menu
```

```
:SELECT_2
rem client setting
set /P NTP=SYNCHRONIZE WITH AN TIME SERVER (SET NAME OR IP-ADRESS):
set Key="HKLM\SYSTEM\CurrentControlSet\Services\W32Time"
reg add %key% /v Start /t REG_DWORD /d "2" /f
net stop w32time
net start w32time
w32tm /config /manualpeerlist:%NTP% /update
w32tm /resync
echo.
echo Press any key back to menu...
pause>NUL
GOTO :menu
```

```
:SELECT_3
rem manuel time sync
w32tm /resync
echo.
echo Press any key back to menu...
pause>NUL
GOTO :menu
```

```
:SELECT_4
rem time service information
echo Time Source:
```

GENERAL

```
echo -----  
w32tm /query /source /verbose  
echo.  
echo Time Configuration  
echo -----  
w32tm /query /configuration  
echo.  
echo Time Status:  
echo -----  
w32tm /query /status /verbose  
echo Peers:  
echo -----  
w32tm /query /peers  
echo.  
echo Press any key back to menu...  
pause>NUL  
GOTO :menu
```

```
:SELECT_5  
rem time monitor  
echo Display Offset between this computer  
echo and another computer  
set /P comp=computer(SET NAME OR IP-ADRESS):  
cls  
title Display Offset between this computer %comp%  
w32tm /stripchart /computer:%comp%  
echo.  
echo Press any key back to menu...  
pause>NUL  
GOTO :menu
```

```
:SELECT_6  
rem restore default  
net stop w32time  
rem MS (w32tm error) must be ignored!!  
w32tm /unregister  
w32tm /unregister  
w32tm /register  
net start w32time  
echo.  
echo Press any key back to menu...  
pause>NUL  
GOTO :menu
```

```
:SELECT_7
```

GENERAL

```
rem firewall configuration
call :FIREWALL
echo.
echo Press any key back to menu...
pause>NUL
GOTO :menu
```

```
:SELECT_8
rem time sevice
call :SERVICETIME
echo.
echo Press any key back to menu...
pause>NUL
GOTO :menu
```

```
:SELECT_9
rem w32tm help
w32tm
echo.
echo Press any key back to menu...
pause>NUL
GOTO :menu
```

```
:FIREWALL
echo Port sharing for Windows Time Service UDP 123 in
netsh advfirewall firewall add rule name="Time Server IN" dir=in action=allow
description="NTP 123 IN" enable=yes profile=any localport=123 remoteport=any pro-
tocol=UDP
echo Port sharing for Windows Time Service UDP 123 out
netsh advfirewall firewall add rule name="Time Server OUT" dir=out action=allow
description="NTP 123 OUT" enable=no profile=any localport=123 remoteport=any
protocol=UDP
exit /b
```

```
:SERVICETIME
rem config and start time service
sc qc w32time
sc config w32time start= auto
sc start w32time
sc qtriggerinfo w32time
SC triggerinfo w32time delete
sc qtriggerinfo w32time
exit /b
```

```
:INFO
```

GENERAL

```
title Warning!
echo.
echo.
echo *** WARNING!
echo.
echo.
echo You may need to launch an elevated Command Prompt (right-click Run as
administrator)
echo.
echo.
echo.
echo.
pause>NUL
echo.
```

Fallback Recording Cache (FRC)

This feature only works with iSCSI storage systems.

⚠ IMPORTANT: FRC is not an "official" feature and may be used only at your own risk without support. For critical applications, use should be avoided without detailed testing.

i Under no circumstances is Geutebrück GmbH liable for direct or indirect subsequent damage or for special subsequent damage resulting from or in association with this feature.

Most of today's professional CCTV systems use digital image recording. So for them storage capacity, reliability and flexibility are important considerations.

- Modern systems use RAID (Redundant Array of Independent Discs) technology with redundant hard disks to guarantee reliability.
- LAN-attached iSCSI (internet Small Computer System Interface) storage units are often preferred for their high flexibility.
- With iSCSI, multiple recording devices (DVRs or NVRs) within the local IP network can record to centrally located storage capacity.

This saves cost as there is no need for separate cabling or for extra disks to create redundancy (depending on RAID level). But network connections can fail more easily than dedicated cabling between recorder and storage device.


The Fallback Recording Cache (FRC) in GeViScope and re_reporter systems offers perfect reliability with iSCSI RAID systems. It automatically

GENERAL

- Detects any connection failure with the iSCSI storage.
- Stores all video data in a local cache until the connection is re-established.
- Updates the database on the storage device after re-connect without any user intervention.

It therefore makes flexible iSCSI RAID storage systems just as reliable as local SCSI storage solutions.

How to Start FRC

1. The fallback recording cache is started by a registry entry.
2.  **You should only edit the registry when you are absolutely certain that you know what you are doing! Otherwise, use a Reg file.**
3. To create a Reg file, start the editor and enter the following text:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck-
\GeviScope\GscServer\DBE]
"FRCHandleEnabled"=dword:00000001
"FRCHandleLocation"="G:\\"
"FRCHandleSizeGB"=dword:00000010
```
4. Enter a valid file location (here as an example the drive G:, marked red).
5. Save the file as as FRC_ON.REG.
6. Now double click on the file icon and confirm if prompted. The file is executed and FRC is enabled.

How FRC Works

FRC activates (when enabled) by itself when the last connected .database file goes offline.

FRC is thus always active when there is no longer a database file there (if the database consists of several files). Recording then takes places from this moment on to the FRC cache.

Once a .database file goes back online, a switch is made to **Reconcile Mode**, in which the recording still goes to the FRC cache, but the cache is already written/emptied to the database.

GENERAL

Once the GSCServer manages to empty the FRC cache (which can take a long time under certain circumstances), FRC is deactivated and the recording continues normally.

How to Disable FRC

1. Write a second Reg file:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck-  
\GeviScope\GscServer\DBE]
```

```
"FRCFileEnabled"=dword:00000000
```

2. Save the file as as FRC_OFF.REG.
3. Now double click on the file icon and confirm if prompted. The file is executed and FRC is turned off.

Vehicle Status Page

The vehicle status page can be used to display status information on connected remote servers. This applies currently only for trains but is easy to adopt.

Displayed Data

Train List							
Name	Train Number	Route Number	Connection State	Download	Time Offset	Livestream	
LRV 004	Train 25	Route 189	Connected	Stopped	---	5	●
LRV 005	Train 5	Route 29	Connected	Running	00h 46m 00s	7	●
LRV 006	Train 27	Route 234	Connected	Running	00h 14m 21s	6	●
LRV 004	Train 39	Route 14	Connected	Running	01h 08m 02s	6	●
LRV 005	Train 34	Route 93	Connected	Running	01h 13m 54s	4	●
LRV 006	Train 21	Route 116	Connected	Running	00h 27m 58s	6	●
LRV 004	Train 25	Route 231	Connected	Running	01h 09m 54s	1	●
LRV 005	Train 0	Route 27	NotConnected	Unknown	---	0	●
LRV 006	Train 28	Route 167	Connected	Running	01h 06m 39s	6	●
LRV 004	Train 28	Route 229	Connected	Running	00h 30m 23s	1	●
LRV 005	Train 4	Route 237	Connected	Running	01h 12m 10s	8	●
LRV 006	Train 14	Route 51	Connected	Running	00h 25m 22s	6	●
LRV 004	Train 34	Route 88	Connected	Stopped	---	4	●
LRV 005	Train 32	Route 69	Connected	Running	00h 16m 05s	6	●
LRV 004	Train 7	Route 67	Connected	Running	00h 16m 05s	7	●
LRV 005	Train 15	Route 208	Connected	Running	00h 41m 39s	4	●
LRV 006	Train 30	Route 10	Connected	Running	01h 06m 25s	4	●
LRV 004	Train 6	Route 216	Unknown	Unknown	---	0	●
Name				Type	Status	Time	
Error Message				Error	This is an error	12:29:20	
Warning Message				Warning	This is a warning	12:29:21	
Error Message				Error	This is an error	12:29:21	

▼ Action List

The operator UI consists of two main parts: On the top, there is a list of all vehicles (here: trains) connected via the wayside servers. Here, detailed information for every connected train is shown.

Below, there is a connection log where all important information is shown. If the tool is not run as admin, the main functionality will be shown, but there will be no option for actual configuration.

Connected Server List

The information shown is retrieved from the actions that are sent by the wayside.

Name	Description
Name	Name of the Train Recorder.
Train Number	Train number as given in the status actions.

Name	Description
Route Number	Route number as given in the status actions.
Connection State	<p>State of the connection between wayside and train:</p> <ul style="list-style-type: none"> • Unknown: On startup when there has not yet been any action. • NotConnected: No connection between train and wayside is established. • Connected: Connection established between train and wayside.
Download	<p>Status of the download of data from train to wayside:</p> <ul style="list-style-type: none"> • Unknown: On startup there has not yet been any action. • Running: Download is currently running, there is data transferred from train to wayside. • Stopped: There is no download running, either because it is finished or because a connection error occurred. <p>Progress Bar: Will roughly display the progress of the download based on the time offset. Will be displayed in red if the train is not connected.</p>
Time Offset	Difference between the timestamp of the last image in the wayside's database and the train's database. Will be displayed as "- -" if the download is finished.
Livestream	Shows the number of the currently running livestreams from this train as well as a colored indicator, which is based on the thresholds of the livestreamproxy plugin which will be configured in G-Set.

Connection Log

In the connection log, all actions related to the train in the list above are shown. This way, the user has a short history of the connections.

Configuration

If the tool is run as an admin, there will be possibilities to configure the settings.

Name	Train Number	Route Number	Connection State	Download	Time Offset	Livestream
LRV 004	Train 25	Route 189	Connected	Stopped	---	5
LRV 005	Train 5	Route 29	Connected	Running	00h 46m 00s	7
LRV 006	Train 27	Route 234	Connected	Running	00h 14m 21s	6
LRV 004	Train 39	Route 14	Connected	Running	01h 08m 02s	6
LRV 005	Train 34	Route 93	Connected	Running	01h 13m 54s	4
LRV 006	Train 21	Route 116	Connected	Running	00h 27m 58s	6
LRV 004	Train 25	Route 231	Connected	Running	01h 09m 54s	1
LRV 005	Train 0	Route 27	NotConnected	Unknown	---	0
LRV 006	Train 28	Route 167	Connected	Running	01h 06m 39s	6
LRV 004	Train 28	Route 229	Connected	Running	00h 30m 23s	1
LRV 005	Train 4	Route 237	Connected	Running	01h 12m 10s	8
LRV 006	Train 14	Route 51	Connected	Running	00h 25m 22s	6
LRV 004	Train 34	Route 88	Connected	Stopped	---	4
LRV 005	Train 32	Route 69	Connected	Running	00h 16m 05s	6
LRV 004	Train 7	Route 67	Connected	Running	00h 16m 05s	7
LRV 005	Train 15	Route 208	Connected	Running	00h 41m 39s	4
LRV 006	Train 30	Route 10	Connected	Running	01h 06m 25s	4
LRV 004	Train 6	Route 216	Unknown	Unknown	---	0

Name	Type	Status	Time
Error Message	Error	This is an error	12:51:59
Warning Message	Warning	This is a warning	12:51:59
Error Message	Error	This is an error	12:51:59

Most options to change the settings are in the sidebar in the left. The basic functionalities to display train status will still be present.

On the bottom is the standard **Connections** wizard where all configured connections are shown in a list. To add a new wayside, click the plus icon **+**. On startup the tool will AutoConnect to all connections. If a connection cannot immediately be established, it will constantly try reconnecting.

In the input field **Actions to display** you can set the number of actions that will be listed in the connection log. The connection log works like a ring, the oldest action will be deleted if there is a new one.

With the **Keep Actions on close** button you can determine whether after closing the application the connection log will still be present on the next startup.

There are three further input fields that will change the behavior of the progress bar, which will in turn get its value from the time offset. If the time offset is below the value entered in **Minutes for 75%**, the progress bar will be at 75%. If the time offset is below the value entered in **Minutes for 50%**, the progress bar will be at 50%. If the time offset is below the value entered in **Minutes for 25%**, the progress bar will be at 25%.

The **Default settings** button will set all settings to default that exclusively affect the display of data:

GENERAL

- Actions to display: 50
- Keep Actions on close: false
- Minutes for 25%: 60 min
- Minutes for 50%: 15 min
- Minutes for 75%: 1 min

Actions

This chapter contains the description of the actions available in G-Core.

Customer User Action

In G-Core it is possible to define your own actions. This requires purpose built XML file in the installation directory (bin folder) for example where the GngActions.dll is located. The name of the XML file needs to start with `plc*.xml`. The basic structure of the XML file needs to look like the following.

Basic Structure

```
1 | <?xml version="1.0" encoding="utf-8"?>
2 | <plc xmlns="http://actions.gng.geutebrueck.de/">
3 | </plc>
```

Below the `<plc>` root you can define enumerations `<enums>`, action classes `<actionclasses>` and actions `<actions>`. When the G-Core server starts, the XML file will be read and the containing enumerations, action classes and actions will be registered.

In the following text, codes are mentioned, which must be specified at each definition. The codes of enumerations, action classes and actions are independent of each other (you can increment each separately).

- The Identifications code for dynamically added enumerations starts from 10,000.
- The Identifications code for dynamically added action classes starts from 1,000.
- The Identifications code for dynamically added actions starts from 10,000.

The scheme, which specifies how a definition should look like, will be explained in the following sections.

Definition of an Enumeration

Required Parameters

The definition of an enumeration requires at least the name and the identification code of the enumeration.

ACTIONS

Parameter		Description
EnumerationName	name="..."	Name of the enumeration.
EnumerationCode	code="..."	Identification code of the enumeration. i The identification code for dynamically added enumerations starts with 10000.

The definition of the required parameters looks like this:

```
Name and Identification Code
1 | <enums>
2 |   <enum name="EnumerationValues" code="10000"/>
3 | </enums>
```

Optional Parameters

A display name and a description can be specified for the enumeration name. This information is optional and is used for display in user interfaces. If the `<plain>` and `<description>` attributes are missing, the specified enumeration name `name="..."` is used instead of the display name or description.

Values can be specified for the enumeration. The values require a name and a value. Optionally, a display name can be specified for the value name, which is used for display in user interfaces.

Parameter		Description
EnumerationPlainName	<code><plain></code>	Name of the enumeration as display name (well readable with spaces).
EnumerationDescription	<code><description></code>	Description of the enumeration.
EnumerationValueName	name="..."	Name of the value.
EnumerationValueValue	value="..."	Value.
EnumerationValueText	text="..."	Name of the value as display name.

The definition of the optional parameters looks like this:

ACTIONS

Display Name, Description and Values

```
1 <enums>
2   <enum name="EnumerationValues" code="10000">
3     <plain>Enumeration values</plain>
4     <description>This enumeration defines...</description>
5     <values>
6       <value name="Zero" value="0" text="First" />
7       <value name="One" value="1" text="Second" />
8       <value name="Two" value="2" text="Third" />
9     </values>
10  </enum>
11 </enums>
```

Definition of an Action Class

The following action classes are available in G-Core. If the existing action classes are not sufficient, a new action class can be defined.

Action Class Name	Display Name	Identification Code
System	System actions	0
Video	Video control	1
Audio	Audio control	2
CameraControl	Camera control	3
DigitalContacts	Digital contacts	4
Device	Device information	5
ATM	ATM/ACS	6
Backup	Backup actions	7
CashManagement	Cash management actions	8
Viewer	Viewer actions	9
ViewerNotification	Viewer notifications	10
POS	POS	11
RemoteExport	Remote export	12

ACTIONS

Action Class Name	Display Name	Identification Code
SkiData	SKIDATA	13
LPS	LPS	14
Logistic	Supply chain security	15
Lenel	Lenel	16
Imex	Imex	17
PP	Perimeter protection	18
VCA	Video content analytics	19

Required Parameters

The definition of an action class requires at least the name and the identification code of the action class.

Parameter		Description
ActionClassName	name="..."	Name of the action class.
ActionClassCode	code="..."	Identification code of the action class. i The identification code for dynamically added action classes starts from 1000. i All action classes whose code is lower than the start value are ignored because these codes are already assigned.

The definition of the required parameters looks like this:

Name and Identification Code

```
1 | <actionclasses>
2 |   <actionclass name="Supplementary" code="1000"/>
3 | </actionclasses>
```

ACTIONS

Optional Parameters

A display name and a description can be specified for the action class name. This information is optional and is used for the display in user interfaces. If the `<plain>` and `<description>` attributes are missing, the specified action class name `name="..."` is used instead of the display name or description.

Parameter		Description
ActionClassPlainName	<code><plain></code>	Name of the action class as display name (well readable with spaces).
ActionClassDescription	<code><description></code>	Description of the action class.

The definition of the optional parameters looks like this:


Display Name and Description

```
1 <actionclasses>
2   <actionclass name="Supplementary" code="1000">
3     <plain>Supplementary</plain>
4     <description>These actions supplement the usual G-Core
   actions.</description>
5   </actionclass>
6 </actionclasses>
```

Definition of an Action

Required Parameters

A definition of an action requires at least the name of the action and a uniquely occurring number.

Parameter		Description
ActionName	<code>name="..."</code>	Name of the action.
ActionCode	<code>code="..."</code>	Code of the action.  The identification code for dynamically added actions starts from 10,000.

ACTIONS

- i** To assign a dynamic action to an existing action class, the name or the identification code of the action class can be used. It is recommended to use the name of the action class to ensure better readability during later processing.

The definition of the minimum parameters looks like this:

Name, Identification Code and Action Class

```
1 <actions>
2   <action name="FuturisticWork" code="10000" class="1000"/>
3   <!-- OR -->
4   <action
5     name="FuturisticWork" code="10000" class="Supplementary"/>
6 </actions>
```

Optional Parameters

For the name of the action, a display name and a description can be specified. This information is optional and is used for the display in user interfaces. In case of missing attributes (plain and description), the specified name is used instead of the display name or the description.

Parameter		Description
ActionPlainName	<plain>	Name of the action as display name (well readable with spaces).
ActionDescription	<description>	Description of the action.

The definition specifying the display name and the description looks like this:

Display Name and Description

```
1 <actions>
2   <action
3     name="FuturisticWork" code="10000" class="Supplementary"/>
4     <plain>Futuristic work</plain>
5     <description>This action will send some data which targets a
6     futuristic date.</description>
7   </action>
8 </actions>
```

Definition of an Action Parameter

Required Parameters

A definition of an action parameter requires at least the name of the action parameter and a parameter type.

Parameter		Description
ParameterName	name="..."	Name of the parameter.
ParameterType	type="..."	Data type of the parameter (for example a string).

The definition of the minimum parameters looks like this:

```

Name and Parameter Type
1 | <action>
2 |   <parameters>
3 |     <parameter name="Active" type="Boolean"/>
4 |   </parameters>
5 | </action>

```

Optional Parameters

For the name of the action parameter, a display name and a description can be specified. This information is optional and is used for the display in user interfaces. In case of missing attributes (plain and description), the specified name is used instead of the display name or the description.

For some action parameters the `view` attribute can be added (depending on the type). In the corresponding section of the selected type you can look up if this option is available.

Parameter		Description
ParameterPlainName	<plain>	Name of the parameter as display name (well readable with spaces).
ParameterDescription	<description>	Description of the parameter.
ParameterView	view="..."	Specifies whether the parameter is resource related.

ACTIONS

The definition specifying the display name and the description looks like this:

Display Name and Description

```
1 <action>
2   <parameters>
3     <parameter name="Active" type="Boolean">
4       <plain>Active</plain>
5       <description>Indicates if ...</description>
6     </parameter>
7   </parameters>
8 </action>
```

In addition to the display name and the description, a database field and a priority can be defined for the action parameter. The priority is used to hide insignificant parameters, e.g. when using the event text in a viewer.

Parameter		Description
ParameterPriority	priority="..."	Priority of the parameter. The default value is 5.
ParameterDatabaseFlag	dbfield="..."	Specifies which field or fields the parameter is written to in the database.

The definition specifying the priority and a database field looks like this:

Priority and Database Field

```
1 <action>
2   <parameters>
3     <parameter
4       name="Active" type="Boolean" priority="4" dbfield="Int32_A">
5       <plain>Active</plain>
6       <description>Indicates if ...</description>
7     </parameter>
8   </parameters>
9 </action>
```

The priority level behaves in a way that an action parameter with a lower priority level (higher number) than the set priority level is hidden. The priority level ranges from 1 (important) to 10 (unimportant).

ACTIONS

For example, the hash parameter is only displayed if the priority level is set to 7 or higher.

Hash Parameter

```
1 <action>
2   <parameters>
3     <parameter
4     name="Hash" type="Numeric64Bit" priority="7" dbfield="Int64_
5     A" view="ForeignKey">
6       <plain>Hash value</plain>
7       <description>Hash value of ...</description>
8     </parameter>
9   </parameters>
10 </action>
```

Parameter Types

The following parameter types are available:

	Name of the Type	Required Database Fields
Basic	Boolean	1
	Numeric32Bit (or Enum)	1
	Numeric64Bit	1
	NumericFloat	1
	String	1
Structures	Guid	2
	DateTime	1
	MediaChannel	3
	MediaChannel	3
	Rect	1

The available database fields are listed in **Database Field**.

The required database fields of the parameter types can be found in the section for the respective database type.

Boolean

Boolean

- Bool (Numeric32Bit)

Example Parameter Type Boolean

```
1 | <action name="TestBool" code="10001" class="System">
2 |     <parameters>
3 |         <parameter
4 |     name="Active" type="Boolean" dbfield="Int32_A"/>
5 |     </parameters>
6 | </action>
```

Enum

Enum

- Enum (Numeric32Bit)

Numeric32Bit

Numeric32Bit

- Int32 (Numeric32Bit)

Example Parameter Type Numeric32Bit

```
1 | <action name="TestInt32" code="10002" class="System">
2 |     <parameters>
3 |         <parameter
4 |     name="Value" type="Numeric32Bit" dbfield="Int32_A"/>
5 |     </parameters>
6 | </action>
```

Special Case Enumeration Parameter

Numeric32Bit

- Int32 (Numeric32Bit)
-

ACTIONS

Example Enumeration Parameter

```
1 <enums>
2   <enum name="EnumerationValues" code="10000" />
3 </enums>
4 <action name="TestEnumerationValues" code="10003" class="System">
5   <parameters>
6     <parameter
7     name="EnumValue" type="EnumerationValues" dbfield="Int32_A"
8     />
9   </parameters>
10 </action>
```

As shown in the example, the name of the enumeration must be entered as the type.

In G-Core some enumerations are already implemented.

Enumeration Name	Description
DigitalInputState	State of the digital input contact.
DigitalOutputState	State of the digital output contact.
VideoSignalNorm	Norm of the video input signal.
VideoSignalType	Type of the video input signal.
VideoInterlaceType	Interlace kind of the video input signal.
ADArea	Activity detection area.
VMDGroup	VMD group.
SystemLED	System LED.
VideoSensorKind	Video sensor type.
UserLoginFailureCode	User login failure code.
PlcMessageSource	Source of the message.
PlcMessageCode	Code of the message.

ACTIONS

Enumeration Name	Description
PlcViewerAlarmQueueSelection	Viewer alarm queue selection mode.
ABCapacityWarning	Auto backup capacity monitoring warning.
PlcDatabaseStatus	Database status.
SystemKey	System key.
VMDCycle	VMD measure cycle.
SafebagStep	Safebag step.
PlcViewerPlayMode	Viewer play mode.
PlcViewerAlarmPlayMode	Viewer alarm play mode.
PlcViewerAlarmState	Viewer alarm state notification.
PlcImageExportType	Image export type.
PlcDatabaseRing	Database ring.
PlcPluginError	Plugin error code.
PlcClientType	Client type.
PlcFRCNotification	FRC notification.
PlcResourceKind	PLC resource kind.
PlcResourceChangeKind	PLC resource change kind.
PlcPOSStatus	PLC POS status.
PlcNPRRestriction	PLC NPR restriction.
PlcSpecialConstants	Special constants.
PlcPluginState	Plugin state.
PlcPumpStatus	PLC pump status.
PlcDayNightMode	Day/night mode.

ACTIONS

Enumeration Name	Description
PlcBacklightMode	Backlight compensation mode.
PlcSkidataControl	SKIDATA control message.
PlcSkidataMsgCodeEntry	SKIDATA message entry.
PlcSkidataMsgCodeExit	SKIDATA message exit.
PlcSkidataMsgCodeTransaction	SKIDATA message transaction.
PlcExportMarker	Export marker.
PlcBackupFormat	Backup format.
PlcExportSuccess	Export success state.
Spezial-FallPlcExportAbort	Export abort flag.
PlcLpsStatus	Position query status.
PlcSceneStoreModificationType	Scene store modification type.
GTectAlarmReason	GTect alarm reason.
GTectClientVCAType	GTect client VCA type
LenelAccessResult	Lenel access result.
LenelEventType	Lenel event type.
LenelEventID	Lenel event ID.
IODeviceType	Specifies the type of the io device.
TrafficDirection	Specifies the traffic direction.
PPAlarmState	Specifies the alarm state of perimeter protection.
PPCableKind	Specifies the cable kind of perimeter protection.
PPSensorKind	Specifies the sensor kind of perimeter protection.
IPSwitchOps	Specifies the IP switch operation

Numeric64Bit

Numeric64Bit

- Int64 (Numeric64Bit)

Example Parameter Type Numeric64Bit

```
1 | <action name="TestInt64" code="10004" class="System">
2 |     <parameters>
3 |         <parameter
4 | name="Value" type="Numeric64Bit" dbfield="Int64_A" />
5 |     </parameters>
6 | </action>
7 | <action name="TestForeignKey" code="10005" class="System">
8 |     <parameters>
9 |         <parameter name="Key" type="Numeric64Bit" view="Fo-
10| reignKey" />
    </parameters>
    </action>
```

In the previous example, the attribute `view` is shown. If this attribute exists, the foreign key in the database will be described with the value.

NumericFloat

NumericFloat

- Double (NumericFloat)

Example Parameter Type NumericFloat

```
1 | <action name="TestDouble" code="10006" class="System">
2 |     <parameters>
3 |         <parameter
4 | name="Value" type="Double" dbfield="Double_A" />
5 |     </parameters>
6 | </action>
```

String

String

- String (String)

ACTIONS

Example Parameter Type String

```
1 <action name="TestString" code="10007" class="System">
2   <parameters>
3     <parameter name="Desc" type="String" dbfield="String_
A" />
4   </parameters>
5 </action>
```

Guid

Guid

- Part1 - Low (Numeric64Bit)
- Part2 - High (Numeric64Bit)

Example Parameter Type Guid

```
1 <action name="TestGUID" code="10008" class="System">
2   <parameters>
3     <parameter
name="SpecialID" type="Guid" dbfield="Int64_A|Int64_B" />
4   </parameters>
5 </action>
```

DateTime

DateTime

- Low + High + Bias (Numeric64Bit)

Example Parameter Type DateTime

```
1 <action name="TestDateTime" code="10009" class="System">
2   <parameters>
3     <parameter
name="Time" type="DateTime" dbfield="Int64_A " />
4   </parameters>
5 </action>
```

MediaChannel

ACTIONS

MediaChannel

- ChannelID (Numeric64Bit)
- ChannelName (String)
- GlobalNumber (Numeric32Bit)

Example Parameter Type MediaChannel

```
1 <action name="TestMediaChannel" code="10011" class="Video">
2   <parameters>
3     <parameter
4       name
5       ="Channel"
        type="MediaChannel" view="VideoInput" dbfield="Int64_B|Int32_
        B|String_B"/>
    </parameters>
  </action>
```

In the previous example, the attribute `view` is shown. If this attribute exists, the parameter refers to certain resources, created in the server.

Resource Name	Target
VideoInput	Available media channels (MediaChannel configuration).
AudioInput	Currently not implemented.
InputContact	Available input contacts (IO configuration).
OutputContact	Output contacts created in the IO configuration.
PTZHead	Channels created in the media channel configuration, which are defined as telecontrol camera.

Resource

Resource

- ResourceID (GUID)

ACTIONS

- Part1 - Low (Numeric64Bit)
- Part2 - High (Numeric64Bit)

- ResourceName (String)

Example Parameter Type Resource

```
1 <action name="TestResource" code="10012" class="System">
2   <parameters>
3     <parameter name="Module" type="Resource" view="HardwareModule" dbfield="Int64_A|Int64_B|String_A" />
4   </parameters>
5 </action>
```

In the previous example, the attribute `view` is shown. If this attribute exists, the parameter refers to certain resources, created in the server.

Resource Name	Target
ABSchedule	Available auto backup schedules (AutoBackup configuration).
ABDestination	Available auto backup destinations (AutoBackup configuration).
ABSource	Available auto backup sources (AutoBackup configuration).
ADParameterSet	Available AD templates (AD configuration).
CameraProfile	Support has ended.
GTectParameterSet	Available VMX templates (VMX configuration).
HardwareModule	Available hardware modules (Hardware configuration).
ImexDestination	Available export destinations (Imex configuration).
SVParameterSet	Available SV templates (SV configuration).
TimeRange	Available time reanges (TimeRanges con-

ACTIONS

Resource Name	Target
	figuration).
VMDParameterSet	Available VMD templates (VMD configuration).

Rect

Rect

- Top + Left + Bottom + Right (Numeric64Bit)

Example Parameter Type Rect

```
1 <action name="TestRect" code="10013" class="System">
2   <parameters>
3     <parameter name="Value" type="Rect" dbfield="Int64_A
"/>
4   </parameters>
5 </action>
```

Database Field

The following database fields are available:

Database Field Name	Equivalent Parameter Type
Int32_A	Boolean or Numeric32Bit
Int32_B	Boolean or Numeric32Bit
Int32_C	Boolean or Numeric32Bit
Int32_D	Boolean or Numeric32Bit
Int64_A	Numeric64Bit
Int64_B	Numeric64Bit
Int64_C	Numeric64Bit
Int64_D	Numeric64Bit

ACTIONS

Database Field Name	Equivalent Parameter Type
Double_A	NumericFloat
Double_B	NumericFloat
Time_A	DateTime
Time_B	DateTime
String_A	String
String_B	String
String_C	String
String_D	String

The division into database fields is optional, because the entire action (with parameters) is written to the `EventData` field (also known as BLOB).

If important parameters are written in the fields, this has the advantage that you can use e.g. filters in the G-View event list.

If a parameter needs to be written in a database field or more database fields, then the parameter needs the attribute `dbfield` with an indication of one or more flags.

Example Database Field

```
1 | <parameters>
2 |   <parameter name="Value" type="Numeric64Bit" dbfield="Int64_A"/>
3 |   <!-- OR -->
4 |   <parameter name="Value" type="EventType" dbfield=" Int64_
   | A|String_A"/>
5 | </parameters>
```

Otherwise you don't need to add the attribute `dbfield`.

Summary of the Examples

Examples Summary

```
1 | <?xml version="1.0" encoding="utf-8"?>
2 | <plc xmlns="http://actions.gng.geutebrueck.de/">
3 |   <enums>
```


ACTIONS

```
4         <enum name="EnumerationValues" code="10000">
5             <plain>Enumeration values</plain>
6             <description>This enumeration defines...</description>
7             <values>
8                 <value name="Zero" value="0" text="First"/>
9                 <value name="One" value="1" text="Second"/>
10                <value name="Two" value="2" text="Third"/>
11            </values>
12        </enum>
13    </enums>
14    <actionclasses>
15        <actionclass name="Supplementary" code="1000">
16            <plain>Supplementary</plain>
17            <description>These actions supplement the usual G-Core
actions.</description>
18        </actionclass>
19    </actionclasses>
20    <actions>
21        <action name="FuturisticWork" code="10000" class="Su-
pplementary">
22            <plain>Futuristic work</plain>
23            <description>This action will send some data which tar-
gets a futuristic date.</description>
24            <parameters>
25                <parameter
name="Active" type="Boolean" priority="4" dbfield="Int32_A">
26                    <plain>Active</plain>
27                    <description>Indicates if ...</description>
28                </parameter>
29                <parameter
name="Hash" type="Numeric64Bit" priority="7" dbfield="Int64_
A" view="ForeignKey"
30                    <plain>Hash value</plain>
31                    <description>Hash value of ...</description>
32                </parameter>
33            </parameters>
34        </action>
35        <action name="TestBool" code="10001" class="System">
36            <parameters>
37                <parameter
name="Active" type="Boolean" dbfield="Int32_A"/>
38            </parameters>
39        </action>
40        <action name="TestInt32" code="10002" class="System">
41            <parameters>
42                <parameter
```

ACTIONS

```
43     name="Value" type="Numeric32Bit" dbfield="Int32_A"/>
44         </parameters>
45     </action>
46     <action name="TestEnumerationValues" code="10003" class="System">
47         <parameters>
48             <parameter
49 name="EnumValue" type="EnumerationValues" dbfield="Int32_A"/>
50             </parameters>
51         </action>
52         <action name="TestInt64" code="10004" class="System">
53             <parameters>
54                 <parameter
55 name="Value" type="Numeric64Bit" dbfield="Int64_A"/>
56                 </parameters>
57             </action>
58             <action name="TestForeignKey" code="10005" class="System">
59                 <parameters>
60                     <parameter name="Key" type="Numeric64Bit" view="Fo-
61 reignKey"/>
62                 </parameters>
63             </action>
64             <action name="TestDouble" code="10006" class="System">
65                 <parameters>
66                     <parameter
67 name="Value" type="Double" dbfield="Double_A"/>
68                     </parameters>
69                 </action>
70                 <action name="TestString" code="10007" class="System">
71                     <parameters>
72                         <parameter name="Desc" type="String" dbfield="String_
73 A"/>
74                     </parameters>
75                 </action>
76                 <action name="TestGUID" code="10008" class="System">
77                     <parameters>
78                         <parameter
79 name="SpecialID" type="Guid" dbfield="Int64_A|Int64_B"/>
80                         </parameters>
81                     </action>
82                     <action name="TestDateTime" code="10009" class="System">
83                         <parameters>
84                             <parameter
85 name="Time" type="DateTime" dbfield="Int64_A "/>
86                             </parameters>
87                         </action>
88                     </parameters>
89                 </action>
90             </parameters>
91         </action>
92     </parameters>
93 </action>
```

ACTIONS

```
80     <action name="TestMediaChannel" code="10011" class="Video">
81         <parameters>
82             <parameter
name="Channel" type="MediaChannel" view="VideoInput" dbfield="Int64_
B|Int32_B|String_B"/>
83         </parameters>
84     </action>
85     <action name="TestResource" code="10012" class="System">
86         <parameters>
87             <parameter name="Module" type="Resource" view="Har-
rdwareModule" dbfield="Int64_A|Int64_B|String_A"/>
88         </parameters>
89     </action>
90     <action name="TestRect" code="10013" class="System">
91         <parameters>
92             <parameter name="Value" type="Rect" dbfield="Int64_
A"/>
93         </parameters>
94     </action>
95 </actions>
96 </plc>
```

G-Core Actions Reference

In this PDF document you will find a complete definition of all G-Core actions and parameters: [G-Core Actions Reference](#).

ATM/ACS

ATM and ACS actions.

ATM raw data

Action name: ATMRawData (ATM, time stamp, data)

Action category: logical

ATM raw data.

ACTIONS

Parameter		Function
ATM	ATMName	ATM name.
time stamp	TimeStamp	Time stamp.
data	ATMData	ATM data.

ATM raw answer

Action name: ATMRawAnswer (ATM, time stamp, answer)

Action category: logical

ATM raw answer.

Parameter		Function
ATM	ATMName	ATM name.
time stamp	TimeStamp	Time stamp.
answer	ATMData	ATM answer.

ATM transaction

Action name: ATMTransaction (ATM, new transaction, photostep, ATM no, account, bank code, card no, tan 1, tan 2, time stamp 1, time stamp 2, amount, currency)

Action category: logical

ATM transaction.

Parameter		Function
ATM	ATMName	ATM name.
new transaction	NewTransaction	New transaction.

ACTIONS

Parameter		Function
photostep	Photostep	Photostep.
ATM no	ATMNo	ATM no.
account	Account	Account no.
bank code	BancCode	Bank code.
card no	CardNo	Card no.
tan 1	TAN1	TAN 1.
tan 2	TAN2	TAN 2.
time stamp 1	TimeStamp1	Time stamp 1.
time stamp 2	TimeStamp2	Time stamp 2.
amount	Amount	Amount.
currency	Currency	Currency.

ATM transaction extended

Action name: ATMTransactionEx (ATM, ATM no, ATM action, location, time stamp, currency, bank name, bank code, card no, record no, amount, available balance, current balance)

Action category: logical

ATM transaction extended.

Parameter		Function
ATM	ATMName	ATM name.
ATM no	ATMNo	ATM no.
ATM action	ATMAction	ATM action.
location	Location	Location.

ACTIONS

Parameter		Function
time stamp	TimeStamp	Time stamp.
currency	Currency	Currency.
bank name	BankName	Bank name.
bank code	BankCode	Bank code.
card no	CardNo	Card no.
record no	RecordNo	Record no.
amount	Amount	Amount.
available balance	AvailableBalance	Available balance.
current balance	CurrentBalance	Current balance.

ACS raw data

Action name: ACSRawData (ACS, time stamp, data)

Action category: logical

ACS raw data.

Parameter		Function
ACS	ACSName	ACS name.
time stamp	TimeStamp	Time stamp.
data	ACSData	ACS data.

ACS raw answer

Action name: ACSRawAnswer (ACS, time stamp, answer)

Action category: logical

ACS raw answer.

ACTIONS

Parameter		Function
ACS	ACSName	ACS name.
time stamp	TimeStamp	Time stamp.
answer	ACSData	ACS answer.

ACS access granted

Action name: ACSAccessGranted (ACS, ACS no, account, bank code, card no, time stamp)

Action category: logical

ACS access granted.

Parameter		Function
ACS	ACSName	ACS name.
ACS no	ACSNo	ACS no.
account	Account	Account no.
bank code	BancCode	Bank code.
card no	CardNo	Card no.
time stamp	TimeStamp	Time stamp.

ACS access denied

Action name: ACSAccessDenied (ACS, ACS no, account, bank code, card no, time stamp, reason)

Action category: command

ACS access denied.

ACTIONS

Parameter		Function
ACS	ACSName	ACS name.
ACS no	ACSNo	ACS no.
account	Account	Account no.
bank code	BancCode	Bank code.
card no	CardNo	Card no.
time stamp	TimeStamp	Time stamp.
reason	Reason	Reason.

Audio Control

All actions to control the audio streams, also all notifications about the state change of the audio streams.

Sensor audio alarm

Action name: SensorAudioAlarm (channel)

Action category: logical

Audio alarm detected.

Parameter		Function
channel	Channel	Channel.

ABC connect

Action name: ABCConnect (address)

Action category: logical

Connect audio back channel.

ACTIONS

Parameter		Function
address	Address	Address of the remote server.

ABC disconnect

Action name: ABCDisconnect ()

Action category: logical

Disconnect audio back channel.

ABC play file

Action name: ABCPlayFile (file ID, file name, repeat)

Action category: logical

Play file on audio back channel.

Parameter		Function
file ID	FileID	File ID.
file name	FileName	Name of the file.
repeat	AutoRepeat	Repeat file automatically

Backup Actions

All actions for backup.

Start auto backup

Action name: StartAutoBackup (schedule)

Action category: logical

Start auto backup.

ACTIONS

Parameter		Function
schedule	Schedule	Schedule.

Backup event

Action name: BackupEvent (instance ID, event type, destination, start hint ID, stop hint ID, sub folder)

Action category: logical

Backup event.

Parameter		Function
instance ID	EventID	Instance ID of the event.
event type	TypeID	Type of the event.
destination	Destination	Destination.
start hint ID	StartHintID	Optional start hint ID.
stop hint ID	StopHintID	Optional stop hint ID.
sub folder	Subfolder	Sub folder to backup event.

Auto backup schedule started

Action name: AutoBackupScheduleStarted (schedule, start time, effective start time, operation count, timer start)

Action category: logical

Auto backup progress notification: schedule started.

Parameter		Function
schedule	Schedule	Schedule.
start time	StartTime	Start time, empty during event

ACTIONS

Parameter		Function
		backup.
effective start time	EffectiveStartTime	Effective schedule start time.
operation count	OperationCount	Operation count.
timer start	TimerStart	Timer start.

Auto backup schedule done

Action name: AutoBackupScheduleDone (schedule, start time, effective start time, stop time, operation count, timer start)

Action category: logical

Auto backup progress notification: schedule done.

Parameter		Function
schedule	Schedule	Schedule.
start time	StartTime	Start time, empty during event backup.
effective start time	EffectiveStartTime	Effective schedule start time.
stop time	StopTime	Schedule stop time.
operation count	OperationCount	Operation count.
timer start	TimerStart	Timer start.

Auto backup operation started

ACTIONS

Action name: AutoBackupOperationStarted (schedule, start time, effective start time, operation count, timer start, operation index, operation start time, source, destination, file size limit, band width limit)

Action category: logical

Auto backup progress notification: operation started.

Parameter		Function
schedule	Schedule	Schedule.
start time	StartTime	Start time, empty during event backup.
effective start time	EffectiveStartTime	Effective schedule start time.
operation count	OperationCount	Operation count.
timer start	TimerStart	Timer start.
operation index	OperationIndex	Operation index.
operation start time	OperationStartTime	Operation start time.
source	Source	Source.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.

Auto backup operation done

Action name: AutoBackupOperationDone (schedule, start time, effective start time, operation count, timer start, operation index, operation start time, operation stop time, source, destination, file size limit, band width limit, error code)

Action category: logical

Auto backup progress notification: operation done.

ACTIONS

Parameter		Function
schedule	Schedule	Schedule.
start time	StartTime	Start time, empty during event backup.
effective start time	EffectiveStartTime	Effective schedule start time.
operation count	OperationCount	Operation count.
timer start	TimerStart	Timer start.
operation index	OperationIndex	Operation index.
operation start time	OperationStartTime	Operation start time.
operation stop time	OperationStopTime	Operation stop time.
source	Source	Source.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
error code	OperationErrorCode	Operation error code.

Auto backup file started

Action name: AutoBackupFileStarted (schedule, start time, effective start time, operation count, timer start, operation index, operation start time, source, destination, file size limit, band width limit, file index, file name)

Action category: logical

Auto backup progress notification: file started.

ACTIONS

Parameter		Function
schedule	Schedule	Schedule.
start time	StartTime	Start time, empty during event backup.
effective start time	EffectiveStartTime	Effective schedule start time.
operation count	OperationCount	Operation count.
timer start	TimerStart	Timer start.
operation index	OperationIndex	Operation index.
operation start time	OperationStartTime	Operation start time.
source	Source	Source.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
file index	FileIndex	File index.
file name	FileName	File name.

Auto backup file progress

Action name: AutoBackupFileProgress (schedule, start time, effective start time, operation count, timer start, operation index, operation start time, source, destination, file size limit, band width limit, file index, file name, file size)

Action category: logical

Auto backup progress notification: file progress.

ACTIONS

Parameter		Function
schedule	Schedule	Schedule.
start time	StartTime	Start time, empty during event backup.
effective start time	EffectiveStartTime	Effective schedule start time.
operation count	OperationCount	Operation count.
timer start	TimerStart	Timer start.
operation index	OperationIndex	Operation index.
operation start time	OperationStartTime	Operation start time.
source	Source	Source.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
file index	FileIndex	File index.
file name	FileName	File name.
file size	FileSize	File size.

Auto backup file done

Action name: AutoBackupFileDone (schedule, start time, effective start time, operation count, timer start, operation index, operation start time, source, destination, file size limit, band width limit, file index, file name, file size)

Action category: logical

Auto backup progress notification: file done.

ACTIONS

Parameter		Function
schedule	Schedule	Schedule.
start time	StartTime	Start time, empty during event backup.
effective start time	EffectiveStartTime	Effective schedule start time.
operation count	OperationCount	Operation count.
timer start	TimerStart	Timer start.
operation index	OperationIndex	Operation index.
operation start time	OperationStartTime	Operation start time.
source	Source	Source.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
file index	FileIndex	File index.
file name	FileName	File name.
file size	FileSize	File size.

Event backup started

Action name: EventBackupStarted (job ID, event type, instance ID, destination, file size limit, band width limit, start time)

Action category: logical

Event backup progress notification: backup started.

ACTIONS

Parameter		Function
job ID	JobID	Backup job ID.
event type	EventTypeID	Type of the event.
instance ID	EventID	Instance ID of the event.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
start time	StartTime	Backup start time.

Event backup done

Action name: EventBackupDone (job ID, event type, instance ID, destination, file size limit, band width limit, start time, stop time, error code)

Action category: logical

Event backup progress notification: backup done.

Parameter		Function
job ID	JobID	Backup job ID.
event type	EventTypeID	Type of the event.
instance ID	EventID	Instance ID of the event.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
start time	StartTime	Backup start time.
stop time	StopTime	Backup stop time.
error code	OperationErrorCode	Operation error code.

Event backup file started

Action name: EventBackupFileStarted (job ID, event type, instance ID, destination, file size limit, band width limit, start time, file index, file name)

Action category: logical

Event backup progress notification: file started.

Parameter		Function
job ID	JobID	Backup job ID.
event type	EventTypeID	Type of the event.
instance ID	EventID	Instance ID of the event.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
start time	StartTime	Effective backup start time.
file index	FileIndex	File index.
file name	FileName	File name.

Event backup file progress

Action name: EventBackupFileProgress (job ID, event type, instance ID, destination, file size limit, band width limit, start time, file index, file name, file size)

Action category: logical

Event backup progress notification: file progress.

Parameter		Function
job ID	JobID	Backup job ID.
event type	EventTypeID	Type of the event.

ACTIONS

Parameter		Function
instance ID	EventID	Instance ID of the event.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
start time	StartTime	Effective backup start time.
file index	FileIndex	File index.
file name	FileName	File name.
file size	FileSize	File size.

Event backup file done

Action name: EventBackupFileDone (job ID, event type, instance ID, destination, file size limit, band width limit, start time, file index, file name, file size)

Action category: logical

Event backup progress notification: file done.

Parameter		Function
job ID	JobID	Backup job ID.
event type	EventTypeID	Type of the event.
instance ID	EventID	Instance ID of the event.
destination	Destination	Destination.
file size limit	FileSizeLimit	File size limit.
band width limit	BandWidthLimit	Band width limit.
start time	StartTime	Effective backup start time.

Parameter		Function
file index	FileIndex	File index.
file name	FileName	File name.
file size	FileSize	File size.

Auto backup capacity out of disk space

Action name: AutoBackupCapacityMonitoringOutOfDiskSpace (warning, destination, total capacity, free capacity, allocated by GBF, percent free, percent allocated, percent allocated by GBF)

Action category: logical

Auto backup capacity monitoring: out of disk space.

Parameter		Function
warning	Warning	Warning.
destination	Destination	Destination.
total capacity	TotalCapacity	Total capacity.
free capacity	FreeCapacity	Free capacity.
allocated by GBF	AllocatedByGbf	Allocated by GBF.
percent free	PercentFree	Percent free.
percent allocated	PercentAllocated	Percent allocated.
percent allocated by GBF	PercentAllocatedByGbf	Percent allocated by GBF.

Auto backup capacity warning

Action name: AutoBackupCapacityMonitoringCapacityWarning (warning, destination, total capacity, free capacity, allocated by GBF, percent free, percent allocated, percent allocated by GBF)

ACTIONS

Action category: logical

Auto backup capacity monitoring: capacity warning.

Parameter		Function
warning	Warning	Warning.
destination	Destination	Destination.
total capacity	TotalCapacity	Total capacity.
free capacity	FreeCapacity	Free capacity.
allocated by GBF	AllocatedByGbf	Allocated by GBF.
percent free	PercentFree	Percent free.
percent allocated	PercentAllocated	Percent allocated.
percent allocated by GBF	PercentAllocatedByGbf	Percent allocated by GBF.

Auto backup capacity file auto deleted

Action name: AutoBackupCapacityMonitoringFileAutoDeleted (warning, destination, total capacity, free capacity, allocated by GBF, percent free, percent allocated, percent allocated by GBF, file size, file name)

Action category: logical

Auto backup capacity monitoring: file auto deleted.

Parameter		Function
warning	Warning	Warning.
destination	Destination	Destination.
total capacity	TotalCapacity	Total capacity.
free capacity	FreeCapacity	Free capacity.

ACTIONS

Parameter		Function
allocated by GBF	AllocatedByGbf	Allocated by GBF.
percent free	PercentFree	Percent free.
percent allocated	PercentAllocated	Percent allocated.
percent allocated by GBF	PercentAllocatedByGbf	Percent allocated by GBF.
file size	FileSize	File size.
file name	FileName	File name.

Abort auto backup

Action name: AbortAutoBackup (schedule)

Action category: logical

Abort auto backup.

Parameter		Function
schedule	Schedule	Schedule.

Abort all auto backups

Action name: AbortAllAutoBackups ()

Action category: logical

Abort all auto backups.

Camera Control

Actions to set and control PTZ/ normal cameras. Note: Which camera types are supported always depends on model and manufacturer! This applies to all listed actions!

Pan right

Action name: PanRight (PTZ head, speed)

Action category: command

The camera pans to the right.

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Pan speed.

Pan left

Action name: PanLeft (PTZ head, speed)

Action category: command

The camera pans to the left.

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Pan speed.

Pan stop

Action name: PanStop (PTZ head)

Action category: command

The camera stops pan movement.

Parameter		Function
PTZ head	Camera	PTZ head.

Tilt up

ACTIONS

Action name: TiltUp (PTZ head, speed)

Action category: command

The camera tilts up.

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Tilt speed.

Tilt down

Action name: TiltDown (PTZ head, speed)

Action category: command

The camera tilts down.

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Tilt speed.

Tilt stop

Action name: TiltStop (PTZ head)

Action category: command

The camera stops the tilt movement.

Parameter		Function
PTZ head	Camera	PTZ head.

Zoom in

Action name: ZoomIn (PTZ head, speed)

ACTIONS

Action category: command

The Camera zooms in (tele range).

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Zoom speed.

Zoom out

Action name: ZoomOut (PTZ head, speed)

Action category: command

The camera zooms out (wide-angle range).

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Zoom speed.

Zoom stop

Action name: ZoomStop (PTZ head)

Action category: command

The camera stops zooming process.

Parameter		Function
PTZ head	Camera	PTZ head.

Focus near

Action name: FocusNear (PTZ head, speed)

Action category: command

ACTIONS

The camera focus adjusts on near.

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Focus speed.

Focus far

Action name: FocusFar (PTZ head, speed)

Action category: command

The camera focus adjusts on far.

Parameter		Function
PTZ head	Camera	PTZ head.
speed	Speed	Focus speed.

Focus stop

Action name: FocusStop (PTZ head)

Action category: command

The camera stops the focusing process.

Parameter		Function
PTZ head	Camera	PTZ head.

Iris open

Action name: IrisOpen (PTZ head)

Action category: command

The camera opens the aperture.

ACTIONS

Parameter		Function
PTZ head	Camera	PTZ head.

Iris close

Action name: IrisClose (PTZ head)

Action category: command

The camera closes the aperture.

Parameter		Function
PTZ head	Camera	PTZ head.

Iris stop

Action name: IrisStop (PTZ head)

Action category: command

The camera stops closing/opening aperture.

Parameter		Function
PTZ head	Camera	PTZ head.

Move to preset position

Action name: PrePosCallUp (PTZ head, position)

Action category: command

The camera moves to a preset position determined in advance through the action "SavePresetPosition".

ACTIONS

Parameter		Function
PTZ head	Camera	PTZ head.
position	Position	Preset position.

Move to default position

Action name: DefaultPosCallUp (PTZ head)

Action category: command

The PTZ camera moves back to the home position (usually position 1). Therefore the home position has to be set and saved in advance by the action "SaveDefaultPosition".

Parameter		Function
PTZ head	Camera	PTZ head.

Camera tour start

Action name: CameraTourStart (PTZ head, tour ID, tour name)

Action category: command

This action starts a pre-defined tour.

Parameter		Function
PTZ head	Camera	PTZ head.
tour ID	TourID	Tour ID.
tour name	TourName	Tour name.

Camera tour stop

Action name: CameraTourStop (PTZ head)

ACTIONS

Action category: command

This action stops a running tour.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera light on

Action name: CameraLightOn (PTZ head)

Action category: command

This action turns the camera light on.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera light off

Action name: CameraLightOff (PTZ head)

Action category: command

This action turns the camera light off.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera on

Action name: CameraOn (PTZ head)

Action category: command

This action turns on the camera.

ACTIONS

Parameter		Function
PTZ head	Camera	PTZ head.

Camera off

Action name: CameraOff (PTZ head)

Action category: command

This action turns off the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera pump on

Action name: CameraPumpOn (PTZ head)

Action category: command

Turn camera pump on.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera pump off

Action name: CameraPumpOff (PTZ head)

Action category: command

This action disables the pump of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Fast speed on

Action name: FastSpeedOn (PTZ head)

Action category: command

This action switches from normal speed of the camera to high-speed of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Fast speed off

Action name: FastSpeedOff (PTZ head)

Action category: command

This action switches from high-speed of the camera to normal speed of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera wash-wipe on

Action name: CameraWashOn (PTZ head)

Action category: command

This action enables the functions "wash" and "wipe".

Parameter		Function
PTZ head	Camera	PTZ head.

Camera wash-wipe off

Action name: CameraWashOff (PTZ head)

ACTIONS

Action category: command

This action disables the functions "wash" and "wipe".

Parameter		Function
PTZ head	Camera	PTZ head.

Camera spec func U on

Action name: CameraSpecFuncUOn (PTZ head)

Action category: command

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera spec func U off

Action name: CameraSpecFuncUOff (PTZ head)

Action category: command

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera spec func V on

Action name: CameraSpecFuncVOn (PTZ head)

Action category: command

ACTIONS

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera spec func V off

Action name: CameraSpecFuncVOff (PTZ head)

Action category: command

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera spec func X on

Action name: CameraSpecFuncXOn (PTZ head)

Action category: command

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera spec func X off

Action name: CameraSpecFuncXOff (PTZ head)

Action category: command

ACTIONS

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera spec func Y on

Action name: CameraSpecFuncYOn (PTZ head)

Action category: command

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera Spec func Y off

Action name: CameraSpecFuncYOff (PTZ head)

Action category: command

Special functions are mapped to this action. (MBeg functions X, Y, U and V).

Parameter		Function
PTZ head	Camera	PTZ head.

Camera stop all

Action name: CameraStopAll (PTZ head)

Action category: command

This action stops all movements of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Save preset position

Action name: PrePosSave (PTZ head, position)

Action category: command

Saves current position of the PTZ camera as a preset position.

Parameter		Function
PTZ head	Camera	PTZ head.
position	Position	Preset position.

Save default position

Action name: DefaultPosSave (PTZ head)

Action category: command

This action saves the current position of the camera as default position.

Parameter		Function
PTZ head	Camera	PTZ head.

Clear preset position

Action name: PrePosClear (PTZ head, position)

Action category: command

This action deletes a position previously saved by the action "SavePresetPosition".

Parameter		Function
PTZ head	Camera	PTZ head.
position	Position	Preset position.

Clear default position

Action name: DefaultPosClear (PTZ head)

Action category: command

This action deletes the currently defined default position.

Parameter		Function
PTZ head	Camera	PTZ head.

Set camera text

Action name: SetCameraText (PTZ head, text)

Action category: command

This action saves the camera description in accordance with the parameter "text".

Parameter		Function
PTZ head	Camera	PTZ head.
text	Text	Text to superimpose.

Camera select char mode

Action name: CameraSelectCharMode (PTZ head, mode)

Action category: command

"For internal use only"

ACTIONS

Parameter		Function
PTZ head	Camera	PTZ head.
mode	Mode	Character mode.

Camera clear preset text

Action name: CameraClearPrePosText (PTZ head, position)

Action category: command

This action clears the text that was previously defined and assigned to a particular camera position by the action "CameraSetPresetText" and displayed when the camera moves to this position.

Parameter		Function
PTZ head	Camera	PTZ head.
position	Position	Preset position.

Camera set preset text

Action name: CameraSetPrePosText (PTZ head, position)

Action category: command

With this action, one defines the text that is associated with a particular camera position and displayed when the camera moves to this position.

Parameter		Function
PTZ head	Camera	PTZ head.
position	Position	Preset position.

Camera RAW output

Action name: CameraRAWOutput (PTZ head, output)

ACTIONS

Action category: command

This action sends a raw string (parameter output) to the camera.

Parameter		Function
PTZ head	Camera	PTZ head.
output	Output	RAW command to output.

Camera apply profile

Action name: CameraApplyProfile (PTZ head, profile)

Action category: command

Apply a predefined profile settings to the camera.

Parameter		Function
PTZ head	Camera	PTZ head.
profile	Profile	Profile name.

Camera version on

Action name: CameraVersionOn (PTZ head)

Action category: command

With this action the firmware version of the camera will be shown as OSD.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera version off

Action name: CameraVersionOff (PTZ head)

Action category: command

ACTIONS

With this action the firmware version of the camera will be hidden.

Parameter		Function
PTZ head	Camera	PTZ head.

Pan auto

Action name: PanAuto (PTZ head, modus)

Action category: command

Cameras without automatic end stop turn on and on until this function is stopped through the action "PanStop". Cameras with automatic end stop do stop automatically after a 360 turn. It depends on the camera type if this function is even available and in case how it is going to be accomplished.

Parameter		Function
PTZ head	Camera	PTZ head.
modus	Modus	Pan modus.

Auto focus on

Action name: AutoFocusOn (PTZ head)

Action category: command

This action enables the auto-focus function of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Auto focus off

Action name: AutoFocusOff (PTZ head)

ACTIONS

Action category: command

This action disables the auto-focus function of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera manual iris on

Action name: CameraManuallIrisOn (PTZ head)

Action category: command

This action enables the option to adjust the camera iris manually.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera manual iris off

Action name: CameraManuallIrisOff (PTZ head)

Action category: command

This action disables the option to adjust the camera iris manually.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera text on

Action name: CameraTextOn (PTZ head)

Action category: command

This action turns on the text display of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera text off

Action name: CameraTextOff (PTZ head)

Action category: command

This action turns off the text display of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera day/night mode

Action name: CameraDayNightMode (PTZ head, mode)

Action category: command

This action changes the day/ night mode of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.
mode	Mode	Day/night mode.

Camera backlight compensation mode

Action name: CameraBacklightCompensationMode (PTZ head, mode)

Action category: command

This action changes the backlight compensation of the camera.

ACTIONS

Parameter		Function
PTZ head	Camera	PTZ head.
mode	Mode	Backlight compensation mode.

Move to absolute position

Action name: MoveToAbsolutePosition (PTZ head, alpha, beta, zoom, focus, alpha speed, beta speed)

Action category: command

"For internal use only"

Parameter		Function
PTZ head	Camera	PTZ head.
alpha	Alpha	Alpha angle (-180°/+180°).
beta	Beta	Beta angle (-90°/+90°).
zoom	Zoom	Zoom value.
focus	Focus	Focus value.
alpha speed	SpeedAlpha	Speed in alpha direction (0/100 %).
beta speed	SpeedBeta	Speed in beta direction (0/100 %).

Move to relative position

Action name: MoveToRelativePosition (PTZ head, alpha, beta, zoom, focus, alpha speed, beta speed)

Action category: command

"For internal use only"

ACTIONS

Parameter		Function
PTZ head	Camera	PTZ head.
alpha	Alpha	Alpha angle (-180°/+180°).
beta	Beta	Beta angle (-90°/+90°).
zoom	Zoom	Zoom value.
focus	Focus	Focus value.
alpha speed	SpeedAlpha	Speed in alpha direction (0/100 %).
beta speed	SpeedBeta	Speed in beta direction (0/100 %).

Move by speed

Action name: MoveToBySpeed (PTZ head, alpha speed, beta speed)

Action category: command

"For internal use only"

Parameter		Function
PTZ head	Camera	PTZ head.
alpha speed	SpeedAlpha	Speed in alpha (pan) direction (0/100 %).
beta speed	SpeedBeta	Speed in beta (tilt) direction (0/100 %).

Camera absolute position

Action name: CameraAbsolutePosition (PTZ head, updated, alpha, beta, zoom, focus)

Action category: command

"For internal use only"

ACTIONS

Parameter		Function
PTZ head	Camera	PTZ head.
updated	Updated	Updated.
alpha	Alpha	Alpha angle.
beta	Beta	Beta angle.
zoom	Zoom	Zoom value.
focus	Focus	Focus value.

Camera push auto focus

Action name: CameraPushAF (PTZ head)

Action category: command

This action triggers the auto-focus function of the camera.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera area zoom

Action name: CameraAreaZoom (PTZ head, X-Coordinate, Y-Coordinate, zoom direction, rectangle width, rectangle height, width, height)

Action category: command

Camera area zoom.

Parameter		Function
PTZ head	Camera	PTZ head.
X-Coordinate	X	X-Coordinate of position to center.

ACTIONS

Parameter		Function
Y-Coordinate	Y	Y-Coordinate of position to center.
zoom direction	ZoomDirection	Zoom direction
rectangle width	RectangleWidth	Rectangle Width.
rectangle height	RectangleHeight	Height of zoom rectangle.
width	Width	Actual number of Pixels shown.
height	Height	Actual number of Pixels shown.

Move to preset position for Onvif

Action name: PrePosCallUpOnvif (PTZ head, position)

Action category: command

The camera moves to a preset position string defined on a custom button.

Parameter		Function
PTZ head	Camera	PTZ head.
position	Position	Preset position.

Camera tour pause

Action name: CameraTourPause (PTZ head)

Action category: command

This action interrupts a running tour.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera tour resume

Action name: CameraTourResume (PTZ head)

Action category: command

This action resumes an interrupted tour.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera tour prev

Action name: CameraTourPrev (PTZ head)

Action category: command

This action selects the previous position in a running tour.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera tour next

Action name: CameraTourNext (PTZ head)

Action category: command

This action selects the next position in a running tour.

Parameter		Function
PTZ head	Camera	PTZ head.

Camera Notification

All camera notifications.

Counter

ACTIONS

Action name: Counter (Channel, Counter description, Counter Type, Value, Counter Status)

Action category:

Counter.

Parameter		Function
Channel	Channel	Local channel.
Counter description	Description	Counter description.
Counter Type	Type	Counter Type.
Value	Value	Counter value.
Counter Status	Status	Counter Status.

Onvif notification message

Action name: OnvifNotificationMessage (channel, time, topic, source name, source value, data name, data value, key name, key value, property operation, source string, data string, key string, topic dialect)

Action category:

This action will forward the event notifications sent by a camera.

Parameter		Function
channel	Channel	Media channel.
time	Time	Time of the event.
topic	Topic	Topic of the event.
source name	SourceName	Name of the source of the event.
source value	SourceValue	Value of the source of the event.
data name	DataName	Name of the data sent by the source.

ACTIONS

Parameter		Function
data value	DataValue	Value of the data sent by the source.
key name	KeyName	Key name (optional).
key value	KeyValue	Key value (optional).
property operation	PropertyOperation	Information about property of this notification.
source string	SourceString	List of all sources sent by notification.
data string	DataString	List of all data sent by notification.
key string	KeyString	List of all keys sent by notification.
topic dialect	TopicDialect	Name of the used topic dialect.

Temperature detection

Action name: TemperatureDetection (channel, temperature as string, Temperature Unit, area, time, temperature state, temperature)

Action category:

Temperature detection.

Parameter		Function
channel	Channel	Channel.
temperature as string	TemperatureStr	Temperature as string.
Temperature Unit	TempUnit	Temperature Unit.
area	Area	Area rectangle.
time	Time	Time stamp.

Parameter		Function
temperature state	State	Temperature state.
temperature	Temperature	Temperature.

Cash Management Actions

Cash Management Actions offer the exchange of accompanying meta data between Cash Management Systems and G-Scopes. With these actions money handling processes can be documented consistently via video. The use of these actions for starting and restarting of event recordings leads to the display of the accompanying video data in live streams of G-View and the storage of those in the video database. The video sequences recorded by Cash Management Actions can later be recovered easily in G-View by using the accompanying meta data and a special data filter dialog.

Safebag open

Action name: SafebagOpen (working place, start time, safebag no., safebag info, step ID)

Action category: notification

The integrated Cash Management System sends the action as soon as the user has opened the safe bag and confirmed that with an entry in the Cash Management System. The affected Working Place will be identified via the parameter "Working place". Further parameters will be filled with accompanying meta data on the part of the Cash Management System. The Parameter "StepID" can be addressed by the Cash Management System with a code figure for the currently running process step.

Parameter		Function
working place	WorkingPlace	Working place no.
start time	StartTime	Start time stamp.
safebag no.	SafebagNo	Safebag no.
safebag info	SafebagInfo	Additional info about safebag.
step ID	StepID	Processing step ID.

Safebag data

Action name: SafebagData (working place, start time, safebag no., safebag info, step ID, debit, total, difference, has difference, notes, coins, cheques)

Action category: command

The integrated Cash Management System sends the action as soon as the user has finished counting one variety of notes or coins and has confirmed that to the system. Via the parameter "working place" the affected working place will be identified. The further parameter will be provided with accompanying meta data by the Cash Management System. The parameter "StepID" can be provided with a code figure by the Cash Management System for the currently running process step.

Parameter		Function
working place	WorkingPlace	Working place no.
start time	StartTime	Start time stamp.
safebag no.	SafebagNo	Safebag no.
safebag info	SafebagInfo	Additional info about safebag.
step ID	StepID	Processing step ID.
debit	Debit	Debit.
total	Total	Total.
difference	Difference	Difference between debit and total.
has difference	HasDifference	Difference between debit and total is not zero.
notes	Notes	Notes.
coins	Coins	Coins.
cheques	Cheques	Cheques.

Safebag close

ACTIONS

Action name: SafebagClose (working place, start time, stop time, safebag no., safebag info, step ID, debit, total, difference, has difference, notes, coins, cheques)

Action category: command

SafebagClose The integrated Cash Management System sends the action as soon as the user has finished the counting of one safe bag and has confirmed that to the Cash Management System . Via the parameter "working place" the affected working place will be identified. The further parameter will be provided with accompanying video data by Cash Management System. The parameter "StepID" can be provided with a code figure by the Cash Management System for the currently running process step.

Parameter		Function
working place	WorkingPlace	Working place no.
start time	StartTime	Start time stamp.
stop time	StopTime	Stop time stamp.
safebag no.	SafebagNo	Safebag no.
safebag info	SafebagInfo	Additional info about safebag.
step ID	StepID	Processing step ID.
debit	Debit	Debit.
total	Total	Total.
difference	Difference	Difference between debit and total.
has difference	HasDifference	Difference between debit and total is not zero.
notes	Notes	Notes.
coins	Coins	Coins.
cheques	Cheques	Cheques.

Safebag passing of risk start

ACTIONS

Action name: SafebagPassingOfRiskStart (working place, start time, safebag no., safebag info, step ID, user 1, user 2, tour no, target working place, passing of risk type)

Action category: command

The integrated Cash Management System sends the action as soon as a number of safe bags will be transferred between two employees and this is confirmed to the Cash Management System. This part of the money handling process is a "passing of risk". Via the parameter "working place" the affected transfer place and respectively the working place will be identified. The further parameters will be filled with accompanying meta data by the Cash Management System. The parameter "StepID" can be provided with a code figure by the Cash Management System for the currently running process step.

Parameter		Function
working place	WorkingPlace	Working place no.
start time	StartTime	Start time stamp.
safebag no.	SafebagNo	Safebag no.
safebag info	SafebagInfo	Additional info about safebag.
step ID	StepID	Processing step ID.
user 1	UserID1	User who gives the safebag.
user 2	UserID2	User who takes the safebag.
tour no	TourNumber	Optional tour no.
target working place	TargetWorkingPlace	Target working place.
passing of risk type	PassingOfRiskType	Passing of risk type.

Safebag passing of risk data

ACTIONS

Action name: SafebagPassingOfRiskData (working place, start time, safebag no., safebag info, step ID, user 1, user 2, tour no, target working place, passing of risk type)

Action category: command

The integrated Cash Management System sends the action continuously for each safe bag while the amount of safe bags between two employees will be transferred and this will be confirmed to the Cash Management System. This part of the money handling process is a "passing of risk". Via the parameter "working place" the affected transfer place and respectively the working place will be identified. The further parameters will be filled with accompanying video data by the Cash Management System. The parameter "StepID" can be provided with a code figure by the Cash Management System for the currently running process step.

Parameter		Function
working place	WorkingPlace	Working place no.
start time	StartTime	Start time stamp.
safebag no.	SafebagNo	Safebag no.
safebag info	SafebagInfo	Additional info about safebag.
step ID	StepID	Processing step ID.
user 1	UserID1	User who gives the safebag.
user 2	UserID2	User who takes the safebag.
tour no	TourNumber	Optional tour no.
target working place	TargetWorkingPlace	Target working place.
passing of risk type	PassingOfRiskType	Passing of risk type.

Safebag passing of risk stop

ACTIONS

Action name: SafebagPassingOfRiskStop (working place, start time, stop time, safebag no., safebag info, step ID, user 1, user 2, tour no, target working place, passing of risk type)

Action category: command

The integrated Cash Management System sends the action closing after the last safe bag, while the number of safe bags will be transferred between two employees and this is confirmed to the Cash Management System. This part of the money handling process is a "passing of risk". Via the parameter "Working place" the affected transfer place respective working place will be identified. The further parameters will be filled with accompanying video data by the Cash Management System. The parameter "StepID" can be supplied by Cash Management System with a code figure for a currently running process step

Parameter		Function
working place	WorkingPlace	Working place no.
start time	StartTime	Start time stamp.
stop time	StopTime	Stop time stamp.
safebag no.	SafebagNo	Safebag no.
safebag info	SafebagInfo	Additional info about safebag.
step ID	StepID	Processing step ID.
user 1	UserID1	User who gives the safebag.
user 2	UserID2	User who takes the safebag.
tour no	TourNumber	Optional tour no.
target working place	TargetWorkingPlace	Target working place.
passing of risk type	PassingOfRiskType	Passing of risk type.

Device Information

All actions for low-level notification of the device or media channels changes.

Device found

Action name: DeviceFound (device type, device name, serial ID)

Action category: logical

This action will be fired when the USB or NET device is connected to the system. It is also fired at start-up for all detected devices.

Parameter		Function
device type	Type	Type of the device.
device name	Name	Device name if assigned in setup, empty otherwise.
serial ID	Serial	Serial ID of the device.

Device removed

Action name: DeviceRemoved (device type, device name, serial ID)

Action category: logical

This action will be fired when the USB or NET device is disconnected from the system. It is also fired at the start-up for all parameterized but not present devices.

Parameter		Function
device type	Type	Type of the device.
device name	Name	Device name if assigned in setup, empty otherwise.
serial ID	Serial	Serial ID of the device.

New firmware received

ACTIONS

Action name: DeviceNewFirmware (device type, device name, serial ID, firmware serial)

Action category: logical

This action will be fired when the USB or NET device has got the new firmware.

Parameter		Function
device type	Type	Type of the device.
device name	Name	Device name if assigned in setup, empty otherwise.
serial ID	Serial	Serial ID of the device.
firmware serial	Firmware	Serial ID of the firmware.

Device reattached

Action name: DeviceReattached (device type, device name, serial ID)

Action category: logical

This action will be fired when the USB or NET device is reattached to the system.

Parameter		Function
device type	Type	Type of the device.
device name	Name	Device name if assigned in setup, empty otherwise.
serial ID	Serial	Serial ID of the device.

Device plugin error

Action name: DevicePluginError (channel, device type, device subtype, device name, serial ID, error class, error code, description)

ACTIONS

Action category: logical

This action notifies device plugin error.

Parameter		Function
channel	Channel	Channel.
device type	Type	Type of the device.
device subtype	SubType	Subtype of the device.
device name	Name	Device name.
serial ID	Serial	Serial ID of the device.
error class	ErrorClass	Error class of the error occurred.
error code	ErrorCode	Plugin type specific error code.
description	Description	Error description.

Device plugin state

Action name: DevicePluginState (channel, device type, device subtype, device name, serial ID, plugin state, internal state, description)

Action category: logical

This action notifies device plugin state.

Parameter		Function
channel	Channel	Channel.
device type	Type	Type of the device.
device subtype	SubType	Subtype of the device.
device name	Name	Device name.
serial ID	Serial	Serial ID of the device.
plugin state	State	New plugin device state.

ACTIONS

Parameter		Function
internal state	InternalState	Plugin device specific state.
description	Description	State description.

Digital Contacts

All actions for handling digital inputs and outputs.

Digital input

Action name: DigitalInput (contact, state)

Action category: logical

This action will be fired when the state of the digital input has changed.

Parameter		Function
contact	Contact	Contact.
state	State	New state.

Set digital output

Action name: SetDigitalOutput (contact, state)

Action category: logical

This action is used to modify the state of the digital output and to notify this change.

Parameter		Function
contact	Contact	Contact.
state	State	New state.

Set system LED

ACTIONS

Action name: SetLED (LED, state)

Action category: logical

This action is used to turn the system LEDs on or off.

Parameter		Function
LED	LED	System LED.
state	State	New state.

Set system LED to blink

Action name: SetLEDBlink (LED, LED time ON, LED time OFF)

Action category: logical

This action is used to blink the system LEDs.

Parameter		Function
LED	LED	System LED.
LED time ON	LedTimeOnMs	Time in milliseconds when the LED will be switched on.
LED time OFF	LedTimeOffMs	Time in milliseconds when the LED will be switched off.

Key pressed

Action name: KeyPressed (key)

Action category: logical

This action is notified if one of the G-Store system keys is pressed.

Parameter		Function
key	Key	System key.

Key released

Action name: KeyReleased (key)

Action category: logical

This action is notified if one of the G-Store system keys is released.

Parameter		Function
key	Key	System key.

IOI43 watchdog activate

Action name: IOI43WDActivate ()

Action category: logical

Activate watchdog on IOI43a/ab USB Alarm-I/O.

IOI43 watchdog deactivate

Action name: IOI43WDDeactivate ()

Action category: logical

Deactivate watchdog on IOI43a/ab USB Alarm-I/O.

IOI43 watchdog trigger

Action name: IOI43WDTrigger ()

Action category: logical

Trigger watchdog on IOI43a/ab USB Alarm-I/O.

IOI43 reset mainboard

Action name: IOI43ResetMainboard ()

Action category: logical

Reset mainboard using IOI43a/ab USB Alarm-I/O.

IOI43 temperature notification

Action name: IOI43Temperature (ID, temperature)

Action category: logical

Temperature notification from IOI43a/ab USB Alarm-I/O.

Parameter		Function
ID	ID	ID of the IOI43 module (like IOI43-00).
temperature	Temperature	Temperature.

Watchdog activate

Action name: WatchdogActivate ()

Action category: logical

Activate watchdog.

Watchdog deactivate

Action name: WatchdogDeactivate ()

Action category: logical

Deactivate watchdog.

Watchdog trigger

Action name: WatchdogTrigger ()

Action category: logical

Trigger watchdog.

Temperature notification

Action name: Temperature (IO device type, ID, temperature)

Action category: logical

Temperature notification from a/ab USB Alarm-I/O.

ACTIONS

Parameter		Function
IO device type	SourceType	Type of the device, which has fired the action.
ID	ID	ID of the IO module (like IOI43-00/MIO84-00/MIO168-00).
temperature	TemperatureValue	Temperature.

Reset mainboard

Action name: ResetMainboard ()

Action category: logical

Reset mainboard using IO device.

Case has been opened

Action name: CaseOpened ()

Action category: logical

Case has been opened.

Case has been closed

Action name: CaseClosed ()

Action category: logical

Case has been closed.

Edge Recording

Edge Recording actions.

Edge recording ignore time range

Action name: EdgeRecIgnoreTimeRange (channel, start time, stop time)

ACTIONS

Action category:

This action specifies a time range which should be deleted from a list of time ranges (downloaded from the camera).

Parameter		Function
channel	Channel	Media channel.
start time	StartTime	Start time of the time range to be removed.
stop time	StopTime	Stop time of the time range to be removed.

Edge recording all fine notification

Action name: EdgeRecAllFine (channel, OK time)

Action category:

This action will be sent from the server to notify up to which date and time all recordings are valid on the original edge channel.

Parameter		Function
channel	Channel	Media channel.
OK time	OKTime	OK time.

Edge recording add time range

Action name: EdgeRecAddTimeRange (channel, start time, stop time)

Action category:

This action specifies a time range which should be added to a list of time ranges (downloaded from the camera).

Parameter		Function
channel	Channel	Media channel.

ACTIONS

Parameter		Function
start time	StartTime	Start time of the time range to be added.
stop time	StopTime	Stop time of the time range to be added.

GPS & LPS

GPS (Global Positioning System) and LPS (Local Positioning System) actions are used to query and receive position data.

LPS position data

Action name: LPSPositionData (tag ID, scanner ID, X coordinate, Y coordinate, Z coordinate, latitude, longitude, area ID, cell ID, status, time stamp, data, area name)

Action category: logical

LPS position data.

Parameter		Function
tag ID	TagID	Tag ID.
scanner ID	ScannerID	Scanner ID or IP address.
X coordinate	X	X coordinate of cartesian coordinates.
Y coordinate	Y	Y coordinate of cartesian coordinates.
Z coordinate	Z	Z coordinate of cartesian coordinates.
latitude	Latitude	Latitude of geographic coordinates.
longitude	Longitude	Longitude of geographic coordinates.
area ID	AreaID	Area ID.
cell ID	CellID	Cell ID.
status	Status	Status.

ACTIONS

Parameter		Function
time stamp	TimeStamp	Time stamp.
data	Data	Data.
area name	AreaName	Area Name.

LPS query position

Action name: LPSQueryPosition (tag ID, scanner ID, data)

Action category: command

Send position query for a Tag to LPS server.

Parameter		Function
tag ID	TagID	Tag ID.
scanner ID	ScannerID	Scanner ID or IP address.
data	Data	Data.

Vehicle moving

Action name: VehicleMoving (area, vehicle ID, custom string, trip ID, course ID, altitude, distance, latitude, longitude, speed, time, delay, custom ID, status)

Action category: notification

Vehicle moving.

Parameter		Function
area	Area	Area.
vehicle ID	VehicleID	Vehicle or host ID.

ACTIONS

Parameter		Function
custom string	CustomString	Custom string.
trip ID	TripID	Trip ID.
course ID	CourseID	Course ID.
altitude	Altitude	Altitude.
distance	Distance	Current distance.
latitude	Latitude	Current latitude.
longitude	Longitude	Current longitude.
speed	Speed	Current speed.
time	Time	Current time.
delay	Delay	Delay (s).
custom ID	CustomID	Custom ID.
status	Status	Status.

Vehicle stop

Action name: VehicleStop (stop, vehicle ID, custom string, trip ID, course ID, altitude, latitude, longitude, time, delay, custom ID)

Action category: notification

Vehicle stop.

Parameter		Function
stop	Stop	Stop name or ID.
vehicle ID	VehicleID	Vehicle or host ID.
custom string	CustomString	Custom string.
trip ID	TripID	Trip ID.

ACTIONS

Parameter		Function
course ID	CourseID	Course ID.
altitude	Altitude	Altitude.
latitude	Latitude	Current latitude.
longitude	Longitude	Current longitude.
time	Time	Current time.
delay	Delay	Delay (s).
custom ID	CustomID	Custom ID.

Imex

Image export.

Imex capacity warning

Action name: ImexCapacityWarning (warning, destination, total capacity, free capacity, allocated by image file, percent free, percent allocated, percent allocated by image file)

Action category: notification

Imex capacity warning: capacity warning.

Parameter		Function
warning	Warning	Warning.
destination	Destination	Destination.
total capacity	TotalCapacity	Total capacity.
free capacity	FreeCapacity	Free capacity.
allocated by image file	AllocatedByImageFile	Allocated by image file.

ACTIONS

Parameter		Function
percent free	PercentFree	Percent free.
percent allocated	PercentAllocated	Percent allocated.
percent allocated by image file	PercentAllocatedByImageFile	Percent allocated by image file.

Imex capacity out of disk space

Action name: ImexCapacityOutOfDiskSpace (warning, destination, total capacity, free capacity, allocated by image file, percent free, percent allocated, percent allocated by image file)

Action category: notification

Imex capacity warning: out of disk space.

Parameter		Function
warning	Warning	Warning.
destination	Destination	Destination.
total capacity	TotalCapacity	Total capacity.
free capacity	FreeCapacity	Free capacity.
allocated by image file	AllocatedByImageFile	Allocated by image file.
percent free	PercentFree	Percent free.
percent allocated	PercentAllocated	Percent allocated.
percent allocated by image file	PercentAllocatedByImageFile	Percent allocated by image file.

Imex capacity file auto deleted

Action name: ImexCapacityFileAutoDeleted (warning, destination, total capacity, free capacity, allocated by image file, percent free, percent allocated, percent allocated by image file, total file size, number of files)

Action category: notification

Imex capacity warning: file auto deleted.

Parameter		Function
warning	Warning	Warning.
destination	Destination	Destination.
total capacity	TotalCapacity	Total capacity.
free capacity	FreeCapacity	Free capacity.
allocated by image file	AllocatedByImageFile	Allocated by image file.
percent free	PercentFree	Percent free.
percent allocated	PercentAllocated	Percent allocated.
percent allocated by image file	PercentAllocatedByImageFile	Percent allocated by image file.
total file size	TotalFileSize	Total file size.
number of files	NumberOfFiles	Number of files.

Imex export image from DB

Action name: ImexExportImageFromDB (channel, destination, file name, picture time)

Action category: command

Imex export image from DB.

ACTIONS

Parameter		Function
channel	Channel	Channel.
destination	Destination	Destination.
file name	FilePath	File name.
picture time	PictureTime	Picture time.

Imex export event image

Action name: ImexExportEventImage (instance ID, event type, destination, file name)

Action category: command

Imex export event image.

Parameter		Function
instance ID	EventID	Instance ID of the event.
event type	TypeID	Type of the event.
destination	Destination	Destination.
file name	FilePath	File name.

Imex export image from live stream

Action name: ImexExportImageFromLiveStream (channel, destination, file name)

Action category: command

Imex export image from live stream.

ACTIONS

Parameter		Function
channel	Channel	Channel.
destination	Destination	Destination.
file name	FilePath	File name.

Lenel

Lenel OnGuard actions.

Lenel security event

Action name: LenelSecurityEvent (SubType, panel, device, secondary device, type, description, serial number, time stamp, server host, event text)

Action category: logical

Lenel OnGuard security event.

Parameter		Function
SubType	SubType	The SubType ID that uniquely identifies the type of this event.
panel	Panel	The name of the panel where this event originated.
device	Device	The name of the device where this event originated.
secondary device	SecondaryDevice	The ID of the secondary device where this event originated.
type	Type	Event type i.e., duress, system, etc.
description	Description	A human readable, brief

ACTIONS

Parameter		Function
		description of this event.
serial number	SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
time stamp	TimeStamp	Time stamp.
server host	CommServerHostName	Host name of the Communication server through which the event arrived.
event text	EventText	Text associated with event

Lenel access event

Action name: LenelAccessEvent (SubType, panel, device, secondary device, card number, access result, type, description, serial number, time stamp, area entered, area exited, asset ID, cardholder entered, duress, elevator floor, facility code, readable card, issue code, server host, event text)

Action category: logical

Lenel OnGuard access event.

Parameter		Function
SubType	SubType	The SubType ID that uniquely identifies the type of this event.
panel	Panel	The name of the panel where this event originated.
device	Device	The name of the device where this event originated.
secondary device	SecondaryDevice	The ID of the secondary device where this event originated.

ACTIONS

Parameter		Function
card number	CardNumber	The badge ID for the card that was read, if available.
access result	AccessResult	The level of access that was granted that resulted from reading the card.
type	Type	Event type i.e., duress, system, etc.
description	Description	A human readable, brief description of this event.
serial number	SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
time stamp	TimeStamp	Time stamp.
area entered	AreaEnteredID	The ID of the area that was entered, if any.
area exited	AreaExitedID	The ID of the area that was exited, if any.
asset ID	AssetID	The ID of the asset related to this event, if any.
cardholder entered	CardholderEntered	Whether entry was made by the cardholder.
duress	Duress	Indicates whether this card access indicates an under duress/emergency state.
elevator floor	ElevatorFloor	The elevator floor on which the access event was generated, if any.
facility code	FacilityCode	The facility code for the card that was read, if available.
readable	IsReadableCard	Whether the card could be

ACTIONS

Parameter		Function
card		read.
issue code	IssueCode	The issue code for the card that was read, if available.
server host	CommServerHostName	Host name of the Communication server through which the event arrived.
event text	EventText	Text associated with event

Lenel fire event

Action name: LenelFireEvent (SubType, panel, device, secondary device, trouble code, type, description, serial number, time stamp, server host, event text)

Action category: logical

Lenel OnGuard fire event.

Parameter		Function
SubType	SubType	The SubType ID that uniquely identifies the type of this event.
panel	Panel	The name of the panel where this event originated.
device	Device	The name of the device where this event originated.
secondary device	SecondaryDevice	The ID of the secondary device where this event originated.
trouble code	TroubleCode	A trouble code associated with the fire event.
type	Type	Event type i.e., duress, system,

ACTIONS

Parameter		Function
		etc.
description	Description	A human readable, brief description of this event.
serial number	SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
time stamp	TimeStamp	Time stamp.
server host	CommServerHostName	Host name of the Communication server through which the event arrived.
event text	EventText	Text associated with event

Lenel intercom event

Action name: LenelIntercomEvent (SubType, panel, device, secondary device, intercom data, line number, type, description, serial number, time stamp, server host, event text)

Action category: logical

Lenel OnGuard intercom event.

Parameter		Function
SubType	SubType	The SubType ID that uniquely identifies the type of this event.
panel	Panel	The name of the panel where this event originated.
device	Device	The name of the device where this event originated.
secondary device	SecondaryDevice	The ID of the secondary device where this event ori-

ACTIONS

Parameter		Function
		generated.
intercom data	IntercomData	Additional data for the intercom event that occurred.
line number	LineNumber	The line number involved in the intercom event.
type	Type	Event type i.e., duress, system, etc.
description	Description	A human readable, brief description of this event.
serial number	SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
time stamp	TimeStamp	Time stamp.
server host	CommServerHostName	Host name of the Communication server through which the event arrived.
event text	EventText	Text associated with event

Lenel video event

Action name: LenelVideoEvent (SubType, panel, device, secondary device, channel, type, description, serial number, time stamp, start stamp, end time, server host, event text)

Action category: logical

Lenel OnGuard video event.

Parameter		Function
SubType	SubType	The SubType ID that uniquely identifies the type of this event.

ACTIONS

Parameter		Function
panel	Panel	The name of the panel where this event originated.
device	Device	The name of the device where this event originated.
secondary device	SecondaryDevice	The ID of the secondary device where this event originated.
channel	Channel	The physical channel the camera is connected to that is creating this event.
type	Type	Event type i.e., duress, system, etc.
description	Description	A human readable, brief description of this event.
serial number	SerialNumber	A number that uniquely identifies the instance of the event for a particular panel.
time stamp	TimeStamp	Time stamp.
start stamp	StartTime	The time the video event started
end time	EndTime	The time the video event ended.
server host	CommServerHostName	Host name of the Communication server through which the event arrived.
event text	EventText	Text associated with event

Lenel generic event

Action name: LenelGenericEvent (ID, panel, device, secondary device, card number, description, time stamp)

ACTIONS

Action category: logical

Lenel OnGuard generic event.

Parameter		Function
ID	ID	The ID that uniquely identifies the type of this event.
panel	Panel	The name of the panel where this event originated.
device	Device	The name of the device where this event originated.
secondary device	SecondaryDevice	The ID of the secondary device where this event originated.
card number	CardNumber	The badge ID for the card that was read, if available.
description	Description	A human readable, brief description of this event.
time stamp	TimeStamp	Time stamp.

Lenel raw data

Action name: LenelRawData (time stamp, data)

Action category: logical

Lenel OnGuard raw data.

Parameter		Function
time stamp	TimeStamp	Time stamp.
data	LenelData	Lenel OnGuard data.

Lenel refresh names

Action name: LenelRefreshNames ()

ACTIONS

Action category: logical

Lenel OnGuard refresh names.

Lenel alarm input

Action name: LenelAlarmInput (method, data, host name, ID, panel ID, alarm panel ID, input ID)

Action category: logical

Lenel alarm input.

Parameter		Function
method	Method	Method.
data	Name	Data.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
alarm panel ID	AlarmPanelID	Alarm panel ID.
input ID	InputID	Input ID.

Lenel alarm input response

Action name: LenelAlarmInputResponse (method, data, host name, ID, panel ID, alarm panel ID, input ID, status)

Action category: logical

Lenel alarm input response.

Parameter		Function
method	Method	Method.

ACTIONS

Parameter		Function
data	Name	Data.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
alarm panel ID	AlarmPanelID	Alarm panel ID.
input ID	InputID	Input ID.
status	Status	Status.

Lenel alarm output

Action name: LenelAlarmOutput (method, data, host name, ID, panel ID, alarm panel ID, output ID, duration)

Action category: logical

Lenel alarm output.

Parameter		Function
method	Method	Method.
data	Name	Data.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
alarm panel ID	AlarmPanelID	Alarm panel ID.
output ID	OutputID	Output ID.
duration	Duration	Duration.

Lenel alarm output response

ACTIONS

Action name: LenelAlarmOutputResponse (method, data, host name, ID, panel ID, alarm panel ID, output ID, status)

Action category: logical

Lenel alarm output response.

Parameter		Function
method	Method	Method.
data	Name	Data.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
alarm panel ID	AlarmPanelID	Alarm panel ID.
output ID	OutputID	Output ID.
status	Status	Status.

Lenel alarm panel

Action name: LenelAlarmPanel (method, name, host name, ID, panel ID, control type)

Action category: logical

Lenel alarm panel.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.

ACTIONS

Parameter		Function
panel ID	PanelID	Panel ID.
control type	ControlType	Control type.

Lenel alarm panel response

Action name: LenelAlarmPanelResponse (method, name, host name, ID, panel ID, control type, status)

Action category: logical

Lenel alarm panel response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
control type	ControlType	Control type.
status	Status	Status.

Lenel intrusion area

Action name: LenelIntrusionArea (method, name, host name, ID, panel ID, area number, area type, arm state)

Action category: logical

Lenel intrusion area.

ACTIONS

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
area number	AreaNumber	Area number.
area type	AreaType	Area type.
arm state	ArmState	Arm state.

Lenel intrusion area response

Action name: LenelIntrusionAreaResponse (method, name, host name, ID, panel ID, area number, area type, status)

Action category: logical

Lenel intrusion area response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
area number	AreaNumber	Area number.
area type	AreaType	Area type.
status	Status	Status.

Lenel intrusion door

Action name: LenelIntrusionDoor (method, name, ID, panel ID, device ID, mode, host name)

Action category: logical

Lenel intrusion door.

Parameter		Function
method	Method	Method.
name	Name	Name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.
mode	Mode	Mode.
host name	Hostname	Host name.

Lenel intrusion door response

Action name: LenelIntrusionDoorResponse (method, name, host name, ID, panel ID, device ID, mode, status)

Action category: logical

Lenel intrusion door response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.

ACTIONS

Parameter		Function
device ID	DeviceID	Device ID.
mode	Mode	Mode.
status	Status	Status.

Lenel intrusion zone

Action name: LenelIntrusionZone (method, name, host name, ID, panel ID, device ID)

Action category: logical

Lenel intrusion zone.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.

Lenel intrusion zone response

Action name: LenelIntrusionZoneResponse (method, name, host name, ID, panel ID, device ID, status)

Action category: logical

Lenel intrusion zone response.

ACTIONS

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.
status	Status	Status.

Lenel intrusion zone output

Action name: LenelIntrusionZoneOutput (method, name, host name, ID, panel ID, device ID)

Action category: logical

Lenel intrusion zone output.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.

Lenel intrusion zone output response

Action name: LenelIntrusionZoneOutputResponse (method, name, host name, ID, panel ID, device ID, status)

ACTIONS

Action category: logical

Lenel intrusion zone output response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.
status	Status	Status.

Lenel off board relay output

Action name: LenelOffBoardRelayOutput (method, name, host name, ID, panel ID, device ID)

Action category: logical

Lenel off board relay output.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.

Lenel off board relay output response

ACTIONS

Action name: LenelOffBoardRelayOutputResponse (method, name, host name, ID, panel ID, device ID, status)

Action category: logical

Lenel off board relay output response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.
status	Status	Status.

Lenel on board relay output

Action name: LenelOnBoardRelayOutput (method, name, host name, ID, panel ID, device ID)

Action category: logical

Lenel on board relay output.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.

Lenel on board relay output response

Action name: LenelOnBoardRelayOutputResponse (method, name, host name, ID, panel ID, device ID, status)

Action category: logical

Lenel on board relay output response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
ID	ID	ID.
panel ID	PanelID	Panel ID.
device ID	DeviceID	Device ID.
status	Status	Status.

Lenel reader

Action name: LenelReader (method, name, host name, reader ID, panel ID, control type, type, value)

Action category: logical

Lenel reader.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.

ACTIONS

Parameter		Function
control type	ControlType	Control type.
type	Type	Type.
value	Value	Value.

Lenel reader response

Action name: LenelReaderResponse (method, name, host name, reader ID, panel ID, control type, type, Status)

Action category: logical

Lenel reader response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.
control type	ControlType	Control type.
type	Type	Type.
Status	Status	Status.

Lenel reader output 1

Action name: LenelReaderOutput1 (method, name, host name, reader ID, panel ID)

Action category: logical

Lenel reader output 1.

ACTIONS

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.

Lenel reader output 1 response

Action name: LenelReaderOutput1Response (method, name, host name, reader ID, panel ID, status)

Action category: logical

Lenel reader output 1 response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.
status	Status	Status.

Lenel reader output 2

Action name: LenelReaderOutput2 (method, name, host name, reader ID, panel ID)

Action category: logical

Lenel reader output 2.

ACTIONS

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.

Lenel reader output 2 response

Action name: LenelReaderOutput2Response (method, name, host name, reader ID, panel ID, status)

Action category: logical

Lenel reader output 2 response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.
status	Status	Status.

Lenel reader input 1

Action name: LenelReaderInput1 (method, name, host name, reader ID, panel ID)

Action category: logical

Lenel reader input 1.

ACTIONS

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.

Lenel reader input 1 response

Action name: LenelReaderInput1Response (method, name, host name, reader ID, panel ID, status)

Action category: logical

Lenel reader input 1 response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.
status	Status	Status.

Lenel reader input 2

Action name: LenelReaderInput2 (method, name, host name, reader ID, panel ID)

Action category: logical

Lenel reader input 2.

ACTIONS

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.

Lenel reader input 2 response

Action name: LenelReaderInput2Response (method, name, host name, reader ID, panel ID, status)

Action category: logical

Lenel reader input 2 response.

Parameter		Function
method	Method	Method.
name	Name	Name.
host name	Hostname	Host name.
reader ID	ReaderID	Reader ID.
panel ID	PanelID	Panel ID.
status	Status	Status.

Perimeter Protection

Perimeter protection.

PP subcell alarm

ACTIONS

Action name: PPSubcellAlarm (interface id, device address, cable, subcell, state)

Action category: notification

Perimeter protection subcell alarm.

Parameter		Function
interface id	InterfacelD	Interface ID.
device address	DeviceAddress	Device address.
cable	Cable	Cable.
subcell	Subcell	Subcell.
state	State	State.

PP device alarm

Action name: PPDeviceAlarm (interface id, device address, sensor, state)

Action category: notification

Perimeter protection device alarm.

Parameter		Function
interface id	InterfacelD	Interface ID.
device address	DeviceAddress	Device address.
sensor	Sensor	Sensor.
state	State	State.

PP zone alarm

Action name: PPZoneAlarm (zone id, interface id, device address, cable, subcell, state)

Action category: notification

ACTIONS

Perimeter protection zone alarm.

Parameter		Function
zone id	ZoneID	Zone ID.
interface id	InterfacelD	Interface ID.
device address	DeviceAddress	Device address.
cable	Cable	Cable.
subcell	Subcell	Subcell.
state	State	State.

PP device input

Action name: PPDeviceInput (interface id, device address, input, state)

Action category: notification

Perimeter protection device input.

Parameter		Function
interface id	InterfacelD	Interface ID.
device address	DeviceAddress	Device address.
input	Input	Input.
state	State	State.

PP set device output

Action name: PPSetDeviceOutput (interface id, device address, output, state)

Action category: command

Perimeter protection set device output.

ACTIONS

Parameter		Function
interface id	InterfaceID	Interface ID.
device address	DeviceAddress	Device address.
output	Output	Output.
state	State	State.

PP query interface

Action name: PPQueryInterface (interface id)

Action category: command

Perimeter protection query interface.

Parameter		Function
interface id	InterfaceID	Interface ID.

PP interface online

Action name: PPInterfaceOnline (interface id)

Action category: notification

Perimeter protection interface online.

Parameter		Function
interface id	InterfaceID	Interface ID.

PP interface offline

Action name: PPInterfaceOffline (interface id)

Action category: notification

Perimeter protection interface offline.

ACTIONS

Parameter		Function
interface id	InterfaceID	Interface ID.

PP device online

Action name: PPDeviceOnline (interface id, device address)

Action category: notification

Perimeter protection device online.

Parameter		Function
interface id	InterfaceID	Interface ID.
device address	DeviceAddress	Device address.

PP device offline

Action name: PPDeviceOffline (interface id, device address)

Action category: notification

Perimeter protection device offline.

Parameter		Function
interface id	InterfaceID	Interface ID.
device address	DeviceAddress	Device address.

POS

Points of sales (POS) Actions enable the exchange of accompanying meta data between POS Management Systems and G-Scopes. With these actions payment processes can be documented consistently by video. The use of these actions for start and re-start of event recordings leads to the output of accompanying meta data in live video in G-View as well as in the storage of those in the video data

ACTIONS

base. The video sequences recorded via POS Actions can easily be retrieved in G-View using the accompanying meta data und special data filter dialogs (optional) Besides the actions POSStatus and POSData for the general integration into POS Management Systems there are also POS actions which belong to special G-Core modules. The actions FillingPumpStatus, TerminalArticleData and TerminalPaymentData are used by the module "HUTH". The module "HUTH" is a G-Core media plugin, which was developed by GEUTEBRUECK, to integrate filling station management systems of the manufacturer HUTH Elektronik Systeme GmbH into G-Scopes. The driver is compatible to HUTH Video Interface T400/T450/Maxi/mini V1.2. The actions InterfaceRawData and InterfaceRawAnswer are also used by the driver "HUTH". But they only serve for debugging and fault analysis purpose. They can also be used in general for any link that the concerned action supports - respectively uses these actions. The action BarcodeData serves as a general integration of barcode scanners.

Interface raw data

Action name: InterfaceRawData (interface, time stamp, data)

Action category: notification

This action is used by the driver "HUTH". It serves only as a debug service and can also be used in general for any integration that supports or uses this action. The "HUTH" driver sends the action for each telegram it has received from the end device. The affected end device will be identified by the parameter "TerminalName". The "HUTH" driver can always build up numerous connections to different Huth devices. The driver then sends the alphanumerical value defined in its setup as "Interface name" The further parameter will be filled with video meta data by the driver.

Parameter		Function
interface	InterfaceName	Interface name.
time stamp	TimeStamp	Time stamp.
data	Data	Interface data.

Interface raw answer

Action name: InterfaceRawAnswer (interface, time stamp, answer)

Action category: notification

ACTIONS

This action is used by the "HUTH" driver. ". It serves only as a debug service and can also be used in general for any integration that supports or uses this action. The "HUTH" driver sends the action for each telegram it has sent to the end device. The affected end device will be identified by the parameter "TerminalName". The "HUTH" driver can always build up numerous connections to different Huth devices. The driver then sends the alphanumeric value defined in its setup as "Interface name" The further parameter will be filled with video meta data by the driver.

Parameter		Function
interface	InterfaceName	Interface name.
time stamp	TimeStamp	Time stamp.
answer	Data	Interface answer.

POS status

Action name: POSStatus (POS, time stamp, status, details)

Action category: notification

The POS management system sends the action as soon as the cash point is opened or closed or as soon as a cancellation will be made at a cash point. Via the parameter "POS" the concerned cash point will be identified. The further parameter will be filled with video meta data from the POS management system. The parameter "Status" can be addressed by the POS management system with a code figure for the currently notified status.

Parameter		Function
POS	POSName	POS name.
time stamp	TimeStamp	Time stamp.
status	Status	Status.
details	Details	Details.

POS data

ACTIONS

Action name: POSData (POS, time stamp, article, price, units, price per unit, line 1, line 2, line 3, line 4, line 5)

Action category: notification

The POS Management System sends the action for each transaction carried out at a cash point Via the parameter "POS"the affected cash point will be identified. The further parameter will be filled with video meta data by the POS Management System

Parameter		Function
POS	POSName	POS name.
time stamp	TimeStamp	Time stamp.
article	Article	Article description.
price	Price	Price.
units	Units	Number of units.
price per unit	PricePerUnit	Price per unit.
line 1	Line1	Line 1.
line 2	Line2	Line 2.
line 3	Line3	Line 3.
line 4	Line4	Line 4.
line 5	Line5	Line 5.

POS data extended

Action name: POSDataEx (POS, time stamp, article, price, units, price per unit, line 1, line 2, line 3, line 4, line 5, user ID, username, action type, value C (32-bit), value D (32-bit), value A (64-bit), value B (64-bit), value C (64-bit), value D (64-bit))

Action category: notification

Extended POS Data action with username, action type and several fields for integer values.

ACTIONS

Parameter		Function
POS	POSName	POS name.
time stamp	TimeStamp	Time stamp.
article	Article	Article description.
price	Price	Price.
units	Units	Number of units.
price per unit	PricePerUnit	Price per unit.
line 1	Line1	Line 1.
line 2	Line2	Line 2.
line 3	Line3	Line 3.
line 4	Line4	Line 4.
line 5	Line5	Line 5.
user ID	UserID	User ID of certain user.
username	Username	Name of user.
action type	Actiontype	Type of action.
value C (32-bit)	Int32FieldC	Additional data
value D (32-bit)	Int32FieldD	Additional data
value A (64-bit)	Int64FieldA	64 bit value A
value B (64-bit)	Int64FieldB	64 bit value B
value C (64-bit)	Int64FieldC	64 bit value C
value D (64-bit)	Int64FieldD	64 bit value D

Barcode data

Action name: BarcodeData (scanner, time stamp, code)

Action category: notification

ACTIONS

The POS Management System (or any other system like barcode scanner or similar) sends the action as soon as a barcode was read. Via the parameter "ReaderName" the affected barcode scanner will be identified. The further parameter will be filled with video meta data by the POS Management System.

Parameter		Function
scanner	ReaderName	Scanner name.
time stamp	TimeStamp	Time stamp.
code	Barcode	Barcode.

Filling pump status

Action name: FillingPumpStatus (terminal, time stamp, pump no, status, amount, price, details)

Action category: notification

The "HUTH" driver sends the action for each status change of one filling pump. Via the parameter "TerminalName" the concerned device will be identified. The "HUTH" driver is principally able to build up several connections to different Huth devices. The driver sends the alphanumerical value defined in his setup as "Interface name". The further parameter will be filled with video meta data by the driver.

Parameter		Function
terminal	TerminalName	Terminal name.
time stamp	TimeStamp	Time stamp.
pump no	PumpNo	Pump no.
status	Status	Status.
amount	Amount	Amount.
price	Price	Price.
details	Details	Details.

Terminal article data

Action name: TerminalArticleData (terminal, time stamp, cashier station, pump no, alarm, amount, price, details)

Action category: notification

The "Huth" driver sends the actions for each product-group-booking. Via the parameter "TerminalName" the affected device will be identified. The "HUTH" driver is principally able to build up several connections to different Huth devices. The driver sends the alphanumerical value defined in his setup as "Interface name". The further parameter will be filled with video meta data via the driver.

Parameter		Function
terminal	TerminalName	Terminal name.
time stamp	TimeStamp	Time stamp.
cashier station	CashierStation	Cashier station.
pump no	PumpNo	Pump no.
alarm	AlarmStatus	Alarm status.
amount	Amount	Amount.
price	Price	Price.
details	Details	Details.

Terminal payment data

Action name: TerminalPaymentData (terminal, time stamp, cashier station, pump no, alarm, amount, price, details)

Action category: notification

The "HUTH" driver sends the action for each termination of a booking with the used method of payment. Via the parameter "TerminalName" the affected device will be identified. The "HUTH" driver is principally able to build up several connections to different Huth devices. The driver sends the alphanumerical value defined in his setup as "Interface name". The further parameter will be filled with video meta data via the driver.

ACTIONS

Parameter		Function
terminal	TerminalName	Terminal name.
time stamp	TimeStamp	Time stamp.
cashier station	CashierStation	Cashier station.
pump no	PumpNo	Pump no.
alarm	AlarmStatus	Alarm status.
amount	Amount	Amount.
price	Price	Price.
details	Details	Details.

Gaming machine

Action name: GamingMachine (machine location, calltype, amount, player ID, event date time, currency ID, Bank number)

Action category: notification

With this action information from gaming machines can be stored in database.

Parameter		Function
machine location	MachineLocation	Location of gaming machine.
calltype	Calltype	Calltype of the action.
amount	Amount	Amount (currency may be determined by currency ID).
player ID	PlayerID	ID of the player/patron.
event date time	EventDateTime	The local date and local time that the event occurred.
currency ID	CurrencyID	With the currency ID the currency

ACTIONS

Parameter		Function
		may be determined.
Bank number	BankNumber	Bank number.

Remote Export

The actions of the category "Remote Export" subserve to start and control exports over the network. The actions are only at disposal if G-Core RemEx service runs on every device and a connection to a central GeViSoft server persists. The G-Core server and G-Core RemEx service have to run together on a local machine otherwise exports are not possible. The G-Core RemEx service has to be setup in advance by G-Core RemExEditor. The exports can be executed by a PILOT center device or other software systems (SDK based, GEUTEBRUECK devices). The PILOT is a system management console of GEUTEBRUECK which simplifies the handling of complex security systems. The PILOT among others can be used to control G-View. Especially in view of the fact of exports the user can define start and end points by the help of the PILOT through G-Core RemEx ("SetExportMarker" action). G-View remembers the points in time and inserts them to the action "StartRemoteExport". The action "StartRemoteExport" is initiated by G-View after the PILOT has send the action "InitializeRemoteExport" by indirection via the GeViSoft server and G-Core server to G-View. G-View sends the action "StartRemoteExport" to the G-Core RemEx service and triggers the appropriate export. Exports that have been started through G-Core RemEx service can be started or aborted from other devices or software systems over the network. Exports that have been started locally in G-View cannot be controlled from other devices or software systems. In the course of an export process no new export can be started. This export has to be restarted after the running export process has been completed! The actions "SetExportMarker" and "InitializeRemoteExport" have been developed especially for the PILOT.

Set export marker

Action name: SetExportMarker (viewer, marker)

Action category: command

This action is being used especially in the context of control units or systems like for example the PILOT. It indicates G-View that an export start and end point has to be set on the current position of viewer X. The so-

ACTIONS

called markers are being transferred automatically into the "StartRemoteExport" action once the "InitializeRemoteExport" action has been sent from the PILOT. The action "StartRemoteExport" transfers the start and end points to the G-Core RemEx service which conducts the appropriate export.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
marker	Marker	Marker kind.

Initialize remote export

Action name: InitializeRemoteExport (viewer, device GUID)

Action category: command

This action is being used especially in the context of control units or systems like for example the PILOT. The PILOT center device notifies G-View that a new export has to be initiated. Thereupon G-View creates the action "StartRemoteExport" with the appropriate parameters.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
device GUID	Device	Pilot device GUID.

Start remote export

Action name: StartRemoteExport (export GUID, device GUID, format, channel, start time, end time, job ID)

Action category: command

This action tells the G-Core RemEx service to start a new export. The action "StartRemoteExport" was created because the PILOT or another external software system did send the action "InitializeRemoteExport" to G-View before.

ACTIONS

Parameter		Function
export GUID	ExportID	Export GUID.
device GUID	Device	Pilot device GUID.
format	BackupFormat	Backup format.
channel	Channel	Channel.
start time	SelectionBegin	Start time.
end time	SelectionEnd	End time.
job ID	JobID	Job ID.

Export progress

Action name: ExportProgress (export GUID, progress)

Action category: notification

The G-Core RemEx service notifies the current status of the running export process in %.

Parameter		Function
export GUID	ExportID	Export GUID.
progress	Progress	Progress.

Export finished

Action name: ExportFinished (export GUID, success)

Action category: notification

The G-Core RemEx service notifies through this action that the running process was completed. Possible status messages are: user abort, low disc space, no user rights, error.

ACTIONS

Parameter		Function
export GUID	ExportID	Export GUID.
success	Success	Success.

Cancel export

Action name: CancelExport (export GUID, abort flag)

Action category: command

Through this action the running export process with the specified export ID is being aborted if G-View remote-controls the G-Core RemEx service. If the G-Core RemEx service is remote-controlled by an external application the external application has to send the action to abort the running export process.

Parameter		Function
export GUID	ExportID	Export GUID.
abort flag	AbortFlag	Abort flag.

Start scene store

Action name: StartSceneStore (scene store GUID, cut-list, pre-history length, recording length)

Action category: command

For internal use only!

Parameter		Function
scene store GUID	SceneStoreID	Scene store GUID.
cut-list	CutList	Cut-list.
pre-history length	PreHistoryLength	Pre-history length.
recording length	RecordingLength	Recording length.

Security Management Systems

Security Management Systems.

SMS door event

Action name: SMSDoorEvent (door state, request type, device name, device ID, time, server host, action ID)

Action category:

Any activity happened on a door.

Parameter		Function
door state	DoorState	State of the door.
request type	RequestType	Get or SET action.
device name	DeviceName	Name of the device.
device ID	DeviceID	ID of the device.
time	Time	Time of the event.
server host	ServerHost	Time of the event.
action ID	ActionID	Identification number of the action.

SMS card reader notification

Action name: SMSCardReaderNotification (access result, error code, card number, device name, device ID, time, server host, action ID)

Action category:

Any activity happened on a card reader.

Parameter		Function
access result	AccessResult	Access result of the card reader.

ACTIONS

Parameter		Function
error code	ErrorCode	Describes the error code of the card reader activity.
card number	CardNumber	Number / ID of the used card.
device name	DeviceName	Name of the device.
device ID	DeviceID	ID of the device.
time	Time	Time of the event.
server host	ServerHost	Name of the server host.
action ID	ActionID	Identification of the action.

SMS system information

Action name: SMSSystemInformation (status, information, time, server host, action ID)

Action category:

SMS system information.

Parameter		Function
status	Status	Status of the system.
information	Information	Additional information of the system.
time	Time	Time of the event.
server host	ServerHost	Name of the server host.
action ID	ActionID	Identification number of the action.

SMS I/O notification

ACTIONS

Action name: SMSIONotification (IO status, request type, device name, device ID, time, server host, action ID)

Action category:

SMS I/O notification.

Parameter		Function
IO status	Status	Describes the status of an input or output.
request type	RequestType	Get input or set output.
device name	DeviceName	Name of the device.
device ID	DeviceID	ID of the device.
time	Time	Time of the event.
server host	ServerHost	Name of the server host.
action ID	ActionID	Identification of the action.

SMS operator notification

Action name: SMSOperatorNotification (status, name, ID, time, server host, action ID)

Action category:

SMS operator notification.

Parameter		Function
status	Status	Describes the login status of an operator.
name	Name	Name of the operator.
ID	ID	Identification number of the Operator.

ACTIONS

Parameter		Function
time	Time	Time of the event.
server host	ServerHost	Name of the server host.
action ID	ActionID	Identification number of the action.

SMS intercommunication notification

Action name: SMSIntercomNotification (Information, Caller, Callee, device Name, device ID, time, server host, action ID)

Action category:

SMS intercommunication notification.

Parameter		Function
Information	Information	Information of the caller.
Caller	Caller	Name of the caller.
Callee	Callee	Name of the callee.
device name	DeviceName	Name of the device.
device ID	DeviceID	ID of the device.
time	Time	Time of the event.
server host	ServerHost	Name of the server host.
action ID	ActionID	Identification number of the action.

SKIDATA

SKIDATA messages.

SKIDATA control

Action name: SkidataControl (interface, state)

ACTIONS

Action category: logical

SKIDATA control information.

Parameter		Function
interface	InterfaceName	Interface name.
state	Data	Interface state.

SKIDATA entry

Action name: SkidataEntry (interface, message, transaction, car park, device)

Action category: logical

SKIDATA entry.

Parameter		Function
interface	InterfaceName	Interface name.
message	MessageCode	Message code.
transaction	TransactionID	Transaction ID.
car park	CarParkNo	Car park no.
device	DeviceID	Device ID.

SKIDATA exit

Action name: SkidataExit (interface, message, transaction, car park, device)

Action category: logical

SKIDATA exit.

ACTIONS

Parameter		Function
interface	InterfaceName	Interface name.
message	MessageCode	Message code.
transaction	TransactionID	Transaction ID.
car park	CarParkNo	Car park no.
device	DeviceID	Device ID.

SKIDATA transaction

Action name: SkidataTransaction (interface, message, transaction, car park, device)

Action category: logical

SKIDATA transaction.

Parameter		Function
interface	InterfaceName	Interface name.
message	MessageCode	Message code.
transaction	TransactionID	Transaction ID.
car park	CarParkNo	Car park no.
device	DeviceID	Device ID.

SKIDATA device event

Action name: SkidataDeviceEvent (interface, device, event code)

Action category: logical

SKIDATA device event.

Parameter		Function
interface	InterfaceName	Interface name.
device	DeviceID	Device ID.
event code	EventCode	Event code.

Supply Chain Security

Supply chain security actions are used in the logistic environment where meta data, e.g. barcodes, is used to start recording events. Later, a research on the barcodes is done to show the scanning operation in the recorded images. To speed up the search, a CRC32 checksum is used as a hash and serves as a foreign key of the event startd. The foreign key is indexed in the event table and can therefore be found much faster than a lookup on the string itself. Additional parameters are used to notify positioning information since the assignment of scanning and recording camera is often done according to the position of the scanner.

Log barcode data

Action name: LogBarcodeData (barcode, hash value, scanner name, area number, area name, channel, time stamp, order number, shipment number, item number)

Action category: notification

Logistic barcode data .

Parameter		Function
barcode	Barcode	Barcode.
hash value	Hash	Hash value.
scanner name	Scanner	Scanner name or IP address.
area number	AreaID	Area number.
area name	AreaName	Area name.

ACTIONS

Parameter		Function
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
order number	Order	Order number.
shipment number	Shipment	Shipment number.
item number	Item	Item number.

Log barcode data LPS

Action name: LogBarcodeDataLPS (barcode, hash value, scanner name, area number, area name, channel, time stamp, X coordinate, Y coordinate, Z coordinate, LPS tag ID, LPS status, LPS cell ID, LPS area ID, user param, order number, shipment number, item number)

Action category: notification

Logistic barcode data including positioning and area information.

Parameter		Function
barcode	Barcode	Barcode.
hash value	Hash	Hash value.
scanner name	Scanner	Scanner name or IP address.
area number	AreaID	Area number.
area name	AreaName	Area name.
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
X coordinate	X	X coordinate.
Y coordinate	Y	Y coordinate.

ACTIONS

Parameter		Function
Z coordinate	Z	Z coordinate.
LPS tag ID	LpsTagID	LPS tag ID.
LPS status	LpsStatus	LPS status.
LPS cell ID	LpsCellID	LPS cell ID.
LPS area ID	LpsAreaID	LPS area ID.
user param	UserParam	User param.
order number	Order	Order number.
shipment number	Shipment	Shipment number.
item number	Item	Item number.

Log NPR recognition

Action name: LogNPRRecognition (plate no., hash value, country, channel, time stamp, restriction, category)

Action category: logical

Log NPR recognition.

Parameter		Function
plate no.	PlateNo	Recognized plate no.
hash value	Hash	Hash value.
country	Country	Country.
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
restriction	Restriction	Restriction of recognized number.
category	Category	Category of recognized number.

Log barcode ID

Action name: LogBarcodeID (ID, hash value, ID2, type, scanner name, area number, area name, channel, time stamp, order number, shipment number, item number)

Action category: notification

Logistic barcode action with two generic IDs for data search.

Parameter		Function
ID	ID	ID1.
hash value	Hash	Hash value.
ID2	ID2	ID2.
type	Type	ID type.
scanner name	Scanner	Scanner name or IP address.
area number	AreaID	Area number.
area name	AreaName	Area name.
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
order number	Order	Order number.
shipment number	Shipment	Shipment number.
item number	Item	Item number.

Log barcode order ID

Action name: LogBarcodeOrderID (scanner name, area, order number, item number, item order quantity, actual item quantity, time stamp, area number, channel)

Action category: notification

Logistic barcode order ID.

ACTIONS

Parameter		Function
scanner name	Scanner	Scanner name or IP address.
area	Area	Area.
order number	Order	Order number.
item number	Item	Item number.
item order quantity	ItemOrderQty	Item order quantity.
actual item quantity	ActualItemQty	Actual item quantity.
time stamp	TimeStamp	Time stamp.
area number	AreaID	Area number.
channel	Channel	Channel.

Axle load

Action name: AxleLoad (toll gate number, lane no, time stamp, max axle no, max axle load, total weight, axle no, plate no, type)

Action category: notification

Action used to document weight data on toll stations.

Parameter		Function
toll gate number	TollGateNumber	Number of toll gate.
lane no	LaneNo	Number of lane.
time stamp	TimeStamp	Date and time.
max axle no	MaxAxleNo	Number of axels.
max axle load	MaxAxleLoad	Maximum weight on axle.
total weight	TotalWeight	Total weight of vehicle.

ACTIONS

Parameter		Function
axle no	AxleNo	Current axle number on the weight.
plate no	PlateNo	Number plate of the vehicle.
type	Type	Type of vehicle.

Plaza transaction

Action name: PlazaTransaction (header data, data type, plaza no, lane no, job no, common txn no, txn number, BOJ date time, operational date, job type, lane type, operation mode, other data)

Action category: notification

Action used to document events happening at toll lanes.

Parameter		Function
header data	HeaderData	Header data.
data type	DataType	Data type.
plaza no	PlazaNo	Plaza no.
lane no	LaneNo	Lane no.
job no	JobNo	Job no.
common txn no	CommonTrxnNo	Common transaction no.
txn number	TrxnNo	Transaction number.
BOJ date time	BOJDateTime	Beginning of the job.
operational date	OperationalDate	Operational date.
job type	JobType	Job type.
lane type	LaneType	Lane type.
operation mode	OperationMode	Operation mode.
other data	OtherData	Other data.

G-SCS vehicle access denied

Action name: GSCSVehicleAccessDenied (sequence ID, plate no., time stamp, company category, company name, reason, traffic lane, channel, direction)

Action category: notification

G-SCS vehicle access denied.

Parameter		Function
sequence ID	SequenceID	The sequence ID.
plate no.	PlateNo	Recognized plate no.
time stamp	TimeStamp	Time stamp.
company category	CompanyCategory	Company category.
company name	CompanyName	Company name.
reason	Reason	Reason.
traffic lane	TrafficLane	Traffic lane.
channel	Channel	Channel.
direction	Direction	Direction.

G-SCS vehicle access granted

Action name: GSCSVehicleAccessGranted (sequence ID, plate no., time stamp, company category, company name, reason, traffic lane, channel, direction)

Action category: notification

G-SCS vehicle access granted.

Parameter		Function
sequence ID	SequenceID	The sequence ID.

ACTIONS

Parameter		Function
plate no.	PlateNo	Recognized plate no.
time stamp	TimeStamp	Time stamp.
company category	CompanyCategory	Company category.
company name	CompanyName	Company name.
reason	Reason	Reason.
traffic lane	TrafficLane	Traffic lane.
channel	Channel	Channel.
direction	Direction	Direction.

G-SCS vehicle access expired

Action name: GSCSVehicleAccessExpired (sequence ID, plate no., time stamp, expiring time, company category, company name, reason, traffic lane, channel, direction)

Action category: notification

G-SCS vehicle access expired.

Parameter		Function
sequence ID	SequenceID	The sequence ID.
plate no.	PlateNo	Recognized plate no.
time stamp	TimeStamp	Time stamp.
expiring time	ExpiringTime	Expiring time.
company category	CompanyCategory	Company category.
company name	CompanyName	Company name.
reason	Reason	Reason.

ACTIONS

Parameter		Function
traffic lane	TrafficLane	Traffic lane.
channel	Channel	Channel.
direction	Direction	Direction.

G-SCS vehicle access pending

Action name: GSCSVehicleAccessPending (sequence ID, plate no., time stamp, company category, company name, reason, traffic lane, channel, direction)

Action category: notification

G-SCS vehicle access pending.

Parameter		Function
sequence ID	SequenceID	The sequence ID.
plate no.	PlateNo	Recognized plate no.
time stamp	TimeStamp	Time stamp.
company category	CompanyCategory	Company category.
company name	CompanyName	Company name.
reason	Reason	Reason.
traffic lane	TrafficLane	Traffic lane.
channel	Channel	Channel.
direction	Direction	Direction.

System Actions

All actions describing system behaviour.

System started

ACTIONS

Action name: SystemStarted (start time)

Action category: logical

This action will be fired only once at the system start-up.

Parameter		Function
start time	Date	Time of the system start-up.

System terminating

Action name: SystemTerminating (stop time, Windows shutdown)

Action category: logical

This action will be fired when the system is going to be shut down.

Parameter		Function
stop time	Date	Time of the system shutdown.
Windows shutdown	WindowsShutdown	Indicates whether the system shutdown is done due to the windows shutdown.

User login

Action name: UserLogin (first user, second user, remote host, client host, client type, client account)

Action category: logical

This action will be fired when the user has connected to the system.

Parameter		Function
first user	User1	Name of the user connected to the system.
second	User2	Name of the second user by four eyes

ACTIONS

Parameter		Function
user		authentication.
remote host	Host	Host from where the connection is done.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

User login failed

Action name: UserLoginFailed (first user, second user, remote host, reject reason, client host, client type, client account)

Action category: logical

This action will be fired when the user has tried to connect to the system but was rejected.

Parameter		Function
first user	User1	Name of the user who tried to connect to the system.
second user	User2	Name of the second user by four eyes authentication.
remote host	Host	Host from where the connection is done.
reject reason	RejectReason	Reason of the rejection.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

User logout

Action name: UserLogout (first user, second user, remote host, client host, client type, client account)

Action category: logical

This action will be fired when the user has disconnected from the system.

Parameter		Function
first user	User1	Name of the user disconnected from the system.
second user	User2	Name of the second user by four eyes authentication.
remote host	Host	Host from where the connection was done.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

System settings changed

Action name: SystemSettingsChanged (setup changed, first user, second user, remote host, time range changed, current time range, licence changed, change time)

Action category: logical

Setup of the system and/or the current time range changed.

Parameter		Function
setup changed	SetupChanged	System setup has changed.
first user	User1	Name of the user who modified the setup.

ACTIONS

Parameter		Function
second user	User2	Name of the second user by four eyes authentication.
remote host	Host	Host from where the connection was done.
time range changed	TimeRangeChanged	Time range has changed.
current time range	TimeRange	Currently active time range.
licence changed	LicenceChanged	Licence has changed.
change time	Date	Time of the system settings changed.

Setup upload progress

Action name: SetupUploadProgress (first user, second user, remote host, progress %, current time)

Action category: logical

Setup upload progress.

Parameter		Function
first user	User1	Name of the user who modified the setup.
second user	User2	Name of the second user by four eyes authentication.
remote host	Host	Host from where the connection was done.
progress %	Progress	Progress in percent.
current time	Date	Current stage time.

Setup changed

Action name: SetupChanged (user name, remote host, current time, resource kind, resource ID, change kind, details, client host, client type, client account)

Action category: logical

Setup changed.

Parameter		Function
user name	User	Name of the user who modified the setup.
remote host	Host	Host from where the connection was done.
current time	Date	Current time.
resource kind	ResourceKind	Modified resource kind.
resource ID	ResourceID	Modified resource ID.
change kind	ChangeKind	Change kind.
details	Details	Details of the modification.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

Set clock

Action name: SetClock (current time)

Action category: logical

Set clock.

ACTIONS

Parameter		Function
current time	Date	Current time.

Live check

Action name: LiveCheck (counter, time stamp)

Action category: logical

This action will be fired every 10 seconds and is intended for use as live check.

Parameter		Function
counter	Counter	This is the number of already fired live check actions.
time stamp	Date	Current server time.

Custom action

Action name: CustomAction (INT parameter, STRING parameter)

Action category: logical

This action has no side effects and can be used for customer purposes.

Parameter		Function
INT parameter	Int	Numeric parameter.
STRING parameter	String	Literal parameter.

Custom action extended

ACTIONS

Action name: CustomActionEx (value A (64-bit), value B (64-bit), value C (64-bit), value D (64-bit), value A (32-bit), value B (32-bit), value C (32-bit), value D (32-bit), text A, text B, text C, text D, time stamp A, time stamp B, value A (double), value B (double))

Action category: logical

With the CustomActionEx action all DB fields can be used within one unspecific action. All available database fields can be set to a certain value.

Parameter		Function
value A (64-bit)	Int64FieldA	64 bit value A.
value B (64-bit)	Int64FieldB	64 bit value B.
value C (64-bit)	Int64FieldC	64 bit value C.
value D (64-bit)	Int64FieldD	64 bit value D.
value A (32-bit)	Int32FieldA	32 bit value A.
value B (32-bit)	Int32FieldB	32 bit value B.
value C (32-bit)	Int32FieldC	32 bit value C.
value D (32-bit)	Int32FieldD	32 bit value D.
text A	StringFieldA	string value A.
text B	StringFieldB	string value B.
text C	StringFieldC	string value C.
text D	StringFieldD	string value D.
time stamp A	DateFieldA	time stamp value A.
time stamp B	DateFieldB	time stamp value B.
value A (double)	DoubleFieldA	double value A.
value B (double)	DoubleFieldB	double value B.

Database started

ACTIONS

Action name: DatabaseStarted (status, total size)

Action category: logical

This action will be fired at the database start-up.

Parameter		Function
status	Status	Database status message.
total size	TotalSize	Database total size.

FRC notification

Action name: FRCNotification (notification, param, description, additional info)

Action category: logical

FRC notification.

Parameter		Function
notification	Notification	Notification reason.
param	Param	Additional parameter.
description	Description	Optional notification text.
additional info	XMLInfo	Optional additional info (usually as XML string).

Redundant power failure

Action name: RedundantPowerFailure ()

Action category: logical

This action is notified if a failure of the redundant power supply is detected.

Redundant power ok

ACTIONS

Action name: RedundantPowerOk ()

Action category: logical

This action is notified if a failure of the redundant power supply is removed.

IP switch operation

Action name: IPSwitchOperation (operation, port no, parameter)

Action category: logical

IP switch operation.

Parameter		Function
operation	Operation	Operation.
port no	Port	Port no, IP address, MAC address.
parameter	Param	Optional parameter.

System info

Action name: SystemInfo (source subsystem, message code, description, additional info)

Action category: logical

Notify system information.

Parameter		Function
source sub-system	Source	Source of the message.
message code	Message	Kind of the message.
description	Description	Optional description of the message.
additional info	XMLInfo	Optional additional info (usually as XML string).

System warning

Action name: SystemWarning (source subsystem, message code, Windows error code, description, additional info)

Action category: logical

Notify system warning.

Parameter		Function
source sub-system	Source	Source of the message.
message code	Message	Kind of the message.
Windows error code	WindowsError	Optional Windows error code.
description	Description	Optional description of the message.
additional info	XMLInfo	Optional additional info (usually as XML string).

System error

Action name: SystemError (source subsystem, message code, Windows error code, description, additional info)

Action category: logical

Notify system error.

Parameter		Function
source sub-system	Source	Source of the message.
message code	Message	Kind of the message.
Windows error code	WindowsError	Optional Windows error code.

ACTIONS

Parameter		Function
description	Description	Optional description of the message.
additional info	XMLInfo	Optional additional info (usually as XML string).

Set watchdog

Action name: SetWatchdog (timeout)

Action category: logical

Set watchdog.

Parameter		Function
timeout	Timeout	Timeout in seconds, before the watchdog must be retriggered and before the hardware watchdog will set the hardware contact.

Start event

Action name: StartEvent (event type, foreign key)

Action category: logical

Start event.

Parameter		Function
event type	TypeID	Type of the event.
foreign key	ForeignKey	Optional foreign key used to store with alarm.

Stop event

Action name: StopEvent (event type)

ACTIONS

Action category: logical

Stop event.

Parameter		Function
event type	TypeID	Type of the event.

Stop event by instance

Action name: StopEventByID (instance ID)

Action category: logical

Stop event by instance ID.

Parameter		Function
instance ID	EventID	Instance ID of the event.

Event started

Action name: EventStarted (instance ID, event type, foreign key)

Action category: logical

Event has started.

Parameter		Function
instance ID	EventID	Instance ID of the event.
event type	TypeID	Type of the event.
foreign key	ForeignKey	Optional foreign key used to start the alarm.

Event stopped

Action name: EventStopped (instance ID, event type)

ACTIONS

Action category: logical

Event has stopped.

Parameter		Function
instance ID	EventID	Instance ID of the event.
event type	TypeID	Type of the event.

Event recording changed

Action name: EventRecordingChanged (instance ID, event type)

Action category: logical

Event recording settings are changed.

Parameter		Function
instance ID	EventID	Instance ID of the event.
event type	TypeID	Type of the event.

Stop all events

Action name: StopAllEvents ()

Action category: logical

Stop all active events.

Kill event

Action name: KillEvent (event type)

Action category: logical

Kill event.

ACTIONS

Parameter		Function
event type	TypeID	Type of the event.

Kill event by instance

Action name: KillEventByID (instance ID)

Action category: logical

Kill event by instance ID.

Parameter		Function
instance ID	EventID	Instance ID of the event.

Kill all events

Action name: KillAllEvents ()

Action category: logical

Kill all active events.

Info event

Action name: InfoEvent (instance ID, status, foreign key, note)

Action category: notification

Info event.

Parameter		Function
instance ID	EventID	Instance ID of the event.
status	Status	Status.
foreign key	ForeignKey	Optional foreign key.
note	Note	Note.

ACTIONS

Blocking filter activate

Action name: BlockingFilterActivate (filter)

Action category: logical

Blocking filter activate.

Parameter		Function
filter	Filter	Blocking filter.

Blocking filter deactivate

Action name: BlockingFilterDeactivate (filter)

Action category: logical

Blocking filter deactivate.

Parameter		Function
filter	Filter	Blocking filter.

GPS data result

Action name: GPSResult (time, longitude, latitude, speed)

Action category: logical

GPS data Result

Parameter		Function
time	Time	Time stamp.
longitude	Longitude	Longitude
latitude	Latitude	Latitude
speed	Speed	speed.

GPS status changed

Action name: GPSStatus (status)

Action category: logical

GPS Status changed

Parameter		Function
status	Status	Status.

Livestreamproxy connection count

Action name: LiveStreamProxyConnectionCount (time, nvr guid, live stream count, warning level)

Action category: logical

LiveStreamProxy Connection Count.

Parameter		Function
time	Time	Time stamp.
nvr guid	NVRGUID	NVR GUID.
live stream count	LiveStreamCount	Live Stream Count.
warning level	WarningLevel	Warning Level.

Replication started

Action name: ReplicationStarted (Server name, Server GUID, Database GUID)

Action category: notification

The replication was started.

ACTIONS

Parameter		Function
Server name	ServerName	Source server name.
Server GUID	ServerGuid	Source server GUID.
Database GUID	DatabaseGuid	Source database GUID.

Replication progress

Action name: ReplicationProgress (Server name, Server GUID, Database GUID, Current sample id, Current sample time, Read only mode is active, Newest sample id, Newest sample time)

Action category: notification

The replication is in progress.

Parameter		Function
Server name	ServerName	Source server name.
Server GUID	ServerGuid	Source server GUID.
Database GUID	DatabaseGuid	Source database GUID.
Current sample id	CurrentSampleId	Current replicated sample id.
Current sample time	CurrentSampleTime	Current replicated sample time.
Read only mode is active	ReadOnlyModeActive	The read only mode of the source database is active.
Newest sample id	NewestSampleId	Newest sample id on source server.
Newest sample time	NewestSampleTime	Newest sample time on source server.

Replication finished

ACTIONS

Action name: ReplicationFinished (Server name, Server guid, Database GUID)

Action category: notification

The replication was finished.

Parameter		Function
Server name	ServerName	Source server name.
Server guid	ServerGuid	Source server guid.
Database GUID	DatabaseGuid	Source database GUID.

Replication stopped

Action name: ReplicationStopped (Server name, Server guid, Database GUID)

Action category: notification

The replication was stopped.

Parameter		Function
Server name	ServerName	Source server name.
Server guid	ServerGuid	Source server guid.
Database GUID	DatabaseGuid	Source database GUID.

Read only mode has changed

Action name: DatabaseReadOnlyModeChanged (Server guid, Database GUID, Read only mode is active)

Action category: notification

The state of the read only mode has changed.

ACTIONS

Parameter		Function
Server guid	ServerGuid	Source server guid.
Database GUID	DatabaseGuid	Source database GUID.
Read only mode is active	ReadOnlyModeActive	The read only mode of the source database is active.

Database recording info total

Action name: DatabaseRecordingInfoTotal (no video recording, no audio recording, no recording, video samples/s, video samples MB/s, audio samples/s, audio samples MB/s, write wait %, total capacity, free capacity, allocated capacity, oldest item, recording depth, estimated required capacity, required capacity factor, required capacity available)

Action category: logical

Database recording info total.

Parameter		Function
no video recording	NoVideoRecording	Video is recording or not.
no audio recording	NoAudioRecording	Audio is recording or not.
no recording	NoRecordingAtAll	Video and/or audio is recording or not.
video samples/s	VideoSamplesPerSecond	Video samples per second.
video samples MB/s	VideoMBPerSecond	Video MB per second.
audio samples/s	AudioSamplesPerSecond	Audio samples per second.
audio samples MB/s	AudioMBPerSecond	Audio MB per second.

ACTIONS

Parameter		Function
write wait %	WriteWaitTimesPercent	Write waiting times in percent.
total capacity	TotalCapacity	Total capacity.
free capacity	FreeCapacity	Free capacity.
allocated capacity	AllocatedCapacity	Allocated capacity.
oldest item	OldestItem	Time stamp of the oldest item.
recording depth	RecordingDepth	Recording depth in hours.
estimated required capacity	EstimatedRequiredCapacity	Estimated required capacity.
required capacity factor	RequiredCapacityFactor	Required capacity factor.
required capacity available	RequiredCapacityAvailable	Required capacity available.

Database recording info per ring

Action name: DatabaseRecordingInfoRing (database ring, no video recording, no audio recording, no recording, video samples/s, video samples MB/s, audio samples/s, audio samples MB/s, write wait %, ring capacity, oldest item, recording depth, estimated required capacity)

Action category: logical

Database recording info per ring.

Parameter		Function
database ring	DatabaseRing	Database ring.

ACTIONS

Parameter		Function
no video recording	NoVideoRecording	Video is recording or not.
no audio recording	NoAudioRecording	Audio is recording or not.
no recording	NoRecordingAtAll	Video and/or audio is recording or not.
video samples/s	VideoSamplesPerSecond	Video samples per second.
video samples MB/s	VideoMBPerSecond	Video MB per second.
audio samples/s	AudioSamplesPerSecond	Audio samples per second.
audio samples MB/s	AudioMBPerSecond	Audio MB per second.
write wait %	WriteWaitTimesPercent	Write waiting times in percent.
ring capacity	RingCapacity	Ring capacity.
oldest item	OldestItem	Time stamp of the oldest item.
recording depth	RecordingDepth	Recording depth in hours.
estimated required capacity	EstimatedRequiredCapacity	Estimated required capacity.

Database recording info per channel

Action name: DatabaseRecordingInfoChannel (channel, no video recording, no audio recording, no recording, video samples/s, video samples MB/s, audio samples/s, audio samples MB/s)

Action category: logical

ACTIONS

Database recording info per channel.

Parameter		Function
channel	Channel	Channel.
no video recording	NoVideoRecording	Video is recording or not.
no audio recording	NoAudioRecording	Audio is recording or not.
no recording	NoRecordingAtAll	Video and/or audio is recording or not.
video samples/s	VideoSamplesPerSecond	Video samples per second.
video samples MB/s	VideoMBPerSecond	Video MB per second.
audio samples/s	AudioSamplesPerSecond	Audio samples per second.
audio samples MB/s	AudioMBPerSecond	Audio MB per second.

GEMOS alarm

Action name: GEMOSalarm (GEMOS key, GEMOS int, GEMOS str)

Action category: logical

GEMOS alarm notification.

Parameter		Function
GEMOS key	GEMOSkey	GEMOS alarm key.
GEMOS int	GEMOSint	GEMOS alarm integer parameter.
GEMOS str	GEMOSstr	GEMOS alarm string parameter.

ACTIONS

GHealth alarm

Action name: GHealthAlarm (GHealth ID, GHealth alarm type code, GHealth alarm type name, GHealth device ID, GHealth device, GHealth rule ID, GHealth priority, GHealth alarm value, GHealth message, GHealth time stamp, GHealth alarm state)

Action category: logical

GHealth alarm notification.

Parameter		Function
GHealth ID	ID	GHealth instance ID.
GHealth alarm type code	AlarmTypeCode	GHealth alarm type code.
GHealth alarm type name	AlarmTypeName	GHealth alarm type name.
GHealth device ID	DeviceID	GHealth device ID.
GHealth device	Device	GHealth device.
GHealth rule ID	RuleId	GHealth rule ID.
GHealth priority	Priority	GHealth priority.
GHealth alarm value	AlarmValue	GHealth alarm value.
GHealth message	Message	GHealth message.
GHealth time stamp	TimeStamp	GHealth time stamp.
GHealth alarm state	AlarmState	GHealth alarm state.

SMTP mail

Action name: SMTPMailSend (subject, to, cc, body, channel)

Action category: logical

This action will send a user defined email if G-Mail is connected

ACTIONS

Parameter		Function
subject	Subject	Mail subject.
to	To	Mail recipients.
cc	Cc	Carbon copy recipients.
body	Body	Mail body.
channel	Channel	Channel.

Transfer binary buffer

Action name: TransferBinaryBuffer (internal handle, parameter)

Action category: logical

Transfer binary buffer.

Parameter		Function
internal handle	InternalHandle	Internal handle.
parameter	Parameter	Parameter.

Transfer binary channel buffer

Action name: TransferBinaryChannelBuffer (channel, internal handle, parameter)

Action category: logical

Transfer binary channel buffer.

Parameter		Function
channel	Channel	Channel.
internal handle	InternalHandle	Internal handle.
parameter	Parameter	Parameter.

SMRP viewer connected

Action name: SMRPViewerConnected (server, channel)

Action category: logical

SMRP viewer connected to the camera.

Parameter		Function
server	Server	Server name.
channel	Channel	Channel.

SMRP viewer cleared

Action name: SMRPViewerCleared ()

Action category: logical

SMRP viewer cleared.

System timer start

Action name: SystemTimerStart (timer ID, timer name)

Action category: command

This action starts a system timer.

Parameter		Function
timer ID	TimerID	Timer ID.
timer name	TimerName	Timer name.

System timer stop

Action name: SystemTimerStop (timer ID, timer name)

Action category: command

This action stops a system timer.

ACTIONS

Parameter		Function
timer ID	TimerID	Timer ID.
timer name	TimerName	Timer name.

CAN Bus data

Action name: CANBusData (Type, Vehicle ID, Vehicle description, Value, Lower limit, Upper limit, Auxillary data)

Action category: logical

CAN Bus alarm data, including current values and limits

Parameter		Function
Type	Type	Type of data
Vehicle ID	ID	Vehicle ID (Name, License plate etc.)
Vehicle description	Description	Vehicle description
Value	Value	Current value
Lower limit	LowerLimit	Lower action limit
Upper limit	UpperLimit	Upper action limit
Auxillary data	AuxillaryData	Auxillary data

Keep Alive Signal

Action name: KeepAliveSignal (Type of device, Address, ConnectionAlive)

Action category: notification

States whether the connection to a specific device is established.

ACTIONS

Parameter		Function
Type of device	Type	Type of device which is (not) connected.
Address	Address	Address of the module tho which the connection is alive.
ConnectionAlive	ConnectionAlive	Indicates whether the connection is alive or not.

Video Content Analytics

Video content analytics

G-Tect/AD alarm

Action name: GTectADAlarm (channel, Area ID, Object Direction, Alarm area)

Action category: logical

This action will be fired when G-Tect/AD Video content analysis detects an alarm.

Parameter		Function
channel	Channel	Channel.
Area ID	AreaID	Area ID
Object Direction	ObjectDirection	Object Direction
Alarm area	AlarmArea	Alarm area.

G-Tect/AD alarm finished

Action name: GTectADAlarmFinished (channel, Area ID)

Action category: logical

This action will be fired when the alarm is finished.

ACTIONS

Parameter		Function
channel	Channel	Channel.
Area ID	AreaID	Area ID

G-Tect/AD report

Action name: GTectADReport (channel, Report data)

Action category: logical

This action will be fired to report status of the Activity detection.

Parameter		Function
channel	Channel	Channel.
Report data	ReportData	Report data

G-Tect/VMD alarm

Action name: GTectVMDAlarm (channel, VMD alarm group, VMD zone, VMD cycle, alarm area)

Action category: logical

This action will be fired when VMD detects an alarm.

Parameter		Function
channel	Channel	Channel.
VMD alarm group	VMDGroup	VMD alarm group.
VMD zone	VMDZone	VMD zone nr.
VMD cycle	VMDCycle	VMD measure cycle.
alarm area	AlarmArea	Alarm area.

G-Tect/VMD alarm finished

Action name: GTectVMDAlarmFinished (channel)

Action category: logical

This action will be fired when the alarm is finished.

Parameter		Function
channel	Channel	Channel.

G-Tect/VMD inhibit alarm

Action name: GTectVMDInhibitAlarm (channel, VMD alarm group, VMD zone, VMD cycle, alarm area)

Action category: logical

This action will be fired when VMD detects an alarm.

Parameter		Function
channel	Channel	Channel.
VMD alarm group	VMDGroup	VMD alarm group.
VMD zone	VMDZone	VMD zone nr.
VMD cycle	VMDCycle	VMD measure cycle.
alarm area	AlarmArea	Alarm area.

G-Tect/VMD inhibit alarm finished

Action name: GTectVMDInhibitAlarmFinished (channel)

Action category: logical

This action will be fired when the alarm is finished.

Parameter		Function
channel	Channel	Channel.

G-Tect/VMD report

Action name: GTectVMDReport (channel, Report data)

Action category: logical

This action will be fired to report status of the Activity detection.

Parameter		Function
channel	Channel	Channel.
Report data	ReportData	Report data

G-Tect/Scene validation alarm

Action name: GTectSceneValidationAlarm (channel, Area ID)

Action category: logical

This action will be fired when G-Tect SV Video content analysis detects an alarm.

Parameter		Function
channel	Channel	Channel.
Area ID	ReportData	Area ID

G-Tect/SV alarm finished

Action name: GTectSceneValidationAlarmFinished (channel)

Action category: logical

This action will be fired when the alarm is finished.

Parameter		Function
channel	Channel	Channel.

G-Tect/SV report

ACTIONS

Action name: GTectSceneValidationReport (channel, Report data)

Action category: logical

This action will be fired to report status of the Scene validation.

Parameter		Function
channel	Channel	Channel.
Report data	ReportData	Report data

G-Tect/Dual sensor alarm

Action name: GTectDualSensorAlarm (channel, sterile zone number, virtual fence number, VMD alarm group, VMD zone, VMD cycle, alarm area)

Action category: logical

This action will be fired when G-Tect/Dual sensor detects an alarm.

Parameter		Function
channel	Channel	Channel.
sterile zone number	SterileZoneNumber	Sterile Zone Number
virtual fence number	VirtualFenceNumber	Virtual Fence Number.
VMD alarm group	VMDGroup	VMD alarm group.
VMD zone	VMDZone	VMD zone nr.
VMD cycle	VMDCycle	VMD measure cycle.
alarm area	AlarmArea	Alarm area.

G-Tect/Dual sensor alarm finished

Action name: GTectDualSensorAlarmFinished (channel)

Action category: logical

This action will be fired when the alarm is finished.

ACTIONS

Parameter		Function
channel	Channel	Channel.

G-Tect/VMX alarm

Action name: GTectVMXAlarm (channel, Alarm type, Zone or fence number, Alarm group, Track ID, alarm area, ObjectPath)

Action category: logical

This action will be fired when the G-Tect/VMX Video content analysis detects an alarm.

Parameter		Function
channel	Channel	Channel.
Alarm type	GTectVMXAlarmType	Alarm type
Zone or fence number	Number	Zone or fence number
Alarm group	Group	Alarm group.
Track ID	TrackID	Track ID.
alarm area	AlarmArea	Alarm area.
ObjectPath	ObjectPath	ObjectPath

G-Tect/VMX alarm finished

Action name: GTectVMXAlarmFinished (channel, Alarm type, Zone or fence number)

Action category: logical

This action will be fired when the G-Tect/VMX alarm is finished.

ACTIONS

Parameter		Function
channel	Channel	Channel.
Alarm type	GTectVMXAlarmType	Alarm type
Zone or fence number	Number	Zone or fence number

G-Tect/VMX report

Action name: GTectVMXReport (channel, Report data)

Action category: logical

This action will be fired to report status of the G-Tect/VMX.

Parameter		Function
channel	Channel	Channel.
Report data	ReportData	Report data

G-Tect/AI alarm

Action name: GTectAIAlarm (ROI guid, ObjectCount, Object class name, Detection Confidence, Logic mode for detection, Object data)

Action category: logical

This action will be fired when the G-Tect/VMX detects an alarm.

Parameter		Function
ROI guid	Rule	ROI GUID.
ObjectCount	ObjectCount	ObjectCount
Object class name	ObjectClass	Object class name
Detection Confidence	Confidence	Detection Confidence

ACTIONS

Parameter		Function
Logic mode for detection	DetectionMode	Logic mode for detection
Object data	ObjectData	Object data

G-Tect/AI alarm finished

Action name: GTectAIAlarmFinished (ROI guid)

Action category: logical

This action will be fired when the G-Tect/AI alarm is finished.

Parameter		Function
ROI guid	Rule	ROI GUID.

G-Tect/AI report

Action name: GTectAIReport (channel, Number of objects in report, Report data)

Action category: logical

This action will be fired to report status of G-Tect/AI.

Parameter		Function
channel	Channel	Channel.
Number of objects in report	ObjectCount	Number of objects in report
Report data	ReportData	Report data

G-Tect/AI Info Request

Action name: GTectAllInfoRequest (channel, Info Code)

ACTIONS

Action category: logical

This action will be fired to report status of GTect/AI.

Parameter		Function
channel	Channel	Channel.
Info Code	InfoCode	Info Code

G-Tect/AI Info

Action name: GTectAllInfo (channel, Info Code, Info data)

Action category: logical

This action will be fired to answer to an GTectAllInfo request .

Parameter		Function
channel	Channel	Channel.
Info Code	InfoCode	Info Code
Info data	InfoData	Info data

G-Tect/AI object count

Action name: GTectAIObjectCount (ROI guid, Object data)

Action category: logical

This action will be fired to norify G-Tect/AI object counting

Parameter		Function
ROI guid	Rule	ROI GUID.
Object data	CountingData	Object data

G-Tect/Contrast failed

ACTIONS

Action name: GTectContrastFailed (channel)

Action category: logical

This action will be fired when contrast fails on MediaChannel

Parameter		Function
channel	Channel	Channel.

G-Tect/Contrast is OK

Action name: GTectContrastOK (channel)

Action category: logical

This action will be fired when contrast is OK again on selected MediaChannel.

Parameter		Function
channel	Channel	Channel.

G-Tect/Contrast report

Action name: GTectContrastReport (channel, Contrast value, Contrast threshold)

Action category: logical

This action is sent as status report for contrast when a setup is online.

Parameter		Function
channel	Channel	Channel.
Contrast value	ContrastValue	Contrast value
Contrast threshold	ContrastThreshold	Contrast threshold

G-Tect analytics live check

ACTIONS

Action name: GTectAnalyticsLiveCheck ()

Action category: logical

This action will be fired periodically to ensure that all channels using analytics are still running.

G-Tect analytics failover notification

Action name: GTectAnalyticsFailoverNotification (primary server, secondary server, state)

Action category: notification

G-Tect analytics failover notification.

Parameter		Function
primary server	PrimaryServer	The name of the primary server.
secondary server	SecondaryServer	The name of the secondary server.
state	State	State.

G-CAM/E2 VCA Alarm

Action name: E2VCAAlarm (channel, type, rule ID, rule name, rule type, zone ID, zone name, classification name, bounding box, object info)

Action category: logical

A VCA Alarm detected by G-CAM/E2.

Parameter		Function
channel	Channel	Channel.
type	Type	Type of the event. Can be zone or tamper.
rule ID	RuleId	The ID of the rule that triggered to generate the event.

ACTIONS

Parameter		Function
rule name	RuleName	The name of the rule that triggered to generate the event.
rule type	RuleType	The type of the rule that triggered to generate the event: presence, enter, exit, appear, disappear, stop, dwell, direction, speed, tailgating, linecountera, linecounterb, colsig, smoke, fire, abrmobj, complex, unknown.
zone ID	ZoneID	Zone ID of triggered zone.
zone name	ZoneName	Zone name of triggered zone.
classification name	ClsName	The classification names of the objects.
bounding box	BoundingBox	The bounding box of the object when the event was generated.
object info	ObjectInfo	Object information as XML string.

G-CAM/E2 VCA Alarm finished

Action name: E2VCAAlarmFinished (channel, zone ID>, zone name)

Action category: logical

A VCA Alarm finished by G-CAM/E2.

Parameter		Function
channel	Channel	Channel.
zone ID>	ZoneID	Zone ID of triggered zone.
zone name	ZoneName	Zone name of triggered zone.

G-CAM/E2 VCA Counter changed

Action name: E2VCACounterChanged (channel, ID, name, value)

ACTIONS

Action category: logical

A G-Cam/E2 count changed his value.

Parameter		Function
channel	Channel	Channel.
ID	ID	The id of the counter.
name	Name	The name of the counter.
value	Value	The name of the counter.

G-CAM/E2 Set VCA Counter

Action name: E2VCASetCounterValue (channel, ID, name, value)

Action category: logical

Change G-Cam/E2 counter value.

Parameter		Function
channel	Channel	Channel.
ID	ID	The id of the counter.
name	Name	The name of the counter.
value	Value	The name of the counter.

LPR recognition

Action name: LPRRecognition (plate no., country, channel, time stamp, zone rect, weight, city, Plate colour, Text colour, plate size, direction)

Action category: logical

LPR recognition.

ACTIONS

Parameter		Function
plate no.	PlateNo	Recognized plate no.
country	Country	Country.
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
zone rect	ZoneRect	Zone rectangle.
weight	Weight	Weight of recognition.
city	City	City of plate.
Plate colour	PlateColour	Colour of plate.
Text colour	TextColour	Text colour of plate.
plate size	PlateSize	Size of plate.
direction	Direction	Direction of the motion.

Face recognition enrollment

Action name: FaceRecEnrollment (group, channel, time, face rect)

Action category: logical

Face recognition enrollment.

Parameter		Function
group	Group	Group.
channel	Channel	Channel.
time	Time	Time stamp.
face rect	FaceRect	Face rectangle.

Face recognition result

ACTIONS

Action name: FaceRecResult (ID, name, first name, group, info, card no, confidence, gender, age, channel, time, result data set, string 1, string 2, integer 1, integer 2, double 1, double 2)

Action category: logical

Face recognition result.

Parameter		Function
ID	ID	ID.
name	Name	Name.
first name	FirstName	First name.
group	Group	Group.
info	Info	Info.
card no	CardNo	Card number.
confidence	Confidence	Confidence.
gender	Gender	Gender.
age	Age	Age.
channel	Channel	Channel.
time	Time	Time stamp.
result data set	ResultDataSet	Result data set.
string 1	String1	String 1.
string 2	String2	String 2.
integer 1	Integer1	integer 1.
integer 2	Integer2	integer 2.
double 1	Double1	double 1.
double 2	Double2	double 2.

VCA Alarm CrossingLine

ACTIONS

Action name: CrossingLine (channel, type, trigger name, object info)

Action category: logical

VCA Alarm Crossing Line. Will be Send if

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
trigger name	TriggerName	Name of the alarm rule.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Follow Route

Action name: FollowRoute (channel, type, zone name, object info)

Action category: logical

Generic follow route action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Object Removed

Action name: RemovedObject (channel, type, zone name, object info)

Action category: logical

Generic removed object action.

ACTIONS

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Object Idle

Action name: IdleObject (channel, type, zone name, object info)

Action category: logical

Generic idle object action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Leave Field

Action name: LeaveField (channel, type, zone name, object info)

Action category: logical

Generic leave field action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.

ACTIONS

Parameter		Function
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Enter Field

Action name: EnterField (channel, type, zone name, object info)

Action category: logical

Generic enter field action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Loitering

Action name: VCAAlarmLoitering (channel, type, zone name, object info)

Action category: logical

Generic loitering action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Object In Field

Action name: VCAAlarmObjectInField (channel, type, zone name, object info)

Action category: logical

Generic object in field action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Tampering

Action name: VCAAlarmTampering (channel, type, zone name, object info)

Action category: logical

Generic tampering action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Crowd Detected

Action name: VCAAlarmCrowdDetected (channel, type, zone name, object info)

Action category: logical

Generic crowd detection action.

ACTIONS

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Fire

Action name: VCAAlarmFire (channel, type, zone name, object info)

Action category: logical

Generic fire action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Smoke

Action name: VCAAlarmSmoke (channel, type, zone name, object info)

Action category: logical

Generic smoke action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.

ACTIONS

Parameter		Function
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm Counter

Action name: VCAAlarmCounter (channel, type, ID, name, value, object info)

Action category: logical

Generic counter action.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
ID	ID	The id of the counter.
name	Name	The name of the counter.
value	Value	The name of the counter.
object info	ObjectInfo	Object information as XML string.

VCA Object count

Action name: VCAObjectCount (channel, type, zone name, count info, object info)

Action category: logical

VCA Object count.

ACTIONS

Parameter		Function
channel	Channel	Channel.
type	Type	VCA source.
zone name	TriggerName	Zone name of triggered zone.
count info	CountInfo	Count info.
object info	ObjectInfo	Object information as XML string.

VCA Stopped vehicle

Action name: VCAStoppedVehicle (channel, type, zone name, object info)

Action category: logical

VCA Stopped vehicle.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Wrong direction

Action name: VCAWrongDirection (channel, type, zone name, object info)

Action category: logical

VCA Wrong direction.

Parameter		Function
channel	Channel	Channel.

ACTIONS

Parameter		Function
type	Type	VCA source.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

VCA Alarm

Action name: VCAAlarm (channel, type, trigger type, custom string, zone name, object info)

Action category: logical

Generic VCA Alarm that can be triggered by different types and sources.

Parameter		Function
channel	Channel	Channel.
type	Type	VCA Source.
trigger type	TriggerType	trigger type.
custom string	TriggerString	Custom string.
zone name	TriggerName	Zone name of triggered zone.
object info	ObjectInfo	Object information as XML string.

Face recognition event

Action name: FaceRecEvent (name, group, channel, person ID, external ID, confidence, gender, age, ID class, time, info, site, sentiment, liveness, liveness confirmed, smile, mask, direction, tag ID, external event ID, external event type, result data set)

Action category: logical

Face recognition event.

ACTIONS

Parameter		Function
name	Name	Name and Surname or the detected person.
group	Group	Group or person type.
channel	Channel	Channel.
person ID	PersonID	ID of the recognized person.
external ID	ExternalID	External ID.
confidence	Confidence	Confidence or Similarity Score.
gender	Gender	Gender.
age	Age	Age.
ID class	IDClass	ID class or thread level.
time	Time	Start time.
info	Info	Info or tags.
site	Site	Site.
sentiment	Sentiment	Sentiment.
liveness	Liveness	Liveness.
liveness confirmed	LivenessConfirmed	Liveness confirmed.
smile	Smile	Smile detected.
mask	Mask	Mask detected.
direction	Direction	Direction.
tag ID	TagID	Tag ID.
external event ID	ExternalEventID	External event ID.
external event type	ExternalEventType	External event type.
result data set	ResultDataSet	Result data set.

Video Control

All actions to control the video streams, also all notifications about the state change of the video streams.

IP camera raw command

Action name: IPCameraRawCommand (url, user, password, post)

Action category: logical

This action sends a special command to the IP camera.

Parameter		Function
url	URL	Complete command URL (like <code>http://192.168.0.165:80/set?daynight=night</code>).
user	User	User name to authenticate by the camera (optional).
password	Password	Password to authenticate by the camera (optional).
post	POST	POST parameters (optional, separate lines with <code>\\r\\n</code>).

IP camera raw command extended

Action name: IPCameraRawCommandEx (url, user, password, HTTP message body, HTTP request method)

Action category: logical

This action sends a special command to the IP camera.

Parameter		Function
url	URL	Complete command URL (like <code>http://192.168.0.165:80/-set?daynight=night</code>).

Parameter		Function
user	User	User name to authenticate by the camera (optional).
password	Password	Password to authenticate by the camera (optional).
HTTP message body	HTTPMessageBody	HTTP message body (optional, separate lines with \\r\\n).
HTTP request method	HTTPRequestMethod	HTTP request method (GET, POST, PUT, DELETE).

Set channel parameter

Action name: SetChannelParameter (channel, Identifier, Key, Value)

Action category: logical

Set Parameter for a Media-Channel as Key/Value pair.

Parameter		Function
channel	Channel	Channel.
Identifier	Identifier	Identifier. May be used for Filtering
Key	Key	Key. This is the name of the parameter.
Value	Value	Value to assign to the parameter.

Channel live check

Action name: ChannelLiveCheck (channel, sensor type, time stamp)

Action category: logical

This action notifies that the channel is alive.

ACTIONS

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
time stamp	TimeStamp	Time stamp.

Video sync detected

Action name: VideoSyncDetected (channel)

Action category: logical

This action will be fired when the sync is detected in the video signal.

Parameter		Function
channel	Channel	Channel.

Video sync failed

Action name: VideoSyncFailed (channel)

Action category: logical

This action will be fired when the sync is lost in the video signal.

Parameter		Function
channel	Channel	Channel.

Change AD parameter set

Action name: ChangeADParameterSet (channel, AD parameter set)

Action category: logical

This action changes the current AD parameter set of the video channel.

ACTIONS

Parameter		Function
channel	Channel	Channel.
AD parameter set	ParameterSet	The name of the new AD parameter set.

Change VMD parameter set

Action name: ChangeVMDParameterSet (channel, VMD parameter set)

Action category: logical

This action changes the current VMD parameter set of the video channel.

Parameter		Function
channel	Channel	Channel.
VMD parameter set	ParameterSet	The name of the new VMD parameter set.

Change SV parameter set

Action name: ChangeSVParameterSet (channel, SV parameter set)

Action category: logical

This action changes the current SV parameter set of the video channel.

Parameter		Function
channel	Channel	Channel.
SV parameter set	ParameterSet	The name of the new SV parameter set.

Video source has changed

ACTIONS

Action name: VideoSourceChanged (channel, signal norm, signal type, interlace type)

Action category: logical

This action indicates the changes on the video input source.

Parameter		Function
channel	Channel	Channel.
signal norm	SignalNorm	New signal norm.
signal type	SignalType	New signal type.
interlace type	InterlaceType	New interlace type.

Video contrast detected

Action name: VideoContrastDetected (channel)

Action category: logical

This action will be fired when the contrast is detected in the video signal.

Parameter		Function
channel	Channel	Channel.

Video contrast failed

Action name: VideoContrastFailed (channel)

Action category: logical

This action will be fired when the contrast is lost in the video signal.

Parameter		Function
channel	Channel	Channel.

IAS settings changed

Action name: IASSettingsChanged (channel, sensor type)

Action category: logical

IAS settings changed.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.

Sensor video alarm

Action name: SensorVideoAlarm (channel, sensor type, AD alarm area, AD cell, VMD alarm group, VMD zone, VMD cycle, alarm area)

Action category: logical

This action will be fired when video alarm is detected.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
AD alarm area	ADArea	AD alarm area.
AD cell	ADCell	AD cell nr.
VMD alarm group	VMDGroup	VMD alarm group.
VMD zone	VMDZone	VMD zone nr.
VMD cycle	VMDCycle	VMD measure cycle.
alarm area	AlarmArea	Alarm area.

Sensor inhibit video alarm

ACTIONS

Action name: SensorInhibitVideoAlarm (channel, sensor type, AD alarm area, AD cell, VMD alarm group, VMD zone, VMD cycle, alarm area)

Action category: logical

This action will be fired when the motion in inhibit area is detected.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
AD alarm area	ADArea	AD alarm area.
AD cell	ADCell	AD cell nr.
VMD alarm group	VMDGroup	VMD alarm group.
VMD zone	VMDZone	VMD zone nr.
VMD cycle	VMDCycle	VMD measure cycle.
alarm area	AlarmArea	Alarm area.

Sensor alarm finished

Action name: SensorAlarmFinished (channel, sensor type)

Action category: logical

This action will be fired when the alarm is finished.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.

Sensor inhibit alarm finished

Action name: SensorInhibitAlarmFinished (channel, sensor type)

Action category: logical

ACTIONS

This action will be fired when the inhibit alarm is finished.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.

Set test picture mode

Action name: SetTestPictureMode (channel, enable)

Action category: logical

Enable or disable test picture generator.

Parameter		Function
channel	Channel	Channel.
enable	Mode	Enable or disable test picture generator.

Video result

Action name: VideoResult(value A (64-bit), value B (64-bit), value C (64-bit), value D (64-bit), value A (32-bit), value B (32-bit), value C (32-bit), value D (32-bit), time stamp A, time stamp B, value A (double), value B (double), text A, text B, text C, text D, text E, text F, channel, result data set)

Action category: command

Video result.

Parameter		Function
value A (64-bit)	Int64FieldA	64 bit value A.
value B (64-bit)	Int64FieldB	64 bit value B.
value C (64-bit)	Int64FieldC	64 bit value C.

ACTIONS

Parameter		Function
value D (64-bit)	Int64FieldD	64 bit value D.
value A (32-bit)	Int32FieldA	32 bit value A.
value B (32-bit)	Int32FieldB	32 bit value B.
value C (32-bit)	Int32FieldC	32 bit value C.
value D (32-bit)	Int32FieldD	32 bit value D.
time stamp A	DateFieldA	time stamp value A.
time stamp B	DateFieldB	time stamp value B.
value A (double)	DoubleFieldA	double value A.
value B (double)	DoubleFieldB	double value B.
text A	StringFieldA	string value A.
text B	StringFieldB	string value B.
text C	StringFieldC	string value C.
text D	StringFieldD	string value D.
text E	StringFieldE	string value E.
text F	StringFieldF	string value F.
channel	Channel	Channel.
result data set	ResultDataSet	Result data set.

Video interrupted

Action name: VideoInterrupted (channel, time)

Action category: logical

Action to notify the interruption of a video stream.

ACTIONS

Parameter		Function
channel	Channel	Channel.
time	Time	Time stamp of interruption.

Video restored

Action name: VideoRestored (channel, time, gap)

Action category: logical

Action to notify that a video stream is restored after it has been interrupted. The action also contains the length of the interruption in seconds.

Parameter		Function
channel	Channel	Channel.
time	Time	Time stamp of restoration.
gap	Gap	Gap in seconds.

Channel info

Action name: ChannelInfo (channel, sensor type, source subsystem, message code, description, additional info)

Action category: logical

Notify channel information.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
source subsystem	Source	Source of the message.

ACTIONS

Parameter		Function
message code	Message	Kind of the message.
description	Description	Optional description of the message.
additional info	XMLInfo	Optional additional info (usually as XML string).

Channel warning

Action name: ChannelWarning (channel, sensor type, source subsystem, message code, Windows error code, description, additional info)

Action category: logical

Notify channel warning.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
source sub-system	Source	Source of the message.
message code	Message	Kind of the message.
Windows error code	WindowsError	Optional Windows error code.
description	Description	Optional description of the message.
additional info	XMLInfo	Optional additional info (usually as XML string).

Channel error

Action name: ChannelError (channel, sensor type, source subsystem, message code, Windows error code, description, additional info)

ACTIONS

Action category: logical

Notify channel error.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
source sub-system	Source	Source of the message.
message code	Message	Kind of the message.
Windows error code	WindowsError	Optional Windows error code.
description	Description	Optional description of the message.
additional info	XMLInfo	Optional additional info (usually as XML string).

Activate external process

Action name: ActivateExternalProcess (channel, time stamp, external system)

Action category: logical

Activate external process.

Parameter		Function
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
external system	ExternalSystem	External system to activate.

NPR raw data

ACTIONS

Action name: NPRRawData (plate no., country, channel, time stamp, zone rect, weight, zone state, zone status, speed, direction, zone index, best, plate width, plate height, plate angle, symbol height, type)

Action category: logical

NPR raw data.

Parameter		Function
plate no.	PlateNo	Recognized plate no.
country	Country	Country.
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
zone rect	ZoneRect	Zone rectangle.
weight	Weight	Weight of recognition.
zone state	ZoneState	Zone state.
zone status	ZonePlace	Zone status.
speed	Speed	Speed in km/h
direction	Direction	Direction of the motion.
zone index	ZoneIndex	Zone index.
best	CurBest	Current recognition is best.
plate width	PlateWidth	Plate width.
plate height	PlateHeight	Plate height.
plate angle	PlateAngle	Plate angle.
symbol height	SymHeight	Symbol height.
type	Type	Number type.

NPR recognition

ACTIONS

Action name: NPRRecognition (plate no., country, channel, time stamp, zone rect, restriction, category, speed, direction, zone index, type, weight)

Action category: logical

NPR recognition.

Parameter		Function
plate no.	PlateNo	Recognized plate no.
country	Country	Country.
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
zone rect	ZoneRect	Zone rectangle.
restriction	Restriction	Restriction of recognized number.
category	Category	Category of recognized number.
speed	Speed	Speed in km/h
direction	Direction	Direction of the motion.
zone index	ZoneIndex	Zone index.
type	Type	Number type.
weight	Weight	Weight of recognition.

Video set image contrast

Action name: VideoSetImageContrast (channel, sensor type, contrast)

Action category: logical

Video set image contrast.

Parameter		Function
channel	Channel	Channel.

ACTIONS

Parameter		Function
sensor type	SensorType	Sensor type.
contrast	Contrast	Contrast.

Video set image brightness

Action name: VideoSetImageBrightness (channel, sensor type, brightness)

Action category: logical

Video set image brightness.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
brightness	Brightness	Brightness.

Video set image saturation

Action name: VideoSetImageSaturation (channel, sensor type, saturation)

Action category: logical

Video set image saturation.

Parameter		Function
channel	Channel	Channel.
sensor type	SensorType	Sensor type.
saturation	Saturation	Saturation.

Media channel setup

Action name: MediaChannelSetupInfo (channel, time stamp, parameter)

ACTIONS

Action category: logical

Media channel setup info.

Parameter		Function
channel	Channel	Channel.
time stamp	TimeStamp	Time stamp.
parameter	Parameter	Parameter.

Set system time

Action name: SetSystemTime (time stamp)

Action category: logical

Set system time.

Parameter		Function
time stamp	TimeStamp	Time stamp.

Change camera profile

Action name: ChangeCameraProfile (hardware, profile)

Action category: logical

This action changes the current camera profile of the hardware module.

Parameter		Function
hardware	HardwareModule	Hardware module.
profile	CameraProfile	The name of the camera profile.

Enable client VCA

Action name: SetClientVCA (channel, VCA Type, enabled)

ACTIONS

Action category: logical

Enable client VCA

Parameter		Function
channel	Channel	Channel.
VCA Type	ClientVCAType	VCA Type
enabled	Enabled	Enabled

VCA set armed

Action name: VCASetArmed (Channel, Sensor type, Armed (true) or disarmed (false))

Action category: logical

Send this action to notify VCA to be armed or disarmed.

Parameter		Function
Channel	Channel	Channel.
Sensor type	SensorType	Sensor type.
Armed (true) or disarmed (false)	Armed	Armed (true) or disarmed (false)

VCA status request

Action name: VCAStatusRequest (Channel, Sensor type)

Action category: logical

Send this action to request status of VCA. As response VCA will send VCA status answer.

ACTIONS

Parameter		Function
Channel	Channel	Channel.
Sensor type	SensorType	Sensor type.

VCA status answer

Action name: VCAStatusAnswer (Channel, Sensor type, Armed (true) or disarmed (false))

Action category: logical

This action will be sent in response to VCA status request.

Parameter		Function
Channel	Channel	Channel.
Sensor type	SensorType	Sensor type.
Armed (true) or disarmed (false)	Armed	Armed (true) or disarmed (false)

IP camera failover notification

Action name: IPCamFailoverNotification (primary server, secondary server, primary channel, secondary channel, camera parameters)

Action category: logical

IP camera failover notification.

Parameter		Function
primary server	PrimaryServer	The name of the primary server.
secondary server	SecondaryServer	The name of the secondary server.

ACTIONS

Parameter		Function
primary channel	PrimaryChannel	Primary channel.
secondary channel	SecondaryChannel	Secondary channel.
camera parameters	CameraParameters	Optional camera parameters.

IP camera failover restore

Action name: IPCamFailoverRestore (primary server, secondary server, primary channel, secondary channel, camera parameters)

Action category: logical

IP camera failover restore.

Parameter		Function
primary server	PrimaryServer	The name of the primary server.
secondary server	SecondaryServer	The name of the secondary server.
primary channel	PrimaryChannel	Primary channel.
secondary channel	SecondaryChannel	Secondary channel.
camera parameters	CameraParameters	Optional camera parameters.

Change G-Tect/VMX parameter set

Action name: ChangeGTectParameterSet (channel, G-Tect/VMX parameter set)

Action category: logical

ACTIONS

This action changes the current G-Tect/VMX parameter set of the video channel.

Parameter		Function
channel	Channel	Channel.
G-Tect/VMX parameter set	ParameterSet	The name of the new G-Tect/VMX parameter set.

Viewer Actions

Viewer actions allow remote controlling G-View. To enable remote controlling G-View the "Remote control" setting in G-View ProfileManager and a global unique viewer client number has to be configured.

Viewer connect live

Action name: ViewerConnectLive (viewer, channel)

Action category: command

This action displays live pictures of a video channel on the active viewer of the G-View with the given viewer client number or on the viewer with the global number on any G-View in the network.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
channel	Channel	Channel.

Viewer connect

Action name: ViewerConnect (viewer, channel, play mode)

Action category: command

ACTIONS

The action displays pictures of a video channel on the active viewer of the G-View with the given viewer client number or on the viewer with the global number on any G-View in the network. The parameter "play mode" defines in which mode the pictures are presented (live, forward, backward).

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
channel	Channel	Channel.
play mode	PlayMode	Viewer play mode.

Viewer clear

Action name: ViewerClear (viewer)

Action category: command

The action clears the active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

Viewer change scene

Action name: ViewerChangeScene (viewer)

Action category: command

The action displays the scene where the viewer with the global number on any G-View in the network belongs to.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

VC change scene by name

Action name: VCChangeSceneByName (viewer, scene)

Action category: command

The action displays a scene in the G-View with the given viewer client number. The scene is identified by its name which is case insensitive. (e.g. "MyScene" equal "myscene")

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
scene	Scene	Scene name.

Viewer clear scene

Action name: ViewerClearScene (viewer)

Action category: command

The action clears the scene where the active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network belongs to.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

VC clear scene by name

Action name: VCClearSceneByName (viewer, scene)

Action category: command

The action clears a scene in the G-View with the given viewer client number. The scene is identified by its name which is case insensitive. If the scene is currently not active it will be displayed after the action is executed. (e.g. "MyScene" equal "myscene")

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
scene	Scene	Scene name.

Viewer change sync audio/video

Action name: ViewerSyncAudioAndVideo (viewer, enable sync)

Action category: command

The active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network should be remote controlled. The parameter "enable sync" defines whether audio and video should be synchronized or not.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
enable sync	EnableSync	Enable audio/video sync.

VC set audio level

Action name: VCSetAudioLevel (viewer, audio level)

Action category: command

The volume of the audio output of the G-View with the given viewer client number can be controlled.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
audio level	AudioLevel	Audio level in range 0 (audio off) till 100 (max. volume).

Viewer maximize

ACTIONS

Action name: ViewerMaximize (viewer, maximize)

Action category: command

The active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network which should be remote controlled. The parameter "maximize" defines whether the viewer should be displayed in maximized mode or not.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
maximize	Maximize	Maximize.

Viewer export picture

Action name: ViewerExportPicture (viewer, file path)

Action category: command

The action exports the current picture of the active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network. The actual picture is exported as a windows bitmap graphic file in the G-View directory or in the path (local or UNC) defined via the parameter "file path".

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
file path	FilePath	File path (local or UNC). G-View default path is used if left empty.

Viewer print picture

Action name: ViewerPrintPicture (viewer)

Action category: command

ACTIONS

The action prints out the current picture of the active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network. The print out is done on the default printer of the PC on which G-View is running.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

Viewer select

Action name: ViewerSelect (viewer)

Action category: command

The action declares the viewer with the global number on any G-View in the network to the active viewer of the corresponding G-View.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

VC show viewer text

Action name: VCShowViewerText (viewer, show text)

Action category: command

The text fade-in of all viewers of the G-View with the given viewer client number can be switched on and off.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
show text	ShowText	Show text in viewer client.

VC full mode

Action name: VCFullMode (viewer, full mode, sensitive area enabled)

ACTIONS

Action category: command

The G-View with the given viewer client number can be switched into full mode display or normal mode display. In full mode display G-View offers the possibility to fade in controls like the tool bar or the side bar if the user moves the mouse cursor in the near of the window borders. This behavior can be controlled by the Parameter "Sensitive area enabled".

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
full mode	FullMode	Switch viewer client in full mode.
sensitive area enabled	SensitiveAreaEnabled	Sensitive area enabled.

VC stretch mode

Action name: VCStretchMode (viewer, stretch mode)

Action category: command

The G-View with the given viewer client number can be switched into stretched mode display or normal mode display. In the stretched view, the viewers are stretched to the available size in the G-View main window. In the normal mode display the viewers are sized in 4:3 ratio.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
stretch mode	StretchMode	Switch viewer client in stretch mode.

Viewer text output

Action name: ViewerTextOutput (viewer, text string)

Action category: command

ACTIONS

The action displays a text in the active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
text string	Text	Text string to display.

Viewer clear text output

Action name: ViewerClearTextOutput (viewer)

Action category: command

The action doesn't display a text in the active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network anymore.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

VC alarm queue select

Action name: VCArmQueueSelect (viewer, selection mode)

Action category: command

The alarm queue of the G-View with the given viewer client number can be remote controlled. An alarm of the queue is presented. The parameter "selection mode" defines which alarm in the queue will be presented.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
selection mode	SelectionMode	Selection mode.

VC alarm queue select by type

Action name: VCArmQueueSelectByType (viewer, event type, selection mode)

Action category: command

The alarm queue of the G-View with the given viewer client number can be remote controlled. An alarm of the queue is presented. It is identified by its alarm type (event type) which means the name of the alarm (event) in the G-Core server event list and also by the parameter "selection mode". The parameter "selection mode" defines which alarm in the queue will be selected.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
event type	TypeID	Type of the event.
selection mode	SelectionMode	Selection mode.

VC alarm queue select by instance

Action name: VCArmQueueSelectByInstance (viewer, instance ID)

Action category: command

The alarm queue of the G-View with the given viewer client number can be remote controlled. An alarm of the queue is presented. It is identified by its alarm instance ID (event instance ID). A unique instance ID is assigned to each alarm/event recording.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
instance ID	AlarmID	Instance ID of the alarm.

VC alarm queue confirm

Action name: VCArmQueueConfirm (viewer, selection mode)

ACTIONS

Action category: command

The alarm queue of the G-View with the given viewer client number can be remote controlled. A current alarm is confirmed. The parameter "selection mode" defines which alarm in the queue will be confirmed.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
selection mode	SelectionMode	Selection mode.

VC alarm queue confirm by type

Action name: VCAAlarmQueueConfirmByType (viewer, event type, selection mode)

Action category: command

The alarm queue of G-View with the given viewer client number can be remote controlled. A current alarm is confirmed. It is identified by its alarm type (event type) which means the name of the alarm (event) in the G-Core server event list and also by the parameter "selection mode". The parameter "selection mode" defines which alarm in the queue will be selected.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
event type	TypeID	Type of the event.
selection mode	SelectionMode	Selection mode.

VC alarm queue confirm by instance

Action name: VCAAlarmQueueConfirmByInstance (viewer, instance ID)

Action category: command

ACTIONS

The alarm queue of G-View with the given viewer client number can be remote controlled. A current alarm is confirmed. It is identified by its alarm instance ID (event instance ID). A unique instance ID is assigned to each alarm /recording event at creation time by the G-Core server.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
instance ID	AlarmID	Instance ID of the alarm.

VC alarm queue remove

Action name: VCArmQueueRemove (viewer, selection mode)

Action category: command

The alarm queue of the G-View with the given viewer client number can be remote controlled. An alarm is removed from the queue. The parameter "selection mode" defines which alarm in the queue will be removed.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
selection mode	SelectionMode	Selection mode.

VC alarm queue remove by type

Action name: VCArmQueueRemoveByType (viewer, event type, selection mode)

Action category: command

The alarm queue of the G-View with the given viewer client number can be remote controlled. An alarm is removed from the queue. It is identified by its alarm type (event type) which means the name of the alarm (event) in the G-Core server event list. The parameter "selection mode" defines which alarm will be removed.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
event type	TypeID	Type of the event.
selection mode	SelectionMode	Selection mode.

VC alarm queue remove by instance

Action name: VCArmQueueRemoveByInstance (viewer, instance ID)

Action category: command

The alarm queue of the G-View with the given viewer client number can be remote controlled. An alarm is removed from the queue. It is identified by its alarm instance ID (event instance ID). A unique instance ID is assigned to each alarm/event recording.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
instance ID	AlarmID	Instance ID of the alarm.

Viewer show alarm by instance

Action name: ViewerShowAlarmByInstance (viewer, instance ID, play mode)

Action category: command

The action displays pictures of an alarm on the G-View with the given viewer client number in the network. The alarm is identified by its alarm instance ID (event instance ID). Every alarm (event) is assigned a unique instance ID at creation time by the G-Core server. The parameter "play mode" defines in which mode the pictures are presented (live replay, replay event pictures, .).

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
instance ID	AlarmID	Instance ID of the alarm.
play mode	PlayMode	Viewer alarm's play mode.

Viewer show alarm by key

Action name: ViewerShowAlarmByKey (viewer, foreign key, play mode)

Action category: command

The action displays pictures of an alarm on the G-View with the given viewer client number in the network. The alarm is identified by its "foreign key". The "foreign key" was assigned explicit to the alarm as the alarm was started. The parameter "play mode" defines in which mode the pictures are presented (live replay, replay event pictures .).

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
foreign key	ForeignKey	Foreign key used to start the alarm.
play mode	PlayMode	Viewer alarm's play mode.

Viewer show alarm by type

Action name: ViewerShowAlarmByType (viewer, alarm type, foreign key, play mode)

Action category: command

The action displays pictures of an alarm on the G-View with the given viewer client number in the network. The alarm is identified by its alarm type and optional by its foreign key. The alarm type (event name) is defined in the G-Core server setup. The foreign key was assigned explicit to the alarm as the alarm was started. It is optional. If it is not set, the last

ACTIONS

alarm with the defined alarm type is displayed. The parameter "play mode" defines in which mode the pictures are presented (live replay, replay event pictures .).

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
alarm type	TypeID	Type of the alarm.
foreign key	ForeignKey	Foreign key used to start the alarm.
play mode	PlayMode	Viewer alarm's play mode.

Viewer jump by time

Action name: ViewerJumpByTime (viewer, channel, play mode, time in sec)

Action category: command

The action displays pictures of a video channel on the active viewer of the G-View with the given viewer client number or on the viewer with the global number on any G-View in the network. The parameter "play mode" defines in which mode the pictures are presented (live, forward, backward .). The parameter "time in sec" defines the time span that the start of the replay should be moved from the actual timestamp.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
channel	Channel	Channel.
play mode	PlayMode	Viewer play mode.
time in sec	TimeInSec	Time to jump in seconds. Use negative values to jump in past.

Viewer play from time

ACTIONS

Action name: ViewerPlayFromTime (viewer, channel, play mode, time)

Action category: command

The action displays pictures of a video channel on the active viewer of the G-View with the given viewer client number or on the viewer with the global number on any G-View in the network. The parameter "play mode" defines in which mode the pictures are presented (live, forward, backward .). The parameter "time" defines the timestamp where the replay of the recorded video should start

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
channel	Channel	Channel.
play mode	PlayMode	Viewer play mode.
time	Time	Time to play from.

Viewer set play mode

Action name: ViewerSetPlayMode (viewer, play mode, play speed)

Action category: command

The action sets the "play mode" of the active viewer of the G-View with the given viewer client number or the viewer with the global number on any G-View in the network.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
play mode	PlayMode	Viewer play mode.
play speed	PlaySpeed	Optional play speed parameter.

VC change map by name

Action name: VCChangeMapByName (viewer, map)

ACTIONS

Action category: command

The action displays a map in the viewer application with the given viewer client number. The map is identified by its name which is case insensitive. (e.g. "MyMap" equal "mymap")

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
map	Map	map name.

Camera cycle start

Action name: CameraCycleStart (viewer, cycle ID, cycle name)

Action category: command

This action starts a pre-defined cycle.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
cycle ID	CycleID	Cycle ID.
cycle name	CycleName	Cycle name.

Camera cycle stop

Action name: CameraCycleStop (viewer)

Action category: command

This action stops a running cycle.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

Camera cycle pause

Action name: CameraCyclePause (viewer)

Action category: command

This action interrupts a running cycle.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

Camera cycle resume

Action name: CameraCycleResume (viewer)

Action category: command

This action resumes an interrupted cycle.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

Camera cycle prev

Action name: CameraCyclePrev (viewer)

Action category: command

This action selects the previous position in a running cycle.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

Camera cycle next

Action name: CameraCycleNext (viewer)

Action category: command

ACTIONS

This action selects the next position in a running cycle.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.

Viewer Notifications

Viewer notifications are fired by G-View while G-View is remote controlled. To enable remote controlling G-View the "Remote control" setting in G-View ProfileManager and a global unique viewer client number has to be configured. To enable G-View sending viewer notifications the "Send notification actions" settings in G-View ProfileManager have to be configured.

Viewer connected

Action name: ViewerConnected (viewer, channel, play mode, client host, client type, client account)

Action category: notification

The viewer with the transmitted global number on some G-View in the network has been connected. G-View has fired this notification because one of its viewers has been connected via a ViewerConnect or ViewerConnectLive action while G-View is remote controlled or because the user has manually connected the viewer in G-View. The parameter "play mode" defines in which mode the pictures are presented (live, forward, backward, .).

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
channel	Channel	Channel.
play mode	PlayMode	Viewer play mode.
client host	ClientHost	Host from where the connection is done.

ACTIONS

Parameter		Function
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

Viewer cleared

Action name: ViewerCleared (viewer, client host, client type, client account)

Action category: notification

The viewer with the transmitted global number on some G-View in the network has been cleared. G-View has fired this notification because one of its viewers has been cleared via a ViewerClear action while G-View is remote controlled or because the user has manually cleared the viewer in G-View.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

Viewer play mode changed

Action name: ViewerPlayModeChanged (viewer, channel, play mode, channel time, client host, client type, client account)

Action category: notification

The playmode of the viewer with the transmitted global number on some G-View in the network has been changed. G-View has fired this notification because the playmode of one of its viewers has been changed via

ACTIONS

a ViewerConnect, ViewerConnectLive, ViewerSetPlayMode, ViewerPlayFromTime, ViewerJumpByTime or one of the ViewerShowAlarmBy actions while G-View is remote controlled or because the user has manually changed the playmode of the viewer in G-View.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
channel	Channel	Channel.
play mode	PlayMode	Viewer play mode.
channel time	ChannelTime	Channel time.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

Image export notification

Action name: ImageExportNotification (user, destination, destination type, time stamp, end time, channels, client host, client type, client account)

Action category: notification

A single image or a video sequence has been exported by a G-View in the network. G-View has fired this notification because a single picture has been exported via a ViewerExportPicture action while G-View is remote controlled or because the user has manually exported a picture or a video sequence in G-View.

Parameter		Function
user	User	Name of the user connected to the system.

ACTIONS

Parameter		Function
destination	Destination	Destination.
destination type	DestinationType	Destination type.
time stamp	TimeStamp	Time stamp.
end time	TimeEnd	End time.
channels	Channels	Channels.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

Viewer selection changed

Action name: ViewerSelectionChanged (viewer, channel, play mode, client host, client type, client account)

Action category: notification

The active viewer on some G-View in the network has been changed. G-View has fired this notification because the user has selected one of its viewers by mouse click or by dragging a camera onto one of its viewers. G-View only fires the notification, if a camera is displayed on the selected viewer.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
channel	Channel	Channel.
play mode	PlayMode	Viewer play mode.
client host	ClientHost	Host from where the connection is

ACTIONS

Parameter		Function
		done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

Scene store modification

Action name: SceneStoreModification (viewer, scene store GUID, scene store name, time stamp, modification type, user, client host, client type, client account)

Action category: notification

Scene store modification.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
scene store GUID	SceneStoreID	Scene store GUID.
scene store name	SceneStoreName	Scene store name.
time stamp	TimeStamp	Time stamp.
modification type	ModificationType	Modification type.
user	User	Name of the user.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

VC alarm queue notification

Action name: VCArmQueueNotification (viewer, notification, instance ID, event type, client host, client type, client account)

Action category: notification

The state of the alarm queue of the G-View with the transmitted viewer client number has been changed. G-View has fired this notification because the state of its alarm queue has been changed via a VCArmQueue... action while G-View is remote controlled or because the user has manually changed the state of the alarm queue in G-View. An alarm can be identified by its alarm instance ID (event instance ID). Every alarm (event) is assigned a unique instance ID at creation time by the G-Core server. Alternatively the alarm can be identified by its alarm type (event type) which means the name of the alarm (event) in the G-Core server event list.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
notification	Notification	Alarm state notification.
instance ID	AlarmID	Instance ID of the alarm.
event type	TypeID	Type of the event.
client host	ClientHost	Host from where the connection is done.
client type	ClientType	Client type.
client account	ClientAccount	User account from where the connection is done.

VC scene changed

Action name: VCSceneChanged (viewer, scene)

Action category: notification

ACTIONS

The active scene of the G-View with the transmitted viewer client number has been changed. G-View has fired this notification because its active scene has been changed via a VCChangeSceneByName or ViewerChangeScene action while G-View is remote controlled or because the user has manually changed the active scene in G-View.

Parameter		Function
viewer	Viewer	Global viewer or viewer client no.
scene	Scene	Scene name.

VC map changed

Action name: VCMapChanged (viewer, map)

Action category: notification

The active map of the viewer application with the transmitted viewer number has been changed. The viewer application has fired this notification because its active map has been changed via a VCChangeMapByName action while the viewer application is remote controlled or because the user has manually changed the active map in the viewer application.

Parameter		Function
viewer	Viewer	Global viewer or viewer map no.
map	Map	map name.

About Plugins

Plugins are additions in the form of DLL (Dynamic Link Libraries) files which extend or simplify the work with G-Core.

There are two types of plugins:

- Plugins provided by Geutebrück.
- Plugins that are created or can be created using the SDK (Software Development Kit).

Plugins basically consist of a DLL file. If the plugin provides additional configuration dialogs, this DLL file includes a file with the same name and the extension .dlg.dll (for example: ActionGate.dll and ActionGate.dlg.dll).

Name	Size	Date modified	Type
ACSGarny.dlg.dll	42 KB	4/28/2015 10:03 AM	Application extension
ACSGarny.dll	991 KB	4/28/2015 10:03 AM	Application extension
ACSInform.dlg.dll	42 KB	4/28/2015 10:03 AM	Application extension
ACSInform.dll	993 KB	4/28/2015 10:03 AM	Application extension
ACSKebaPassador.dlg.dll	43 KB	4/28/2015 10:03 AM	Application extension
ACSKebaPassador.dll	997 KB	4/28/2015 10:03 AM	Application extension
ActionGate.dlg.dll	19 KB	4/28/2015 10:03 AM	Application extension
ActionGate.dll	1,901 KB	4/28/2015 10:03 AM	Application extension
E2IPC.dlg	12,399 KB	4/28/2015 10:03 AM	DLG File
E2IPC.dll	1,442 KB	4/28/2015 10:03 AM	Application extension
E3IPC.dlg	11,257 KB	4/28/2015 10:03 AM	DLG File
E3IPC.dll	1,414 KB	4/28/2015 10:03 AM	Application extension

Installation

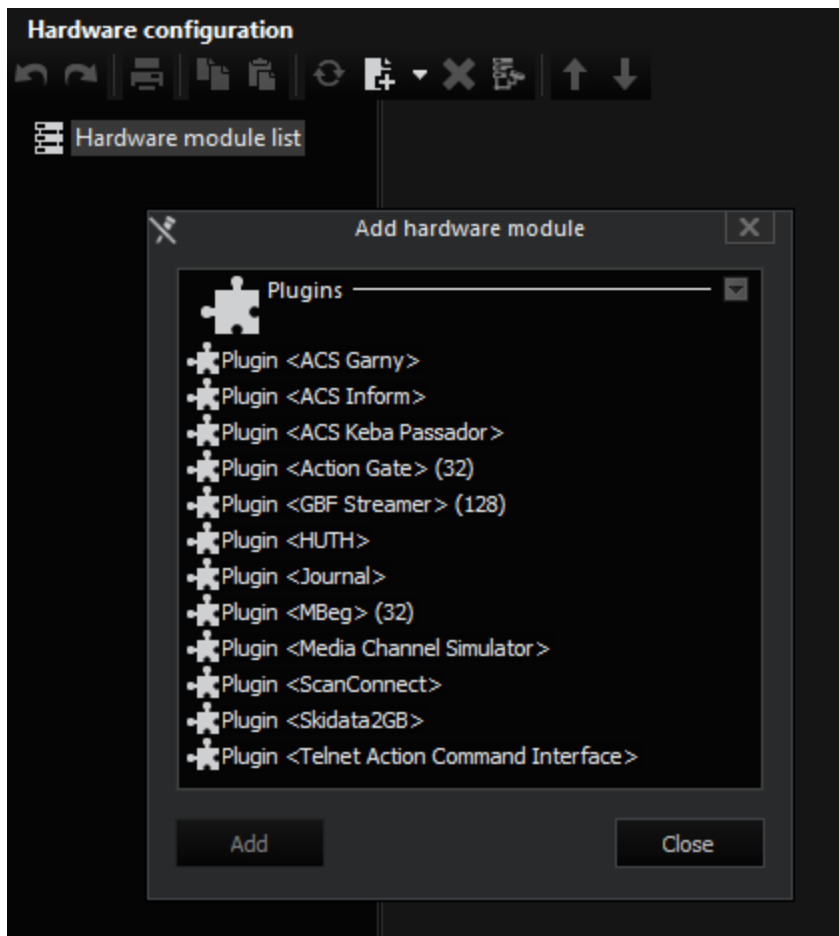
The installed plugins are initialized when G-Set is connected to the server.

If you want to add a plugin, copy the corresponding DLL file (and the DLG file, if available) to the **MediaPlugins** subfolder in the G-Core directory, which by default is located in the folder `C:\Programme\Geutebrueck\GCore\MediaPlugins`.

i To initialize the plugin, you must reboot the G-Core server.

Add a Plugin

1. Open the **Hardware** selection menu.
2. Click with the right mouse button in the tree view and then on **Add** twice.
3. The **Add hardware module** dialog is opened. It displays all installed plugins.

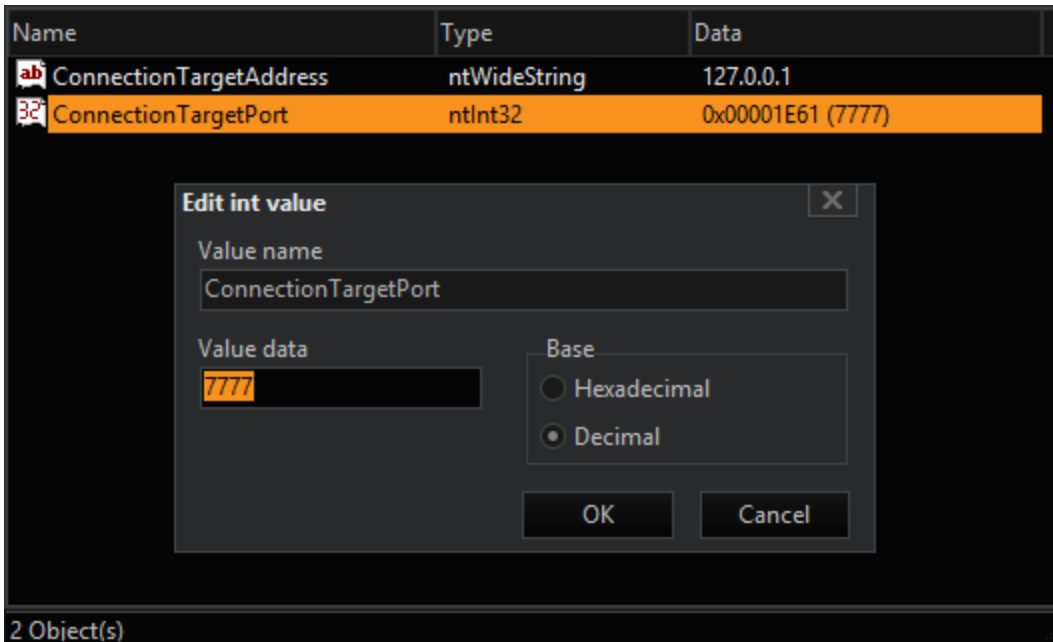


4. Select the desired plugin, click on **Add** and then on **Close**.
- The select plugin is displayed in the tree view.

Plugin Dialog

Plugins without Dialog

In our example, the plugin has no separate dialog for the TelnetActions commands. You only see the possible entries you can process after double clicking the respective entry.

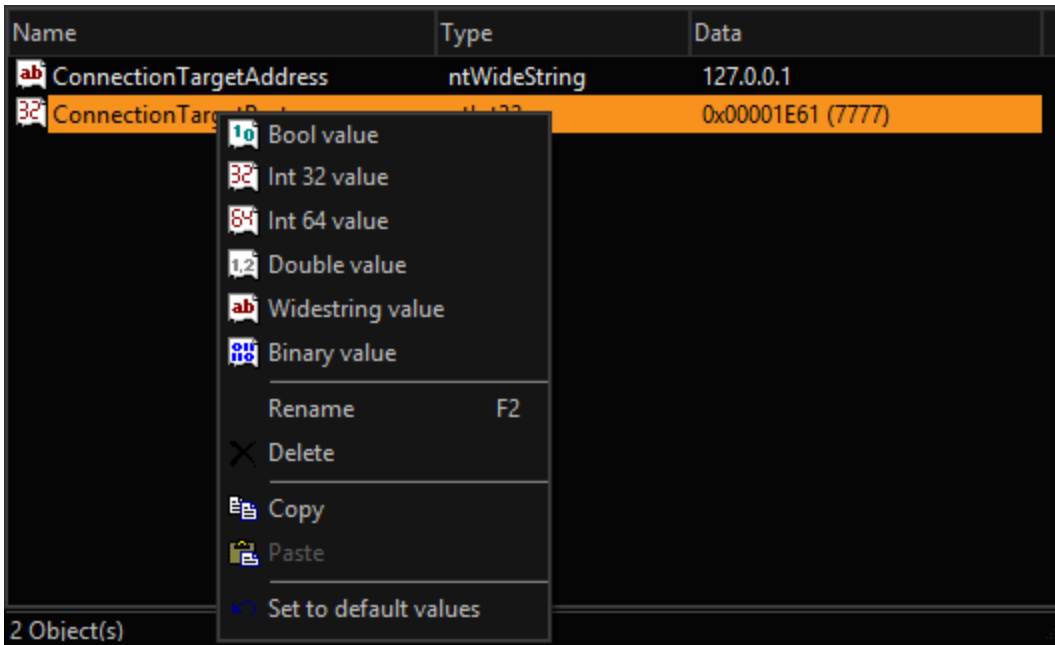


Click an entry with the right-hand mouse key to open the popup menu with the option

- to compile a new entry (possible values: Bool, Int32, Int64, Double, Wide string and Binary).
- to rename the entry.
- to delete the entry.
- copy and paste it in.

Use the command **Set to default values** to reset all values.

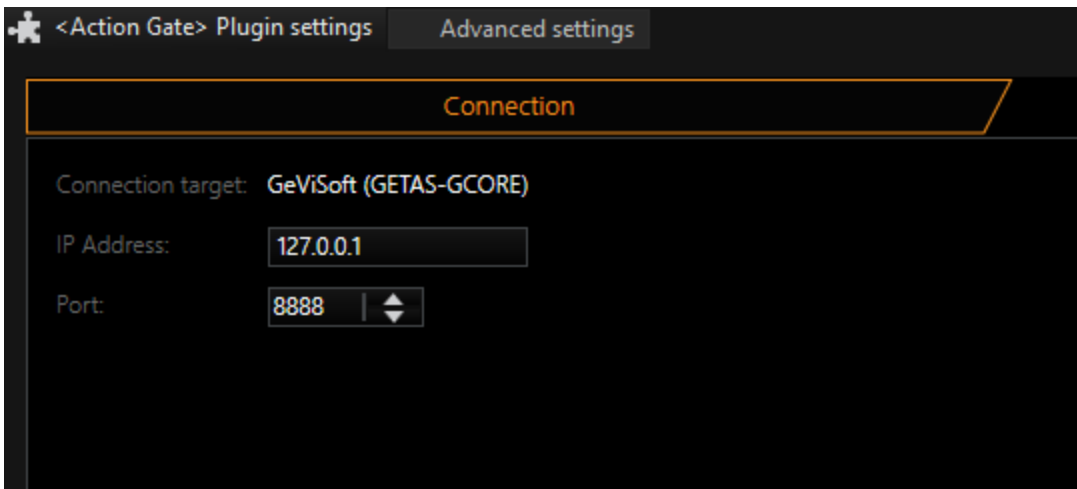
ABOUT PLUGINS



After completing configuration, send the settings to the server.

Plugins with Dialog

Plugins with dialog are opened in exactly the same manner as the plugins without a dialog. Settings are made via the dialog. An example of this is the AudioBackChannel ABC dialog.



Delete a Plugin

If you wish to delete a plugin:

ABOUT PLUGINS

- delete the plugin from the hardware settings and
- delete the respective DLL file (and the DLG file if such exists) from the **MediaPlugins** subfolder in the G-Core directory, which by default is located in the folder `C:\Programme\Geutebrueck\GCore\MediaPlugins`.

i **To de-initialize the plugin, you must reboot the G-Core server!**

i **Reboot the G-Core server also after all changes in the media channel / plugin configuration.**

Plugins

This chapter contains the description of the plugins available in G-Core.

ACS Keba Passador

Installation

The plugin consists of two DLL files:

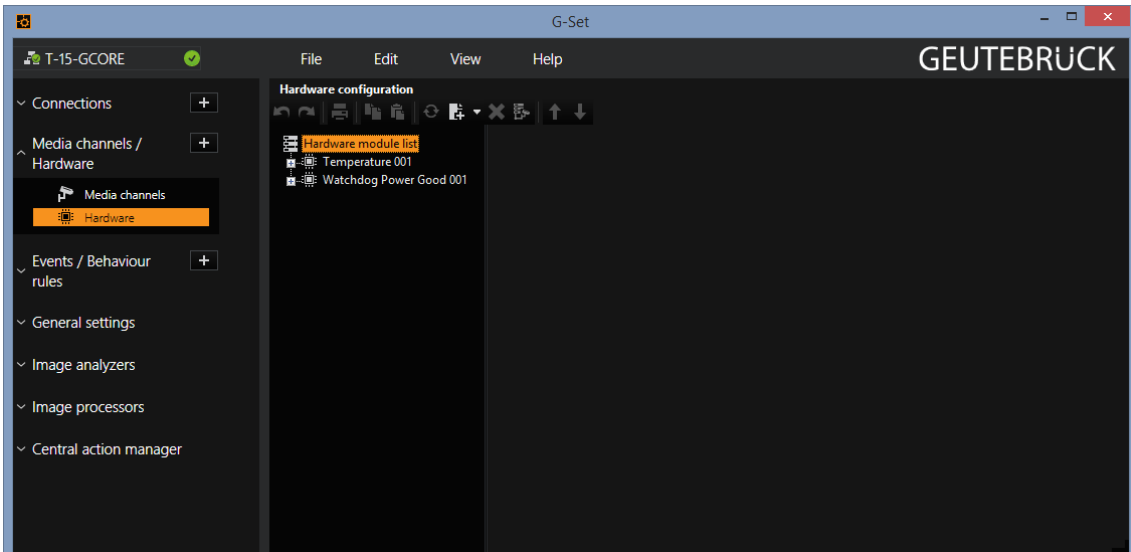
- KebaPassador.dll
- KebaPassador.dlg.dll

The first file represents the functionality of the plugin, the second for the configuration dialog.

If the plugin is not included in the installation after delivery, please copy the two files to the G-Core plugin directory (C:\Programme\Geutebrueck\GCore\MediaPlugins).

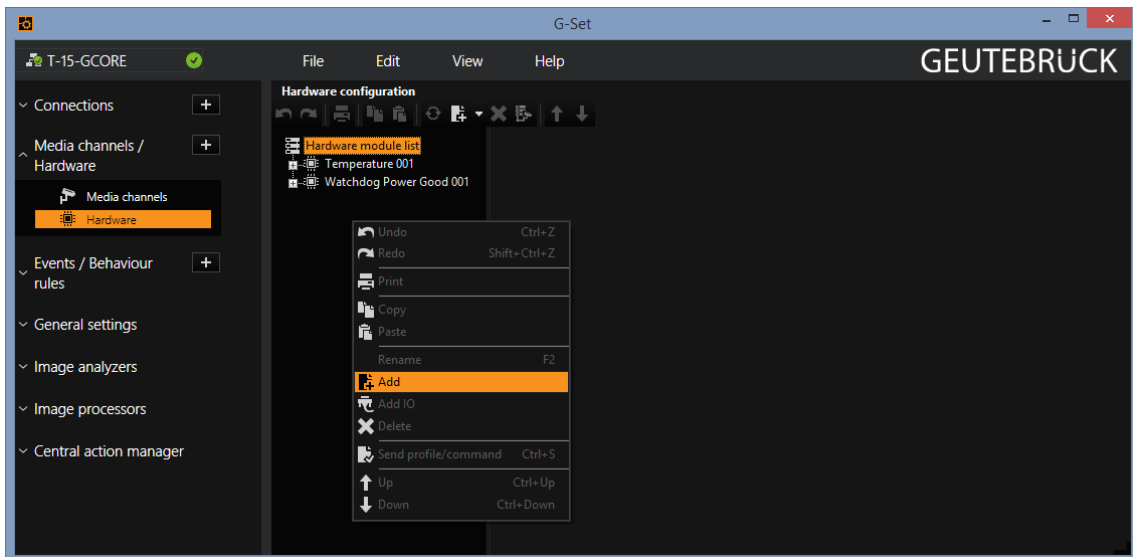
Add the Plugin

1. In G-Set open the **Hardware** selection menu.

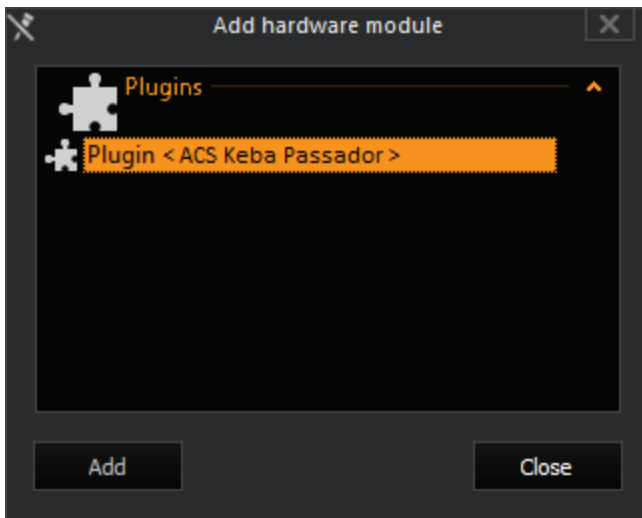


PLUGINS

2. Click with the right mouse button in the list view and select **Add** in the pop-up menu.



3. Select the **Plugin <ACS Keba Passador>** in the following popup by marking it and clicking on **Add**.

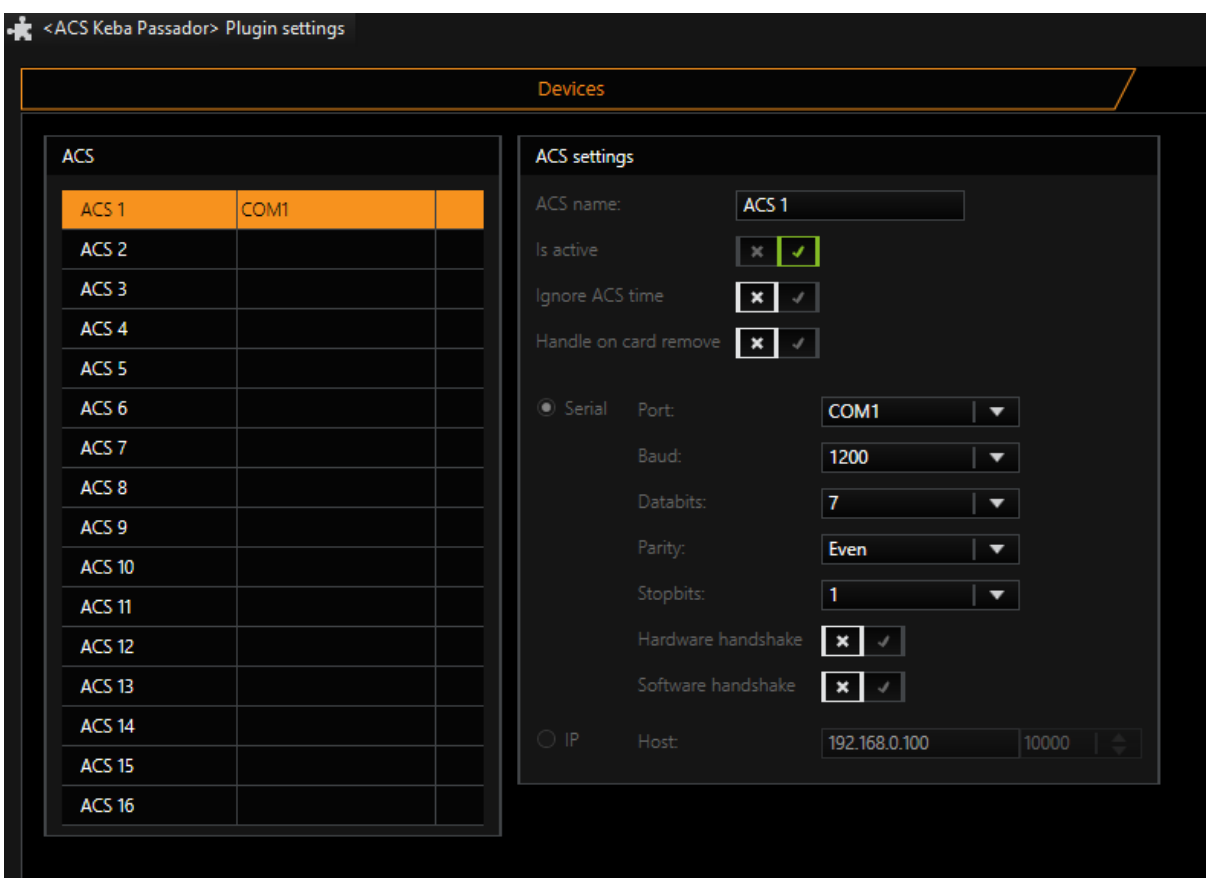


→ The ACS Keba Passador plugin is now entered as a hardware resource in the hardware module list. If you click on it, you can set the required parameters.

Configuration

The plugin supports up to 16 devices. For each device you can individually set the serial parameters. When the interfaces are activated, the display of the port is shown in the overview list.

PLUGINS



Especially for the Kebin S6 integration, the following parameters are relevant.

Name	Description
Ignore ACS time	If activated, the time specification of the local computer is used and the specification in the ACS messages are discarded. This parameter is not active in the standard configuration.
Handle on card remove	Kebin S6 sends the track records when inserting as well as removing the card from the slot. Practical experience has shown that the card data are significantly more reliable when the card is removed. For reasons of compatibility, the data are generated from the records during insertion of the card. If this parameter is activated, the data will be generated from the records during removal of the card. This parameter is not active in the standard configuration.

Actions

The plugin produces three messages in operation:

PLUGINS

Name	Description
ACS raw data	This action transmits character strings to the interface and is used for recordings or debugging.
ACS access granted	This action occurs during reception of the track 3 data. Usable information include the name of the ACS, account number, bank routing number and time stamp.
ACS access denied	As above, only in this case no account data can be read.

Here an excerpt from a communication log:

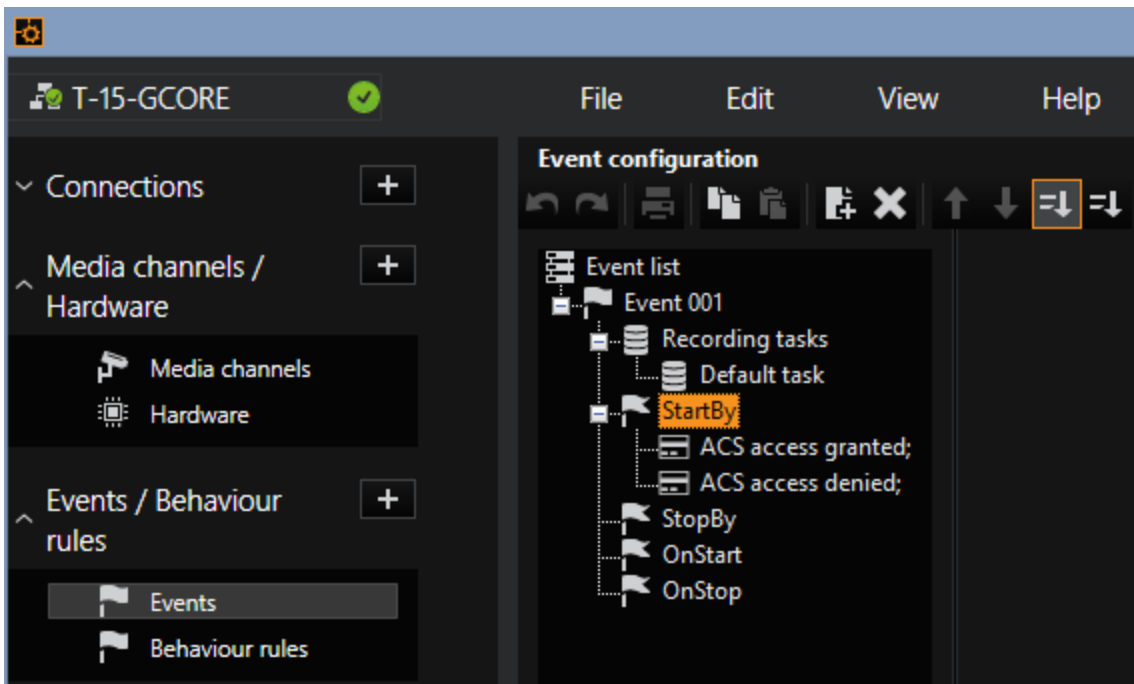
Time	Information
→ 4/27/2015 9:46:10 AM	ACS 1: Track2: 867018500000413 {0D}
→ 4/27/2015 9:46:27 AM	ACS 1: Track3: 8005908775D0000041343343D{0D}
→ 4/27/2015 9:47:13 AM	ACSAccessGranted (ACSName: *ACS 1*, Account: 4134334, BancCode: 8775, TimeStamp: *2015/04/27 09:46:57,047 GMT+02:00*)
→ 4/27/2015 9:48:49 AM	ACS 1: 27.04.15 09:50:18{0D}
→ 4/27/2015 9:49:38 AM	ACS 1: Track2: 867019530000024 {0D}
→ 4/27/2015 9:50:03 AM	ACS 1: Track3: 8005909158D000002443015D{0D}
→ 4/27/2015 9:50:49 AM	ACSAccessGranted (ACSName: *ACS 1*, Account: 244301, BancCode: 9158, TimeStamp: *2015/04/27 09:50:42,157 GMT+02:00*)
→ 4/27/2015 9:52:43 AM	ACS 1: 27.04.15 09:52:20{0D}
→ 4/27/2015 9:53:09 AM	ACS 1: Track2: 867018950000001 {0D}
→ 4/27/2015 9:53:36 AM	ACS 1: Track3: 8005909867D000000139538D{0D}
→ 4/27/2015 9:54:08 AM	ACSAccessGranted (ACSName: *ACS 1*, Account: 13953, BancCode: 9867, TimeStamp: *2015/04/27 09:54:05,861 GMT+02:00*)

Configuration of Event

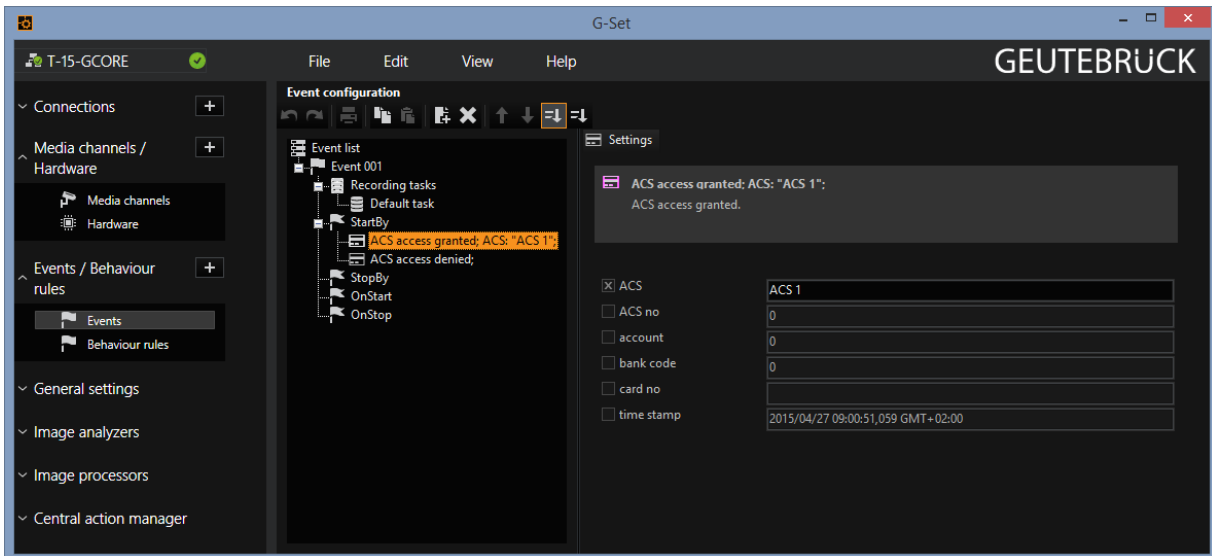
For recording of data, they need to be stored as accompanying data of an event. To do this, add an event. The event should be started by the ACS messages. To do this, add the following two actions in the **StartBy** list:

- ACS access granted
- ACS access denied

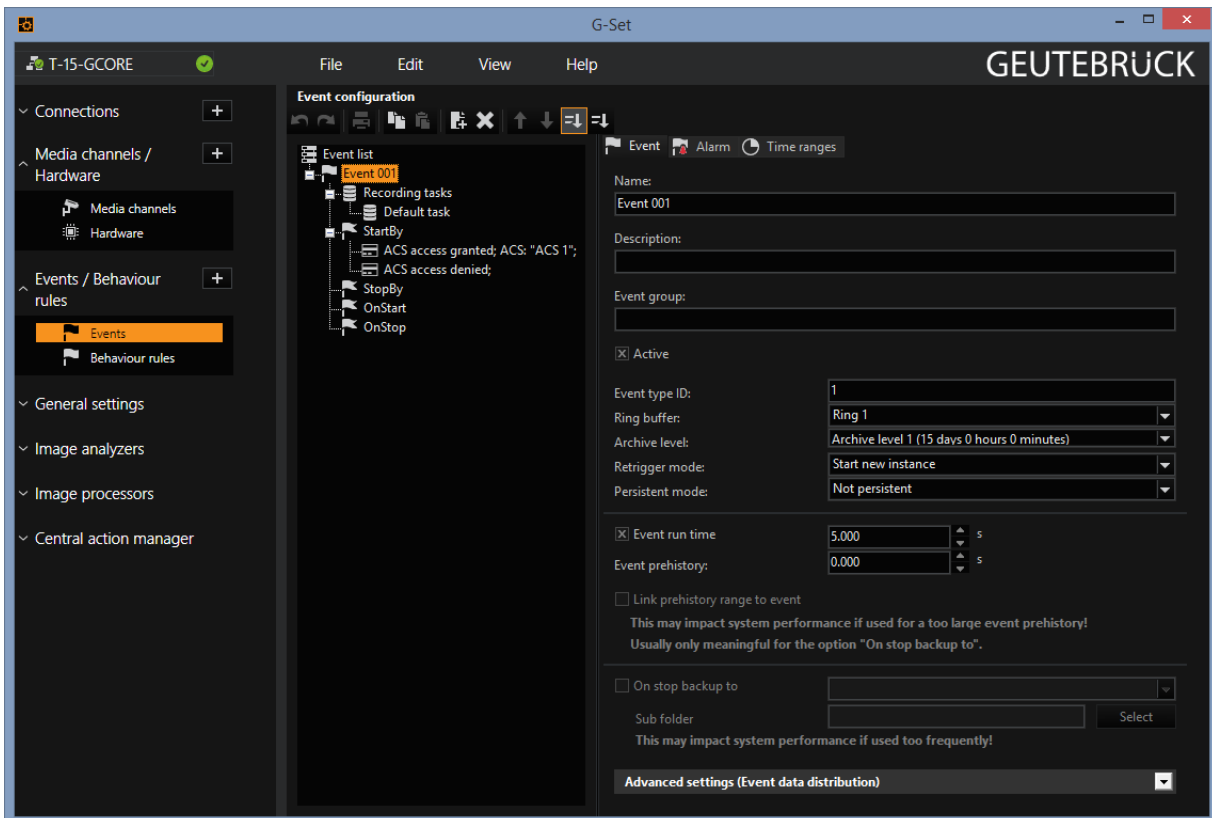
PLUGINS



If you operate only one ACS device, then you can omit the ACS name, otherwise you can use this parameter to differentiate between different ACS devices. Leave all other fields empty.



Recording is started using these two actions. Recording should stop after a certain duration; in our example after 5 seconds:



i If new messages come within this time period, it is important that a new event is started so that the data is not stored with the old event. To do this, change Retrigger mode to Start new instance.

Action Gate

ActionGate and GeViSoftActionGateGetas.dll form the basis for the easy migration of GeViSoft clients in G-Core systems. They cover various aspects of this conversion: Action Gate is a plugin that was specially developed to simplify the migration. The core of the plugin is a TCP client, improved with the following enhancements:

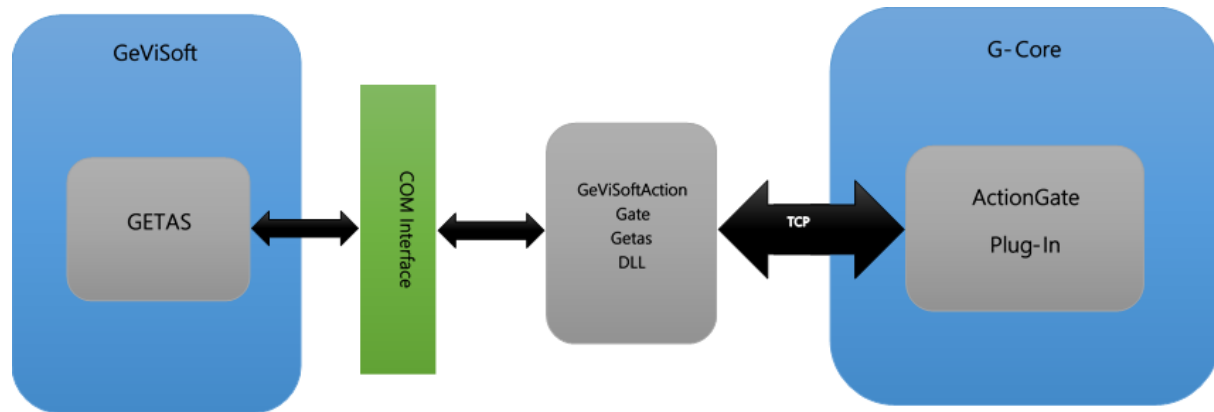
- Action transcoding
- Encrypted connection to the listener in GETAS

GeViSoftActionGateGetas is an extension for GETAS on the GeViSoft side. It includes a TCP listener, which is started from GETAS.

PLUGINS

For multiple instantiation, the plugin can provide different parametrization for individual clients. Action transcoding ensures that the GeViSoft actions are mapped to the equivalent G-Core actions and vice versa.

The following architectural diagram describes the use of Action Gate:



The client then, as usual, sends the character strings with GeViSoft actions, for example `CrossSwitch(1, 1, 0)` or `ClearVideoOutput(1)`, the Action Gate plugin receives these character strings and translates them to G-Core actions `ViewerConnectLive(Viewer: 1, Channel: 1)` or `ViewerClear(Viewer: 1)`. They are then forwarded to the G-Core server.

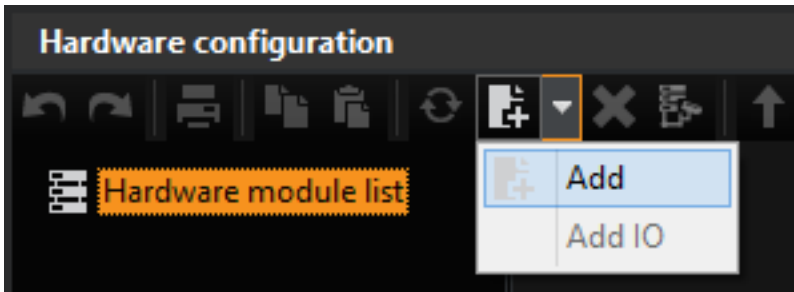
In the other direction essentially the same procedure occurs: When an action is triggered at the G-Core server, for example `SensorVideoAlarm(Channel: 1, ...)`, this is then transcoded into the corresponding GeViSoft action `VSAalarmInField(1, 0, A)` and sent to the GETAS client.

- i** If there is no equivalent G-Core action for a GeViSoft action, for example `MBegLockCamera`, then on the G-Core side a general action `GeViSoft:MBegLockCamera` is generated and the parameters are adopted. Conversely, if no equivalent GeViSoft action exists for a G-Core action, the action is ignored.

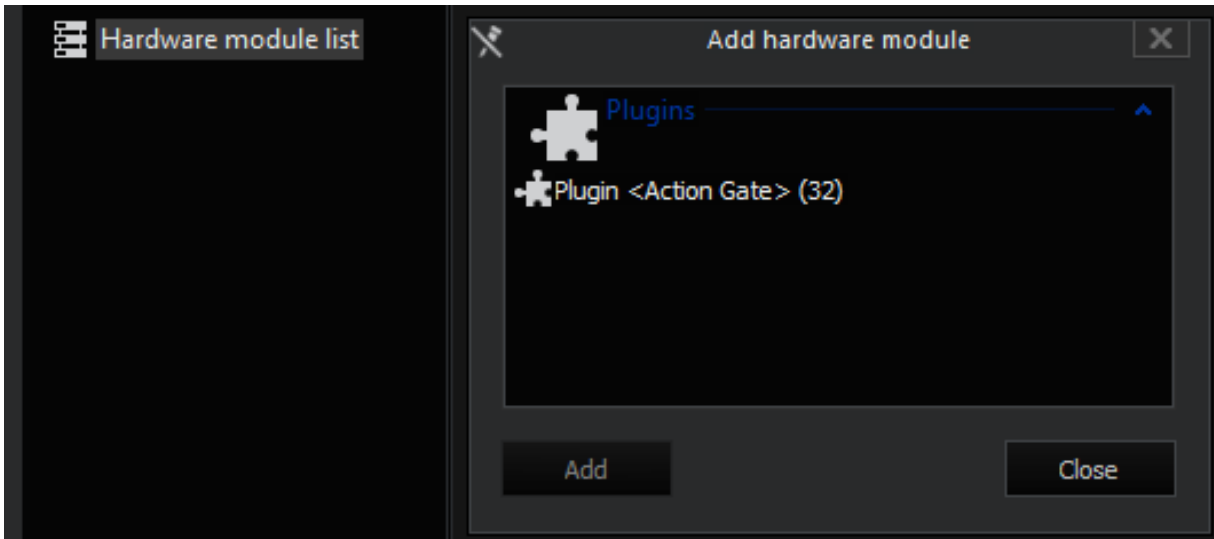
Add the Plugin

On the G-Core-side, an instance of Action Gate must be created:

PLUGINS



For this purpose, a new module must be created in the hardware configuration. The **Plugin <Action Gate>** is then selected and confirmed with **Add**.

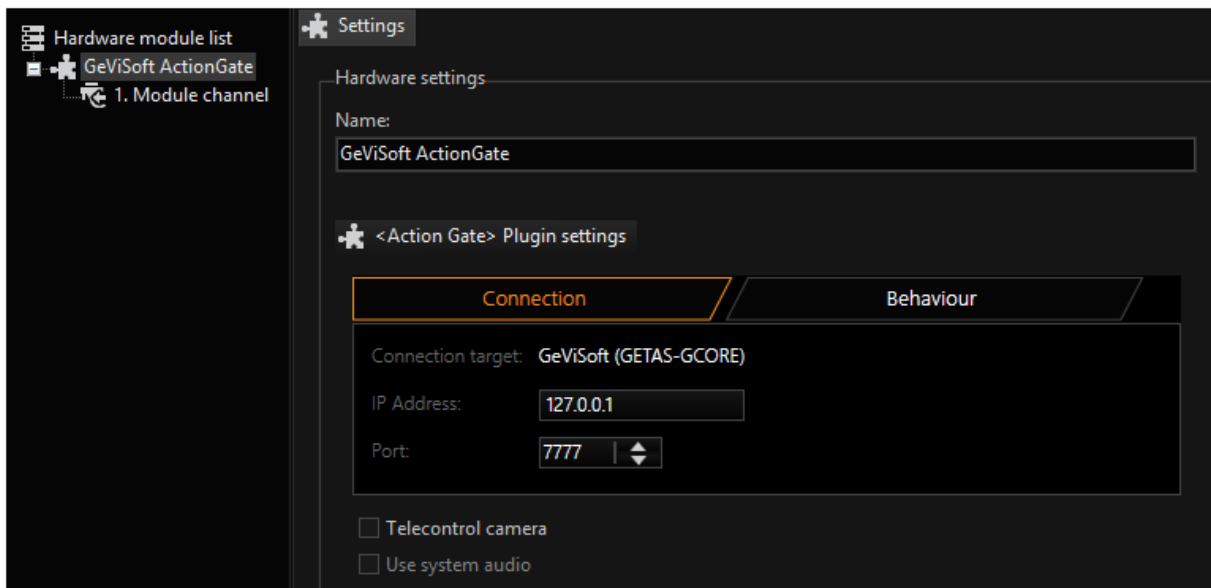


Configuration

Connection

The IP address of the host on which the GeViSoft runs and the port of the listener of the GeViSoftActionGateGetas.dll must then be specified.

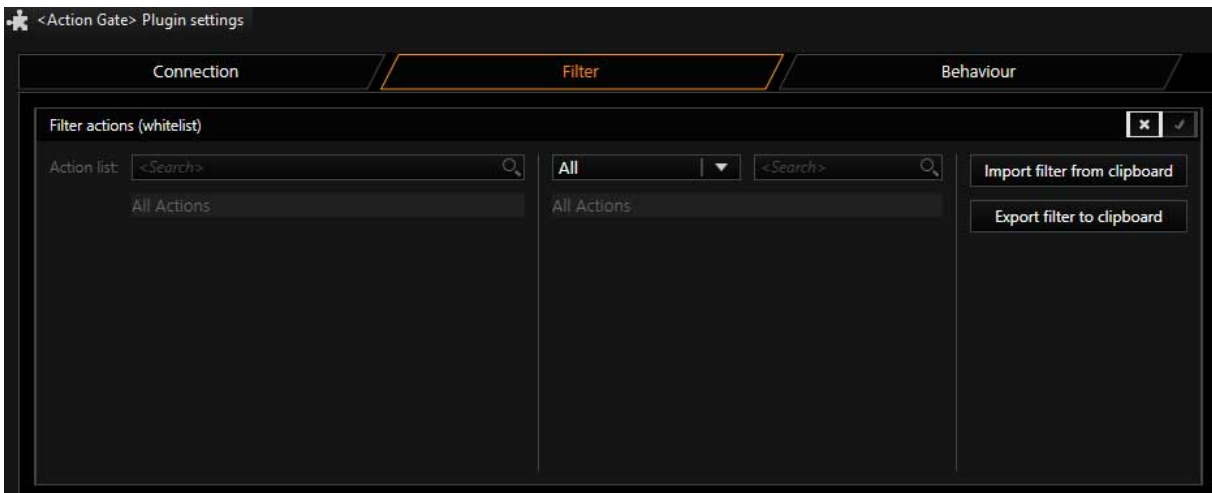
PLUGINS



i By default the port is set to **7777**. It can be changed, as described below.

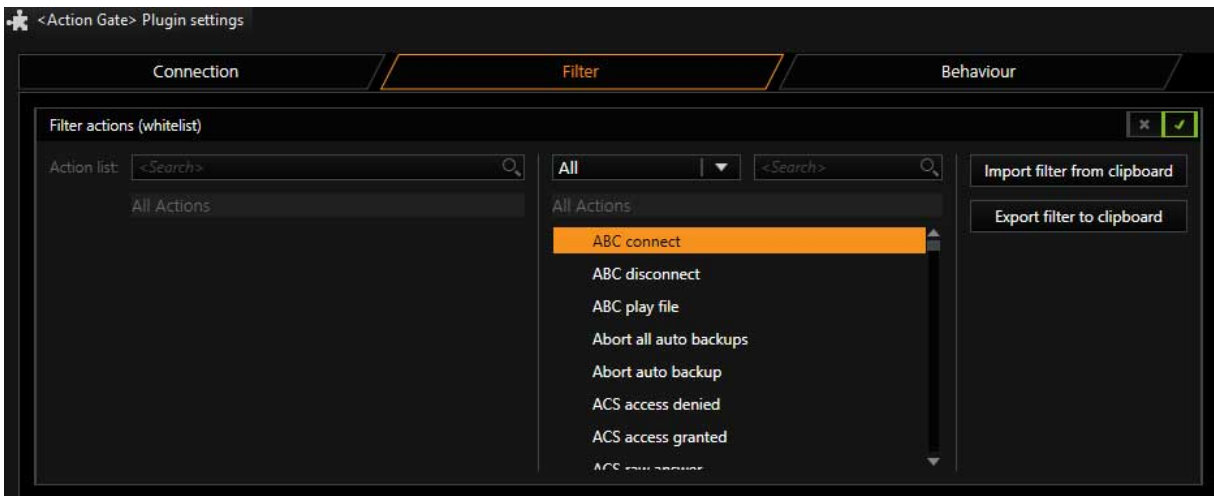
Filter

The number of actions that are exchanged between GeViSoft and G-Core can be reduced. Filters must be used for this purpose. The filter acts as a whitelist, the actions relate to the G-Core PLC.

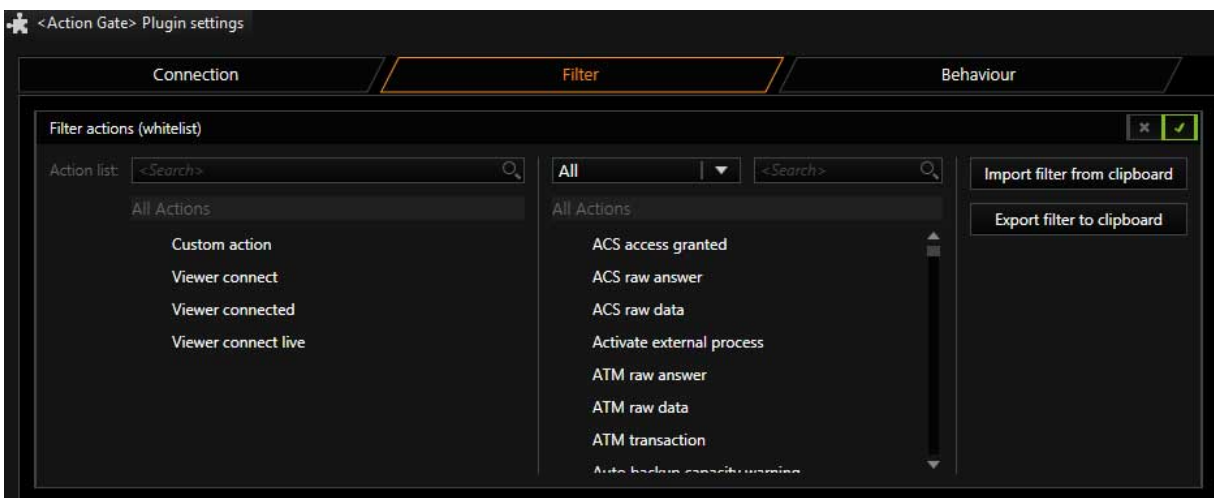


The filter must be activated before it can be configured.

PLUGINS



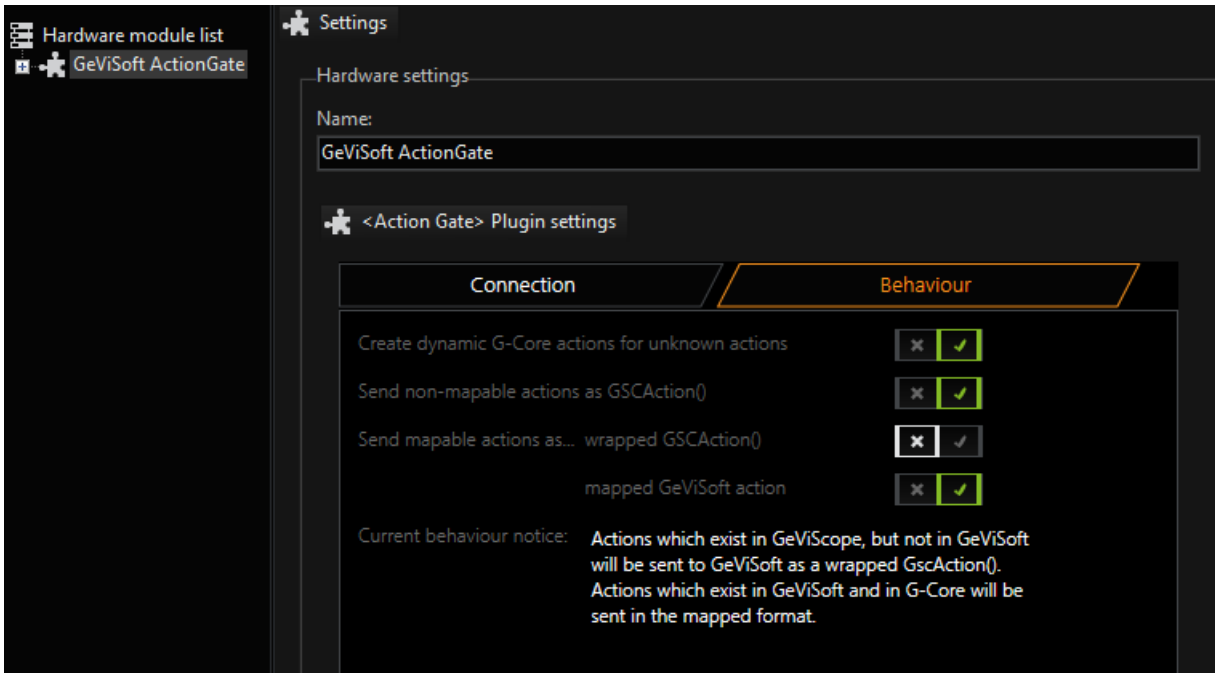
The action items can then be dragged and dropped into the whitelist (left field). By right-clicking on an action item in the whitelist, entries can be removed again. Using the import/export function, the filter lists can be exchanged between multiple Action Gate instances.



Behaviour

In the **Behaviour** tab you can also set what will happen with the actions.

PLUGINS



As explained in the introduction, from the GeViSoft action MBegLockCamera on the G-Core side a generic action GeViSoft:MBegLockCamera is generated. This can be activated or deactivated with the first check box.

Because GeViScope can also be connected over GeViSoft servers, the Action Gate can also be parametrized by the second check box so that actions that do not exist in GeViSoft but do exist in GeViScope can be sent as packed GSCAction().

For example, the Barcode Action, if the check box is activated, is sent as packed action:

```
BarcodeData ("Scanner 001", "2015/08/10 16:05:54,584 GMT+02:00", "1234")
```

```
GscAction ("",BarcodeData ("Scanner 001", "2015/08/10 16:05:54,584 GMT+02:00", "1234"))
```

How to handle the remaining actions, i.e. actions that exist in GeViSoft and in GeViScope, can be specified using the third and fourth check boxes.

For example, for the CameraTourStart action, you can decide whether it is intended for GeViScope or GeViSoft, as this action is implemented in GeViScope, GeViSoft and G-Core.

- Action in G-Core: CameraTourStart (Camera: 1, TourID: 1, TourName: "Tour 001")
- Mapped action for GeViSoft: CameraTourStart (1, 1, "Tour 001")

PLUGINS

- Packed action for GeViScope: GscAction ("", CameraTourStart (1, 1, "Tour 001"))

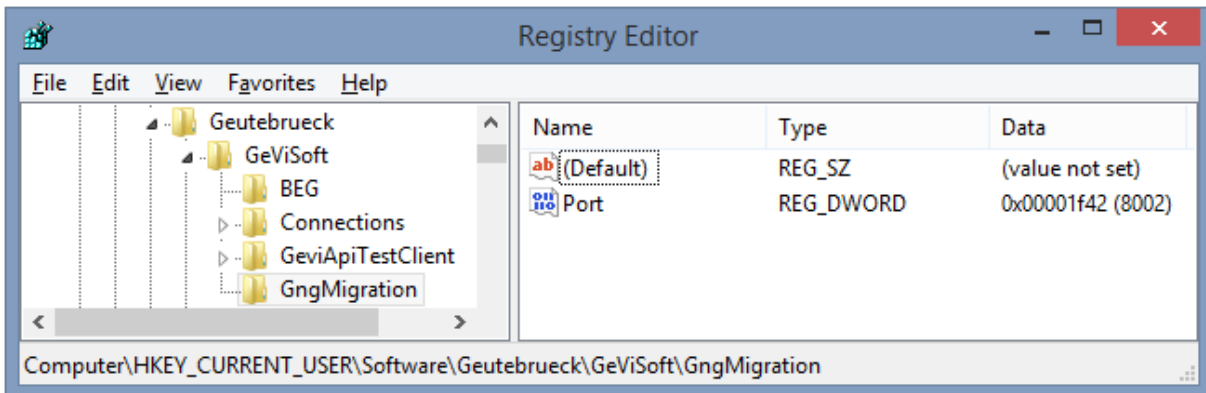
Description of Changes for GeViSoft GETAS

GeViSoft is shipped from version 5.0.128.3 with GeViSoftActonGateGetas.dll and thus supports migration in G-Scope systems.

If GeViSoftActionGateGetas.dll is in the folder GeViSoft, this DLL is loaded by GETAS and a TCP listener is instantiated for ActionGate connections.

The port 7777 is set as the default in the TCP Listener. If necessary, it can be changed under HKEY_CURRENT_USER\Software\Geutebrueck\GeViSoft\GngMigration\ in the Windows Registry.

⚠ IMPORTANT: Use caution with all changes that are made in the Windows Registry. It is extremely important to know what you are doing!



i This key must be created manually. The GeViSoft server must then be restarted for the port change to take effect.

Areca

The Areca plugin cyclically queries the status of the hard drives in the RAID system of a G-Scope. To this end, it uses SDK provided by **Areca Technology Corporation**, the manufacturer of the installed RAID controller.

If a defective disk is found, the plugin sends a SystemError action. It contains the information storage error, Raid HDD error and the ID of the defective disk.

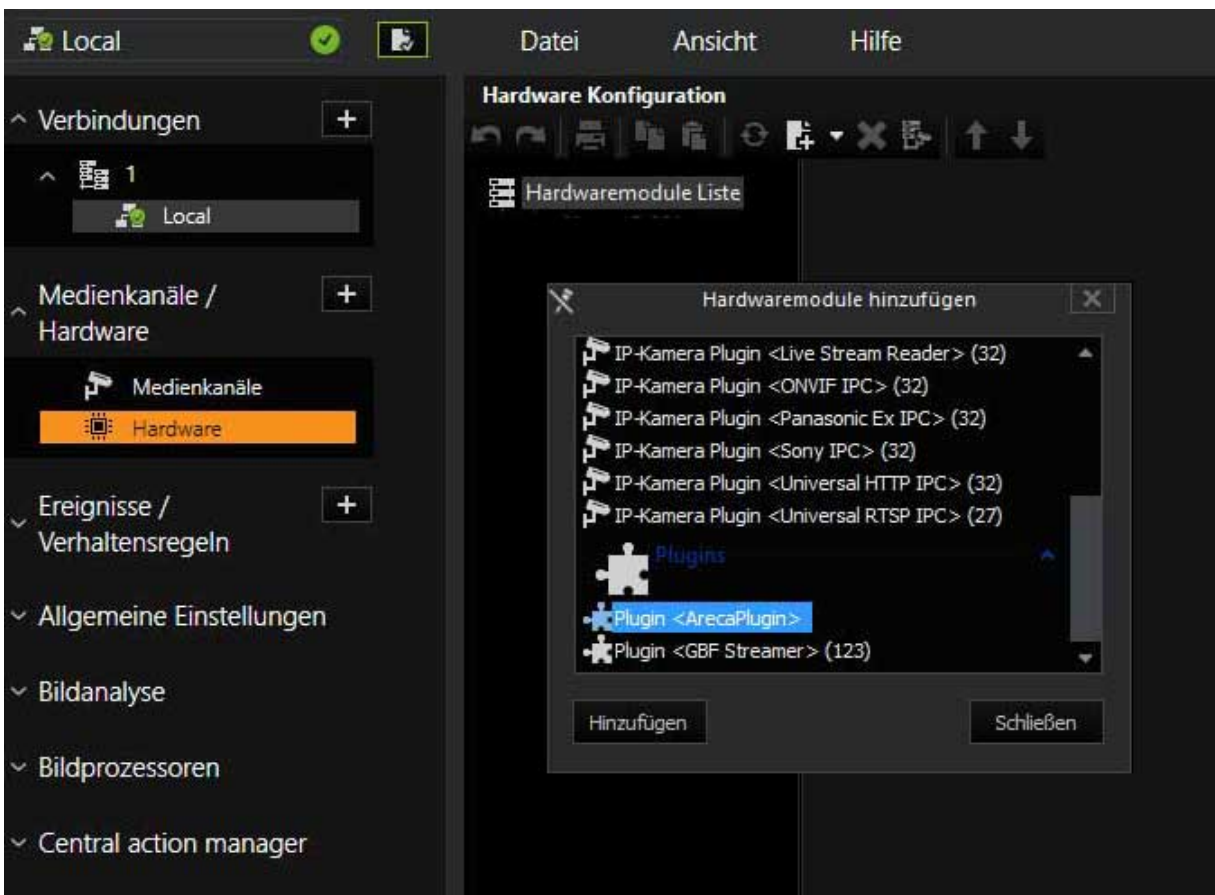
Reactions to this action can be defined as usual by creating corresponding behavior rules in G-Set.

Installation

Starting from version 2.0, the Areca plugin is a standard feature in G-Core. A requirement for the use of the Areca plugin is a G-Scope with an integrated Areca RAID controller and the corresponding G-Core version.

Add the Plugin

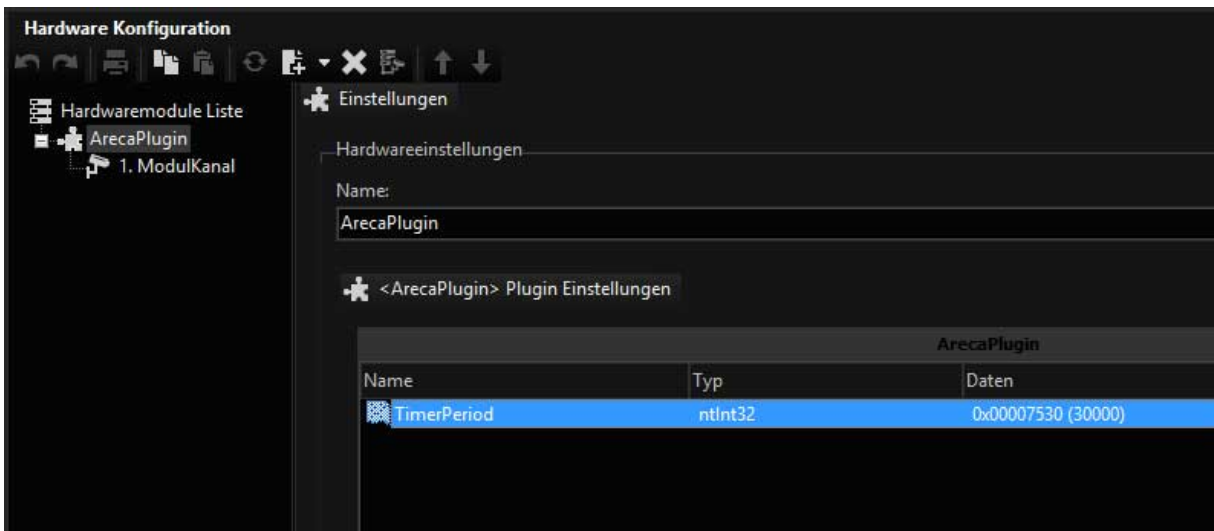
After successful installation of G-Core, the G-Core server starts automatically and loads all present plugins. After the start of G-Set, the Areca plugin can be added under **Hardware**.



Configuration

Using the registry key **TimerPeriod**, the interval for the hard-drive checks can be defined. If no registry key is set, a default value of 30,000 milliseconds is used.

i The entered timer period must be at least 15,000 milliseconds.



Audio Back Channel

The Audio Back Channel plugin is used to create uni/ bidirectional audio communication between different components of the G-Scope environment. Examples for use are:

- Uni/ bidirectional audio communication between a G-View station and a G-Scope. This form can be used, for example, by train stations, where announcements are passed on via a CCTV workstation to the G-Scopes that are installed there (announcement function).
- Uni/ bidirectional audio communication between two G-View stations (audio chat function).
- Simple audio functions such as announcements in shopping centers or acoustic supply with audio multimedia, i.e. not-CCTV-relevant applications (thin audio client function).

Even if the functionality is comparable to professional intercom technology: It has not been designed as such. With a latency time of roughly 500 ms, this is to be expected. The plugin simply makes possible communication between G-View workstations and other devices. This makes a range of interesting applications possible and easy to realize.

The Audio Back Channel plugin is a G-Scope media plugin. At the output side (ABC output) the plugin must be installed in order to output (ABC output) an announcement or audio file over the loudspeakers.

At the input side (ABC input) a G-Core server must be installed that composes the input of the Audio Back Channel. The input source is a microphone or another audio component that is connected to the GESC.

- i** **The ABC function is completely independent from the DSP input of the G-Scope. It can therefore also be used when the G-Scope itself do not use any audio inputs.**

Installation

Installation is carried out in 2 steps at the input side and several settings at the output side.

ABC Input

If you have not installed a G-Core server at the output side, you must do this now. After that or in general:

In G-Set:

1. Start G-Set and connect yourself with the G-Core server of the ABC output system.
2. Open the selection menu **Hardware** and create a virtual channel (this can be, for instance, a channel for an IP camera of any type as the channel only serves as a placeholder for the ABC function).
3. Activate **Use system audio** in the corresponding properties dialog. Thus the audio input of the system is connected with the media channel.
4. Send the setup to the server.
5. Open the selection menu **Media channels**.
6. Add a virtual media channel. Change the name of the channel to **AUDIOBACKCHANNEL**.
7. Go to the settings for live streaming.
8. Select **HIGH** for the audio profile of the live stream.
9. Send the setup to the server. The system now shows an audio channel is available in the network.

In G-View:

1. Open the Profile Manager in G-View.
2. Select the menu **Custom buttons**.
3. Create a button entitled **SPEAK**.

PLUGINS

4. Set the **Action on mouse down** to ABC_CONNECT(XXX) and **Action on mouse up** to ABC_DISCONNECT(XXX). Set the Sent to function to server of selected viewer.

 **XXX is the IP address or the network name of the input audio system!**

5. Save the settings.

ABC Output

Before you configure the device for output, please connect a loudspeaker and test if you can hear audio files with the help of the media player.

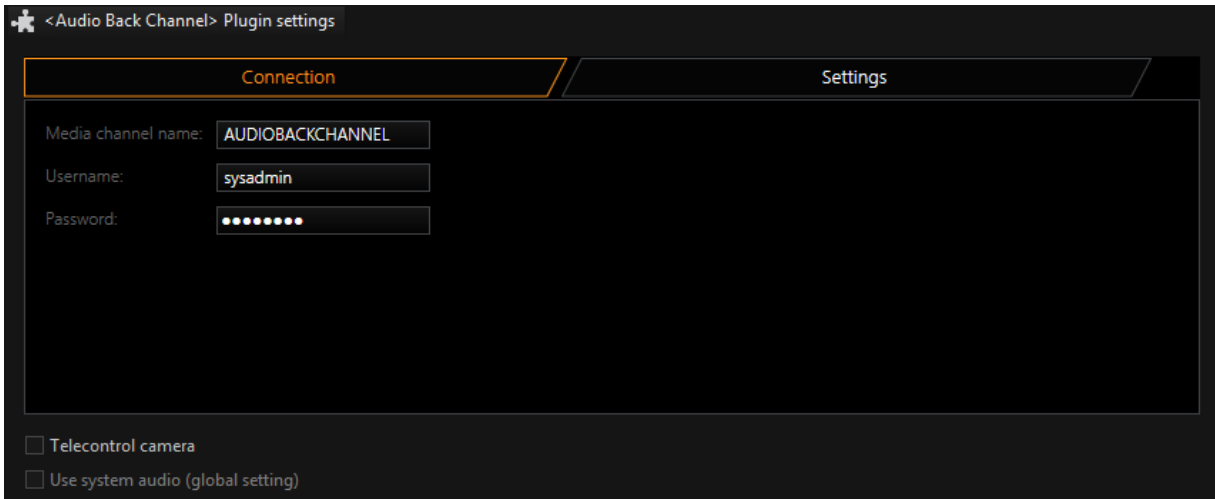
1. Copy the ABC plugin (GngAudioBackChannel.dll and GngAudioBackChannel.dlg.dll) to the **MediaPlugins** subfolder in the G-Core directory, which by default is located in the folder
C:\Programme\Geutebrueck\GCore\MediaPlugins.
2. Start G-Set and connect yourself with the G-Core server of the ABC output system.
3. Go to the **Hardware** dialog.
4. Click on **Add** and select the ABC plugin from the list of media plugins.
5. Save the settings. It is not necessary to configure a media channel for the plugin.

You must carry through this procedure for each G-Core system that is meant to output the audio of the input system.

Configuration

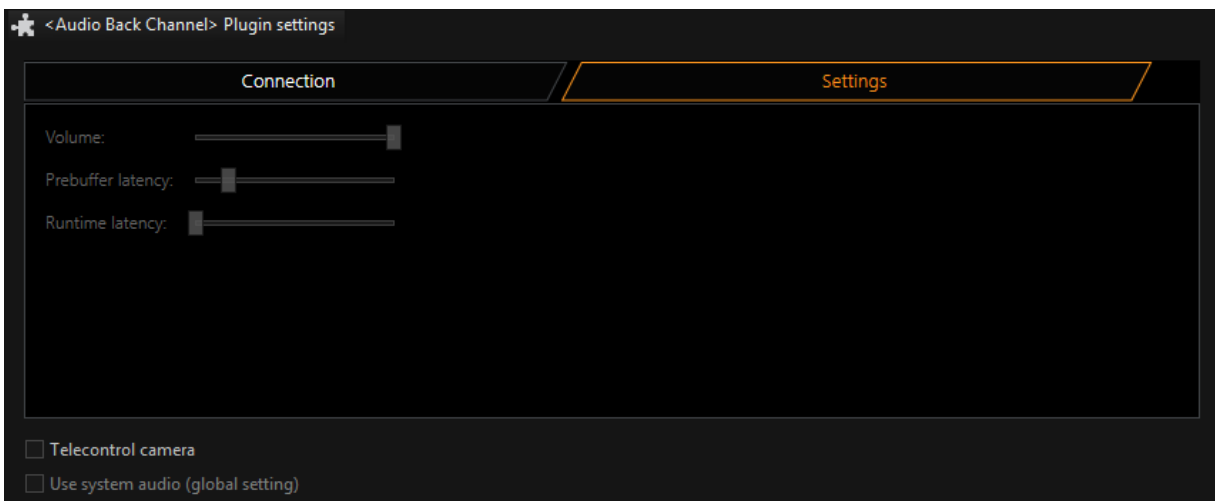
Click on **ABC** in the plugin selection menu. The settings window is opened.

Connection



Name	Description
Media channel name	This is the name of the audio channel in the audio source system. The standard name is AUDIOBACKCHANNEL.
Username / Password	The connection between the ABC plugin and the ABC source server requires a normal G-Core user account. As a standard sysadmin and masterkey is foreseen. If you want to use another user account, you can change the settings here.

Settings



Name	Description
Volume	Defines the volume of the audio output.
Prebuffer latency / Runtime latency	These parameters influence the audio transmission latency. For an undisturbed transmission, a certain amount of buffering is necessary. If the audio transmission is disrupted, then you can reduce the disruptions by increasing the latency time.

BaroxSwitch

The BaroxSwitch plugin connects a Barox switch to G-Core via TCP/IP. It allows to power on or power off specific POE ports of the switch to restart connected cameras. To operate a port of the switch, the action **IP Switch Operation** is sent to G-Core.

System Requirements

i **Not all Barox switches are supported by the BaroxSwitch plugin. Currently only switches that are able to work with the G-Core Web API are supported, no switches with SNMP protocol.**

The switches must be updated to the new firmware:

- RY-LGSP16-10: v6.54.3600 2020-11-20
- RY-LGSP28-10: v8.40.2154 2021-10-16

This plugin works from G-Core version 5.

Installation

The plugin consists of the following files:

- BaroxSwitch.dll
- BaroxSwitchDevice.dll

How to install the plugin:

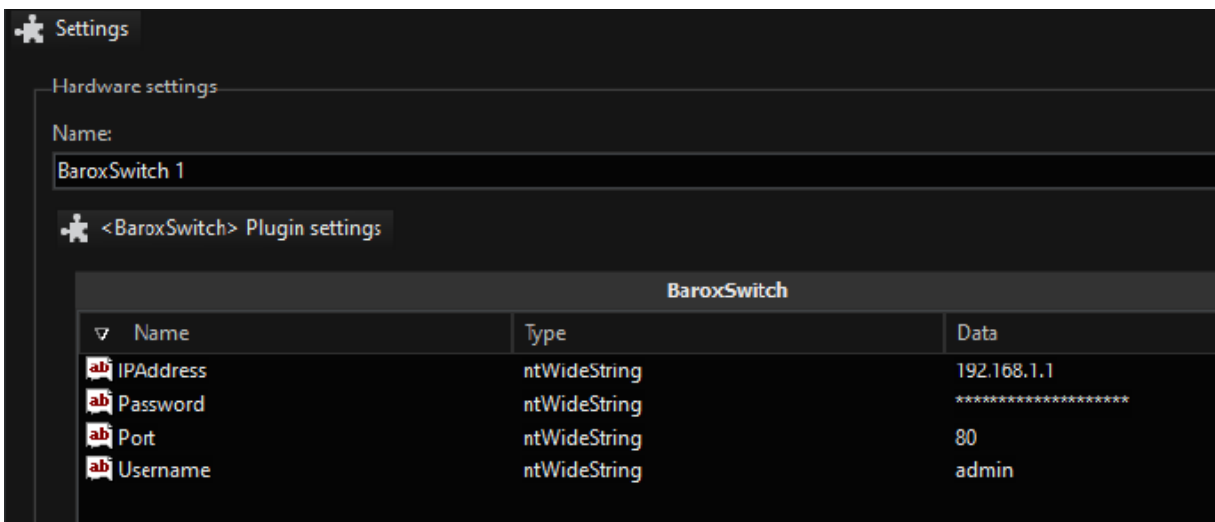
1. Run the `Barox Switch Plugin.exe` installation file.
2. The plugin files are copied to the G-Core installation directory.

PLUGINS

- BaroxSwitchDevice.dll: C:\Program Files\Geutebrueck\Gcore
 - BaroxSwitch.dll: C:\Program Files\Geutebrueck-\GCore\MediaPlugins
3. Restart the G-Core server.
 4. Open G-Set and add the plugin in the **Hardware configuration** window.

i You need to add a separate plugin for each Barox switch.

Plugin Settings



Name	Description
IPAddress	The IP address of the Barox switch.
Password	The password for logging in to the Barox switch.
Port	The port is fixed to 80.
Username	The username for logging in to the Barox switch.

Configuration

The Barox switch provides a REST API interface through which multiple API methods are available.

How to log in to the switch:

PLUGINS

```
URL: /api/login Method: POST Request JSON: { "login": { "username" : "user123", "password" : "user123", "user_ip": "192.168.1.1", "sessid": "375118820" } }
```

How to connect the plugin to the switch:

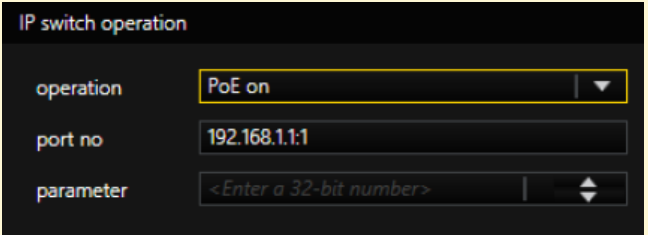
The G-Core action **IP switch operation** is used to set the ports of the switch.

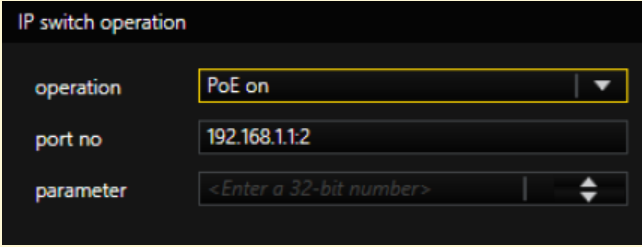
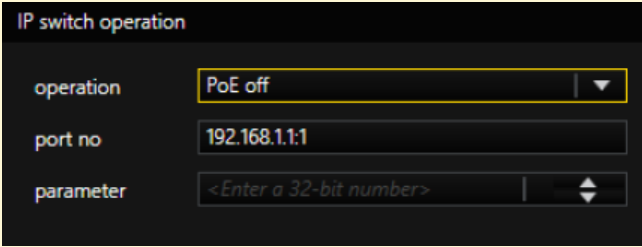


The screenshot shows a configuration window titled "IP switch operation". It contains three input fields: "operation" is a dropdown menu currently showing "PoE on"; "port no" is a text input field containing "192.168.1.1"; and "parameter" is a text input field containing "<Enter a 32-bit number>".

1. Select **PoE on** in the **operation** drop-down list.
2. Enter the IP address of the switch and the port number in the **port no** field (<IP address>:<port>).
3. The plugin retrieves the required API command from the switch and connects to the switch on startup. If the switch is not reachable, the plugin periodically tries to reconnect to the switch.

IP Switch Operation Actions

Action	Parameter
Power on PoE port number 1	operation: PoE on port no: 192.168.1.1:1 
Power on PoE port number 2	operation: 0 port no: 192.168.1.1:2

Action	Parameter
	 <p>IP switch operation</p> <p>operation: PoE on</p> <p>port no: 192.168.1.1:2</p> <p>parameter: <Enter a 32-bit number></p>
Power off PoE port number 1	<p>operation: PoE off</p> <p>port no: 192.168.1.1:1</p>  <p>IP switch operation</p> <p>operation: PoE off</p> <p>port no: 192.168.1.1:1</p> <p>parameter: <Enter a 32-bit number></p>

CANBus

i This plugin is only available on a project basis. Contact the sales department if you are interested.

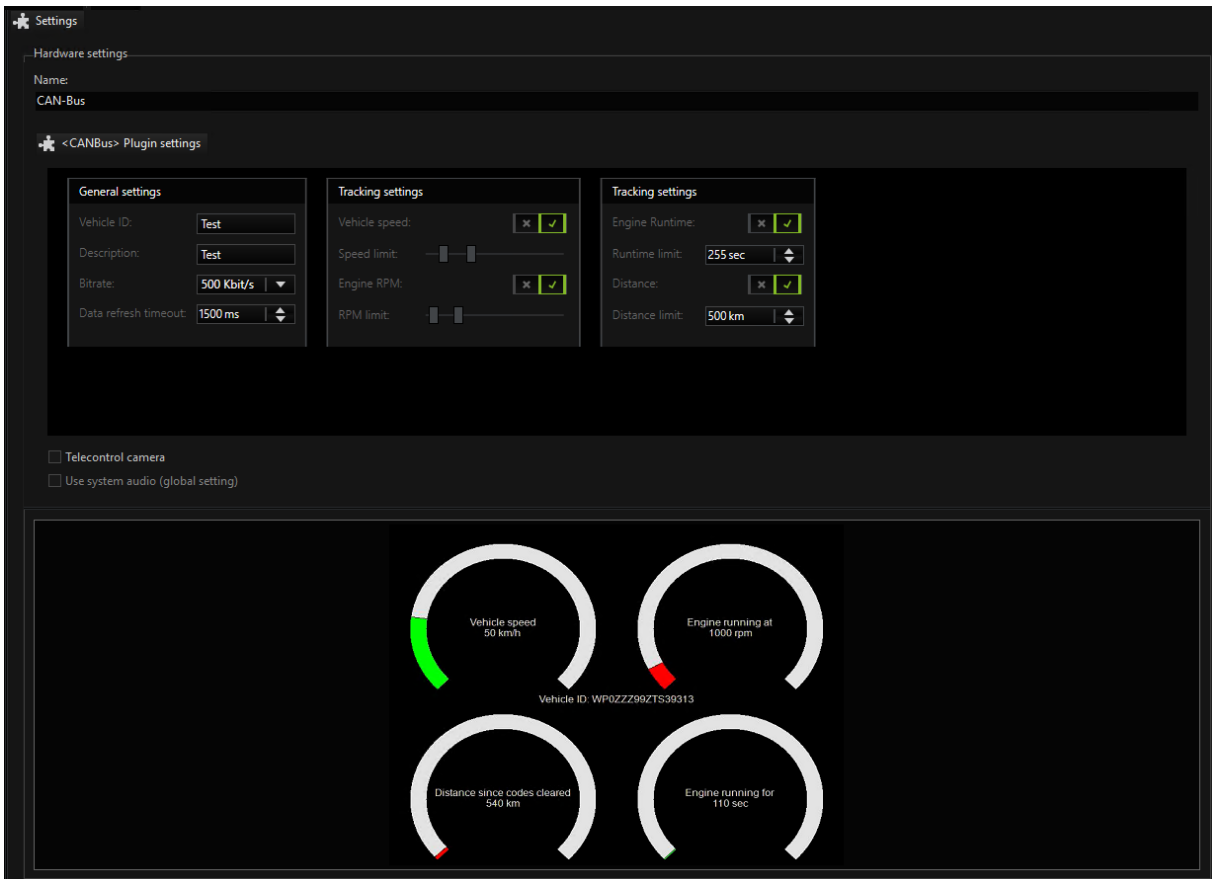
Introduction

The CAN Bus plugin connects to the CAN Bus port of a vehicle and samples live data via the OBD II protocol. Currently four parameters can be accessed using this plugin:

- Vehicle speed
- Engine RPM
- Time since engine start
- Distance traveled since error codes cleared (inspection)

PLUGINS

The time frame after which data should be sampled can be configured. Data sampling can be toggled on or off separately for each of the parameters. In case configured thresholds are hit, a special CANBusData action is emitted, allowing further notification and treatment. The sampled parameters and values are also represented in graphical form in video streams.



Configuration

General Settings

The bus operates at a certain bitrate (most likely 500 Kbit/s). In order for the bus to operate correctly, the plugin has to use the same bitrate setting as the bus.

Name	Explanation
Vehicle ID	A customizable field to identify the vehicle.
Description	An optional description of the vehicle.

PLUGINS

Name	Explanation
Data refresh timeout	Refers to a time frame after which new data will be sampled.

Tracking Settings

Name	Description
Vehicle Speed	The setting can be turned on or off. To set a lower and upper limit for this parameter, adjust the limit sliders accordingly. If the sampled value is below or above these set thresholds, an action will be emitted containing type, value and limits as configured (see below).
Speed limit (km/h)	
Engine RPM	The setting can be turned on or off. Use the limit sliders to set a lower and upper limit for this parameter. If the sampled value is below or above these thresholds, an action will be emitted containing type, value and limits as configured (see below).
RPM limit	
Engine Runtime	The settings can either be turned on or off. To set a threshold for this parameter, use the spin box or text field . If the sampled value is above this threshold an action will be emitted containing type, value and limit as configured (see below).
Runtime limit (sec)	
Distance	The settings can either be turned on or off. To set a threshold for this parameter, use the spin box or text field. If the sampled value is above this threshold, an action will be emitted containing type, value and limit as configured (see below).
Distance limit (km)	

CANBusData Action

The CANBusData action contains the following fields:

Name	Explanation
Type	The type of the parameter, one of: <ul style="list-style-type: none"> • Undefined = 0 • VehicleSpeed = 1 • EngineRPM = 2 • EngineRuntime = 3 • Distance = 4
Id	The Id configured in the plugin settings.
Description	The description configured in the plugin settings.
Value	The current sampled value of the parameter represented as a floating point number (double).
Limit1	The lower threshold / the threshold for triggering this action.
Limit2	The upper threshold / the threshold for triggering this action.
AuxillaryData	Currently, this field contains the vehicle identification number (VIN).

Commend

i Also refer to the G-CIS (GeViSoft) documentation for **COMMEND**.

The COMMEND interface of Geutebrück connects Commend Intercommunication Server with the G-Core server.

All information from the Commend server can be handled as a **CustomActionEX action**. Specific information is handled through specific G-Core actions.

User-defined actions can be sent to the Commend server using CustomActionsEx.

The interface has been developed by G-Core as a hardware plug-in. The connection protocol is TCP/IP.

Functionality

The plugin connects to a Commend server via TCP/IP with a unique IP address (with PORT).

After connecting to the Commend server, the plugin expects information from the Commend server. This information is sent as a readable string and translated into G-Core actions. CustomActionEx send by G-Core is translated into Commend strings.

Usability

The Commend plugin can be added as a hardware plugin in G-Set. For each Commend server one plug-in must be installed. It is configured in G-Set.

The information from the Commend server is translated into the actions **SMS inter-communication notification** or **Viewer Connect**.

In addition, all information can be processed by the Commend server using the CustomActionEX action.

Translations

From Commend Server to G-Core

Specific commands from Commend:

Name	Description
Shutdown of Commend server	SMSSystemInformation (Status: Shutdown, Information: "System down", Time: GLibTimestamp, ServerHost: #, ActionID: #)
Start of Commend server	SMSSystemInformation (Status: Reset, Information: "System start", Time: GLibTimestamp, ServerHost: #, ActionID: #)
Fail of card hardware	SMSDoorEvent (DoorState: Unknown, RequestType: Get, DeviceName: "#", DeviceID: #, Time: GLibTimestamp, ServerHost: #, ActionID: #)
End call	SMSIntercomNotification (Information: EndCall, Caller: "#", Callee: "#", DeviceName: "#", DeviceID: #, Time: GLibTimestamp, ServerHost: "#", ActionID: #)
Interupted call	SMSIntercomNotification (Information: EndCall, Caller: "#", Callee: "#", DeviceName: "#", DeviceID: #, Time: GLibTimestamp,

PLUGINS

Name	Description
	ServerHost: "#", ActionID: #)
Outgoing call	SMSIntercomNotification (Information: OutgoingCall, Caller: "#", Callee: "#", DeviceName: "#", DeviceID: #, Time: GLibTimestamp, ServerHost: "#", ActionID: #)
Incomming call	SMSIntercomNotification (Information: IncommingCall, Caller: "#", Callee: "#", DeviceName: "#", DeviceID: #, Time: GLibTimestamp, ServerHost: "#", ActionID: #)
Start call	SMSIntercomNotification (Information: OutgoingCall, Caller: "#", Callee: "#", DeviceName: "#", DeviceID: #, Time: GLibTimestamp, ServerHost: "#", ActionID: #)
User busy	SMSIntercomNotification (Information: Busy, Caller: "#", Callee: "#", DeviceName: "#", DeviceID: #, Time: GLibTimestamp, ServerHost: "#", ActionID: #)
Watchdog	SMSSystemInformation (Status: Normal, Information: "LIVE", Time: GLibTimestamp, ServerHost: #, ActionID: #)
Input status	SMSIONotification (Status: Low, RequestType: Get, DeviceName: #, DeviceID: #, Time: GLibTimestamp, ServerHost: #, ActionID: #)
	SMSIONotification (Status: High, RequestType: Get, DeviceName: #, DeviceID: #, Time: GLibTimestamp, ServerHost: #, ActionID: #)
Output status	SMSIONotification (Status: Low, RequestType: Get, DeviceName: #, DeviceID: #, Time: GLibTimestamp, ServerHost: #, ActionID: #)
	SMSIONotification (Status: High, RequestType: Get, DeviceName: #, DeviceID: #, Time: GLibTimestamp, ServerHost: #, ActionID: #)
Set viewer text Task 9F/5F	ViewerTextOutput (Viewer: #, Text: #)
Set camera to viewer	ViewerConnect (Viewer: #, PlayMode: Live)
Clear viewer	ViewerClear (Viewer: #)

Aditionally all commands from Commend server can be caught by CustomActionEx.

PLUGINS

An incoming call like:	Will be presented by CustomActionEx as:
22.05.2018 11:53:07 SMS intercommunication notification; Information: incoming call; Caller: "12345"; Callee: "1000"; device name: "12345"; device ID: 12345; time: "22.05.2018 11:53:07"; server host: "10.10.1.1"; action ID: 123;	22.05.2018 11:53:07 Custom action extended; value A (64-bit): 123; value B (64-bit): 33; value C (64-bit): 0; value D (64-bit): 0; value A (32-bit): 1000; value B (32-bit): 12345; value C (32-bit): 5; value D (32-bit): 0; text A: "COMMEND_RECEIVE"; text B: "007B0021FFFFF1000FFF12345"; text C: "0x7b/0x21"; text D: "FFFF1000FFF12345"; time stamp A: "22.05.2018 11:53:07"; time stamp B: "22.05.2018 11:53:07"; value A (double): 0; value B (double): 0;

Value A(64bit): Action ID

Value B(64bit): MessageType

Value C(64bit): not used

Value D(64bit): not used

Value A(32bit): first parameter

Value B(32bit): second parameter

Value C(32bit): third parameter

Value D(32bit): not used

Text A : COMMEND_RECEIVE

Text B : String from COMMEND

Text C : Action ID / MessageType as HEX String

Text D : Taskinfo

Time Stamp1 : Time of G-Core server

Time Stamp2 : Time of G-Core server

Value A(double): not used

Value B(double): not used

From G-Core to Commend Server

Commands to the Commend server can be send by "CustomActionEx" action or "SMS Security manangement system actions"

Examples with CustomActionEx:

StringFieldA : "COMMEND"

PLUGINS

StringFieldB : "SEND",

StringFieldC: The string command to COMMEND

StringFieldD: assigned IP address of the COMMEND server

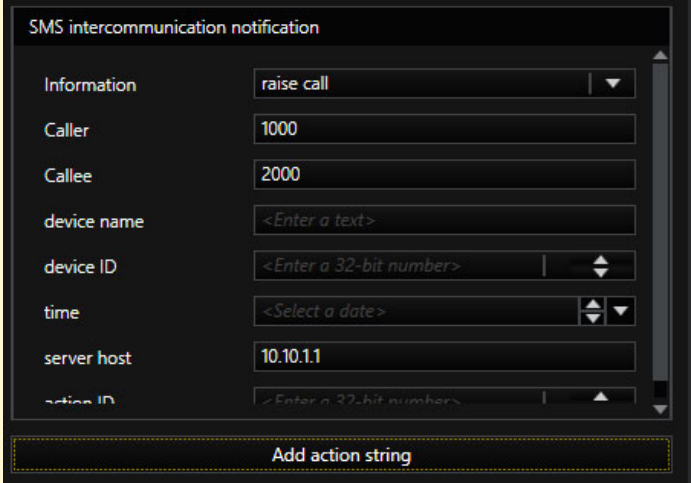
Examples

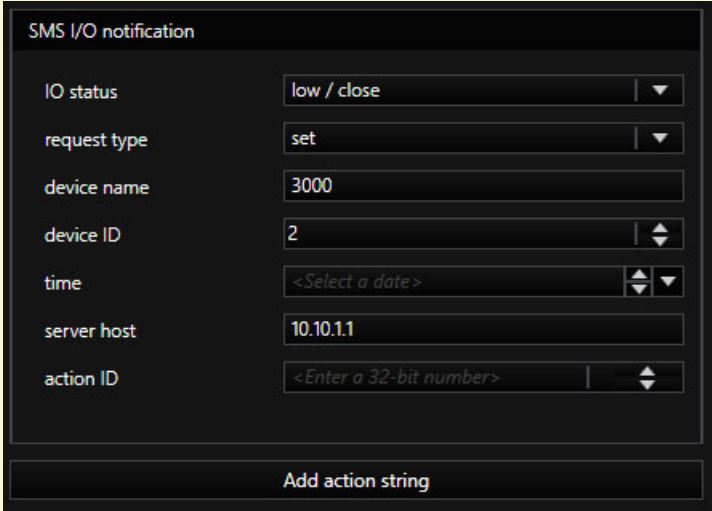
	Name	Description
1	A raise call from station 1000 to station 3000 in server with the IP:10.10.1.1	CustomActionEx(StringFieldA : "COMMEND", StringFieldB : "SEND", StringFieldC : "0040001000300080", StringFieldD : "10.10.1.1")
2	A raise call from station 1000 to station 12345 in server with the IP:10.10.1.1	CustomActionEx(StringFieldA : "COMMEND", StringFieldB : "SEND", StringFieldC : "00800080FFF1000FFF12345", StringFieldD : "10.10.1.1")
3	Disable audio on station 1000 on server 10.10.1.1	CustomActionEx(StringFieldA : "COMMEND", StringFieldB : "SEND", StringFieldC : "0040001000F0008F", StringFieldD : "10.10.1.1")
4	Activate audio on station 1000 on server 10.10.1.1	CustomActionEx(StringFieldA : "COMMEND", StringFieldB : "SEND", StringFieldC : "00400010000A048F", StringFieldD : "10.10.1.1")
5	Close output on device 3000 on server 10.10.1.1	CustomActionEx(StringFieldA : "COMMEND", StringFieldB : "SEND", StringFieldC : "0040003000010040", StringFieldD : "10.10.1.1")
6	Close output 2 on device 3000 on server 10.10.1.1	CustomActionEx(StringFieldA : "COMMEND", StringFieldB : "SEND", StringFieldC : "0040003000020194", StringFieldD : "10.10.1.1")

Examples with SMS Security Management System Actions

	Name	Description
1	Raise a call	SMSIntercomNotification (Information: Raise call, Caller:

PLUGINS

	Name	Description
	from device 1000 to device 2000.	<p>"1000", Callee: "2000", ServerHost: "10.10.1.1")</p> <p>i If caller or callee number is shorter than 5 digits the command 40/80 will be used. If caller or callee number is higher than 4 digits the command 80/80 will be used.</p> 
2	Set the output number 2 of the device 3000 to low/closed	<p>SMSIONotification (Status: low/closed, RequestType: Set, DeviceName: "3000", DeviceID: 2, ServerHost: "10.10.1.1")</p> <p>i If the device ID is missing then output of device name will be set. Task 40 Type 40. If the number of device name is equal or lower 4 then Task is 40 Type 94. If the number of device name is greater than 4 then Task is 80 Type 94.</p>

	Name	Description
		<div style="display: flex; align-items: center;"> i  </div>

GeVisContactLAN

This plugin establishes the connection between G-Core and a GeVisContactLan. The plugin can also be installed multiple times if there are several I/O units.

- i** All further information can be found in the GeVisContactLan documentation, which was delivered with the device and can also be downloaded from the Geutebrück website. Read the GeVisContactLan documentation completely before connecting the device to G-Core.

Installation

The plugin consists of two files: GeVisContactLan.dll and GeVisContactLan.dlg.dll. If the plugin is not included in the scope of installation with delivery, please copy both files (GeVisContactLan.dll and GeVisContactLan.dlg.dll) to the plugin directory of G-Scope (C:\Program Files\Geutebrueck\GCore\MediaPlugins).

The G-Core server service must then be restarted.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **Plugin <GeVisContactLan>** by selecting it and clicking **Add**.
 - The GeVisContactLan plugin is now entered in the hardware module list as a hardware resource.

Configuration

Select the plugin in the list and make the necessary changes to the settings.

Connection

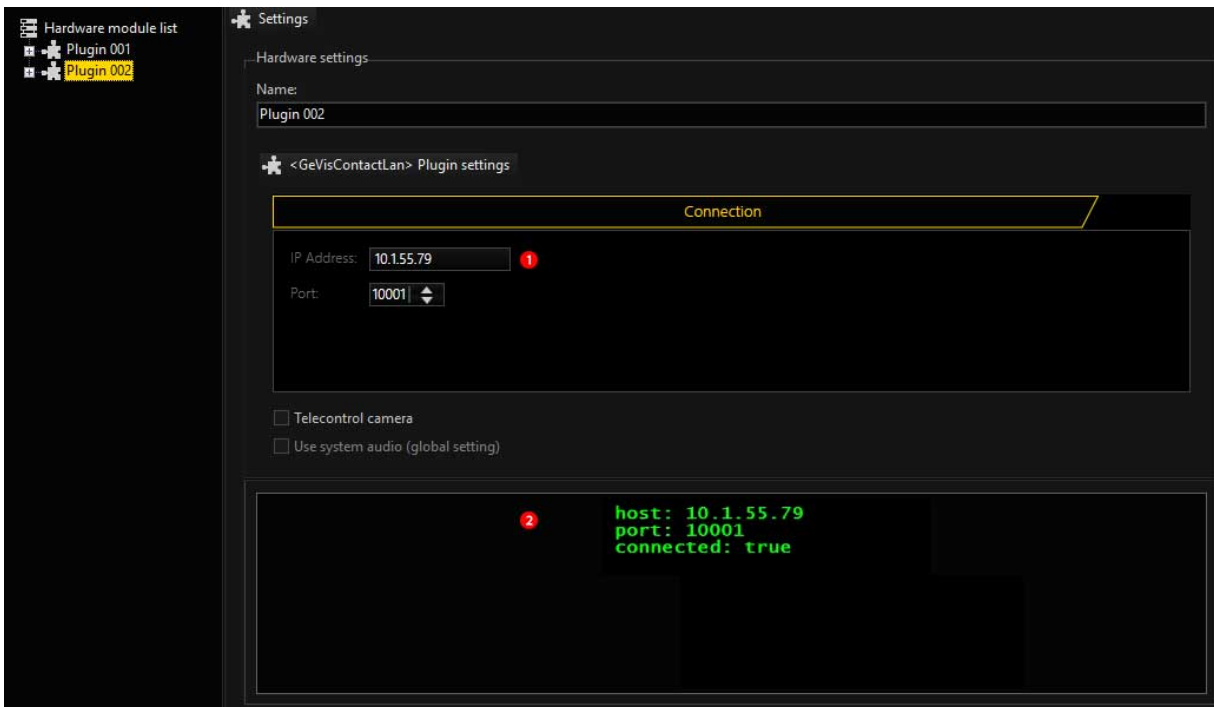
At **IP Address**, enter the IP address of the GeVisContactLan **1**.

i **The GeVisContactLan documentation explains how the GeVisContactLan is assigned an IP address.**

i **The port assignment on port 10001 should not be changed.**

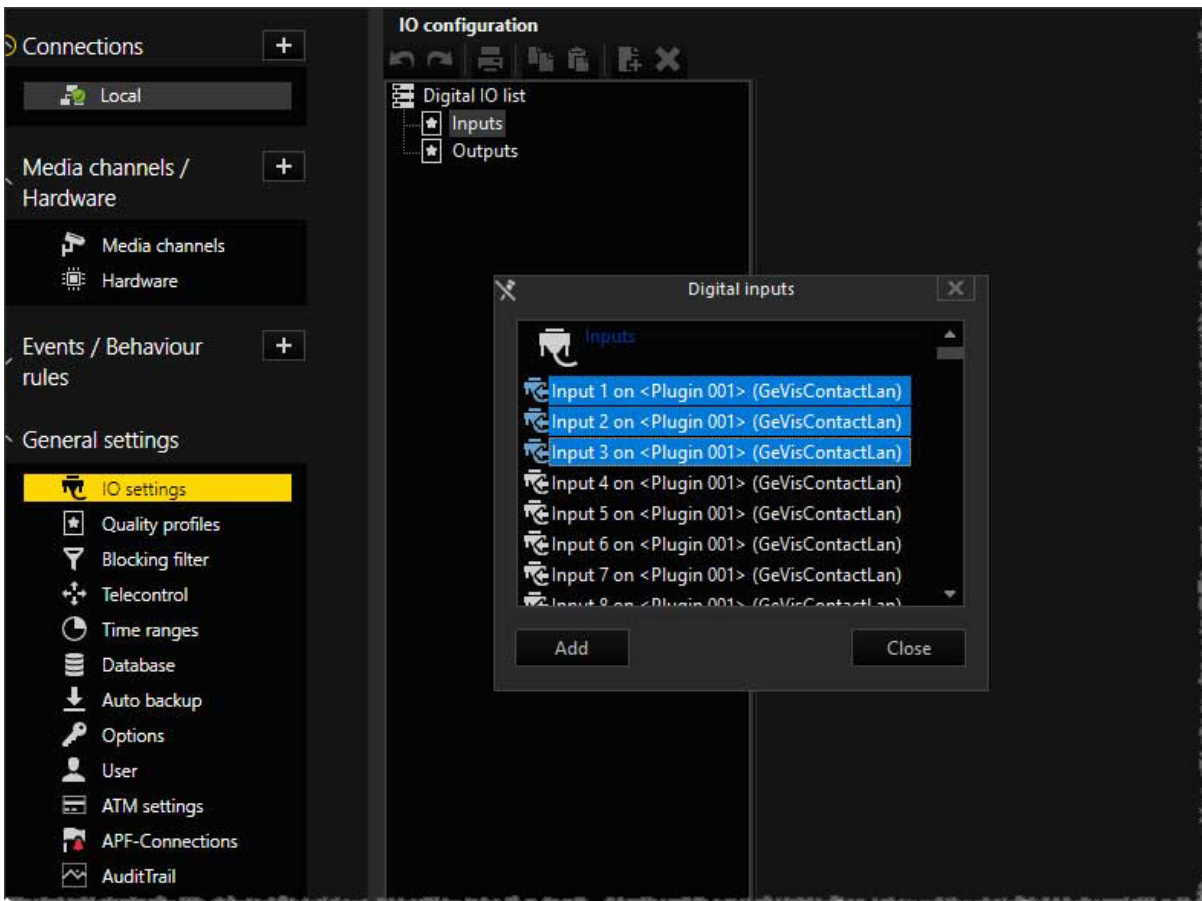
When the settings are saved on the G-Core server, the connection is automatically established using the entered data. A successful connection is displayed in the terminal window **2**.

PLUGINS



Register Inputs and Outputs

To register the digital inputs and outputs click **IO Settings** under the **General Settings** tab, to add the inputs and outputs from the GeVisContactLan.



GngMetaDataInjector

The MetaDataInjector plugin allows you to receive metadata from an external VCA source, assign it to a media channel, and thus display it directly in the high-resolution video stream of the camera.

An example is the analysis of a video stream that is both analyzed on a VCA system (e.g. Perimeter+) and processed in G-Core. In this case, the VCA system provides only the results of the analysis to G-Core, since the video images from the VCA source themselves are not of sufficient quality. The metadata is transmitted to the MetaDataInjector plugin via an RTSP port and linked to the corresponding images from the camera via this plugin. This allows the live and recorded streams to display the images and associated metadata synchronously.

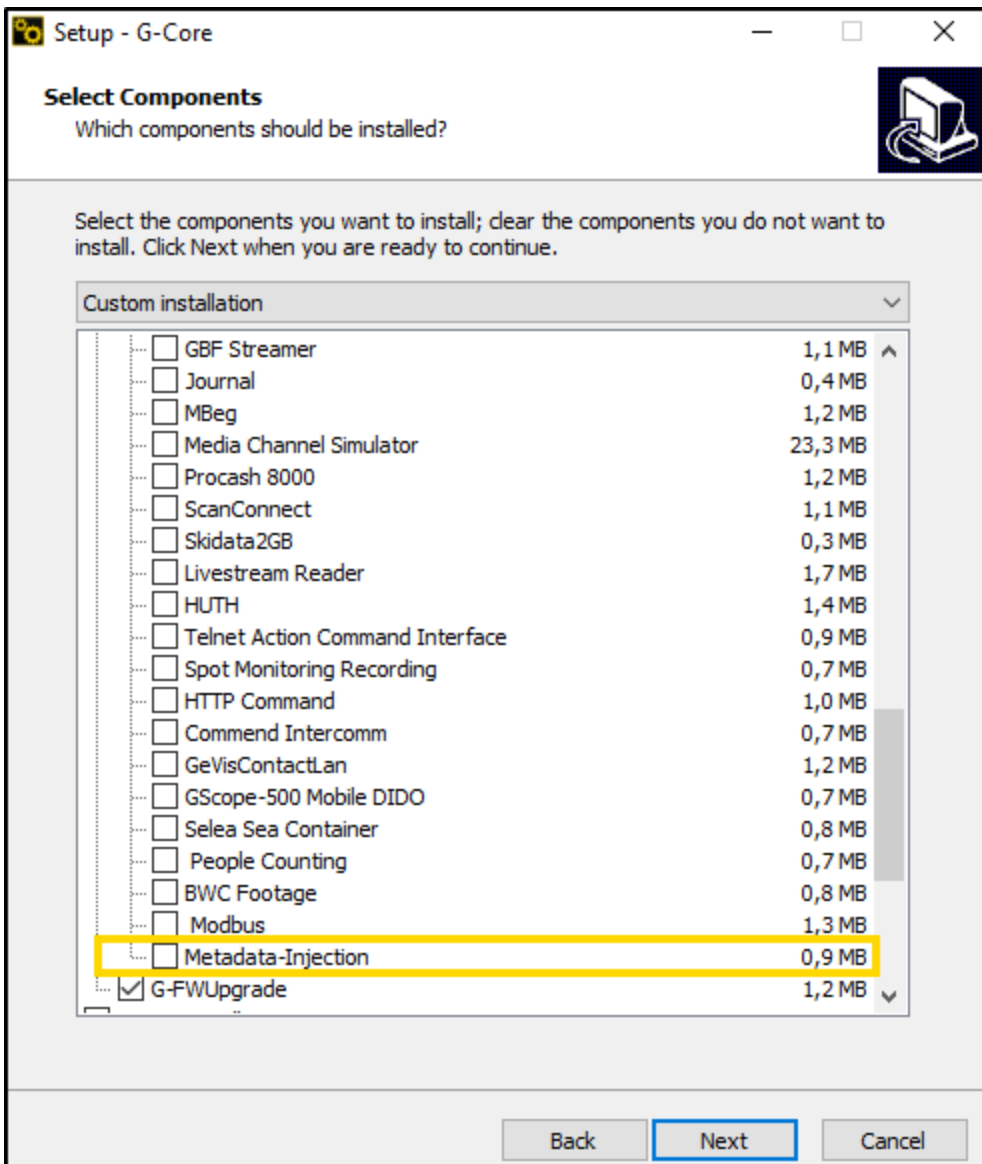
PLUGINS

- i** Since the metadata is received by the G-Core system via the VCA system with a slight delay, the images are buffered for an adjustable time (see Video stream delay) and there is a slight delay in the live stream.
- i** Currently, only the Perimeter+ GFusion VCA source is available. Information about Perimeter+ is available here: [Perimeter+ Documentation](#).

The representation of the received metadata can be taken over from the VCA system or customized in G-Core to the respective conditions (see **Metadata Representation**).


Installation

During the installation of G-Core, enable the Metadata-Injection plugin in the Select Components list.

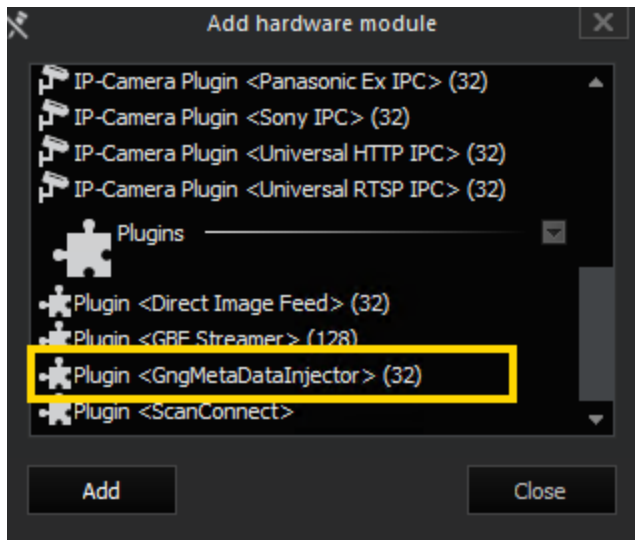


Add the Plugin

How to add the MetaDataInjector plugin:

1. Click the  icon in the toolbar of the **Hardware configuration** window. The **Add hardware module** dialog window opens.
2. Select the Plugin <GngMetaDataInjector>.

PLUGINS



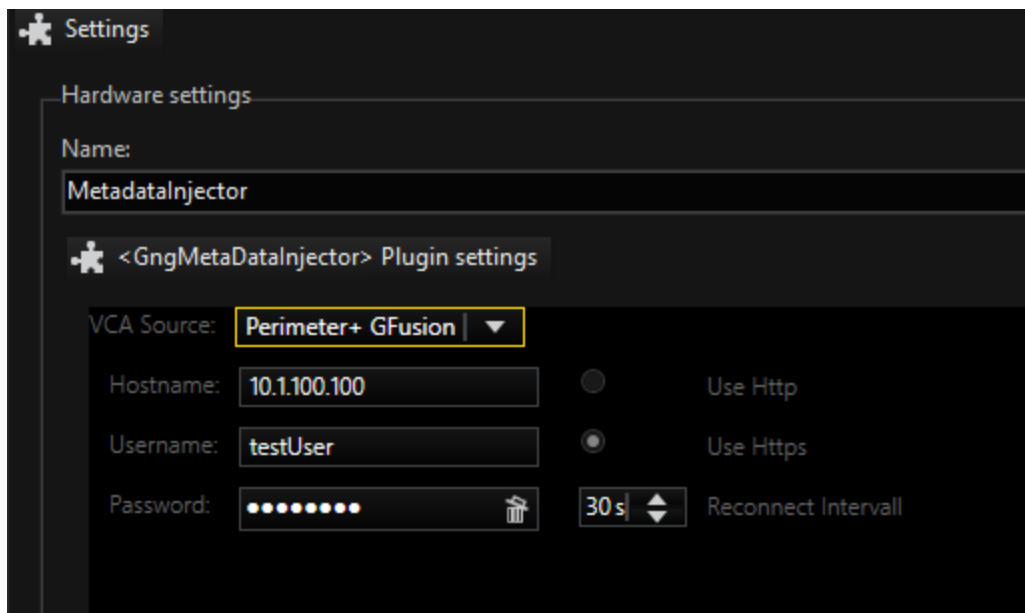
3. Click Add.

Set the VCA Source

The MetaDataInjector plugin allows you to map metadata from any source to any channel.

How to set the VCA source:

1. Select the plugin from the Hardware module list.



PLUGINS

2. Enter the following settings:

Name	Description
VCA Source	Select the type of the VCA source. i Currently, only Perimeter+ GFusion is available.
Hostname	Enter the hostname or IP address of the VCA source.
Username	If authentication is enabled in the VCA source, you must enter the username.
Password	If authentication is enabled in the VCA source, you must enter the password.
Use Http Use Https	Select this option to use HTTP or HTTPS for encryption. i This setting is currently not active.
Reconnect Interval	Enter the interval in seconds between reconnection attempts when the connection is lost. The default is 30 seconds.

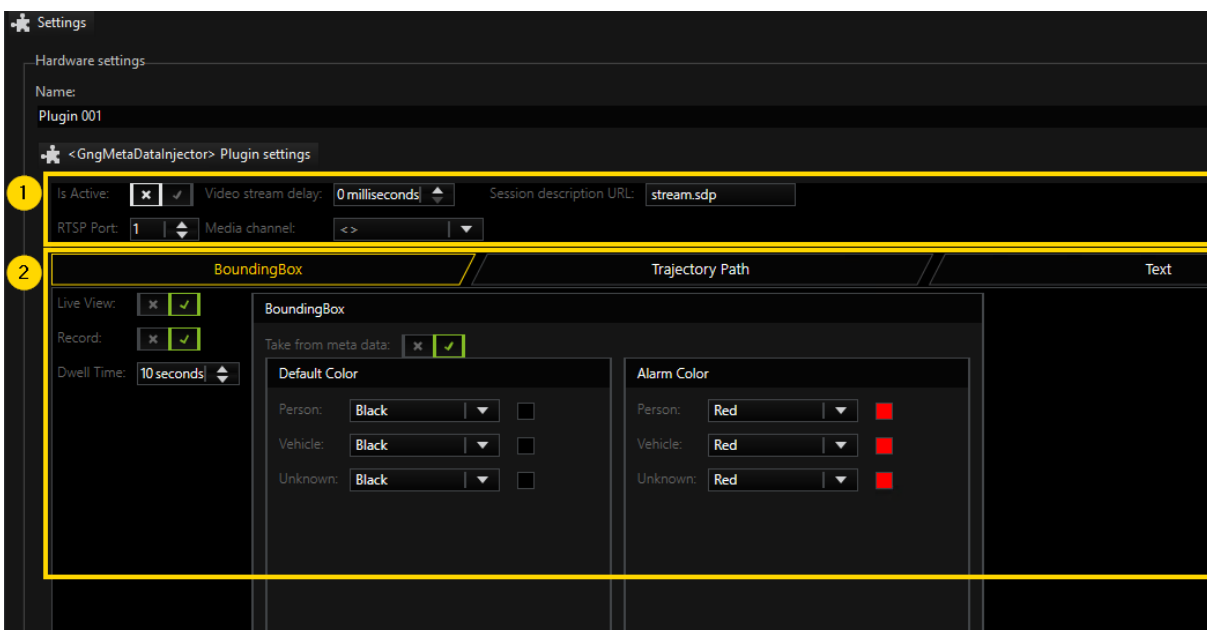
3. Click the  icon in the menu bar to send all changes to the server.

Set the Channel

You can set up to 16 channels with one MetaDataInjector plugin.

To set a channel, select the media channel from the **Media channel list**. The settings window of the respective channel opens, which consists of two settings areas:

- **1 Channel Mapping**
- **2 Metadata Representation:**
 - **Bounding Box**
 - **Trajectory Path**
 - **Text**



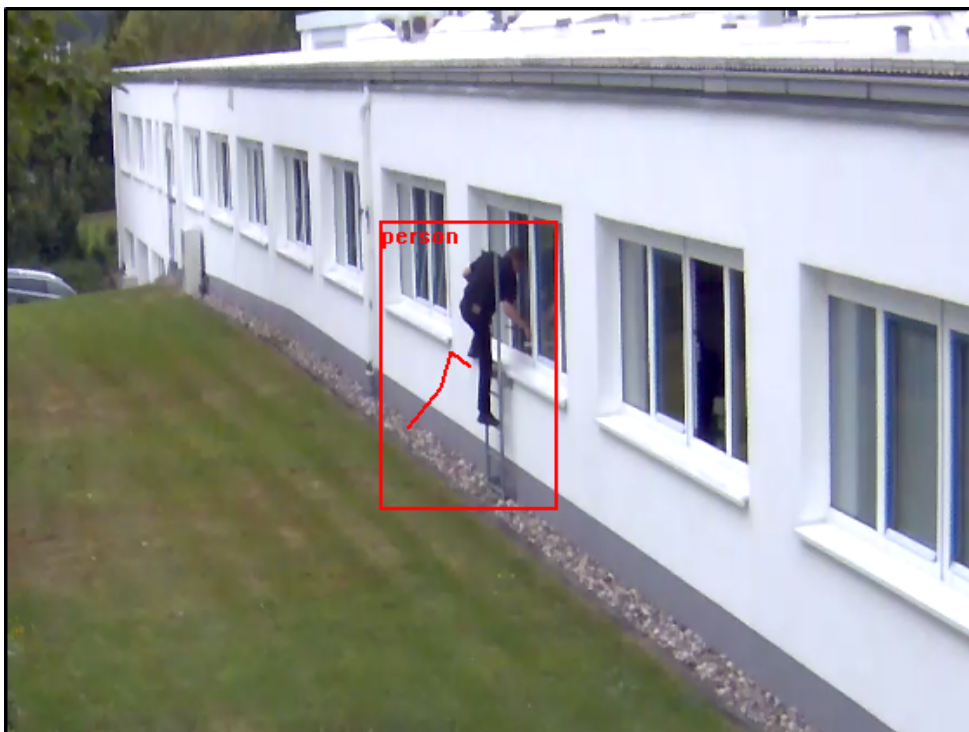
Channel Mapping

In this setting area, you set the mapping information that is relevant for connecting to the metadata stream. The following settings are available:

Name	Description
Is Active	Enable the mapping or drawing of all metadata in the stream. Disabled by default.
Video stream delay	Set how long the video will be delayed to synchronize the metadata coming from the VCA source with the images. The default is 0 milliseconds.
Session description URL	Enter the stream name. This information is appended to the URL of the metadata stream. The default is stream.sdp .
RTSP Port	Enter the port corresponding to the metadata source of the metadata stream set in the VCA source. The default is 1.
Media channel	Select the media channel in which to display the metadata. Each configured channel is displayed in this drop-down list.

Metadata Representation

In this settings area, you set the representation of the metadata in the media channel. Configured channels then display bounding box, trajectory path and text as overlays in the viewer.



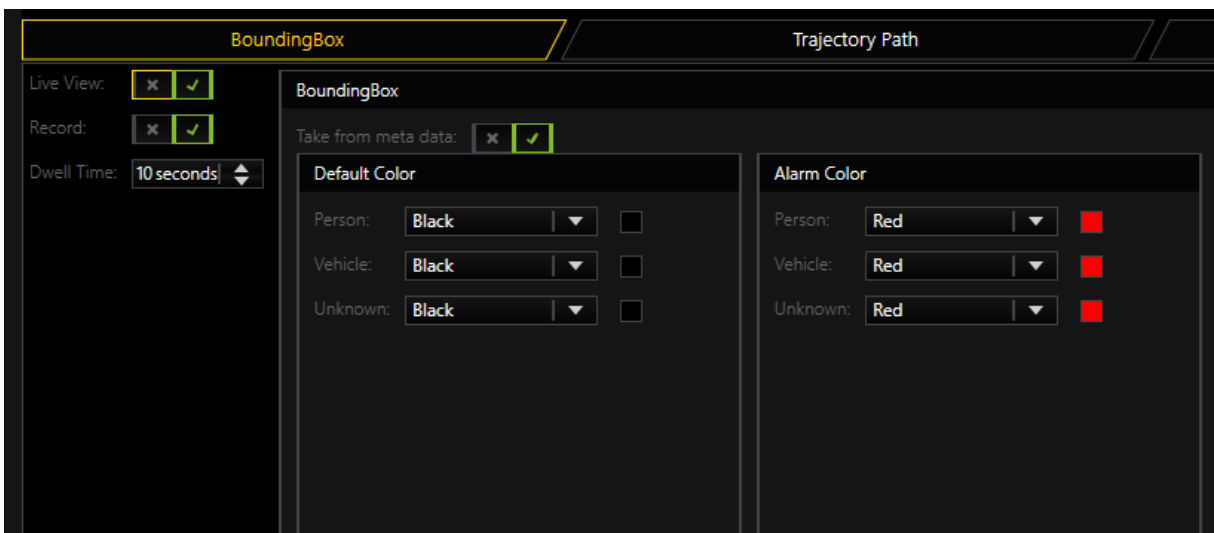
Bounding Box

The bounding box is a polygon drawn around an object detected in the scene, for example a person or vehicle.

Name	Description
Live View	Enable the drawing of the bounding box in the live stream. Enabled by default.
Record	Enable the drawing of the bounding box in the recorded stream. Enabled by default. <div style="text-align: center;"> i Drawing the bounding box for the live and recorded stream can be enabled or disabled independently. </div>
Dwell Time	Set how long the metadata information (bounding box, trajectory

PLUGINS


Name	Description
	path and text) is displayed when the object is no longer tracked. The default is 10 seconds.
Take from metadata	Enable this option to take the color for displaying the metadata from the metadata provided by the VCA source. If you disable this option, the colors you define in the Default Color area will be used. Enabled by default.
Default Color	Select the color of the metadata information (bounding box, trajectory path and text) for objects classified as person, vehicle or unknown object. The default color is black.
Alarm Color	Select the color of the metadata information (bounding box, trajectory path and text) for objects classified as person, vehicle, or unknown object, when the metadata has assigned an alarm to the object. The default color is red. <div style="display: flex; align-items: center;"> i This setting is currently not active. </div>

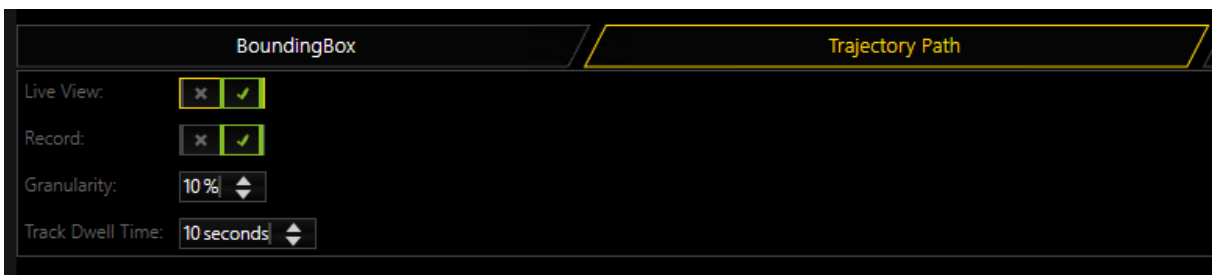


Trajectory Path

The trajectory path shows where the detected object has moved in the scene.

PLUGINS

Name	Description
Live View	Enable the drawing of the trajectory path in the live stream. Enabled by default.
Record	Enable the drawing of the trajectory path in the recorded stream. Enabled by default. <div style="text-align: center;">  Drawing the trajectory path for the live and recorded stream can be enabled or disabled independently. </div>
Granularity	Set how granular the trajectory path is represented. A higher granularity indicates that the path contains more points and is more accurate. A lower granularity indicates that the path is coarser and less accurate. The default is 10%.
Track Dwell Time	Set how long the trajectory path is represented. A dwell time of 1 second indicates a short path and a dwell time of 20 seconds a long path. The default is 10 seconds.



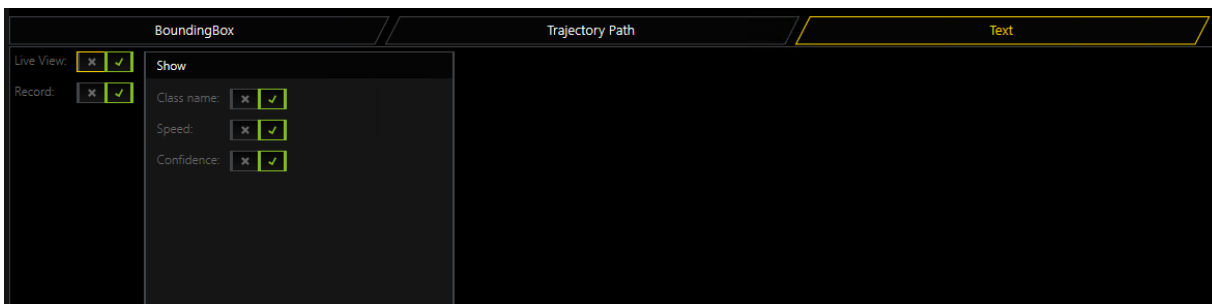
Text

The text details of the detected object are displayed as text in the upper left corner of the bounding box.

Name	Description
Live View	Enable the displaying of the text in the live stream. Enabled by default.
Record	Enable the displaying of the text in the recorded stream.

PLUGINS

Name	Description
	Enabled by default. i Displaying the text for the live and recorded stream can be enabled or disabled independently.
Class name	Enable the displaying of the class name of the detected object (e.g. "Person" or "Vehicle"). Enabled by default.
Speed	Enable the displaying of the speed of the object detected object. Enabled by default. i This setting is currently not active with the Perimeter+ GFusion VCA source.
Confidence	Enable the displaying of the percentage confidence of reliable detection of the object. Enabled by default.

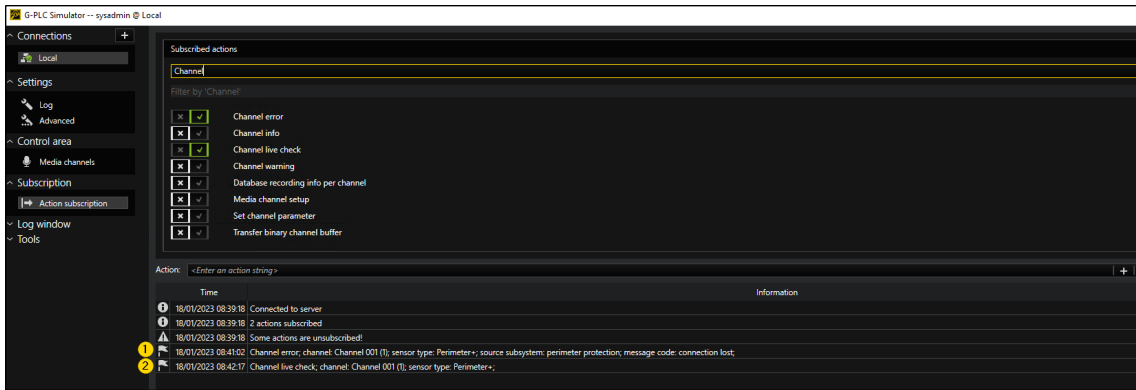


Lost Connection

When the connection to the VCA source is lost, the following actions are sent:

- **1** Channel error: The connection is lost.
- **2** Channel live check: The connection is restored.

PLUGINS



The note **Perimeter+ Device disconnected** is displayed in the viewer. No metadata is displayed.



GScopeMobileDIDO

The GScopeMobileDIDO plugin is used to use the digital input and output contacts (DIDO) of the G-Scope-500. The plugin manages the input and output signals with the help of actions. Reactions to these actions can be defined as usual by creating corresponding behavior rules in G-Set.

Installation

The GScopeMobileDIDO plugin consists of the files: GScopeMobileDIDO.dll and WPT_DIO64.dll.

If the plugin is not included in the installation, please copy the both files (GScopeMobileDIDO.dll and WPT_DIO64.dll) into the plugin directory of G-Scope (C:\Programme\Geutebrueck\GCore\MediaPlugins).

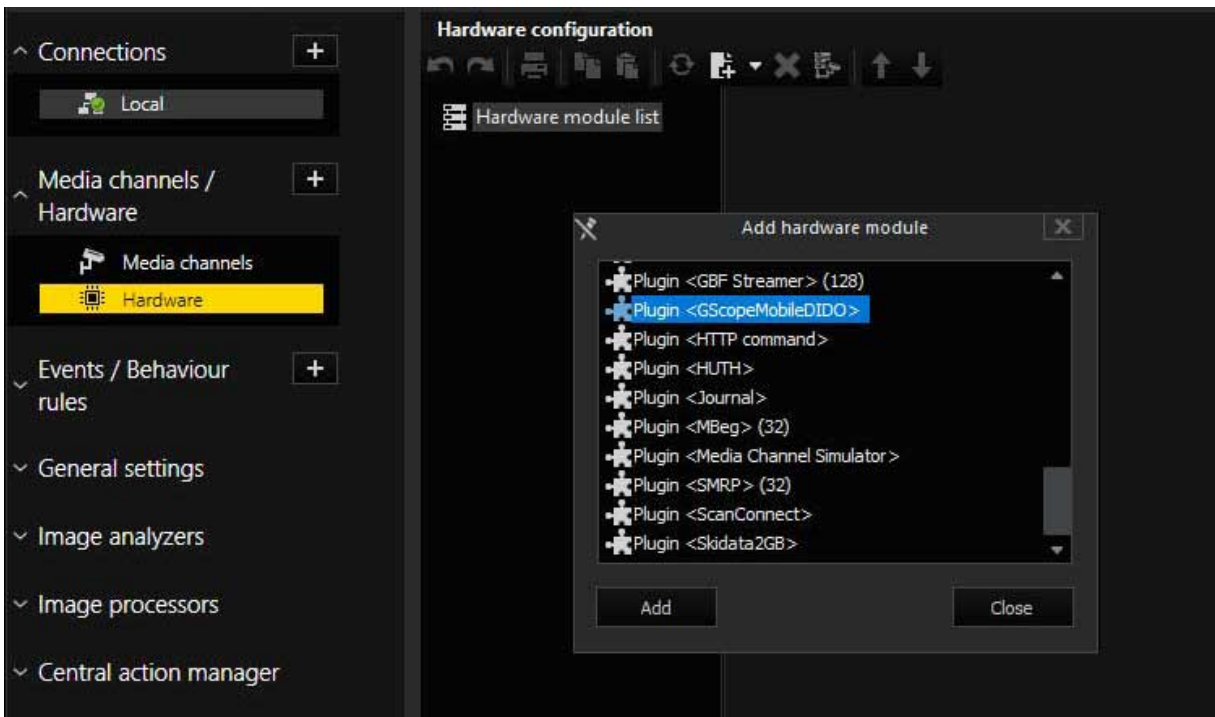
The driver files WinRing0x64.dll and WinRing0x63.sys must also be installed in the System32 directory of Windows.

 **The G-Core server service must then be restarted.**

Configuration

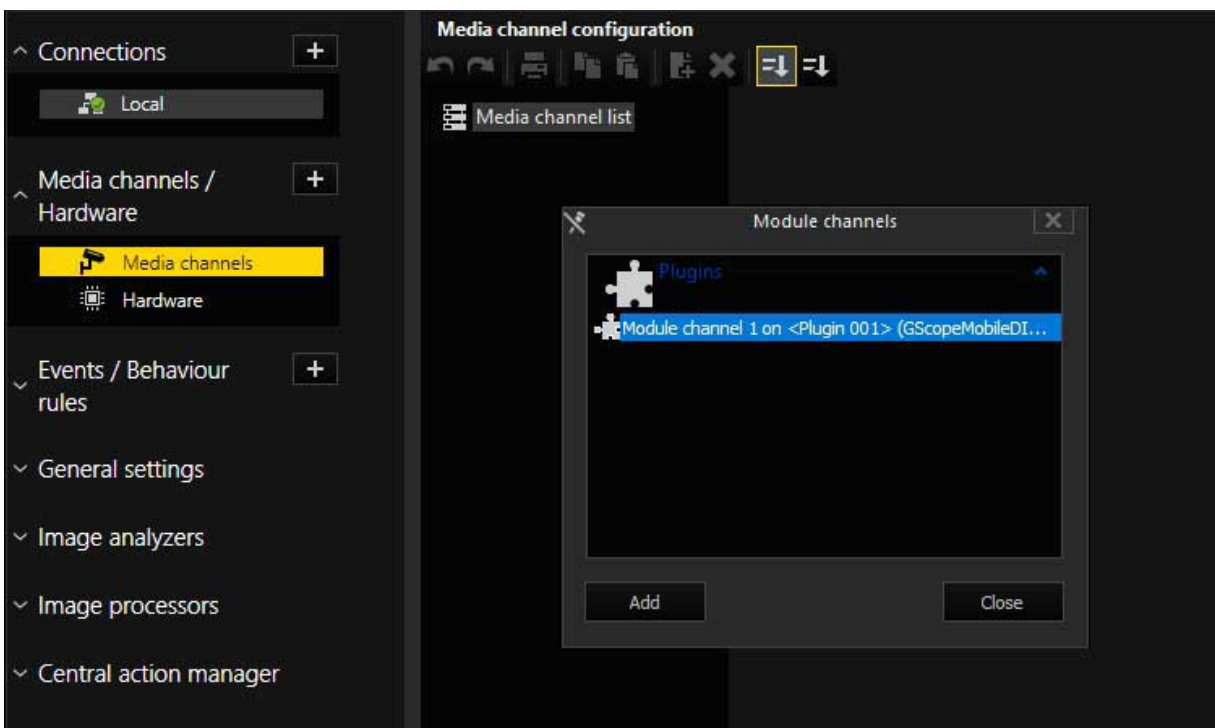
If G-Set is connected to the G-Core Server, you can add the **Plugin <GScopeMobileDIDO>** under **Hardware**.

PLUGINS



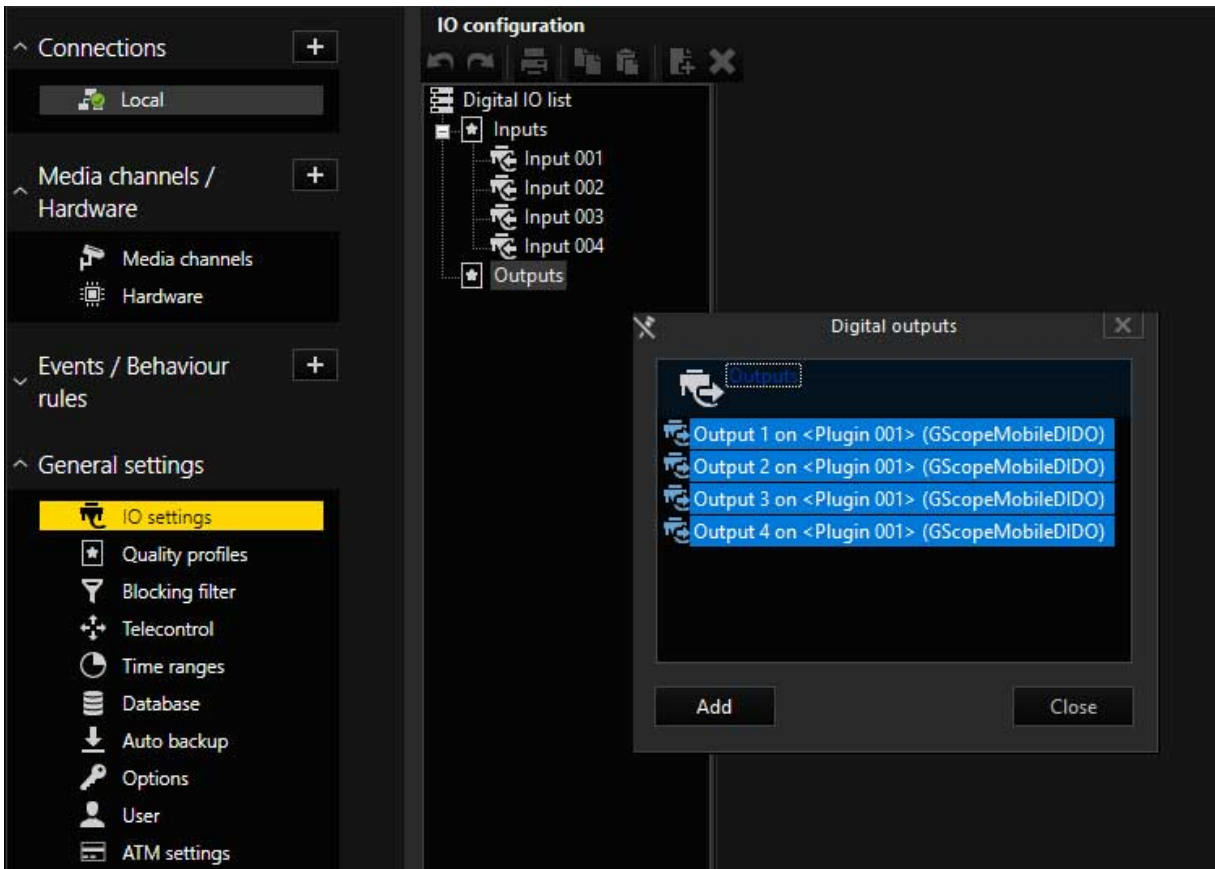
Optional Step:

Now add the module channel (GScopeMobileDIDO Plugin) under Media Channels.

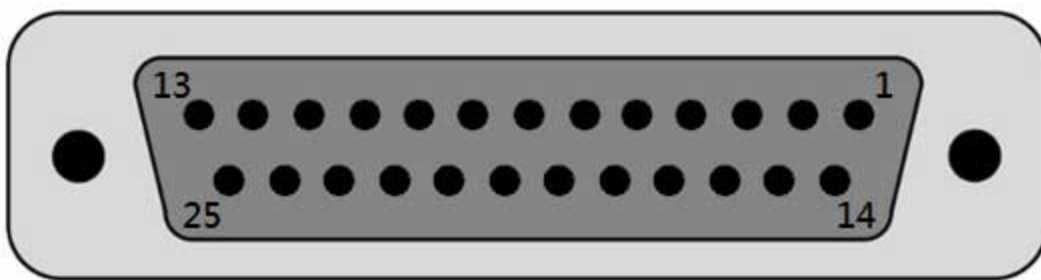


PLUGINS

Under **General Settings**, click **IO Settings** to add the inputs and outputs from the GScopeMobileDIDO plugin.



G-Scope-500 Pin Assignment



PIN	PIN Def.	Description	PIN	PIN Def.	Description
1	ISO_DI3H	Digital input channel 3	14	ISO_DI3L	Digital input channel 3 GND

PLUGINS

PIN	PIN Def.	Description	PIN	PIN Def.	Description
2	ISO_DI2H	Digital input channel 2	15	ISO_DI2L	Digital input channel 2 GND
3	ISO_DI1H	Digital input channel 1	16	ISO_DI1L	Digital input channel 1 GND
4	ISO_DI0H	Digital input channel 0	17	ISO_DI0L	Digital input channel 0 GND
5	Reserved	Reserved pin. Keep unconnected	18	Reserved	Reserved pin. Keep unconnected
6	Reserved	Reserved pin. Keep unconnected	19	Reserved	Reserved pin. Keep unconnected
7	ISO_DO3	Digital output channel 3	20	DOGND	Digital output GND
8	ISO_DO2	Digital output channel 2	21	DOGND	Digital output GND
9	ISO_DO1	Digital output channel 1	22	DOGND	Digital output GND
10	ISO_DO0	Digital output channel 0	23	DOGND	Digital output GND
11	VDD	DO voltage source input for inductive load	24	DOGND	Digital output GND
12	ISO5V	Isolated 5V power supply	25	DOGND	Digital output GND
13	Reserved	Reserved pin. Keep unconnected			

HTTP Command

This document provides an introduction to the use of the HTTP COMMAND plugin. The plugin offers the option of directly sending HTTP GET and POST commands with the IP camera raw command action to any type of network device. The action IP camera raw command ex also offers the option of directly sending all HTTP commands (GET, POST, PUT, DELETE) to any type of network device. It is thus possible to switch from day to night mode, to open or close contacts or change the shutter speed or control non IP camera network devices.

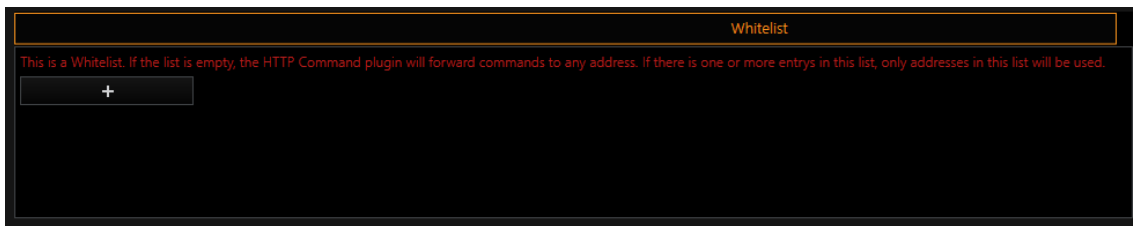
To use this plugin, you need G-Core software version 2.0 or higher.

Installation

The plugin is installed by default with the G-Core software.

Add the Plugin

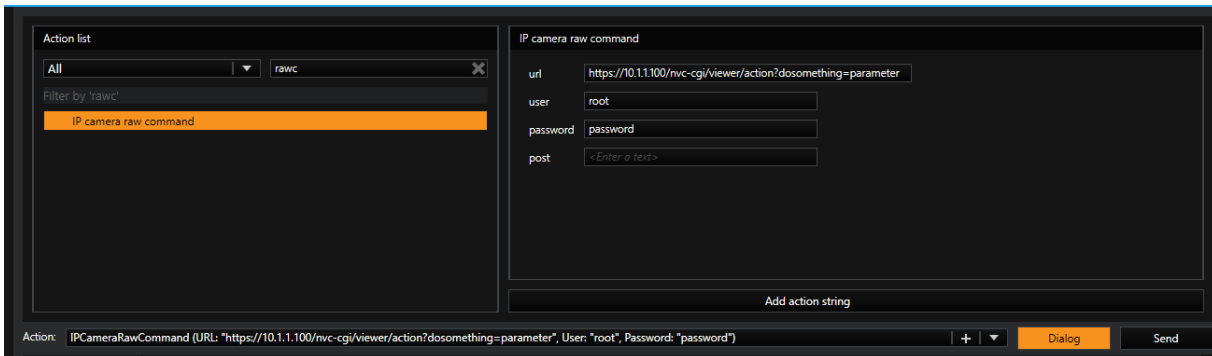
1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **Plugin <HTTP command>** and clicking **Add**.
→ The HTTP COMMAND plugin is now entered in the hardware module list as a hardware resource.



Configuration

You can now send the POST and GET HTTP commands to any device with the IP camera raw command action:

PLUGINS

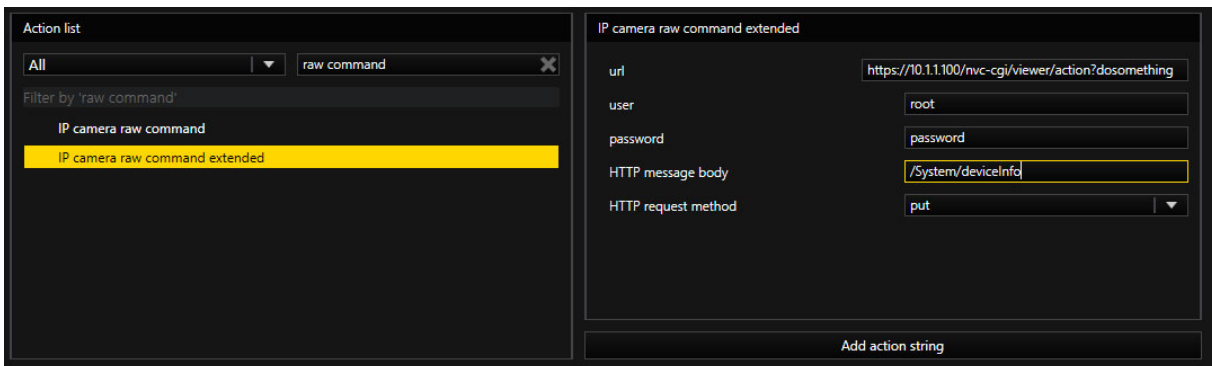


If you leave the **Post** field empty, the command will be send as HTTP GET, else it will be send as HTTP POST.

You can choose between HTTP and HTTPS by the URL... `http://10.....` / `https://10...`

Select **url**, **user** and **password** and enter the corresponding information.

You can also send any HTTP command (GET, POST, PUT, DELETE) with the **IP camera raw command extended** action:



You can choose between HTTP and HTTPS by the URL... `http://10.....` / `https://10...`

Select **url**, **user** and **password** and enter the corresponding information.

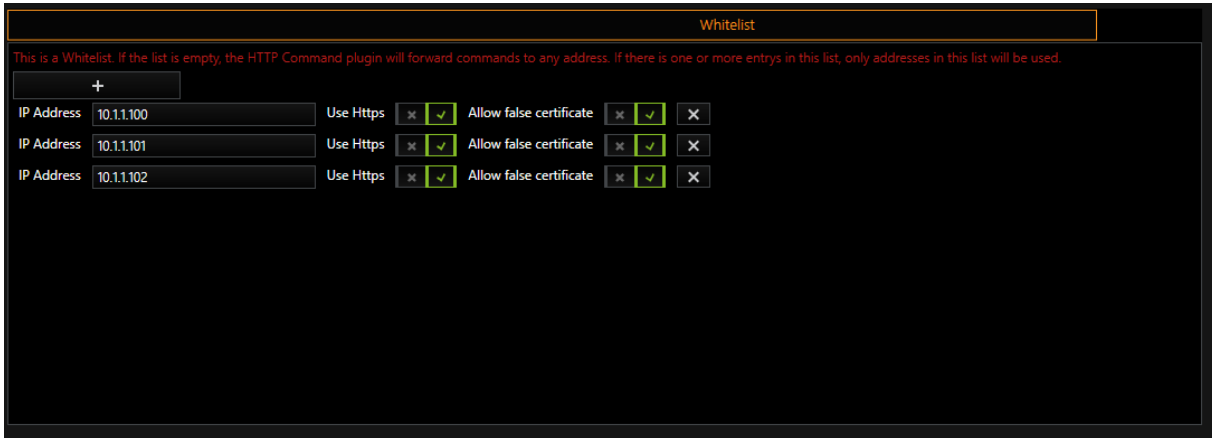
You have to choose a **HTTP request method** from the drop down field and add the **HTTP message body** of your request.

HTTP Methode	Explanation
GET	Change something
POST	Create something
PUT	Update / replace something
DELETE	Delete something

PLUGINS

If you choose GET the **HTTP message body** will not be used.

If you just want to limit the HTTP Command plugin to specific devices, you can add them to a whitelist in the plugin dialog.



If the switch button **Use Https** is activated it will enforce https for this IP. However, if it is not activated, it will use whatever protocol (HTTP/HTTPS) is given by the URL from the action.

The switch button **Allow false certificate** will allow any certificate from the device, also if it is not signed or expired. If you only want to accept signed and valid certificates deactivate this button.

HUTH

With this plugin, the HUTH interface, known from Multiscope, can be used in G-Core. HUTH devices can be connected using a serial connection or also over COM/IP routers.

Installation

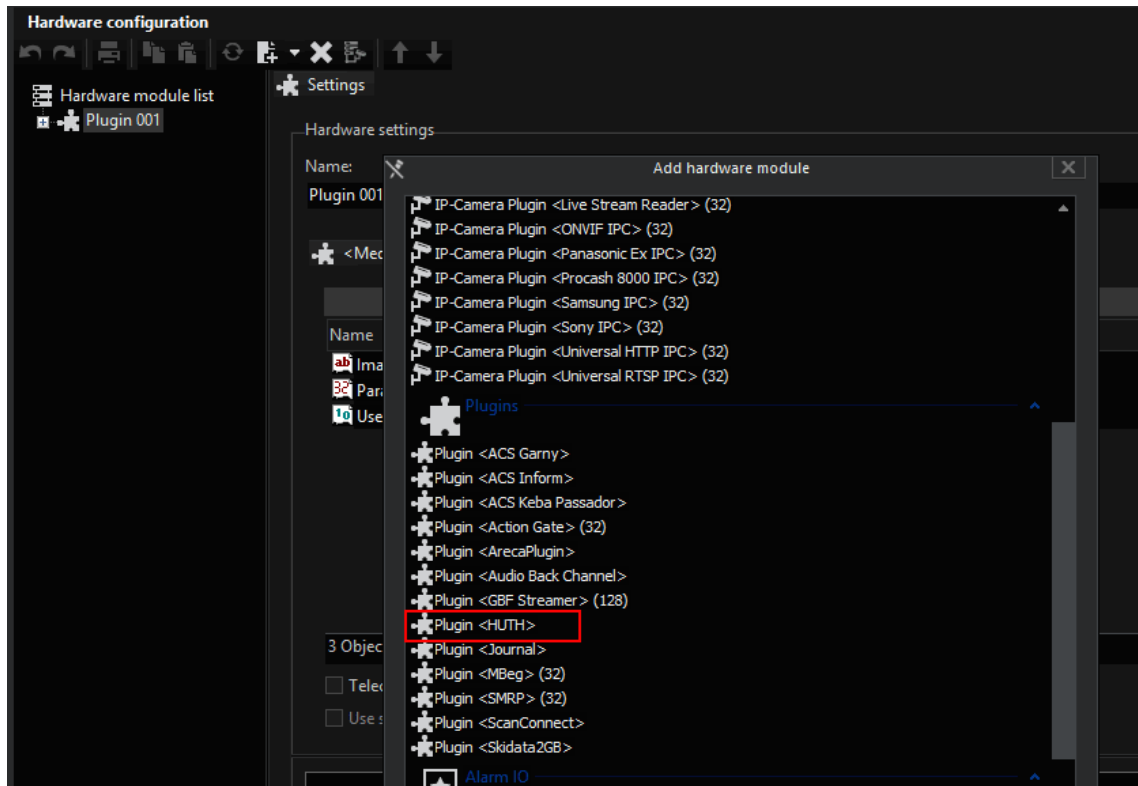
The plugin consists of two DLLs: HUTH.DLL (the HUTH plugin) and HUTHDialog.DLG.DLL (the HUTH setup GUI).

If the plugin is not included in the scope of installation with delivery, please copy the two files to the plugin directory of G-Core (C:\Program Files\Geutebrueck-\GCORE\MediaPlugins).

i **The G-Core server service must then be restarted.**

Add the Plugin

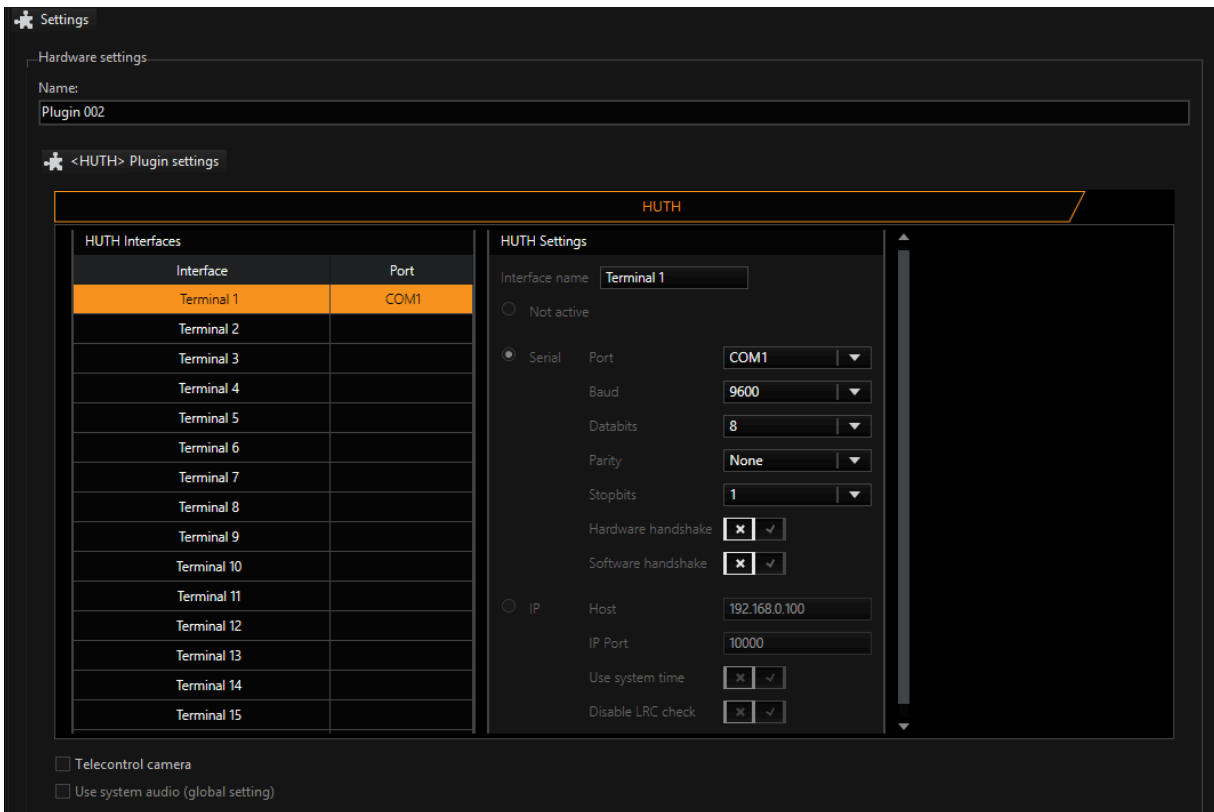
1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **Plugin <HUTH>** by selecting it and clicking **Add**.



→ The HUTH plugin is now entered in the hardware module list as a hardware resource.

Configuration

When you click on the HUTH plugin in the hardware module list, you can configure the necessary serial parameters.



The plugin supports up to 16 devices. For each device, you can configure the serial parameters individually. For active interfaces, the port is displayed in the overview list.

You also have the option of turning off the LRC check (**Disable LRC Check**) and using the host time of the server in time stamps (**Use System Time**).

Messages

The plugin reacts to status messages of the individual pumps and product bookings as well as status messages of the terminals. Each messages is processed and the corresponding G-Core action is triggered.

The following actions are available:

Name	Description
Filling pump status	Triggered by S and M records. Contains the pump number, the current status and for M records additionally the quantity and amount.

PLUGINS

Name	Description
Terminal article data	Triggered by W and Z records. These actions are structured similarly and include the following information: Terminal number, possibly pump number, quantity and amount as well as operation description. An alarm flag is also saved.
Terminal payment data	

Journal

Journal is a special plugin for G-Core. It can be used for logging various activities on a CCTV system. The filtered information is written in so-called journal files that can be used for the reproduction of user interactions with G-Core. The following activities are logged:

- User login
- User logout
- User login failed
- Image export notification
- Setup changed

Journal formats the information pertaining to the activities (such as user names or IP addresses) and adds a time stamp when the information is written to the journal file.

Example The following is an example of a Journal file that was created with the default formatting:

```
15/10/2009 16:10:13 ImageExportNotification Paul G-View WS1
15/10/2009 18:30:56 UserLoginFailed Pieter G-View WS3
15/10/2009 18:45:06 UserLogin Simon G-View WS1
15/10/2009 19:52:23 UserLogout Paul G-Set PC4
15/10/2009 19:54:15 UserLoginFailed Justin G-Set PC8
15/10/2009 21:17:22 ImageExportNotification Paul G-View WS1
15/10/2009 22:14:54 UserLoginFailed Pieter G-Set PC3
```

Installation

The plugin consists of the JOURNAL.DLL file.

If the plugin is not included in the G-Scope of installation with delivery, copy the file JOURNAL.DLL to the plugin directory of G-Core (C:\Program Files\Geutebrueck\GCore\MediaPlugins).

 **The G-Core server service must then be restarted.**

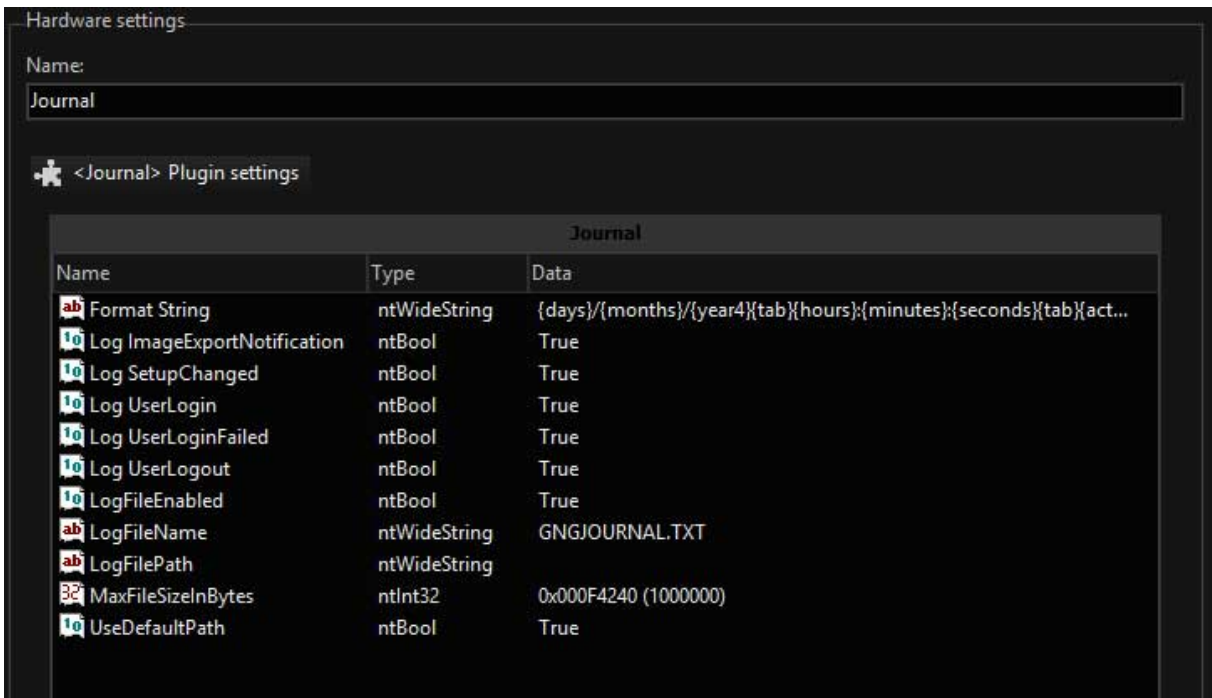
Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **Plugin <Journal>** by selecting it and clicking **Add**.
 - The Journal plugin is now entered in the hardware module list as a hardware resource.
4. Send the new setting to the server.
 - The plugin now directly starts working and submits journal files with the above content.

Configuration

You can set some parameters for plugin behavior. To do so, select the plugin in the list and make the necessary changes to the settings.

PLUGINS



Name	Description
Format String	<p>This parameter represents the template that is used for formatting the text lines in the journal file. The default template is:</p> <pre>{days}/{months}/{year4}{tab}{hours}:{minutes}:{seconds}{tab}{action}{tab}{username}{tab}{clienttype}{tab}{ipaddress}{crlf}</pre> <p>The template produces a log entry for any activity that is filtered by Journal. Earlier, we showed an example that was created with this template.</p>
Log xxx	<p>These five parameters (Log ImageExportNotification LogUserLogout control) control which activities should be logged in the journal file. With the entry TRUE, the selected parameter will be logged, with FALSE it will not be logged.</p>
LogFileEnabled	Turns the journal function on or off.
LogFileName	Here you specify the name for the journal file.
MaxFileSizeInBytes	This parameter controls the maximum size of the journal file and the backups.

Storage Location of Journal Files

The journal files are stored under `C:\users\public\documents\GNGJOURNALS`.

i **The name of the folder differs according to the default language of your Windows system.**

The JOURNALS directory contains three journal files:

- GNGJOURNAL.TXT: The active file.
- GNGJOURNAL.TXTOLD01.TXT: The most recently created file.
- GNGJOURNAL.TXTOLD02.TXT: The oldest journal file.

The files contain plain text and can be opened with any editor. The text format is UTF-8.

MBeg

This plugin establishes the connection between G-Core and a MBeg. The plugin can also be installed multiple times if there are several control units.

i **All further information can be found in the MBeg documentation, which was delivered with the device and can also be downloaded from the Geutebrück website. Read the MBeg documentation completely before connecting the device to G-Core.**

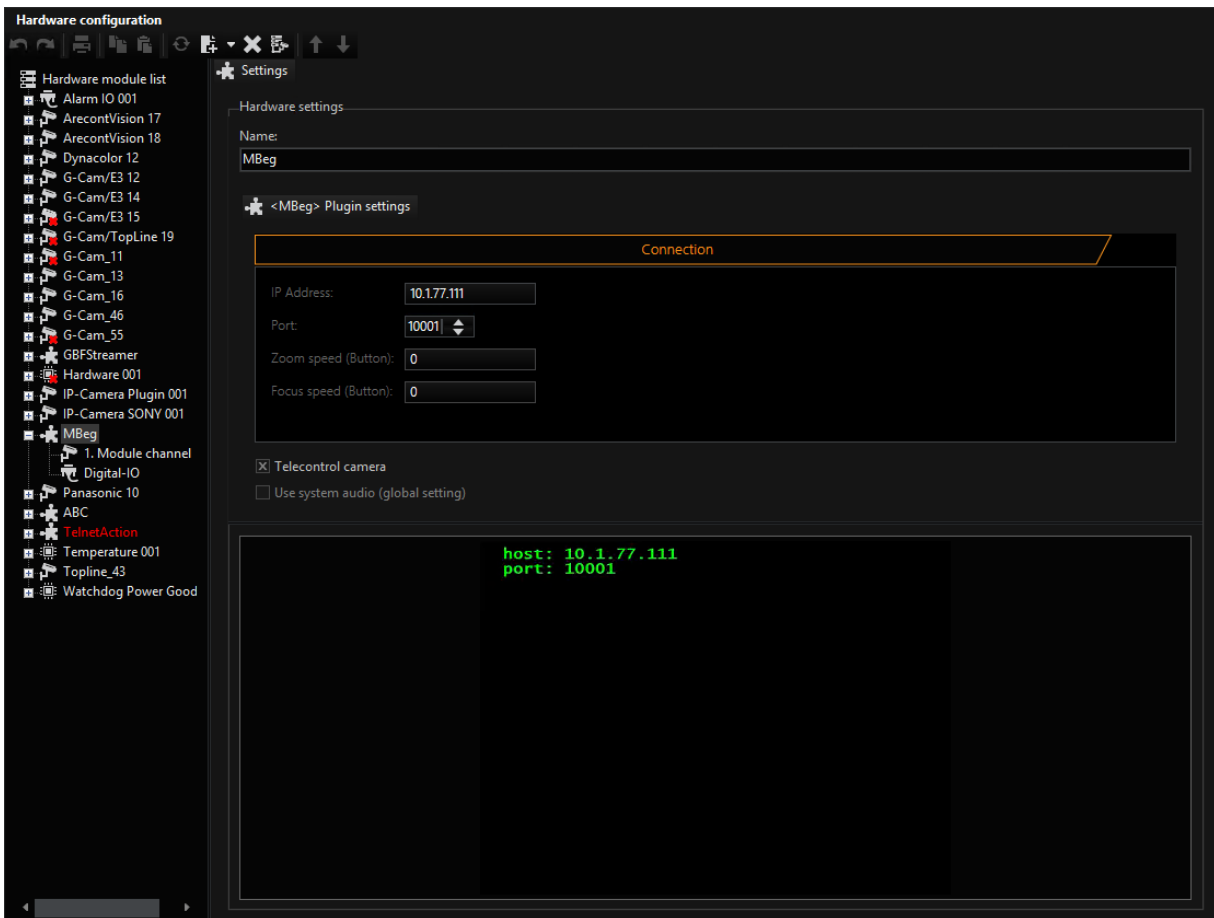
Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **Plugin <MBeg>** by selecting it and clicking **Add**.
 - The MBeg plugin is now entered in the hardware module list as a hardware resource.

Configuration

Select the plugin in the list and make the necessary changes to the settings.

PLUGINS



At IP Address, enter the IP address of the MBeg.

i The MBeg documentation explains how the MBeg is assigned an IP address.

If possible, the port assignment on port 10001 should not be changed.

The setting for the speed of the zoom and focus should only be increased if there are (camera-dependent) delays in operation (0-128).

When the settings are saved on the G-Core server, the connection is automatically established using the entered data. A successful connection is displayed in the terminal window.

MBeg and G-View

In all viewers that are connected to a server, the camera movements are also controlled when fisheye dewarping is used, for example, when the connected MBeg actively controls the camera. Because fisheye dewarping is a software feature that

is or can also be applied retroactively to recorded client server data, these camera movements are not always desired by the remote control. With the help of the **Ignore Remote PTZ** switch, the remote control can be switched off (**GView > Profile manager > Options > Actions**).

i Use the Ignore Remote PTZ switch even if G-View cameras are only controlled by a locally connected MBeg.

When using an MBeg and several G-Cores, it is possible that individual global numbers have been assigned more than once for PTZ cameras, in particular when configured servers are added to the network at a later point in time. In this case, all cameras with the same global number would be simultaneously controlled, even though the intention was to only move one of the cameras. With the help of the **Ignore Remote PTZ** switch, the remote control can be switched off (**G-View > Profile manager > Options > Actions**).

Media Channel Simulator

The Media Channel Simulator (MCS) is a way to simulate media data streamed in a media channel. Images in JPG format (of n=1-m) are used as video source and played back in a loop.

Installation

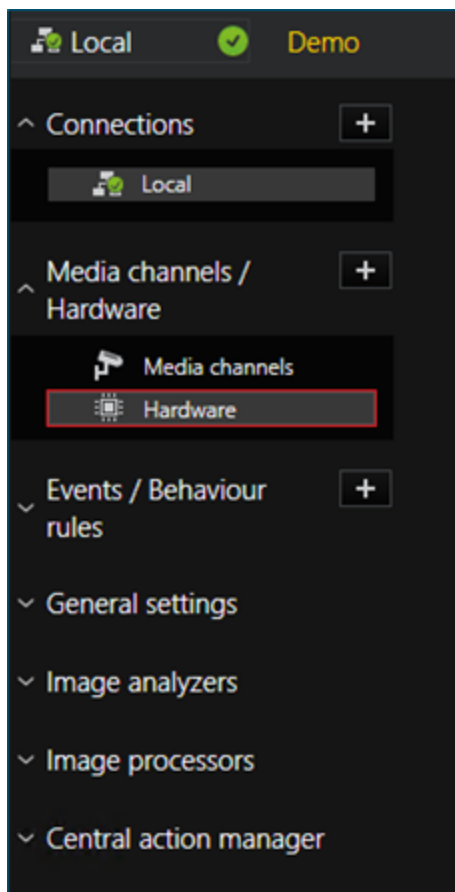
1. Confirm that the checkbox for the **Media Channel Simulator** (MCS) plugin is selected during installation.

PLUGINS

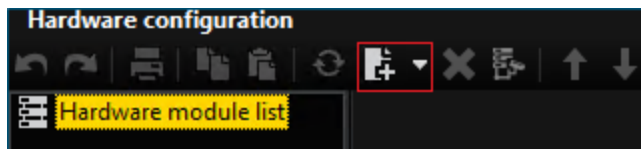


2. Connect to your G-Core server via G-Set and select **Hardware**.

PLUGINS

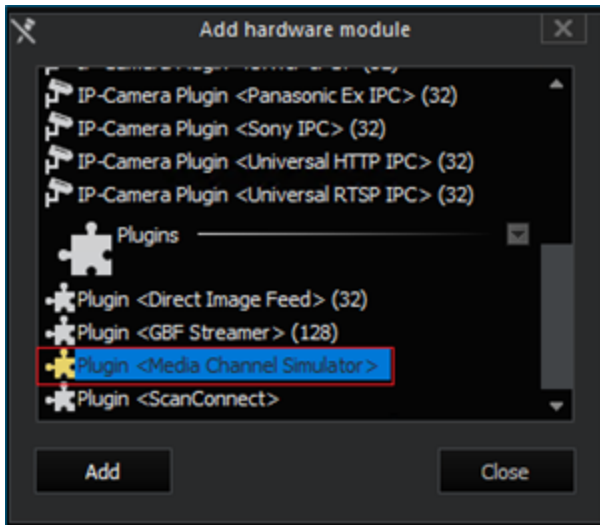


3. Add an new hardware module.



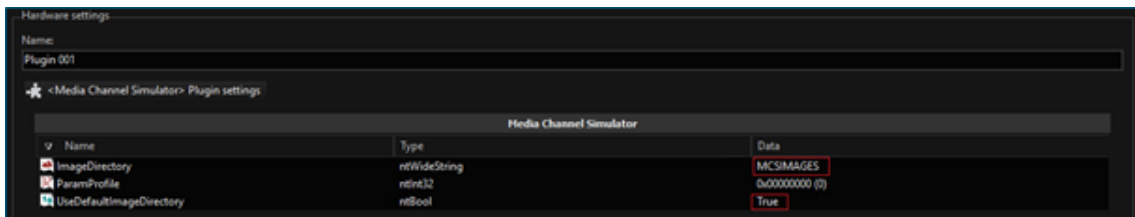
4. Choose the Plugin <Media Channel Simulator>.

PLUGINS

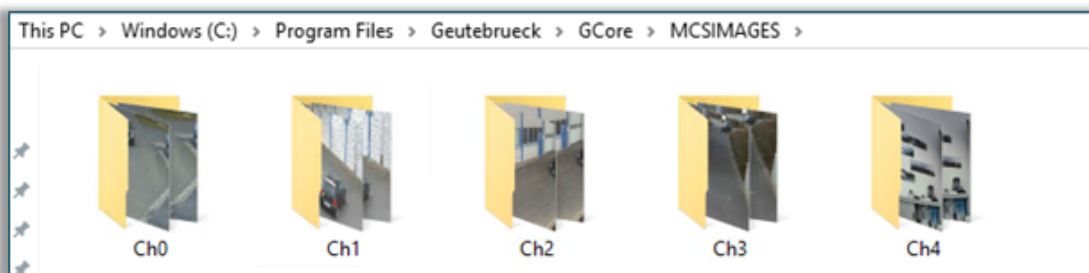


Configuration

1. Either you choose an absolute path or use the standard relative path. Using an absolute path requires to change it by double clicking on **MCSIMAGES** and entering it without quotation marks. You also need to change **UseDefaultImageDirectory** value to **False**.

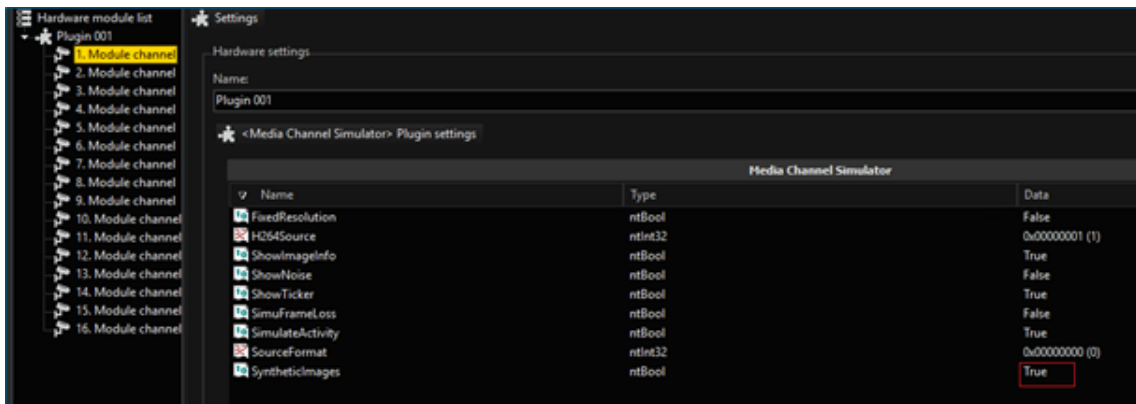


2. The relative path is set in `.. \Geutebrueck \GCore`. You need to create a folder structured like this for each media channel, where you can insert the images you want. The images must be in .jpg format and YUV 4:2:0 sub-sample. Note that the images will be streamed in alphabetical order, so it is recommended to use any kind of enumeration.

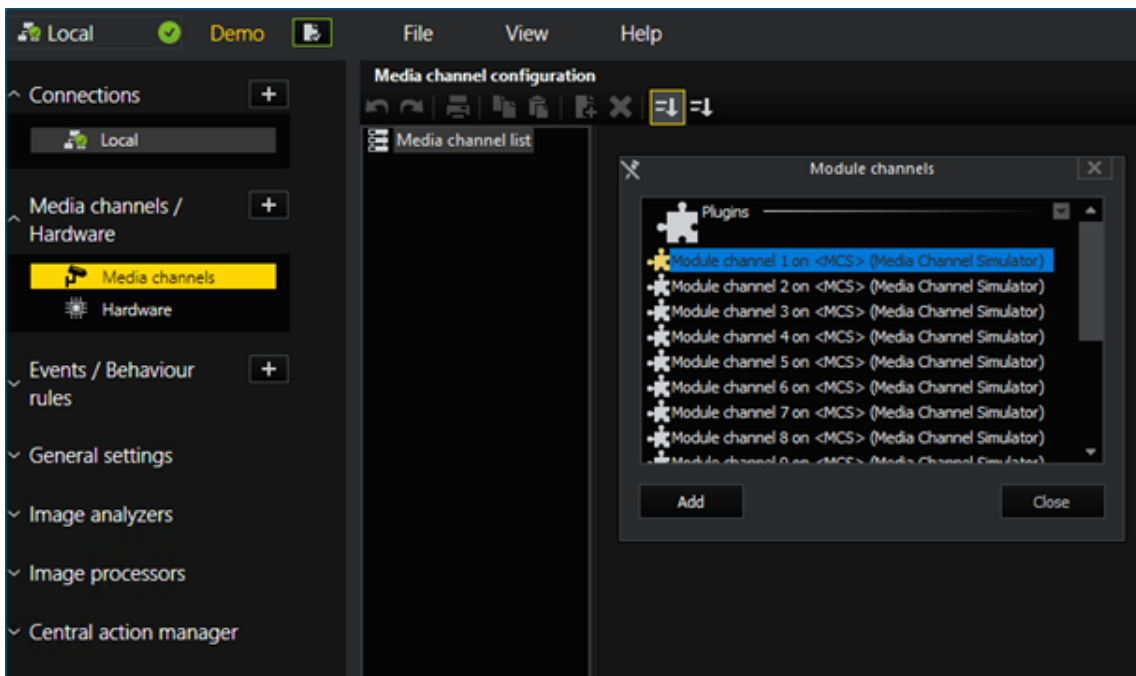


3. Change **SyntheticImages** value to **False** to avoid a basic test image.

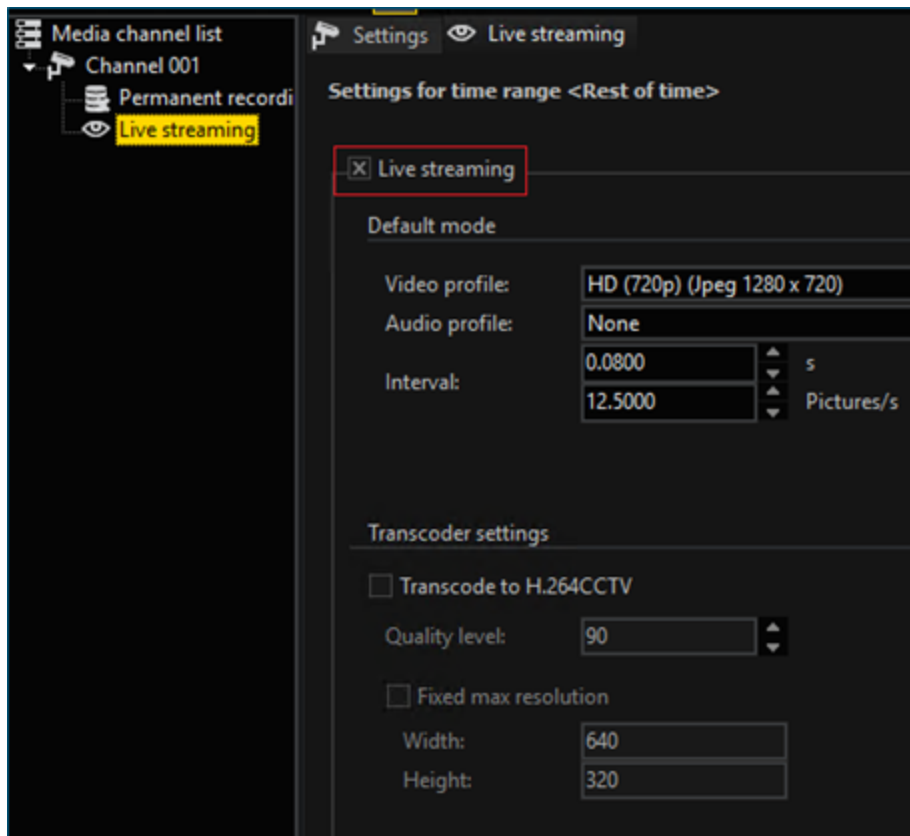
PLUGINS



4. Add a media channel and select the required number of MCS modules channels.



5. Make sure the **Live streaming** feature is enabled and configure your media channels as desired.



Modbus

The Modbus I/O plugin allows the connection of a G-Core system with external I/O modules that communicate via the Modbus standard.

Creation of the Hardware Plugin in G-Set

For each Modbus device you want to connect to G-Core, you need to create a Modbus hardware plugin. There are three different types of Modbus plugins. You can choose between 32 inputs or 32 outputs or 16 inputs and 16 outputs.

If you have a Modbus device with more inputs and outputs, you must use more than one plugin. See the following sections for more information.

Description of the Configuration Parameters

The following parameters can be configured in the settings of the plugin:

PLUGINS

General Settings

Name	Description
Modbus device IP or Hostname	IP address of the respective Modbus module.
Modbus device port	Port of the Modbus module (default: 502).
Polling time refresh rate	Interval at which the current inputs of the module are polled (setting in milliseconds).
Keepalive action interval	Configuration of the interval at which the Keepalive action is sent. The current connection status of the Modbus module is displayed here.

Input Settings

Name	Description
Start address of inputs	Start address of the inputs of the Modbus module.

PLUGINS

Name	Description
Number of inputs	<p>Number of inputs that the Modbus module has. Depending on the selected plugin type, a maximum of up to 32 inputs are supported.</p>
Explicitly poll read only inputs instead of read/write inputs	<p>This setting is disabled by default.</p> <ul style="list-style-type: none"> • The inputs are polled by default with the Modbus functions 0x01 READ_COILS or 0x03 READ_REGS. • Activating this setting changes this to the Modbus functions 0x02 READ_INPUT_BITS or 0x04 READ_INPUT_REGS. <p>i Whether this function is required depends on the Modbus module used.</p>
Retrigger inputs on startup	<p>When this setting is enabled, the plugin retriggers inputs that were already set when the G-Core server was started. This is useful for scenarios where events should be triggered immediately at server startup.</p>
Use analog Inputs instead of digital (enables cut line detection)	<p>This setting is disabled by default.</p> <ul style="list-style-type: none"> • The inputs are polled by default with the Modbus functions 0x01 READ_COILS or 0x02 READ_INPUT_BITS. • Activating this settings changes this to the Modbus functions 0x03 READ_REGS or 0x04 READ_INPUT_REGS. <p>i Whether this function is required depends on the Modbus module used. If a Modbus module with analogue inputs is used, this function activates the cut line detection.</p>
Voltage threshold 1 / Voltage threshold 2	<p>When activating the analog query and thus the cut line detection, the voltage state can be defined with these two parameters. This defines when analog inputs are detected as closed, open or terminated.</p> <p>i The values can vary depending on the used Modbus module and resistor.</p>

Output Settings

Name	Description
Start address of outputs	Start address of the outputs of the Modbus module.
Number of outputs	Number of outputs that the Modbus module has. Depending on the selected plugin type, a maximum of up to 32 outputs are supported.
Use analog Outputs instead of digital	<p>This setting is disabled by default.</p> <ul style="list-style-type: none"> • By default, outputs are set with function 0x05 WRITE_COIL. • If the setting is enabled, function 0x06 WRITE_REG is used. <p>i Whether this function is required depends on the Modbus module used.</p>
Reconnect Behaviour	<p>This setting determines how the plugin behaves when it is reconnected to the Modbus device after a connection loss.</p> <ul style="list-style-type: none"> • Buffer outputs: During the connection loss, all outputs are buffered and as soon as the connection is re-established, the latest output states will be sent to the Modbus device. • Query outputs: After the connection is re-established, the plugin ignores the outputs that have been set in the meantime and queries the Modbus device for its current output states and uses them. • Do nothing: The outputs are neither buffered nor polled, but simply ignored and normal operation continues. May cause a temporary inconsistency between the initial state of the G-Core server and the actual output states of the Modbus devices. This only lasts until the outputs are set again. <p>i Do nothing: May cause a temporary inconsistency between the initial state of the G-Core server and the actual output states of the Modbus devices. This only lasts until the outputs are set again.</p>

Mapping of the G-Set I/O's with the Modbus I/O's

Additionally you have to map the inputs and outputs that the Modbus plugin provides to the G-Core server to the virtual inputs and outputs of the server. You can do this in G-Set in the **General Settings** via the **I/O Settings**.

Serving a Large Modbus Device with Multiple Plugins

You can set up Modbus devices with more inputs and outputs than a plugin supports due to its existing limitations. For example, the input addresses of your Modbus device start at 1000 and go to 1063.

In the first plugin you can now set the input address to 1000 and the number of inputs to 32. In the second plugin you can set the input address to 1032 and the number of inputs to 32 as well. However, in both plugins the IP address and the port must be the same.

i **Important is the compatibility of the respective Modbus module, it must support multiple server connections, because each plugin is equivalent to its own server.**

Manufacturer Specific Notes

I/O modules of the manufacturer Phoenix Contact:

The watchdog on the module is activated by default, this means that the module goes into an error mode after 200 ms to 65000 ms as soon as no more outputs are set.

In the error mode no more outputs can be set and the mode can only be canceled by restarting the device. This problem can only be avoided if outputs are set in this time frame or if the watchdog is switched off.

RAID Controller Monitoring

The RAID Controller Monitoring plugin cyclically queries the status of the hard drives in the RAID system of a G-Scope. To this end, it uses SDK provided by Broadcom Inc., the manufacturer of the installed RAID controller.

If a defective disk is found, the plugin sends a SystemError action. It contains the information storage error, Raid HDD error and the ID of the defective disk.

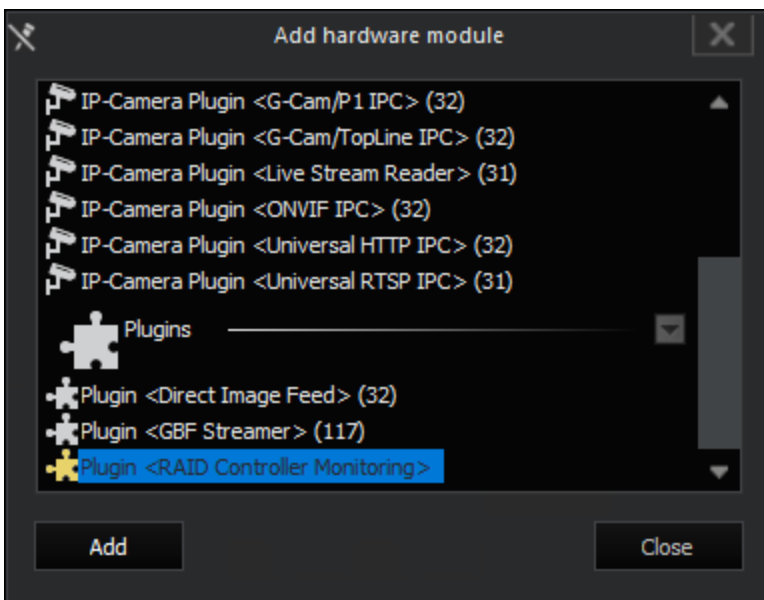
Reactions to this action can be defined as usual by creating corresponding behavior rules in G-Set.

Installation

A requirement for the use of the RAID Controller Monitoring plugin is a G-Scope with an integrated Broadcom RAID controller and the corresponding G-Core version.

Add the Plugin

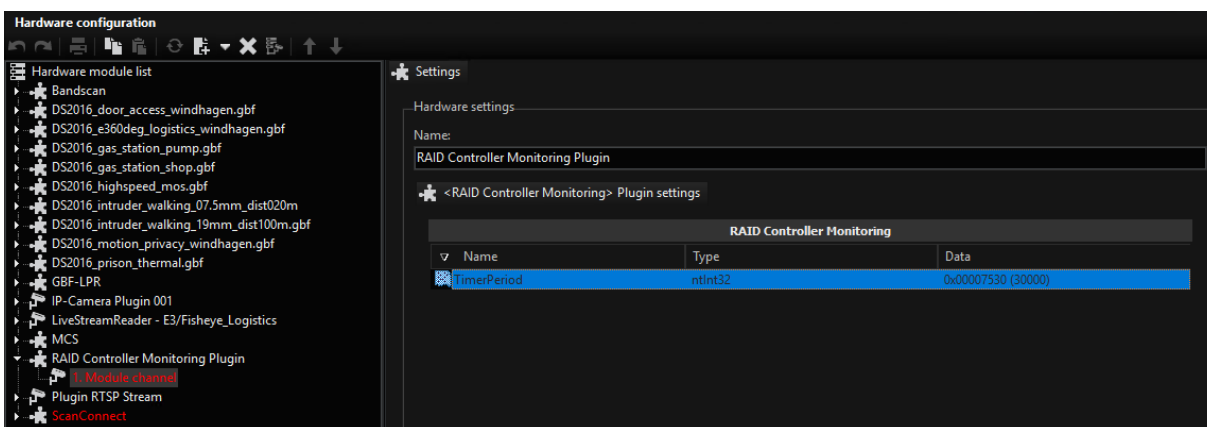
After successful installation of G-Core, the G-Core server starts automatically and loads all present plugins. After the start of G-Set, the **Plugin <RAID Controller Monitoring>** plugin can be added under **Hardware**.



Configuration

Using the registry key **TimerPeriod**, the interval for the hard-drive checks can be defined. If no registry key is set, a default value of 30,000 milliseconds is used.

i The entered timer period must be at least 15,000 milliseconds.



ScanConnect

 Subject to license

The ScanConnect plugin makes it possible to connect serial scanners and external clients.

Each scanner is assigned a serial interface with its parameters and a location. The data is received as BarcodeData, LogBarcodeData or LogBarcodeID actions and can be edited if necessary before it is sent to the server. The edited actions are added as a hash value to make possible accelerated database searches.

The ScanConnect plugin thus takes over the functions of the previous GSupplyChain/Scan module and the TACI plugin.

Requirements

The ScanConnect plugin requires the following binary files (plugins):

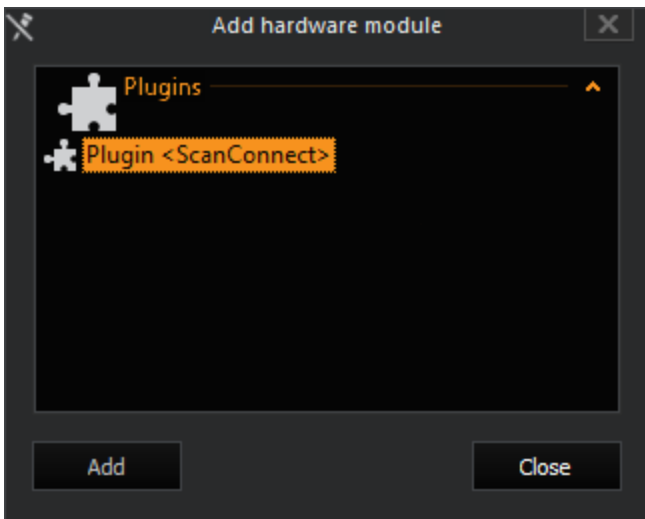
- ScanConnect.dll,
- ScanConnect.dlg.dll and
- MediaPluginLoaderNet.dll

Configuration

To use the ScanConnect plugin, the aforementioned binary files must be present in the MediaPlugins directory.

If the server finds the plugin after a restart, it can be added in the server, just like any other plugin:

PLUGINS



Once the plugin has been added, in G-Set the ScanConnect interface is added with the tabs

- Devices
- Areas
- TACI (Telnet Action Command Interface)
- Options
- Advanced output
- Import/Export.

Devices

1. After the plugin has been added, in G-Set the ScanConnect interface should be shown with 6 provided scanners (4x serial and 2 IP). All are initially disabled.

PLUGINS

<ScanConnect> Plugin settings

Devices Area TACI Options Advanced output Import / Export

Scanner	Port	Area
Scanner 1	Not active	
Scanner 2	Not active	
Scanner 3	Not active	
Scanner 4	Not active	
Scanner 5	Not active	
Scanner 6	Not active	

Scanner settings

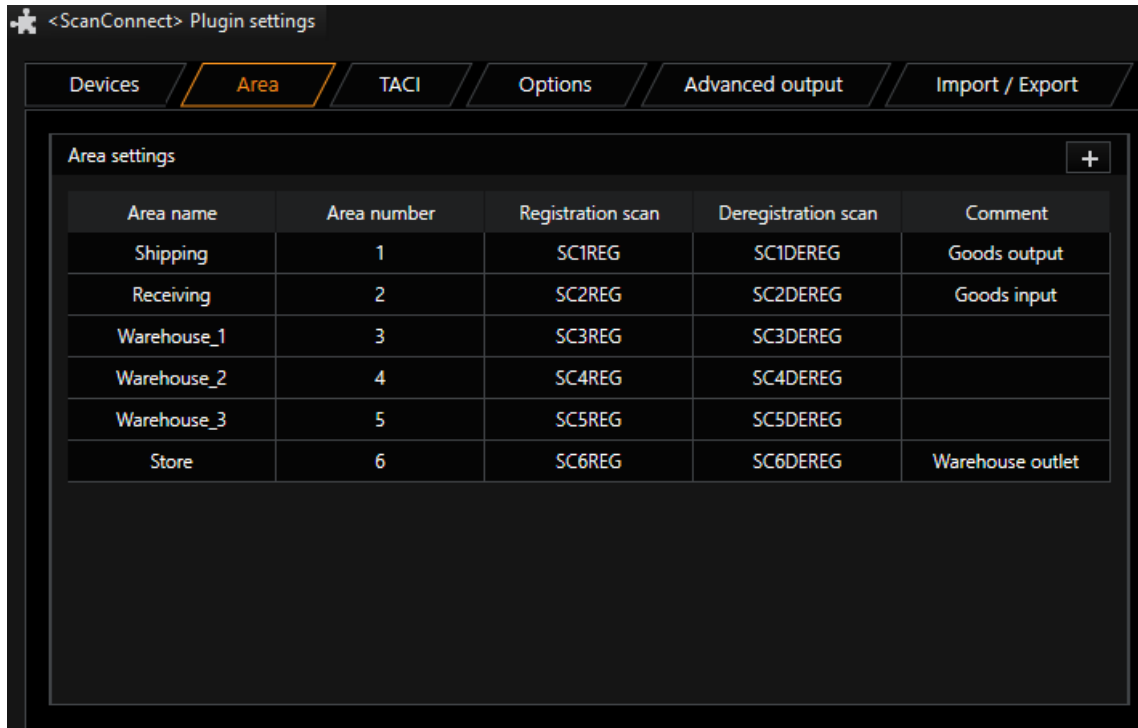
Scanner name: Scanner 1

Area: [dropdown] [add icon]

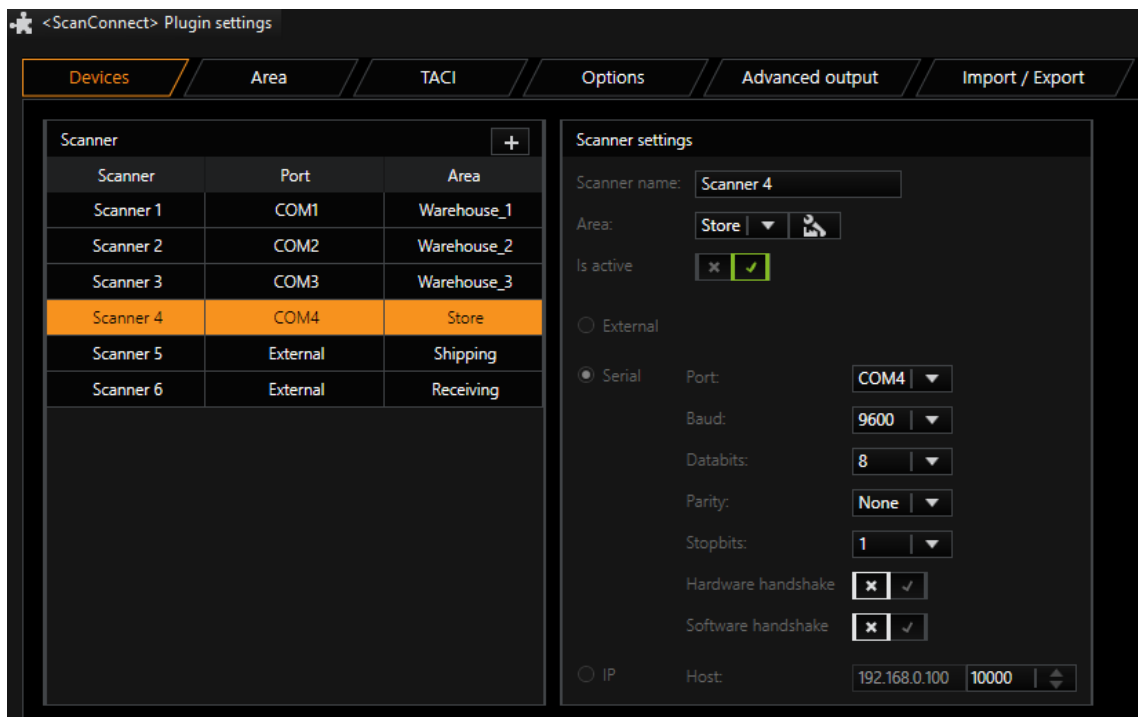
Is active: [x] [checkmark]

2. Before the scanner can be configured, all desired areas must be added in the **Area** tab. To add an area, click **Add**. In our example, six areas were added:

PLUGINS



3. In the **Devices** tab you can now assign an area to each scanner:



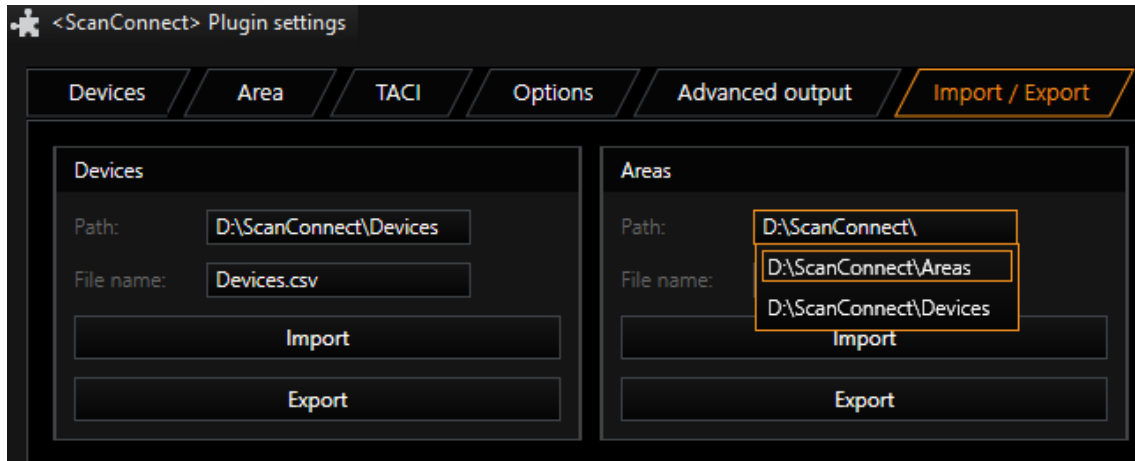
4. Select a scanner and configure it in the **Scanner Settings** dialog.

PLUGINS

- Click on the **+** icon in the **Scanner** dialog to add additional scanners. A maximum of 255 serial scanners can be added.

i This mapping can also be omitted because the scanner can register and deregister itself at other locations using registration and deregistration scan codes at run time.

- Alternatively, areas and scanners can also be imported from a *.CSV file or exported. These options are found in the **Import / Export** tab.



i When both a scanner and an area list will be imported, note the following: If the scanners in the scanner list already have area assignments, the area list must be imported first! Otherwise, the area assignments on the scanner list will be lost if the areas indicated in the area list do not yet exist.

The CSV files can be easily edited using Excel.

- Managing the scanner list in Excel:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	ScannerName	Area	ComPort	Baud	Databits	Parity	Stopbits	IsHardwareHandshake	IsSoftwareHandshake	Host	Port	IsActive	ConnectionKind
2	Scanner 1	Warehouse_1	1	4800	8	0	1	False	False	192.168.0.100	10000	True	0
3	Scanner 2	Warehouse_2	2	9600	8	0	1	False	False	192.168.0.100	10000	True	0
4	Scanner 3	Warehouse_3	3	9600	8	0	1	False	False	192.168.0.100	10000	True	0
5	Scanner 4	Store	4	9600	8	0	2	False	False	192.168.0.100	10000	True	0
6	Scanner 5	Shipping	5	9600	8	0	0	False	False	192.168.0.100	10000	True	1
7	Scanner 6	Receiving	6	9600	8	0	0	False	False	192.168.0.100	10000	True	1
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19		Scanner 17											
20													

PLUGINS

- Managing the area list in Excel:

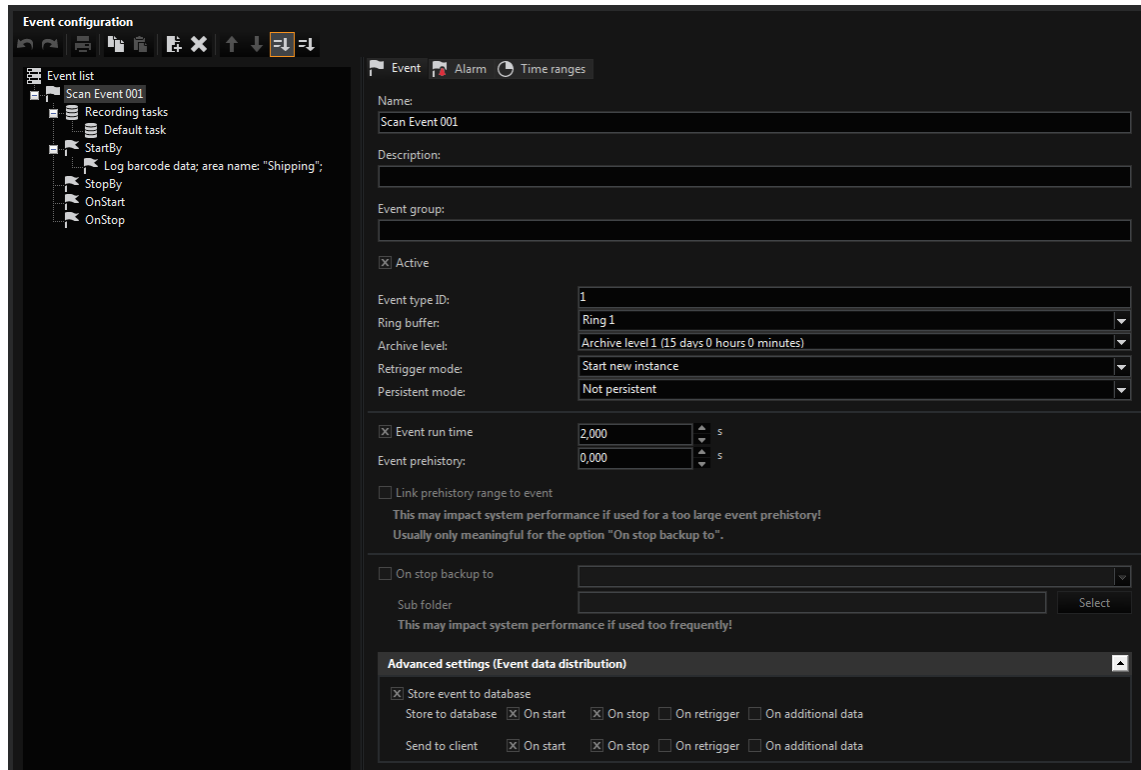
	A	B	C	D	E
1	Alias name	Area number	Registration scan	Deregistration scan	Comment
2	Shipping	1	SC1REG	SC1DEREG	Goods output
3	Receiving	2	SC2REG	SC2DEREG	Goods input
4	Warehouse_1	3	SC3REG	SC3DEREG	
5	Warehouse_2	4	SC4REG	SC4DEREG	
6	Warehouse_3	5	SC5REG	SC5DEREG	
7	Store	6	SC6REG	SC6DEREG	Warehouse outlet
8					
9					
10					
11					

- i** If there are incorrect entries, the entire row will be rejected during the import procedure.

For each Area an Event must be configured to start a recording combined with the scan data. The StartBy LogBarcode. Action must match with the Area Name or AreaID to the event. Supply an Event run time and set Retrigger mode to Start new

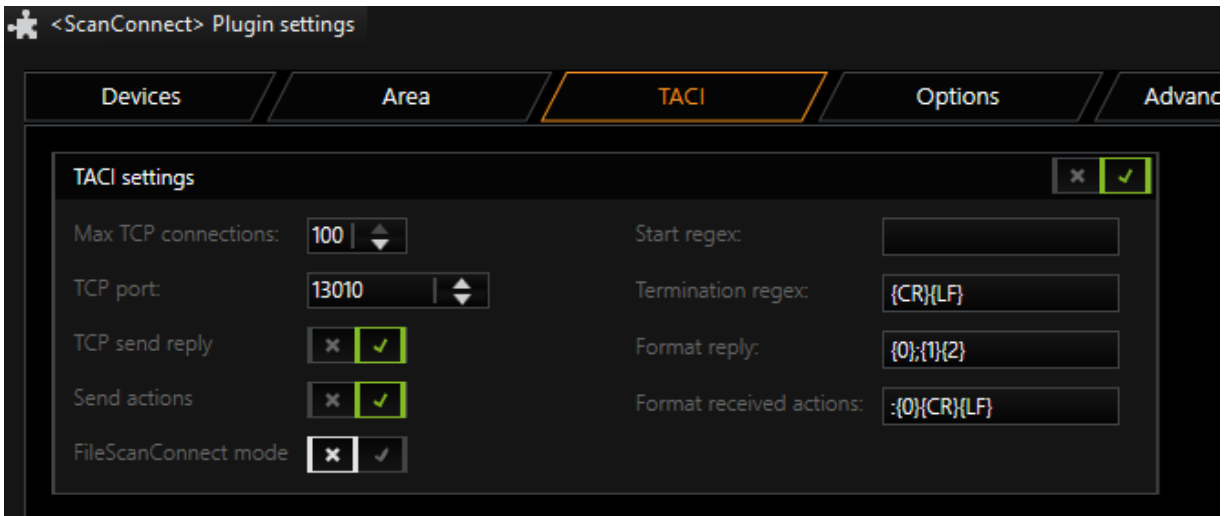
PLUGINS

instance, since the hash for fast research is only written on new events.



TACI (Telnet Action Command Interface)

All Telnet commands can be easily configured in the TACI tab:



i To connect the G-Core FileScanConnect service, switch to FileScanConnect mode

TACI (Telnet Action Command Interface) provides an option for sending and receiving actions in ASCII format. TACI converts these ASCII actions into normal G-Core actions, or conversely converts G-Core actions into ASCII format for transmission over a Telnet port.

The TACI interface included in the ScanConnect Plugin can only receive Barcode Actions (Barcode, LogBarcodeData, LogBarcodeID) . DigitalInput Action can be sent and received to establish a handshake for connection watchdog. If an other action must be sent or received through TACI, the separate TACI-Plugin must be installed.

i Your software must be capable of sending and receiving text in ASCII format.

The following describes the parameters:

i UDP is not currently implemented.

Name	Description
Is active	TACI Interface is activated (Default = false)
TCPPort	Number of TCP Port for the telnet connection
MaxTCPConnections	Maximum number of allowed TACI connections for one server
TCP send reply	If set to true you will receive an echo of your command
SendAllActions	Forward all actions from server to Telnet
Start regex	Regular expression to identify data start
Termination regex	Regular expression to identify data termination
Format reply	Format string of the reply from TACI {0}: Return value 3: Error(No action 4: OK) {1}: Position of echo {2}: Send termination signal at the end (CR/ LF)
Format received actions	{0} Position of Action in the received string

PLUGINS

The screenshot shows the 'ScanConnect' Plugin settings window, specifically the 'TACI' tab. The window has a dark theme and a tabbed interface with 'Devices', 'Area', 'TACI', 'Options', 'Advanced output', and 'In'. The 'TACI settings' panel is active, containing several configuration fields:

- Max TCP connections: 100
- TCP port: 13010
- TCP send reply:
- Send actions:
- FileScanConnect mode:
- Start regex: (empty)
- Termination regex: {CR}{LF}
- Format reply: {0};{1};{2}
- Format received actions: :{0}{CR}{LF}

Below the settings panel, there are two checkboxes: 'Telecontrol camera' and 'Use system audio (global setting)', both of which are unchecked. At the bottom of the window, a terminal window displays the following output:

```
G-CORE TELNET ACTION COMMAND INTERFACE
VERSION 1.94

TCP PORT:                13010
TCP CLIENTS:              0
ACTION OUT FILTER REGEX: (DigitalInput)
(.*)
ACTION IN FILTER REGEX: (Barcode)(.*)|
(LogBarcode)(.*)|(DigitalInput)(.*)
COMMAND REGEX:            *
TERMINATION REGEX:       {CR}{LF}
TCP ACTIONS RECEIVED:    0
TCP ACTIONS ERRORS:      0
TCP LAST ACTION:
LAST DATA:
```

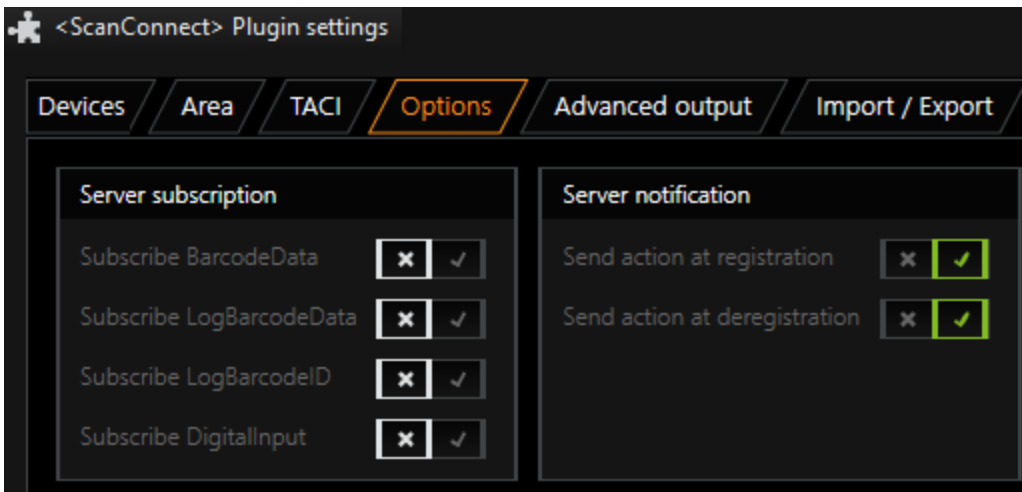
i For safety reasons, only the required ports should be open. Port 13010, needed for TACI use, is closed by default by the firewall. However, the firewall typically contains a rule that only needs to be activated to open the port and make it usable for TACI. It is not necessary to create a new rule.

Options

In the **Options** tab you can specify which Actions will be subscribed from the G-Core server.

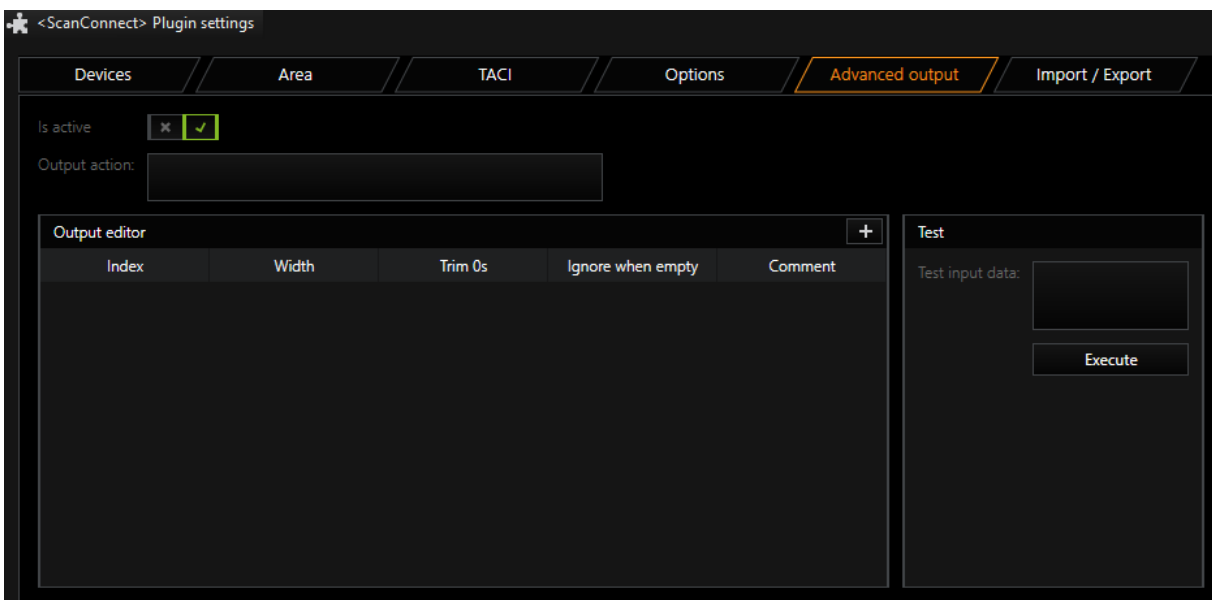
You can also specify whether an action will be forwarded if a registration or deregistration scan was performed.

PLUGINS



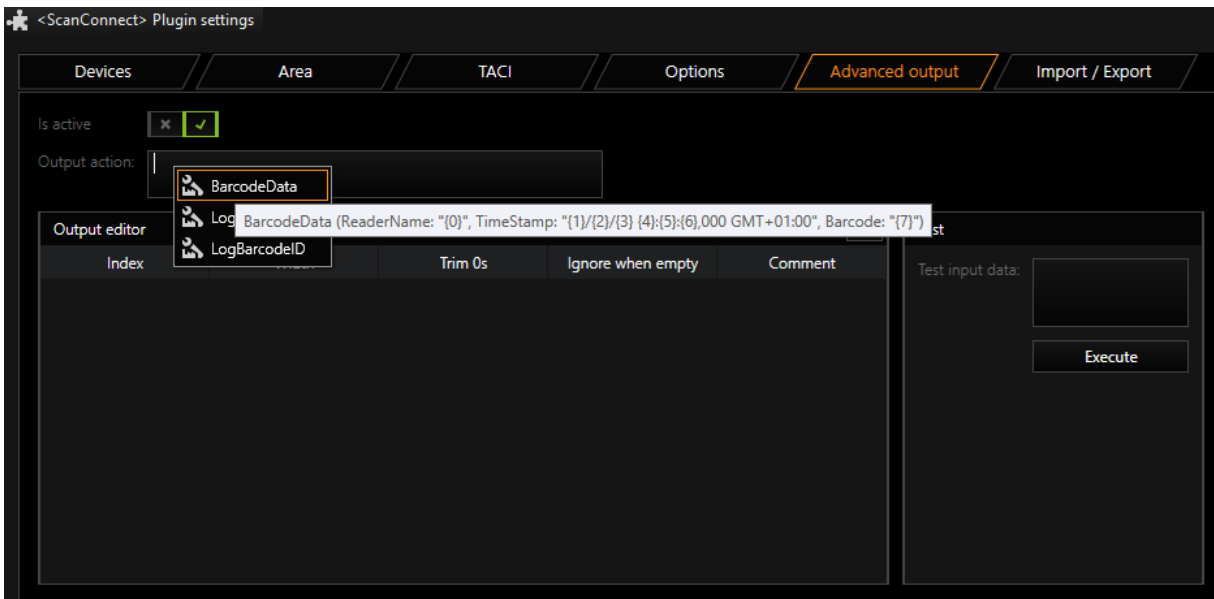
Advanced Output

In the **Advanced output** tab, scan data formatting can be activated.



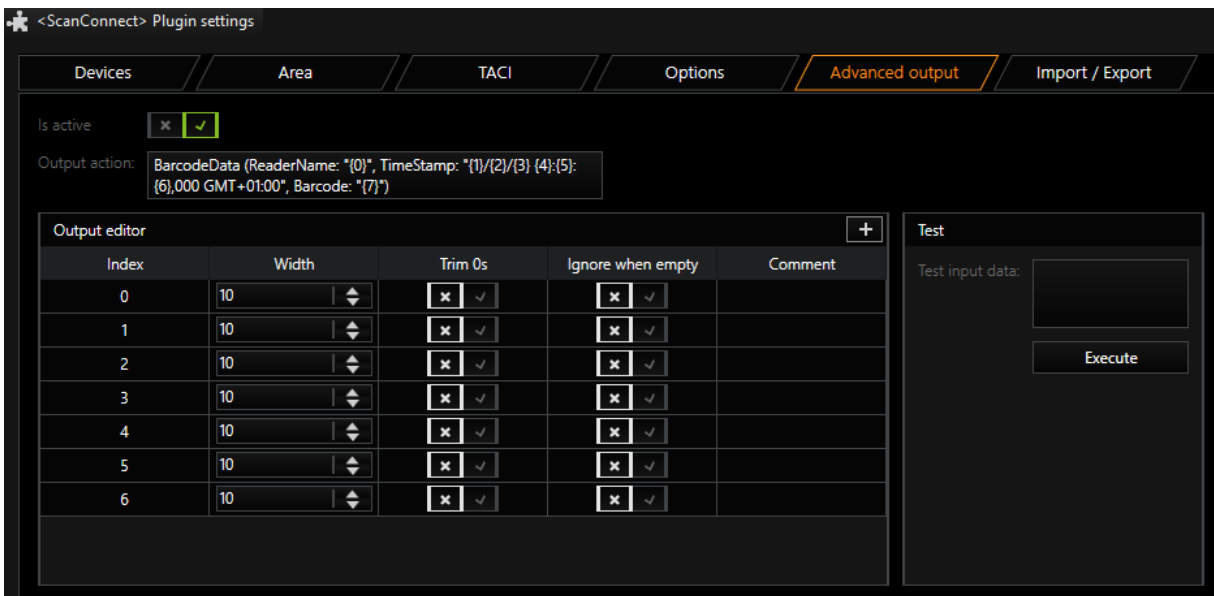
Under **Output action** the action is entered that is to be sent by ScanConnect when data was processed over the serial interface. Actions are only sent when the **Advanced output** interface is active (Is active = True).

PLUGINS

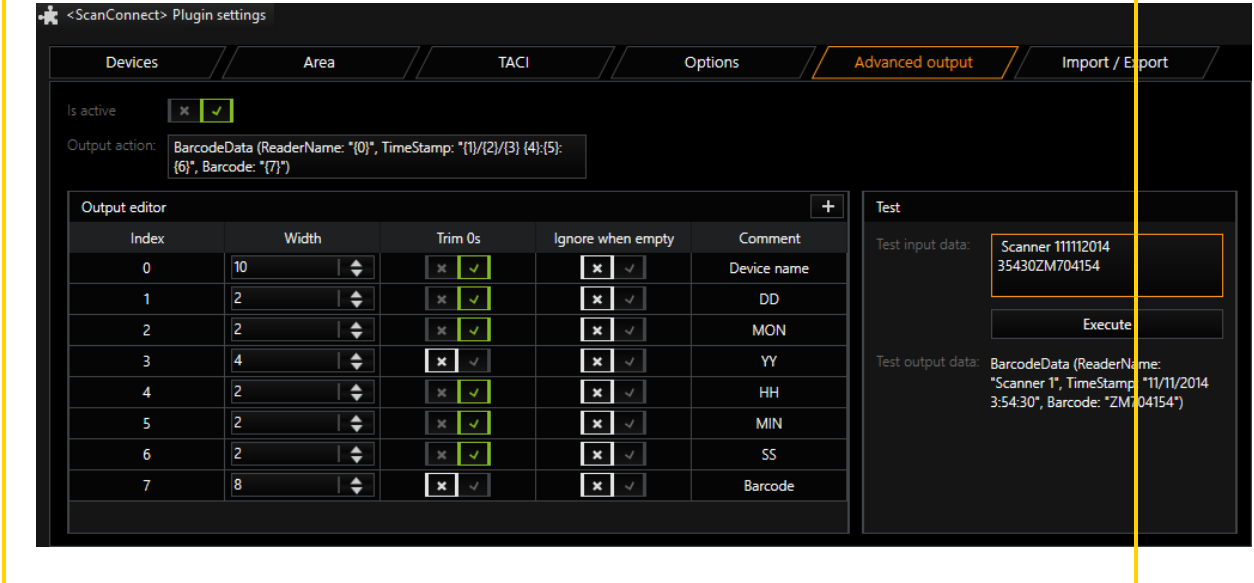


By right clicking in the field **Output action**, a template for possible actions can be selected: In our example, this is BarcodeData. It displays a help line which adds action/template with a single click.

In the action character string, parameter values are provided with placeholders {0}. The number of these placeholders is found under **Index** in the **Output editor**. A new index can be added by clicking the **+** icon.



Example In our sample action, seven index entries are required. However, more index fields can be added, for example, to ignore/ skip a portion of the input data.



Under **Width** you set where the corresponding data is located in the input data.

With the activation of **Trim 0s**, leading zeros are cut off in the strings.

If **Ignore when empty** is activated for an index entry, the target parameter is ignored when the data section is empty.

i **Spaces at the start and end of the data section are always removed.**

Whether the configuration matches the scheme of the future scan data can be checked by clicking **Execute** in the **Test** area.

Example Here is another example with more index entries:

The screenshot shows the 'ScanConnect' Plugin settings for the 'Advanced output' tab. The 'Output editor' table is as follows:

Index	Width	Trim 0s	Ignore when empty	Comment
0	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	NVE
1	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SN
2	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	REGION
3	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	YY
4	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MON
5	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	DD
6	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	HH
7	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MIN
8	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SS
9	6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Ignore
10	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	USER
11	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	SCANTYPE
12	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	IN
13	4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	OUT
14	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	DISPO
15	7	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ROUTE
16	17	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	LP
17	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	POOL
18	10	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CONT
19	16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	REGION_L
20	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CAT

The 'Test' area shows the following data:

```

Test input data: 00340037300031991195042799790
                  68      20141111203406
                  MDE19SADOW40
                  0002010397200      DA
                  ST6363  4022-4024      F
                  Execute

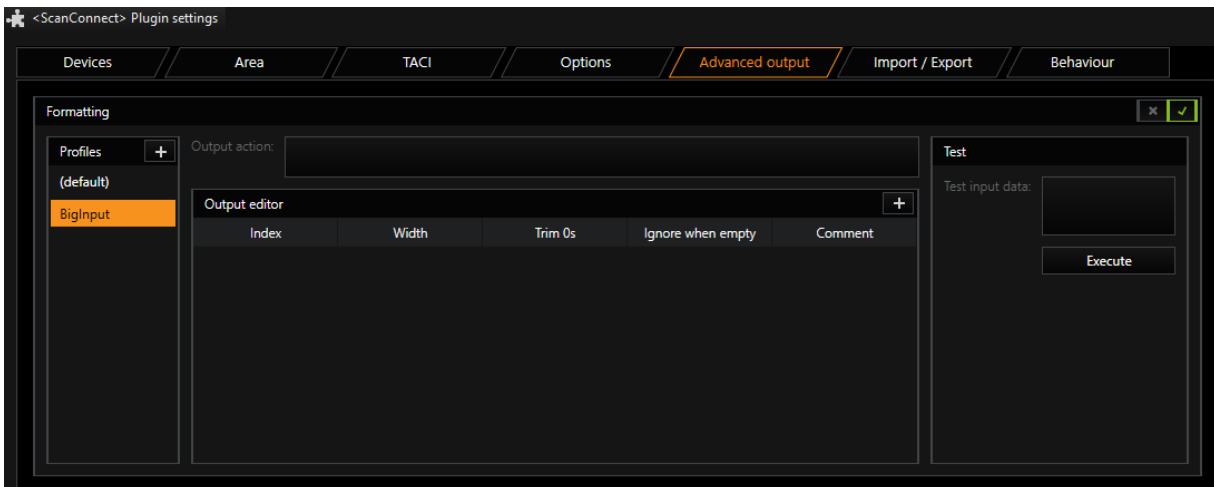
Test output data: LogBarcodeID (ID:
                  "340037300031991195", ID2:
                  "4279979068", Scanner
                  "MDE19SADOW", Time stamp:
                  "2014/11/11 20:34:06", Type: "40")
    
```

In the field **Output action** is the action that will be sent by the ScanConnect plugin. In this case, `LogBarcodeID` with 11 necessary and 9 other commented parameters. In the above example, the scanner ID (NVE) is truncated to 20 characters. The rest of the string is shown in **ID2 (Width)** and for the first three strings, by activating **Trim 0s**, the leading zeros are cut off. In the Test area you can see the output data for the `LogBarcodeID`-String as input and output.

Creating Additional Profiles:

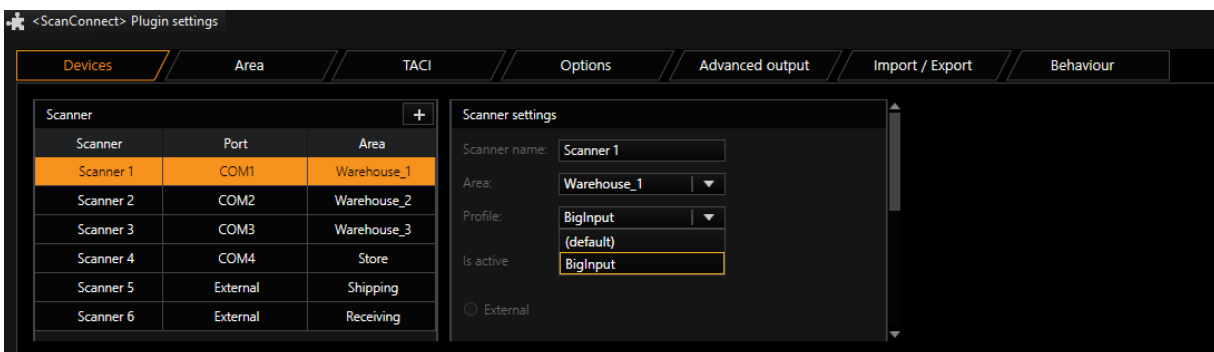
It is possible that the input data have different lengths. In this case, an additional profile can be created (click on the **+** icon).

PLUGINS



The new profile can now be adapted to a 20-digit bar code or a 34-digit character string (here the input data).

If additional profiles are created, they can be assigned to the scanners. The default profile then applies for all other scanners.



Selea

The Selea interface from Geutebrück connects the Selea camera from a “Global Proof Guardian 704 ILB ACCR-System” to a G-Core server. The camera detects the top, front or rear side of a sea container for the horizontal and vertical number. This number has its standard according to the ISO-Norm 6346.

The information from the Selea camera server will be handled in G-Core as an NPRRecognition action. An additional picture, showing the founded number, can be used as an input stream in the plugin channel.

The interface is developed as a hardware plugin of G-Core.

The connection protocol is TCP/IP.

Functionality

The plugin offers a Port to a Selea camera via TCP/IP. The camera connects to this port and pushes a XML string to it.

This XML contains information on the number and the recognition time. A picture, used for the recognition, will be sent to a the given FTP server port. This picture is used by the plugin for the input stream.

The received numbers are used to fire NPRRecognition actions. These actions can be used to initiate events programmed in G-Set. Using pictures and actions, these events represent the existing of a sea container in front of the camera.

Usage

The Selea plugin can be added as a hardware plugin in G-Set.

A plugin must be installed for each Selea camera. The configuration of the plugin is done in G-Set.

Information from the Selea camera are translated into “NPRRecognition” actions.

Pictures from the camera are copied by the camera to a connected FTP server. The FTP server has to be provided by the operating system.

If the camera recognize a number on a sea container, the camera will connect to the Selea plugin and push the XML string with the number. The plugin must wait until the picture of this recognition is made available through the FTP server before sending the NPR Recognition action. This can take several seconds to minutes. Therefore events can occur considerably later than the point of time the sea container passed the camera. However, the events contain the correct time with the recognized number.

Some setting must be done for proper functionality.

Camera Settings

General Settings

The options **Save notification on memory in case of sending failure** and **Send saved notifications** should both be checked. Otherwise the XML string is different.

PLUGINS

The screenshot shows the SELEA LIVE STORAGE SETUP interface. The left sidebar contains a navigation menu with the following items: System, Network, Car plates reading, Image control, Compression parameters, Security, Events management, Notification services (selected), Actions, Storage, and Maintenance. The 'Notification services' section is expanded, showing a sub-menu with General (selected), Email, FTP, XML, and IP alarm. The main content area is titled 'NOTIFICATION SERVICES' and contains the following settings:

- Sent image in notifications: Picture in Picture (dropdown)
- Notifications date/time in UTC format:
- Sent image setting**
 - Resolution: 752 x 480 (dropdown) WVGA
 - Quality: Low (dropdown)
- Carplate event notification and images services**
 - Resolution: 752 x 480 (dropdown) WVGA
 - Quality: Low (dropdown)
 - Disable transit informations:
 - OCR: Date/time: Name: Nationality: ADR: Position: Warnings:
 - Disable Magic-Spot:
 - Split multiple reading:
 - Split context images:
- Carplates filters**
 - Notify only carplates with direction detected: no (dropdown)
 - Notify only carplates with syntax match:
 - Enabled vehicles categories: Car: Trailer: Motorbike: Motorcycle: Military: ADR: ILU-BIC:
- Notification sending failed**
 - Save notification on memory in case of sending failure: (highlighted with a red box)
 - Send saved notifications: (highlighted with a red box)

At the bottom of the settings area is a 'Save parameters' button. The bottom right corner of the page contains the text 'powered by Videx s.r.l.'.

FTP Connect

The option **Enable FTP notifications** should be checked. Otherwise there will be no pictures available.

Also the **File name format** settings should be set as they are on the screen shot:

PLUGINS

GUARDIAN704ILB x +

Nicht sicher | 10.1.96.133/settings.html

SELEA LIVE STORAGE **SETUP** English

System
Network
Car plates reading
Image control
Compression parameters
Security
Events management
Notification services
o General
o Email
o **FTP**
o XML
o IP alarm
Actions
Storage
Maintenance

FTP NOTIFICATIONS SETTING

Enable FTP notifications

Server

IP address

Port

Username

Password

Sending options

Save path

Add date and time to save path

Add carplate type to save path

Create path for context images

File name format

+

i.e.

Transfer mode

Keep alive commands connection

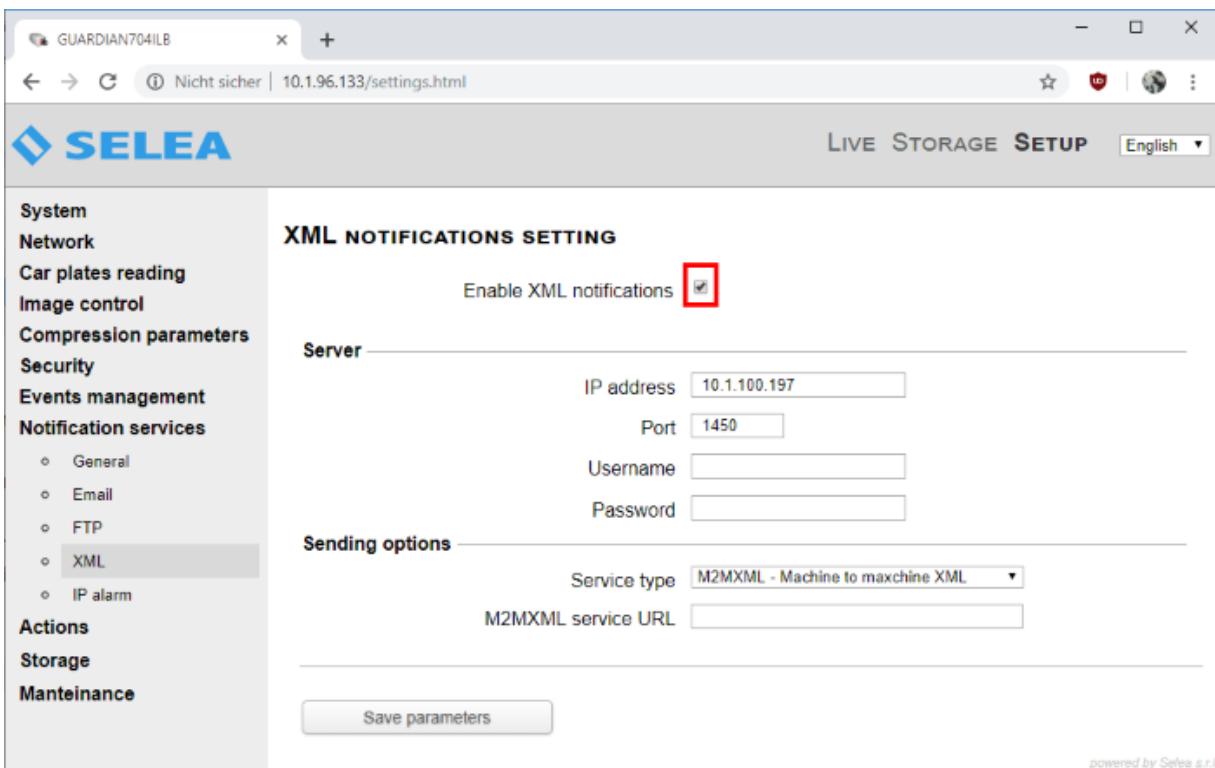
Save parameters

Verbindung wird hergestellt...

powered by Selea s.r.l.

XML Connect

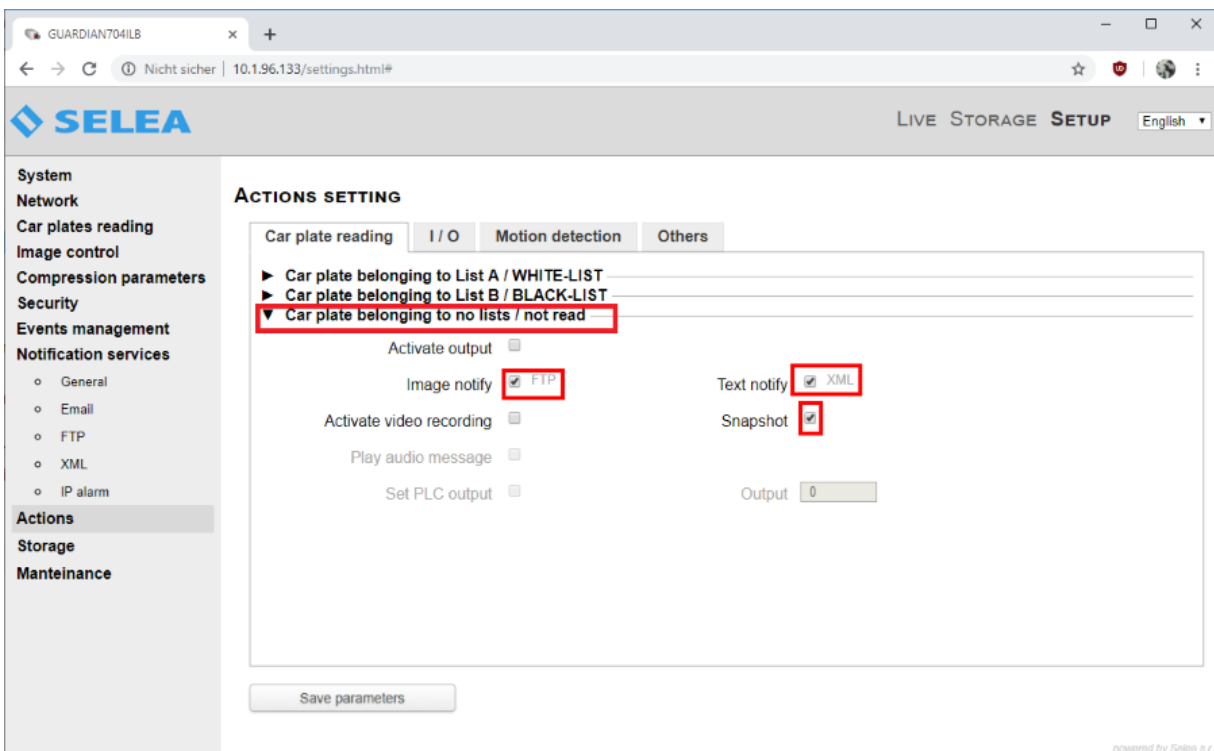
The option **Enable XML notifications** should be checked. Otherwise neither XML strings nor actions are fired.



Actions Setting

The Actions settings should be set as they are on the screen shot:

PLUGINS




- If **Image notify** is checked, a picture will be copied to the FTP server.
- If **Text notify** is checked, an XML event will be created.
- If **Snapshot** is checked, a picture inside camera storage will be created (obsolete).

Plugin Settings

Selea		
Name	Typ	Daten
Custom Actions	ntBool	True
FTP Server image path:	ntWideString	C:\ftp_images\
FTP Server timeout in sec.:	ntInt32	0x00000078 (120)
PrintDebugMessage	ntBool	True
XML PORT	ntWideString	1450

PLUGINS

Name	Description
Custom Actions	(not used)
FTP Server image path	In this path, the plugin is searching for pictures corresponding to a NPR recognition action.
FTP Server timeout in sec	If no picture is found after this time frame, a default picture will be used and the NPR recognition action is fired. If set to "0", the plugin will fire the action immediately. 
PrintDebugMessage	(Developer debug output)
XML PORT	TCP/IP port of the plugin where the camera can connect their XML connector.

Skidata2GB

The Skidata2GB plugin implements an interface between the car park management system from Skidata and Geutebrück G-Core DVR. It is used to receive events of the Skidata system. These can be used to control the recording of video data associated cameras and for all functions available via PLC action mappings. The interface extracts key data from the Skidata events and passes them to the

PLUGINS

video recordings as meta data. Based on these meta data, it is possible to search in G-Core for recordings that are relevant for the park management system and associated video recordings.

Events

The Skidata2GB plugin supports the following Skidata Message Groups and the events reported by it:

- Device Event
- Entries
- Exits
- Transactions

Device Events provide the following information, which can be used in G-Core for control and search purposes:

Name	Description
DeviceID	Corresponds to a unique number of the triggering device. This could be, for instance, the
EventCode	Is the Skidata code for the characterization of the event (for example follower alarm)

Entries, Exits and Transactions provide the following information, which is passed on to G-Core:

Name	Description
MsgCode	Detailed information on the kind of message (for example "Exit of Skidata ticket") or
TransactionID	A unique ID which Skidata Management records for everyone. This information is saved in G-Core with the events and can be used as
Car Park Number	The number of the parking garage where the process has been triggered.
DeviceID	Corresponds to a unique number of the triggering device. This could be, for instance, the

Software Architecture

An interface consists of the following components:

Component	Description
Skidata2GB.DLL	The interface plugin for the GCoreServer.
HCIWrapper.DLL	Encapsulates .NET HCI interface from Skidata to be able to access the C ++ interface of the plugin SDK.
HCI.DLL	SkiData Interface DLL for communication with the HCI Management Server.
HCI Management Server	SkiData Installation of the management server

The following two modules can be used for test and service purposes during commissioning of the communication:

Module	Description
SkidataSimuServer	Simulation a Skidata management server for testing purposes.
HCIMonitor	Monitor for the HCI interface for testing purposes. Can be used before installation of the plugin with the GCoreServer to test communication options with the HCI management server.

Installation

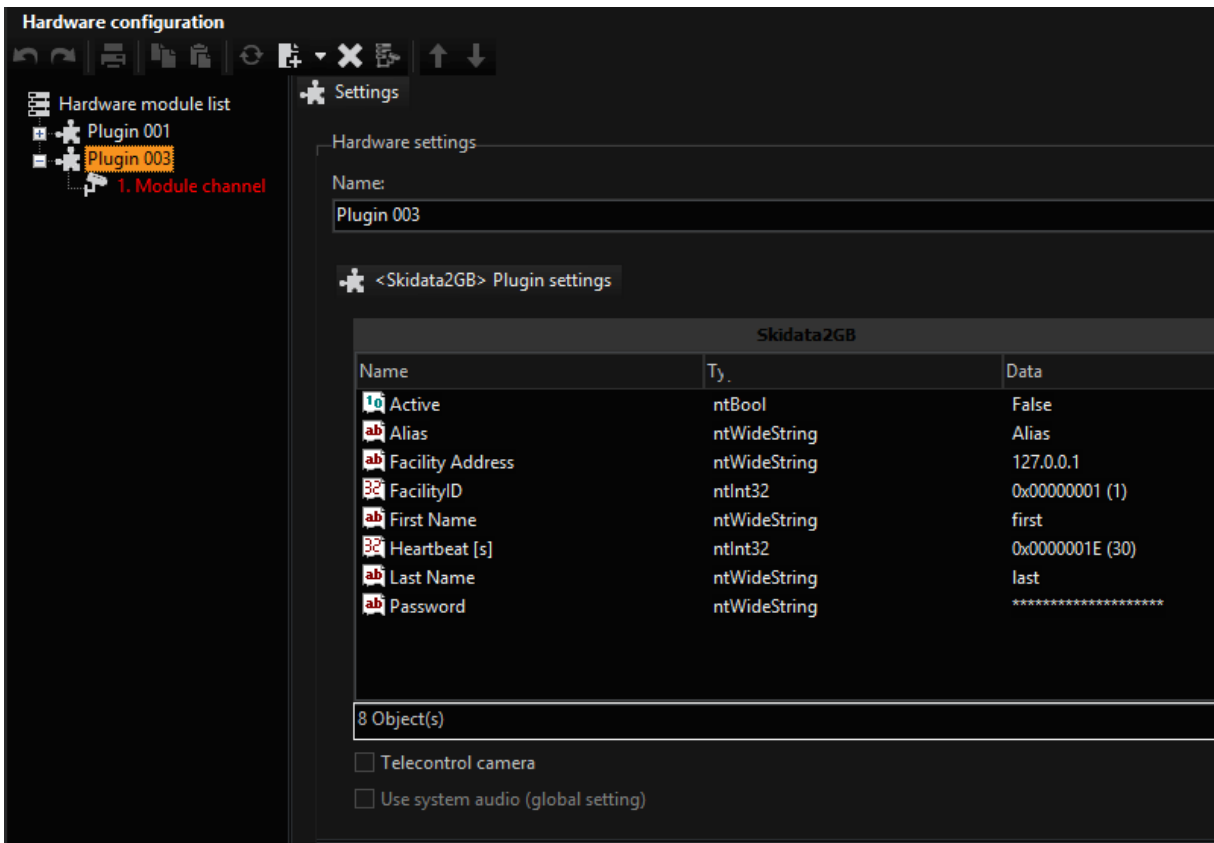
- Before installation of the plugin, the Microsoft Installer `vc_redist_86.exe` must be run on the G-Core.
- The Skidata2GB plugin must be in the `mediaplugin` directory of the media G-Core system software.
- The DLLs `HCIWrapper.dll` and `HCI.dll` must be in the main directory of the G-Core system software
- The Skidata HCI Interface uses port 10200 for communication with the Skidata management server. If no communication is possible after installation of all components, it should be checked whether the firewall on the G-Core blocks a connection.

PLUGINS

- It makes sense to first check with the HCIMonitor whether an HCI connection can be made from the GeViScope. To do so, an HCIMonitor is copied into the G-Core system directory and started.

Configuration

The Skidata2GB plugin is setup in the G-Set module. If the plugin is installed correctly, it can be selected in the **Hardware** dialog of G-Set. After selection, the following parameters are set:



Name	Description
Active	Default is false. If the parameter is true, the plugin will try with HCI If the server is not found, then a cyclic
Alias	Connection parameters of the HCI interface
Facility Address	Connection parameters of the HCI interface

PLUGINS

Name	Description
Facility ID	Connection parameters of the HCI interface
First Name	User account name on the server HCI
Last Name	User account name on the server HCI
Password	Password on the server HCI
Heartbeat	Time in which the HCI interface checks the connection cyclically. Default is 30 seconds.

The communication between the Skidata2GB plugin and the HCI server is signaled by corresponding G-Core actions signals.

Actions

The plugin produces 2 types of actions, which are transmitted to the G-Core server. These are

- Control actions, which signal the status of the connection to the HCI server and
- Payload actions, which signal the arrival of park events.

The following actions are triggered by the interface:

SkidataControl(State)	Monitoring the connection status to the HCI server
1: Connect OK	
2: Connection attempt failed	
3: Disconnect	
4: Connection loss	
SkidataEntry	Monitoring of entry events
SkidataExit	Monitoring of exit events
SkidataTransaction	Monitoring of transaction / payment events
MsgCode	Type of message (e.g. card type)

PLUGINS

Transaction ID	Reference ID of the operation (business case
CarParkNumber	
DeviceID	Triggering device. Basis for linking with associated
SkidataTransaction	Monitoring of transaction / payment events
DevideID	Triggering device
EventCode	Event code

All actions also carry the value of the alias parameter as an interface identifier.

SMRP (Spot Monitoring Recording)



Subject to license

SMRP is a method that makes it possible to make recordings from image material that is switched to a certain viewer, i.e. a viewer with a certain global number. An example: A security guard is observing a suspicious person in a department store. He switches the image of the camera in the men's changing room to the SMRP Viewer. He then switches the image to the perfume department, where the suspicious person steals soap. And, finally, the image from the music department is switched to the SMRP Viewer, where the thief pockets a cassette.

All images switched to the SMRP viewer are sequentially recorded on the G-Core upon which the plugin is installed. This makes it possible to collect observations that were made on different channels onto one single channel with just a few mouse clicks.

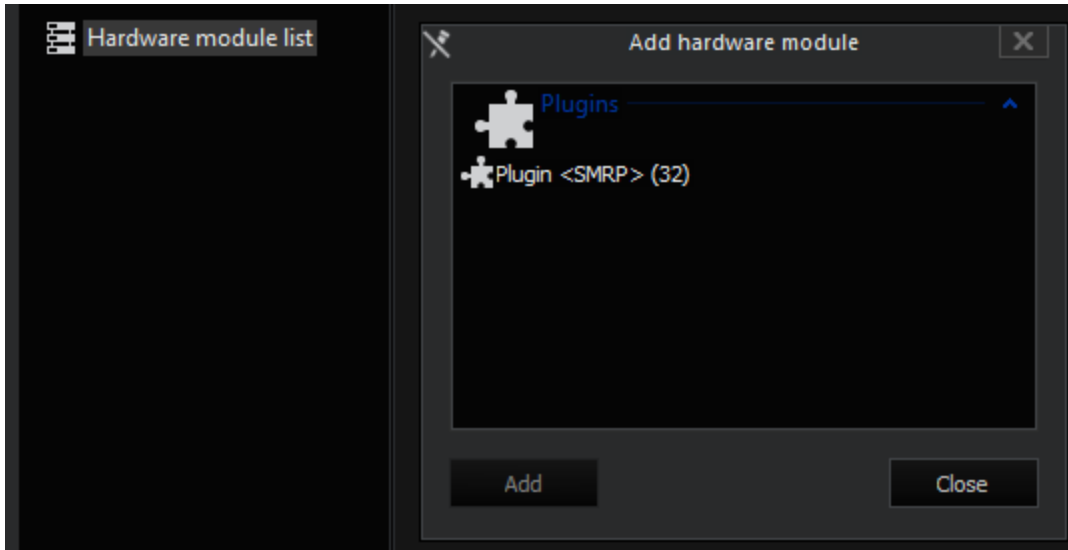
- i** **In order for SMRP to function properly, the global numbers of the cameras on all involved G-Core servers must be rechecked and corrected if necessary. The same holds for the global number of the viewer to which the images are switched. Additionally, you need the network name, user name and password for each G-Core server so that the plugin can access the camera.**

Installation

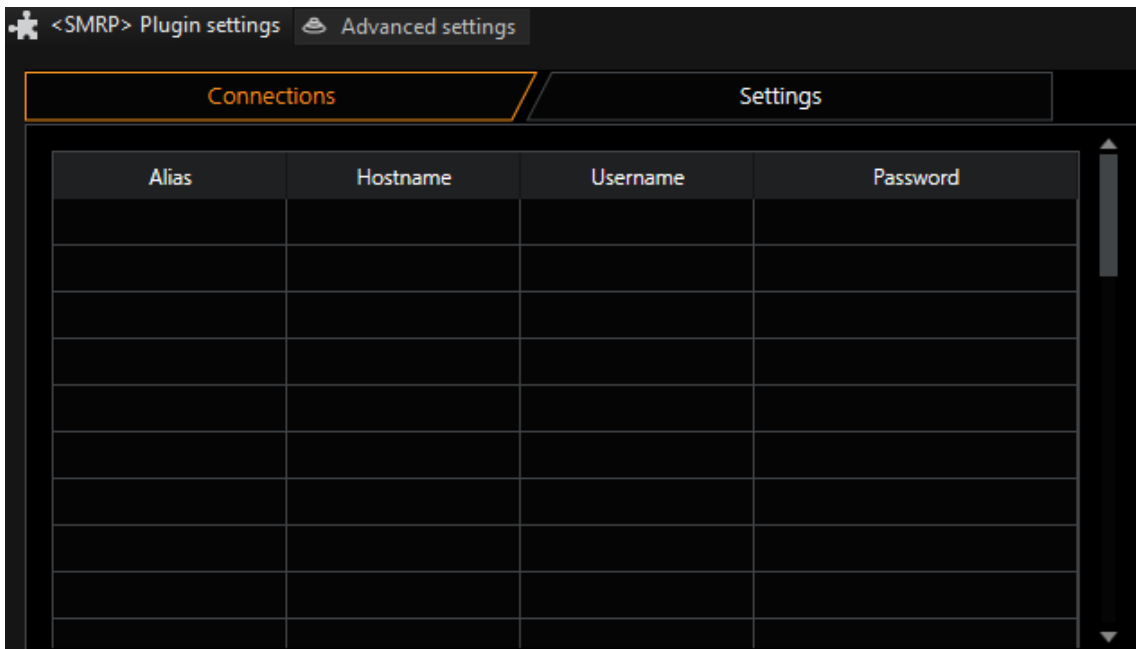
1. Copy the SMRP.DLL file (and also the SMRP.DLG.DLL file) to the subdirectory **MediaPlugins** in the G-Core installation directory.

PLUGINS

2. Click on **Hardware** in the **General Settings** selection menu.
3. Once the Hardware dialog has opened, click with the right mouse button to open the tree view and then click on **Add** in the pop-up menu.
4. In the **Add hardware module**, search for the entry **Plugin <SMRP>**. Select it and click on **Add** and then on **Close**.



5. You can now configure the plugin.

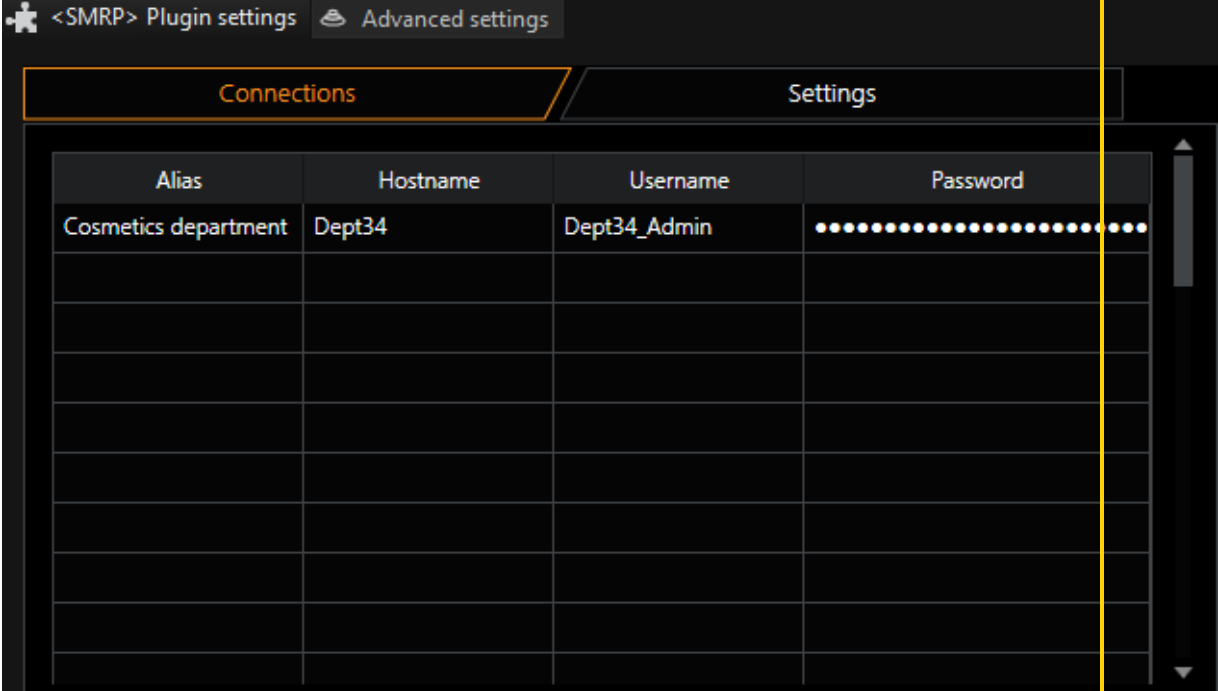


Configuration of the Server Connections

If you select the plugin in the tree view, the SMRP Plugin dialog opens.

You can configure up to 128 G-Core connections, from whose cameras you can access images. The 128 servers are already installed. Enter a name for the connection under **Alias**. The computer name of the G-Core server is required in the **Hostname** column. Finally, you have to enter the **Password** and **Username**.

Example



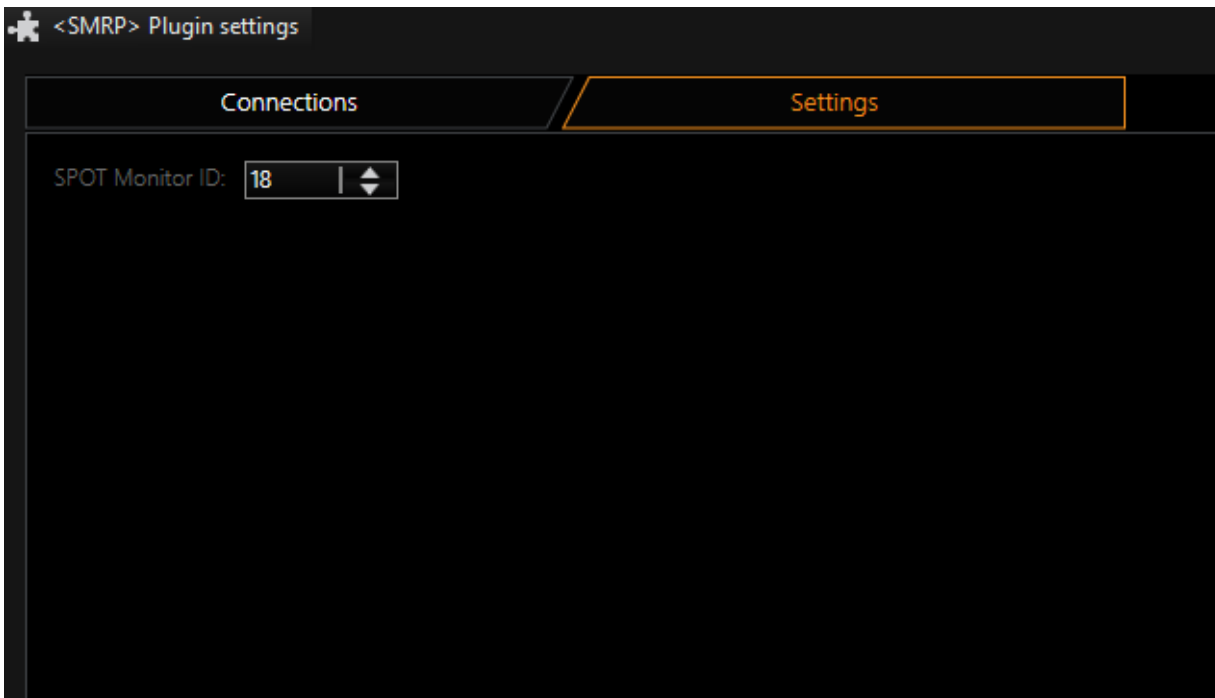
The screenshot shows the SMRP Plugin settings dialog with the 'Connections' tab selected. The dialog has a dark theme and a breadcrumb path '<SMRP> Plugin settings' with an 'Advanced settings' button. The 'Connections' tab is active, showing a table with four columns: Alias, Hostname, Username, and Password. The first row contains the following data: 'Cosmetics department' for Alias, 'Dept34' for Hostname, 'Dept34_Admin' for Username, and a masked password represented by 12 dots. The table has 12 rows in total, with the first row filled and the rest empty. A vertical scrollbar is visible on the right side of the table.

Alias	Hostname	Username	Password
Cosmetics department	Dept34	Dept34_Admin

⚠ IMPORTANT: In the G-View ProfileManager on the **Actions** tab, Viewer state must be activated. Otherwise SMRP will not work properly.

Configuration of the SMRP Viewer

You must now inform the system which viewer you have selected for SMRP. To do this, enter the global number of the viewer that you have selected as SMRP Viewer. In the illustration we have selected the viewer with the global number 18.

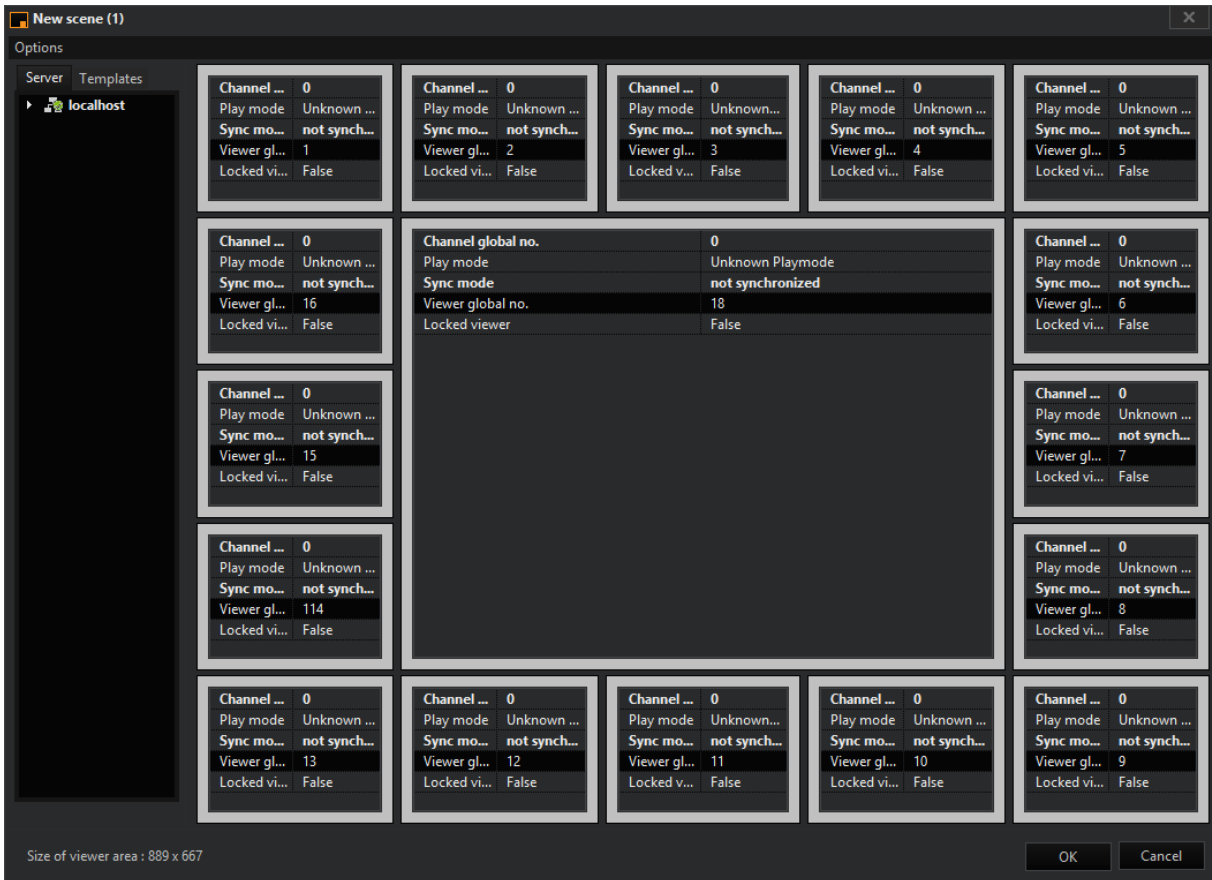


Where Do I Find the Global Number of the SMRP Viewer?

In our example, we have set up a scene that shows 16 camera channels around a larger viewer in the middle. The camera channels have the global numbers 1-16, in the clockwise direction. The centre viewer has the global number 18. We have also entered this number during the SMRP configuration.

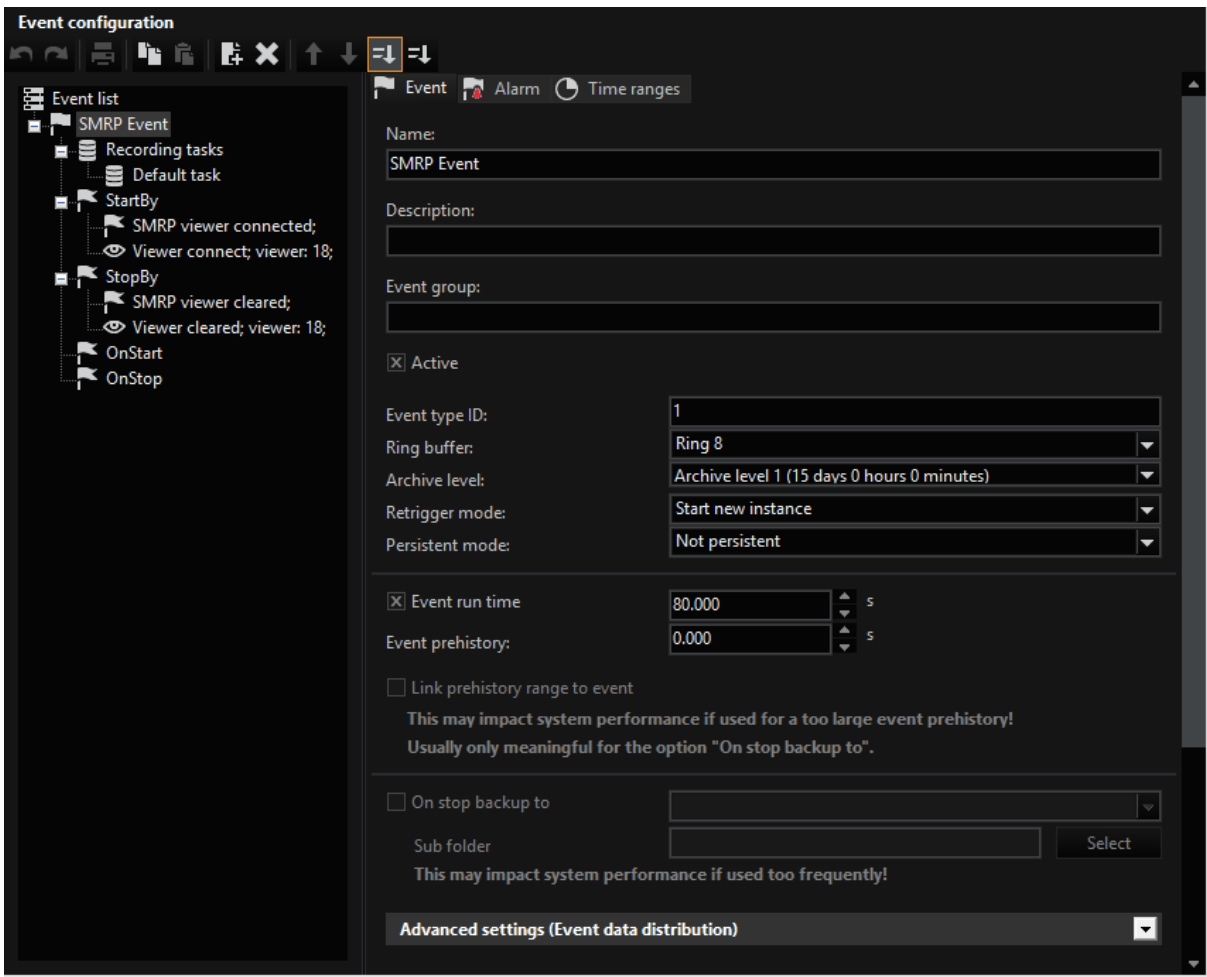
If your scene to be used for SMRP does not have a global number for the viewer, define this number. Observe the rules of global numbering.

PLUGINS



How Do I Configure an SMRP Event?

Add an event with the name SMRP. This name is not required, but a clear name is advantageous.



Set the **Retrigger mode** to **Start new instance** and activate the **Event run time**. In our example this is 80 seconds.

Under **StartBy**, add the actions **SMRP viewer connected** and **Viewer connect**. For **Viewer connect**, enter the global number of the viewer. In our example this is 18.

Under **StopBy**, add the actions **SMRP viewer cleared** and **Viewer cleared**. For **Viewer cleared**, enter the global number of the viewer again.

How Do I Work with SMRP?

Our example, as described in the introduction, is for use in a department store. The suspicious person appears in one of the viewers. Using drag-n-drop, simply pull this screen to the centre viewer, the SMRP viewer. By switching the image to the SMRP viewer, the recording of these images is started on the G-Core server upon which the SMRP plugin is installed.

The recording stops either once the **Event run time** has expired, as it is set in the event configuration, or if you right-click in the viewer and click on **Clear** in the pop-up menu.

Telnet Action Command Interface (TACI)



Subject to license

G-Core provides an internal optional to send and receive actions system-wide. The normal method of externally sending and receiving actions is provided by the G-Core SDK. However, in a number of situations it is not possible to use the Win32-based SDK. TACI (Telnet Action Command Interface) thus provides an option for sending and receiving actions in ASCII format. TACI converts these ASCII actions into normal G-Core actions, or conversely converts G-Core actions into ASCII format for transmission over a Telnet port.

- i** **Your software must be capable of sending and receiving text in ASCII format.**
- i** **Use the description of the actions in the SDK to become familiar with the actions and their parameters.**

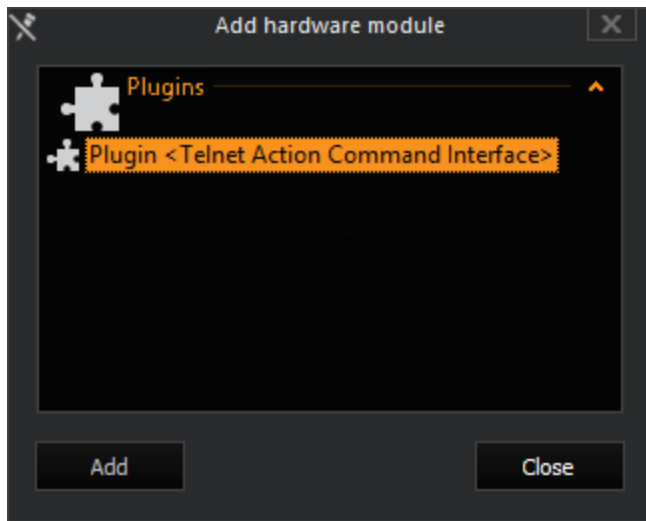
Add the Plugin

1. Ensure that the files `TelnetActionCommandInterface.dll`, `TelnetActionCommandInterface.dlg.dll` and `MediaPluginLoaderNet.dll` has been copied to the directory `GCore/Mediaplugins`. Copy the files to this location if they are not already there.

i **After copying these files to the G-Core directory you must restart the server.**

2. In G-Set, open the **Hardware Selection** menu.
3. Click with the right mouse button in the list view and select **Add** in the pop-up menu.
4. Select the **Plugin <Telnet Action Command Interface>** by marking it and clicking on **Add**.

PLUGINS

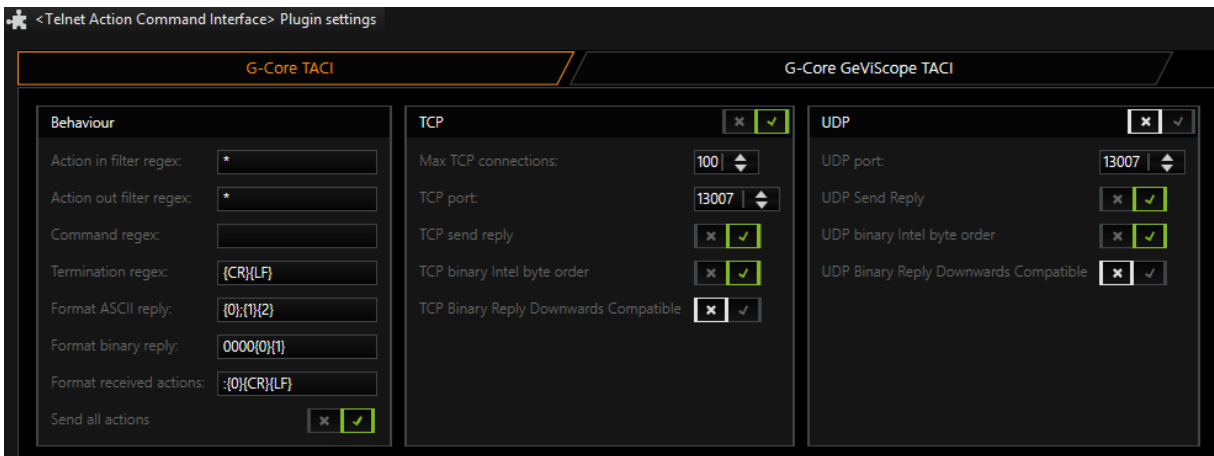


→ The TACI plugin is now entered as a hardware resource in the hardware module list. If you click on it, you can set the required parameters.

Configuration

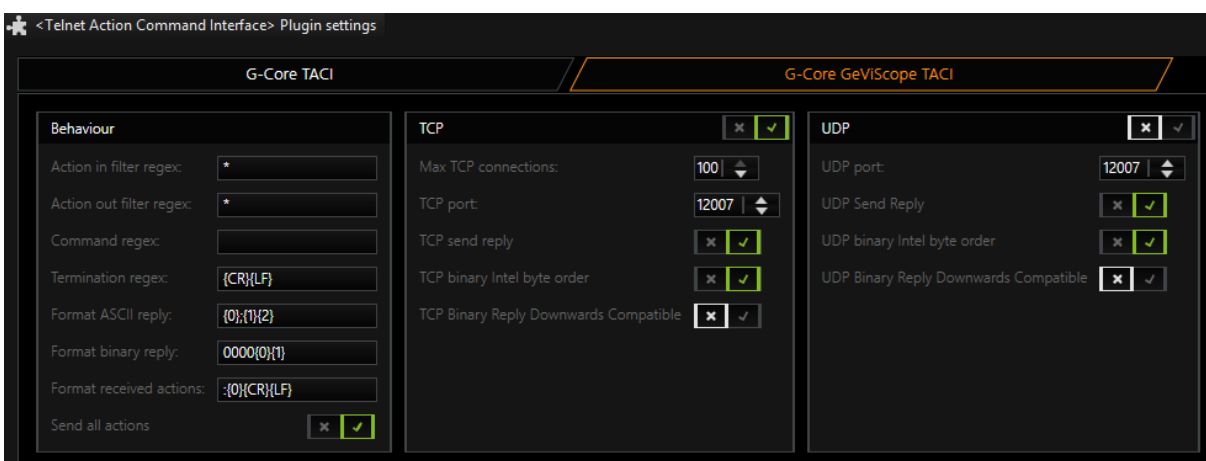
The TACI plugin has two TCP action servers. They can be configured on the two tabs G-Core TACI and G-Core GeViScope TACI.

G-Core TACI dialog after installing:



G-Core GeViScope TACI dialog after installing:

PLUGINS



The TCP Action Server, which can be configured in the **G-Core TACI** register, expects actions in G-Core format and also responds with G-Core actions.

At the same time, actions in GeViScope format can also be processed. For this purpose a second Action Server is instantiated, which is configured in the **G-Core GeViScope TACI** register.

Action server	TCP/UDP default port	Characteristics
G-Core TACI	13007	Responds with actions in the G-Core format
G-Core GeViScope TACI	12007	Responds with actions in the GeViScope format

i **UDP is not supported yet.**

The following table describes the parameters:

Name	Description
Action in filter in	Regular expression to filter incoming commands
Action in filter out	Regular expression to filter outgoing commands
Command termination chars	Characters that define the end of the command
Format ASCII reply	Format string of the reply from TACIIn {0} the return

PLUGINS

Name	Description
	value is entered. Value 3 is for an error (no action) and a value of 4 means OK. In {1} the received text is entered. In {2} characters are added that define an end.
Format binary reply	Outdated
Format received actions	Defines the format of the received action within the text. {0} contains the action.
MaxTCPConnections	Defines the maximum number of allowed TCP client connections
SendAllActions	Actions are sent to the G-Core server
TCP binary Intel byte order	Outdated
TCP binary reply downwards compatible	Outdated
TCP enabled	Enables or disables the TCP action server
TCP port	Number of TCP port for the telnet connection

Example

Examples for regular expressions (regex) to filter outgoing commands:

Example 1

Action out filter regex:

```
(CustomAction) (.*)
```

Filter to the following Custom Action:

```
CustomAction (<any kind of content>)
```

```
CustomActionEx (<any kind of content>)
```

Example 2

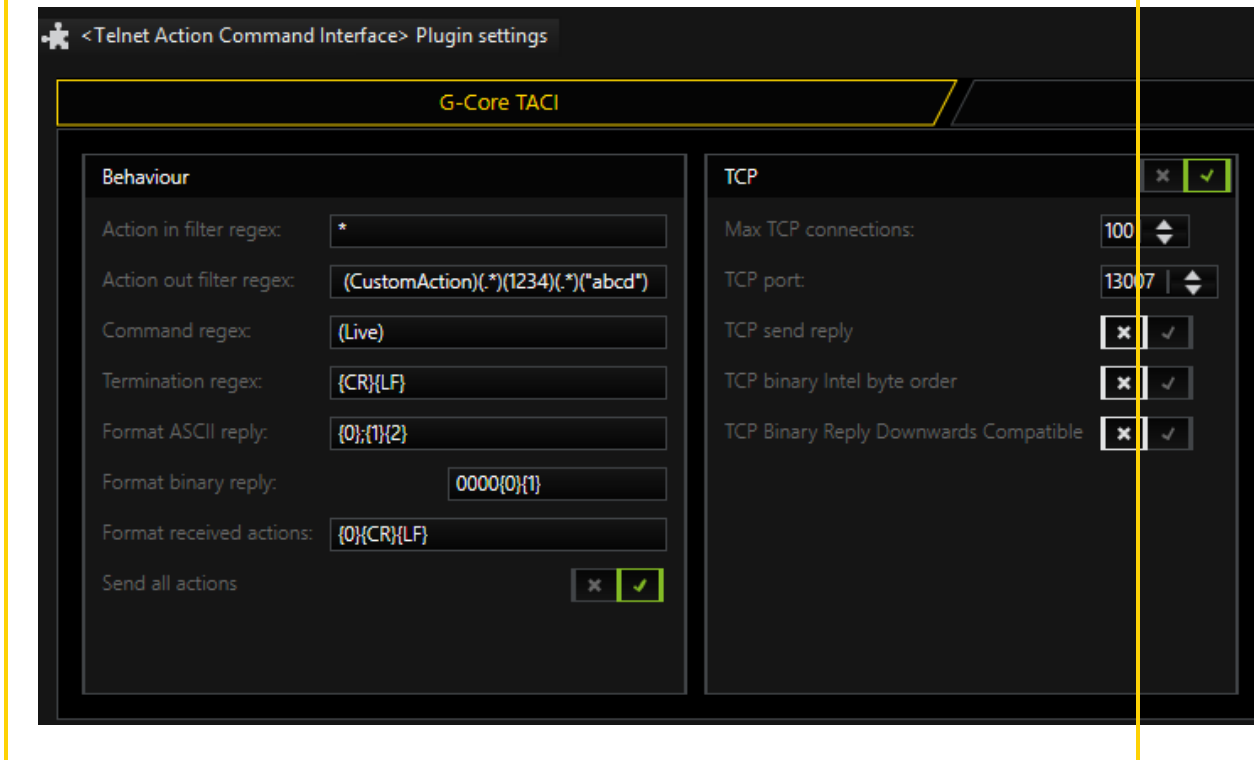
Action out filter regex:

```
(CustomAction) (.) (1234) (.) ("abcd") (.*)
```

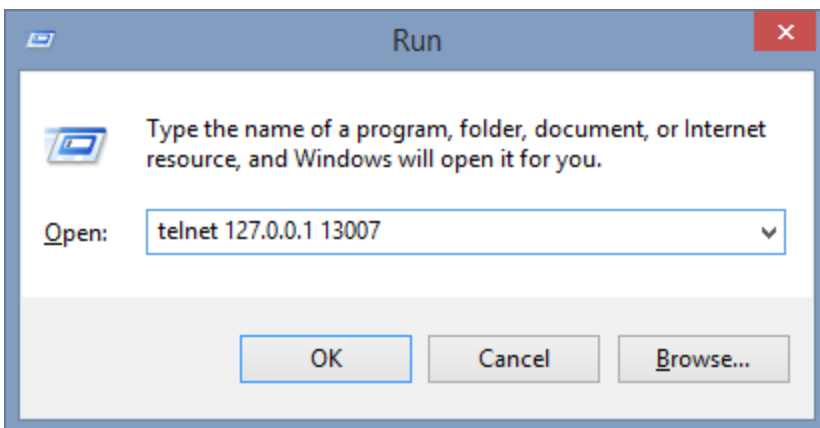
PLUGINS

Filter to the following Custom Action:

CustomAction (Int: 1234, String: "abcd")

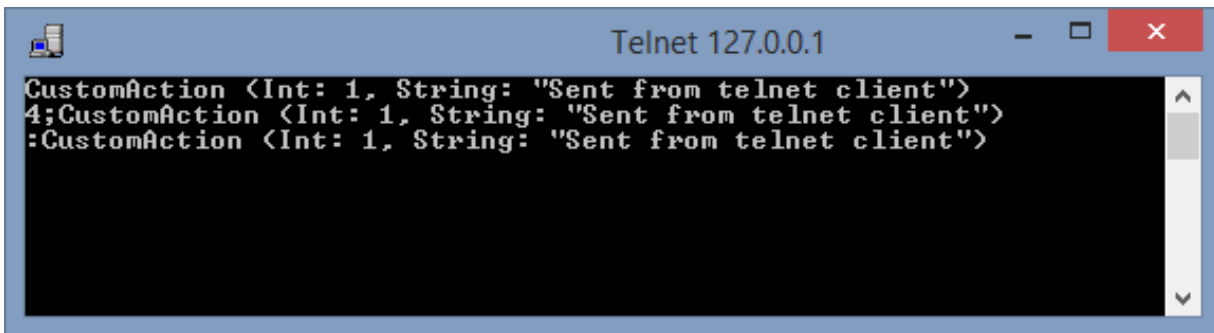


To test the settings, the Windows console can be used. In the **Run** window, telnet, followed by the IP address and the port of the destination, is entered.



Actions can then be sent. For this purpose, the entire action must be entered and confirmed with the Enter key: CustomAction (Int: 0, String: "Sent from telnet client").

PLUGINS



```
Telnet 127.0.0.1
CustomAction <Int: 1, String: "Sent from telnet client">
4;CustomAction <Int: 1, String: "Sent from telnet client">
:CustomAction <Int: 1, String: "Sent from telnet client">
```

The TACI client receives the transmitted action as response with a status value (line 2) and then receives the action distributed by the server (line 3).

In the G-PLC simulator you can also see whether the action has arrived:



G-PLC Simulator -- sysadmin @ Localhost

Connections: g-scope.geutebrueck.com, Localhost

Settings: Settings, Advanced

Control area: Tours, Cycles, Timer, Media channels, Events, Blocking filters, Action subscription, Event subscription, Filter subscription, Statistics, Macro

Action: CustomAction (Int: 0, String: "Sent from PLC Sim") [Dialog] [Send]

Time	Information
3/25/2015 9:42:43 AM	CustomAction (Int: 1, String: "Sent from telnet client")

Status: Connected | Log window: Enabled | macro list length: 0 | Macro: /

Similarly, actions can be sent by the G-PLC simulator:

PLUGINS



If you connect with telnet to the port of the G-Core GeViScope TACI (Port 12007), actions can be received in GeViScope format.

i Actions in GeViScope format can be sent to both TACIs!

Action	Format	Action String
CustomAction	G-Core	CustomAction (Int: 0, String: "Sent from telnet client")
CustomAction	GeViScope	CustomAction (0, "Sent from telnet client")

Uviscan

i This plugin is only available on a project basis. Contact the sales department if you are interested.

PLUGINS

The UVIScan interface from Geutebrück connects the “under vehicle scanner” from SecureOne with a G-Core server.

The UVIScan detects suspicious objects under a vehicle and provides information on these objects in text form. In addition, it creates pictures using the cameras of the UVIScan device. These pictures will be shown in viewers of G-View and actions will be created to the related media channel.

The interface is developed as a hardware plugin of G-Core. The connection protocol is TCP/IP.



Functionality

The UVIScan connects to a given port of the plugin. If the UVIScan fires an event, it will connect to this port and send text and pictures in XML format. This XML string contains the plate number of the vehicle and the reason for firing of the event. The plugin saves the different pictures and copies them to media channel simulator channels. Then, the plugin fires a NPRRecognition action for the number plate and a CustomActionEx action with all other information coming from the UVIScan device.

Usability

The UVIScan plugin can be added as a hardware plugin in G-Set. For each UVIScan device one plugin must be installed.

The configuration of the plugin is done in G-Set. Information from the UVIScan device are translated into NPRRecognition and CustomActionEX actions.

Pictures from the UVIScan cameras are copied to given Media Channel Simulator folders. Pictures are available from **under vehicle**, **front**, **under vehicle colored**, **number plate** and **driver** and will be shown in the Media Channel Simulator.

Plugin Settings

Uviscan		
	Typ	Daten
COMPARED_IMAGE_DIRECTORY	ntWideString	C:\MCSIMAGES\Ch1
DRIVER_IMAGE_DIRECTORY	ntWideString	C:\MCSIMAGES\Ch2
FRONT_IMAGE_DIRECTORY	ntWideString	C:\MCSIMAGES\Ch3
IMAGEDIRECTORY	ntWideString	C:\MCSIMAGES\Ch0
PLATE_IMAGE_DIRECTORY	ntWideString	C:\MCSIMAGES\Ch4
XMLDATAPORT	ntWideString	15510

Name	Description
COMPARED_IMAGE_DIRECTORY DRIVER_IMAGE_DIRECTORY FRONT_IMAGE_DIRECTORY IMAGEDIRECTORY PLATE_IMAGE_DIRECTORY	The directory information describes where the images from the UVIScan should be copied to. These images will be shown in the Media Channel Simulator. Additionally the picture from under the vehicle will always be shown in the UVIScan media channel.
XMLDATAPORT	TCP/IP port of the plugin to which the UVIScan device can connect their XML connector.

Media Channel Simulator Settings

Media Channel Simulator		
Name	Typ	Daten
ImageDirectory	ntWideString	C:\MCSIMAGES
ParamProfile	ntInt32	0x00000000 (0)
UseDefaultImageDirectory	ntBool	False

The main directory for this plugin here is `C:\MCSIMAGES`. `UseDefaultImageDirectory` has to be set to `False`.

Received CustomActionEx Action

The following data coming from UVIScan are translated into CustomActionEx.

Name	Possible Values	Description
<uniqueIdentifier>	<STRING>	Identifier of the process.
<permission>	TRUE FALSE PENDING	Permission status given by operator inspection. PENDING: No check by operator done yet.
<compareStatus>	COMPARE_ERROR	There was an error during comparison.
	COMPARE_OK	Comparison result is OK and no objects have been found.
	COMPARE_RELEVANT	Comparison found suspect objects.
	COMPARE_NOT_AVAILABLE	There was no reference in the database to compare to.
	COMPARE_NOT_	Images cannot be compared at all as they significantly differ

PLUGINS

Name	Possible Values	Description
	COMPARABLE	from each other.
	COMPARE_NO_IMAGE	Comparison could not be processed because no reference images have been available.
<blackAndWhite>	TRUE FALSE	Permission status by black/white list.
<blackAndWhiteByTime>	TRUE FALSE	Permission status by black/white list when applied for specific times only.
<statusPlate>	NA <STRING>	In case of any error during the plate recognition, a diagnostic message might be displayed here, by default this is NA.
<statusUnderCarriage>	NA <STRING>	In case of any error during under-vehicle scanning, a diagnostic message might be displayed here, by default this is NA.

The CustomActionEx action contains information about:

- Int64FieldA: the gate
- Int64FieldB: the lan
- eInt64FieldC: the undercarriage status
- Int64FieldD: the status of the plate (not used)
- Int32FieldA: MediachannelID
- Int32FieldB: the sequence
- Int32FieldC: the compare status
- Int32FieldD: (not used)
- StringFieldA: "UVISCAN_LPR"(Fixed string)

PLUGINS

- StringFieldB: unique identifier
- StringFieldC: permission (TRUE, FALSE, PENDING)
- StringFieldD: the plate number
- DateFieldA: the date/time coming from UVISCAN
- DateFieldB: the date/time coming from G-CORE
- DoubleFieldA: blackAndWhite (false=0, true=1)
- DoubleFieldB: blackAndWhiteByTime (false=0, true=1)

Example 02.07.2019 13:13:19CustomActionEx (Int64FieldA: 1, Int64FieldB: 1, Int64FieldC: 3, Int64FieldD: 0, Int32FieldA: 8, Int32FieldB: 16, Int32FieldC: 0, Int32FieldD: 0, StringFieldA: "UVISCAN_LPR", StringFieldB: "20190401134059479-00000000000000000000", StringFieldC: "PENDING", StringFieldD: "3890", DateFieldA: "2019/04/01 09:39:59,000 GMT-00:01", DateFieldB: "2019/07/02 13:13:18,853 GMT+02:00", DoubleFieldA: 1, DoubleFieldB: 1, GeneralProcessingTimeStamp: "2019/07/02 13:13:19,568 GMT+02:00")

Received NPRRecognition Action

The NPRRecognition action contains information about:

- Plate number
- Country (Not supported)
- Mediachannel
- Date/Time
- Restriction (Not supported)
- Speed (Not supported)
- Direction (Not supported)

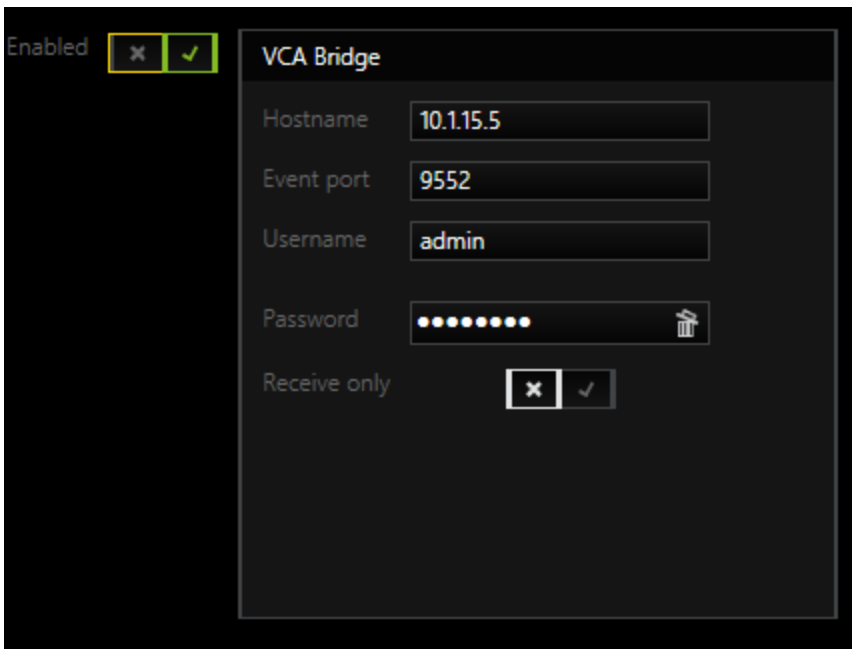
PLUGINS

- ZoneIndex (Not supported)
- Type (Not supported)
- Weight (Not supported)
- GeneralProcessingTimeStamp (Not supported)

Example 17.04.2019 10:21:43NPRRecognition (PlateNo: "B-TH252", Country: "", Channel: { 4, 4, "UVISCAN" }, TimeStamp: "2019/04/17 08:20:41,000 GMT-00:01", Restriction: 0, Speed: 0, Direction: 0, ZoneIndex: 0, Type: "", Weight: 100, GeneralProcessingTimeStamp: "2019/04/17 10:21:42,906 GMT+02:00")

VCA Bridge

Enable VCA Bridge



Name	Description
Enabled	Enable this plugin to use a VCA Bridge.

PLUGINS

Name	Description
Hostname	Host or IP of the VCA Bridge.
Event port	TCP on which this plugin instance should receive events. Has to be unique for each plugin instance.
Username / Password	Login data for VCA Bridge. Default credentials: <ul style="list-style-type: none">• Username: admin• Password: admin
Receive only	If activated, plugin does not configure anything in the VCA Bridge. Inputs and outputs have to be configured manually.

The video analytics itself has to be configured in the VCA Bridge via its Web UI.

- i** It is advisable to use an up to date version of Chrome.
- i** VCA Bridge can currently be used with E2/ E3/ E4 plugins and with the Axis plugin.

Configuration


1. Configure the plugin as usual.
2. In the **Bridge** tab set the plugin to **receive only**.
3. Enter the port.
4. In the bridge, configure a camera.

PLUGINS

Video Sources

Licenses available: 15 / 16

[Add Video Source +](#)

Name: ▼ 

Type:

URI:

User ID:

Password:

Enable Keep-alive:

Use RTP over TCP:

5. In the bridge, configure an **Action**. Enter the following data:

Field	Data to be entered
Name	Freely selectable.
URI	The IP address of the G-Core server.
Port	The same port as in step 3 above.
Body	„Custom“
Sources	The channel from step 4.

PLUGINS

The screenshot shows a configuration form for a TCP action. The 'Type' is set to 'Tcp' and the 'Name' is 'Axis'. The 'URI' field contains the text 'Enter URI'. The 'Port' is set to '1234'. The 'Body' field is set to 'Custom' and contains a JSON template with placeholders for event, zone, rule, and object coordinates. Below the body field are options for 'Always Trigger' (unchecked), 'Sources' (E3 / 14 - Analytics), and a 'Test' button.

Actions of the VCA Bridge

The assignment of the actions between the VCA Bridge and G-Core is as follows:

VCA Bridge	G-Core
Appear	„VCA Alarm Enter Field“ EnterField
Direction	“VCA Alarm Wrong direction” VCAWrongDirection
Disappear	“VCA Alarm Leave Field” LeaveField
Dwell	„VCA Alarm Enter Field“ EnterField
Enter	“VCA Alarm Leave Field” LeaveField
Leave	“VCA Alarm Leave Field” LeaveField
Stopped	“VCA Stopped vehicle” VCAStoppedVehicle
Count	“G-CAM/E2 VCA Counter Changed” E2VCACounterChanged

IP-Camera Plugins

This chapter contains the description of the IP-Camera plugins available in G-Core.

ArecontVision

With the ArecontVision plugin, you can use all IP cameras from Arecont Vision with the described functionality with the G-Core software.

The following functions are available:

- H.264, MJPEG, H264ShortGop support
- Support of digital inputs and outputs
- Support the camera-side motion detection
- Streaming of different areas of the image

Installation

The plugin consists of two files: AVIPCam.dll and AVIPCameraPluginDialog.dlg.

If the plugin is not included in the scope of installation with delivery, please copy both files (AVIPCam.dll and AVIPCameraPluginDialog.dlg) to the plugin directory of GCore (C:\Program Files\GCORE\MediaPlugins).

The GeViScope server service must then be restarted.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <ArecontVision IPC>** by selecting it and clicking **Add**.
4. The Arecont Vision plugin is now entered in the hardware module list as a hardware resource.
5. Now select the plugin in the list and make the necessary changes to the settings.

Connection

The screenshot shows the 'Settings' window for an IP-Camera Plugin. The 'Name' field is 'IP-Camera Plugin 001'. Below it, there are tabs for '<ArecontVision IPC> IP-Camera Plugin settings' and 'Fish eye settings'. The 'Connection' tab is selected, displaying the following fields:

- Hostname: 10.1.92.162
- Port: 80
- Username: (empty field)
- Password: (empty field)
- Panoramic Camera: None (dropdown menu)

At the bottom, there are two unchecked checkboxes:

- Telecontrol camera
- Use system audio (global setting)

Under **Hostname**, enter the IP address of the camera.

Control commands for the camera and the querying of the motion detection and digital inputs are performed by default over port 80. Streaming is also processed over port 80.

- i** **It is important that the correct password is entered.**
- i** **By default, there is no password assigned for Arecont Vision cameras for the users admin and viewer. Therefore, with default settings you do not need to enter a password for either user.**

However, if passwords have been assigned, it is important to enter the **admin** user with the corresponding password in G-Set. Otherwise, you may see images but not be able to control the **Image settings**.

If you are using cameras like AV8180, AV8185, AV8360 or AV8365 it is necessary to select the sensor you like to use.

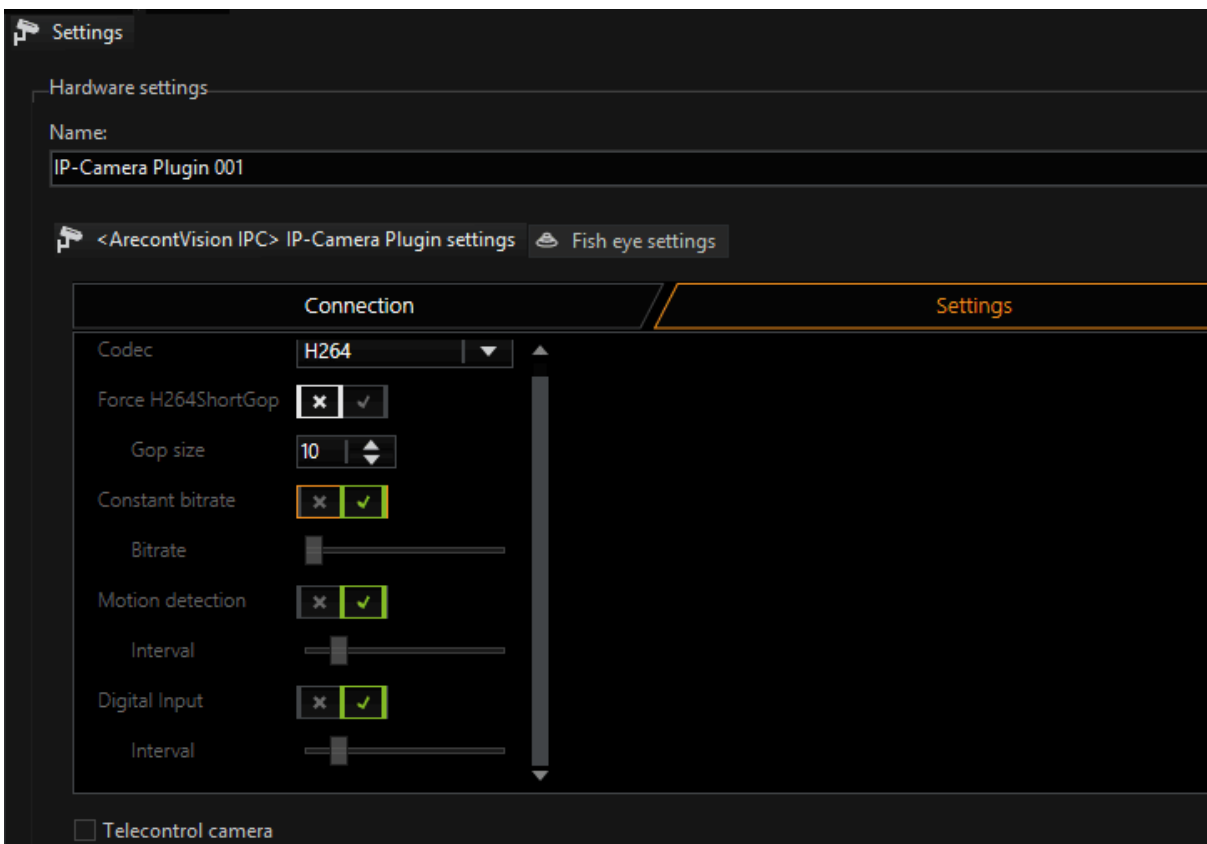
For that please enable the **Panoramic Camera** and select the sensor which should be used.

To use all four sensors of this camera types, you must add 4 different Arecont Vision plugins, all with the same IP address but different sensor selected.

At types AV8180 and AV8185 you must set some channels to flip like described at **Image settings** later in this document.

Settings

In **Settings** you can specify settings for the video stream, for motion detection and for the digital inputs.



Codec

In **Codec** you can choose between H.264 and MJPEG.

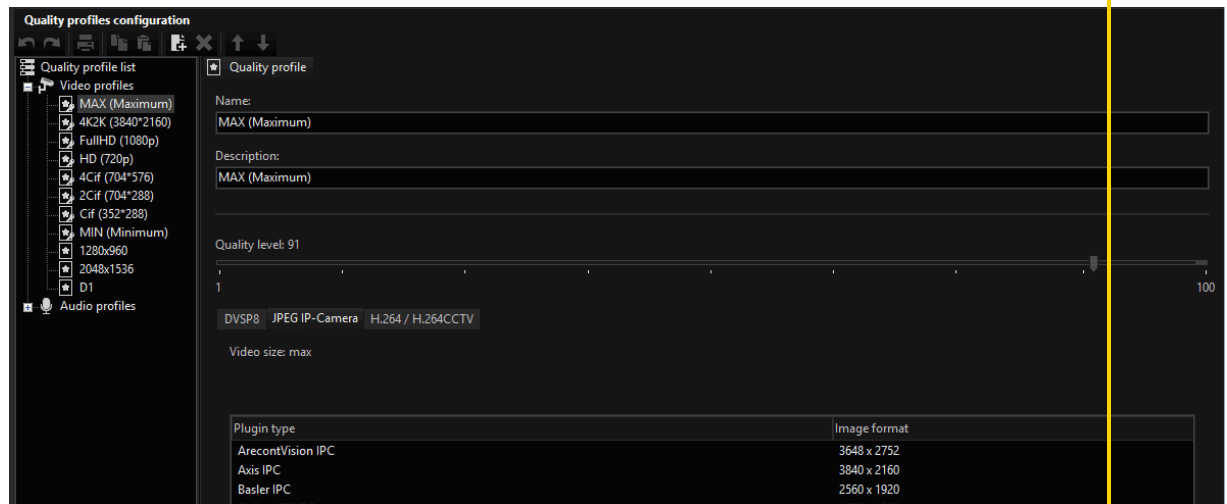
For H.264 there are additional options available:

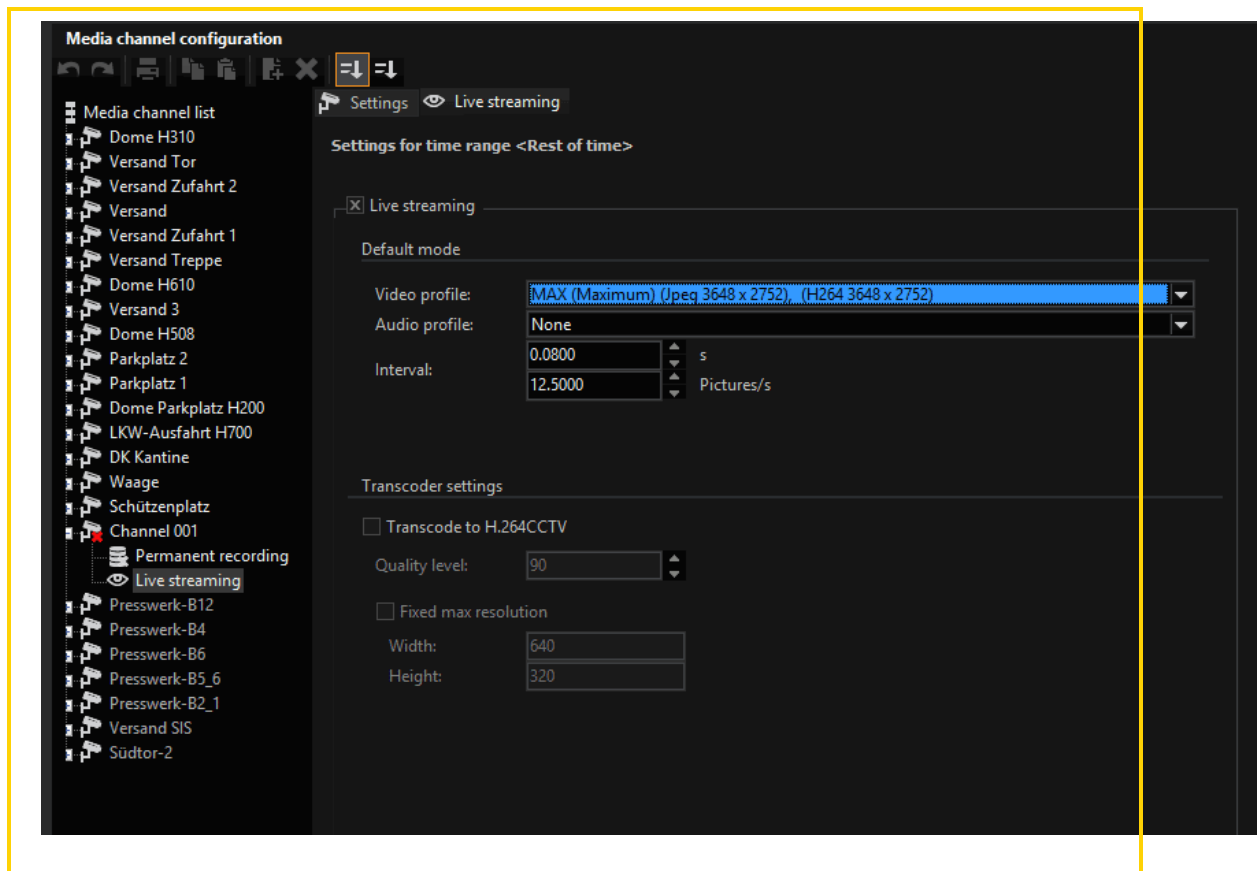
- With **GOP size** you can set the Group of Picture. With it you specify the ratio of IDR to P frames.
- You choose between a Variable Bit Rate (VBR) or a Constant Bit Rate (CBR). With a Variable Bit Rate, the quality settings are used for the profile that is assigned to the media channel. VBR is generally recommended to ensure good image quality. However, if the stream should not exceed a certain bandwidth, you should use a Constant Bit Rate (CBR).

Example Resolution Setting

Please note that for MJPEG the resolution settings for this plugin must be selected using the **Plugin/ IP Camera** tab and for H.264 using the **H.264** tab.

You should then also see the selected settings in the **Video Profiles** under the media channel list.





i Not every camera can deliver the resolution selected here. The plugin will always select a resolution that is as close as possible to the one specified in this dialog.

Motion Detection

To use in-camera motion detection (MD), you must activate the **Enable Motion Detection** option.

The sensitivity and cells of the MD must be set using the web interface of the camera. Follow the instructions from Arecont Vision.

At specified intervals, the G-Core Server queries the camera as to whether motion has occurred. You can set this interval using the Interval control. Querying too frequently can be detrimental to the streaming quality.

Additional settings are not necessary. After saving the settings, the Sensor Video Alarm actions in the GSC server should now be available.

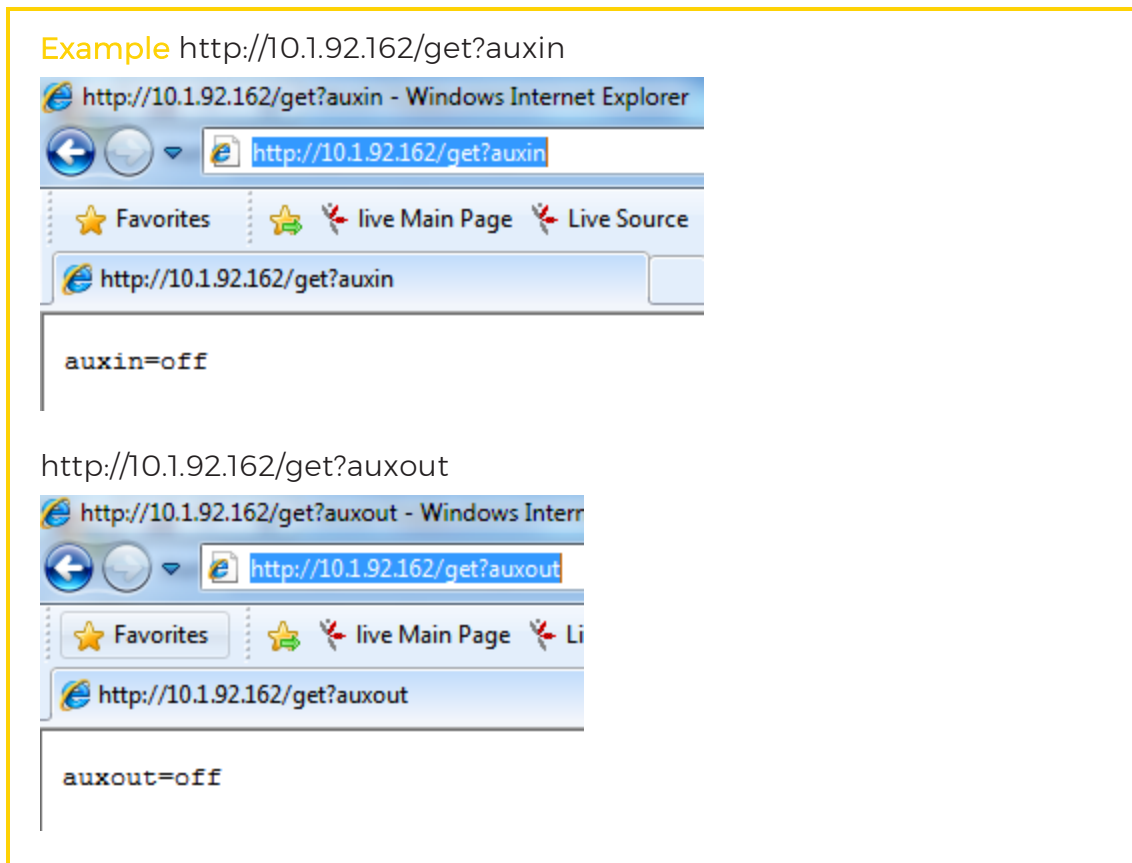
- i** You should also know that there is no **Sensor Alarm Finished** action in conjunction with **Arecont Vision** cameras. Work with event durations in event settings in **G-Set**.

Digital Input

Before you can use the digital input and output contacts, you should first ensure that the camera also supports control of the digital input and output contacts.

Add the following character strings in your browser (e.g. Internet Explorer).

Replace the IP address 10.1.92.162 with the IP address that you are using.

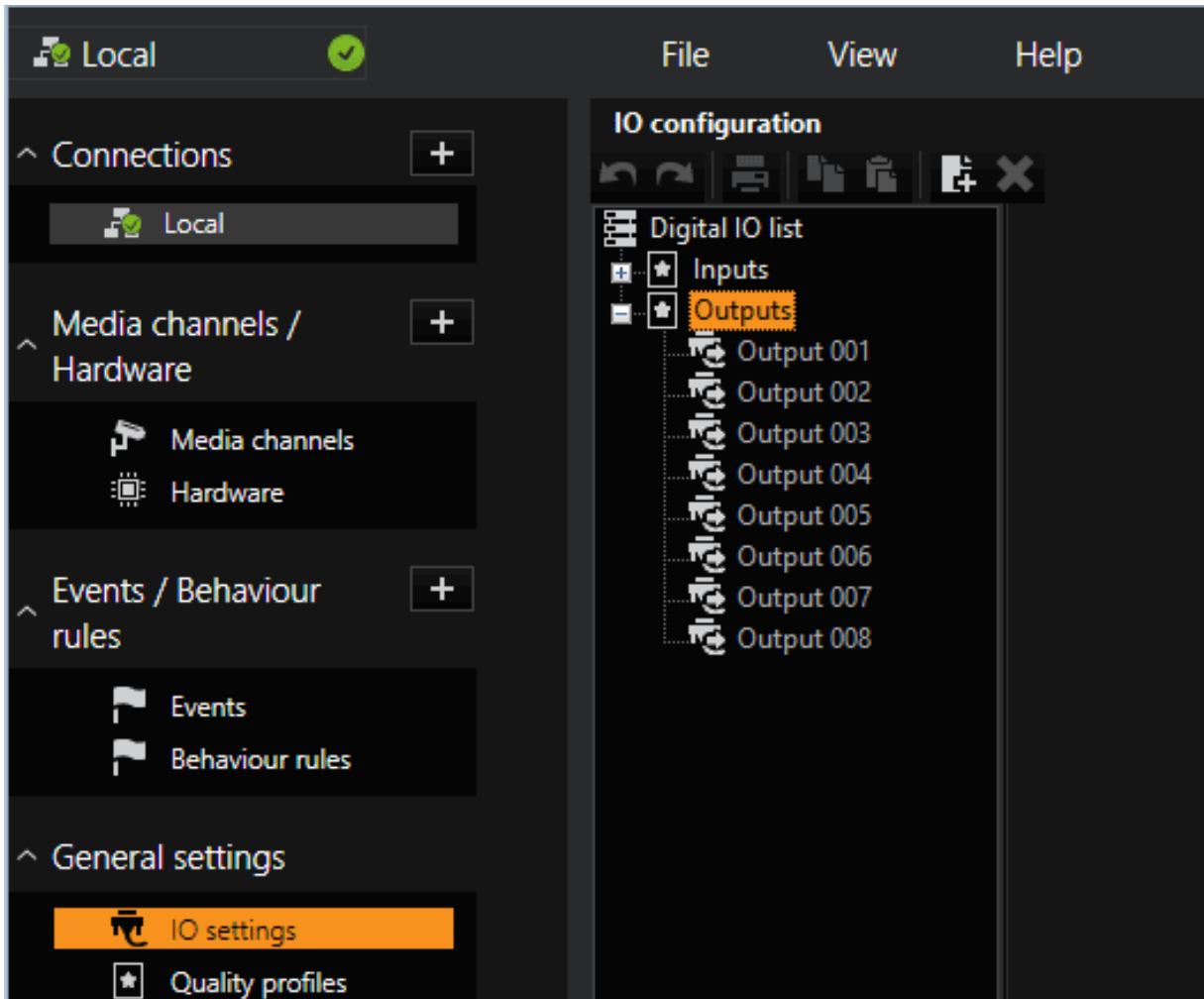


- i** If you do not receive a response as shown, contact your camera vendor and request the newest firmware that supports this function.

To monitor the querying of the digital input, select the option **Enable Digital Input**. At specified intervals, the G-Core server queries the camera as to whether the contact is open or closed. You can set this interval using the interval control.

- i** Querying too frequently can be detrimental to the streaming quality.

- i** If you only want to use the digital output, you do not have to select the option **Enable Digital Input**. The output will work without this option.



In G-Set you must now configure the corresponding inputs and outputs.

After saving the settings, they should be able to respond to the corresponding action in G-Core server.

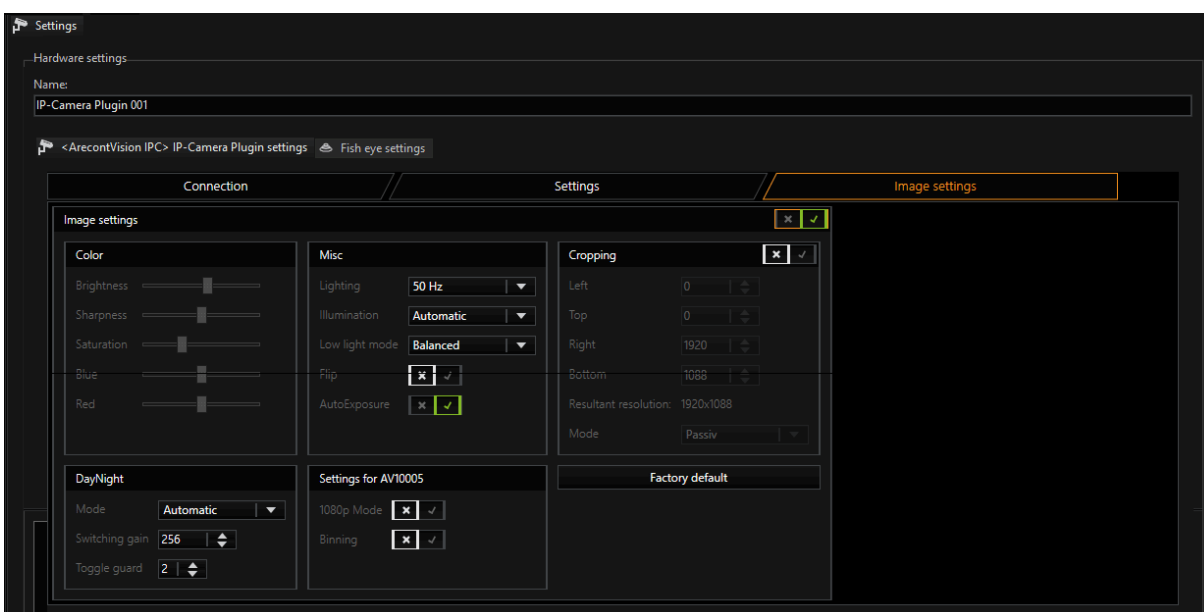
Image Settings

On this dialog you can select a number of settings related to the display of the image.

Once the option **Enable Image Settings** has been selected, for each setup transmission, the values as they are set here will be transmitted to the camera.

IP-CAMERA PLUGINS

The set values are permanently stored in the camera so that they remain intact even if the camera loses power.



The following provides information on the parameters. For details, see the Arecont Vision operating instructions.

Name	Description
Color	Here you can change the brightness, sharpness, saturation and color of the image.
Misc	With Flip the image is rotated 180 degrees. Auto Exposure is for exposure.
Lighting	In areas with 50 Hz AC power, choose 50 Hz, in areas with 60 Hz AC power, choose 60 Hz.
Illumination	Here you can change the white balance.
Low Light Mode	Here you can change the shutter times.
Enable Cropping	You can specify a freely definable area that should be transmitted. This feature is called "cropping". Thus, only a portion of the entire scene is transmitted. The coordinates of the image are defined by the upper left (Left and Top) and lower right (Right and Bottom) points. The resulting resolution is displayed

Name	Description
	under Resultant Resolution : Make sure that you do not enter a value here that is higher than the camera's maximum capability. With the setting Active Cropping , you can have the selected cropped area displayed with a higher frame rate (higher than specified by the manufacturer). This option is only recommended for experienced users or in consultation with customer service.
DayNight	Here you can change the values for the day/ night control. Note that you can also influence the switch over with actions.
Settings for AV10005	Here you can enable the two special modes of the AV10005 camera.
Factory Default	This button will reset all settings made in this interface. This setting is not the same as the Factory Default setting that can be performed via the web interface of the camera.

Supported Actions

The following G-Core actions are supported by the plugin:

Name	Description
Day-Night	<p>Camera Day Night Mode action: With this action, you can change the camera to the corresponding mode at any time. The available modes are Day , Night or Automatic, which means switching is performed automatically by the camera.</p> <p>CameraLightOn action: Enables the night mode</p> <p>CameraLightOff action: Enables the day mode</p>
Camera Raw Output	Using the Camera Raw Output action, it is possible to send any command to the camera at any time. This also makes it possible to set values in the camera that were not previously set. For further information or if you require this feature, contact customer service.
Digital inputs and outputs	To control the digital output of the camera, use the action Set Digital Output with appropriate values. If the plugin has identified a status change for the digital input of the camera, the Digital Input action can be seen in the GSCServer.

Axis

With the Axis plugin, you can use all IP cameras from Axis with the described functionality with the G-Core software.

- i** **However, only cameras using firmware >5.xx can be used. Cameras with firmware 4.xx and lower need to be powered by the HTTP Universal plugin. For Axis multihead cameras, the Axis Multihead plugin must be integrated, which is part of the same installation.**

The following functions are available:

- H.264, MJPEG, H.264ShortGop support
- Support of digital inputs and outputs
- Support of audio inputs Line-In and Microphon
- Support the camera-side motion detection
- Support of Axis Video Motion Detection 2, 3 and 4
- Support of Onvif-Notification-Message action and therefor every kind of event available in the camera
- View area support – streaming of different areas of the image
- Dual Streaming
- Dynamic Live Streaming (DLS)
- Support of Zipstream
- PTZ functions of speed dome cameras
- Solid PTZ – PTZ function at megapixel resolutions
- Support of encrypted communication via HTTPS for streaming and controlling functions such as PTZ
- Support of G-Core feature “Secondary channel”

- Support of AAC (Please note that AAC is licensed separately for Axis cameras!)

Installation

The plugin consists of three files: AxisIPC.dll, AxisIPC.dlg and AxisMultiheadIPC.dlg.

If the plugin is not included in the scope of installation with delivery, please copy both files (AxisIPC.dll and AxisIPC.dlg) to the plugin directory of G-Scope (C:\Program Files\Geutebrueck\GCore\MediaPlugins).

The G-Core server service must then be restarted.

Add the Plugin

1. In G-Set, open the Hardware selection menu.
2. Right-click on the list view and in the popup menu select **Add**.
3. In the following popup, select the plugin **Axis camera xx** by selecting it and clicking **Add**.
 - The Axis IP plugin is now entered in the hardware module list as a hardware resource.
4. Now select the plugin in the list and make the necessary changes to the settings.

PTZ Functionality

To control speed dome cameras, solid PTZ, PTZ for **View Areas** or digital PTZ inside within the camera, you must enable **Telecontrol Camera** in G-Set.

It is then possible to control the camera using the virtual joystick in G-View or the MBeg operating device.

Also refer to the section **Supported Actions**.

Connection

The screenshot shows the 'Connection' tab of the Axis IPC IP-Camera Plugin settings. The interface is dark-themed. At the top, there are navigation tabs: 'Connection' (selected), 'Streaming behaviour', 'Zipstream', 'Advanced', and 'Disable and fix settings'. Below the tabs, the settings are as follows:

- IP-Address : Port:** The IP address is '10.1.1.39'. The port is '80'. There is a secondary port field with '443'.
- Protocol:** Radio buttons for 'UseHTTP' (selected) and 'Use HTTPS'.
- RTSP Port:** The value is '554'.
- Username:** The value is 'root'.
- Password:** A series of 16 dots representing a masked password.
- Use basic access authentication at communication start
- Telecontrol camera
- Use system audio (global setting)

Under **IP-Address**, enter the IP address of the camera.

Control commands for the camera and the querying of the motion detection and digital inputs are performed by default over port 80. Streaming of the video image is processed via RTSP and thus port 554.

It is important that the correct password is entered.

i **There is no default password for Axis products. During first use of a camera, when the user opens the camera IP in the web browser, a password must be entered for the user "root". The password selected there must also be entered in this dialog.**

If you use a speed dome camera, a camera with the functions solid PTZ, digital PTZ or ViewAreas, please also enable **Telecontrol Camera**.

After the setup has been transferred to G-Core server and a media channel has been added, you should be able to see images in the setup. If not, check the IP address, and in particular the user name and password.

If you like to use HTTPS communication, you have to setup the camera to use HTTPS. For this you have to install or create a certificate on the camera.

Open following options in camera. Refer to the original Axis-User-Manual for further information.

AXIS P1365 Network Camera Live View | Setup | Help

Certificates ?

Server/Client Certificates

Certificate Id	Issued On	Expires On
SelfCreated	2015-08-03	2016-08-02

CA Certificates

Certificate Id	Issued On	Expires On
1438172920	2010-09-06	2030-05-24
1438172922	2010-09-06	2030-05-24
AmericaOnline1	2002-05-28	2037-11-19

Also you have to enable the HTTPS on this section inside the camera.

AXIS P1365 Network Camera Live View | Setup | Help

HTTPS Settings ?

Certificates

If no certificates are available go to [certificates](#) to manage.

Certificate:

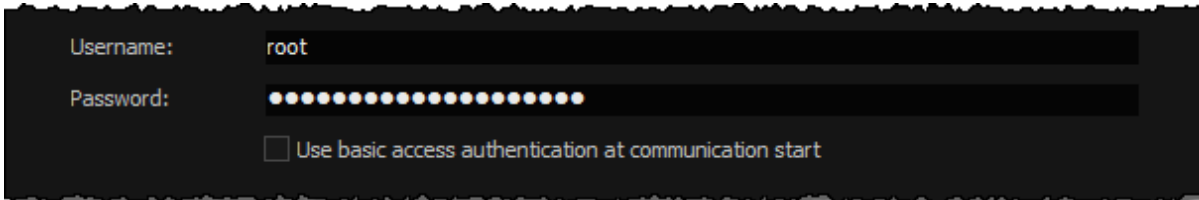
HTTPS Connection Policy

Administrator will use:

Operator will use:

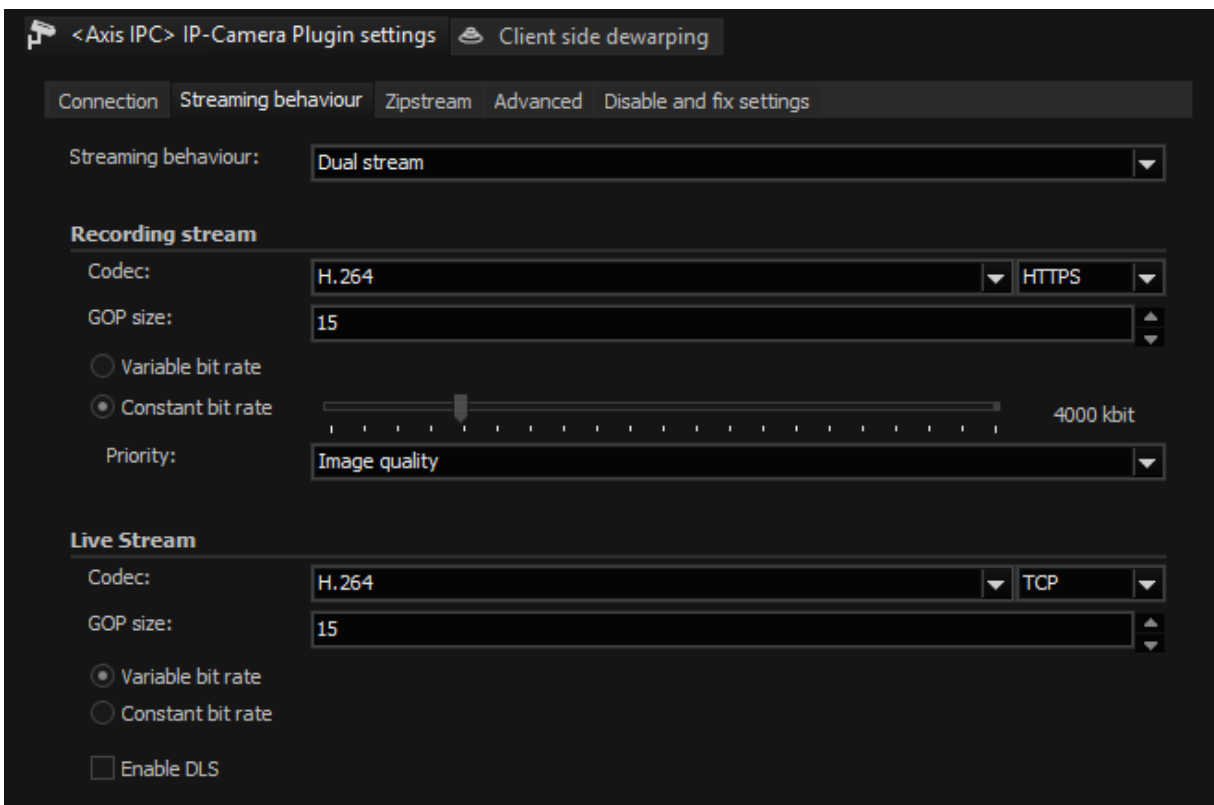
Viewer will use:

- i** If using HTTPS, all communication (PTZ control, RTSP-Streaming, Motion Detection) will be done via HTTPS and Port 443 if not changed from default behavior.



- i** Option Use basic access authentication at communication start: This option can be activated to achieve a faster connection setup. A disadvantage of this option is that password and user name are transmitted without encryption!

Streaming Behaviour



In Streaming Behavior you can select settings for the video stream.

Dual Stream

By default, one stream each is opened for the camera for storage and the live stream. This means that two completely independent settings can be selected for the live image and the stored image.

In **Codec** you can choose between H.264, MJPEG, H.264ShortGop and H. 265.

For H.264 the following settings are available:

- With **GOP Size** you can set the Group of Picture. With it you specify the ratio of IDR to P frames.
- You choose between a **Variable Bit Rate** (VBR) or a **Constant Bit Rate** (CBR).
With a Variable Bit Rate, the quality settings are used for the profile that is assigned to the media channel. VBR is generally recommended to ensure good image quality.
However, if the stream should not exceed a certain bandwidth, you should use a Constant Bit Rate (CBR).

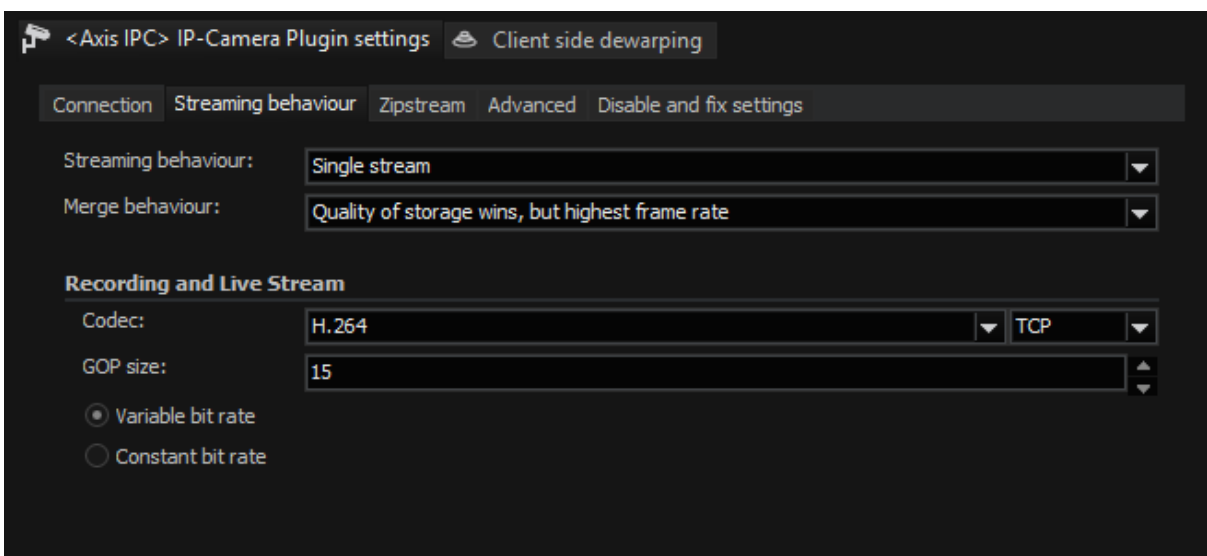
For H.265, you have to keep in mind that a better hardware may be required to decode the image to get better results than H.264.

As CBR can lead to a reduction in either image quality or frame rate, you can also indicate a priority. Select **Image Quality** to receive good image quality at a low frame rate. Select **Frame Rate** to receive a higher frame rate at a lower image quality.

Single Stream

If the camera does not provide the expected performance in dual stream mode or if you wish to reduce the network load, you can operate the camera in single stream mode.

In this mode, however, you no longer have the option of using different frame rates for the stored images and the live stream. If you select **Single Stream** the dialog is presented as follows:



In **Merge Behavior** you can specify how the possibly different settings for Live and Storage under **Media Channels** are combined.

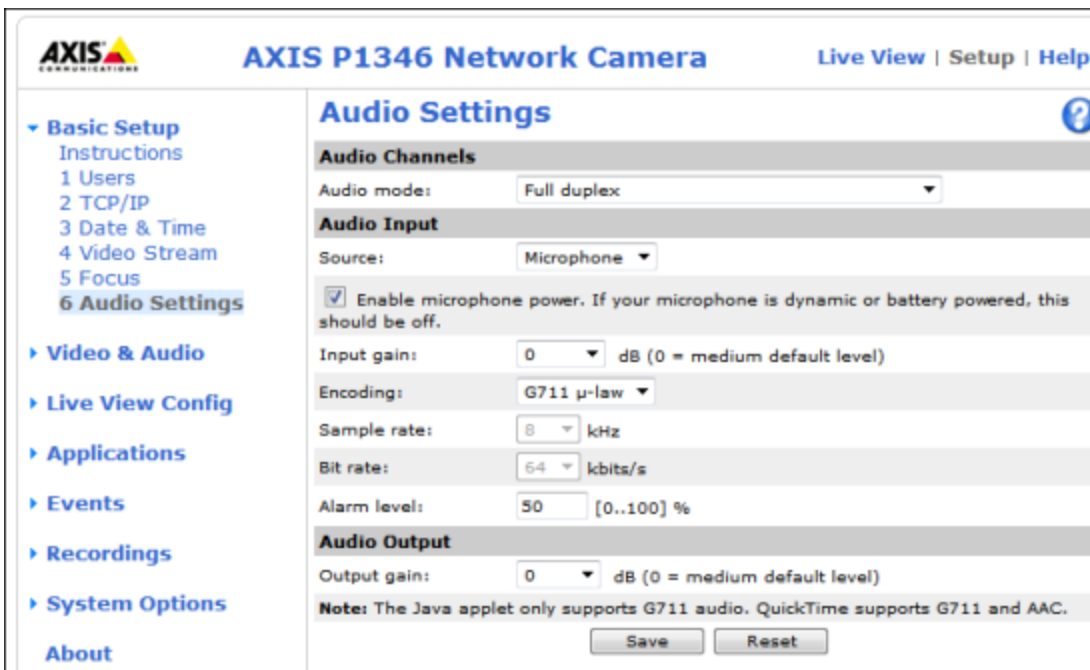
Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters, the highest value specified in the corresponding settings is used.
Worst settings wins	For all parameters, the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used
Storage profile wins	The Storage settings are used

All other settings on this tab behave as in dual stream mode.

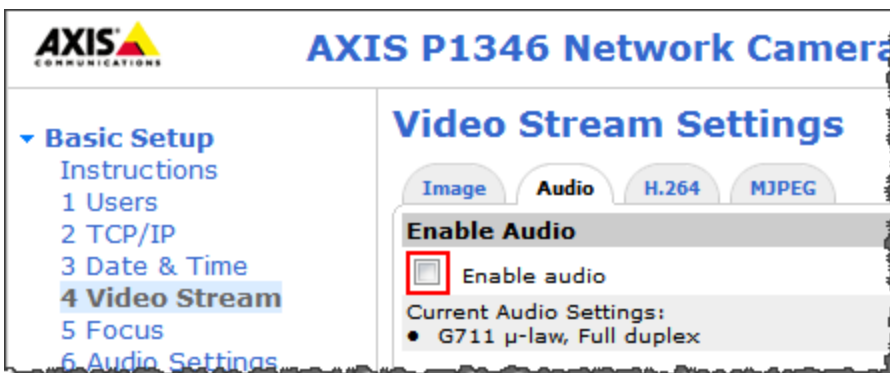
Audio Support

If the camera supports an audio input, it is possible to have it recorded and played with the G-Core server. The audio input can be a line-in or microphone.

To stream audio, this feature must be configured in the camera. Encoding must be set to **G711 u-law** or **G726** because the G-Core server cannot process all other encoder types. The other settings can be specified according to your needs.

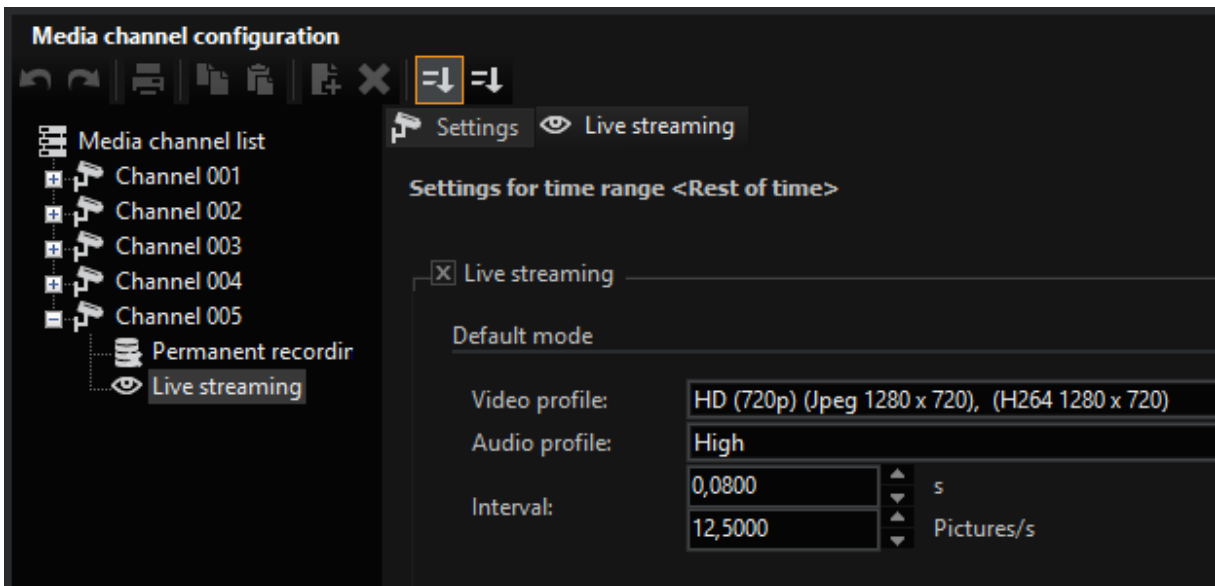


Also you must ensure that streaming audio is allowed. To do so, go to **Video Stream** and select the **Audio** tab. Select **Enable Audio** there.



As a last step, you have to choose whether to store audio should be used for recording and/ or live streaming.

In G-Set select an audio profile for the corresponding channel. It does not matter which profile you choose (high, medium, low), it is only important that you select a profile.

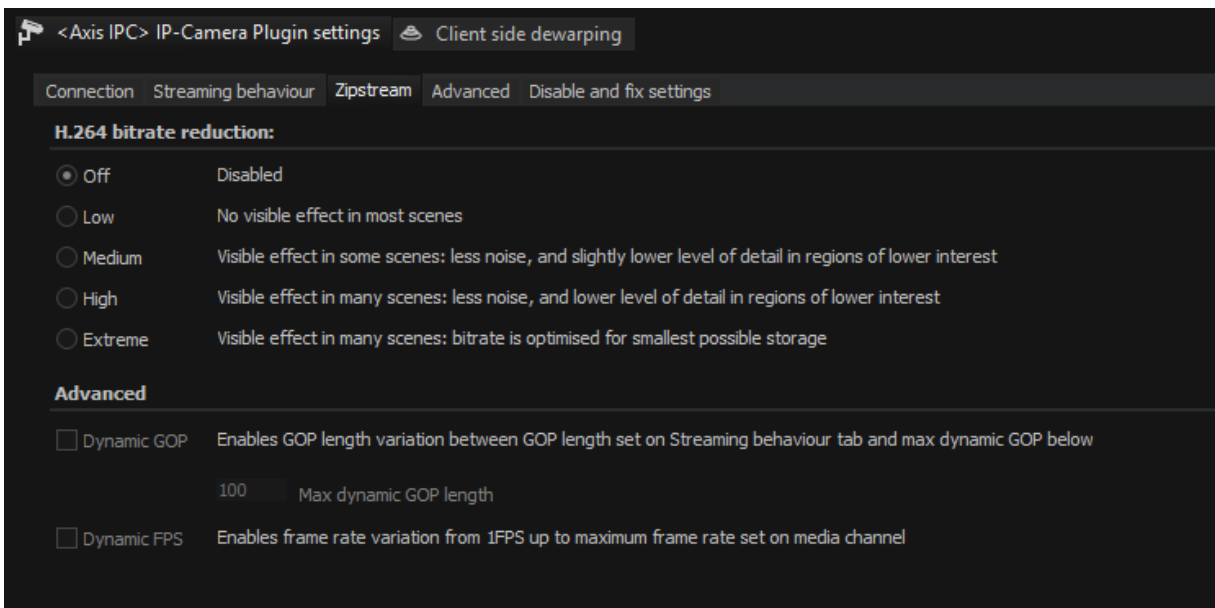


Zipstream

Optimized for video surveillance, Axis Zipstream technology lowers bandwidth and storage requirements by an average of 50% or more for many 24/7 surveillance situations.

At this tab, you can setup the Zipstream.

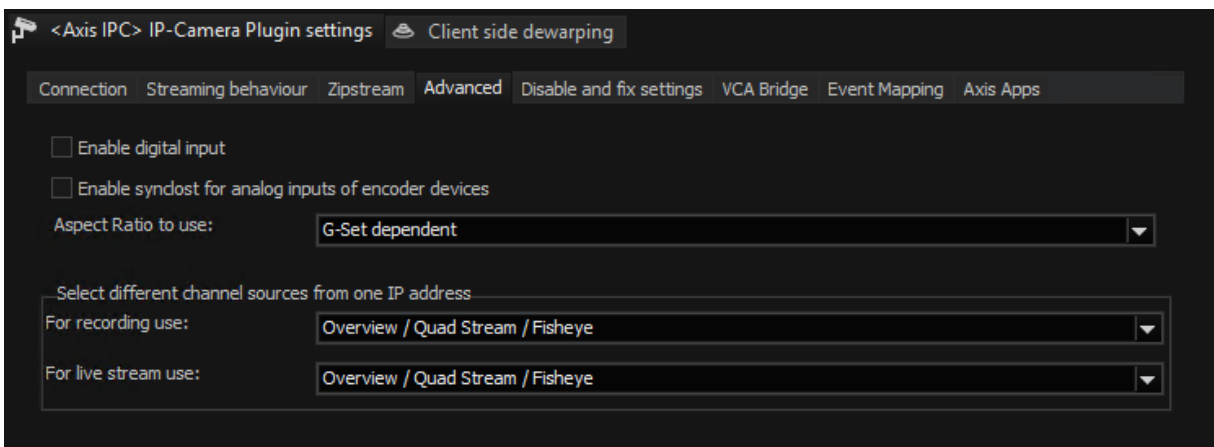
i Refer to the manuals from Axis what settings might be the best for your tasks.



Advanced

On the **Advanced** tab you can set the following:

- **Enable Digital Input**
- **Enable Synclost for Analog Inputs of Encoder Devices**
- **Aspect Ratio to Use**
- **Select Different Channel Sources from One IP Address**



Enable Digital Input

Activate the **Enable digital input** option to use the inputs and the PIR sensor. If you want to use only the outputs of a camera, it is not necessary to activate this option.

i **If this option is enabled, an additional stream for motion detection will be started.**

To use the digital input or output contacts or the PIR sensor, you should first determine the number of contacts that the corresponding camera has. These can be found under **System Options > Ports & Devices**. There you will see the following:

AXIS M1054 Network Camera Live View | Setup | Help

I/O Ports ?

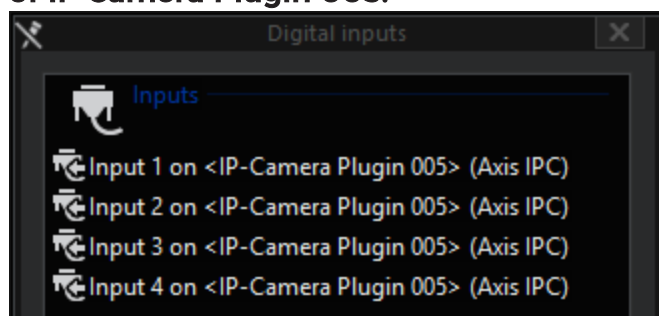
Port	Name	Normal state is...*	Current State
Input 1	Input 1	Open circuit	Open circuit
Input 2	PIR sensor	Inactive	Inactive
Output 1	Output 1	Open circuit	Open circuit

*If the normal state equals the current state, then the port is inactive (see help for more information).

A PIR sensor is also considered as input contact. In the example it is input contact 2.

You must now add the corresponding number of inputs and outputs in G-Set.

- i** For each camera, the plugin provides 4 inputs and 4 outputs. However, you can use only *s* many contacts as the camera actually has. Always start with the smallest Input values that are available in the list for the corresponding plugin. In this example, Input 1 and Input 2 of IP Camera Plugin 005.



After selecting these settings, it should be possible to react to the corresponding action in G-Core server.

- i** Note that the PIR sensor is connected to an input contact. In our example, this was the contact 2.

Enable Synclost for Analog Inputs of Encoder Devices

Enable the **Enable synclost for analog inputs of encoder devices** option when using an encoder such as Axis M70 or P72. If this option is not enabled, no lost synchronization is detected when you use an encoder.

Aspect Ratio to Use

Most Axis cameras support a variety of different aspect ratios.

- i** For an aspect ratio that does not correspond with the aspect ratio of the sensor, either the upper or lower, or the left or the right border will be cropped somewhat. For instance, if the sensor has an aspect ratio of 16:10, but you wish to use a resolution of 640x480, which corresponds to an aspect ratio of 4:3, the image will be cropped somewhat on the right and left. This means that the entire camera scene is not used!

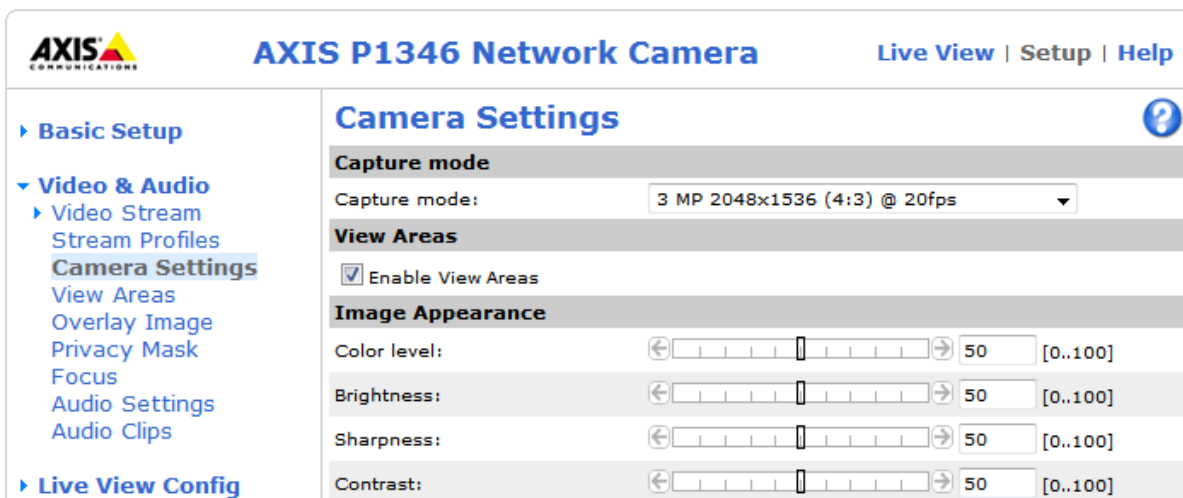
You can specify which aspect ratio to use:

Name	Description
G-Set dependent	The default is G-Set dependent . Thus the selection is made on the basis of the corresponding quality profile. If you set a desired resolution of 1920x1080, for example, then an attempt is always made to use a stream with an aspect ratio of 16:9.
Camera sensor dependent	If you select Camera sensor dependent , the aspect ratio of the sensor is read out. This makes it possible to ensure that the maximum scene is displayed in the viewer.
16:10 16:9 4:3	You can freely specify which aspect ratio to use: 4:3, 16:9 or 16:10.
Use all types of aspect ratio	Use all types of aspect ratio.

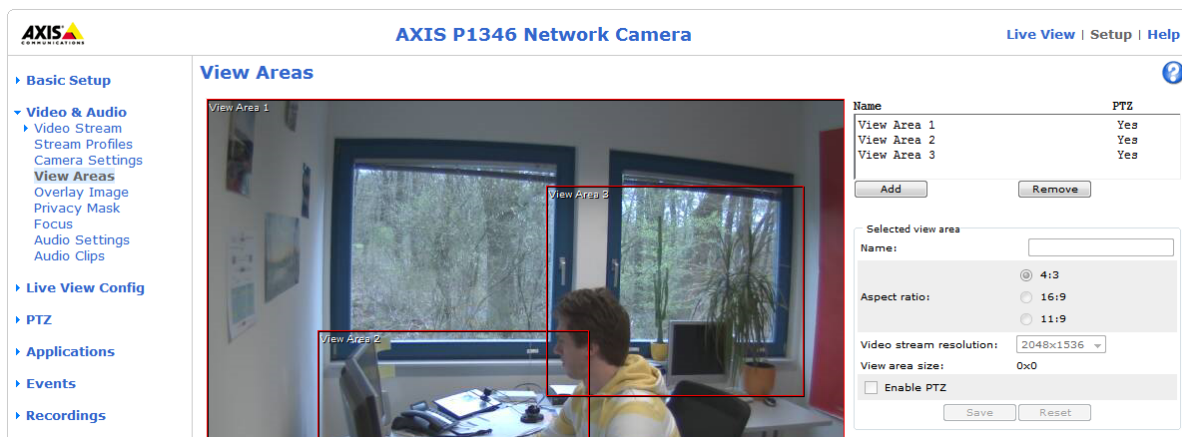
Select Different Channel Sources from One IP Address

- i** Use this for 'View Areas' or different channels from multi encoder-/channel devices.

This feature is only supported by a few cameras (including the types of P1346 and P1347). The function **View Area** must first be activated in the camera itself. If you cannot find the option in a camera, then it is not supported by the camera:



You can then configure various windows using View Areas. Observe the relevant operating instructions for the camera.



If you now select one of the corresponding View Areas in G-Set for Live or Recording, you will also only see this area in the viewer. If you have selected **Overview** / **Quad Stream** / **Fisheye** (the default setting), the entire scene is always streamed.

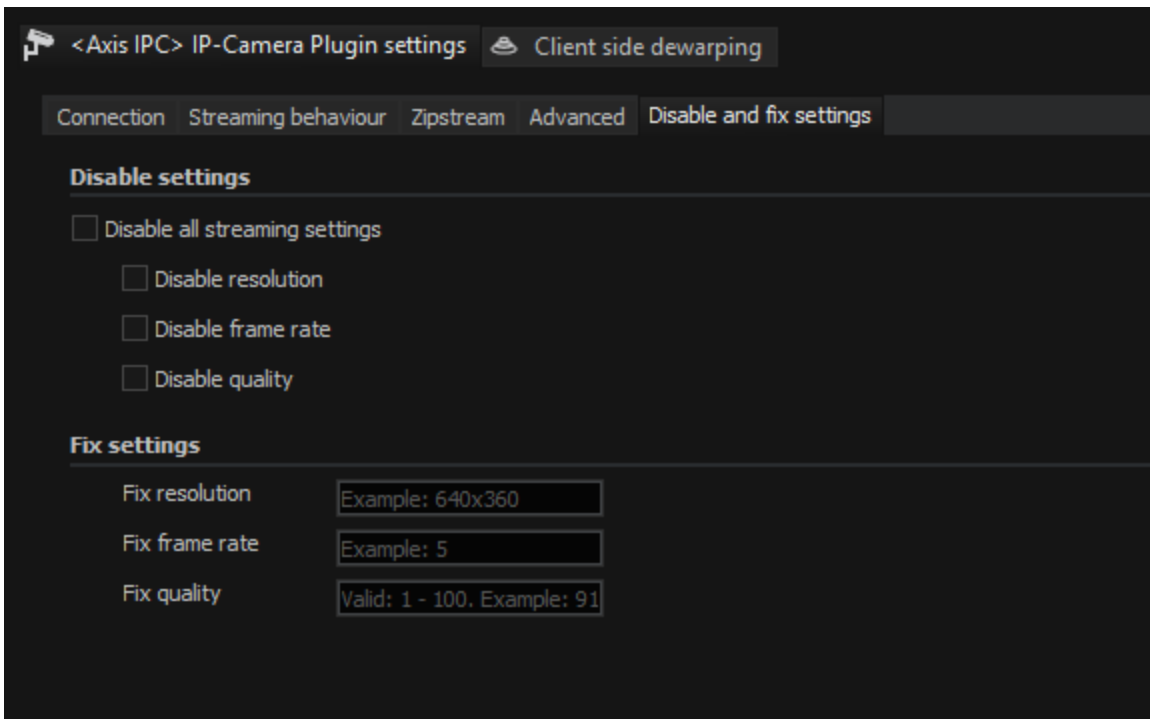
Disable and Fix Settings

Disable Settings

Here it is possible to control individual or all streaming parameters not by the G-Core Server. The respective parameters are then selected according to the settings in the camera and not from the media channels.

Fix Settings

Here, it is possible to overwrite individual or all streaming parameters with fixed values. Settings from the media channels or the camera surface are then no longer considered.



VCA Bridge

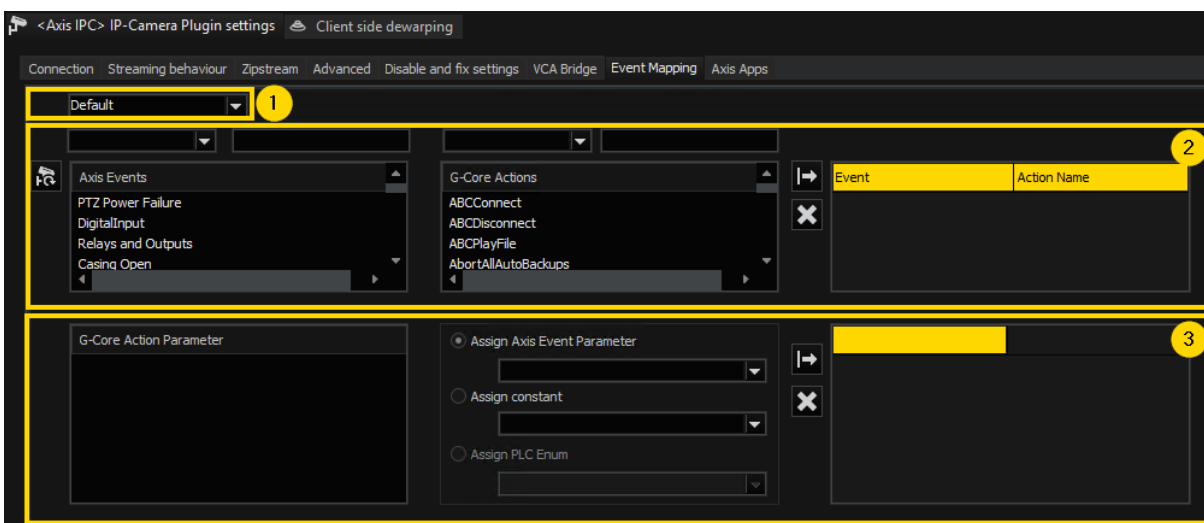
For more information see [VCA Bridge](#)

Event Mapping

In order to provide access to all functions of an Axis camera and to use the provided information in G-Core, it is possible to map the Axis data sent when an event occurs to any G-Core action. Any Axis camera events can be mapped to any available G-Core actions.

The **Event Mapping** dialog window consists of the following setting areas:

- **1 Compatibility Mode**
- **2 Map Axis Event to G-Core Action**
- **3 Map Event Parameter to Action Parameter**



Compatibility Mode

In G-Core versions older than 7.2 you can select in the **Advanced** tab which events of a specific Axis VMD version the plugin should react to. If you have selected the **VMD 2**, **VMD 3** or **VMD 4** option, a **SensorVideoAlarm** action will be sent to G-Core when the event occurs, and if you have selected the **Custom Event** option, an **ONVIFNotificationMessage** action will be sent.

As of G-Core version 7.2 any Axis camera event can be mapped to any available G-Core action, these options are no longer available.

To enable the migration option in existing systems, a compatibility mode can be selected for VMD 2, VMD 3, VMD 4 as well as for the ONVIF notifications. When updating to newer versions, the corresponding compatibility mode is automatically selected when the setup is read for the first time. This ensures that the previous functionality of the system is retained when updating to the new version.

⚠ IMPORTANT: If a VMD compatibility mode is selected, the action mapping settings are ignored because no further mapping is possible. In ONVIF compatibility mode, the mapping works in parallel.

The following compatibility modes are available:


Option	Description
Default	No compatibility mode is active. The actions are mapped according to the settings in the dialog.
VDM 2 Com- patibility	The plugin reacts to events of the Axis VMD version 2. The events are mapped to SensorVideoAlarm actions when the

Option	Description
	event is active and to SensorAlarmFinished actions when the event is finished.
VDM 3 Compatibility	The plugin reacts to events of the Axis VMD version 3. The events are mapped to SensorVideoAlarm actions when the event is active and to SensorAlarmFinished actions when the event is finished.
VMD 4 Compatibility	The plugin reacts to events of the Axis VMD version 4. The events are mapped to SensorVideoAlarm actions when the event is active and to SensorAlarmFinished actions when the event is finished.
Onvif Compatibility	The events are mapped to ONVIFNotificationMessage actions.






Map Axis Event to G-Core Action

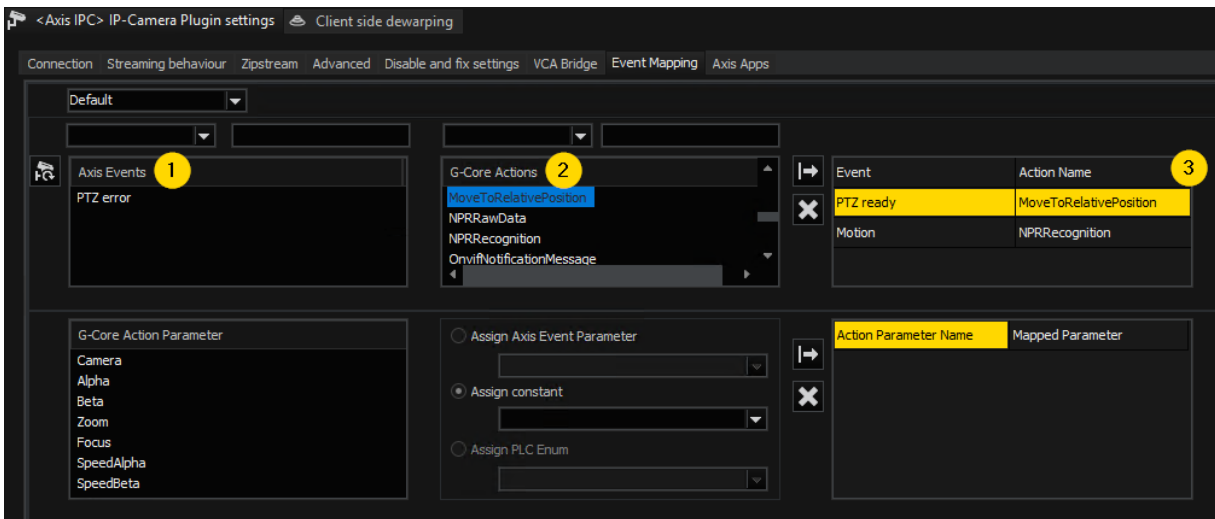
You can map any Axis camera events to all available G-Core actions.

The list of available Axis events depends on the camera. When you open the **Event Mapping** tab, the information about the available Axis events is retrieved from the camera and displayed in the **Axis Events** list.

If you change app settings (see **Axis Apps**), you can update the event list by clicking the  Refresh App Info icon.

How to map Axis events to G-Core actions:

1. Select the event from the **Axis Events** list . You can filter the list by selecting an event category from the drop-down list or by entering the event name in the search field.
2. Select the associated action from the **G-Core Actions** list . You can filter the list by selecting an event category from the drop-down list or by entering the event name in the search field.
3. Click the  **Map event to action** icon. The mapping is displayed in the mapping list .
4. To delete a mapping, select the mapping in the list and click the  **Delete current selected** icon.



Map Event Parameter to Action Parameter

You can assign an Axis event parameter, a constant or a PLC enum to a G-Core action parameter of the respective selected event/action mapping.

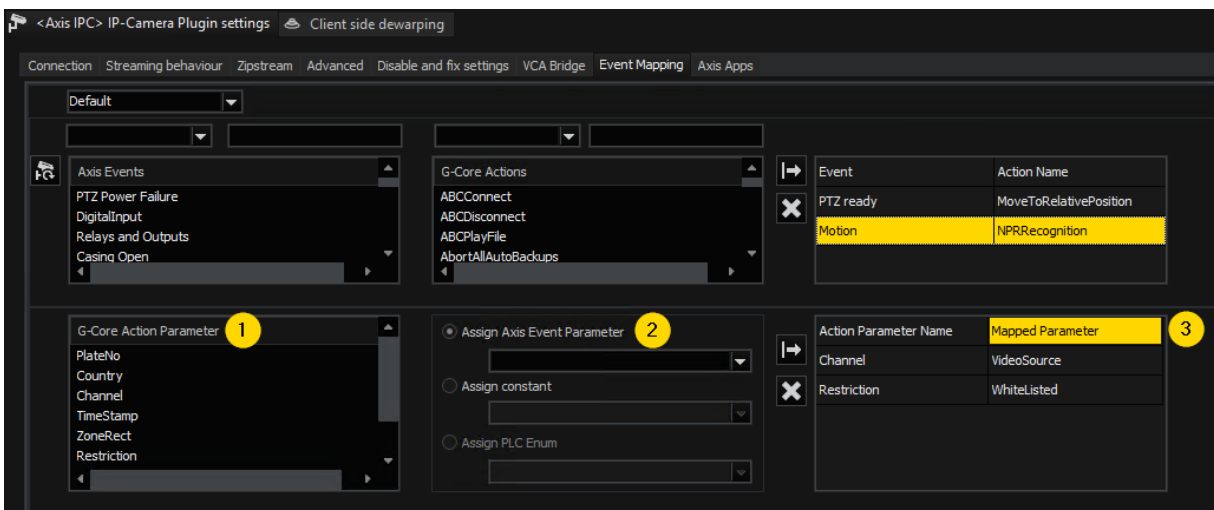
How to map Axis event parameter to G-Core action parameter:

1. Select a mapping from the event/action mapping list. The **G-Core Action Parameter** list shows all available parameters.
2. Select the parameter from the **G-Core Action Parameter** list 1.
3. Select the option to be assigned to the selected G-Core action parameter 2:

Option	Description
Assign Axis Event Parameter	The Axis event parameters that are assigned with the respective event. Select an Axis event parameter from the drop-down list.
Assign constant	The respective mapped event. Select the event from the drop-down list. This is a constant value that is fixed in the settings. No type checking is performed for the constants during mapping. An attempt is made to convert the constant to the respective parameter type when the action is created during operation, and to map it. If this is not possible, the parameter is not mapped.

Option	Description
Assign PLC Enum	<p>The respective enum type value. Select a PLC Enum from the drop-down list.</p> <p>This option is only enabled if the selected G-Core Action parameter is a PLC Enum type. Then the dropdown list is filled with the values of this enum type and these can be assigned as constants.</p>

- Click the **Map parameter** icon. The mapping is displayed in the mapping list **3**. In the mapping list only the mapped parameters of the selected event/action mapping are displayed.
- To delete a mapping, select the mapping in the list and click the **Delete current selected** icon.



Axis Apps

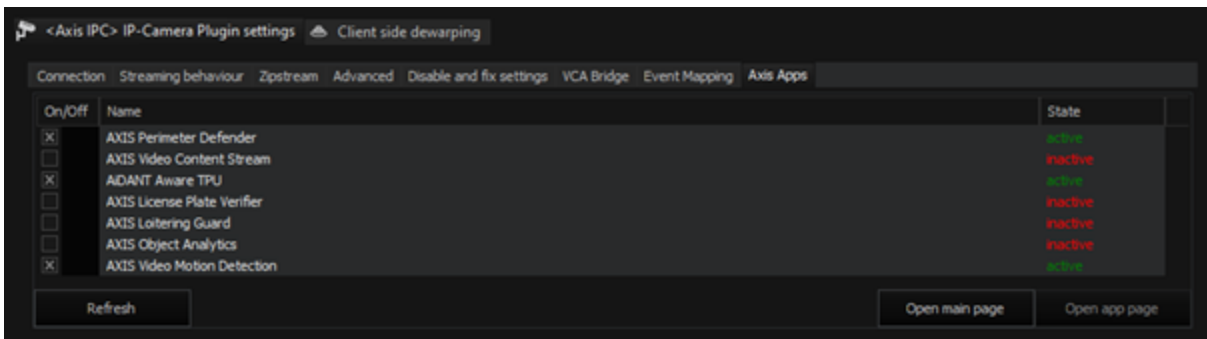
The Axis Apps list displays all ACAP apps installed on the Axis plugin and their running state. You can enable or disable each app by selecting or deselecting the On/Off checkbox of the corresponding app. After a short time, the user interface will be refreshed and display the new states.

Clicking the **Refresh** button will manually refresh the page.

The **Open main page** button opens the global configuration page of the selected Axis plugin.

The **Open app page** button opens the configuration page of the selected app. This can also be done by double-clicking on the app entry in the list.

IP-CAMERA PLUGINS

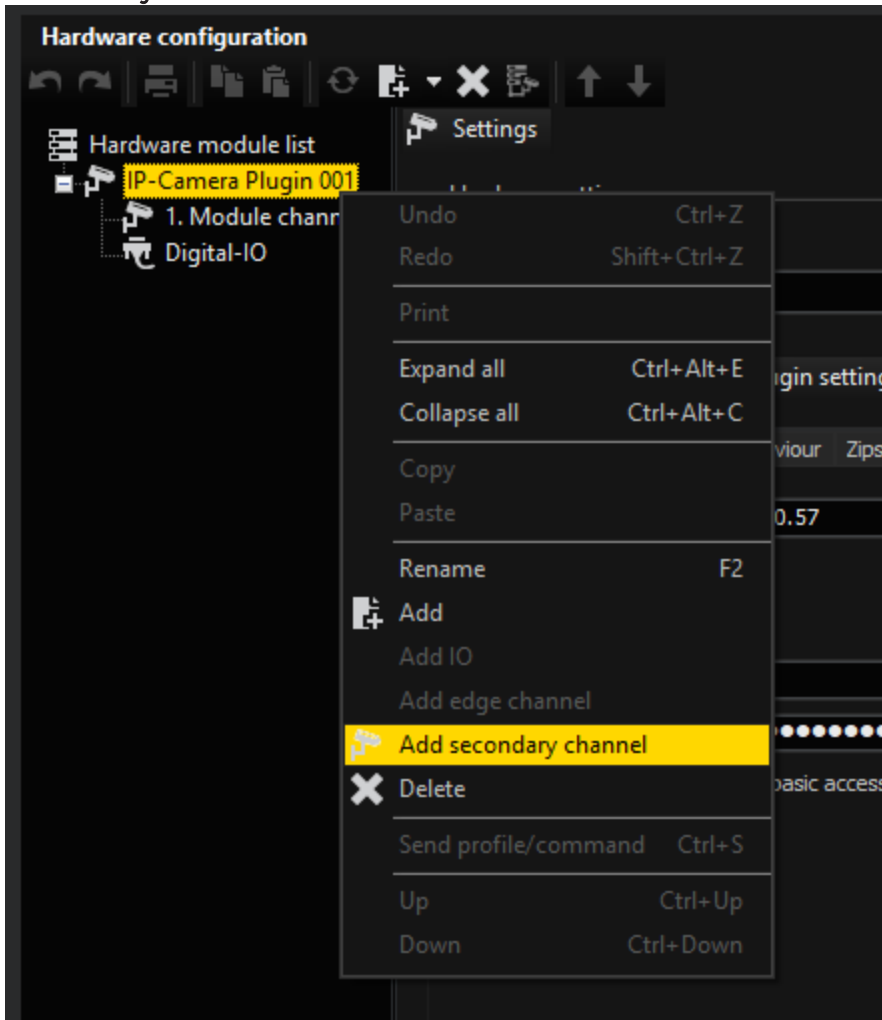


Secondary Channel Function

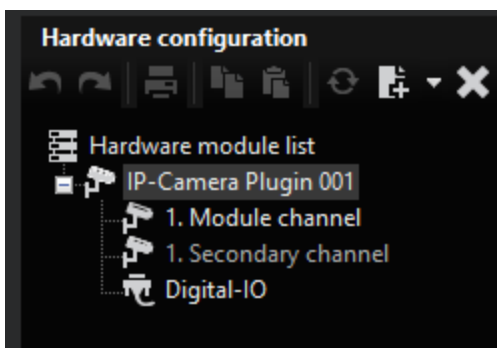
The "Secondary channel" function makes it possible to create a second media channel for a camera that provides the same source in a second resolution/ quality. Thus it is possible to obtain recording and live stream of a camera in two different resolutions. Applications are e.g. a low bandwidth stream for a WAN connection or an extra stream for VCA processing.

Activate the Secondary Channel

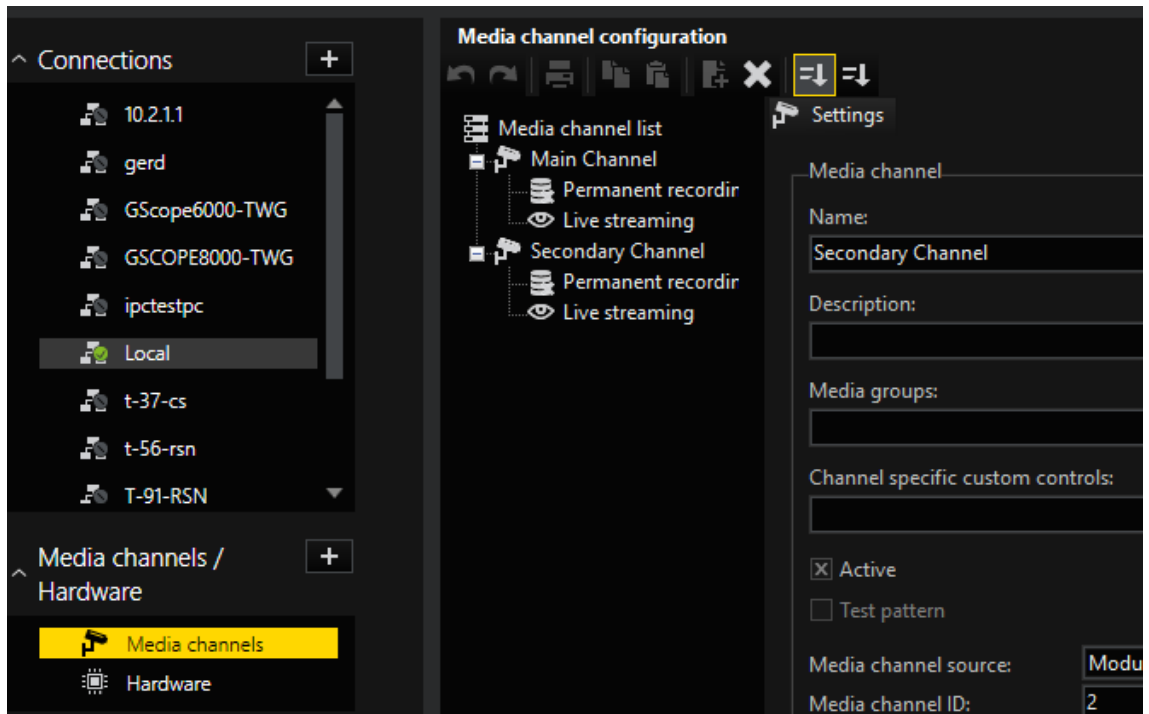
1. Right-click on the root node of the corresponding hardware and select **Add secondary channel**.



2. The module channel 1. **Secondary channel** then appears.



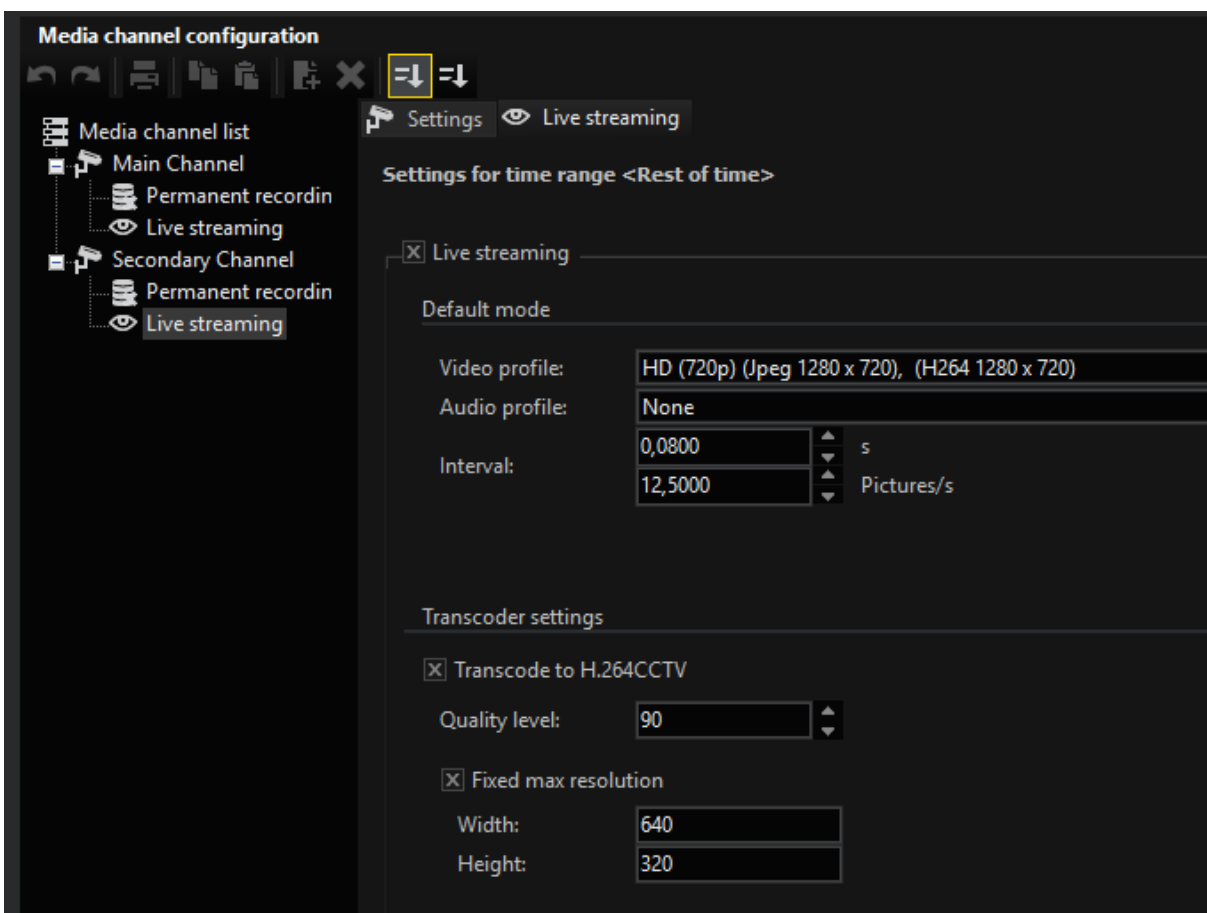
- Then add the now accessible media channel via **Media channels**.



Duplicate Mode

In standard operation, the Secondary Channel will always receive a copy of the images that are intended for the main channel. In this mode, called "Duplicate Mode", the existing stream of the camera is used and made available to the second media channel again.

This mode is useful if the camera is not capable of delivering multiple streams simultaneously. The second media channel must then be transcoded to a lower resolution in order to achieve the desired goal of a different quality/ resolution.



Individual Mode

The second mode is called "Individual Stream" and asks the camera for another own stream (or in the case of dualstream two additional streams) for the secondary channel. This doubles the number of streams picked up by the camera as opposed to "Duplicate Mode".

If the main channel is set to "single stream", the secondary channel also receives only one stream, so the camera requests a total of two streams.

If the main channel is set to "Dualstream", the secondary channel also receives two streams, and thus a total of up to four streams are requested from the camera.

Overview of the advantages and disadvantages of both modes:

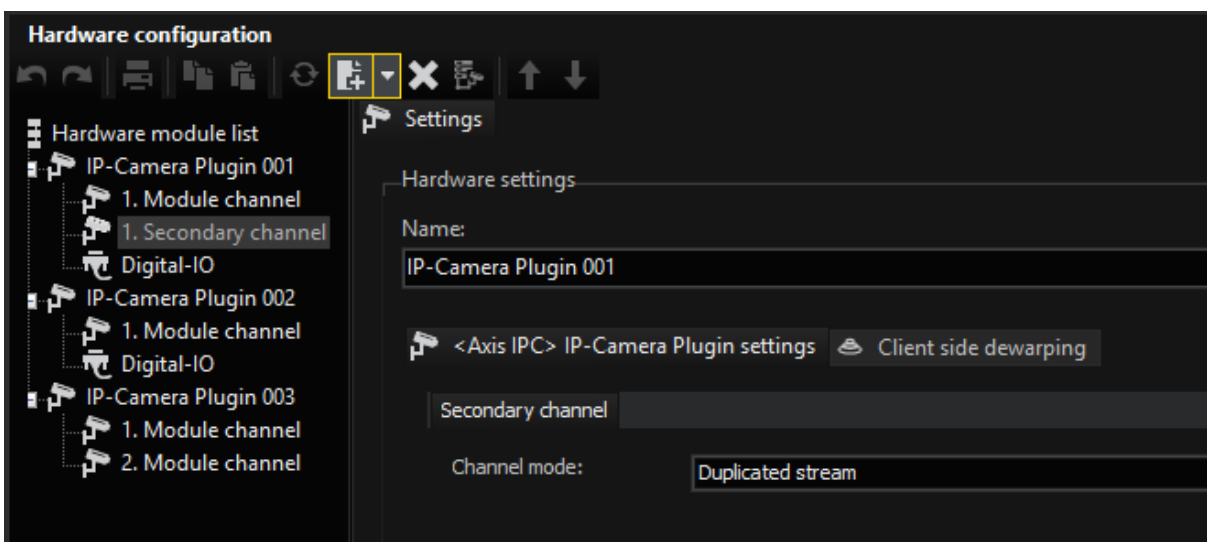
	Duplicate Mode	Individual Mode
Advantages	The stream from the cam-	The resolution/ framerate can be freely selected.

	Duplicate Mode	Individual Mode
	<p>era can be received with maximum resolution and frame rate. It can then be transcoded to any lower resolution/ frame rate.</p> <p>4K cameras can often only deliver one stream at 25FPS and are often not DualStream capable in this mode.</p>	<p>No transcoding is required and the resolution can be higher than that of the main channel depending on the camera.</p>
Disadvantages	<p>You have to use transcoding to get a lower resolution/ quality. This requires additional CPU power on the G-Core. Furthermore, only smaller resolutions are available for the secondary channel, not larger ones.</p>	<p>Since up to four streams are requested from the camera in dual stream mode, it will rarely be possible to achieve the highest frame rate.</p>

i **Special features in Duplicate mode: If the main channel is not streaming live or in memory, the secondary stream can select the resolution and quality itself. As soon as the main channel needs images, however, the resolution/ quality of the main channel is used again and these are also duplicated into the secondary channel.**

Secondary Channel in the Axis Plugin

In the Axis plugin, the secondary mode becomes visible in the hardware by selecting the "1st secondary channel". There you can decide between "Duplicate stream" and "Individual stream".



Supported Actions

The following actions are supported:

PTZ Actions

In addition to the corresponding actions for pan, tilt and zoom, the following actions are also supported:

Name	Description
AutoFocusOff	Deactivate autofocus
AutoFocusOn	Activate autofocus
FocusFar FocusNear FocusStop	If autofocus has been deactivated using AutoFocusOff, manual control of the focus is possible using these actions.
Camera Manual Iris Off	Switch iris to automatic
Camera Manual Iris On	Switch iris to manual control
Iris Open and Iris Close	If the camera is in Manual Iris mode, you can control the iris using these commands.
Move to	The corresponding action is performed.

IP-CAMERA PLUGINS

Name	Description
default position Move to preset position Save default position Save default position Clear default position Clear present position	
Camera Tour Start Camera Tour Stop	The guard tour GO set in the camera is started and stopped.

Control or Light Source such as LED

Name	Description
Camera Light On Camera Light Off	Here it is possible to turn on or off a light source on some camera types, such as the LED of M1054.

Backlight Compensation

Name	Description
Camera Spec Func X Off Camera Spec Func X On	Here you can control the backlight compensation function of a camera, if this function is available.

Day-Light

Name	Description
"Camera Spec Func Y Off"	Here the IR Cut Filter of the camera can be controlled. This feature is intended for type P1346, for instance.
"Camera Spec Func Y On"	
Camera Day Night Mode	With this action, you can change the camera to the corresponding mode at any time. The available modes are Day , Night or Automatic , which means switching is performed automatically by the camera. This feature is intended for type P5534, for instance.

Camera Raw

Name	Description
Camera Raw Output	Using the Camera Raw Output action, it is possible to send any command to the camera at any time. This also makes it possible to set values in the camera that were not previously set. For further information or if you require this feature, please contact customer service.

Digital Inputs and Outputs

Name	Description
Digital inputs and outputs	To control the digital output of the camera, use the action Set Digital Output with appropriate values. If the plugin has identified a status change for the digital input of the camera, the Digital Input action can be seen in the G-Core server.

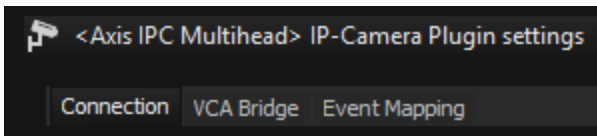
Axis Multihead

The configuration dialog for Axis Multihead plugin contains the same parameters as the Axis plugin dialog.

However, there are some tabs that contain global settings:

IP-CAMERA PLUGINS

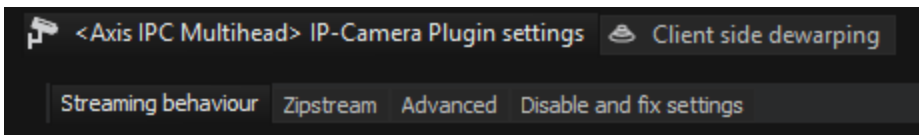
- **Connection**
- **VCA Bridge**
- **Event Mapping**
- **Axis Apps**



- **i To access the global settings, the root of the plugin must be selected in the hardware module list.**

Some tabs contain module channel specific settings:

- **Streaming Behaviour**
- **Zipstream**
- **Advanced**
- **Disable and Fix Settings**



- **i To access the channel specific settings, the corresponding module channel must be selected in the hardware module list.**

Basler

With this plugin, Basler IP cameras can be used in G-Core in M-JPEG mode and we support BIP2 cameras as well as H.264 mode.

This plugin is based on **Basler IP Camera: API Description, Document Number: AW000973**, version 2 from 02 February 2011 from Basler Inc. Thus all cameras with firmware version 1.5, 2.x and 3.x can be used. The plugin was tested only with BIP - 1300c - dn.

Installation

The plugin is part of G-Core installation and does not need to be installed separately.

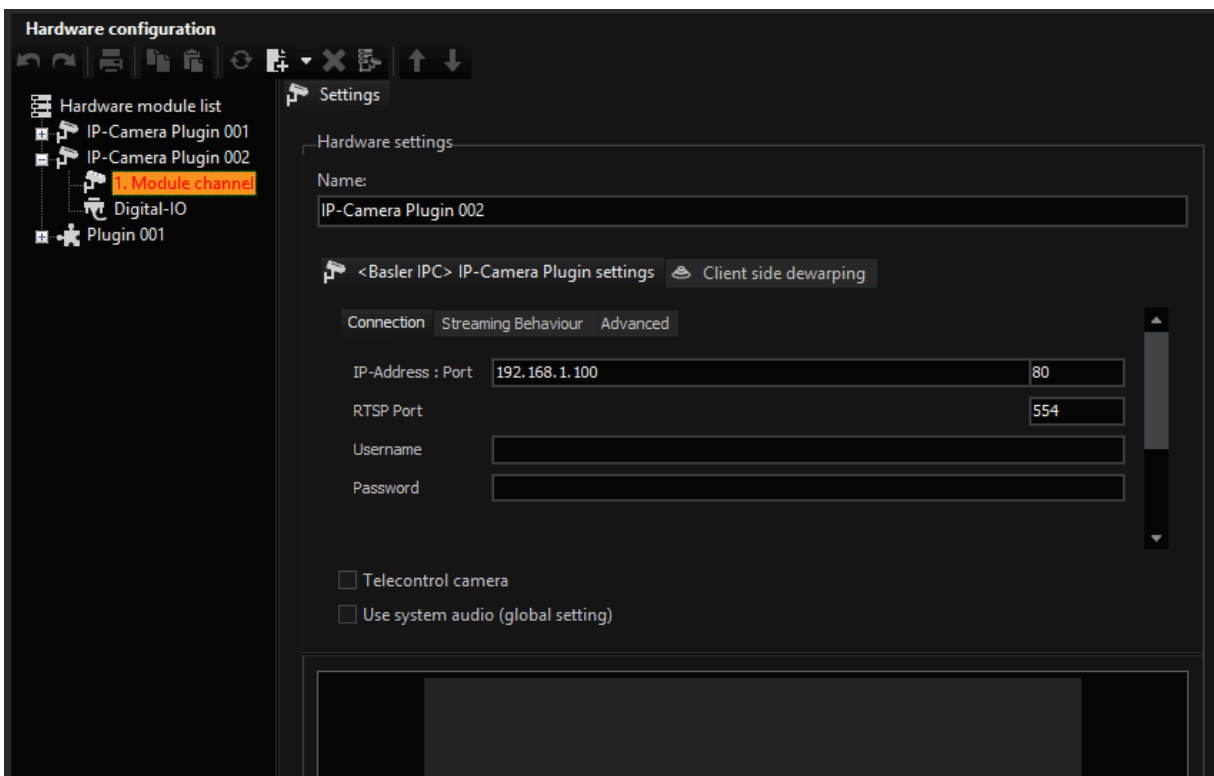
Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <Basler IPC>** by selecting it and clicking **Add**.

→ The Basler plugin is now entered in the hardware module list as a hardware resource.

Configuration

There are the following configuration options:

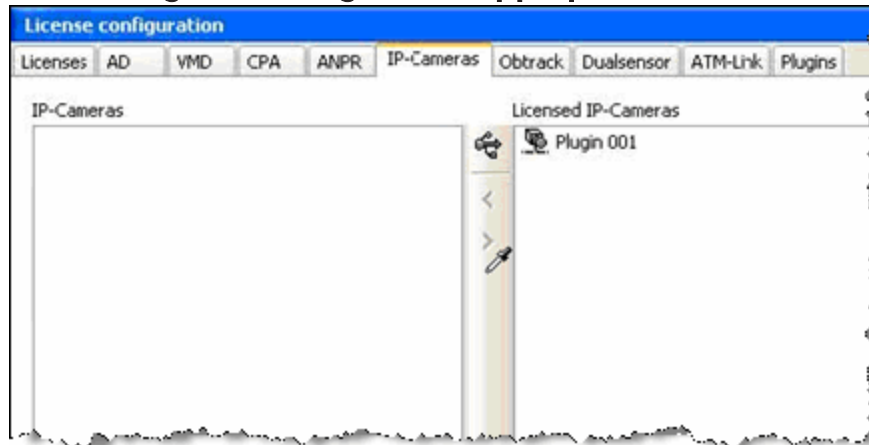


IP-CAMERA PLUGINS

Tab	Option	Description
Connection	IP-Adress	IP address or hostname of the camera (default: 192.168.1.100).
	Port	HTTP port of the camera (default: 80).
	RTSP-Port	RTSP port of the camera (default: 554).
	Username	User name to connect as (default: empty).
	Password	Password (default: empty).
Stream Behaviour	Streaming	Single (default) or dual streaming mode.
	Merging	Different merging methods for single stream mode.
	Codec	Codec for recording, live or single stream. Available values are: Motion JPEG and H.264.
DLS Control (advanced 1)	Disable DLS	Disable DLS control.
	Disable resolution	Disable resolution control.
	Disable quality	Disable quality control.
	Disable FPS	Disable frame rate control.
Fixed values (advanced 2)	Fixed resolution	If provided - this resolution decimation will be used instead of automatically calculated. Examples: <code>Scale_1_4</code> , etc.
	Fixed quality	If provided - this quality level will be always used. Examples: 30, etc.
	Fixed FPS	If provided - this frame rate decimation will be always used. Examples: <code>FpsScale_1_8</code> , etc.

i Normally, you only change the connection settings and leave all other settings untouched.

i Do not forget to configure the appropriate licenses:



Notes on Operation

- All video streaming parameters (resolution, quality, frame rate) change dynamically according to the video requirements. The changeover time to set up and restart a new encoder stream is very short, making the camera DSL-capable.
- The cameras from Basler use different "areas of interest" (AOI). The AOI of the sensor is not affected, the AOI of the stream is expanded to maximum size over all the available sensor area. We use the "OutputScaling" capability of the camera to reduce the image size. Usually this is done in the following steps: 1:1, 1:2, 1:4 and 1:8.
- We set the frame rate of the sensor to the highest possible value (usually 25 or 30 fps) and use "FrameRateScaling" in order to reduce it to the required value. Usually this is done in the following steps: 1:1, 1:2, 1:4 and 1:8.
- JPEG quality has the value 1 (lowest) to 100 (highest).
- The cameras support one digital input and one digital output, which are supported by the plugin. Motion detection is also supported.
- In addition, plugin supports raw commands by using CameraRAWOutput. You can specify a chain, which is connected to the path `/cgi-bin/param_if.cgi?NumActions=1`.

Example Note the capitalization:

```
CameraRAWOutput (<camera>"&Action_0=Sensor.ImageRotation.SetValue&Parameter_0_0=ROT_180")
CameraRAWOutput (<camera>"&Action_
```

```
0=ImageControls.WhiteBalanceMode.SetValue&Parameter_0_0=Incandescent")  
CameraRAWOutput (<camera>"&Action_0=ImageCo-  
ntrols.IRFilterMode.SetValue&Parameter_0_0=Open")
```

Body Temperature Measurement

Introduction

The Geutebrück Body Temperature Measurement Solution (BTMS) is a complete set for reliable measurement of body temperature to detect people with possibly high temperatures and to separate them from group for detailed testing. The entire system was specially designed and developed for use in conjunction with the Geutebrück NVR systems.

The Body Temperature Measurement Solution is equipped with a high-precision thermal camera with thermal sensor, a black body calibration unit and the G-Core ThermalConnect software option to run with G-Core software.

Since the accuracy of the measurement heavily depends on the environment in which it is to be used, it is necessary to understand the impact of different criteria such as humidity, wind drafts, object emissivity, ambient temperature, radiation reflections, etc. As it is not possible to eliminate all these factors in the real world, we try to minimize these factors and reduce the measurement errors with different technologies.

For example, we have introduced a neuronal network which is able to detect human heads. This allows the user to minimize possible false alarms caused by an elevated temperature in the region of interest. Another good example is to manually calibrate the camera in the morning, when the humidity is usually higher than at midday, which affects the accuracy of the measurement. To minimise measurement errors, we have integrated an automatic calibration process in our plugin which continuously adapts the camera parameters to be able to be more accurate in environments where these conditions change during the day. Finally, we integrated a feature which uses the calibration unit as a reference for the measurement area. That means that the plugin always sets the reference area (calibration unit) in relation to the measurement area (ROI). With this feature we can ensure that the measured temperature is based on the temperature in the reference area (see explanation Temperature Deviation Correction in **Configuration of the System Components**).

IP-CAMERA PLUGINS

To get accurate measurements, it is necessary that the eyes of the person are visible to the camera. The eyes must not be covered by glasses. The temperature in the inner part of the eye is more reliable than the temperature of the forehead.

The setup and use of this solution is very complex. We therefore recommend to watch the following webinar from Mobotix: <https://www.youtube.com/watch?v=uRbmwLuyIts>

It contains a lot of basic knowledge. The parameterization shown in the webinar on the camera is not necessary with our preset camera setup.

Connecting the Thermal Camera to the G-Core will not consume a CamConnect software option, but the G-Core Thermal Connect option must be purchased and loaded to the Dongle. When purchasing the product package 0.70050 or 0.70070 the software option is included, but the license must be generated subsequently via options@geutebrueck.com.

Package Contents

The package contains the following contents:

- Geutebrück blackbody temperature calibration unit
- Mobotix M16 Thermalcamera
- G-Core Body Temperature Measurement software option
- Quick installations guide

Usage

The Body Temperature Measurement Solution (BTMS) is designed for indoor use only. The use in outdoor areas is not recommended.

Environmental Conditions

The measurement of a person's body temperature can only be carried out under very special conditions. For measuring scenes with large difference between indoor and outdoor temperature, a queue must be created for example by using tensabarriers or similar products. By using queuing lines, the people have some time to regain and stabilise the indoor forehead temperature.

⚠ IMPORTANT: It must be avoided that sunrays appear in the capture zone. If this is the case, the measurement will not be accurate anymore. In addition, it must be avoided to have wind inside the capture zone that causes a change in temperature.

In general, the installation area must be relatively isolated from the outside environment.

Limitations and Remarks

Limitations

- Rapidly passing through the detection area could lead to rectangles being displayed slightly out of place (not centered on a head).
- Measured heads must have an average size between 10% and 20% of the camera frame. Heads that are too small or too large will not be processed.
- Currently no secondary channel.
- Outdoor use is not recommended.
- No use without blackbody possible.
- The forehead and the eyes should not be covered. Glasses must be removed.
- External conditions can have an influence on the temperature of the persons.
- Outdoor weather conditions can influence the measurements (sunshine, rain, fog).

Change Log

5.1.0.125 – 24.07.2020

- Support for Fahrenheit.
- Syncloss for both streams (RTSP and Thermal data) implemented.
- Reconnection behavior for both streams (RTSP and thermal data) implemented.
- If no RTSP image data is received for more than 2 minutes (RTSP server failure on camera), the camera will reboot.
- Removed the forcing of the left sensor for the RTSP stream.
- The atmospheric transmission adjustment can now be deactivated.
- The head tracker is now working if the server is runs as a windows service.
- The plugin now works in combination with G-Tect (e.g. Face Mask Detection).

Known Bugs

- Full installation not possible. If you want to use this plugin in combination with the Face Mask Detection, use a typical installation and select only the body temperature measurement plugin and the G-Tect. If you want to use other plugins, keep it to a minimum.
- We have experienced live stuttering when a detection is made or rectangles are out of position in recordings. A possible remedy is to reduce the key-frames number (GOP size) in the camera settings. This will reduce the stuttering.
- Clicking quickly through events in G-View can lead to multiple rectangles in the viewer. This depends on the set event runtime.

Positioning of the System Components

Positioning the Camera

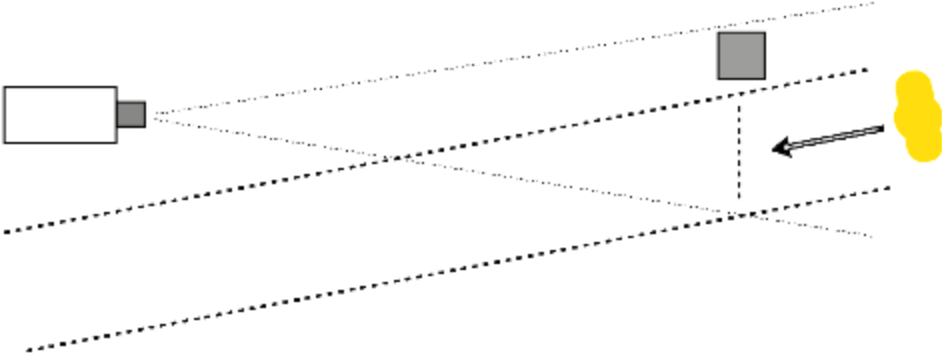
For an optimal measurement result, the camera must be positioned in front of the passing area of people. The camera must be placed over the head area of the people in order to have a top-down view. In addition, it is necessary that the calibration unit is in the field of view of the camera so that the camera always has a reference temperature for correct measurements.

The camera must be placed in a position where the head of the detected person is in front of it with a direct view. A side view is not recommended but optional. If a side view is used it must be ensured that the forehead can be seen. Otherwise it could lead to inaccurate results. Ideally, people should move directly towards the camera so that the forehead is facing the cameras sensors. For best results, the person should assume a stationary position during measurement. Currently there is no detection or alarm if the temperature is not elevated.

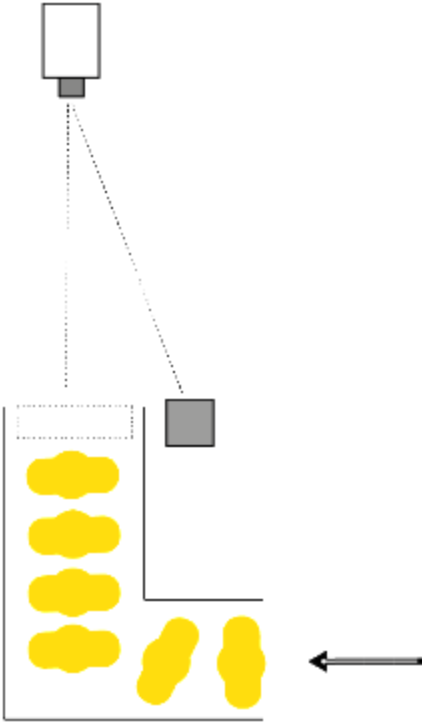
The optimal distance between the camera and the person being measured is 2 to 3 (straight) meters. With a camera height between 1.8 m - 2.2 m.

Positioning in Line:

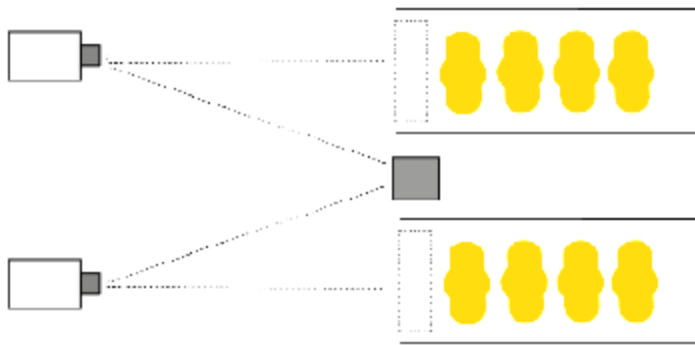
IP-CAMERA PLUGINS



Positioning in Front of Head:



IP-CAMERA PLUGINS



Positioning the Blackbody Calibration Unit (Calibration Device)

The Geutebrück blackbody unit is used to calibrate the thermal camera for exact measurements. The use of the blackbody is mandatory to receive accurate results.

Note the following conditions:

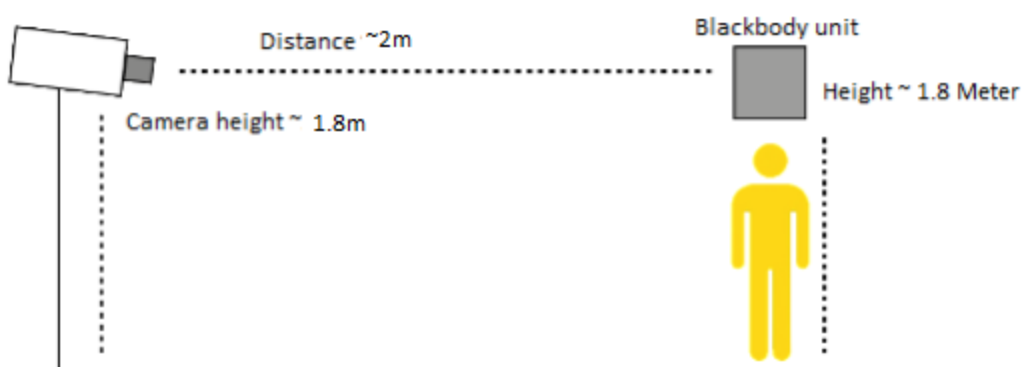
- The unit must be placed next to the screening point where the person is standing, to have the same distance between blackbody and person.
- Under no circumstances should the unit be covered by an object or invisible to the camera. Without the blackbody unit as a reference, measurement cannot be performed.
- The Blackbody must be mounted at a height of approximately 1.8 m, so that it is as level as possible with the head of the measured person. Positioning the blackbody above the heads is also possible.
- The surface of the blackbody radiation must not be touched or soiled. It should be located to the left or right side of the capture zone (see Positioning the Camera).
- It is essential to ensure that adequate illumination is provided and that the influence of reflections / occlusion or other interruptions is avoided.
- The default setting of the black body reference temperature is 35°C.

The Capture Zone

As described, the area where the person is measured must be approximately 2 meters (the straight line distance between the camera and the forehead) away from the camera, and width should not exceed 1.5 meters.

- i The distance between the blackbody and the forehead to the camera must be the same. The best method of positioning is to place footprints in the designated position.**

Optimized mounting dimension:



Configuration of the Plugin

This Body Temperature Measurement plugin communicates with the thermal camera, continuously retrieves the temperature measurements, checks the temperature in given regions of interest and triggers an alarm if the measured temperatures are within a configured critical range.

Head Tracker

The plugin uses a head tracker to identify the heads of people in each frame. The measurement of body temperature is then only taken in the upper part of a tracked head, thus avoiding errors, such as measuring other objects in the frame instead of people. The internally calculated measurement range extends approximately over the upper part of the head, from the nose to the forehead and from the left to the right ears.

When a region of interest is set and configured, the head tracker only processes heads that are located completely inside that region. Otherwise, if the region is not set or configured, the tracker will use the entire camera frame.

Region Based Measurement

In case the head tracker is not enabled in the plugin, the measurement is performed in a region of interest. If the region of interest is not set or configured, the entire camera frame is used for temperature measurement.

- i** **Note that use of a head tracker greatly improves the accuracy of the measurements and avoids errors. Not configuring a region of interest can result in continuously triggered alarms if an object (e.g. the calibration device) is found in the frame.**

Atmospheric Transmission Adjustment

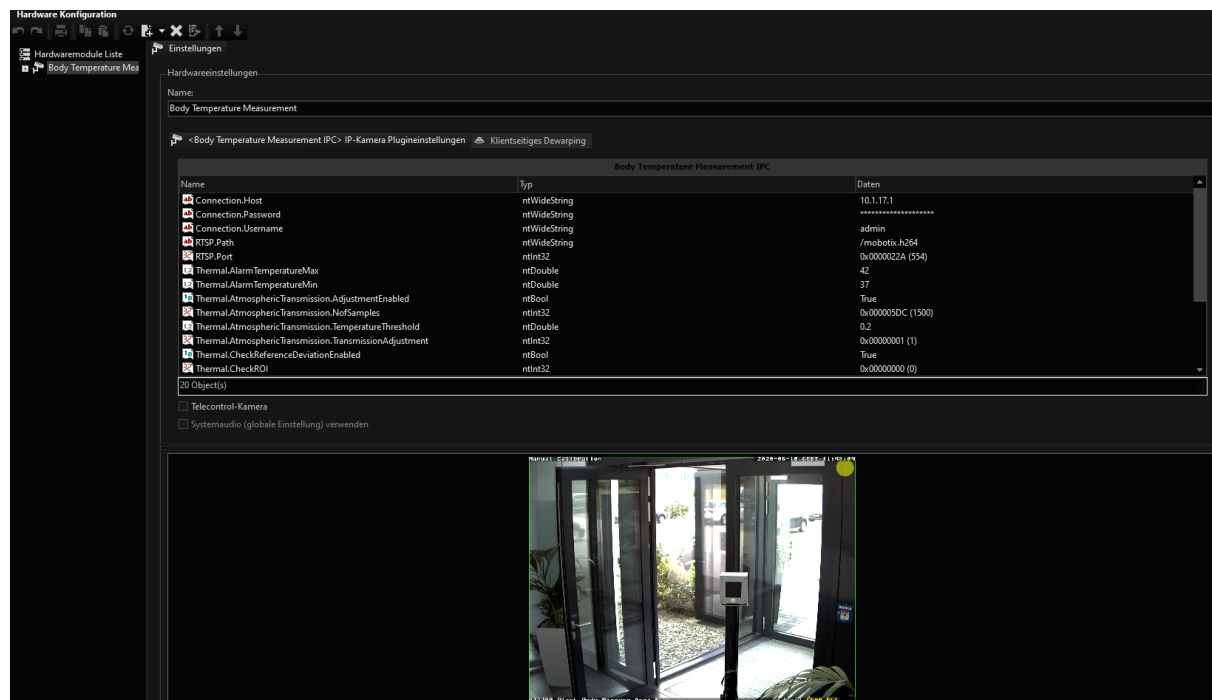
In order to compensate for the contribution of humidity, daytime and other changing physical influences on the general observation error of the thermal sensor, the plugin can attempt to automatically adjust the atmospheric transmission settings. To do, this a reference region must be set and configured to cover the calibration device, as well as setting the reference temperature of this device. Then, after a configurable number of samples, the plugin determines the current temperature measured on the configuration device and checks whether it exceeds a configured threshold compared to the reference temperature. If this is the case, the atmospheric transmission values changed on the camera accordingly. In order to use this automatic mode, you must activate the Temperature Compensation setting in the Thermal Sensor Settings.

Temperature Deviation Correction

When measuring temperature using a thermal sensor, there may be an observable deviation between the current measured temperature and a known reference temperature. This is not an error, but is due to the way the sensor reacts to minor changes in the environment of the setup (e.g. opening windows or doors, sunlight or other heat emitting objects emitting). To correct this deviation when checking the body temperature, a reference region must be set and configured as well as a reference temperature. The region should cover the calibration device and the reference temperature should match that of the calibration device. For each camera frame, the deviation in temperature measurement is calculated and adjusted.

This correction can be enabled or disabled separately. Another way to influencing the deviation is to set a static offset value, which is not changed during the runtime, but instead is used as for measurements.

Plugin Settings



Connection Settings

Prefix Connection.

Registry Key	Description
Host	Hostname or IP address of the camera.
Username	Username of a configured camera user.
Password	Password for camera login.

RTSP Settings

Prefix RTSP.

Registry Key	Description	Default Value
Path	URI path of the cameras RTSP stream.	5.2.x.x firmware “/mobotix.h264” 5.4.x.x firmware “/stream/”

IP-CAMERA PLUGINS

Registry Key	Description	Default Value
		profile0"
Port	Port of the cameras RTSP stream.	554

General Settings

Prefix Thermal.

Registry Key	Description	Default Value
CheckROI	Number of the region of interest configured on the camera in which all measurement is carried out (0 = whole camera frame). Count the number of the event on the camera and enter it here. The counting starts with 1.	0
AlarmTemperatureMax	Maximum critical alarm temperature.	42.0
AlarmTemperatureMin	Minimum critical alarm temperature.	37.0
StaticTemperatureAdjustment	Static offset for temperatures.	0.0
CheckReferenceDeviationEnabled	Enable or disable temperature deviation correction.	True
ReferenceROI	Number of the region of interest use to sample reference measurements, e.g. on calibration device (0 = none configured). Count the number of the event on	0

Registry Key	Description	Default Value
	the camera and enter it here. The counting starts with 1.	
ReferenceTemperature	Reference temperature used for deviation correction and/or atmospheric transmission adjustment.	35.0
TemperatureUnit	Setting "0" – Plugin uses °C (Celsius) Setting "1" – Plugin uses °F (Fahrenheit)	0

Head Tracker Settings

Prefix Thermal.HeadTracker.

Registry Key	Description	Default Value
TrackingEnabled	Enable or disable head tracking.	True
MaxTrackedDistance	Maximum squared Euclidian distance after which a tracked head will be redetected as a new one.	6000
RedetectionScope	Number of frames after which a tracked head will be redetected as a new one.	10
FaceDetectionModelPath	Location of the head tracker model files for face detection.	<INSTALLDIR>/Nets/face-detection-adas-binary-0001.xml
FaceLandmarkModelPath	Location of the head tracker model files for face landmarks.	<INSTALLDIR> /Nets/facial-landmarks-35-adas-0002.xml
Confidence	Confidence value used for head tracker	0.7

Atmospheric Transmission Adjustment

Prefix Thermal.AtmosphericTransmission.

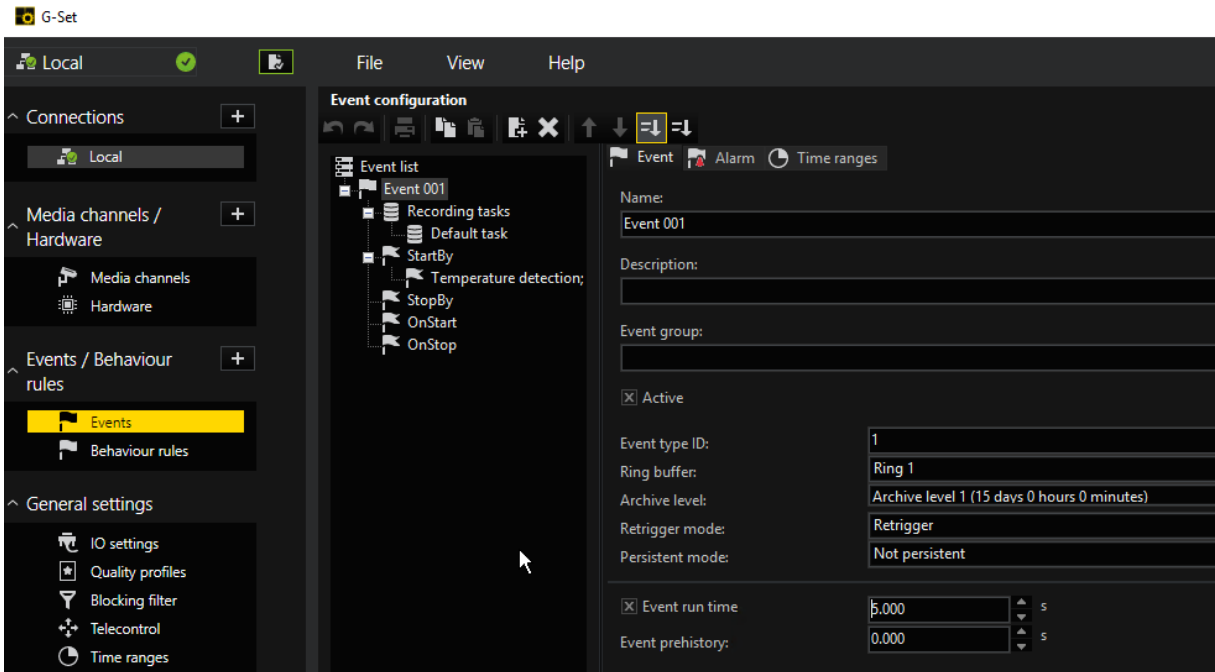
Registry Key	Description	Default Value
AdjustmentEnabled	Enable or disable the automatic atmospheric adjustment	True
NofSamples	Number of sampled frames after which the atmospheric transmission is adjusted	1500
TemperatureThreshold	Threshold specifying how much deviation between reference temperature and measured temperature is tolerated	0.2
TransmissionAdjustment	Value that is used to adjust the transmission	1

Event Settings

To manage the results in G-Core, you need to create an event that starts by the so-called **Temperature detection** action. The event runtime must be adapted according to the range of temperature measurements of different persons.

Example In this Example a person can be tested every 5 seconds. The absolute minimum should be 1 second.

IP-CAMERA PLUGINS



The result in G-View will look like this:

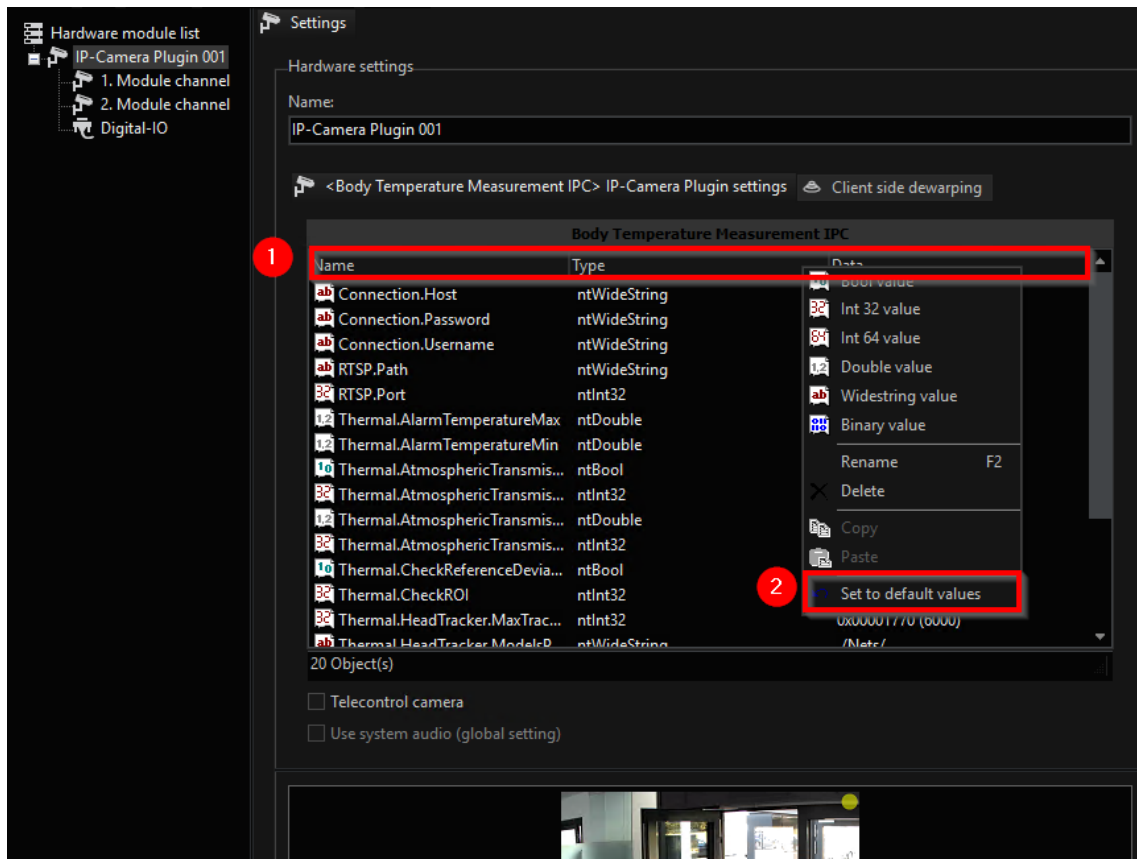


Updating G-Core 5.1.0.75 to a Newer Version

We recommend using the 5.1.0.75 version with a “typical” installation type with the additional plugin for the body temperature measurement. It is also recommended to just update it in the same way. If you update to a newer version, the plugin settings will not be update automatically. If you want to use the plugin in the same way as before, you do not need to consider the next steps. Otherwise, follow the steps to use the new features:

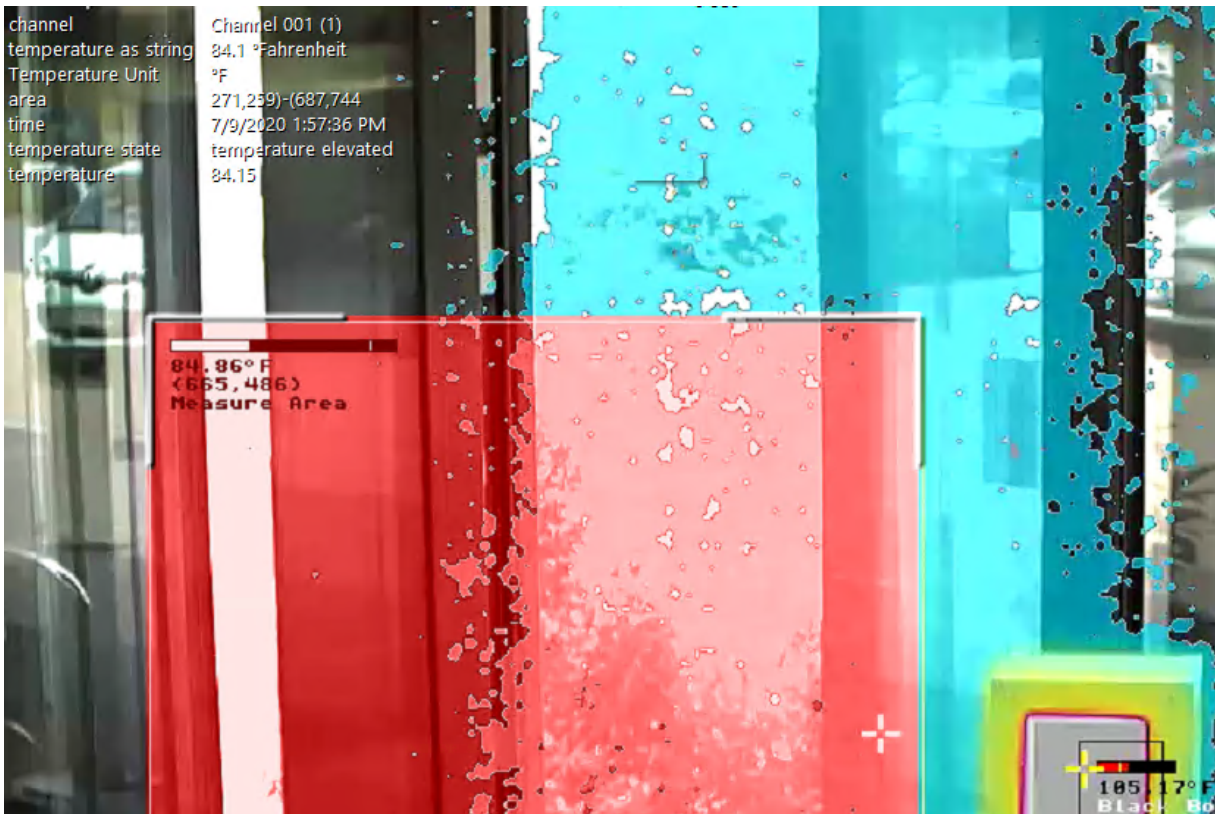
1. Go to the plugin configuration.
2. Right-click in the table header **1** to open the context menu.
3. Select **Set to default values** **2**.

IP-CAMERA PLUGINS



4. Afterwards, you must re-enter your previous configurations such as Host-name, Password, etc. You will notice that there are now new parameters which can be set, such as:
 - Confidence
 - TemperatureUnit

Use of Fahrenheit



To use the temperature unit Fahrenheit (°F) instead of Celsius (°C), you need to change some settings on the camera and some settings in the plugin. The following steps will show you where to change them.

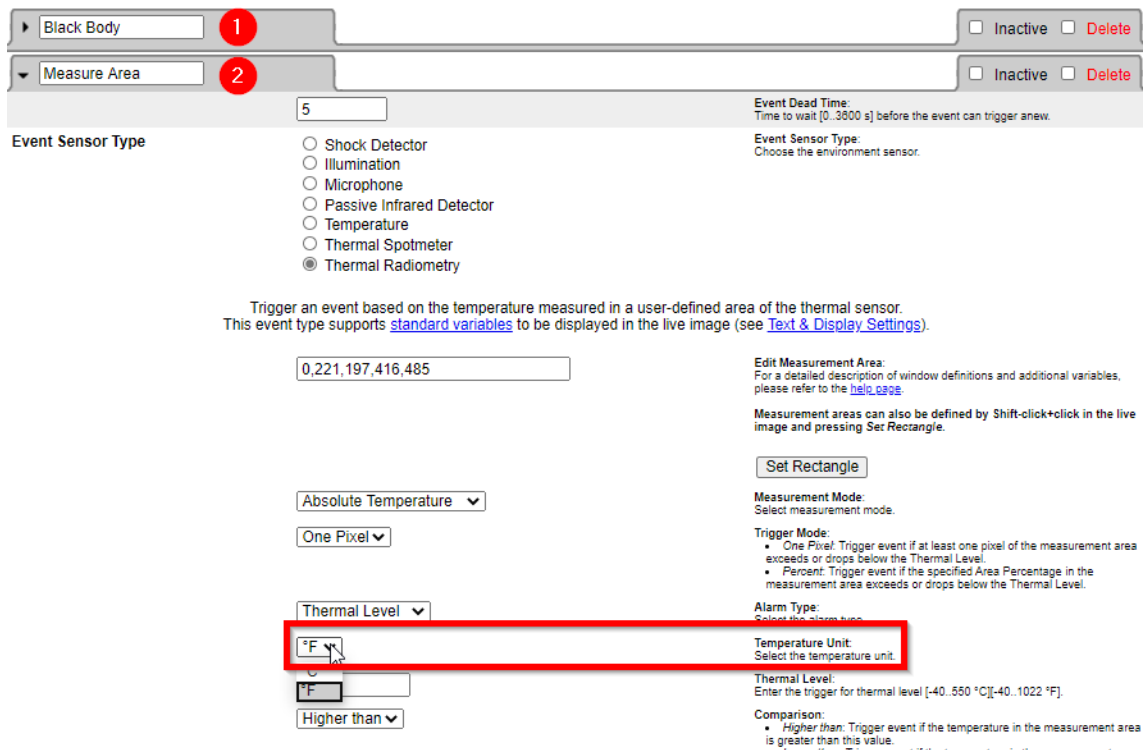
Syncloss

The plugin uses two connections to the camera. One over RTSP and one over the SDK to get the thermal data. Both connections have robust reconnect and sync loss detection. The sync loss for the thermal data is integrated in the secondary channel.

Camera Settings

1. Open your browser and enter the IP address of your M16 camera.
2. Go to **Setup Menu > Event Overview**.
3. Click on **Edit** in the environment Events.

4. Change the temperature unit of all ROI's.



Plugin Settings

1. Start G-Set and connect to your server.
2. Go to **Hardware** and open the plugin **Body Temperature Measurement IPC**.
3. Change the following Settings:
4. Set the **AlarmTemperatureMax** and **AlarmTemperatureMin** according to your needs **1**.
 - Recommendation **AlarmTemperatureMin**: 98.6
 - Recommendation **AlarmTemperatureMax**: 107.9
5. If the blackbody has a configured **ReferenceTemperature** of 35° Celsius, you need to adjust this setting to **95** **2**.

6. Set TemperatureUnit to 1 3.

Name	Type	Data
Connection.Password	ntWideString	*****
Connection.Username	ntWideString	admin
RTSP.Path	ntWideString	/mobotix.h264
RTSP.Port	ntInt32	0x0000022A (554)
Thermal.AlarmTemperatureMax	ntDouble	90
Thermal.AlarmTemperatureMin	ntDouble	75
Thermal.AtmosphericTransmission.AdjustmentEnabled	ntBool	True
Thermal.AtmosphericTransmission.NofSamples	ntInt32	0x000005DC (1500)
Thermal.AtmosphericTransmission.TemperatureThreshold	ntDouble	0.2
Thermal.AtmosphericTransmission.TransmissionAdjustment	ntInt32	0x00000001 (1)
Thermal.CheckReferenceDeviationEnabled	ntBool	False
Thermal.CheckROI	ntInt32	0x00000002 (2)
Thermal.HeadTracker.FaceDetectionModelPath	ntWideString	./Nets/face-detection-adas-0001.xml
Thermal.HeadTracker.FaceLandmarkModelPath	ntWideString	./Nets/facial-landmarks-35-adas-0002.xml
Thermal.HeadTracker.MaxTrackedDistance	ntInt32	0x00001770 (6000)
Thermal.HeadTracker.RedetectionScope	ntInt32	0x0000000A (10)
Thermal.HeadTracker.TrackingEnabled	ntBool	False
Thermal.ReferenceROI	ntInt32	0x00000001 (1)
Thermal.ReferenceTemperature	ntDouble	95
Thermal.StaticTemperatureAdjustment	ntDouble	0
Thermal.TemperatureUnit	ntInt32	0x00000001 (1)

22 Object(s)

Configuration of the System Components

Calibration and Heat-Up

After the blackbody has been powered up, the unit will need about 15-30 minutes to reach and maintain the configured temperature. During this time a measurement is not possible because the reference temperature is not stable.

The thermal camera will also need about 15-20 to calibrate the bolometer sensor after power-on. The camera will recalibrate if the setup is changed. During this time the measurement cannot be performed.

Installing the Camera

After unpacking the camera, the optical sensor must be added to the camera. Refer to the manufacturer's installation guide for the optical sensor.

After the camera has been connected to a PoE Ethernet switch, the camera must be searched by the Mobotix IP Finding Tool and an IP address of the local network must be assigned. It is even possible to select DHCP, but it is not recommended. To configure the IP address of the camera, refer to the Mobotix M16 installation guide.

Configuring the Camera

After installation, the thermal camera must be configured. The capture zone must be created as well as the zone for the reference temperature (blackbody). There is no event or alarm configuration required on the camera.

In the **General Image Settings (Setup Menu > General Image Settings > Camera selection)** you can select which sensor you want to stream to G-Core. It is possible to stream both sensors side by side. The resolution can also be changed.

i **We recommend using the left sensor (normal image) if you want to use the head detection. The head detection does not work properly with the thermal overlay image or the thermal image.**

Check if the latest firmware is installed. The latest tested firmware version with the G-Core plugin is MX-V5.2.6.7. We recommend using the latest firmware from Mobotix.

A default setup is delivered with this documentation, in which the basic settings as well as the measurement and reference zone are set. The use of this setup is recommended.

⚠ IMPORTANT: The changed settings on the camera must be saved permanently. To do this, you have to click the **Close** button after you have defined the new settings. The camera will then ask you to save the settings permanently.

The Mobotix installation guide for the camera can be found here: <https://www.mobotix.com/de/manuals>

Weekly Camera Restart

The camera restarts every Monday between 3 and 4 am. This is a default setting of the camera. Mobotix recommends to leave this setting active to ensure the best performance and functionality of the camera. You can change or disable this setting at: **Admin Menu > Time Tasks**.

Thermal Overlay Offset

The thermal overlay offset can be set in **Setup menu > Thermal senso settings**.

Since both sensors look at your scene from different angles, it is important to set the correct offset of the thermal overlay. You can set the horizontal and vertical offset in the thermal sensor settings. Select the thermal overlay display for the stream in the camera viewer. You can set the offsets when you have positioned the blackbody in the scene.

i The thermal overlay offset settings are only required when the head tracker is used. The offset varies across the entire image. It is important to have the measurement area close to the blackbody, especially on the horizontal axis.

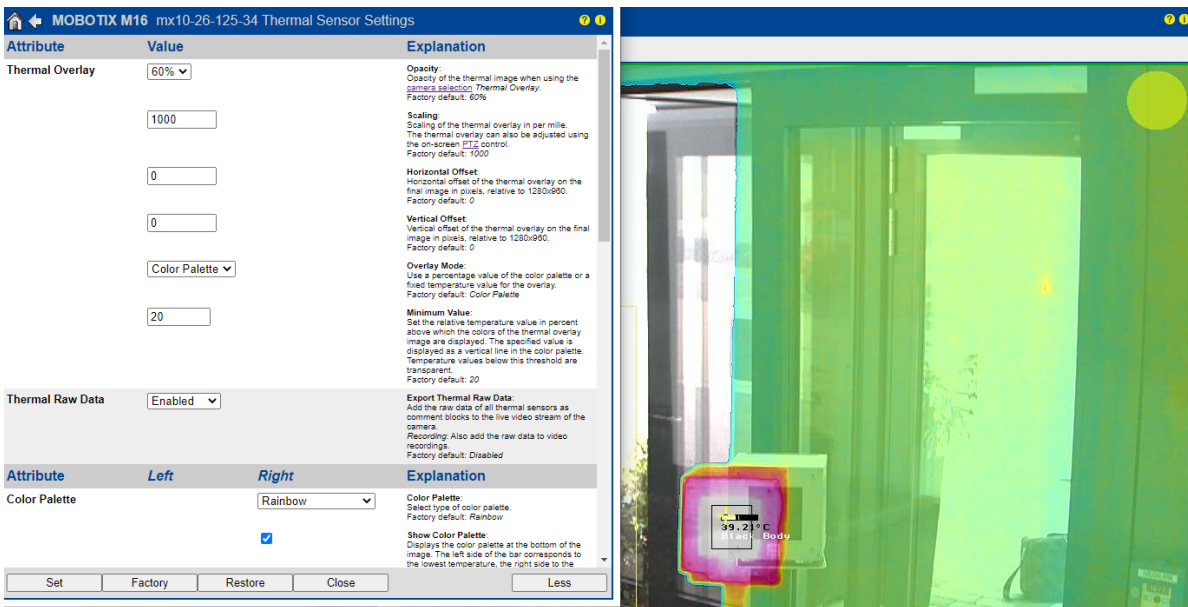
Correct settings:

The screenshot shows the 'MOBOTIX M16 mx10-26-125-34 Thermal Sensor Settings' window. The 'Thermal Overlay' section is configured with the following values:

- Thermal Overlay: 60%
- Opacity: 1000
- Scaling: 56
- Horizontal Offset: -19
- Vertical Offset: -19
- Color Palette: Color Palette
- Minimum Value: 20
- Thermal Raw Data: Enabled

The 'Color Palette' section is also visible, showing 'Rainbow' selected and 'Show Color Palette' checked. The background image shows a thermal camera view of a doorway with a blackbody target. A yellow box highlights the blackbody, and a temperature reading of 39.89°C is displayed next to it.

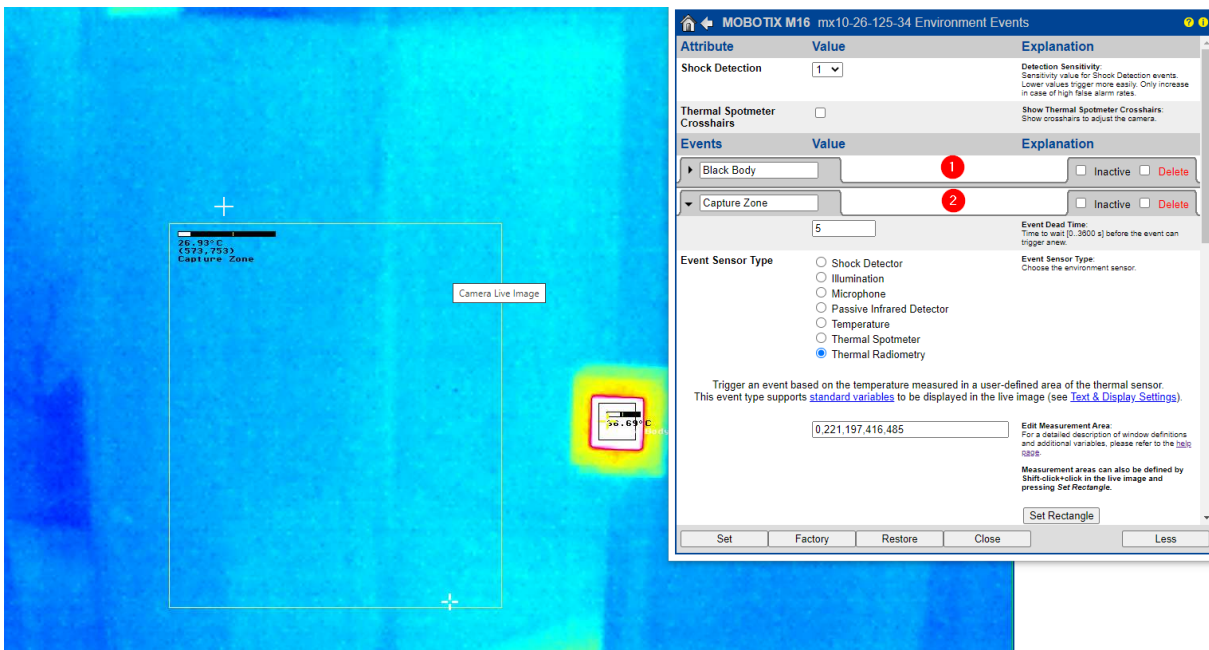
Wrong settings:



Configuring the Capture Zone

The capture zone can be set in Setup menu > Event Overview.

Draw the rectangle on the image and set the coordinates for the zone. No further settings regarding the capture zone are required on the camera. The plugin will only read out the coordinates of the zone. You need the count of the configured event to use it in the plugin settings. The count starts at 1 for the first entry under the events section.



Configuring the Reference Zone

Draw the rectangle on the image and set the coordinates for the zone. No further settings here either. You need the count of the configured event to use it in the plugin settings. The count starts at 1 for the first entry under the events section.

Configuring the Blackbody

By default, the blackbody operates at 35° Celsius as reference temperature. This is the best temperature for the most scenarios. In case the reference temperature needs to be changed, this can be done on the blackbody device on the back. Please refer to the blackbody manual for setup.

Bosch

This manual explains the functionality of the Bosch IP camera plugin for G-Core.

The following functions are available:

- H.264 and MJPEG support
- Audio support for G.711 and G.726
- Dual streaming
- Dynamic Live Streaming (DLS)
- PTZ function of speed dome cameras
- Multicast
- Support of digital outputs
- Support of digital inputs
- Support the camera-side motion detection
- Support for general event handling and filtering via WS-BaseNotification, pull point and metadata streaming
- Receiving Bosch IVA Metadata
- Drawing of moving objects in live- and recorded streams
- Advanced tracking of moving objects in live- and recorded streams

Installation

The plugin consists of two files: BoschIPC.dll and BoschIPC.dlg.

If the plugin is not included in the scope of installation with delivery, please copy both files (BoschIPC.dll and BoschIPC.dlg) to the plugin directory of G-Core (C:\Program Files\Geutebrueck\G-Core\MediaPlugins).

The G-Core Server service must then be restarted.

Configuration

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <Bosch IPC>** by selecting it and clicking **Add**.
4. The Bosch plugin is now entered in the hardware module list as a hardware resource.
5. Now select the plugin in the list and make the necessary changes to the settings.

Connection

The screenshot shows the 'IP-Camera Plugin settings' window for a Bosch IPC camera. The 'Connection' tab is selected, and the 'Client side dewarping' option is checked. The configuration fields are as follows:

Field	Value
IP-Address : Port:	10.1.100.68 : 80
HTTPS Port:	443
RTSP Port:	554
Use HTTPS:	<input type="checkbox"/>
Camera is behind NAT:	<input type="checkbox"/>
Username:	service
Password:	[Masked]

At the bottom, there is an unchecked checkbox for 'Telecontrol camera'.

Under **IP-Address**, enter the IP address of the camera.

Control commands for the camera are sent by default through port 80.

Bosch does use web services. The main-web service will be entered by using the IP address entered above. Via this main-web service the G-Core Server will receive the information about RTSP-Port automatically. Therefore the RTSP-Port needed to be changed via the webpage of the camera, and the G-Core Server will receive this information automatically and use this port.

If you like to use HTTPS communication, you have to setup the camera to use HTTPS. For this you have to install or create a certificate on the camera.

If your camera is behind an NAT (Network Address Translation) web services might send wrong IP addresses and ports for communication.

If you using a router or WAN including NAT, you need to enable the checkbox Camera is behind NAT.

Whether these ports need to be changed depends on settings in the camera itself.

To achieve maximum performance when starting the stream, you can send basic authentication with the option Use basic access authentication at communication start of RTSP-Stream. If this option is not selected, Digest authentication is used, which is the best choice in terms of IT security.

If you are using a PTZ camera, enable the checkmark **Telecontrol camera**.

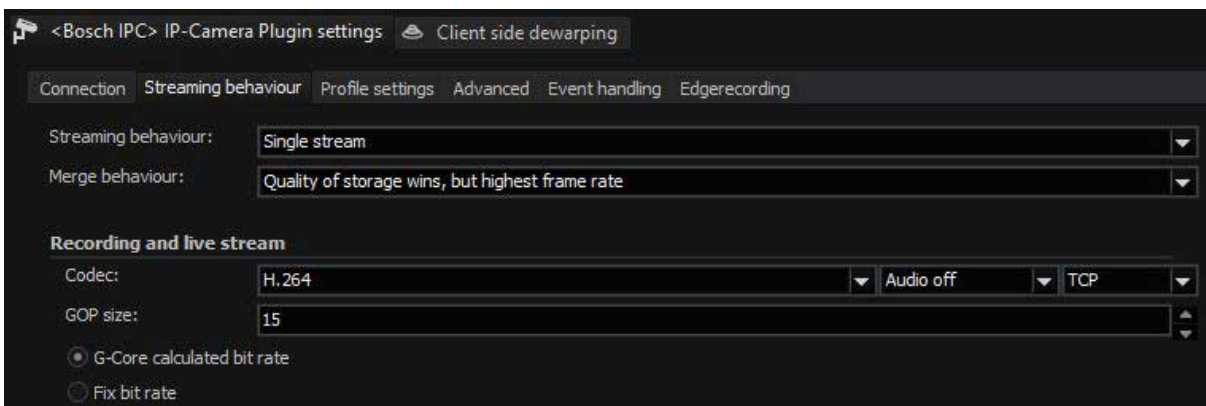
i **Bosch unfortunately does not define default login data. It is important that the correct password is entered. Please check the camera manufacturer's instructions to find the password that you must enter.**

Streaming Behaviour

In **Streaming Behaviour** you can select settings for the video stream.

Single Stream

By default, only one stream is queried by the camera. Therefore, you do not have the option of using different frame rates for the stored images and the live stream. If you select **Single stream** the dialog is presented as follows:



In **Merge behaviour** you can specify how the possibly different settings for Live and Storage under Media Channels are combined:

Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters, the highest value specified in the corresponding settings is used.

Name	Description
Worst settings wins	For all parameters, the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used.
Storage profile wins	The Storage settings are used.

As **Codec** you can choose between H.264 and MJPEG. For H.264 the following settings are available: Under **GOP size** (Group of Picture) you can specify the ratio of IDR to P frames.

In ONVIF version 2.4 and Profiles, there is still no setting for selecting between a variable bit rate (VBR) or constant bit rate (CBR). To be able to use some kind of VBR, the server uses the parameters resolution, quality and frame rate to calculate a bit rate and then passes this information to the camera. This setting is called G-Core calculated bit rate. This ensures that a suitable bit rate is always used. If using Fix bit rate, an bit rate resolution, quality and frame rate independent bit rate will be used.

i **Also the G-Core Server is not able to guarantee, that the correct settings are used with in the camera. Customer need to verify the settings within the webpage of the camera, that bit rate is set in an currently running stream.**

Audio Support

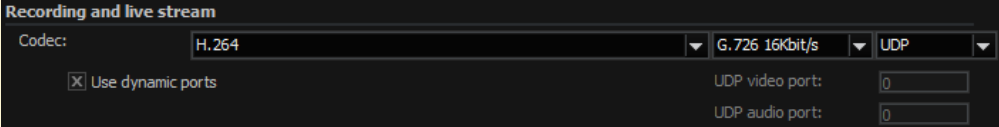
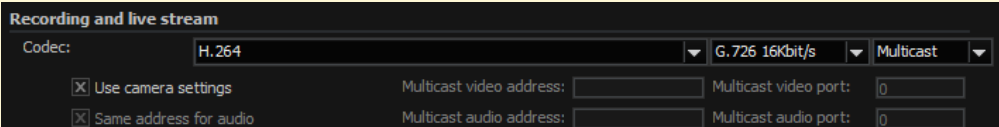
If the camera supports the audio formats G.726, G.711 u-Law or a-Law, the audio data is played back and recorded via the plugin. Select format as you like.

To activate audio playback, you must select a profile for audio in G-Set. Whether you select the profile **high**, **medium** or **low** is irrelevant, it is important, however, that **none** is not selected.

Transport Protocol Selection

For each stream, recording or live, it is possible to choose the transport protocol.

Name	Description
TCP	Streaming communication with the camera takes place on port 554 by default. The total communication (audio, video + control data) takes place only over this port. TCP is the preferred and best

Name	Description
	selection among the transport protocols.
UDP	<p>With UDP, streaming is also performed over port 554. However, video, audio and control information are transmitted over up to 4 additional ports. It is possible to specify to the camera the preferred ports for steaming of data. It is preferable, however, for the camera to choose these ports itself. If a manual assignment of ports is desired, they can be selected by disabling the "Use Dynamic Ports" option. 2 ports are needed each for video and audio. The specified port is opened and the port directly above the specified port. In our example, this would be the ports 60000 + 60001 for video and 60002 + 60003 for audio. Due to the higher number of ports and the associated problem of firewall configuration, UDP is less suitable than TCP.</p> 
Multicast	<p>With multicast, streaming is also performed over port 554. Audio, video and control data are streamed over an additional multicast address plus port. The choice of the multicast address and port is specified in most cases by the camera and cannot be specified via the stream of the G-Core server. The selection "Use camera settings" is also the (initially) best choice.</p> 

i For some camera types, such as Sony cameras, specification of the multicast address plus port is necessary. Please always note the information from the respective manufacturers on multicast parameters.

The use of multicast, unfortunately, brings with it a number of possible errors. Therefore, it is important to note the following:

- Each camera in the network must be assigned a unique multicast address. No two cameras may have the same multicast address.

IP-CAMERA PLUGINS

- It is possible for multiple cameras to use the same port, but they must not have the same multicast address, as the separation in switches is performed primarily using the multicast addresses. Using identical multicast addresses will lead to network and device overload and incorrect display of the images.
- IP addresses in the range 224.0.0.0 to 239.255.255.255 are multicast addresses. In a private network, it is best to select addresses between 239.0.0.0 and 239.255.255.255. When you select multicast, a proposal for a multicast address will be auto-generated from the IP-address entered in the connection-tab.
- It is imperative to use switches with multicast support. Simple switches, without multicast support, would generate broadcast streams from the multicast streams. With a large number of cameras, this would then mean that the entire network traffic of all cameras would arrive at each node in the network. This means that even a 1 GB network connection would quickly be overloaded.
- As a number of ports are opened for multicast, it is advisable to add all applications, such as G-View, G-Set and G-Core Server to the firewall. The applications can thus open all ports and the ports do not need to be added manually.

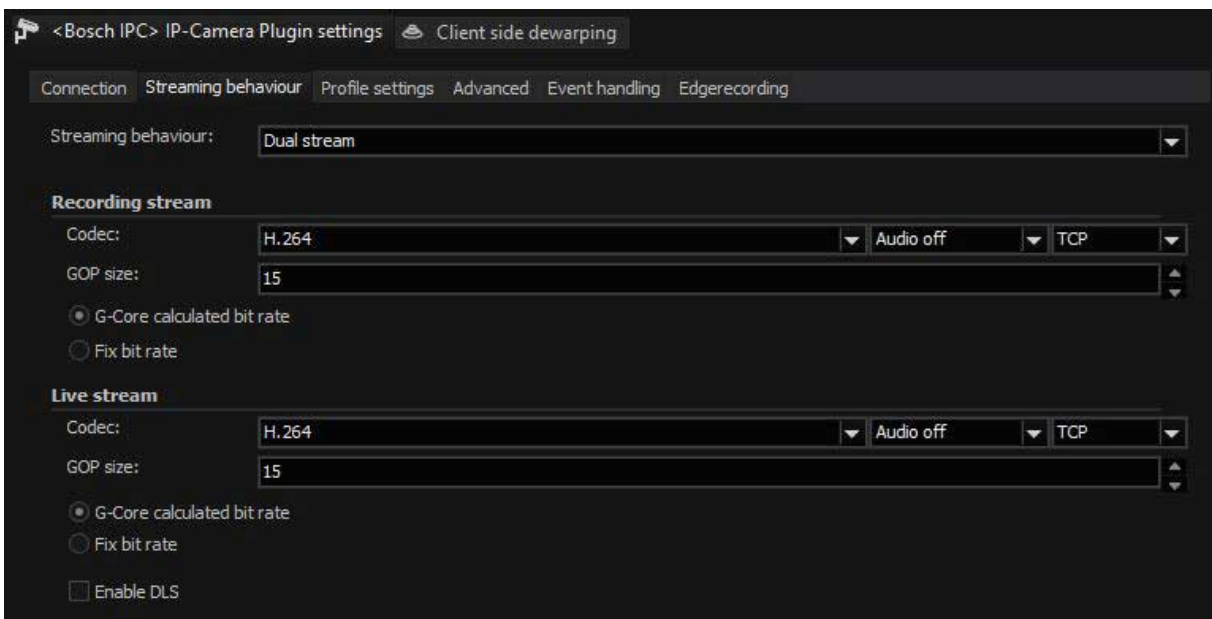
Name	Description
Multicast Server Only	When starting a multicast stream, the stream is accepted from the G-Core Server and also from the corresponding client. Each application thus receives the multicast stream directly from the camera via the switch. If "Multicast Server Only" is selected, the G-Core Server continues to receive the stream from the camera via multicast, however all clients receive their images as in TCP or UDP mode via the G-Core internal communication. This mode is designed for the case when the G-Core Server receives the multicast data, but the clients are not multicast-enabled, or the data is not meant to be received by multicast.
MC Client Only	As already mentioned, when opening the stream, the stream is also received by G-Core Server itself. As the G-Core Server itself, however, does not need live images and cannot display them, these images only create additional network load to the G-Core server. With this setting it is possible for the stream to be received only by the client and no images will go to the G-Core server. This option, however, leads to problems when there are network clients that cannot handle multicast reception. These clients will then no longer receive images, because the G-Core Server does

Name	Description
	not receive them. In such cases, this setting is not useful. In addition, this setting is only available for live stream.
HTTPS	With HTTPS an encrypted RTSP stream is established over HTTPS port 443. (RTSP and RTP over HTTP). Some cameras will not be able to support encrypted streaming. In this case you need to select another transport protocol.

Dual Stream

To circumvent the problem of having the same resolution for live playing and recording, you can attempt to query two streams from the camera. To do so, under **Streaming Behaviour** choose the option **Dual Stream**.

i **Not every camera is dual-stream-capable. And even if the manufacturer specifies that it is, it may quickly hit the limits of its performance. Please test independently in advance whether the camera still works properly in dual stream mode.**



For settings for **Codec**, **GOP size** and **Constant bit rate**, refer to the explanations under **Single Stream** above.

If you use a camera that can, according to the manufacturer's specifications, change resolution very quickly, you can also try the function DLS (Dynamic Live Stream). In general, this is not recommended, as most cameras are not actually capable of performing these changes quickly enough.

Profile Settings

The **Profile settings** can vary depending on the settings of the steaming behavior and the settings in this dialog itself.

i **The settings should be modified by advanced users only!**

Disable GNG settings

With this option, you disable all setting requests of the G-Core Server to the camera.

Cameras of different manufacturers react at different speeds to requests for changes and queries. Some cameras are not suitable for quickly changing the resolution, GOP structures, codes and qualities. If you activate the function, the necessary communication with the camera is reduced to a minimum. You will then only see images in the quality and resolution in G-View that correspond to the set camera values.

Connection Streaming behaviour **Profile settings** Advanced Edgerecording

Disable GNG settings

Use media profile

Profile number storage: 1

Profile number live: 2

Create new profile

Aspect ratio to use: G-Set dependent

Find best fitting encoder

Disable stream changes

Request URI once

Check if Audio at G.726 sounds bad!

Use Media Profile and Create New Profile

In order to query images from a camera, you need "profiles". For each stream (recording and/ or live), there must be a separate profile. These profiles either already exist (then select **Use media profiles**) or they must be created (**Create new profile**).

By default, an attempt is made to use the existing profile (profile number storage = 1).

Bosch cameras automatically assign profiles 1 and 2 to H264. Profile 3 is reserved for JPG.

Using this profile an attempt is then made to change the settings according to the requirements for resolution, type of code, quality and frame rate.

The screenshot shows the 'Profile settings' tab with the following configuration:

- Disable GNG settings
- Use media profile
- Create new profile
 - Video source number: 1
 - Video encoder number storage: 1
 - Video encoder number live: 2
 - Audio source number: 1
 - Audio encoder number storage: 1
 - Audio encoder number live: 2
- Aspect ratio to use: G-Set dependent
- Find best fitting encoder
- Disable stream changes
- Request URI once
- Check if Audio at G.726 sounds bad!

A profile is always composed of video source and video encoder. Here you have the opportunity to compile the profile freely.

Disable stream changes

If you wish to switch from permanent recording at 5 FPS to 25 FPS when an event occurs, several cameras require up to 10 seconds for this transition. During this time, no images are streamed from the camera to the server. This means, that during the time of the event you will have no images.

If you use a camera that exhibits these deficits, select the option **Disable stream changes** to disable general stream control.

If this option is enabled, only images in the set resolution and quality of the camera are streamed from the camera.

Request URI once

For some cameras, activation times are longer than others. This means that when you activate the camera is G-View, it is possible that 2 to 5 seconds can pass before the camera displays the first images. This is due to the slow response times of the camera to the server. Using this option, activation times can be shortened.

Aspect Ratio to Use

Most cameras support a variety of different aspect ratios. For an aspect ratio that does not correspond with the aspect ratio of the sensor, either the upper or lower, or the left or right border will be cropped somewhat.

For instance, if the sensor has an aspect ratio of 16:10, but the user wishes to use a resolution of 640x480, which corresponds to an aspect ratio of 4:3, the image will be cropped somewhat on the right and left. This means that the entire camera scene is not used.

You can freely specify which aspect ratio to use: 4:3, 16:9 and 16:10 are the available aspect ratios.

If you select Camera Sensor Dependent, the aspect ratio of the sensor is read out. You can thus be sure to always see the maximum recorded scene in the viewer.

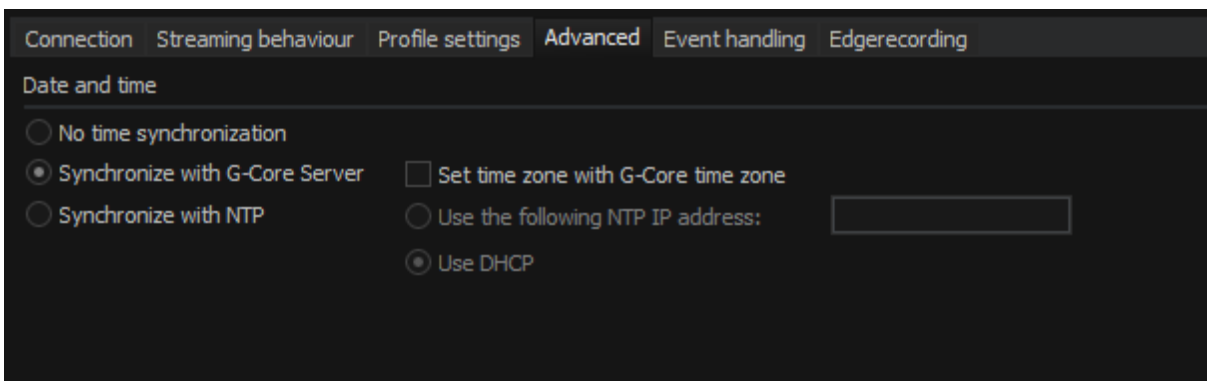
For G-Set Dependent the selection is taken from the settings of the corresponding quality profile. If you set a desired resolution of 1920x1080, then an attempt is always made to use a stream with an aspect ratio of 16:9.

The default setting is Use all types of aspect ratio. Here the closest matching resolution is sought for the resolution set in the quality profile. The advantage of this procedure is that you will at least have a similar resolution, even if it is cut off somewhat.

Check if audio at G.726 sounds bad!

The G.726 standard does not specify whether a byte is decoded from 0-8 or 8-0. This can result in jerky sound. If the sound of G.726 sounds jerky check this box.

Advanced



Date and time

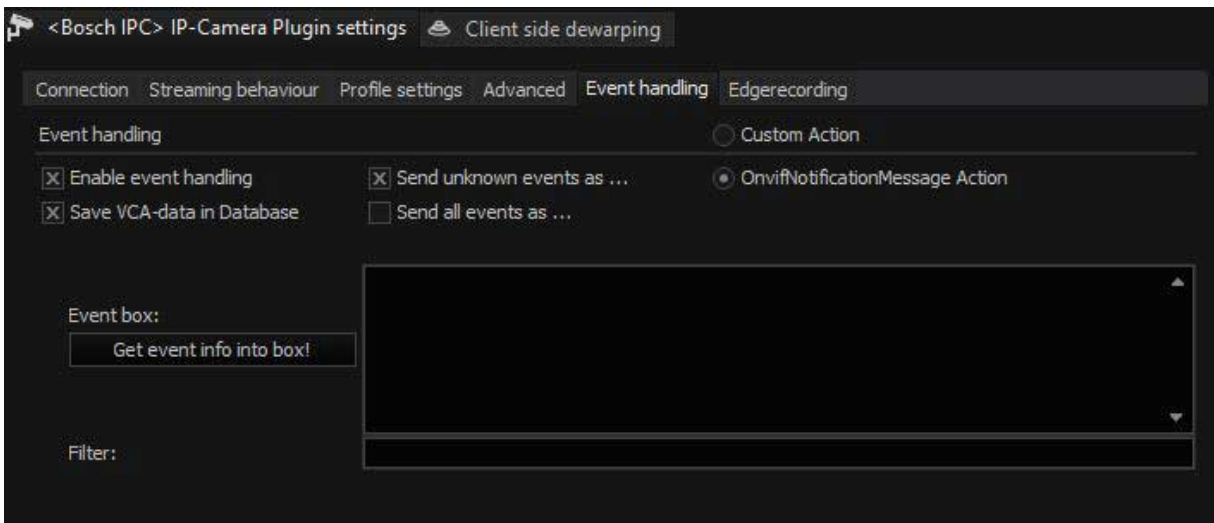
Here you select how the clock in the camera should be configured. In the default setting **Synchronize with G-Core server** the time in the camera is set to the time used by the PC (the PC on which G-Core server is running).

Time synchronization is done on base of UTC. UTC does not specify the time zone. If you select **Set time zone with G-Core time zone**, the camera will also be setup with the time zone from G-Core server.

Alternatively, the camera can also be provided with the time using NTP (**Synchronize with NTP**). Here you can designate a specific NTP server using an IP address or use DHCP. Or you can select not to have any time synchronization at all.

Event Handling

With ONVIF, Event handling refers to the option of receiving information from the camera.



When the motion detection or digital inputs of the camera will be used, **Enable event handling** must be activated.

Cameras then report various events as a string similar to this:
`tns1:VideoSource/tns1:MotionAlarm`

Known and compliant strings for motion detection and digital input contacts are then displayed in the G-Core server as a corresponding action ("Sensor Video Alarm" or "Digital Input").

Save VCA-data in database enables writing VCD data to the G-Core meta data table. This data can then be used to perform search operations using a search tool that must be installed separately.

The **Depth in days** value defines a lower bound for how many days the IVA data is stored at least.

Be aware that each camera can create large amounts of meta data, that can easily exceed the database sizes allowed by the SQL Server Express version. The requirements must be checked individually and an update to a MS Standard SQL Server license must be considered. The search tool is a project specific development, general availability and licensing of that tool will be announced when ready.

The function **Send all events as...** always sends custom actions. Strings identified as motion detection are sent as CustomAction and no longer as VideoSensorAlarm.

For debugging purposes, you can select **Send all events as ... CustomAction** to send understandable strings sent by the camera as CustomAction. If this option is selected, there will no longer be any action (Sensor Video Alarm or Digital Input).

IP-CAMERA PLUGINS

To get an overview of what kind of events a particular camera supports, click the **Get event info into box!** button. All events that the camera offers to send are displayed in the event field. For more information on what the event can be, contact the camera manufacturer. Here are some examples:

- `tns1:AudioAnalytics/Audio/DetectedSound`
- `tns1:Configuration/AudioEncoderConfiguration`
- `tns1:Configuration/VideoEncoderConfiguration`
- `tns1:Device/Trigger/DigitalInput`
- `tns1:Media/ConfigurationChanged`
- `tns1:Media/ProfileChanged`
- `tns1:RuleEngine/CellMotionDetector/Motion`
- `tns1:RuleEngine/FieldDetector/ObjectsInside`
- `tns1:RuleEngine/LineDetector/Crossed`
- `tns1:RuleEngine/TamperDetector/Tamper`
- `tns1:RuleEngine/VideoAnalytics/ObjectDetector/Face`
- `tns1:RuleEngine/VideoSource/FireAlarm`
- `tns1:RuleEngine/VideoSource/SceneTemperature`
- `tns1:VideoSource/MotionAlarm`

By default, G-Core listens to all events and receives information about them. Onvif suggests only requesting the necessary events to prevent camera and network overload. If you know which event you want to listen to, you can place the event from the event box in the filter box.

If only a specific event is required, simply copy an event from the event box to the filter box.

Example 1:

Example If `tns1:Device/Trigger/DigitalInput` is entered, only the digital input events are received by G-Core.

IP-CAMERA PLUGINS

Example 2:

Example If you want to receive two different events, you must place them one after the other, separated by a "|".

If you want to receive digital inputs and motion detection, the filter will look like this: `tns1:Device/Trigger/DigitalInput|tns1:VideoSource/MotionAlarm`.

Example 3:

Example If there are events with the same prefix, you can use a placeholder icon "//.". If you want to receive all `tns1:RuleEngine` events, enter this in the filter box: `tns1:RuleEngine//.`

Example 4:

Example Example 2 and 3 can be combined to receive all configuration and RuleEngine events.

`tns1:Configuration//.|tns1:RuleEngine//.`

Explanation of OnvifNotificationMessage Action

If you have not entered any filters, you can see a large number of actions in the PLC simulator.

01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "01.03.2018 13:43:19"; topic: "tns1:VideoSource/tnsaxis:LiveStreamAccessed"; source name: ""; source value: ""; data name: "accessed"; data value: "1"; key name: ""; key value: ""; property operation: "Initialized"; source string: ""; data string: "accessed,1"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:29"; topic: "tnsaxis:Storage/Recording"; source name: ""; source value: ""; data name: "recording"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: ""; data string: "recording,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:30"; topic: "tns1:Device/tnsaxis:HardwareFailure/StorageFailure"; source name: "disk_id"; source value: "SD_DISK"; data name: "disruption"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,SD_DISK"; data string: "disruption,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:30"; topic: "tnsaxis:Storage/Disruption"; source name: "disk_id"; source value: "SD_DISK"; data name: "disruption"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,SD_DISK"; data string: "disruption,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:26"; topic: "tns1:Device/tnsaxis:HardwareFailure/StorageFailure"; source name: "disk_id"; source value: "NetworkShare"; data name: "disruption"; data value: "1"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,NetworkShare"; data string: "disruption,1"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:26"; topic: "tnsaxis:Storage/Disruption"; source name: "disk_id"; source value: "NetworkShare"; data name: "disruption"; data value: "1"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,NetworkShare"; data string: "disruption,1"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:24"; topic: "tns1:Device/tnsaxis:Status/Temperature/Above"; source name: ""; source value: ""; data name: "sensor_level"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: ""; data string: "sensor_level,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";

Supported Actions

The following actions are supported:

- PTZ actions
- Camera Raw
- Bosch IVA Actions:
 - CrossingLine
 - FollowRoute
 - ObjectRemoved
 - IdleObject
 - EnterField
 - LeaveField

PTZ Actions

In addition to the corresponding actions for pan, tilt and zoom, ONVIF plugin also supports "Move to default position", "Move to preset position", "Save default position", "Save preset position", "Clear preset position", "Auto Focus On", "Auto Focus Off", "Focus far", "Focus near", "Focus stop", "WashOn" and "WashOff".

Camera Raw

Using the Camera Raw Output action, it is possible to send any command to the camera at any time.

Using Camera Raw, it is also possible to delete all the existing fixed positions in the camera at once.

To do so, a Camera Raw Action will be sent to the server with the following string: DeleteAllPresetPos .

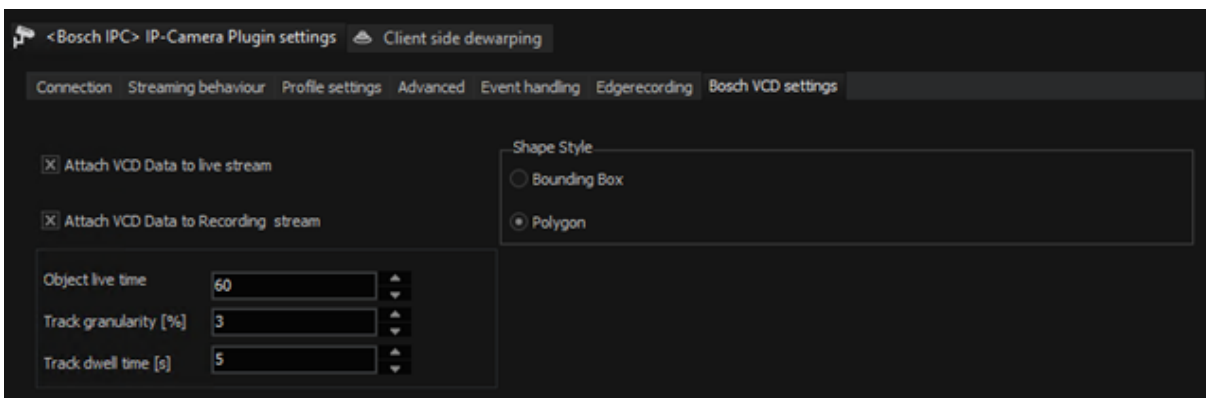
When creating your own media profiles using Create new profile under Profiles settings, the camera's performance can be negatively affected. To delete all self-generated profiles, send the string DeleteAllNotFixedMediaProfiles as Camera Raw Actions to the G-Core Server.

There are several fixed strings to control washer and wiper functions via ONVIF which can be send via CameraRawCommand ("WasherOn", "WasherOff", "WiperOn", "WiperOff", "WashingProcedureOn", "WasherProcedureOff").

Bosch VCD Settings

Bosch's Video Content Description (VCD) format is intended to be used for transmission and storage of the results of a Video Content Analysis (VCA) algorithm. VCD data is linked to the video and can be transmitted independently from encoded video streams.

G-Core is capable of attaching this meta data directly to compressed images from H264/H265 streams. This meta data can be processed on client side:



In case of Bosch plugin, G-Core is using that to mirror drawings, triggered by camera in-built VCA. Therefore, drawing actions are attached to the images in a defined protocol in JSON format.

Name	Description
Shape Style	There is the option to choose between to different shapes, which are used to mark moving objects in the stream. Unlike Polygon, Bounding boxes are fixed to four edges. Considering the amount of data to be sent and related performance, polygons are more intensive.
Object life time	It does not take a reasonable amount of time for the Bosch camera to delete an object internally and report this. This leads to objects being visible in the image for a long time, even though they are already inactive. Therefore, in the G-Set for the plugin, you can choose how long the object lifetime should be. Live time is set in seconds [s].
Track granularity [%]	The granularity in percentage [%] of the image width determines how far an object must have moved for another point to be added to the track.

Name	Description
Track dwell time [s]	The dwell time in seconds [s] determines how long a point is held in the track's list before it is deleted.

Tracking information is not provided as a complete data set, it is created directly in the plugin.

Presentation of Objects and Tracks

In Bosch plugin the meta data is received from the Bosch camera, translated into the protocol and attached to the images of the streams. The tracking information is created in the plugin for each object itself, since the Bosch camera does not provide the tracking information as a complete data set.

i In order to allow attachment of VCD data to both live and recording stream, dual stream has to be selected as Streaming behavior.

Camera and Video Control

An Action was defined to send commands via plugin to the Bosch VCD cameras.

Name: SetChannelParameter

Parameters:

- MediaChannel of Type TPLCMediaChannel
- Identifier of type String
- Key of type String
- Value of type String

The Bosch plugin listens to the Set Channel Parameter Action described above. For this the identifier the Bosch plugin must be entered as parameter.

Video Control Action

Key	Value	Description
SetVCAEnabled	"false"	"false" sends a command to Bosch camera and disables the VCA on it.
	"true"	"true" is currently not evaluated, because

Key	Value	Description
		the activation of the VCA is done by the following command.
SetVCAProfile	1...16	Sends a command to Bosch Camera and activates the VCA profile with the number (Value).
SetObjektLiveTime	1...	Overwrites the Object live time stored in the setup for this channel.
SetTrackDwellTime	0...	Overwrites the Track dwell time stored in the setup for this channel. The value 0 deactivates the track.

Available from G-Core version 6.x.

G-Cam/E2

This manual explains the functionality of the E2 IP camera plugin for G-Core. This plugin should be used, if using G-Cam/Exx-2xxx Cameras.

The following functions are available:

- H.264 and MJPEG support
- Support encryption of metadata and videopayload via HTTPS/SSL/TLS
- Audio support for G.711 at 8kHz and 16kHz
- Dual streaming
- Dynamic Stream Selection (DSS)
- Multicast
- Failover
- Support of digital inputs and outputs
- Support the camera-side ActivityDetection (AD)

Installation

The plugin consists of two files: **E2IPC.dll** and **E2IP.dlg.dll**.

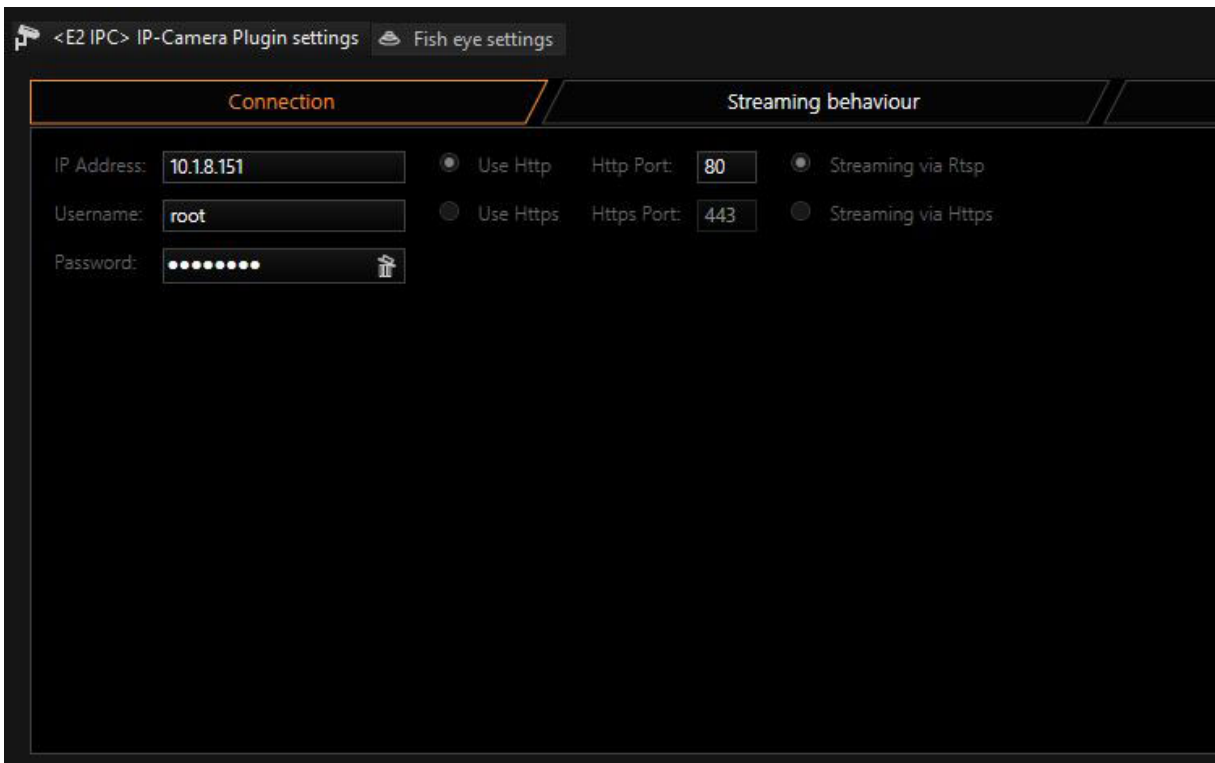
If the plugin is not included in the scope of installation with delivery, please run the installer again and select the E2 plugin within the installer.

The G-Core server service must then be restarted.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <G-Cam/E2 IPC>** by selecting it and clicking **Add**.
4. The E2 plugin is now entered in the hardware module list as a hardware resource.
5. Now select the plugin in the list and make the necessary changes to the settings.

Connection



The screenshot shows the configuration interface for the IP-Camera Plugin. The window title is "<E2 IPC> IP-Camera Plugin settings" and it includes a "Fish eye settings" button. The interface is divided into two tabs: "Connection" (active) and "Streaming behaviour".

Connection Tab:

- IP Address: 10.18.151
- Username: root
- Password: [masked]
- Use Http:
- Use Https:

Streaming behaviour Tab:

- Http Port: 80
- Https Port: 443
- Streaming via Rtsp:
- Streaming via Https:

IP-CAMERA PLUGINS

At **IP-Address**, enter the IP address of the camera.

The default Username/Password for E2 Cameras is **root/admin**.

Control commands for the camera are sent by default through port 80.

If you want a secure connection, over which the control commands are encrypted using HTTPS/SSL/TLS, you must select the option **Use HTTPS**. In this case, the control commands are sent by default on port 443.

With **Use HTTPS** enabled, video and audio data are always transferred using RTSP. When using HTTPS, you can decide whether the video and audio data continue to be transmitted unencrypted over RTSP or are transmitted over HTTPS using encryption. If you want a multicast connection, you must select RTSP. Multicast with HTTPS is not possible.

If you would like to use other ports as the default values for communication with the camera, you must first change the ports in the camera and then make the associated changes in the Connection dialog.

The settings for the ports of the camera can be found here:

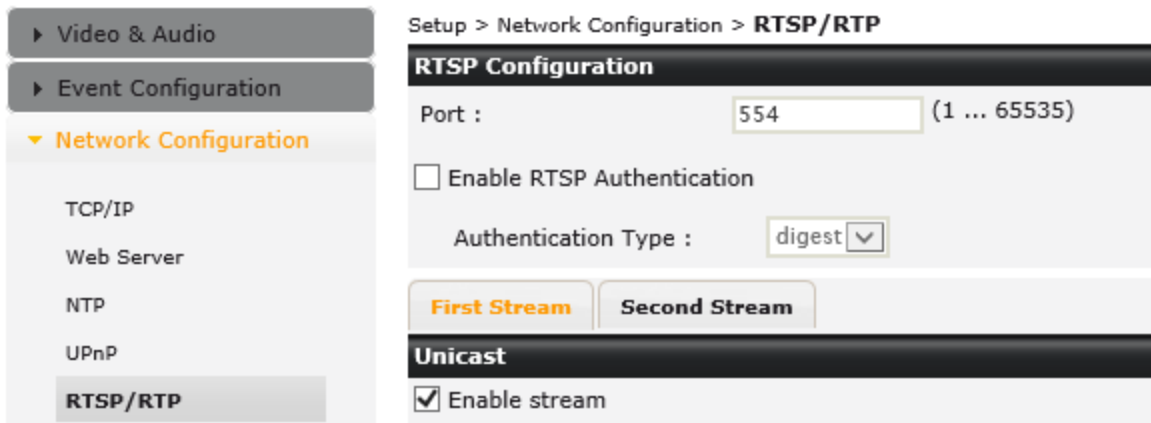
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G-Cam/EBC-2110

The screenshot shows the configuration interface for the Web Server. On the left is a navigation menu with the following items: Video & Audio, Event Configuration, Network Configuration (expanded), TCP/IP, Web Server (selected), NTP, UPnP, RTSP/RTP, and mDNS. The main content area is titled 'Setup > Network Configuration > Web Server' and contains a 'Configuration' section with the following options:

- HTTPS
- HTTP
- TCP/IP port number of HTTP : (1 ... 65535)
- TCP/IP port number of HTTPS : (1 ... 65535)
- Authentication Type : (dropdown arrow)

At the bottom right of the configuration area are two buttons: 'Apply' and 'Cancel'.

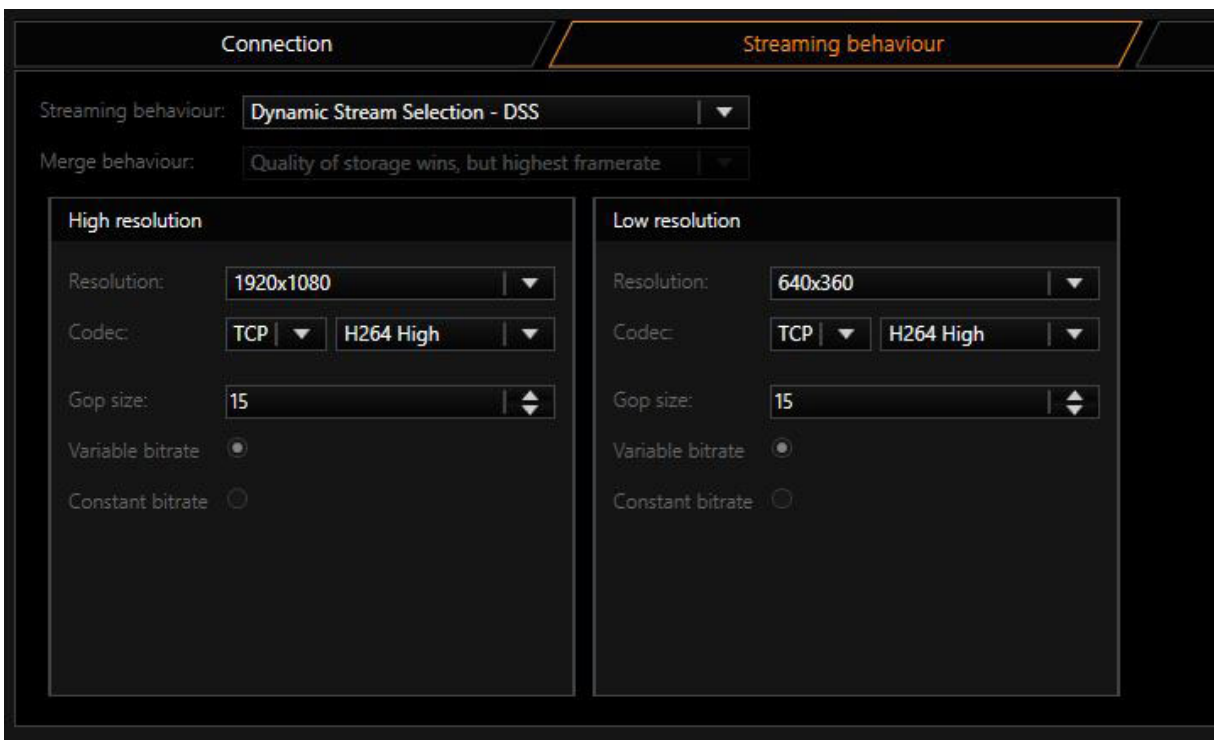


Streaming Behaviour

In Streaming Behavior you can select settings for the video stream.

Single Stream

By default, only one stream is queried by the camera. Therefore, you do not have the option of using different frame rates for the stored images and the live stream. If you select Single Stream the dialog is presented as follows:



IP-CAMERA PLUGINS

In Merge Behavior you can specify how the possibly different settings for Live and Storage under Media Channels are combined:

Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters, the highest value specified in the corresponding settings is used.
Worst settings wins	For all parameters, the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used.
Storage profile wins	The Storage settings are used.

As codec you can choose between H.264 (baseline, main and high) and MJPEG. For H.264 the following settings are available: Under GOP Size [Group of Picture] you can specify the ratio of IDR to P frames.

You choose between a Variable Bit Rate (VBR) or a Constant Bit Rate (CBR). With a Variable Bit Rate, the quality settings are used for the profile that is assigned to the media channel. VBR is generally recommended to ensure good image quality. However, if the stream should not exceed a certain bandwidth, you should use a Constant Bit Rate (CBR).

Transport protocol selection

For each stream, recording or live, it is possible to choose the transport protocol.

TCP

Streaming communication with the camera takes place on port 554 by default. The total communication (audio, video + control data) takes place only over this port.

TCP is the preferred and best selection among the transport protocols.

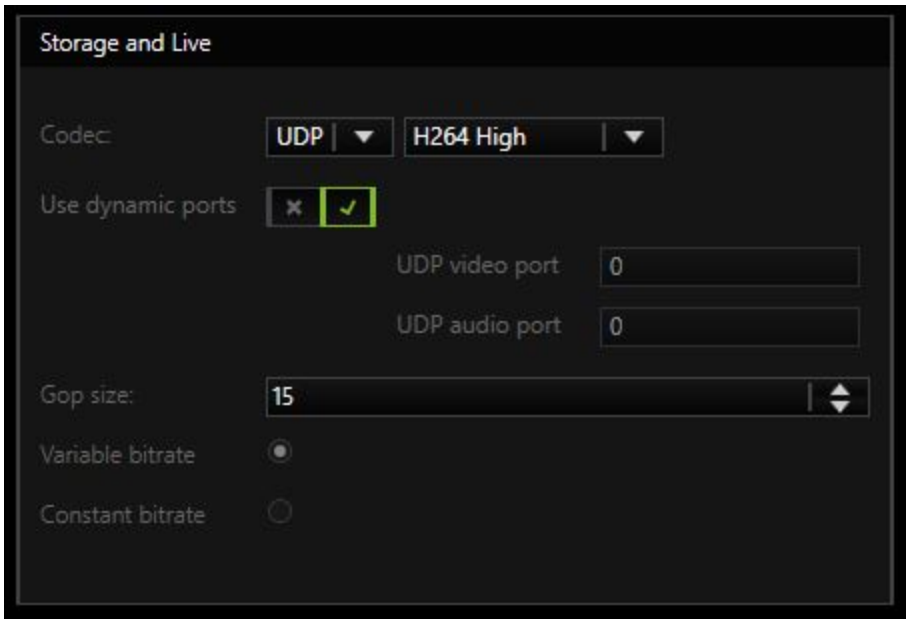
UDP

With UDP, streaming is also performed over port 554. However, video, audio and control information are transmitted over up to 4 additional ports.

IP-CAMERA PLUGINS

It is possible to specify to the camera the preferred ports for steaming of data. It is preferable, however, for the camera to choose these ports itself. If a manual assignment of ports is desired, they can be selected by disabling the "Use Dynamic Ports" option. 2 ports are needed each for video and audio. The specified port is opened and the port directly above the specified port. In our example, this would be the ports 60000 + 60001 for video and 60002 + 60003 for audio.

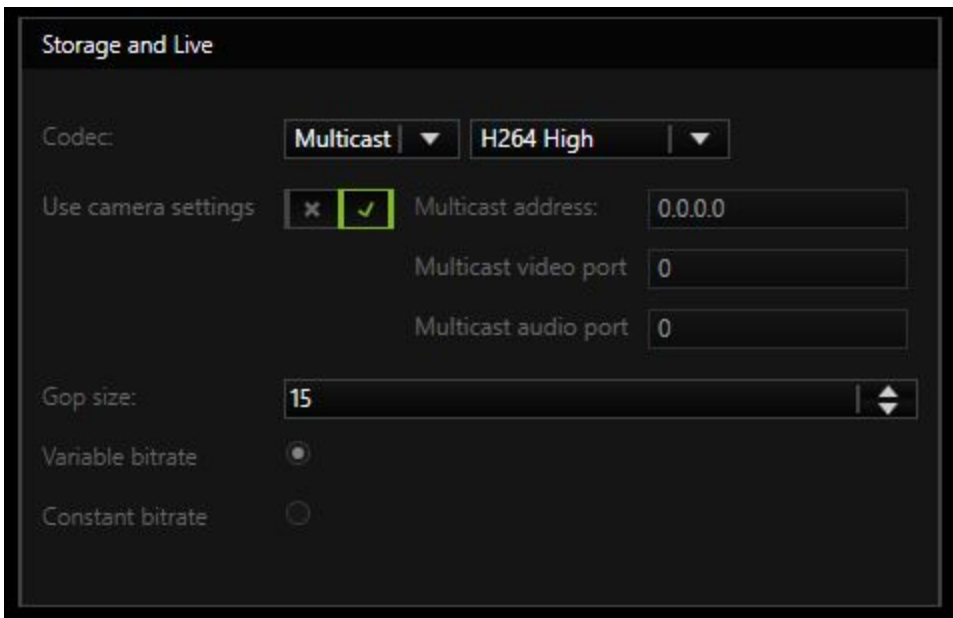
Due to the higher number of ports and the associated problem of firewall configuration, UDP is less suitable than TCP.



Multicast

With multicast, streaming is also performed over port 554. Audio, video and control data are streamed over an additional multicast address plus port.

The choice of the multicast address and port is specified in most cases by the camera and cannot be specified via the stream of the G-Core server. The selection **Use camera settings** is also the (initially) best choice.



The use of multicast, unfortunately, brings with it a number of possible errors. Therefore, it is important to note the following:

- Each camera in the network must be assigned a unique multicast address. No two cameras may have the same multicast address. It is possible for multiple cameras to use the same port, but they must not have the same multicast address, as the separation in switches is performed primarily using the multicast addresses. Using identical multicast addresses will lead to network and device overload and incorrect display of the images.
- IP addresses in the range 224.0.0.0 to 239.255.255.255 are multicast addresses. In a private network, it is best to select addresses between 239.0.0.0 and 239.255.255.255.
- It is imperative to use switches with multicast support. Simple switches, without multicast support, would generate broadcast streams from the multicast streams. With a large number of cameras, this would then mean that the entire network traffic of all cameras would arrive at each node in the network. This means that even a 1 GB network connection would quickly be overloaded.

- As a number of ports are opened for multicast, it is advisable to add all applications, such as G-View, G-Set and G-Core server to the firewall. The applications can thus open all ports and the ports do not need to be added manually.

Multicast Server Only

When starting a multicast stream, the stream is accepted from the G-Core server and also from the corresponding client. Each application thus receives the multicast stream directly from the camera via the switch.

If "Multicast Server Only" is selected, the G-Core server continues to receive the stream from the camera via multicast, however all clients receive their images as in TCP or UDP mode via the G-Core server, the G-Core internal communication.

This mode is designed for the case when the G-Core server receives the multicast data, but the clients are not multicast-enabled, or the data is not meant to be received by multicast.

MC Client Only

As already mentioned, when opening the stream, the stream is also received by G-Core server itself. As the G-Core server itself, however, does not need live images and cannot display them, these images only create additional network load to the G-Core server.

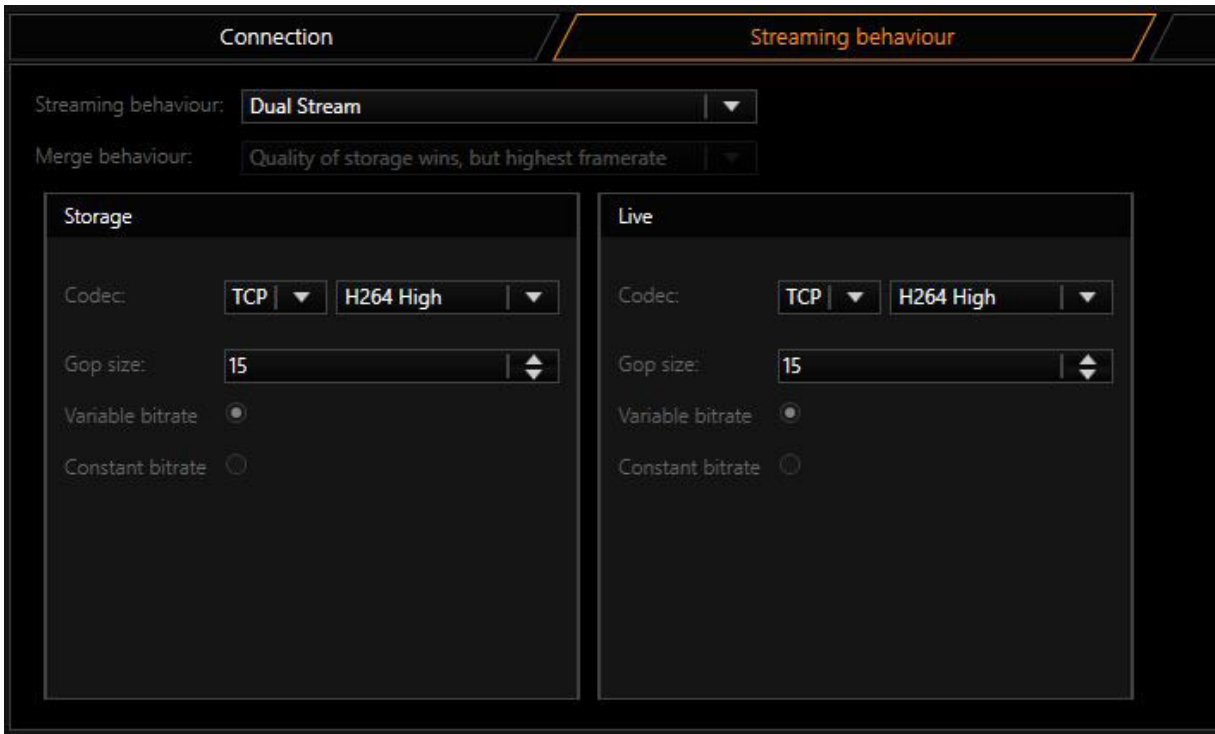
With this setting it is possible for the stream to be received only by the client and no images will go to the G-Core server .

This option, however, leads to problems when there are network clients that cannot handle multicast reception. These clients will then no longer receive images, because the G-Core server does not receive them. In such cases, this setting is not useful.

In addition, this setting is only available for live stream.

Dual Stream

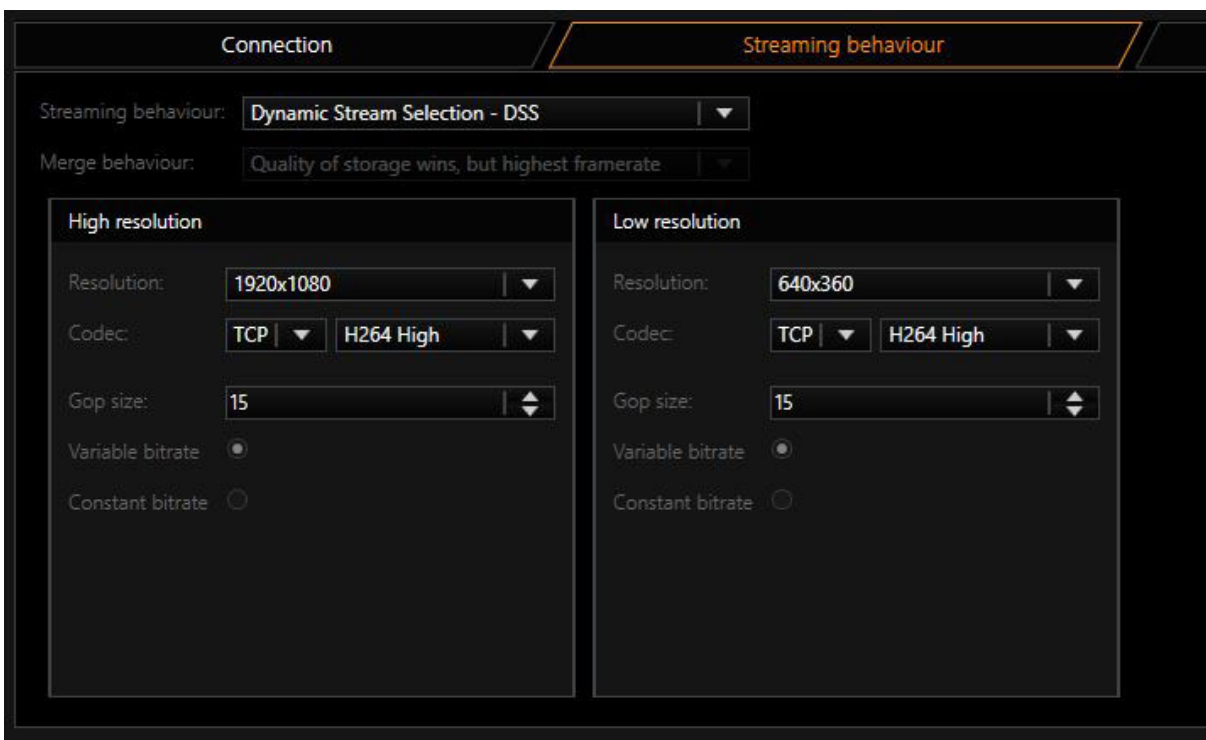
To circumvent the problem of having the same resolution for live playing and recording, you can attempt to query two streams from the camera. To do so, under **Streaming Behavior** choose the option **Dual Stream**.



For settings for Codec, Gop size and Constant bitrate, refer to the explanations under Single Stream above.

- i Use with VCA:**
If you use VCA with the E2, it is recommended to use 720p rather than 1080p due of possible streaming leaks. The 2nd stream must be configured as minimum as possible or turned off if it is not in use.

Dynamic Stream Selection - DSS



With the E2 camera series, Geutebrück has introduced a new kind of streaming. DSS (Dynamic Stream Selection) is characterized by rapid changes in the resolution.

In this situation, two cameras are configured in the camera, according to the user's needs. The user can select the desired resolutions in the Resolution box for the "High Resolution Steam" and for the "Low Resolution Stream".

Now, only streams with one of these two resolution sizes will be available for the server, but in exchange it will be possible to switch very quickly between these two streams.

An explicit specification is now no longer made for which stream is for the live view and which is for the recording. Instead, depending on the settings in the quality profiles, the server will select one of the streams. This particular type of switching behavior in the server guarantees that no image is lost. Thus, it is possible to change the resolution in recording or live stream within 33 ms.

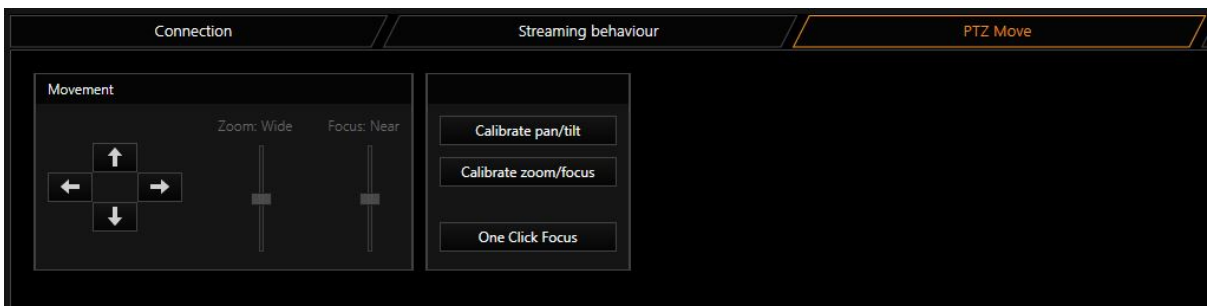
PTZ Move

On this tab, for some models, you can specify the setting for the viewing direction, zoom and focus.

IP-CAMERA PLUGINS

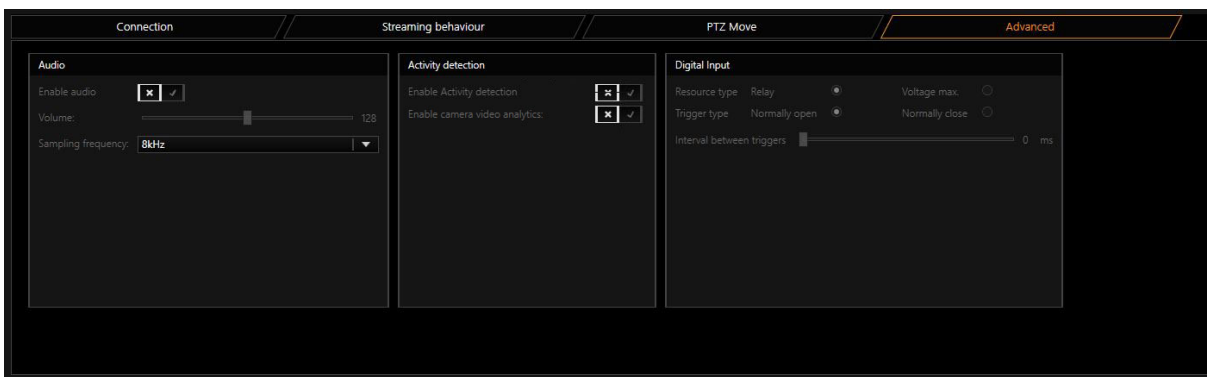
To position the EPTC-2260, use the up, down, left and right buttons. With this type of camera, you can also store positions in the camera. To do so, use the familiar functions in G-View or G-Set.

For all cameras with a motorized lens, you can use the zoom and focus buttons to set the camera according to your needs. To focus camera focuses, use **One Click Focus**.



Advanced

Use this tab to specify the settings for audio, ActivityDetection (AD) and digital input contact.



Audio

If you want to use audio, you must select **Enable Audio**.

With **Volume**, you can regulate the strength of the amplifier at the input of the camera.

The camera supports the audio format G.711 u-Law at 8 kHz and at 16 kHz. 8 kHz requires a bandwidth of 64 kbit/sec and 16 kHz requires a bandwidth of 128 kbit/sec. The 16 kHz signal is sampled at twice the frequency of the 8 kHz signal, thus making it clearer and easier to understand.

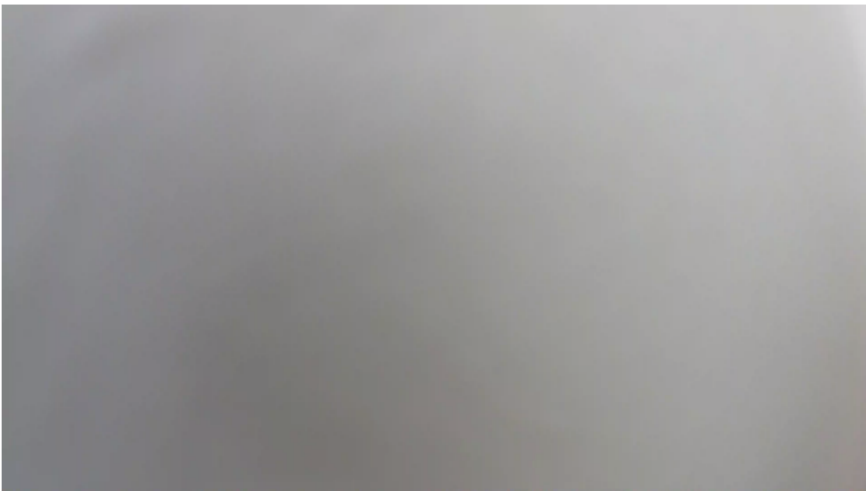
As well to activate audio playback, you must select a profile for audio in G-Set. Whether you select the profile **high**, **medium** or **low** is irrelevant, it is important, however, that none is not selected.

Activity Detection

To use the internal motion detection of the camera, you must activate the **Enable Activity Detection** option. However, the motion detection must still be configured using the web interface. Refer to the camera's manual for more information.

Setup > Event Configuration > **Activity Detection**

View



Motion Zones

Enable	Zone ID	Name	Description	Sensitivity	ObjectSize
<input type="checkbox"/>	01	zone		128	128
<input type="checkbox"/>	02	zone		128	128
<input type="checkbox"/>	03	zone		128	128
<input type="checkbox"/>	04	zone		128	128
<input type="checkbox"/>	05	zone		128	128
<input type="checkbox"/>	06	zone		128	128
<input type="checkbox"/>	07	zone		128	128
<input type="checkbox"/>	08	zone		128	128

Motion Blob

Show motion blob [Go to RTSP/RTP Configuration](#)

SAVE

i With an activated video analysis, dual streaming (DSS) is not possible. Simultaneously, the performance of the camera can be reduced by 50%. The use of video analysis with a resolution of 1080p and higher can lead to stream crashes.

Digital Input

Here you can specify the settings for the behavior of the digital input. For more information, please refer to the camera's manual.

i **If you only wish to use the digital output, you do not have to select the option Enable Digital Input. The output will work without this option.**

In G-Set you must now configure the corresponding inputs and outputs. After saving the settings, they should be able to respond to the corresponding action in G-Core server.

Supported Actions

The following actions are supported:

PTZ Actions

Name	Description
AutoFocusOn	“One Click Focus” will be performed
Move to preset position, Save default position and Clear present position	The corresponding action is performed. Only for EPTC-2260

Day-Night

Name	Description
Camera Day Night Mode	With this action, you can change the camera to the corresponding mode at any time. The available modes are Day , Night or Automatic, which means switching is performed automatically by the camera.

Camera Raw

Name	Description
Camera Raw Out-	Using the Camera Raw Output action, it is possible to send any command to the camera at any time. This also makes it possible to

IP-CAMERA PLUGINS

Name	Description
put	set values in the camera that were not previously set. For further information or if you require this feature, please contact customer service.

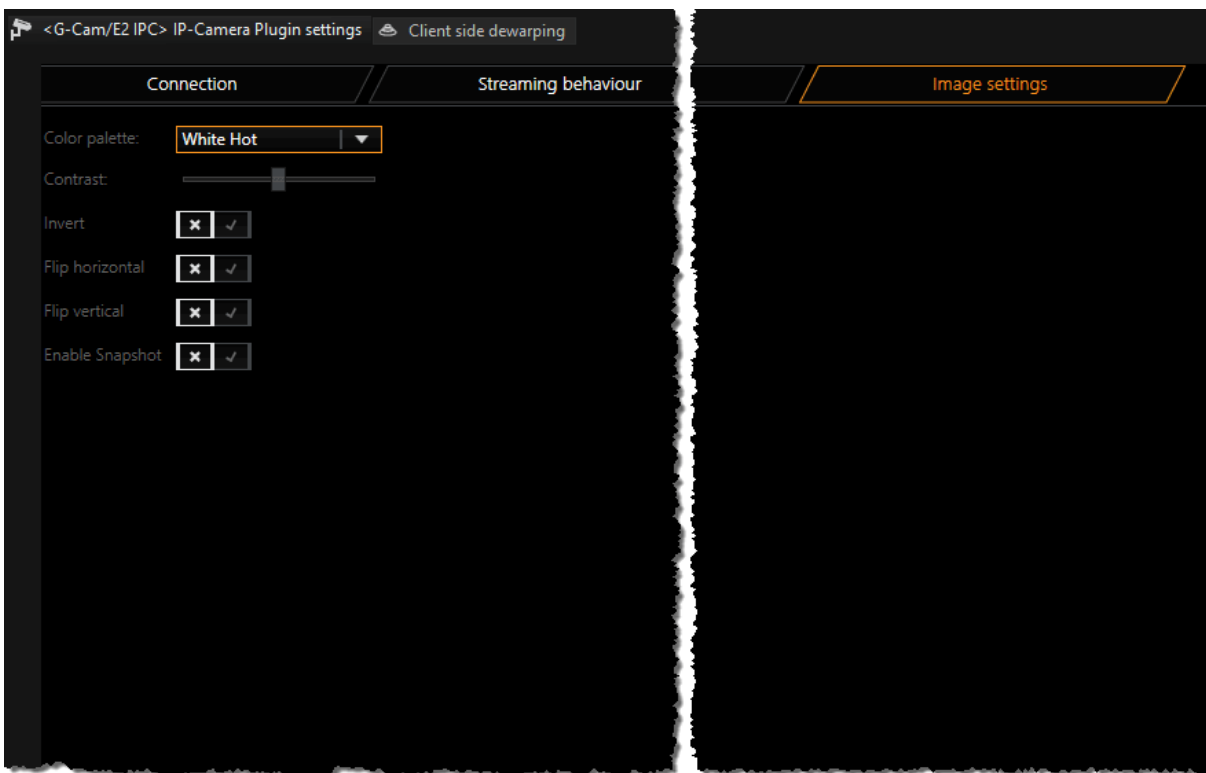
Digital Inputs and Outputs

Name	Description
Digital inputs and outputs	To control the digital output of the camera, use the action Set Digital Output with appropriate values. If the plugin has identified a status change for the digital input of the camera, the Digital Input action can be seen in the GSCServer.

Camera Text On/Off

Name	Description
Camera Text On/Off	To enable Burnt-in Text inside the picture. Setup text at "Video & Audio->Burnt-in Text" inside camera.

Image Settings



These settings are self-explanatory. But a little advice for **Enable Snapshot**: If these switch is ON the camera does permanently generate a .JPG snapshot. If the camera use VCA, it is recommended to turn this switch to OFF!

G-Cam/E3

With the E3 plugin, you can use all IP cameras from G-Cam/E3 with the described functionality with the G-Core software.

The following functions are available:

- H.264, MJPEG, H.264ShortGop support
- Support of digital inputs and outputs
- Support of audio inputs Line-In and Microphon
- Support the camera-side motion detection
- Support the camera-side tampering detection

IP-CAMERA PLUGINS

- Single/Dual Streaming
- Dynamic Stream Selection (DSS)
- PTZ functions of speed dome cameras
- Support of encrypted communication via HTTPS for controlling functions such as PTZ and quality control for the complete E3 lineup.
- Support of encrypted communication of Video and Audio-Stream via HTTPS for all E3-Cameras using Firmware with ending **NSZ** (included since Firmware **gb20160530NSZ**). These are 4K-Cameras, Hemispheric-Camera and coming soon types of Speed-Domes.
- Support of GCore-Feature “Secondary channel”
- Support of AAC

Installation

The plugin consists of two files: E3IPC.dll and E3IPC.dlg.dll.

If the plugin is not included in the scope of installation with delivery, please copy both files (E3IPC.dll and E3IPC.dlg.dll) to the plugin directory of GScope (C:\Program Files\Geutebrueck\GCore\MediaPlugins).

The G-Core server service must then be restarted.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <G-Cam/E3 IPC>** by selecting it and clicking **Add**.
4. The G-Cam/E3 IP plugin is now entered in the hardware module list as a hardware resource.
5. Now select the plugin in the list and make the necessary changes to the settings.

PTZ Functionality

To control speed dome cameras you must enable Telecontrol Camera in G-Set.

It is then possible to control the camera using the virtual joystick in G-View or the MBeg operating device.

Also refer to the section **Supported Actions**.

Connection

<G-Cam/E3 IPC> IP-Camera Plugin settings Client side dewarping

Connection Streaming Advanced

Hostname: 10.15.102 Use Http Http Port: 80

Username: root Use Https Https Port: 443

Password: Use basic access authentication at communication start

Telecontrol camera

Use system audio (global setting)

Under **IP-Address**, enter the IP address of the camera.

Control commands for the camera and the querying of the motion detection and digital inputs are performed by default over port 80. Streaming of the video image is processed via RTSP and thus port 554.

It is important that the correct password is entered. Default at G-Cam/E3 is user-name=root and password=admin.

If you use a speed dome camera please also enable **Telecontrol** Camera. After the setup has been transferred to G-Core server and a media channel has been added, you should be able to see images in the setup. If not, check the IP address, and in particular the user name and password.

Use basic access authentication at communication startup: This option can be activated to achieve a faster connection setup. A disadvantage of this option is that the password and user name are transmitted unencrypted!

If you like to use HTTPS communication, you have to setup the camera to use HTTPS. For this you have to install or create a certificate on the camera.

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Home
System
Streaming
Camera
Logout

System

Security ▲

User

HTTPS

IP filter

IEEE 802.1X

Network ▼

DDNS

Mail

FTP

HTTP

Events ▼

Storage management ▼

Recording

HTTPS

Create self-signed certificate

Install signed certificate

Upload signed certificate

Keine ausgewählt

Created Request

Subject

No certificate request created.

Installed Certificate

Subject

No certificate installed.

Streaming

The screenshot shows the 'Streaming' configuration panel. It includes the following settings:

- Fisheye mode:** Client Fisheye / Overview
- Streaming behaviour:** Single RTP/RTSP Stream
- Merge behaviour:** Quality of storage wins, but highest framerate
- TV System:** default
- Disable resolution:** [x] [✓]
- Disable quality:** [x] [✓]
- Disable FPS:** [x] [✓]
- Refresh information** button

The **Storage and Live** dialog box contains:

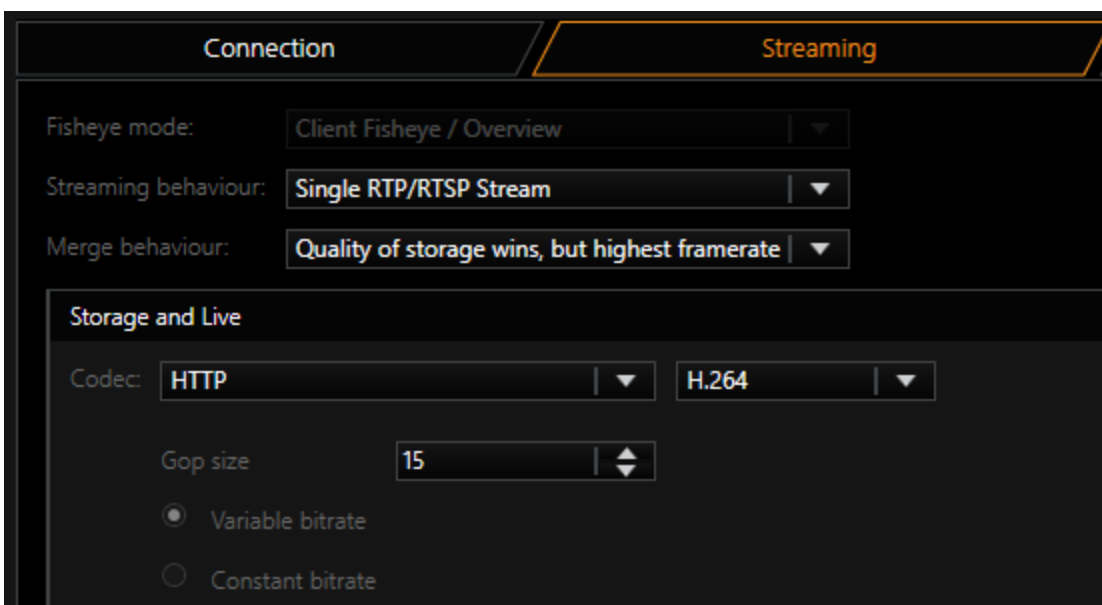
- Codec:** H.264 (dropdown), TCP (dropdown)
- Gop size:** 15 (spinner)
- Variable bitrate:**
- Constant bitrate:**

Streaming behavior

In **Streaming Behavior** you can select settings for the video stream.

Single Stream

Only one stream is queried by the camera. Therefore, you do not have the option of using different frame rates for the stored images and the live stream. If you select Single Stream the dialog is presented as follows:



In Merge Behavior you can specify how the possibly different settings for Live and Storage under Media Channels are combined:

Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters, the highest value specified in the corresponding settings is used.
Worst settings wins	For all parameters, the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used.
Storage profile wins	The Storage settings are used.

As codec you can choose between H.264 and MJPEG. For H.264 the following settings are available: Under GOP Size (Group of Picture) you can specify the ratio of IDR to P frames. Choose a value of 2, for H264ShortGop.

You choose between a Variable Bit Rate (VBR) or a Constant Bit Rate (CBR). With a Variable Bit Rate, the quality settings are used for the profile that is assigned to

the media channel. VBR is generally recommended to ensure good image quality. However, if the stream should not exceed a certain bandwidth, you should use a Constant Bit Rate (CBR).

Transport Protocol Selection

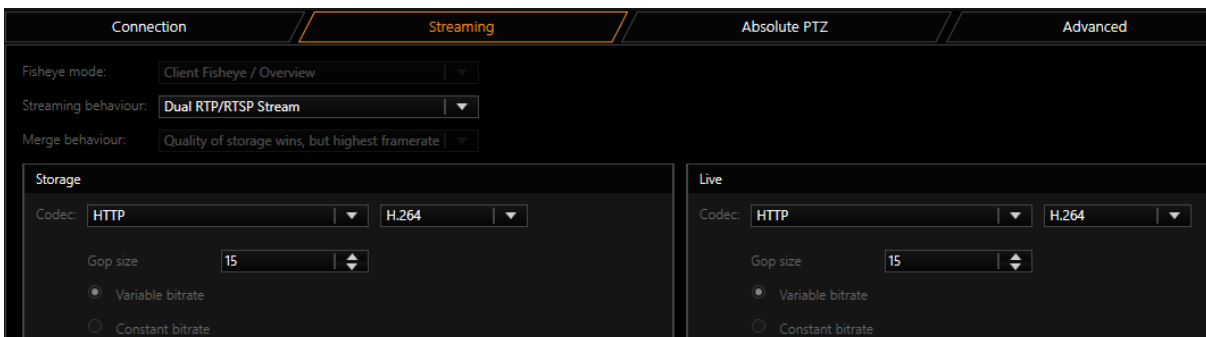
For each stream, it is possible to choose the transport protocol.

Name	Description
TCP	<p>Streaming communication with the camera takes place on port 554 by default. The total communication (audio, video + control data) takes place only over this port.</p> <p>TCP is the preferred and best selection among the transport protocols.</p>
UDP	<p>With UDP, streaming is also performed over port 554. However, video, audio and control information are transmitted over up to 4 additional ports. These ports are selected by the camera.</p> <p>Due to the higher number of ports and the associated problem of firewall configuration, UDP is less suitable than TCP.</p>
Multicast	<p>With multicast, streaming is also performed over port 554. Audio, video and control data are streamed over an additional multicast address plus port.</p> <p>The use of multicast, unfortunately, brings with it a number of possible errors. Therefore, it is important to note the following:</p> <p>Each camera in the network must be assigned a unique multicast address. No two cameras may have the same multicast address.</p> <p>It is possible for multiple cameras to use the same port, but they must not have the same multicast address, as the separation in switches is performed primarily using the multicast addresses. Using identical multicast addresses will lead to network and device overload and incorrect display of the images.</p> <p>IP addresses in the range 224.0.0.0 to 239.255.255.255 are multicast addresses. In a private network, it is best to select addresses between 239.0.0.0 and 239.255.255.255. When you select multicast, a proposal for a multicast address will be auto-generated from the IP-address entered in the connection-tab.</p> <p>It is imperative to use switches with multicast support. Simple switches, without multicast support, would generate broadcast streams from the multicast streams. With a large number of cam-</p>

Name	Description
	<p>eras, this would then mean that the entire network traffic of all cameras would arrive at each node in the network. This means that even a 1 GB network connection would quickly be overloaded. As a number of ports are opened for multicast, it is advisable to add all applications, such as GSCView, GSCSetup and GSCServer to the firewall. The applications can thus open all ports and the ports do not need to be added manually.</p>
HTTP	<p>With HTTP an RTSP stream is established over HTTP port 80. (RTSP and RTP over HTTP).The streaming protocol is established in this case as it is for TCP, except that port 80, which is not blocked by must firewalls, is used instead of port 554.</p>
HTTPS	<p>With HTTPS an encrypted RTSP stream is established over HTTPS port 443. (RTSP and RTP over HTTP).</p> <p>Some cameras will not be able to support encrypted streaming. In this case you need to select another transport protocol.</p>

Dual Stream

To circumvent the problem of having the same resolution for live playing and recording, you can attempt to query two streams from the camera. To do so, under Streaming Behavior choose the option Dual Stream.



For settings for **Codec**, **Gop size** and **Constant bitrate**, refer to the explanations under Single Stream above.

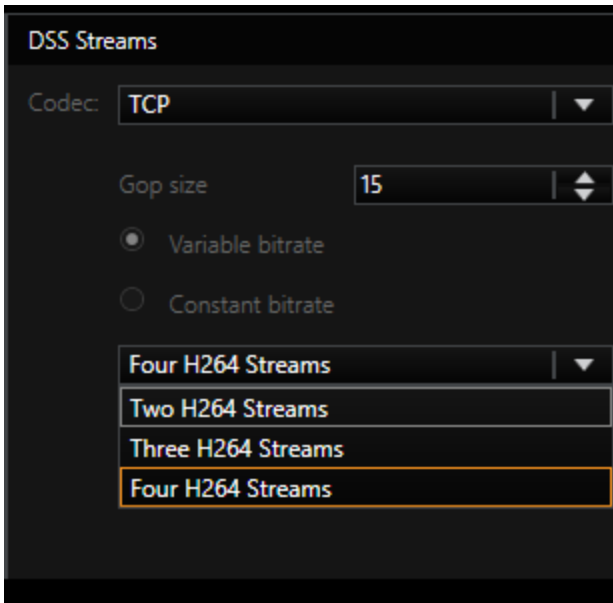
Dynamic Stream Selection - DSS

The screenshot shows a configuration window for an IP camera. At the top, there are two tabs: 'Connection' and 'Streaming'. The 'Streaming' tab is active. Below the tabs, there are two dropdown menus: 'Streaming behaviour' set to 'Dynamic Stream Selection - DSS' and 'Merge behaviour' set to 'Quality of storage wins, but highest framerate'. Below these is a section titled 'DSS Streams'. Inside this section, there are two dropdown menus for 'Codec' set to 'TCP' and 'H.264'. Below that is a 'Gop size' field set to '15' with a vertical slider. There are two radio buttons: 'Variable bitrate' (selected) and 'Constant bitrate'. Below the radio buttons is a dropdown menu for the number of streams, currently set to 'Four H264 Streams'. To the right of this dropdown are four 'Resolution' dropdown menus, each showing a resolution and frame rate: '1920x1080 (25/30 fps)', '1280x1024 (25/30 fps)', '800x600 (25/30 fps)', and '352x288 (25/30 fps)'. The first resolution dropdown is currently selected.

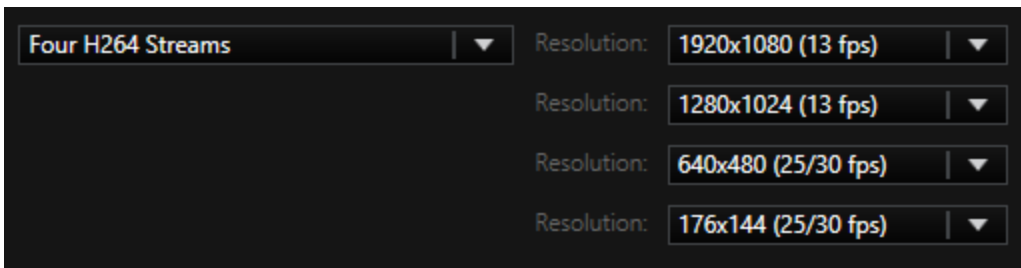
With DSS (Dynamic Stream Selection) the storage and live stream from G-Core is no longer permanently tied to streams of the camera. Instead, between 2 to 4 streams are configured in the camera with different resolutions. Depending on the requirements for the live and recording stream in G-Core, one of these is selected. This makes it possible to switch between resolutions based on events without creating a gap in the stream.

The user should first decide how many streams should be set up in the camera. It is possible to choose between two, three or four streams.

IP-CAMERA PLUGINS



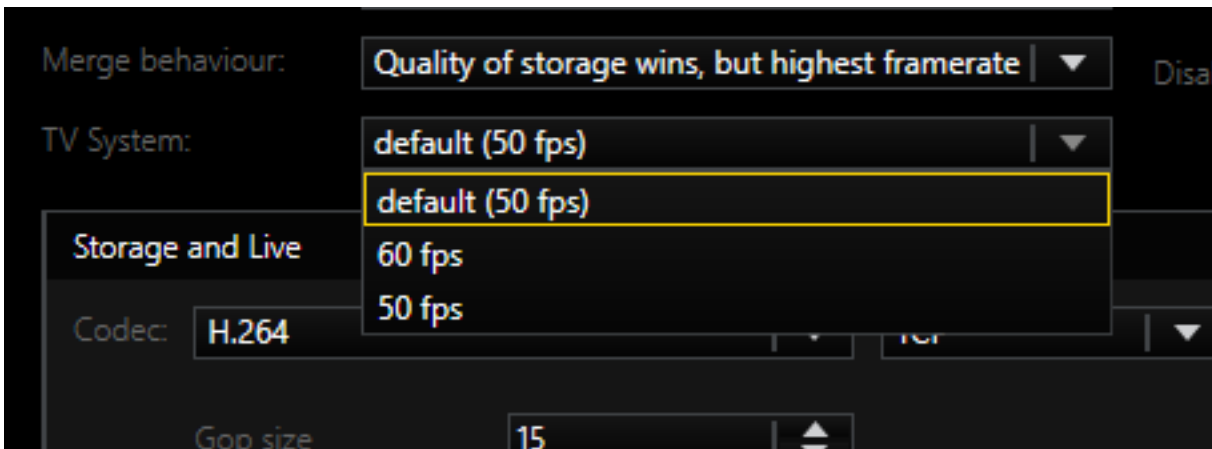
Increasing the number of streams decreases the options available for each individual stream. The resolutions and maximum frame rates that a stream can deliver is found in the following boxes:



Here you can also select the resolutions that will be used. The available choices also depend on the **TV System** setting.

TV System

This setting makes it possible to operate the camera in different modes. Depending on the type of camera, the maximum frame rate can be modified.



i Note that changing this setting makes it necessary to reboot the camera, making the image unavailable for up to 5 minutes.

Streaming Control

Here, the control of the camera by the G-Core server can be restricted:

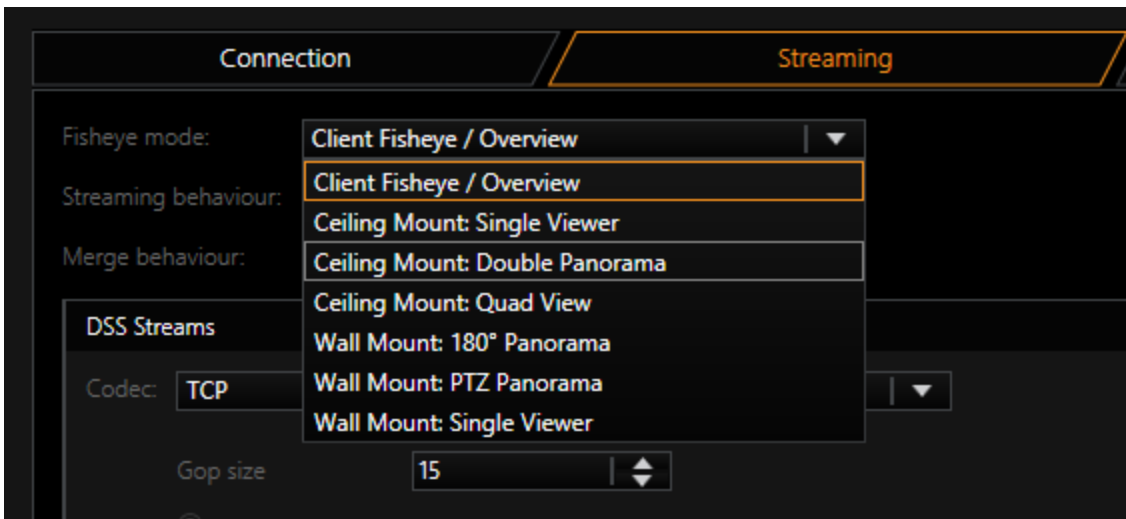
Disable Resolution: Resolution settings in the camera will no longer be specified by the G-Core server.

Disable Quality: Quality settings in the camera are no longer specified by the G-Core server.

Disable FPS: Frame rate settings in the camera are no longer specified by the G-Core server.

Fisheye Mode

The settings under **Fisheye Mode** only take effect when the connected camera is a fisheye camera and the client-side fisheye correction is not activated. How the fisheye correction is performed (dewarping) can be selected in the selection box.

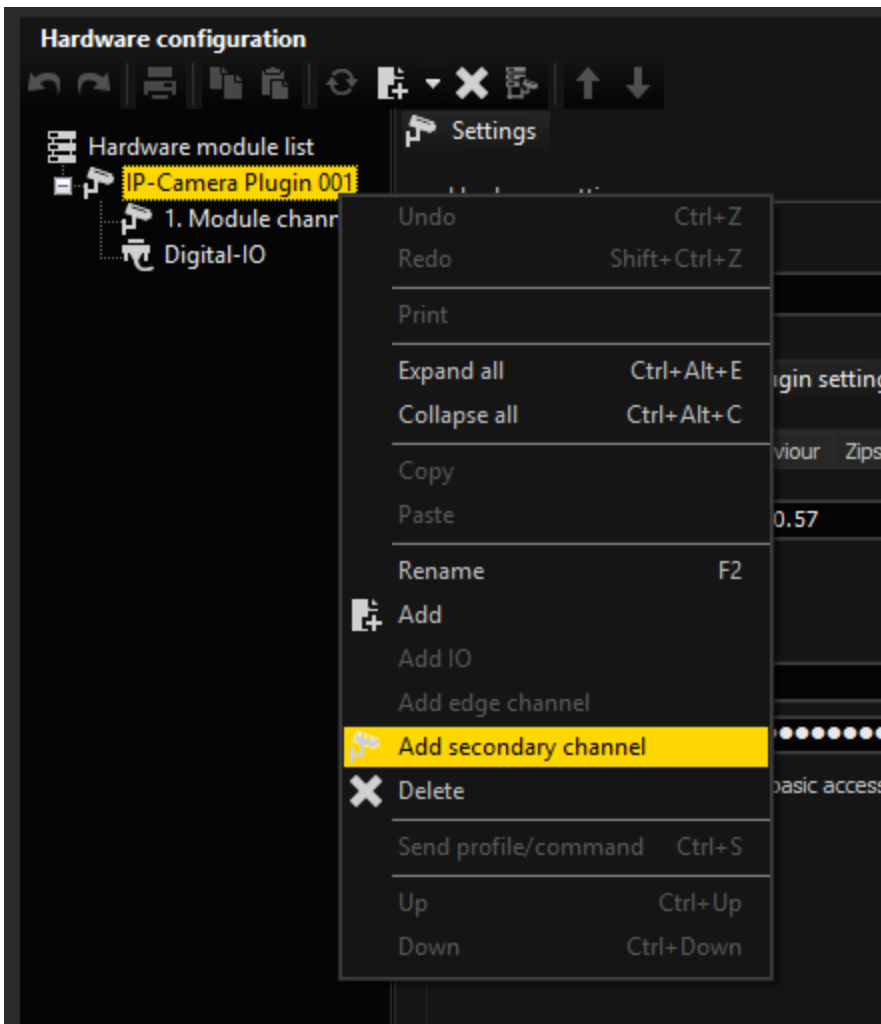


Secondary Channel Function

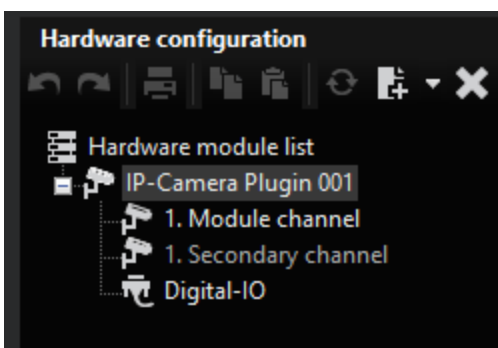
The "Secondary channel" function makes it possible to create a second media channel for a camera that provides the same source in a second resolution/quality. Thus it is possible to obtain recording and live stream of a camera in two different resolutions. Applications are e.g. a low bandwidth stream for a WAN connection or an extra stream for VCA processing.

To activate the secondary channel, right-click on the root node of the corresponding hardware and select **Add secondary channel**.

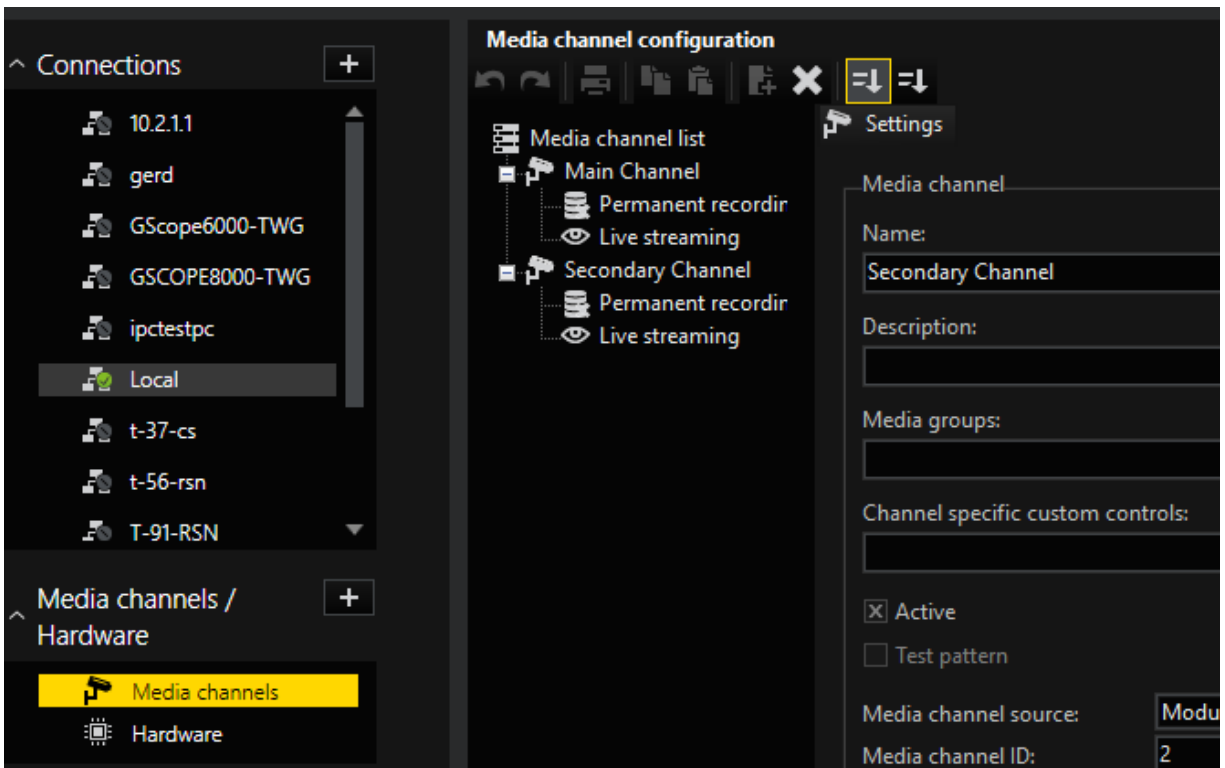
IP-CAMERA PLUGINS



The module channel 1. **Secondary channel** then appears.



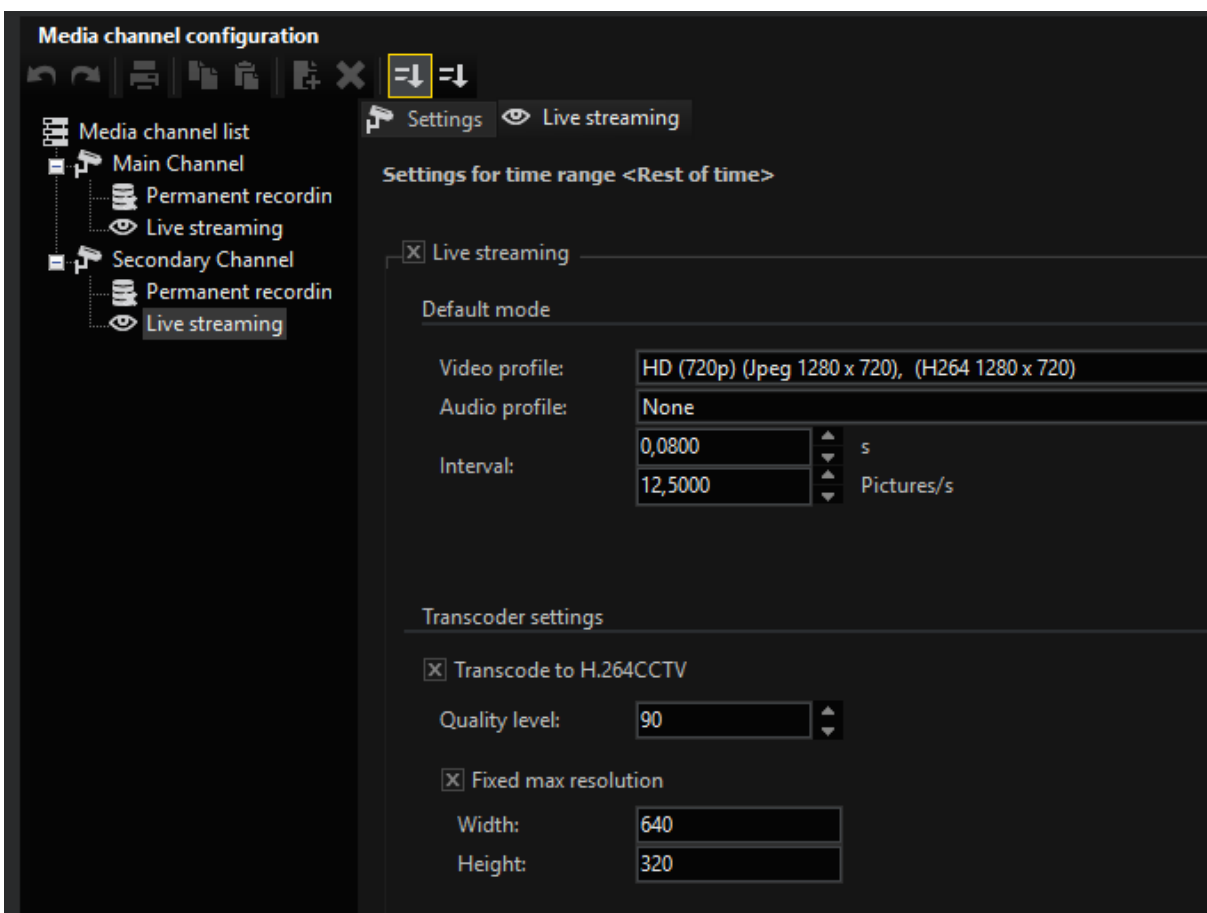
Then add the now accessible media channel via **Media channels**.



Duplicate Mode

In standard operation, the Secondary Channel will always receive a copy of the images that are intended for the main channel. In this mode, called "Duplicate Mode", the existing stream of the camera is used and made available to the second media channel again.

This mode is useful if the camera is not capable of delivering multiple streams simultaneously. The second media channel must then be transcoded to a lower resolution in order to achieve the desired goal of a different quality/resolution.



Individual Mode

The second mode is called "Individual Stream" and asks the camera for another own stream (or in the case of dualstream two additional streams) for the secondary channel. This doubles the number of streams picked up by the camera as opposed to "Duplicate Mode".

If the main channel is set to "single stream", the secondary channel also receives only one stream, so the camera requests a total of two streams.

If the main channel is set to "Dualstream", the secondary channel also receives two streams, and thus a total of up to four streams are requested from the camera.

Overview of the advantages and disadvantages of both modes:

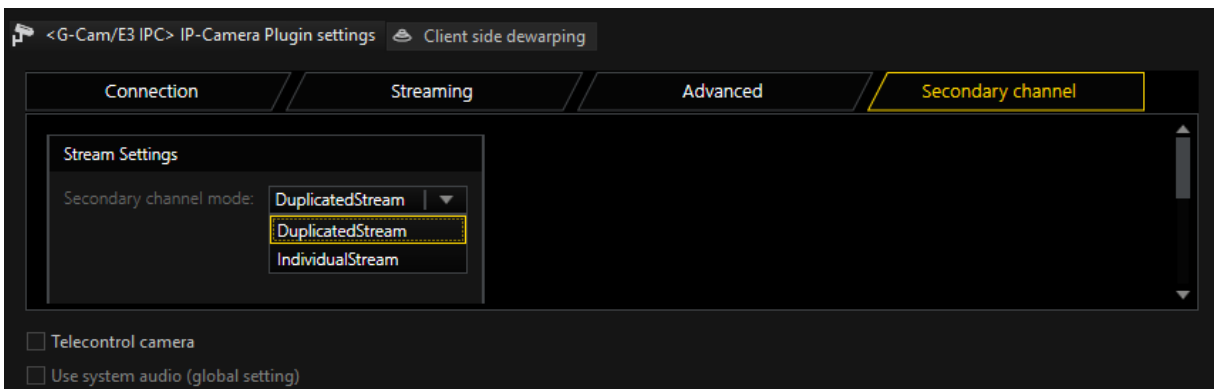
	Duplicate Mode	Individual Mode
Advantages	The stream from the camera can be received with	The resolution/framerate can be freely selected.

	Duplicate Mode	Individual Mode
	<p>maximum resolution and frame rate.</p> <p>It can then be transcoded to any lower resolution/frame rate.</p> <p>4K cameras can often only deliver one stream at 25FPS and are often not DualStream capable in this mode.</p>	<p>No transcoding is required and the resolution can be higher than that of the main channel depending on the camera.</p>
Disadvantages	<p>You have to use transcoding to get a lower resolution/quality. This requires additional CPU power on the G-Core.</p> <p>Furthermore, only smaller resolutions are available for the secondary channel, not larger ones.</p>	<p>Since up to four streams are requested from the camera in dual stream mode, it will rarely be possible to achieve the highest frame rate.</p>

Special features in Duplicate mode: If the main channel is not streaming live or in memory, the secondary stream can select the resolution and quality itself. As soon as the main channel needs images, however, the resolution/quality of the main channel is used again and these are also duplicated into the secondary channel.

Secondary Channel with E3

In the E3 plugin, the secondary mode becomes visible in the hardware by selecting "Secondary channel". There you can decide between "Duplicate stream" and "Individual stream".



IP-CAMERA PLUGINS

In the individual mode of the E3 camera, the following notes must be observed for the number of streams:

- If DSS is used, the number of streams in the camera is parameterized as set under "Streaming". For example, if three streams are selected there, the secondary channel will choose and use the one that fits best.
- With Singlestream the plugin will parameterize two streams in the camera. One for the main channel and one for the secondary channel.

Please note that a 4K camera in this mode will no longer be able to deliver 25FPS. If this is desired, you must select the Duplicate mode.

- i** **With Dual stream the plugin will not parameterize the streams in the camera when using Individual stream. You must select and parameterize the resolutions in the camera yourself. To do this, select the quadruple streaming functionality as shown in the following picture. Then select the desired resolutions as follows.**

H-264-1 is the resolution for the memory stream from the main channel

H-264-2 is the resolution for the livestream from the mainchannel

H-264-3 is the resolution for the memory stream from the secondary channel

H-264-4 is the resolution for the livestreams from the Secondarychannel

The screenshot shows the GEUTEBRÜCK web interface with the 'Streaming' tab selected. On the left is a navigation menu with options: Video Format, Video Compression, Video Text Overlay, Video ROI, Video ROI Encoding, Video OCX Protocol, Video Frame Rate, Video Mask, and Audio. The main content area is titled 'Video Format' and includes a 'Video Resolution' section with a dropdown menu set to 'H.264 + H.264 + H.264 + H.264'. Below this are four format options, each with resolution and FPS details and a codec dropdown:

- Format 1: 1920 x 1080 (25 fps) H-264-1
- Format 2: 1280 x 1024 (25 fps) H-264-2
- Format 3: 1024 x 768 (25 fps) H-264-3
- Format 4: 720 x 576 (25 fps) H-264-4

 A 'Save' button is located below the format options. A 'Note:' section is present at the bottom of the configuration area.

Audio Support

If the camera supports an audio input, it is possible to have it recorded and played with the G-Core server. The audio input can be a line-in or microphone.

To stream audio, “Bit Rate” can be set to uLaw/ALaw (64Kbps), 40Kbps, 32Kbps, 24Kbps or 16Kbps.

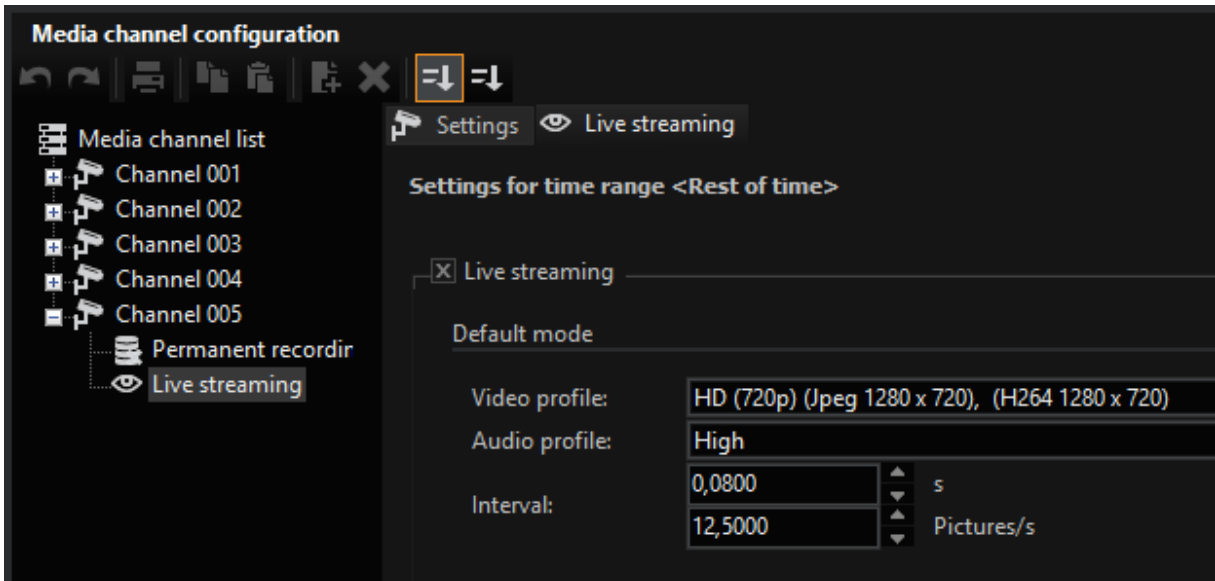
The screenshot shows the GEUTEBRÜCK web interface with the 'Audio' configuration page selected. The navigation menu includes: Home, System, Streaming, Camera, and Logout. The left sidebar menu has options: Video Format, Video Compression, Video ROI, Video OCX Protocol, Video Frame Rate, Video Mask, and Audio. The main content area is titled 'Audio' and includes:

- Transmission Mode:** A list of radio buttons for Full-duplex (Talk and listen simultaneously), Half-duplex (Talk or listen, not at the same time), Simplex (Talk only), Simplex (Listen only) (which is selected), and Disable.
- Server Gain Setting:** Two dropdown menus for 'Input gain' (set to 10) and 'Output gain' (set to 3).
- Bit Rate:** A dropdown menu set to 'ALAW'.
- A 'Save' button at the bottom.

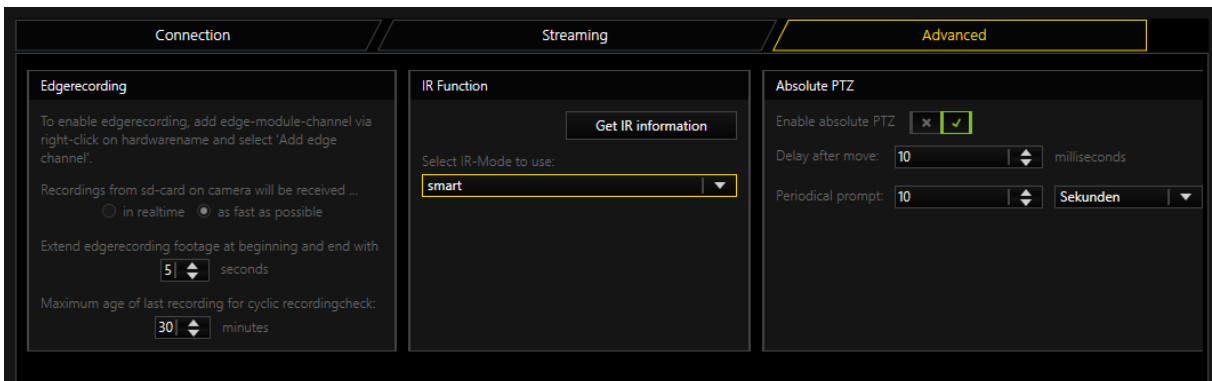
IP-CAMERA PLUGINS

As a last step, you have to choose whether to store audio should be used for recording and/or live streaming.

In G-Set select an audio profile for the corresponding channel. It does not matter which profile you choose (high, medium, low), it is only important that you select a profile.



Advanced



Edgerecording

There are 2 modes how EDGE video footage is grabbed from the camera.

- **In realtime:** Which means that its streamed in normal speed to the DVR. This has the advantage that it doesn't add much load to the network, but has the

IP-CAMERA PLUGINS

disadvantage that its “slow”

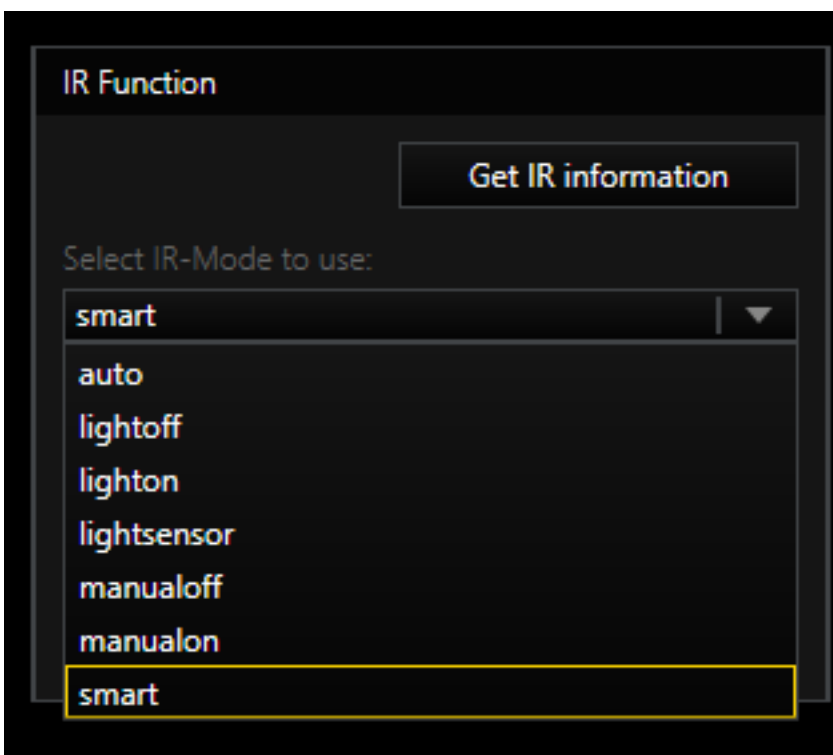
- **As fast as possible:** Which means that video is downloaded with maximum network bandwidth available, This has the advantage that the edge video footage is grabbed in a short time, but could lead to network issues if you have a heavy loaded network

Also you can specify for how much time the edge video is overlapping with your normal video. So if your gap in the stream is for example 60 seconds long and you specify 5 seconds overlapping, the edge part downloads 70 seconds in total. 60 seconds for the gap, and 5 seconds before and after the gap

Edge recording in the E3 Plugin uses the ONVIF Protocol. For more information about ONVIF Edge recording see **Edge Recording**.

IR Function

To find out what IR capabilities the camera has, press **Get IR information**.



The selection of an entry has two effects:

1. When you select a setting, it is immediately sent to the camera and activated in the camera.

- By selecting **auto**, **lightsensor** or **auto**, select the one that will be used when you send the CameraDayNightMode (Auto) action. If you want to use one of these three auto modes, you must select it here.

Explanation of the different modes

Manualoff manualon auto	These modes do not activate the camera's IR LEDs if there are any. So if you have a camera with built-in IR LEDs, the IR LEDs will always remain off in these modes. In most cases, these modes are not a good choice for cameras with IR LEDs. However, you can use it if you do not use the camera's IR LEDs and want to use external IR illumination.
lightoff lighton smart lightsensor	Lightoff and Lighton are similar to Manualoff and Manualon, but this time the IR-LED is also switched on. Smart and Lightsensor are both automatic modes that select between Lightoff and Lighton depending on the ambient light. Smart will make the decision based on the incidence of light on the camera's sensor. This is the best mode in predominantly bright environments. Some cameras have an external light sensor on the device. If you select a light sensor, it will be used for the decision.

Absolute PTZ



PTZ cameras enable absolute and relative positioning. Positioning is possible with MoveToAbsolutePosition and MoveToRelativePosition.

i This is always possible regardless of whether the Absolute PTZ option is activated.

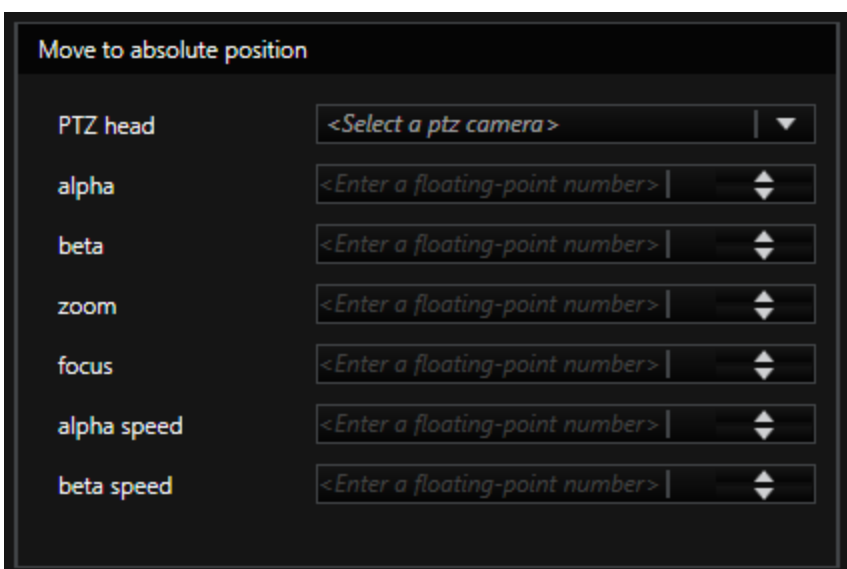
IP-CAMERA PLUGINS

It is also possible that the G-Core server communicates the position of the camera via the action **CameraAbsolutePosition**. For this function, **Enable Absolute PTZ** must be activated.

If this function is activated, there will be a periodic action in the system. This time span can be set with **Periodical prompt**.

The G-Core server also reports the position after each movement to a preset position and stops a movement. How quickly the action is triggered after the stop can be set via **Delay after move**.

Explanation of parameters for Actions



The screenshot shows a configuration window titled "Move to absolute position". It contains the following parameters and their controls:

- PTZ head**: A dropdown menu with the text "<Select a ptz camera>" and a downward arrow.
- alpha**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner control.
- beta**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner control.
- zoom**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner control.
- focus**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner control.
- alpha speed**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner control.
- beta speed**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner control.

This action will be fired by an user to move the camera to desired position.

Explanation of action parameters

PTZ Head	Media channel number of the camera
alpha	This is a pan value in degree. Allowed range is -180 to 180
beta	This is a tilt value in degree. Allowed range is -10 to +190
zoom	This is a zoom value in total. Allowed range is 0 - 9999. Depends also on zoom capabilities of camera.

Explanation of action parameters

focus	This is a focus value in total. Allowed range is 0 – 9999. Depends also on zoom capabilities of camera.
alpha speed and beta speed	Not used in E3-Plugin

Camera absolute position

PTZ head <Select a ptz camera>

updated <Select a value>

alpha <Enter a floating-point number>

beta <Enter a floating-point number>

zoom <Enter a floating-point number>

focus <Enter a floating-point number>

This action will be fired by G-Core server, to notify user about the current position of the camera.

Explanation of action parameters

PTZ Head	Media channel number of the camera
updated	True if GCore has received valid information from Camera. False if GCore has not received valid information from the camera. If false, the last valid values are transferred.
alpha	This is a pan value in degree. Allowed range is -180 to 180
beta	This is a tilt value in degree. Allowed range is -10 to +190
zoom	This is a zoom value in total. Allowed range is 0 – 9999. Depends also on zoom capabilities of camera.
focus	This is a focus value in total. Allowed range is 0 – 9999. Depends also on zoom capabilities of camera.

Move to relative position

PTZ head

alpha

beta

zoom

focus

alpha speed

beta speed

This action will move the camera from current position for desired degree

Explanation of action parameters

PTZ Head	Media channel number of the camera
alpha	This is a pan value in degree. Allowed range is -180 to 180
beta	This is a tilt value in degree. Allowed range is -10 to +190
zoom	This is a zoom value in total. Allowed range is 0 - 9999. Depends also on zoom capabilities of camera.
focus	This is a focus value in total. Allowed range is 0 - 9999. Depends also on zoom capabilities of camera.
alpha speed and beta speed	Not used in E3-Plugin

Activation of Motion Detection and Tampering

Activation of Motion Detection (MD)

To use in-camera motion detection (MD), you must select “On” for the Motion Detection.

- i** You must configure the MD using the camera web page. Add the desired cells. Do not forget to store the settings using Save! For further instructions use Documentation about the webpage of cameras.

The screenshot shows the GEUTEBRÜCK camera web interface. The top navigation bar includes 'Home', 'System', 'Streaming', and 'Camera'. The left sidebar contains a menu with 'System', 'Security', 'Network', 'DDNS', 'Mail', 'FTP', 'HTTP', 'Events', 'Alarm Settings', and 'Motion detection'. The main content area is titled 'Motion Detection' and contains the following settings:

- Motion Detection** 1 (dropdown)
- Off On
- By schedule
- Motion Detection Setting**
 - Sampling pixel interval [1-10]:
 - Detection level [1-100]:
 - Sensitivity level [1-100]:
 - Time interval(sec) [0-7200]:
- Triggered Action**
 - Enable alarm output
 - Record video clip

Additional settings are not necessary. After saving the settings, the Sensor Video Alarm actions in the G-Core server should now be available.

Activation of Tampering

To use in-camera Tampering Alarm you must select “On” for the Tampering Alarm.

- i** You must configure the Tampering using the camera web page. Do not forget to store the settings using Save! For further instructions use Documentation about the webpage of cameras.

GEUTEBRUCK
Competence in Video Security

Home System Streaming Camera Logout

System
Security
Network
DDNS
Mail
FTP
HTTP
Events

Alarm Settings
Motion detection
Network failure detection
Tampering

Tampering Alarm

Off On By schedule Please select ...

Tampering Duration

Minimum duration sec

Triggered Action

Enable alarm output Record video clip
 Send message by FTP Send message by E-Mail
 Upload image by FTP Upload image by E-Mail
 Send HTTP notification

File Name

File name :

Add date/time suffix
 Add sequence number suffix (no maximum value)
 Add sequence number suffix up to and then start over

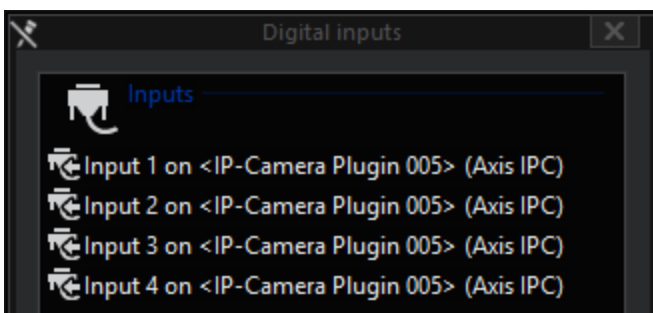
Additional settings are not necessary. After saving the settings, the Sensor Video Alarm actions in the G-Core server should now be available.

Digital Input and Output Contacts

To use the digital input or output contacts, you should first determine the number of contacts that the corresponding camera has.

You must now add the corresponding number of inputs and outputs in G-Set.

- i** For each camera, the plugin provides 4 inputs and 4 outputs. However, you can use only as many contacts as the camera actually has. Always start with the smallest INPUT X values that are available in the list for the corresponding plugin. In this example, Input 1 and Input 2 of IP Camera Plugin 001.



After selecting these settings, it should be possible to react to the corresponding action in G-Core server.

Supported Actions

The following actions are supported:

PTZ Action

In addition to the corresponding actions for pan, tilt and zoom, the following actions are also supported:

Name	Description
AutoFocusOff	Deactivate autofocus.
AutoFocusOn	Activate autofocus.
FocusFar FocusNear FocusStop	If autofocus has been deactivated using AutoFocusOff, manual control of the focus is possible using these actions.
CameraAreaZoom	Support of Area Zoom and one click positioning.
Move to default position Move to preset position Move to absolute position Move to relative position and Camera absolute position Save default position Save preset position Clear default position and Clear present position	The corresponding action is performed.

Day-Night

Name	Description
Camera	With this action, you can change the camera to the cor-

Name	Description
Day Night Mode	responding mode at any time. The available modes are Day , Night or Automatic, which means switching is performed automatically by the camera.
Camera Light On and Camera Light Off	Here the IR Cut Filter of the camera can be controlled.

Camera Raw

Name	Description
Camera Raw Output	Using the Camera Raw Output action, it is possible to send any command to the camera at any time. This also makes it possible to set values in the camera that were not previously set. For further information or if you require this feature, please contact customer service.

Digital Inputs and Outputs

Name	Description
Digital inputs and outputs	To control the digital output of the camera, use the action Set Digital Output with appropriate values. If the plugin has identified a status change for the digital input of the camera, the Digital Input action can be seen in the GCore server.

G-Cam/E4

With the E4 plugin you can use all IP cameras from G-Cam/E4 with the described functionality with the G-Core software.

The following functions are available:

- H.265, H.265CCTV, H.264, H.264CCTV, MJPEG support
- Support of digital inputs and outputs

IP-CAMERA PLUGINS

- Support of audio inputs Line-In and Microphon
- Support of the camera-side motion detection
- Support of the camera-side tampering detection
- Single/Dual Streaming
- Dynamic Stream Selection (DSS)
- PTZ functions of speed dome cameras
- Support of encrypted communication via HTTPS for controlling functions such as PTZ and quality control for the complete E4 lineup
- Support of encrypted communication of Video and Audio-Stream via HTTPS for all E4-Cameras.
- Support of GCore-Feature “Secondary channel”
- Support of AAC

Installation

The plugin consists of two files: E4IPC.dll and E4IPC.dlg.dll.

If the plugin is not included in the scope of installation with delivery, please copy both files (E4IPC.dll and E4IPC.dlg.dll) to the plugin directory of G-Scope `C:\Program Files\Geutebrueck\GCore\MediaPlugins`.

The G-Core server service must then be restarted.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view.
→ The context menu appears.
3. Click **Add**.
4. To select the **IP-Camera Plugin <G-Cam/E4 IPC>**, click the plugin first and then click **Add**.

IP-CAMERA PLUGINS

→ The G-Cam/E4 IP plugin is now entered in the hardware module list as a hardware resource.

5. To make necessary changes to the settings, select the plugin in the list.

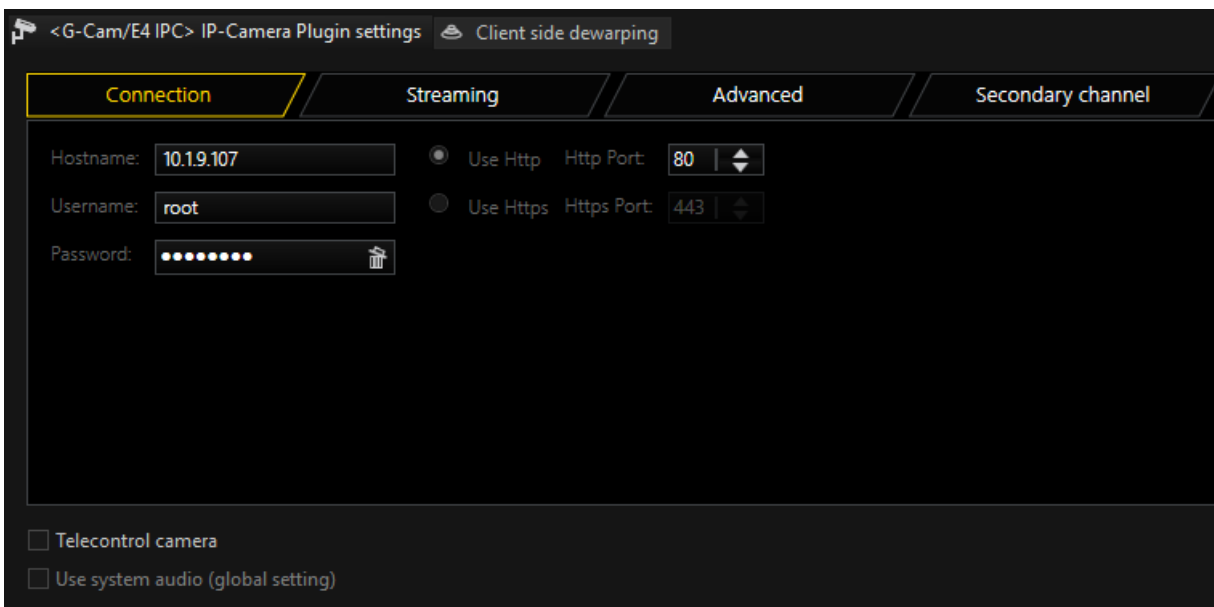
PTZ Functionality

To control speed dome cameras, you must enable **Telecontrol Camera** in G-Set.

It is then possible to control the camera using the virtual joystick in G-View or the MBeg operating device.

Also refer to the section **Supported Actions**.

Connection



The screenshot shows the 'IP-Camera Plugin settings' window for a G-Cam/E4 IPC. The 'Connection' tab is active, displaying fields for Hostname (10.19.107), Username (root), and Password (masked with dots). There are radio buttons for 'Use Http' (selected) and 'Use Https'. The Http Port is set to 80 and the Https Port is set to 443. At the bottom, there are checkboxes for 'Telecontrol camera' and 'Use system audio (global setting)'. The interface also shows tabs for 'Streaming', 'Advanced', and 'Secondary channel'.

Under **Hostname**, enter the IP address of the camera.

Control commands for the camera and the querying of the motion detection and digital inputs are performed by default over port 80. Streaming of the video image is processed via RTSP and thus port 554.

It is important that the correct password is entered. Default at G-Cam/E4 is user-name=root and password=admin.

If you use a speed dome camera, please also enable **Telecontrol Camera**.

After the setup has been transferred to the G-Core server and a media channel has been added, you should be able to see images in the setup. If not, check the IP address, and in particular the user name and password.

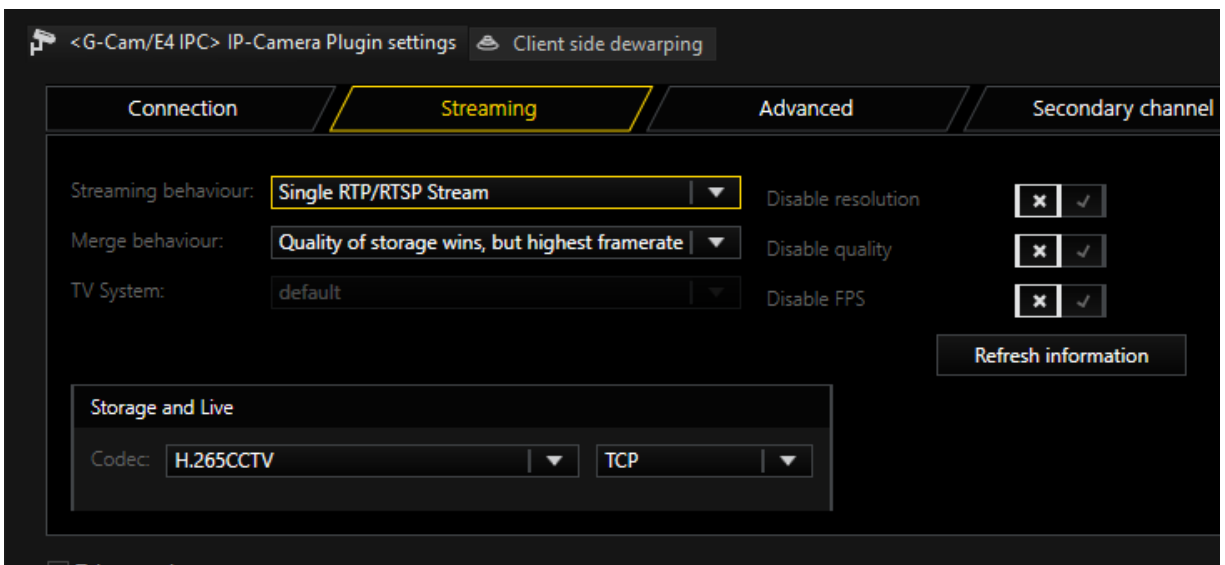
i Use basic access authentication at communication startup: This option can be activated to achieve a faster connection setup. A disadvantage of this option is that the password and user name are transmitted unencrypted!

If you like to use HTTPS communication, you have to set up the camera to use HTTPS. For this you have to install or create a certificate on the camera and enable the HTTPS secure connection.

GEUTEBRÜCK	Home	System	Streaming	Camera	Logout
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System	HTTPS
Security ▲	Enable HTTPS
User	<input checked="" type="checkbox"/> Enable HTTPS secure connection
HTTPS	<input checked="" type="radio"/> HTTP & HTTPS <input type="radio"/> HTTPS only
IP Filter	<input type="button" value="Save"/>
IEEE 802.1X	Create self-signed certificate
Network ▼	<input type="button" value="Create"/>
DDNS	Install signed certificate
Mail	<input type="button" value="Create Certificate Request"/>
FTP	Upload signed certificate
HTTP	<input type="button" value="Datei auswählen"/> Keine ausgewählt <input type="button" value="Upload"/>
Events ▼	Created Request
Storage Management ▼	Subject
Recording	<input style="width: 100%;" type="text" value="No certificate request created."/>
Schedule	<input type="button" value="Properties"/> <input type="button" value="Remove"/>
File Location	Installed Certificate
View Information ▼	Subject
Factory Default	<input style="width: 100%;" type="text" value="No certificate installed."/>
Software Version	<input type="button" value="Properties"/> <input type="button" value="Remove"/>
Software Upgrade	
File Import/Export	

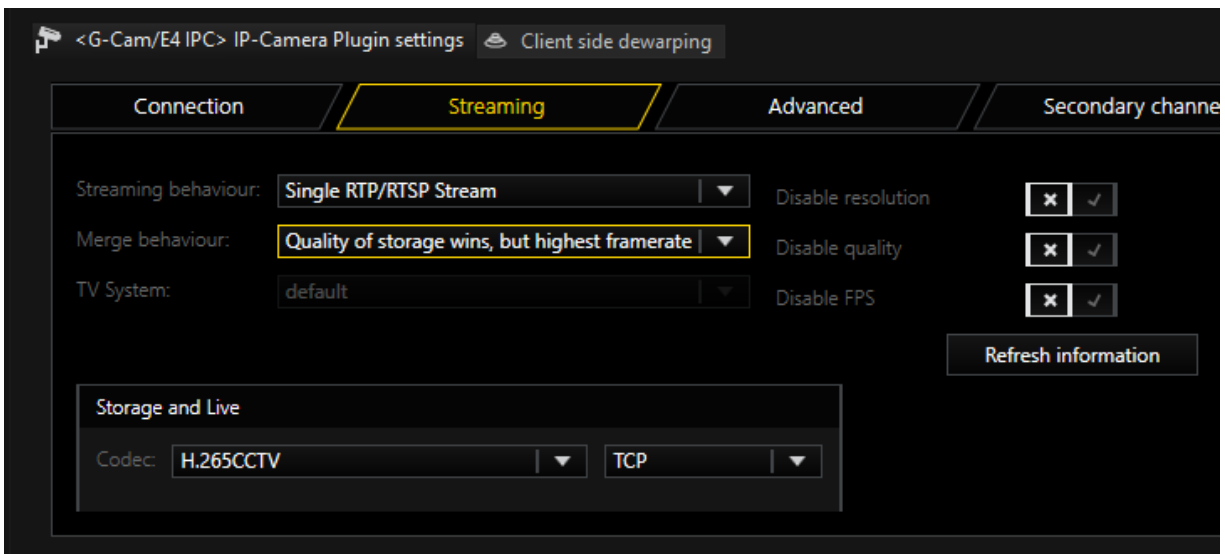
Streaming



In **Streaming Behavior** you can select settings for the video stream.

Single Stream

Only one stream is queried by the camera. Therefore, you do not have an option to use different frame rates for the stored images and the live stream. If you select **Single Stream** the dialog is presented as follows:



In **Merge Behavior** you can specify how the possibly different settings for **Live** and **Storage** under **Media Channels** are combined:

Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters the highest value specified in the corresponding settings is used.
Worst settings wins	For all parameters the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used
Storage profile wins	The Storage settings are used

Concerning the codec, you can choose between H.264 and MJPEG. For H.264, the following settings are available: Under GOP Size (Group of Picture) you can specify the ratio of IDR to P frames. Choose a value of 2 for H264ShortGop.

You choose between a Variable Bit Rate (VBR) or a Constant Bit Rate (CBR). With a Variable Bit Rate, the quality settings are used for the profile that is assigned to the media channel. VBR is generally recommended to ensure good image quality. However, if the stream should not exceed a certain bandwidth, you should use a Constant Bit Rate (CBR).

Transport Protocol Selection

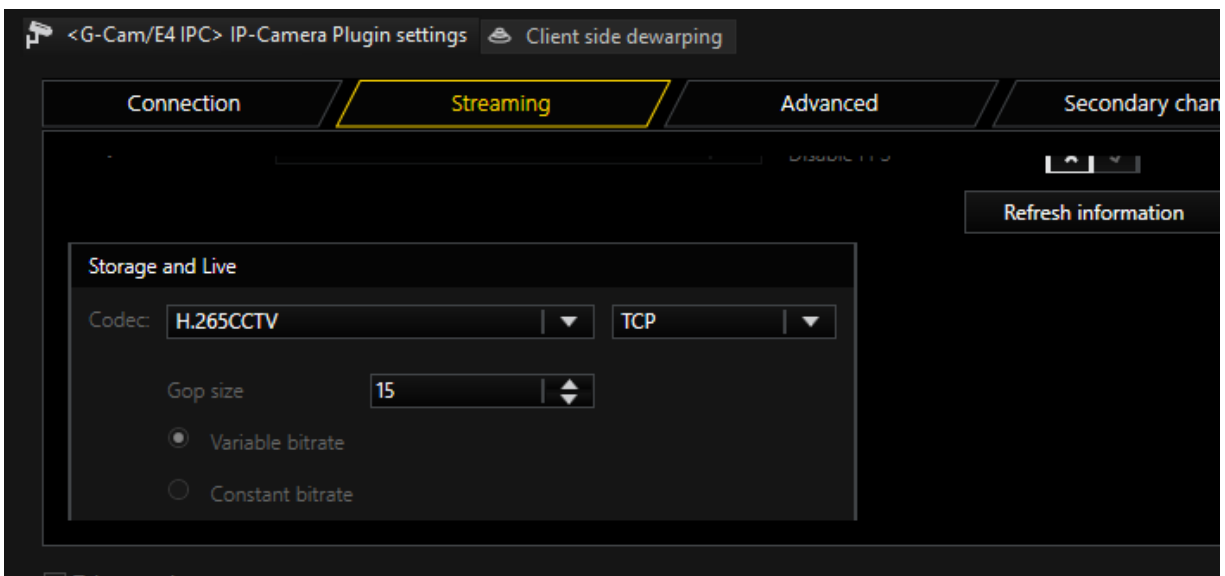
For each stream, it is possible to choose the transport protocol.

Name	Description
TCP	Streaming communication with the camera takes place on port 554 by default. The total communication (audio, video + control data) takes place only over this port. TCP is the preferred and best selection among the transport protocols.
UDP	With UDP, streaming is also performed over port 554. However, video, audio and control information are transmitted over up to four additional ports. These ports are selected by the camera. Due to the higher number of ports and the associated problem of firewall configuration, UDP is less suitable than TCP.

Name	Description
Multicast	<p>With multicast, streaming is also performed over port 554. Audio, video and control data are streamed over an additional multicast address plus port.</p> <p>The use of multicast, unfortunately, brings with it a number of possible errors. Therefore, it is important to note the following:</p> <p>Each camera in the network must be assigned a unique multicast address. No two cameras may have the same multicast address.</p> <p>It is possible for multiple cameras to use the same port, but they must not have the same multicast address, as the separation in switches is performed primarily using the multicast addresses. Using identical multicast addresses will lead to network and device overload and incorrect display of the images.</p> <p>IP addresses in the range 224.0.0.0 to 239.255.255.255 are multicast addresses. In a private network, it is best to select addresses between 239.0.0.0 and 239.255.255.255. When you select multicast, a proposal for a multicast address will be auto generated from the IP-address entered in the connection tab.</p> <p>It is imperative to use switches with multicast support. Simple switches, without multicast support, would generate broadcast streams from the multicast streams. With a large number of cameras, this would mean that the entire network traffic of all cameras would arrive at each node in the network. Thus, even a 1 GB network connection would quickly be overloaded.</p> <p>As a number of ports are opened for multicast, it is advisable to add all applications, such as GSCView, GSCSetup and GSCServer to the firewall. The applications can thus open all ports and the ports do not need to be added manually.</p>
HTTP	<p>With HTTP an RTSP stream is established over HTTP port 80. (RTSP and RTP over HTTP).The streaming protocol is established in this case as it is for TCP, except that port 80, which is not blocked by most firewalls, is used instead of port 554.</p>
HTTPS	<p>With HTTPS an encrypted RTSP stream is established over HTTPS port 443. (RTSP and RTP over HTTP).</p> <p>Some cameras will not be able to support encrypted streaming. In this case you need to select another transport protocol .</p>

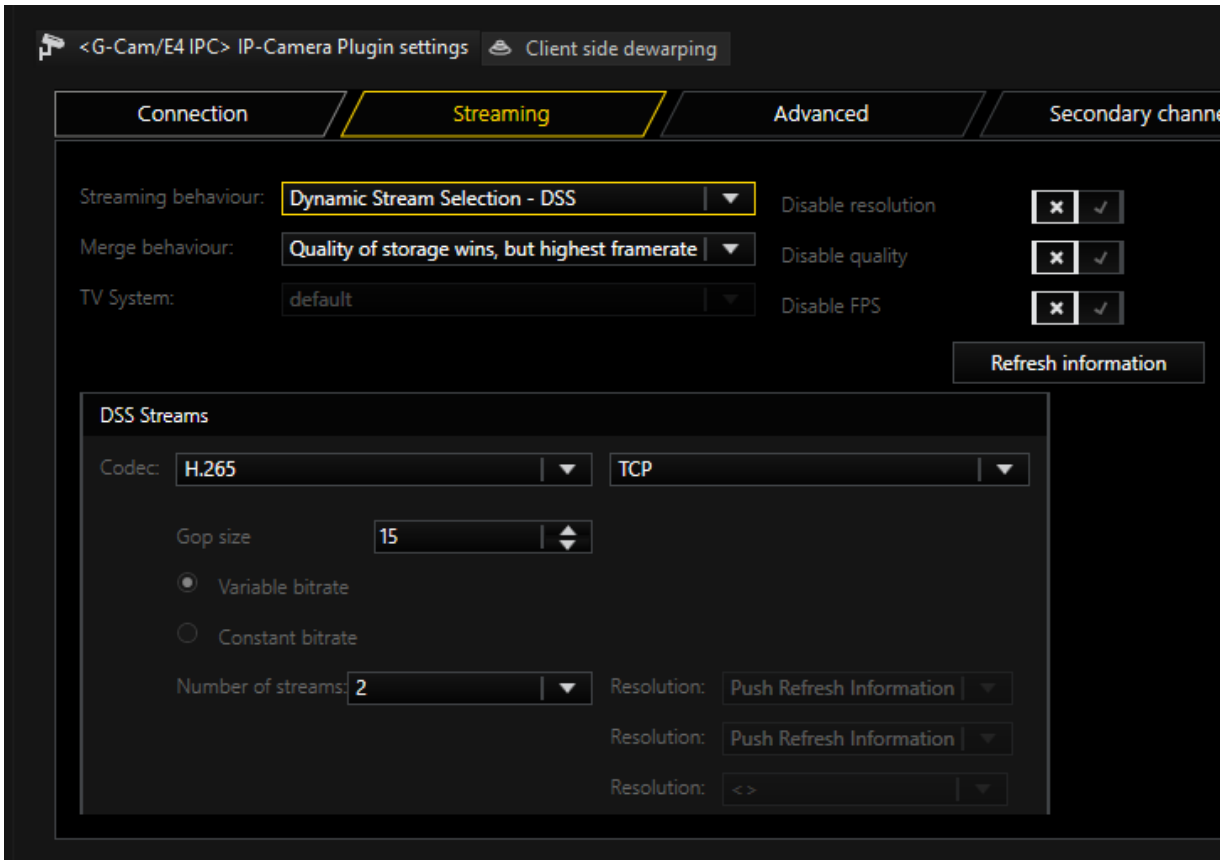
Dual Stream

To circumvent the problem of having the same resolution for live streaming and recording, you can attempt to query two streams from the camera. To do so, under Streaming Behavior choose the option Dual Stream.



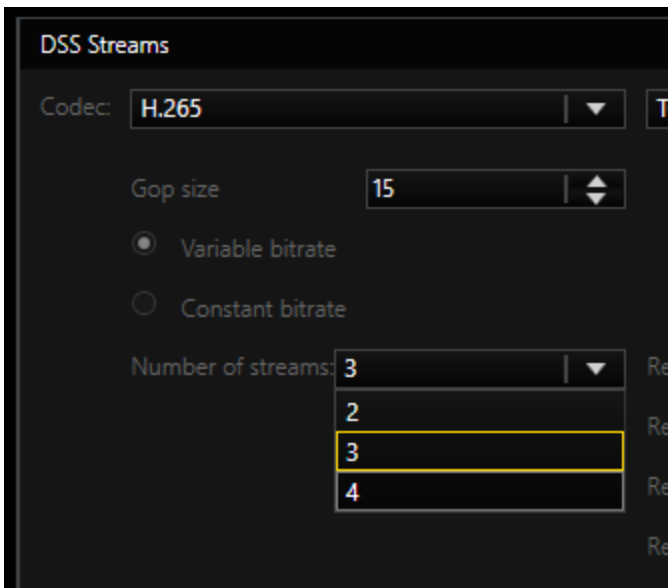
For settings for codec, GOP size and constant bit rate, please refer to the explanations under **Single Stream** above.

Dynamic Stream Selection - DSS

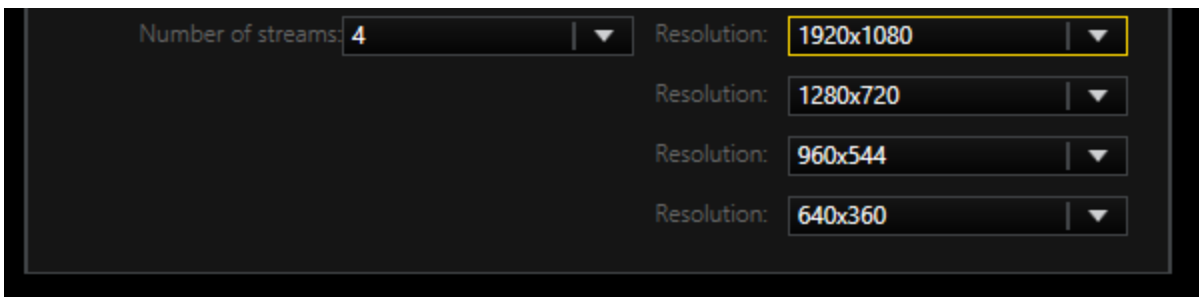


With DSS (Dynamic Stream Selection) the storage and live stream from G-Core is no longer permanently tied to streams of the camera. Instead, between two to four streams are configured in the camera with different resolutions. Depending on the requirements for the live and recording stream in G-Core, one of these is selected. This makes it possible to switch between resolutions based on events without creating a gap in the stream.

The user should decide how many streams should be set up in the camera in the first place. It is possible to choose between two, three or four streams.



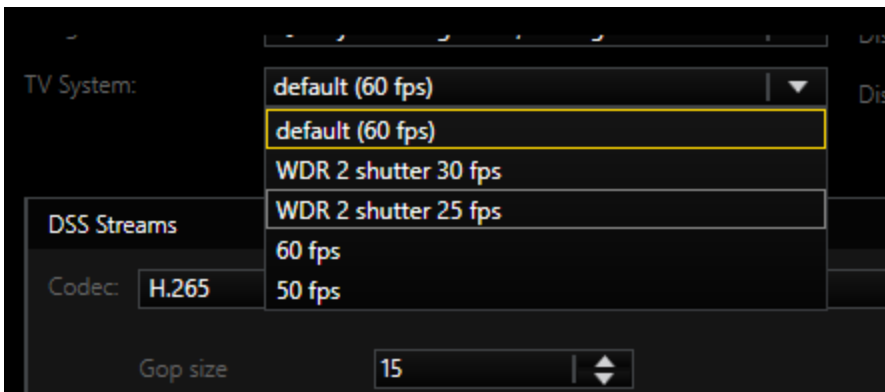
Increasing the number of streams decreases the options available for each individual stream. The resolutions and maximum frame rates that a stream can deliver are to be found in the following boxes:



Here, you can also select the resolutions that will be used. The available choices also depend on the *TV System* setting.

TV System

This setting makes it possible to operate the camera in different modes. Depending on the type of camera, the maximum frame rate can be modified.



- i** Note that changing this setting makes it necessary to reboot the camera, making the image unavailable for up to five minutes.

Streaming Control

Here, the control of the camera by the G-Core server can be restricted:

- **Disable Resolution:** Resolution settings in the camera will no longer be specified by the G-Core server.
- **Disable Quality:** Quality settings in the camera are no longer specified by the G-Core server.
- **Disable FPS:** Frame rate settings in the camera are no longer specified by the G-Core server.

Audio Support

If the camera supports an audio input, it is possible to have it recorded and played with the G-Core server. The audio input can be a line in or a microphone.

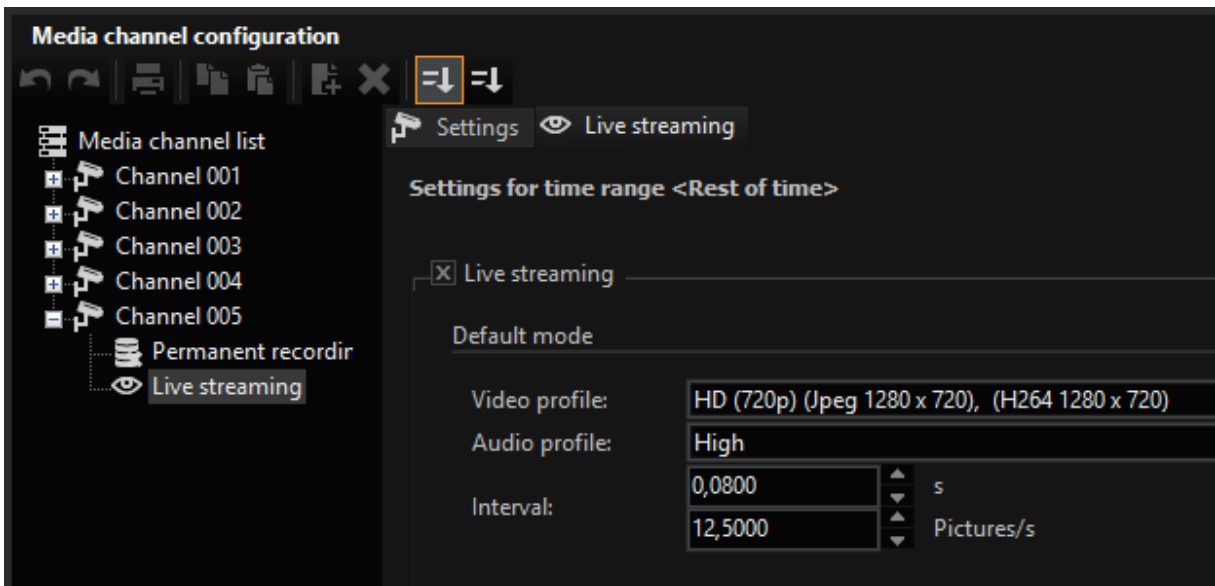
To stream audio, **Bit Rate** can be set to uLaw/ALaw (64Kbps), 40Kbps, 32Kbps, 24Kbps or 16Kbps.

GEUTEBRÜCK	Home	System	Streaming	Camera	Logout
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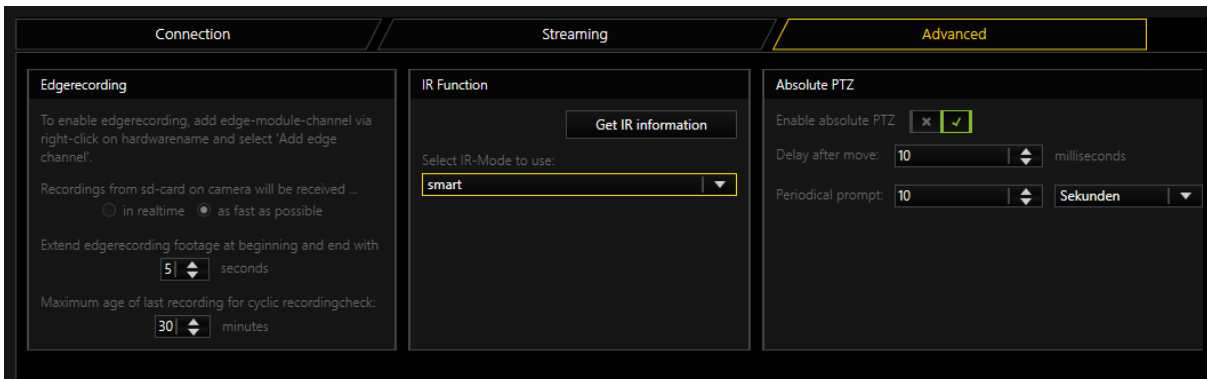
Video Configuration	Audio
Video Rotation	Transmission Mode:
Video Text Overlay	<input type="radio"/> Full-duplex (Talk and listen simultaneously)
Video ROI	<input type="radio"/> Half-duplex (Talk or listen, not at the same time)
Video ROI Encoding	<input type="radio"/> Simplex (Talk only)
Video OCX Protocol	<input checked="" type="radio"/> Simplex (Listen only)
Video Mask	<input type="radio"/> Disable
Audio	Server Gain Setting:
	Input gain: <input type="text" value="3"/>
	Output gain: <input type="text" value="3"/>
	Bit Rate: <input type="text" value="uLAW"/>
	<input type="button" value="Save"/>
	Recording to Storage:
	<input type="text" value="Disable"/>
	<input type="button" value="Save"/>

As a last step, you have to choose whether to store audio or not for recording and/or for live streaming.

In G-Set, select an audio profile for the corresponding channel. It does not matter which profile you choose (high, medium, low) It is only important that you select a profile at all.



Advanced



Edgerecording

There are two modes how EDGE video footage is grabbed from the camera.

- In real time: Which means that it is streamed in normal speed to the DVR. This has the advantage that it does not add much load to the network, but has the disadvantage that it is quite slow
- As fast as Possible: Which means that video is downloaded with maximum network bandwidth available. This bears the advantage, that the edge video

IP-CAMERA PLUGINS

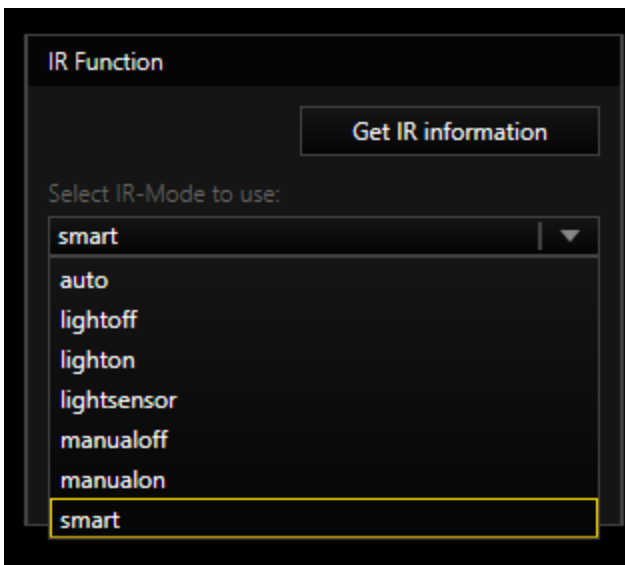
footage is grabbed in a short time, but could lead to network issues if you have a heavy loaded network

Also you can specify for how much time the edge video is overlapping with your normal video. So if your gap in the stream is for example 60 seconds long and you specify five seconds for overlapping, the edge part downloads 70 seconds in total. 60 seconds for the gap, and 5 seconds before and after the gap.

Edge recording in the E4 Plugin uses the ONVIF Protocol. For more information about ONVIF Edge recording see **Edge Recording**.

IR function

To find out what IR capabilities the camera has, click **Get IR information**.



The selection of an entry has two effects:

- When you select a setting, it is immediately sent to the camera and activated in the camera.
- By selecting **auto**, **lightsensor** or **smart** you select the setting used for sending the CameraDayNightMode (Auto) action. If you want to use one of these three auto modes, you must select it here.

Explanation of the different modes

Manualoff manualon auto	These modes do not activate the camera's IR LEDs if there are any. So if you have a camera with built-in IR LEDs, the IR LEDs will always remain off in these modes. In most cases, these modes are not a good choice for cameras with IR LEDs. However, you can use it if you do not use the camera's IR LEDs and want to use external IR illumination.
lightoff lighton smart lightsensor	<p>Lightoff and Lighton are similar to Manualoff and Manualon, but this time the IR-LED is also switched on.</p> <p>Smart and Lightsensor are both automatic modes that select between Lightoff and Lighton depending on the ambient light. Smart will make the decision based on the incidence of light on the camera's sensor. This is the best mode in predominantly bright environments.</p> <p>Some cameras have an external light sensor on the device. If you select a light sensor, it will be used for the decision.</p>

Absolute PTZ



PTZ cameras enable absolute and relative positioning. Positioning is possible with `MoveToAbsolutePosition` and `MoveToRelativePosition`.

i This is always possible regardless of whether the Absolute PTZ option is activated.

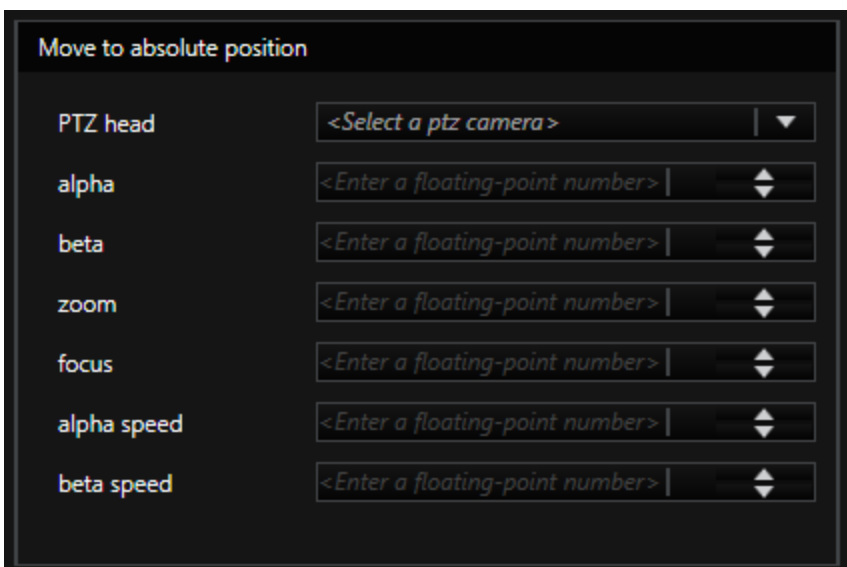
IP-CAMERA PLUGINS

It is also possible that the G-Core server communicates the position of the camera via the action **CameraAbsolutePosition**. For this function **Enable Absolute PTZ** must be activated.

If this function is activated, there will be a periodic action in the system. This time span can be set with **Periodical prompt**.

The G-Core Server also reports the position after each movement to a preset position and stops a movement. How quickly the action is triggered after the stop can be set via **Delay after move**.

Explanation of Parameters for Actions



The screenshot shows a configuration window titled "Move to absolute position". It contains the following parameters and their controls:

- PTZ head**: A dropdown menu with the text "<Select a ptz camera>" and a downward arrow.
- alpha**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner.
- beta**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner.
- zoom**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner.
- focus**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner.
- alpha speed**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner.
- beta speed**: A text input field with the placeholder "<Enter a floating-point number>" and a vertical spinner.

This action will be fired by a user to move the camera to a desired position.

Explanation of action parameters

PTZ Head	Media channel number of the camera.
alpha	This is a pan value in degree. Allowed range is -180 to 180.
beta	This is a tilt value in degree. Allowed range is -10 to +190.
zoom	This is a zoom value in total. Allowed range is 0 - 9999. Depends as well on zoom capabilities of camera.

Explanation of action parameters

focus	This is a focus value in total. Allowed range is 0 – 9999. Depends as well on zoom capabilities of camera.
alpha speed and beta speed	Not used in the E4 plugin.

Camera absolute position

PTZ head <Select a ptz camera>

updated <Select a value>

alpha <Enter a floating-point number>

beta <Enter a floating-point number>

zoom <Enter a floating-point number>

focus <Enter a floating-point number>

This action will be fired by the G-Core server to notify the user about the current position of the camera.

Explanation of action parameters

PTZ Head	Media channel number of the camera
updated	True if G-Core has received valid information from camera. False if G-Core has not received valid information from the camera. If false, the last valid values are transferred.
alpha	This is a pan value in degree. Allowed range is -180 to 180.
beta	This is a tilt value in degree. Allowed range is -10 to +190.
zoom	This is a zoom value in total. Allowed range is 0 – 9999. Depends as well on the zoom capabilities of the camera.
focus	This is a focus value in total. Allowed range is 0 – 9999. Depends as well on the zoom capabilities of the camera.

Move to relative position

PTZ head

alpha

beta

zoom

focus

alpha speed

beta speed

This action will move the camera from the current position for desired degree.

Explanation of action parameters

PTZ Head	Media channel number of the camera
alpha	This is a pan value in degree. Allowed range is -180 to 180.
beta	This is a tilt value in degree. Allowed range is -10 to +190.
zoom	This is a zoom value in total. Allowed range is 0 - 9999. Depends as well on the zoom capabilities of the camera.
focus	This is a focus value in total. Allowed range is 0 - 9999. Depends as well on zoom the capabilities of the camera.
alpha speed and beta speed	Not used in the E4 plugin

Activation of Motion Detection and Tampering

Activation of Motion Detection (MD)

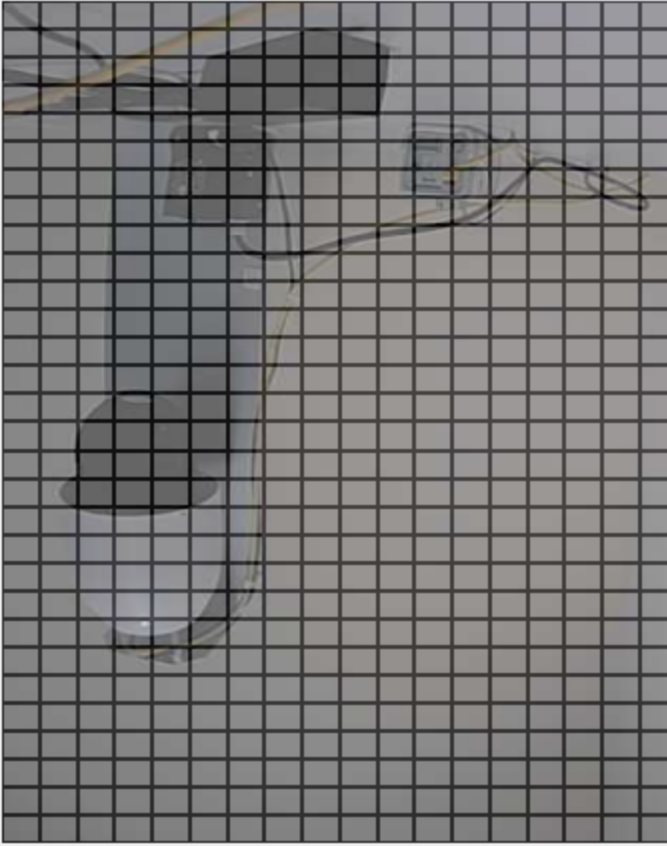
To use in-camera motion detection (MD), you must select “On” for the Motion Detection.

- i** You must configure the MD using the camera web page. Please add the desired cells. Do not forget to store the settings using Save! For further instructions use the documentation about the web page of cameras.

GEUTEBRÜCK
Home
System
Streaming
Camera

- System
- Security ▼
- Network ▼
- DDNS
- Mail
- FTP
- HTTP
- Events ▲
- Alarm Settings
- Motion Detection
- Network Failure Detection
- Tampering
- Periodical Event
- Manual Trigger
- Audio Detection
- Video Analytics
- Storage Management ▼
- Recording
- Schedule
- File Location
- View Information ▼
- Factory Default
- Software Version
- Software Upgrade

Motion Detection



Motion Indication Bar

Motion Detection 1 ▼

Off
 On
 By schedule

Please select ... ▼

Additional settings are not necessary. After saving the settings, the **Sensor Video Alarm** actions in the G-Core server should now be available.

Activation of Tampering

To use in-camera Tampering Alarm you must select “On” for the **Tampering Alarm**.

- i** You must configure the Tampering using the camera web page. Do not forget to store the settings using Save! For further instructions use the documentation about the web page of cameras.

The screenshot shows the GEUTEBRÜCK camera web interface. The top navigation bar includes 'Home', 'System' (selected), 'Streaming', and 'Camera'. On the left, a sidebar menu lists various settings: System, Security, Network, DDNS, Mail, FTP, HTTP, Events (expanded), Alarm Settings, Motion Detection, Network Failure Detection, Tampering (highlighted), Periodical Event, Manual Trigger, and Audio Detection. The main content area is titled 'Tampering Alarm' and contains the following configuration options:

- Tampering Alarm:** Radio buttons for 'Off', 'On' (selected), and 'By schedule'. Below 'By schedule' is a dropdown menu with the text 'Please select ...'.
- Tampering Duration:** A text input field for 'Minimum duration' containing the value '20', followed by the unit 'sec'.
- A 'Save' button is located at the bottom of the configuration area.

Additional settings are not necessary. After saving the settings, the **Sensor Video Alarm** actions in the G-Core server should be available.

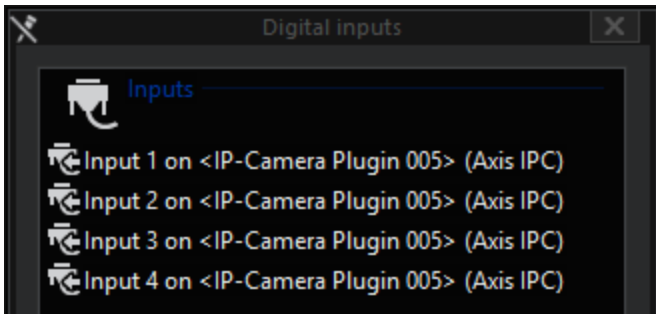
Digital Input and Output Contacts

To use the digital input or output contacts, you should first determine the number of contacts that the corresponding camera has.

You must now add the corresponding number of inputs and outputs in G-Set.

- i** For each camera, the plugin provides four inputs and four outputs. However, you can use only as many contacts as the camera actually has. Always start with the smallest INPUT X values that are available in the list for the corresponding plugin. In this example, Input 1 and Input 2 of IP Camera Plugin 001.

IP-CAMERA PLUGINS



After selecting these settings, it should be possible to react to the corresponding action in the G-Core server.

Supported Actions

The following actions are supported:

PTZ Actions

In addition to the corresponding actions for pan, tilt and zoom, the following actions are also supported:

Name	Description
AutoFocusOff	Deactivate autofocus
AutoFocusOn	Activate autofocus
FocusFar FocusNear FocusStop	If autofocus has been deactivated using AutoFocusOff, manual control of the focus is possible using these actions
CameraAreaZoom	Support of Area Zoom and one click positioning
Move to default position Move to preset position Move to absolute position Move to relative position and Camera absolute position Save default position Save preset position Clear default position and Clear present position	The corresponding action is performed

Day-Night

Name	Description
Camera Day Night Mode	With this action, you can change the camera to the corresponding mode at any time. The available modes are Day , Night or Automatic, which means switching is performed automatically by the camera.
Camera	Here, the IR Cut Filter of the camera can be controlled.

IP-CAMERA PLUGINS

Name	Description
Light On and Camera Light Off	

Camera Raw

Name	Description
Camera Raw Output	Using the Camera Raw Output action, it is possible to send any command to the camera at any time. This also makes it possible to set values in the camera that have not been previously set. For further information or if you require this feature, please contact customer service.

Digital Inputs and Outputs

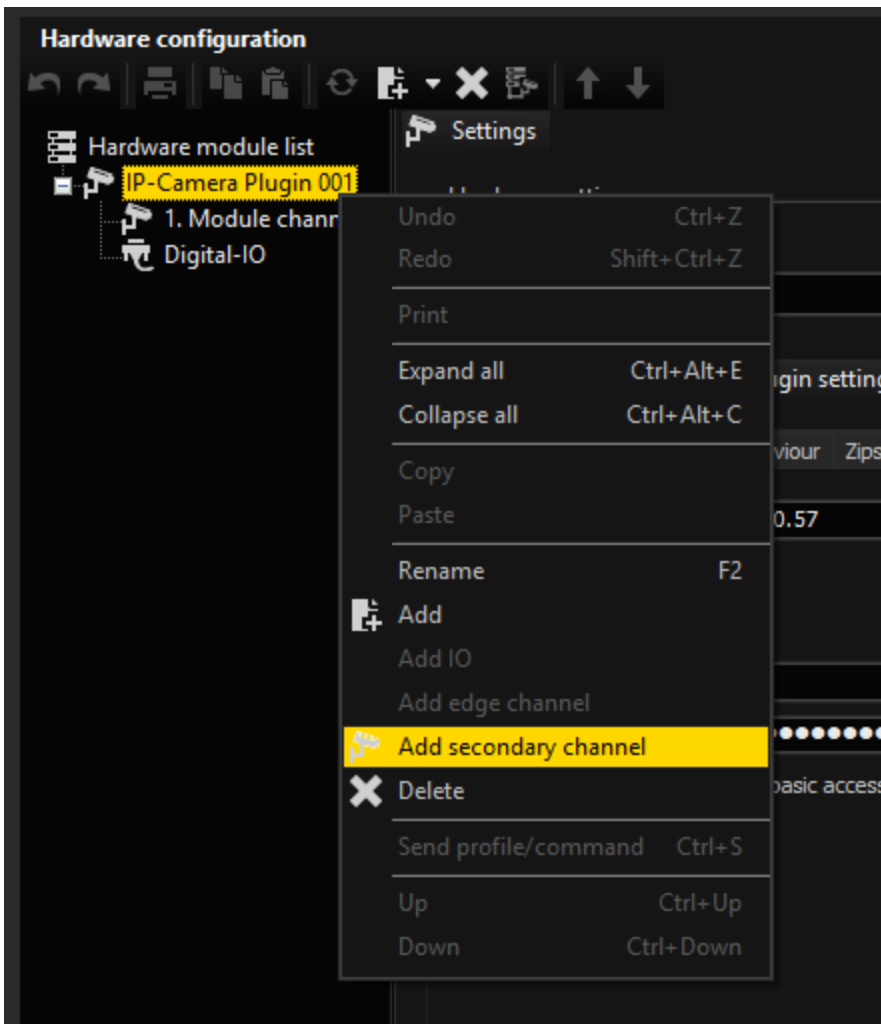
Name	Description
Digital inputs and outputs	To control the digital output of the camera, use the action Set Digital Output with appropriate values. If the plugin has identified a status change for the digital input of the camera, the Digital Input action can be seen in the G-Core server.

Secondary Channel Function

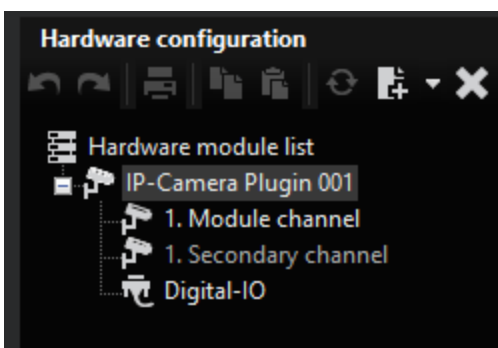
The "Secondary channel" function makes it possible to create a second media channel for a camera that provides the same source in a second resolution/quality. Thus, it is possible to obtain recordings and live footage of a camera in two different resolutions. Applications are e.g. a low bandwidth stream for a WAN connection or an extra stream for VCA processing.

To activate the secondary channel, right-click the root node of the corresponding hardware and select **Add secondary channel**.

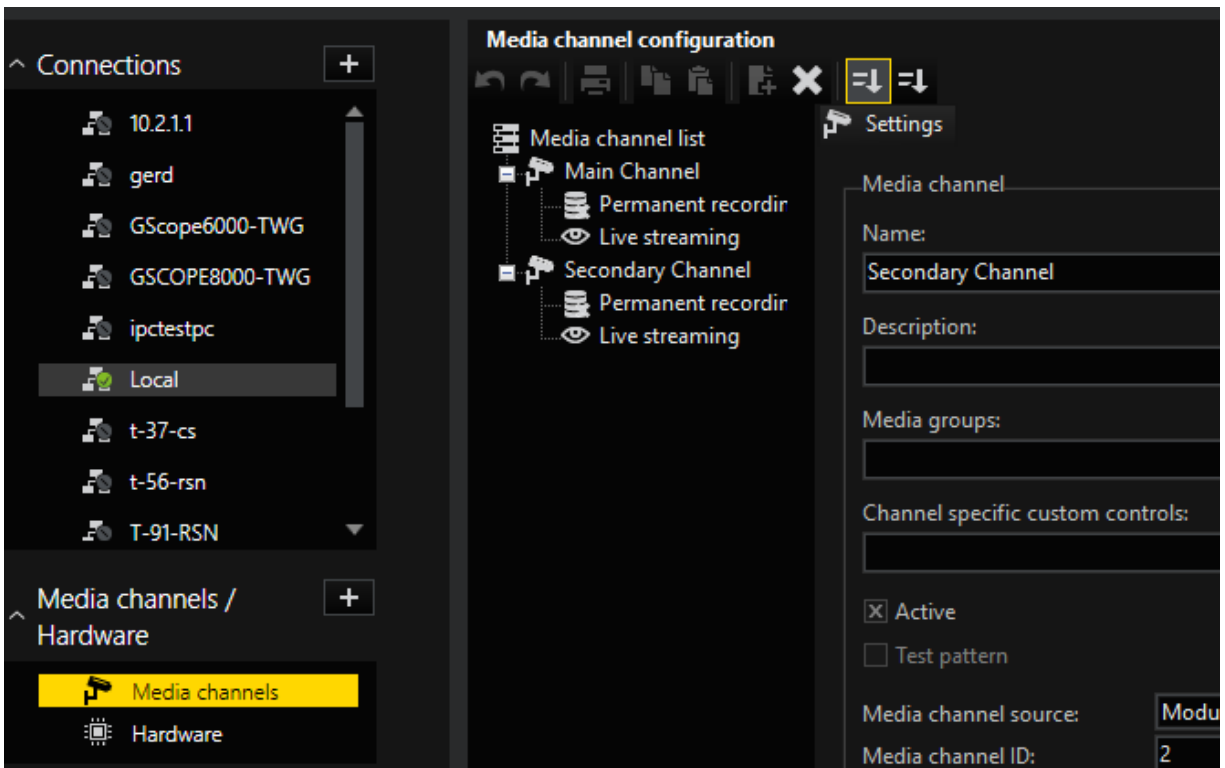
IP-CAMERA PLUGINS



The module channel "1st Secondary channel" appears.



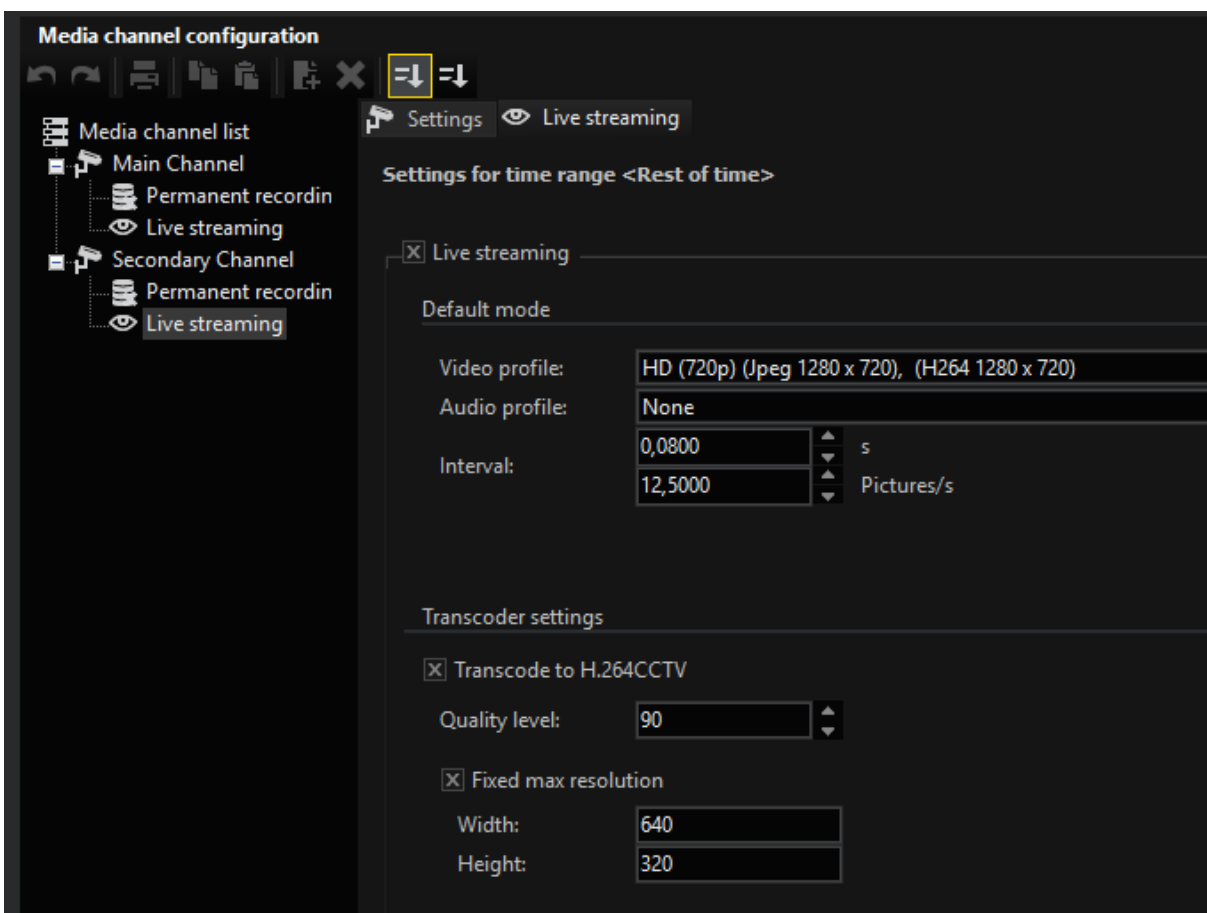
Now add the accessible media channel via **Media channels**.



Duplicate Mode

In standard operation, the Secondary Channel will always receive a copy of the images that are intended for the main channel. In this mode called "Duplicate Mode" the existing stream of the camera is used and made available to the second media channel again.

This mode is useful if the camera is not capable of delivering multiple streams simultaneously. The second media channel must then be transcoded to a lower resolution in order to achieve the desired goal of a different quality/resolution.



Individual Mode

The second mode is called "Individual Stream" and asks the camera for another own stream (or, in the case of Dual Stream, two additional streams) for the secondary channel. This doubles the number of streams picked up by the camera as opposed to "Duplicate Mode".

If the main channel is set to "Single Stream", the secondary channel also receives only one stream, so that the camera requests a total of two streams.

If the main channel is set to "Dual Stream", the secondary channel also receives two streams, and thus a total of up to four streams are requested from the camera.

Overview of the advantages and disadvantages of both modes:

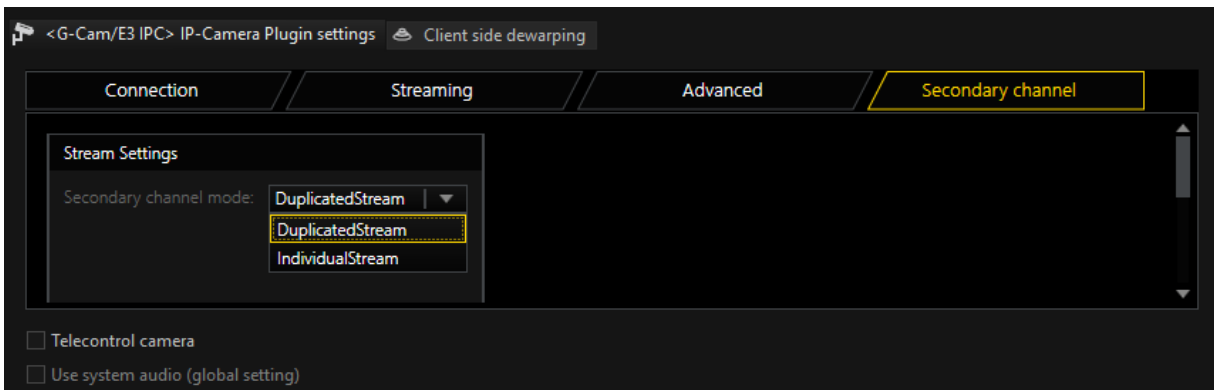
	Duplicate Mode	Individual Mode
Advantages	The stream from the cam-	The resolution/framerate can be

	Duplicate Mode	Individual Mode
	<p>era can be received with maximum resolution and frame rate.</p> <p>It can then be transcoded to any lower resolution/frame rate.</p> <p>4K cameras can often only deliver one stream at 25FPS and are often not Dual Stream capable in this mode.</p>	<p>freely selected.</p> <p>No trans-coding is required and the resolution can be higher than that of the main channel depending on the camera.</p>
Disadvantages	<p>You have to use transcoding to get a lower resolution/quality. This requires additional CPU power on the G-Core.</p> <p>Furthermore, only smaller resolutions are available for the secondary channel, not larger ones.</p>	<p>Since up to four streams are requested from the camera in dual stream mode, it will rarely be possible to achieve the highest frame rate.</p>

i **Special features in Duplicate mode: If the main channel is not live streaming or streaming in memory, the secondary stream can select the resolution and quality itself. As soon as the main channel needs images, however, the resolution/quality of the main channel is used again and these are also duplicated into the secondary channel.**

Secondary Channel with E4

In the E4 plugin, the secondary mode becomes visible in the hardware by selecting "Secondary channel". Here, you can decide between "Duplicate Stream" and "Individual Stream".



In the Individual mode of the E4 camera, the following notes must be observed for the number of streams:

- If DSS is used, the number of streams in the camera is parametrized as set under "Streaming". For example, if three streams are selected, the secondary channel will choose and use the one that fits best.
- With Single Stream the plugin will parametrize two streams in the camera. One for the main channel and one for the secondary channel.
Please note that a 4K camera in this mode will no longer be able to deliver 25FPS. If this is desired, you must select the Duplicate mode.

- i** **With Dual Stream the plugin will not parametrize the streams in the camera when using Individual Stream. You must select and parametrize the resolutions in the camera yourself. To do this, select the quadruple streaming functionality as shown in the following picture. Then select the desired resolutions as follows:**
- stream 1 will set the resolution for the memory stream from the main channel**
 - stream 2 will set the resolution for the live stream from the main channel**
 - stream 3 will set the resolution for the memory stream from the secondary channel**
 - stream 4 will set the resolution for the live streams from the Secondary channel**

GEUTEBRÜCK	Home	System	Streaming	Camera	Logout
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Video Configuration	Video Configuration
Video Rotation	<div style="border: 1px solid #ccc; padding: 5px;"> <p>stream 1</p> <p>Encoding: <input type="text" value="Yes"/></p> <p>Encode Type: <input type="text" value="H.265"/> Pro</p> <p>Resolution: <input type="text" value="1920 x 1080"/> Fra</p> <p>Rate Control: <input type="text" value="VBR"/> Bit</p> <p>GOV Structure: <input type="text" value="Non-reference P frame"/> GC</p> <p style="text-align: right;">Qu</p> </div>
Video Text Overlay	<div style="border: 1px solid #ccc; padding: 5px;"> <p>stream 2</p> <p>Encoding: <input type="text" value="Yes"/></p> <p>Encode Type: <input type="text" value="H.265"/> Pro</p> <p>Resolution: <input type="text" value="1280 x 720"/> Fra</p> <p>Rate Control: <input type="text" value="VBR"/> Bit</p> <p>GOV Structure: <input type="text" value="Non-reference P frame"/> GC</p> <p style="text-align: right;">Qu</p> </div>
Video ROI	<div style="border: 1px solid #ccc; padding: 5px;"> <p>stream 3</p> <p>Encoding: <input type="text" value="Yes"/></p> <p>Encode Type: <input type="text" value="H.265"/> Pro</p> <p>Resolution: <input type="text" value="960 x 544"/> Fra</p> <p>Rate Control: <input type="text" value="VBR"/> Bit</p> <p>GOV Structure: <input type="text" value="Non-reference P frame"/> GC</p> <p style="text-align: right;">Qu</p> </div>
Video ROI Encoding	
Video OCX Protocol	
Video Mask	
Audio	

G-Cam E5

With the E5 plugin you can use all IP cameras from G-Cam/E5 with the described functionality with the G-Core software.

The following functions are available:

- H.265, H.265CCTV, H.264, H.264CCTV, MJPEG support
- Support of digital inputs and outputs
- Support of audio inputs Line-In and Microphon
- Support of the camera-side motion detection
- Support of the camera-side tampering detection
- Single/Dual Streaming
- Dynamic Stream Selection (DSS)
- PTZ functions of speed dome cameras
- Support of encrypted communication via HTTPS for controlling functions such as PTZ and quality control for the complete E5 lineup
- Support of encrypted communication of Video and Audio-Stream via HTTPS for all E5-Cameras.
- Support of GCore-Feature “Secondary channel”
- Support of AAC

Installation

The plugin consists of two files: E5IPC.dll and E5IPC.dlg.dll.

If the plugin is not included in the scope of installation with delivery, please copy both files (E5IPC.dll and E5IPC.dlg.dll) to the plugin directory of G-Scope `C:\Program Files\Geutebrueck\GCore\MediaPlugins`.

The G-Core server service must then be restarted.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view.
 - The context menu appears.
3. Click **Add**.
4. To select the plugin **IP-Camera Plugin <G-Cam/E5 IPC>**, click the plugin first and then click **Add**.
 - The G-Cam/E5 IP plugin is now entered in the hardware module list as a hardware resource.
5. To make necessary changes to the settings, select the plugin in the list.

PTZ Functionality

To control speed dome cameras, you must enable **Telecontrol Camera** in G-Set.

It is then possible to control the camera using the virtual joystick in G-View or the MBeg operating device.

Also refer to the section **Supported Actions**.

Connection

The screenshot shows the configuration interface for the IP-Camera Plugin. The title bar indicates the current plugin is '<G-Cam/E4 IPC> IP-Camera Plugin settings' and a 'Client side dewarping' option is available. The interface is divided into four tabs: 'Connection' (selected), 'Streaming', 'Advanced', and 'Secondary channel'. Under the 'Connection' tab, there are input fields for 'Hostname' (10.19.107), 'Username' (root), and 'Password' (masked with dots). To the right of these fields are radio buttons for 'Use Http' (selected) and 'Use Https'. The 'Http Port' is set to 80, and the 'Https Port' is set to 443. At the bottom of the settings panel, there are two checkboxes: 'Telecontrol camera' and 'Use system audio (global setting)', both of which are currently unchecked.

Under **Hostname**, enter the IP address of the camera.

IP-CAMERA PLUGINS

Control commands for the camera and the querying of the motion detection and digital inputs are performed by default over port 80. Streaming of the video image is processed via RTSP and thus port 554.

It is important that the correct password is entered. Default at G-Cam/E5 is user-name=root and password=admin.

If you use a speed dome camera, please also enable **Telecontrol** Camera.

After the setup has been transferred to the G-Core server and a media channel has been added, you should be able to see images in the setup. If not, check the IP address, and in particular the user name and password.

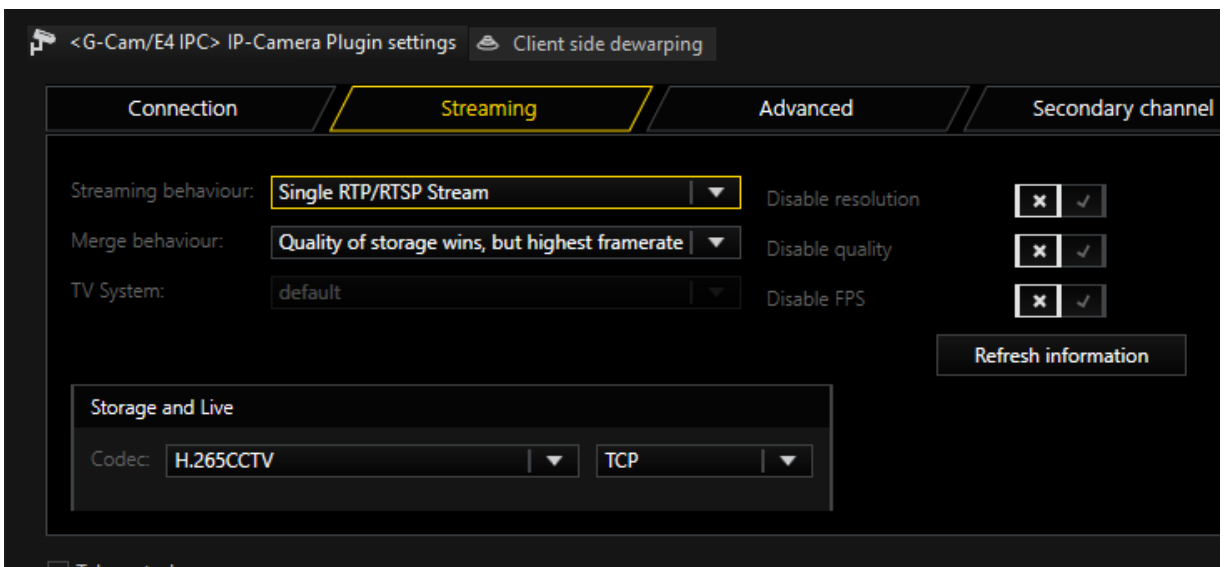
i Use basic access authentication at communication startup: This option can be activated to achieve a faster connection setup. A disadvantage of this option is that the password and user name are transmitted unencrypted!

If you like to use HTTPS communication, you have to set up the camera to use HTTPS. For this you have to install or create a certificate on the camera and enable the HTTPS secure connection.

GEUTEBRÜCK	Home	System	Streaming	Camera	Logout
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System	HTTPS
Security ▲	Enable HTTPS
User	<input checked="" type="checkbox"/> Enable HTTPS secure connection
HTTPS	<input type="radio"/> HTTP & HTTPS <input type="radio"/> HTTPS only
IP Filter	<input type="button" value="Save"/>
IEEE 802.1X	
Network ▼	Create self-signed certificate
DDNS	<input type="button" value="Create"/>
Mail	Install signed certificate
FTP	<input type="button" value="Create Certificate Request"/>
HTTP	Upload signed certificate
Events ▼	<input type="button" value="Datei auswählen"/> Keine ausgewählt <input type="button" value="Upload"/>
Storage Management ▼	Created Request
Recording	Subject
Schedule	<input type="text" value="No certificate request created."/>
File Location	<input type="button" value="Properties"/> <input type="button" value="Remove"/>
View Information ▼	Installed Certificate
Factory Default	Subject
Software Version	<input type="text" value="No certificate installed."/>
Software Upgrade	<input type="button" value="Properties"/> <input type="button" value="Remove"/>
File Import/Export	

Streaming

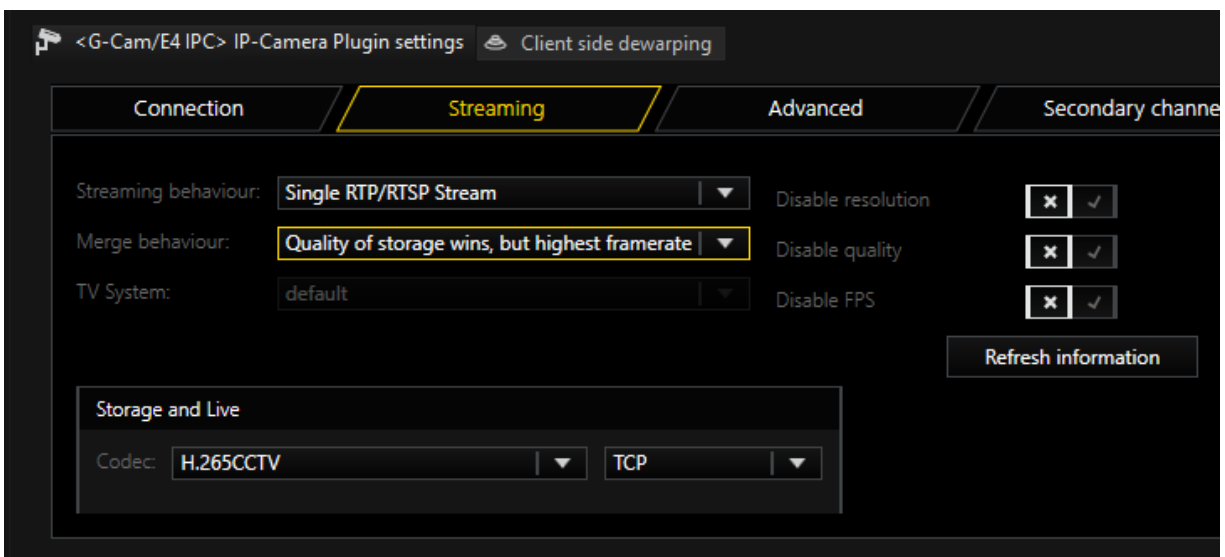


Streaming Behavior

In **Streaming Behavior** you can select settings for the video stream.

Single Stream

Only one stream is queried by the camera. Therefore, you do not have an option to use different frame rates for the stored images and the live stream. If you select **Single Stream** the dialog is presented as follows:



In **Merge Behavior** you can specify how the possibly different settings for **Live and Storage** under **Media Channels** are combined:

Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters the highest value specified in the corresponding settings is used.
Worst settings wins	For all parameters the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used.
Storage profile wins	The Storage settings are used.

Concerning the codec, you can choose between H.264 and MJPEG. For H.264, the following settings are available: Under GOP Size (Group of Picture) you can specify the ratio of IDR to P frames. Choose a value of 2 for H264ShortGop.

You choose between a Variable Bit Rate (VBR) or a Constant Bit Rate (CBR). With a Variable Bit Rate, the quality settings are used for the profile that is assigned to the media channel. VBR is generally recommended to ensure good image quality. However, if the stream should not exceed a certain bandwidth, you should use a Constant Bit Rate (CBR).

Transport protocol selection

For each stream, it is possible to choose the transport protocol.

Name	Description
TCP	Streaming communication with the camera takes place on port 554 by default. The total communication (audio, video + control data) takes place only over this port. TCP is the preferred and best selection among the transport protocols.
UDP	With UDP, streaming is also performed over port 554. However, video, audio and control information are transmitted over up to four additional ports. These ports are selected by the camera.

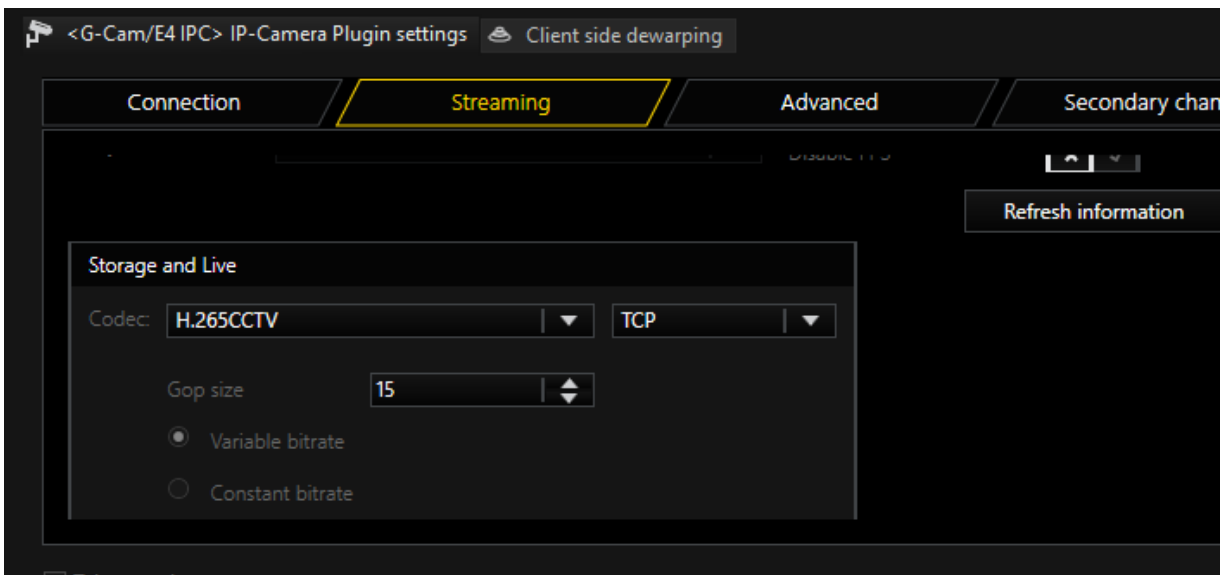
Name	Description
	<p>Due to the higher number of ports and the associated problem of firewall configuration, UDP is less suitable than TCP.</p>
Multicast	<p>With multicast, streaming is also performed over port 554. Audio, video and control data are streamed over an additional multicast address plus port.</p> <p>The use of multicast, unfortunately, brings with it a number of possible errors. Therefore, it is important to note the following:</p> <p>Each camera in the network must be assigned a unique multicast address. No two cameras may have the same multicast address. It is possible for multiple cameras to use the same port, but they must not have the same multicast address, as the separation in switches is performed primarily using the multicast addresses. Using identical multicast addresses will lead to network and device overload and incorrect display of the images.</p> <p>IP addresses in the range 224.0.0.0 to 239.255.255.255 are multicast addresses. In a private network, it is best to select addresses between 239.0.0.0 and 239.255.255.255. When you select multicast, a proposal for a multicast address will be auto generated from the IP-address entered in the connection tab.</p> <p>It is imperative to use switches with multicast support. Simple switches, without multicast support, would generate broadcast streams from the multicast streams. With a large number of cameras, this would mean that the entire network traffic of all cameras would arrive at each node in the network. Thus, even a 1 GB network connection would quickly be overloaded.</p> <p>As a number of ports are opened for multicast, it is advisable to add all applications, such as GSCView, GSCSetup and GSCServer to the firewall. The applications can thus open all ports and the ports do not need to be added manually.</p>
HTTP	<p>With HTTP an RTSP stream is established over HTTP port 80. (RTSP and RTP over HTTP).The streaming protocol is established in this case as it is for TCP, except that port 80, which is not blocked by most firewalls, is used instead of port 554.</p>
HTTPS	<p>With HTTPS an encrypted RTSP stream is established over HTTPS</p>

IP-CAMERA PLUGINS

Name	Description
	port 443. (RTSP and RTP over HTTP). Some cameras will not be able to support encrypted streaming. In this case you need to select another transport protocol .

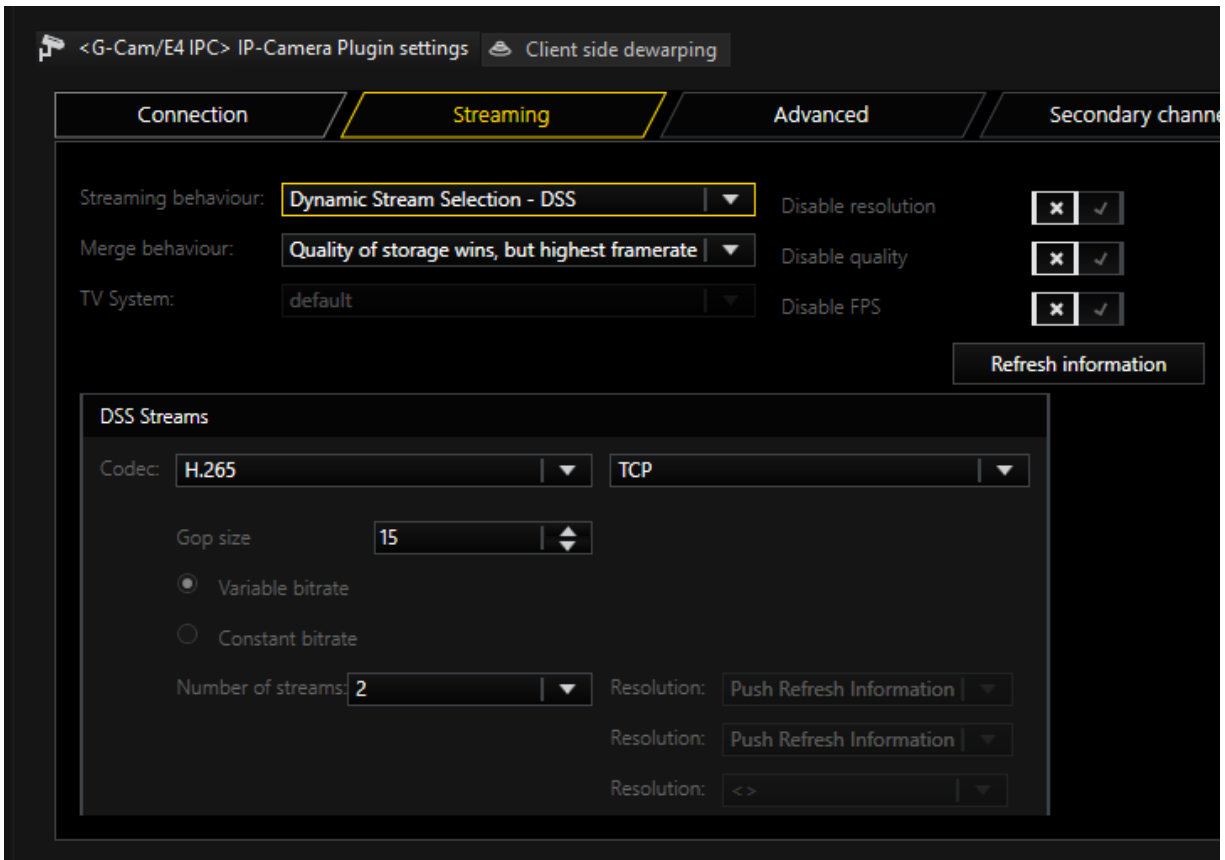
Dual Stream

To circumvent the problem of having the same resolution for live streaming and recording, you can attempt to query two streams from the camera. To do so, under Streaming Behavior choose the option Dual Stream.



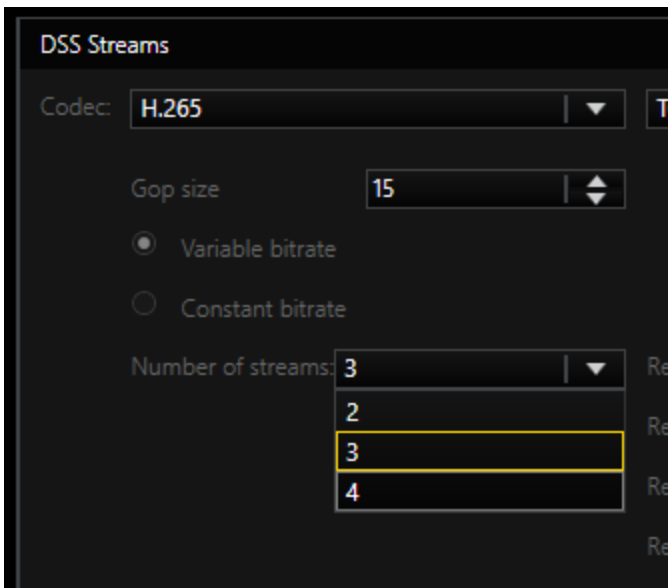
For settings for codec, GOP size and constant bit rate, refer to the explanations under **Single Stream** above.

Dynamic Stream Selection - DSS

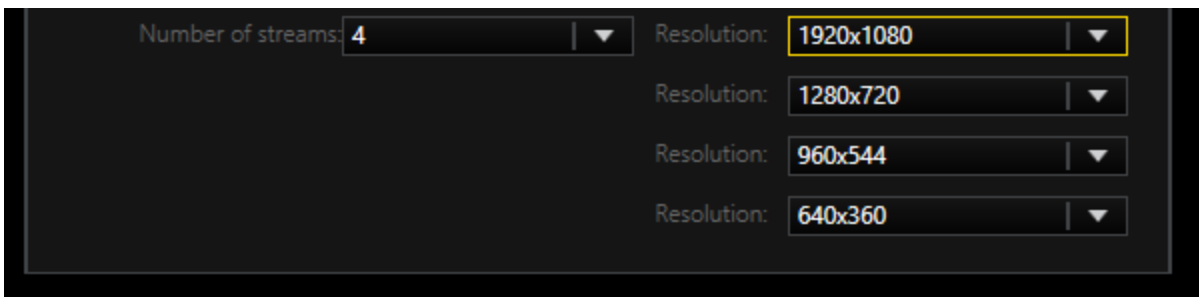


With DSS (Dynamic Stream Selection) the storage and live stream from G-Core is no longer permanently tied to streams of the camera. Instead, between two to four streams are configured in the camera with different resolutions. Depending on the requirements for the live and recording stream in G-Core, one of these is selected. This makes it possible to switch between resolutions based on events without creating a gap in the stream.

The user should decide how many streams should be set up in the camera in the first place. It is possible to choose between two, three or four streams.



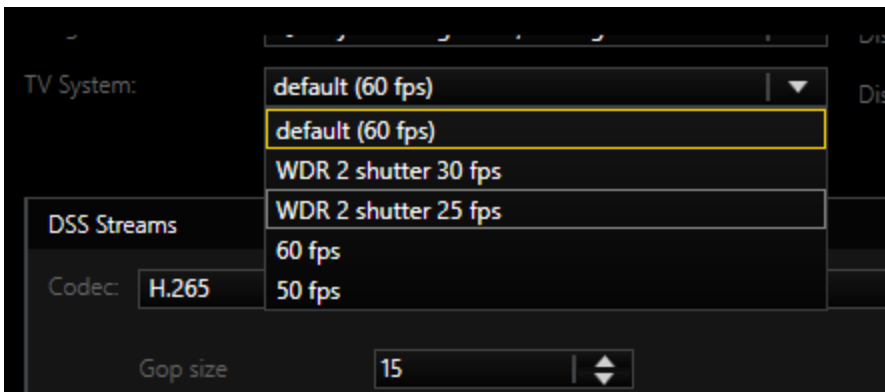
Increasing the number of streams decreases the options available for each individual stream. The resolutions and maximum frame rates that a stream can deliver are to be found in the following boxes:



Here, you can also select the resolutions that will be used. The available choices also depend on the **TV System** setting.

TV System

This setting makes it possible to operate the camera in different modes. Depending on the type of camera, the maximum frame rate can be modified.



- i** Note that changing this setting makes it necessary to reboot the camera, making the image unavailable for up to five minutes.

Streaming Control

Here, the control of the camera by the G-Core server can be restricted:

- **Disable Resolution:** Resolution settings in the camera will no longer be specified by the G-Core server.
- **Disable Quality:** Quality settings in the camera are no longer specified by the G-Core server.
- **Disable FPS:** Frame rate settings in the camera are no longer specified by the G-Core server.

Audio Support

If the camera supports an audio input, it is possible to have it recorded and played with the G-Core server. The audio input can be a line in or a microphone.

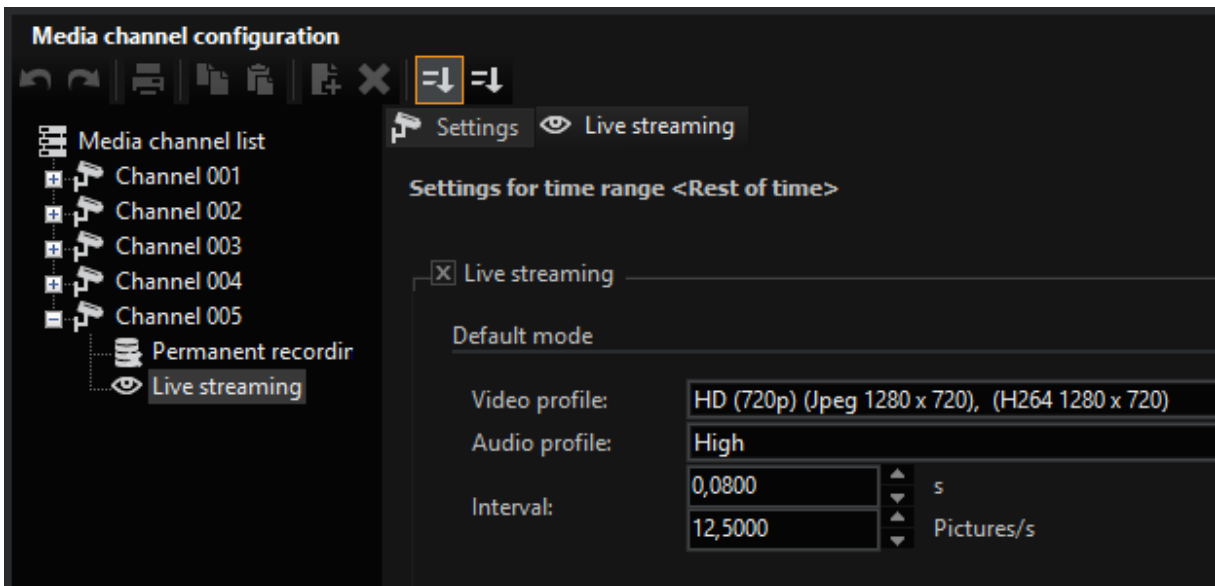
To stream audio, “Bit Rate” can be set to uLaw/ALaw (64Kbps), 40Kbps, 32Kbps, 24Kbps or 16Kbps.

GEUTEBRÜCK	Home	System	Streaming	Camera	Logout
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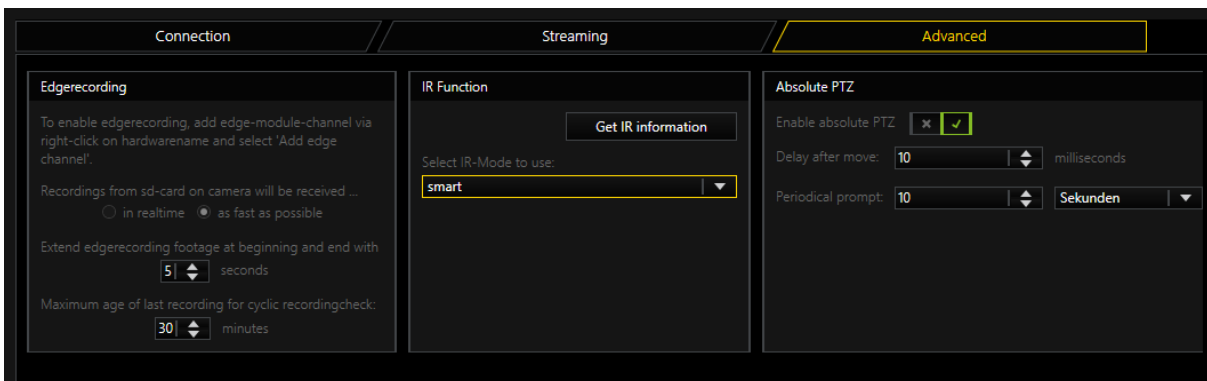
Video Configuration	Audio
Video Rotation	Transmission Mode:
Video Text Overlay	<input type="radio"/> Full-duplex (Talk and listen simultaneously)
Video ROI	<input type="radio"/> Half-duplex (Talk or listen, not at the same time)
Video ROI Encoding	<input type="radio"/> Simplex (Talk only)
Video OCX Protocol	<input checked="" type="radio"/> Simplex (Listen only)
Video Mask	<input type="radio"/> Disable
Audio	Server Gain Setting:
	Input gain: <input type="text" value="3"/>
	Output gain: <input type="text" value="3"/>
	Bit Rate: <input type="text" value="uLAW"/>
	<input type="button" value="Save"/>
	Recording to Storage:
	<input type="text" value="Disable"/>
	<input type="button" value="Save"/>

As a last step, you have to choose whether to store audio or not for recording and/or for live streaming.

In G-Set, select an audio profile for the corresponding channel. It does not matter which profile you choose (high, medium, low) It is only important that you select a profile at all.



Advanced



Edgerecording

There are two modes how EDGE video footage is grabbed from the camera.

- In real time: Which means that it is streamed in normal speed to the DVR. This has the advantage that it does not add much load to the network, but has the disadvantage that it is quite slow
- As fast as Possible: Which means that video is downloaded with maximum network bandwidth available. This bears the advantage, that the edge video

IP-CAMERA PLUGINS

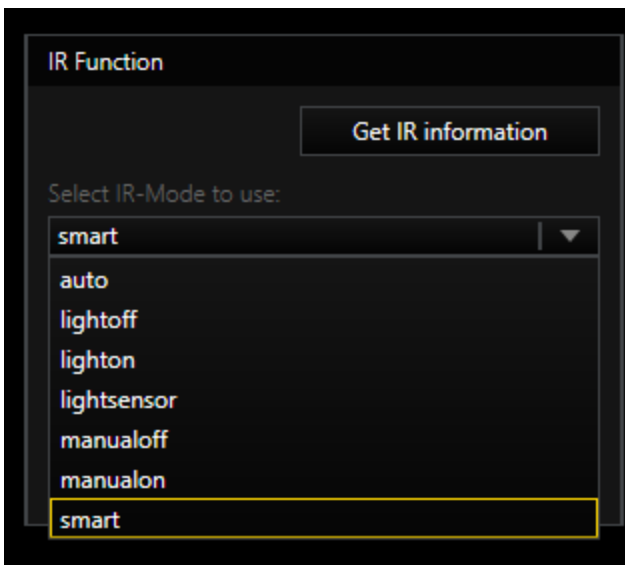
footage is grabbed in a short time, but could lead to network issues if you have a heavy loaded network

Also you can specify for how much time the edge video is overlapping with your normal video. So if your gap in the stream is for example 60 seconds long and you specify five seconds for overlapping, the edge part downloads 70 seconds in total. 60 seconds for the gap, and 5 seconds before and after the gap.

Edge recording in the E5 Plugin uses the ONVIF Protocol. For more information about ONVIF Edge recording is to find **Edge Recording**.

IR Function

To find out what IR capabilities the camera has, click **Get IR information**.



The selection of an entry has two effects:

- When you select a setting, it is immediately sent to the camera and activated in the camera.
- By selecting **auto**, **lightsensor** or **smart** you select the setting used for sending the CameraDayNightMode (Auto) action. If you want to use one of these three auto modes, you must select it here.

Explanation of the different modes

Manualoff manualon auto	These modes do not activate the camera's IR LEDs if there are any. So if you have a camera with built-in IR LEDs, the IR LEDs will always remain off in these modes. In most cases, these modes are not a good choice for cameras with IR LEDs. However, you can use it if you do not use the camera's IR LEDs and want to use external IR illumination.
lightoff lighton smart lightsensor	<p>Lightoff and Lighton are similar to Manualoff and Manualon, but this time the IR-LED is also switched on.</p> <p>Smart and Lightsensor are both automatic modes that select between Lightoff and Lighton depending on the ambient light. Smart will make the decision based on the incidence of light on the camera's sensor. This is the best mode in predominantly bright environments.</p> <p>Some cameras have an external light sensor on the device. If you select a light sensor, it will be used for the decision.</p>

Absolute PTZ



PTZ cameras enable absolute and relative positioning. Positioning is possible with `MoveToAbsolutePosition` and `MoveToRelativePosition`.

i This is always possible regardless of whether the Absolute PTZ option is activated.

IP-CAMERA PLUGINS

It is also possible that the G-Core server communicates the position of the camera via the action **CameraAbsolutePosition**. For this function **Enable Absolute PTZ** must be activated.

If this function is activated, there will be a periodic action in the system. This time span can be set with **Periodical prompt**.

The G-Core Server also reports the position after each movement to a preset position and stops a movement. How quickly the action is triggered after the stop can be set via **Delay after move**.

Explanation of Parameters for Actions

The screenshot shows a configuration window titled "Move to absolute position". It contains the following parameters and their input types:

- PTZ head: A dropdown menu with the placeholder text "<Select a ptz camera>".
- alpha: A numeric input field with the placeholder text "<Enter a floating-point number>".
- beta: A numeric input field with the placeholder text "<Enter a floating-point number>".
- zoom: A numeric input field with the placeholder text "<Enter a floating-point number>".
- focus: A numeric input field with the placeholder text "<Enter a floating-point number>".
- alpha speed: A numeric input field with the placeholder text "<Enter a floating-point number>".
- beta speed: A numeric input field with the placeholder text "<Enter a floating-point number>".

This action will be fired by a user to move the camera to a desired position.

Explanation of action parameters

PTZ Head	Media channel number of the camera.
alpha	This is a pan value in degree. Allowed range is -180 to 180.
beta	This is a tilt value in degree. Allowed range is -10 to +190.
zoom	This is a zoom value in total. Allowed range is 0 - 9999. Depends as well on zoom capabilities of camera.

Explanation of action parameters

focus	This is a focus value in total. Allowed range is 0 – 9999. Depends as well on zoom capabilities of camera.
alpha speed and beta speed	Not used in the E5 plugin.

Camera absolute position

PTZ head <Select a ptz camera>

updated <Select a value>

alpha <Enter a floating-point number>

beta <Enter a floating-point number>

zoom <Enter a floating-point number>

focus <Enter a floating-point number>

This action will be fired by the G-Core server to notify the user about the current position of the camera.

Explanation of action parameters

PTZ Head	Media channel number of the camera
updated	True if G-Core has received valid information from camera. False if G-Core has not received valid information from the camera. If false, the last valid values are transferred.
alpha	This is a pan value in degree. Allowed range is -180 to 180.
beta	This is a tilt value in degree. Allowed range is -10 to +190.
zoom	This is a zoom value in total. Allowed range is 0 – 9999. Depends as well on the zoom capabilities of the camera.
focus	This is a focus value in total. Allowed range is 0 – 9999. Depends as well on the zoom capabilities of the camera.

Move to relative position

PTZ head

alpha

beta

zoom

focus

alpha speed

beta speed

This action will move the camera from the current position for desired degree.

Explanation of action parameters

PTZ Head	Media channel number of the camera.
alpha	This is a pan value in degree. Allowed range is -180 to 180.
beta	This is a tilt value in degree. Allowed range is -10 to +190.
zoom	This is a zoom value in total. Allowed range is 0 - 9999. Depends as well on the zoom capabilities of the camera.
focus	This is a focus value in total. Allowed range is 0 - 9999. Depends as well on zoom the capabilities of the camera.
alpha speed and beta speed	Not used in the E5 plugin.

Activation of Motion Detection and Tampering

Activation of Motion Detection (MD)

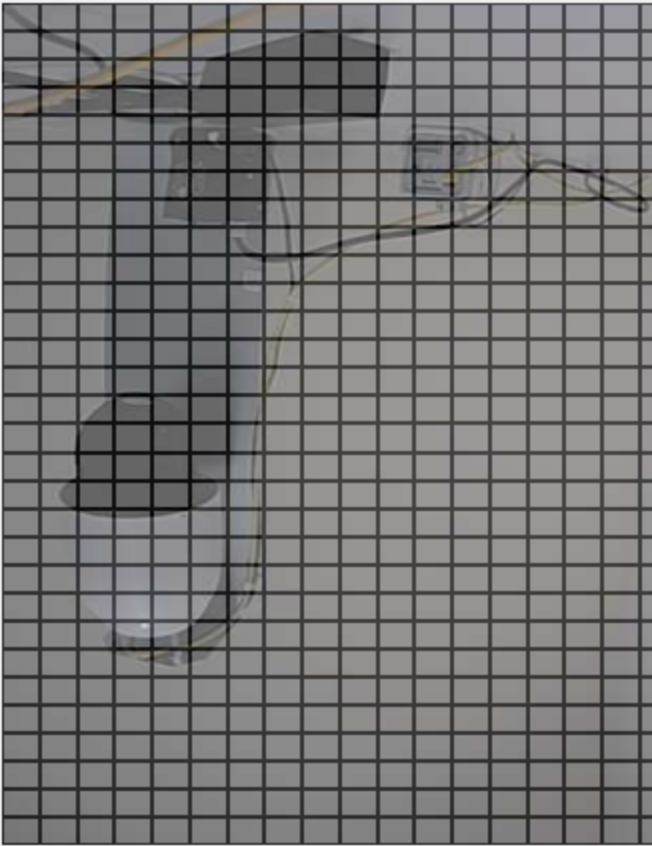
To use in-camera motion detection (MD), you must select “On” for the Motion Detection.

- i** You must configure the MD using the camera web page. Please add the desired cells. Do not forget to store the settings using Save! For further instructions use the documentation about the web page of cameras.

GEUTEBRÜCK
Home
System
Streaming
Camera

- System
- Security ▼
- Network ▼
- DDNS
- Mail
- FTP
- HTTP
- Events ▲
- Alarm Settings
- Motion Detection**
- Network Failure Detection
- Tampering
- Periodical Event
- Manual Trigger
- Audio Detection
- Video Analytics
- Storage Management ▼
- Recording
- Schedule
- File Location
- View Information ▼
- Factory Default
- Software Version
- Software Upgrade

Motion Detection



Motion Indication Bar

Motion Detection 1 ▼

Off
 On
 By schedule

Please select ... ▼

Additional settings are not necessary. After saving the settings, the **Sensor Video Alarm** actions in the G-Core server should now be available.

Activation of Tampering

To use in-camera Tampering Alarm you must select “On” for the **Tampering Alarm**.

- i** You must configure the Tampering using the camera web page. Do not forget to store the settings using Save! For further instructions use the documentation about the web page of cameras.

GEUTEBRÜCK		Home	System	Streaming	Camera
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System	<h3 style="background-color: #333; color: white; padding: 2px;">Tampering Alarm</h3> <p>Tampering Alarm</p> <p> <input type="radio"/> Off <input checked="" type="radio"/> On <input type="radio"/> By schedule </p> <p>Please select ... ▼</p> <p>Tampering Duration</p> <p>Minimum duration <input style="width: 40px;" type="text" value="20"/> sec</p> <p><input type="button" value="Save"/></p>
Security ▼	
Network ▼	
DDNS	
Mail	
FTP	
HTTP	
Events ▲	
Alarm Settings	
Motion Detection	
Network Failure Detection	
Tampering	
Periodical Event	
Manual Trigger	
Audio Detection	

Additional settings are not necessary. After saving the settings, the **Sensor Video Alarm** actions in the G-Core server should be available.

Video Analytics Integration

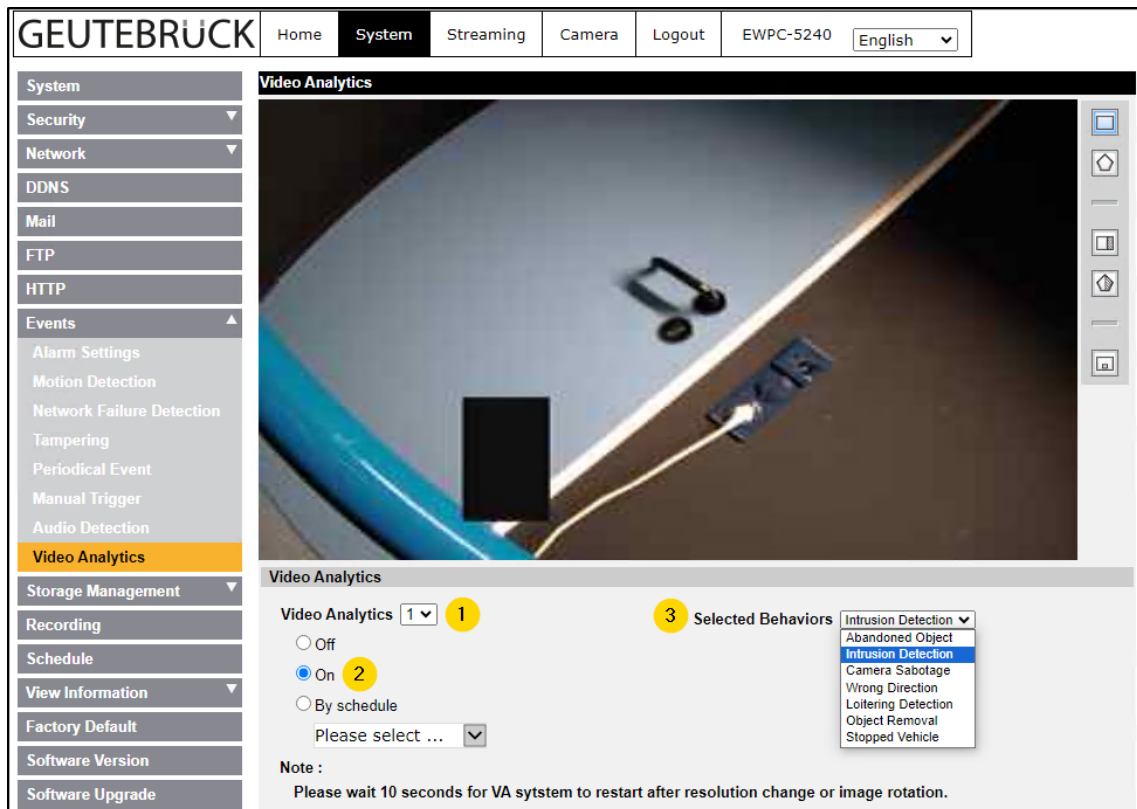
The E5 camera series offers video analytics with various VCA functions that can be integrated into G-Core. To use these, you must configure the video analytics in the user interface of the camera and then activate and configure them in G-Set. The video analytics events are then sent from the camera to G-Core as VCA actions.

Configuration in the Camera User Interface

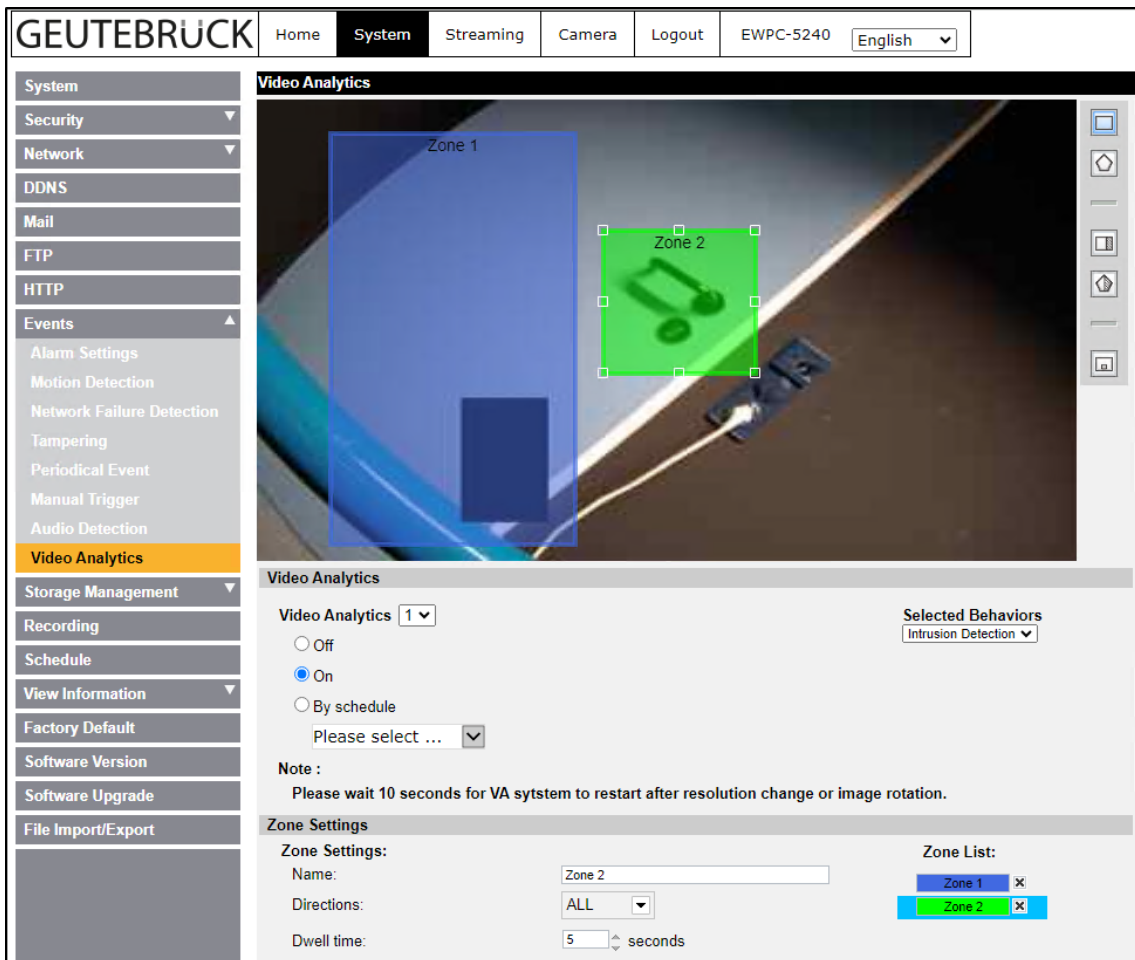
In the user interface of the camera, select the video analytics behavior and define the zones to be analyzed.

i For detailed information on the user interface of the camera, see the **G-Cam/E5 web browser manual**.

1. Enter the IP address of the camera in the browser to reach the user interface and navigate to **System > Events > Video Analytics**.
2. In the **Video Analytics** drop-down menu **1**, select the video analytics profile you want to configure.
3. Select the **On** check box **2** to activate the video analytics.
4. In the **Selected Behaviors** drop-down menu **3**, select the behavior you want to use.



5. In the camera image, draw the areas to be analyzed using the tools from the toolbar. This is required for all behaviors except the behavior **Camera Sabotage**. The **Zone Settings** section appears.



- In the Zone Settings section, define the behavior of the video analytics.

i The zone settings vary depending on the selected video analytics behavior.

Setting	Description
Name	Name of the selected zone. i Do not change the zone name. The default name is used to trigger the event in G-Core (see Create an Event). If you want to change the name, note the default name of the respective zone.

Setting	Description
Directions	Select the desired direction of movement.
Dwell time	Specify the time in seconds how long the alarm remains activated.
Delay before alarm	Specify the time in seconds that it takes for the event to be activated.
Sensitivity	Specify how sensitive the camera reacts to changes.
Trigger type	Select the trigger type that triggers the event.

7. In the **Triggered Action & File name** section, you can define activities for the triggered alarms and the file name.

Triggered Action & File name

<p>Triggered Action</p> <p><input type="checkbox"/> Enable alarm output high ▾</p> <p><input type="checkbox"/> Send alarm message by FTP</p> <p><input type="checkbox"/> Send alarm message by E-mail</p> <p><input type="checkbox"/> Upload image by FTP</p> <p><input type="checkbox"/> Upload image by E-Mail</p> <p><input type="checkbox"/> Send HTTP notification</p> <p><input type="checkbox"/> Record video clip</p> <p><input type="button" value="Save"/> <input type="button" value="Show Analytics Info"/></p>	<p>File Name</p> <p>File Name : image.jpg</p> <p><input checked="" type="radio"/> Add date/time suffix</p> <p><input type="radio"/> Add sequence number suffix (no maximum value)</p> <p><input type="radio"/> Add sequence number suffix up to 0 and then start over</p> <p><input type="radio"/> Overwrite</p>
---	---

8. Click Save.

i After adding or deleting zones, you must check the VCA zones in G-Set to read out the existing zones from the camera (see Check VCA Zones).

Configuration in G-Set

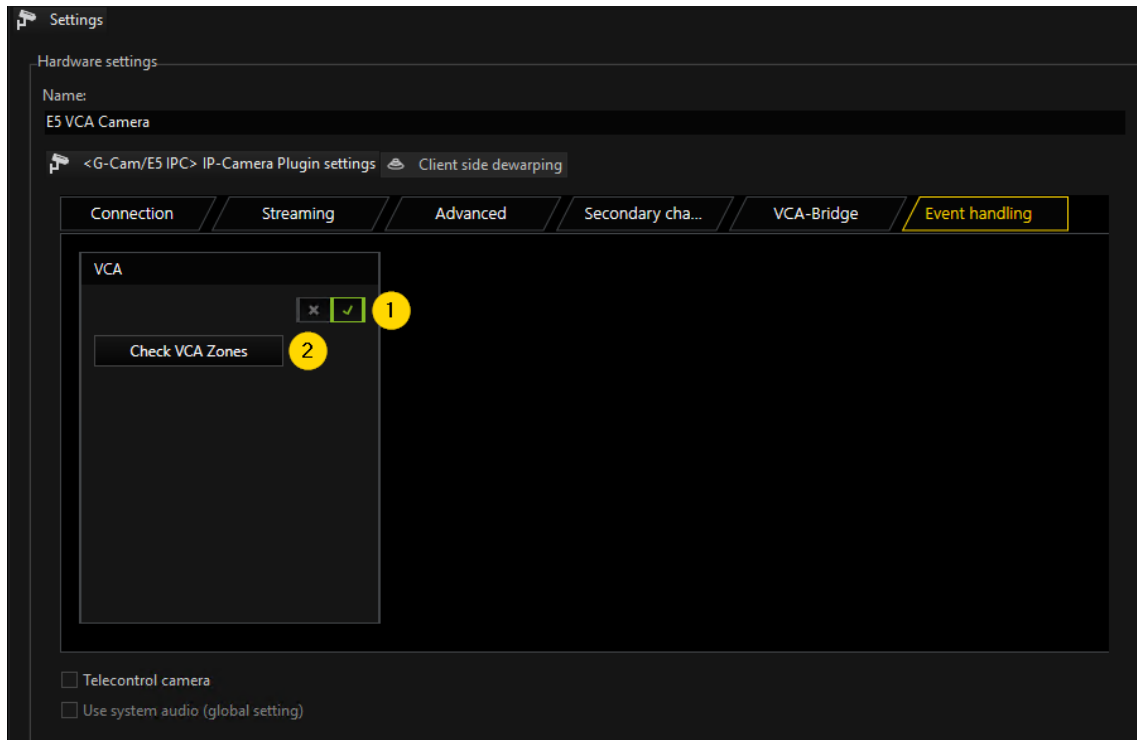
In G-Set, check the VCA zones and create an event for the used video analytics.

Check VCA Zones

Read out the configured zones for the video analytics from the camera.

IP-CAMERA PLUGINS

1. Select the plugin of the camera in the **Hardware module list**.
2. Open the **VCA Bridge** tab and make sure that the VCA Bridge is disabled.
3. Open the **Event handling** tab and enable the **VCA** option **1**.
4. Click on **Check VCA Zones** **2** to read out the existing zones from the camera.



5. Click the  icon in the menu bar to send all changes to the server.

Create an Event

Create an event to retrieve the video analytics events from the camera as VCA actions in G-Core.

1. Create an event.
2. Add an action to the event. Select the corresponding VCA action for the configured video analytics behavior of the camera.

The video analytics events are transferred from the camera to G-Core as the following VCA actions.

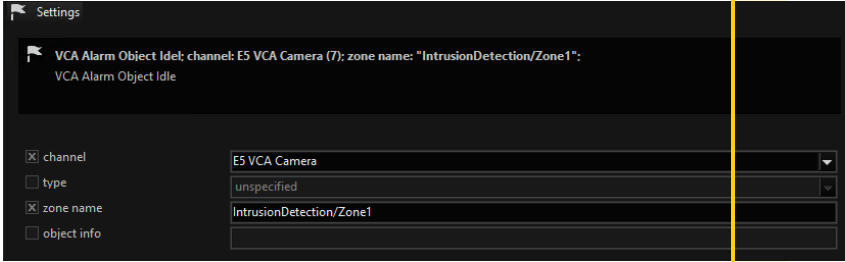
Video Analytics Behavior	VCA Action
Abandoned Object	VCA Alarm Object Idle
Intrusion Detection	VCA Alarm Enter Field
Camera Sabotage	VCA Alarm Tampering
Wrong Direction	VCA Wrong Direction
Loitering Detection	VCA Alarm Loitering
Object Removal	VCA Alarm Object Removed
Stopped Vehicle	VCA Stopped Vehicle

3. Specify the following parameters of the action.

Parameter	Description
channel	Select the media channel of the camera.
zone name	Enter the zone name as follows: VCA analytics behavior + / + Default name of the zone , without spaces.

Example

If you want to trigger the action for the **Intrusion Detection** VCA analytics behavior in **Zone 1**, you must specify the zone name as follows: **IntrusionDetection/Zone1**.



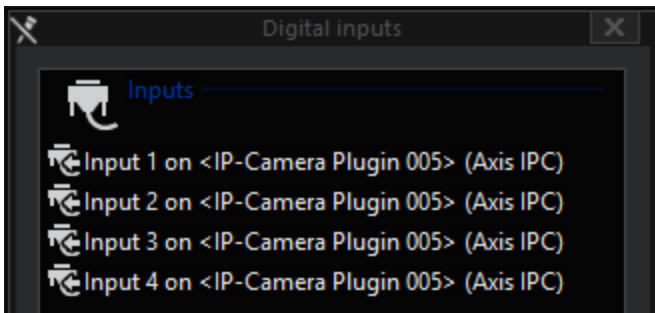
4. Click the  icon in the menu bar to send all changes to the server.

Digital Input and Output Contacts

To use the digital input or output contacts, you should first determine the number of contacts that the corresponding camera has.

You must now add the corresponding number of inputs and outputs in G-Set.

- i** For each camera, the plugin provides four inputs and four outputs. However, you can use only as many contacts as the camera actually has. Always start with the smallest INPUT X values that are available in the list for the corresponding plugin. In this example, Input 1 and Input 2 of IP Camera Plugin 001.



After selecting these settings, it should be possible to react to the corresponding action in the G-Core server.

Supported Actions

The following actions are supported:

PTZ Actions

In addition to the corresponding actions for pan, tilt and zoom, the following actions are also supported:

Name	Description
AutoFocusOff	Deactivate autofocus
AutoFocusOn	Activate autofocus
FocusFar FocusNear FocusStop	If autofocus has been deactivated using AutoFocusOff, manual control of the focus is possible using these actions
CameraAreaZoom	Support of Area Zoom and one click positioning
Move to default position Move to preset position Move to absolute position Move to relative position and Camera absolute position Save default position Save preset position Clear default position and Clear present position	The corresponding action is performed

Day-Night

Name	Description
Camera Day Night Mode	With this action, you can change the camera to the corresponding mode at any time. The available modes are Day , Night or Automatic, which means switching is performed automatically by the camera.
Camera	Here, the IR Cut Filter of the camera can be controlled.

IP-CAMERA PLUGINS

Name	Description
Light On and Camera Light Off	

Camera Raw

Name	Description
Camera Raw Output	Using the Camera Raw Output action, it is possible to send any command to the camera at any time. This also makes it possible to set values in the camera that have not been previously set. For further information or if you require this feature, contact customer service.

Digital Inputs and Outputs

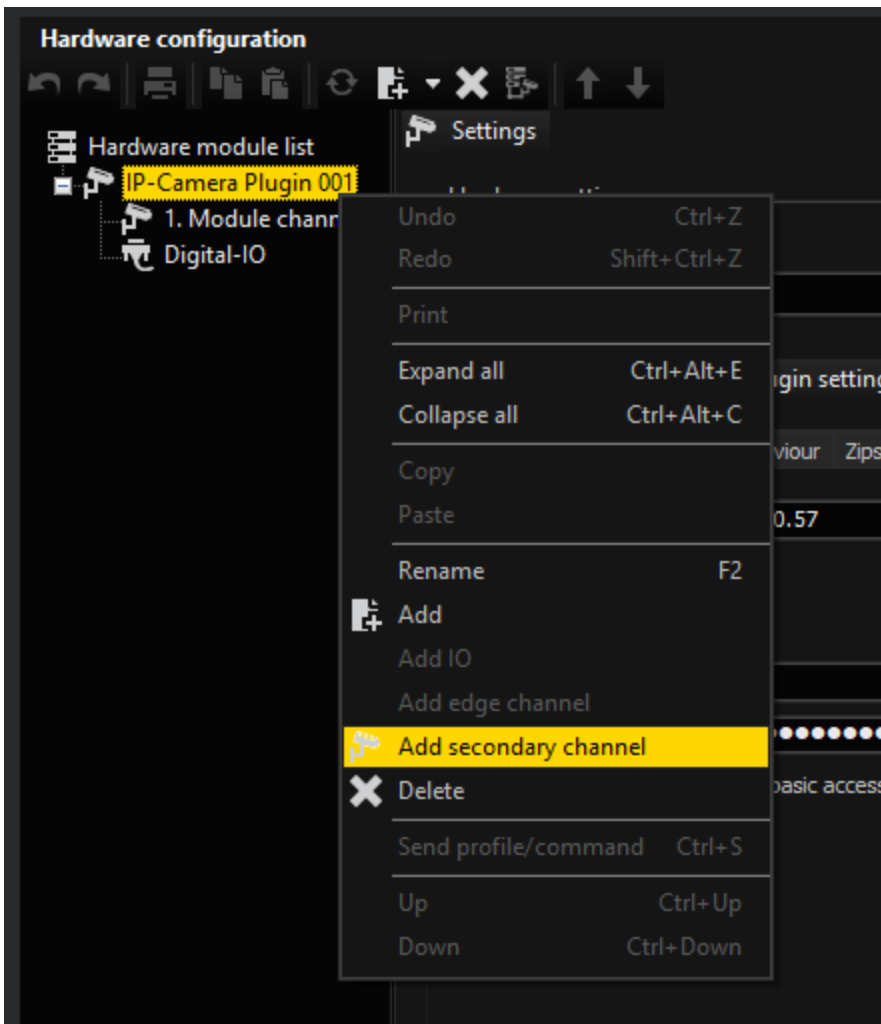
Name	Description
Digital inputs and outputs	To control the digital output of the camera, use the action Set Digital Output with appropriate values. If the plugin has identified a status change for the digital input of the camera, the Digital Input action can be seen in the G-Core server.

Secondary Channel Function

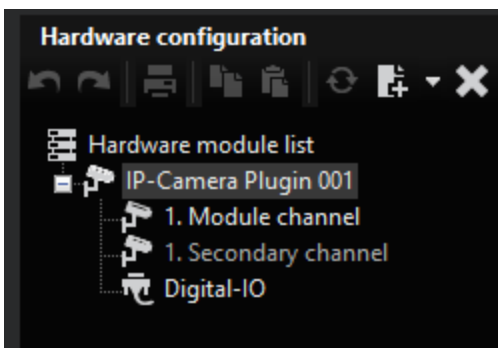
The "Secondary channel" function makes it possible to create a second media channel for a camera that provides the same source in a second resolution/quality. Thus, it is possible to obtain recordings and live footage of a camera in two different resolutions. Applications are e.g. a low bandwidth stream for a WAN connection or an extra stream for VCA processing.

To activate the secondary channel, right-click the root node of the corresponding hardware and select **Add secondary channel**.

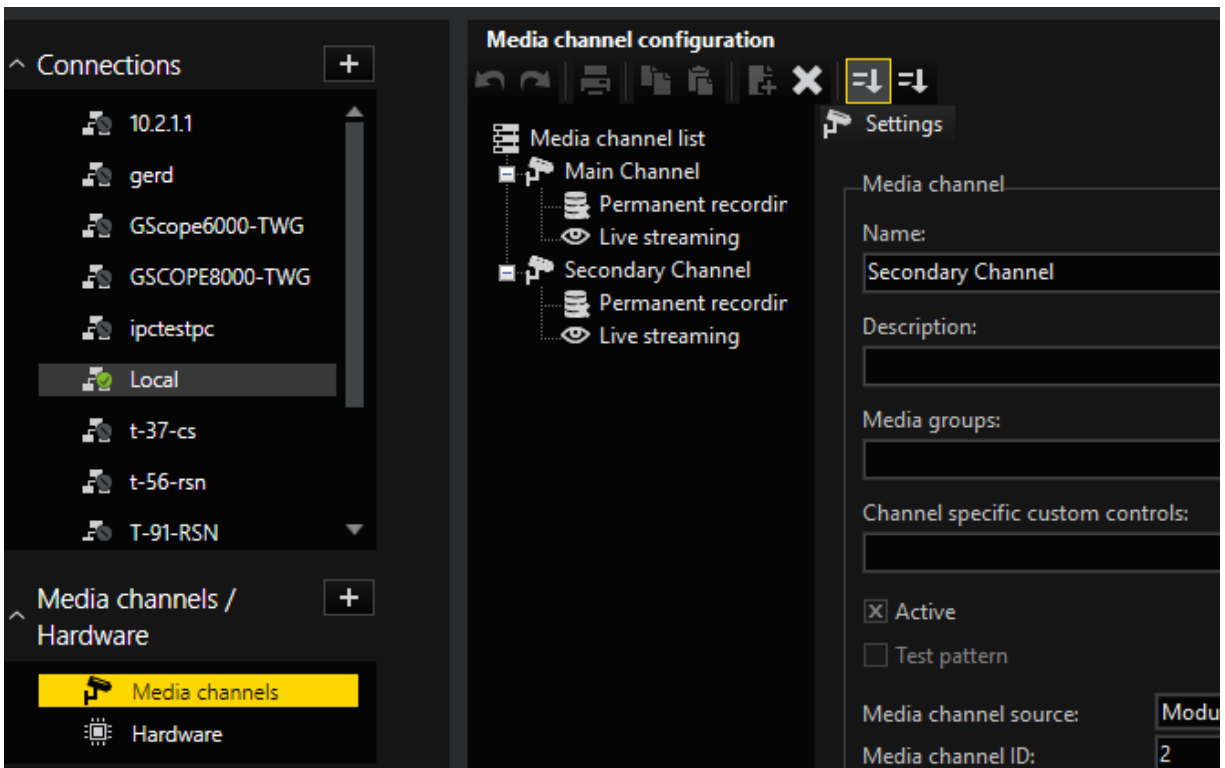
IP-CAMERA PLUGINS



The module channel "1st Secondary channel" appears.



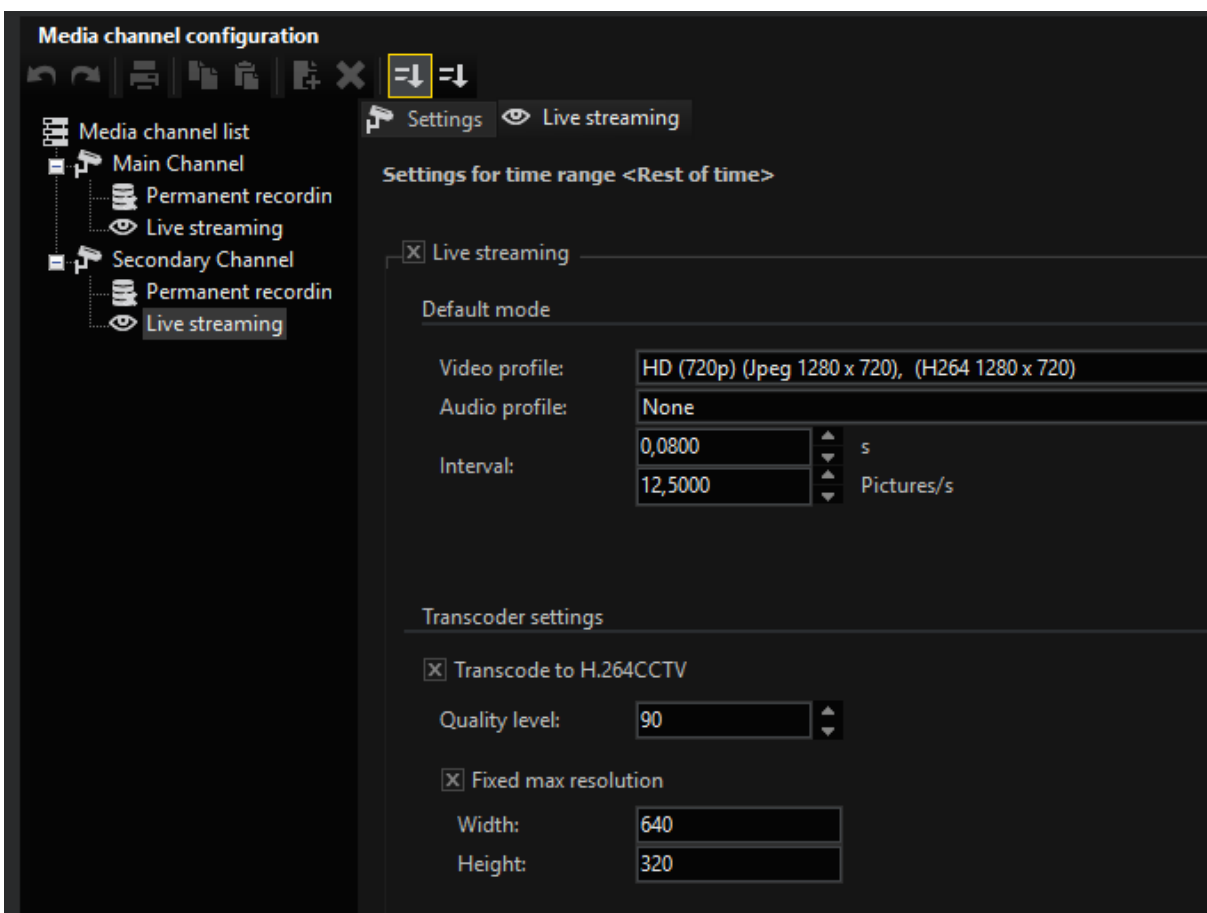
Now add the accessible media channel via **Media channels**.



Duplicate Mode

In standard operation, the Secondary Channel will always receive a copy of the images that are intended for the main channel. In this mode called "Duplicate Mode" the existing stream of the camera is used and made available to the second media channel again.

This mode is useful if the camera is not capable of delivering multiple streams simultaneously. The second media channel must then be transcoded to a lower resolution in order to achieve the desired goal of a different quality/resolution.



Individual Mode

The second mode is called "Individual Stream" and asks the camera for another own stream (or, in the case of Dual Stream, two additional streams) for the secondary channel. This doubles the number of streams picked up by the camera as opposed to "Duplicate Mode".

If the main channel is set to "Single Stream", the secondary channel also receives only one stream, so that the camera requests a total of two streams.

If the main channel is set to "Dual Stream", the secondary channel also receives two streams, and thus a total of up to four streams are requested from the camera.

Overview of the advantages and disadvantages of both modes:

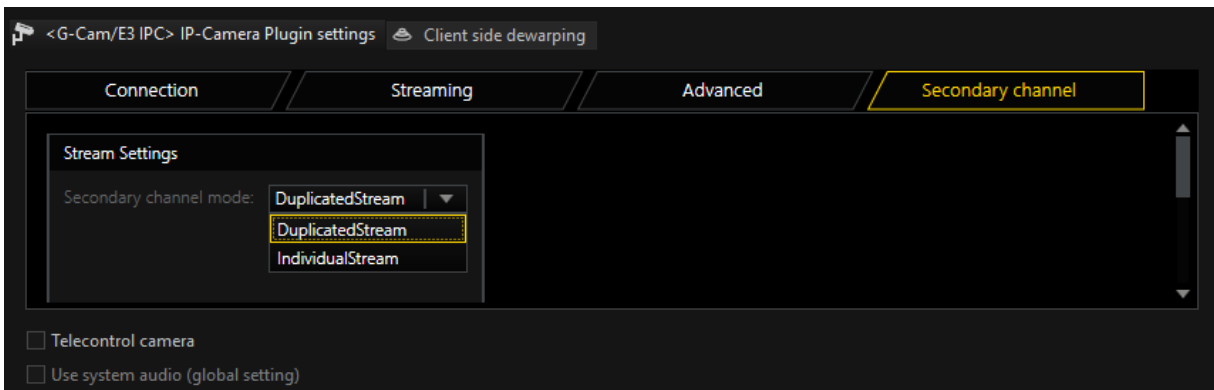
	Duplicate Mode	Individual Mode
Advantages	The stream from the cam-	The resolution/framerate can be

	Duplicate Mode	Individual Mode
	<p>era can be received with maximum resolution and frame rate.</p> <p>It can then be transcoded to any lower resolution/frame rate.</p> <p>4K cameras can often only deliver one stream at 25FPS and are often not Dual Stream capable in this mode.</p>	<p>freely selected.</p> <p>No trans-coding is required and the resolution can be higher than that of the main channel depending on the camera.</p>
Disadvantages	<p>You have to use transcoding to get a lower resolution/quality. This requires additional CPU power on the G-Core.</p> <p>Furthermore, only smaller resolutions are available for the secondary channel, not larger ones.</p>	<p>Since up to four streams are requested from the camera in dual stream mode, it will rarely be possible to achieve the highest frame rate.</p>

i **Special features in Duplicate mode: If the main channel is not live streaming or streaming in memory, the secondary stream can select the resolution and quality itself. As soon as the main channel needs images, however, the resolution/quality of the main channel is used again and these are also duplicated into the secondary channel.**

Secondary Channel with E5

In the E5 plugin, the secondary mode becomes visible in the hardware by selecting "Secondary channel". Here, you can decide between "Duplicate Stream" and "Individual Stream".



In the Individual mode of the E5 camera, the following notes must be observed for the number of streams:

- If DSS is used, the number of streams in the camera is parametrized as set under "Streaming". For example, if three streams are selected, the secondary channel will choose and use the one that fits best.
- With Single Stream the plugin will parametrize two streams in the camera. One for the main channel and one for the secondary channel.
Please note that a 4K camera in this mode will no longer be able to deliver 25FPS. If this is desired, you must select the Duplicate mode.

- i** **With Dual Stream the plugin will not parametrize the streams in the camera when using Individual Stream. You must select and parametrize the resolutions in the camera yourself. To do this, select the quadruple streaming functionality as shown in the following picture. Then select the desired resolutions as follows:**
- stream 1 will set the resolution for the memory stream from the main channel**
 - stream 2 will set the resolution for the live stream from the main channel**
 - stream 3 will set the resolution for the memory stream from the secondary channel**
 - stream 4 will set the resolution for the live streams from the Secondary channel**

- Video Configuration
- Video Rotation
- Video Text Overlay
- Video ROI
- Video ROI Encoding
- Video OCX Protocol
- Video Mask
- Audio

Video Configuration

stream 1

Encoding: Yes

Encode Type: H.265

Resolution: 1920 x 1080

Rate Control: VBR

GOV Structure: Non-reference P frame

stream 2

Encoding: Yes

Encode Type: H.265

Resolution: 1280 x 720

Rate Control: VBR

GOV Structure: Non-reference P frame

stream 3

Encoding: Yes

Encode Type: H.265

Resolution: 960 x 544

Rate Control: VBR

GOV Structure: Non-reference P frame

G-Cam/EcoLine

With this plugin, CNB IP cameras can be used in G-Core in M-JPEG mode.

In MJPEG mode, communication with the CNB cameras is performed via two channels. One channel (RTP over TCP) is established by the CNB-SDK (Integrated_CNb_NETSDK). The images and event data are transmitted via this channel. The second channel (CGI over HTTP) is used to change the data and for the pan/tilt control of the cameras.

i From release 8xx on, the plugin also supports H.264 streaming.

This plugin is based on the documentary "integrated CNB_NETSDK ((VER1.2.10.714)_2MQ". According to the SDK documentation all CNB IP cameras are supported with the TI DaVinci DM6441. The following models are explicitly mentioned:

IGP10xx, IGP1000F, IGB1110xF,

IXP40xx, IXP4000xx, INS2000,

IJBxxxx, IBxxxx, Xpeed IP, IDB1110x, IVB1110x

i Cameras with DM355 (T series) and AMBA288 (IDC4050x(x), IGC2050x) are not supported!

The plugin implements a dynamic adaptation of the resolution (320 x 240 to 1280 x 960), the frame rate (1 to 30 fps) and JPEG quality (1 to 100 in 10 steps). The possible resolutions are camera dependent: D1 cameras (eg, INS 2000) support CIF and D1, SXGA models (eg, IGP 1030) support CIF, VGA (640 x 480), XGA (1024 x 768) and SXGA (1280 x 960). In addition, some models that can only support CIF and VGA resolutions. During initialization of the camera its type is recognized and the correct resolutions are provided.

To conserve network bandwidth - after 10 seconds without an image request - the connection to the camera is disconnected and then re-established at the next request. Similar measures are taken when connection is lost due to network or power failure.

Apart from the video function, the following functions of the CNB cameras are supported

- Integrated Motion Detection
- One changeover contact (alarm contact)

IP-CAMERA PLUGINS

- Two input contacts (contact sensor and loop-through alarm contact).
- Integrated pan/tilt control

i See the separate section on special features of the camera.

Installation

The plugin consists of the CNBIPC.DLL (the CNB plugin), the netcamSDK.dll (v. 1.2.10.714, CNB Open Netcam SDK), the RealSDK.dll (v. 1.0.10.714, CNB Real Stream SDK), the NeoSDKs.dll (v. 1.0.0.1, CNB SDK), the ijl15.dll (v. 1.5.4.36, CNB SDK, Intel JPEG Library) and the CNBSDKWrapper.dll (Wrapper-DLL around the two CNB-SDK-DLLs)

If the plugin is not included in the scope of installation with delivery, please copy the file CNBIPC.DLL to the plugin directory of G-Core (C:\Program Files\Geutebrueck\GCore\MediaPlugins). Copy the other files to the G-Core directory (C:\Program Files\Geutebrueck\GCore).

The G-Core server service must then be restarted.

Other settings (e.g. for motion detection or alarm contacts) will be discussed later.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the plugin **IP-Camera Plugin <G-Cam/EcoLine IPC>** by selecting it and clicking **Add**.
4. Now select the plugin in the list and make the necessary changes to the settings.

Configuration

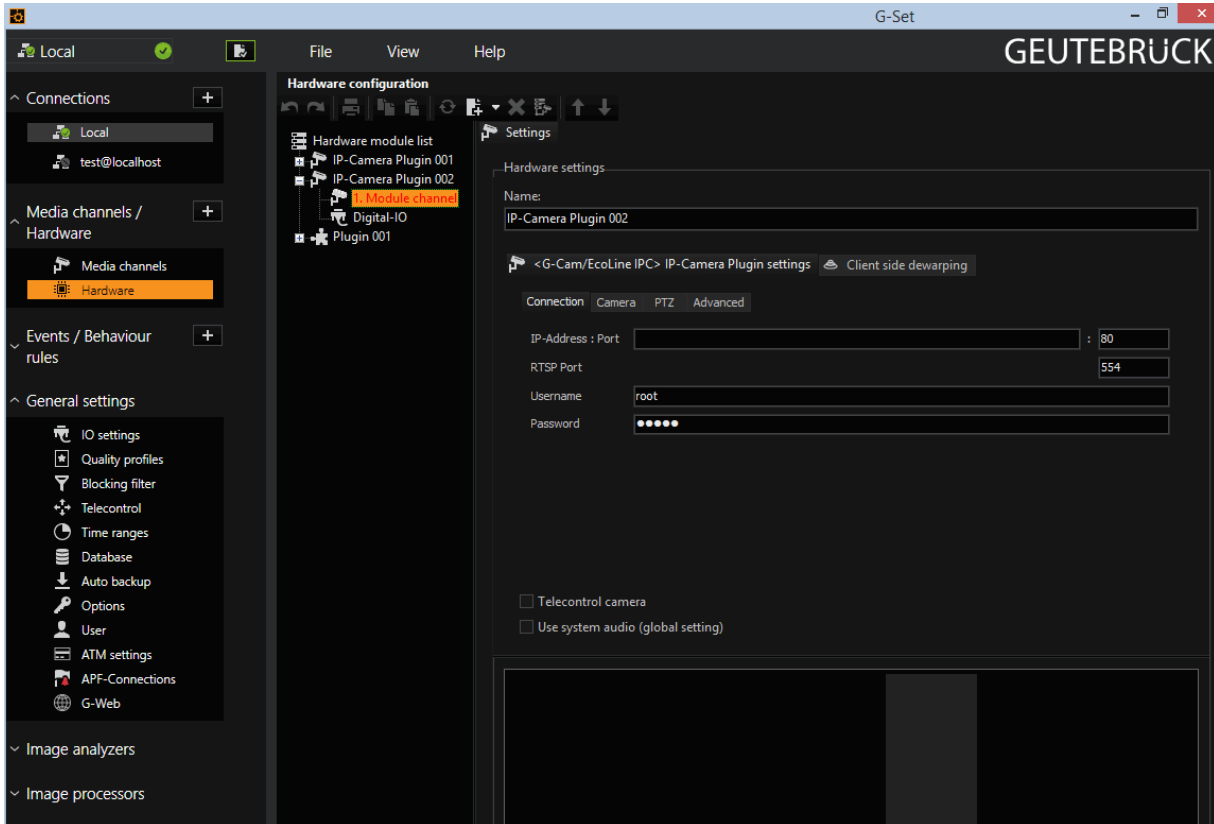
Connection

Normally, you do not need define special settings for the camera. To put the camera into operation, you will need the following information:

Name	Description
IP address of the camera	Is assigned by DHCP server and cus-

IP-CAMERA PLUGINS

Name	Description
	tomized with CNB tools
IP port for Web access	Default 80
User name and password for administrative access	Default "root" / "admin"



Connection to Camera

Parameter	Default	Description
Connection.Host	192.168.0.100	IP address of the camera
Connection.HTTPPort	80	IP camera port (usually 80 - http)

Authorization

Parameter	Default	Description
Connection.User	Root	Name of the authorized user for log on
Connection.Pass	Admin	Password

Camera and Streaming Settings

Parameter	Default	Description
Camera.DisableFPS	true	When activated, the plugin will ignore the dynamic changes in the frame rate. This is standard behavior.
Camera.DisableQuality	false	When activated, the plugin will ignore the dynamic changes in the compression quality.
Camera.DisableResolution	false	When activated, the plugin will ignore the dynamic changes in the resolution.
Camera.FixFPS	0	Switches to operating mode with a fixed frame rate. In this mode, the images are requested by the camera with the specified frame, the decimation of the images is done on the server side.
	<p>i These three parameters are necessary because any change to one of these parameters can cause a restart of the streamer in the camera and a re-establishing of the connection between plugin and camera. This process takes several seconds!</p>	
Camera.Type	<empty>	By default, the resolution of the camera type is determined at the run time. If the automatic recognition does not function or you do not wish to use higher resolutions, you can set the type of camera explicitly. Allowed values: <empty> - auto detection d1 - D1 camera (CIF + D1) sxga -

Parameter	Default	Description
		SXGA camera (CIF, VGA, XGA, SXGA) all other values - VGA camera (CIF + VGA).
Streaming.DisableAutoStop	false	By default, a camera whose pictures are not used for more than 10 seconds is switched off. This serves primarily better utilization of network bandwidth. However, the CNB cameras transfer alarm information (motion, sensor, etc.) only as long as the images are streamed. If you set this parameter to true, then the connection to the camera is permanently maintained.
Streaming.Mode	0	0 - JPEG, 1 - H.264

PTZ Functionality

Parameter	Default	Description
PTZ.Channel	1	Channel number for PTZ control. Whether and how it is used depends on the PTZ protocol installed in the camera.
PTZ.DigitalPTZ	false	If enabled, all pan/tilt commands are translated into the appropriate instructions for digital PTZ in the camera.
PTZ.AdvancedPresets	true	If active, additional instructions are used for preset handling (cmd>= 100 instead of cmd 42, 43).

i If the camera is a pan/tilt camera, select the corresponding checkbox!

Do not forget to configure the corresponding licenses:

Options information

✓ Connection to GCoreSAM at 'localhost' established.

Options | Dongles | Request new options | Failed requests

General information

Upgrade expiration date: 3/17/2018
 Optimized DB size in TB: 64 TB
 Registered DB size: 0 TB

Type	Expiration date	Total count	Used count
^ GScope			
GCoreViewConnect	Unlimited	6	0
GCoreCamConnect	Unlimited	26	1
v 1 T-JAS-REG#IP-Camera Plugin 001_0			
GCoreCenterConnect	Unlimited	5	0
GCoreGeViConnect	Unlimited	1	0
GCoreComConnect	Unlimited	1	0
GCoreScanConnect	Unlimited	1	0
GCoreVAMConnect	Unlimited	1	0
^ GTect			
GTectVMD	Unlimited	10	0
GTectVMX	Unlimited	10	0

Also, add the appropriate media channels and configure the digital contacts.

Supported Actions

The plugin supports the following actions:

Name	Description
VideoSetImageBrightness (c, v)	Change the brightness of the camera, "v" in the range 0-255 Depending on the camera used, use IP-AD as a sensor.
VideoSetImageContrast(c, v)	Change the contrast of the camera, "v" in the range 1-7 For most cameras, the focus is changed Depending on the camera used, use IP-AD as a sensor.
VideoSetImageSaturation (c, v)	Change the color saturation of the camera, "v" in the range 1-7 Depending on the camera used,

IP-CAMERA PLUGINS

Name	Description
	use IP-AD as a sensor.
CameraOff(c)	Separate the connection to the camera.
CameraOn(c)	Connecting the camera.
CameraRAWOutput(c, s)	Execution of a URL command "s". Host, port, user name and password are entered automatically.
AutoFocusOff(c)	Manual focus CNB command: 35
AutoFocusOn(c)	Auto-focus CNB command: 34
CameraLightOff(c)	Power down CNB command: 46
CameraLightOn(c)	Power on CNB command: 45
CameraManuallIrisOff(c)	Auto iris CNB command: 36
CameraManuallIrisOn(c)	Manual iris CNB command: 37
CameraStopAll(c)	Stop CNB command: 255" .
CameraTourStart(c, N)	Run pattern N CNB command: 105
CameraTourStop(c)	Stop CNB command: 255" .
DefaultPosCallUp(c) DefaultPosClear(c) DefaultPosSave(c)	Retrieve, save or delete position 1 If PTZ.AdvancedPresets is active: CNB commands: 100, 101, 102, otherwise: CNB commands: 42, 43
PrePosCallUp(c, N) PrePosClear(c, N) PrePosSave(c, N)	Retrieve, save or delete position N If PTZ.AdvancedPresets is active: CNB commands: 100, 101, 102, otherwise: CNB commands: 42, 43
FocusFar(c, s) FocusNear(c, s) FocusStop(c)	Focus change CNB commands: 57, 58, 59, 60
ZoomIn(c, s) ZoomOut(c, s) ZoomStop(c)	Zoom change CNB commands: 53, 54, 55, 56

IP-CAMERA PLUGINS

Name	Description
IrisClose(c) IrisOpen(c) IrisStop(c)	Iris change CNB commands: 61, 62, 63, 64
PanLeft(c, s) PanRight(c, s) PanStop(c) TiltUp(c, s) TiltDown(c, s) TiltStop(c)	Pan/tilt If PTZ.DigitalPTZ is active: CNB commands: 65 - 80 , otherwise: CNB commands: 0x00 - 0x22

Examples for CameraRAWOutput

In all examples, 1 is used as a camera number.

Name	Description
CameraRAWOutput(1, "/cgi-bin/Param.cgi?action=list")	Display all parameters
CameraRAWOutput(1, "/cgi-bin/Param.cgi?action=list&group=video")	Display video parameters
CameraRAWOutput(1, "/cnb-cgi/CNBMain-tenance?action_flag=0")	Restart the CNB Network Camera
CameraRAWOutput(1, "/cgi-bin/Param.cgi?action=restart_stream")	Restart video stream service
CameraRAWOutput(1, "/cnb-cgi/-setAlarmCtrl?forcealarm=1")	Alarm function can be used in manual mode
CameraRAWOutput(1, "/cgi-bin/Param.cgi?action=update&condition.whitebalance=1")	Whitebalance (1:auto,2:Manual)
CameraRAWOutput(1, "/cgi-bin/Param.cgi?action=update&condition.blc=0")	Back Light compensation(off:0,on:1) Megapixel(Box)DC Iris Lens control (off:0,on:1)

Name	Description
CameraRAWOutput(1, "/cgi-bin/Param.cgi?action=update&condition.cm=1")	Color&Mono(1:color,2:mono)
CameraRAWOutput(1, "/cgi-bin/Param.cgi?action=update&condition.daynight=1")	Day&Night (1:auto,2:night,3:day)

For other commands, see the CNB documentation "CNBHBAPI Specification (Ver0.62)(1).xls."

Special Features of the Camera

Megapixel resolutions are only available in M-JPEG mode. In M-JPEG mode, dual streaming does not function.

If you activate the motion detection, the analog output of the camera then no longer functions. The cameras support up to 3 overlapping zones with separate sensitivity. Alarms are reported as IP-AD alarms with the corresponding area. Alarm is withdrawn only when all areas are blurred.

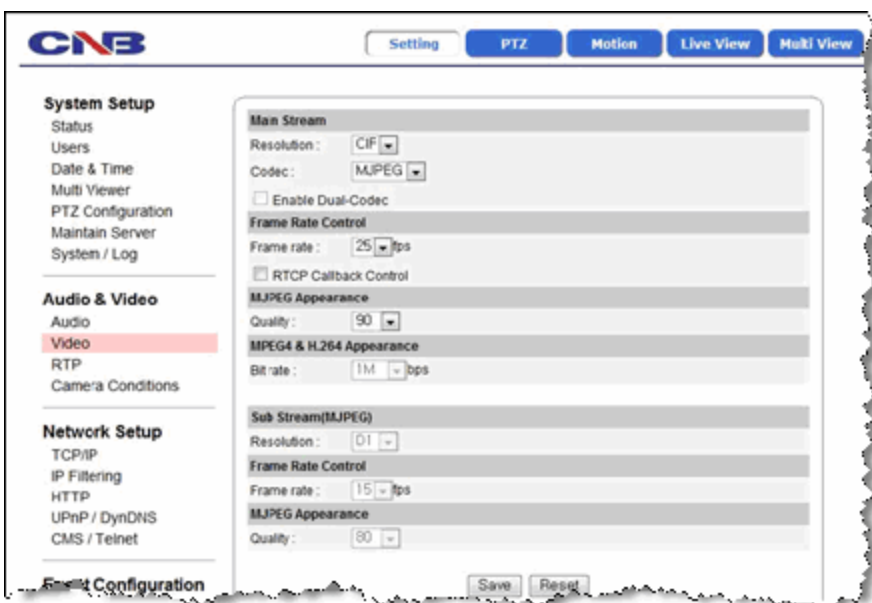
On the back of the camera, there is an input and an output contact. The input contact is called "sensor", the output contact is called "alarm". These contacts are each provided in GeViScope. Switching on the alarm contact is also reported in the server; a second input contact was introduced for this purpose. The alarm output must first be activated for manual access.

Both the sensor messages and the alarm and motion detection messages are transported in the same stream as the image data. If this stream is stopped, messages are no longer delivered! If you want to use the sensors of the camera, you should use either permanent recording for the camera or set the parameters "Streaming.DisableAutoStop" for the camera.

Each switch of the video parameters (whether JPEG quality, resolution or frame rate) shuts off the streamer on the camera after a few seconds. It is then initialized and restarted. Meanwhile, the current connections from the plugin to the camera are lost and must be re-established. The entire process takes up to 10 seconds!

Thus, the camera is not suitable for the dynamic adjustment of recording parameters! With specific settings in the setup ("Camera.Disable ..."), you can specify which of the criteria should be changed dynamically, and which changes need to be suppressed.

Other parameters should be set directly in the camera:



Another option is to use the fixed frame rate with "Camera.FixFPS". In this case, the images are requested at a predetermined frame rate by the camera and first reduced to the required number on the server side. Thus, the higher switching speed is accomplished at the cost of higher bandwidth.

G-Cam/GNSD

With this plugin, Geutebrück Network Speed Domes can be used in G-Core.

Installation

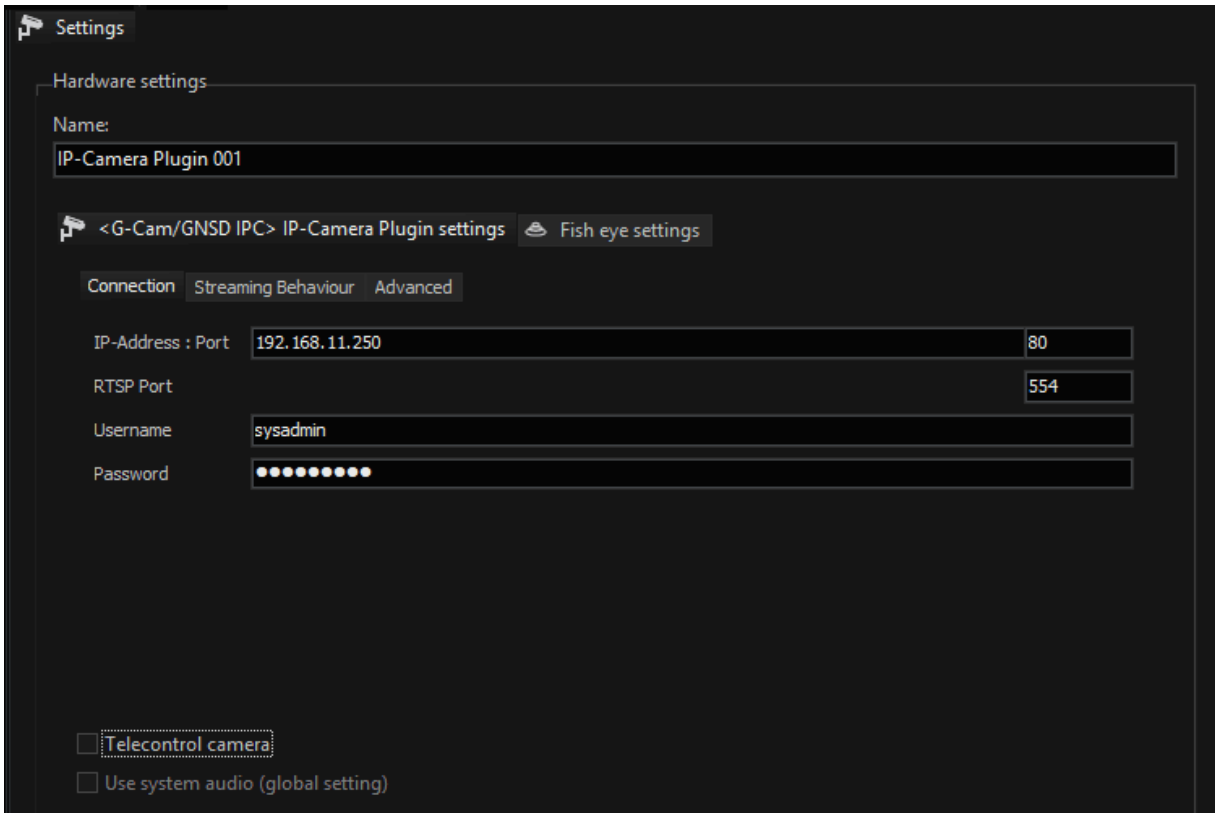
The plugin is part of G-Core installation and does not need to be installed separately.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <G-Cam/GNSD IPC>** by selecting it and clicking **Add**.
 - The GNSD plugin is now entered in the hardware module list as a hardware resource.

Connection

On the **Connection** tab, enter the IP address, the port numbers and the access data.



The screenshot shows the 'Settings' window for an IP-Camera Plugin. The 'Hardware settings' section is expanded, showing the 'Name' field set to 'IP-Camera Plugin 001'. Below this, there are tabs for '<G-Cam/GNSD IPC> IP-Camera Plugin settings' and 'Fish eye settings'. The 'Connection' tab is selected, showing fields for 'IP-Address : Port' (192.168.11.250:80), 'RTSP Port' (554), 'Username' (sysadmin), and 'Password' (masked with dots). At the bottom, there are two checkboxes: 'Telecontrol camera' and 'Use system audio (global setting)', both of which are unchecked.

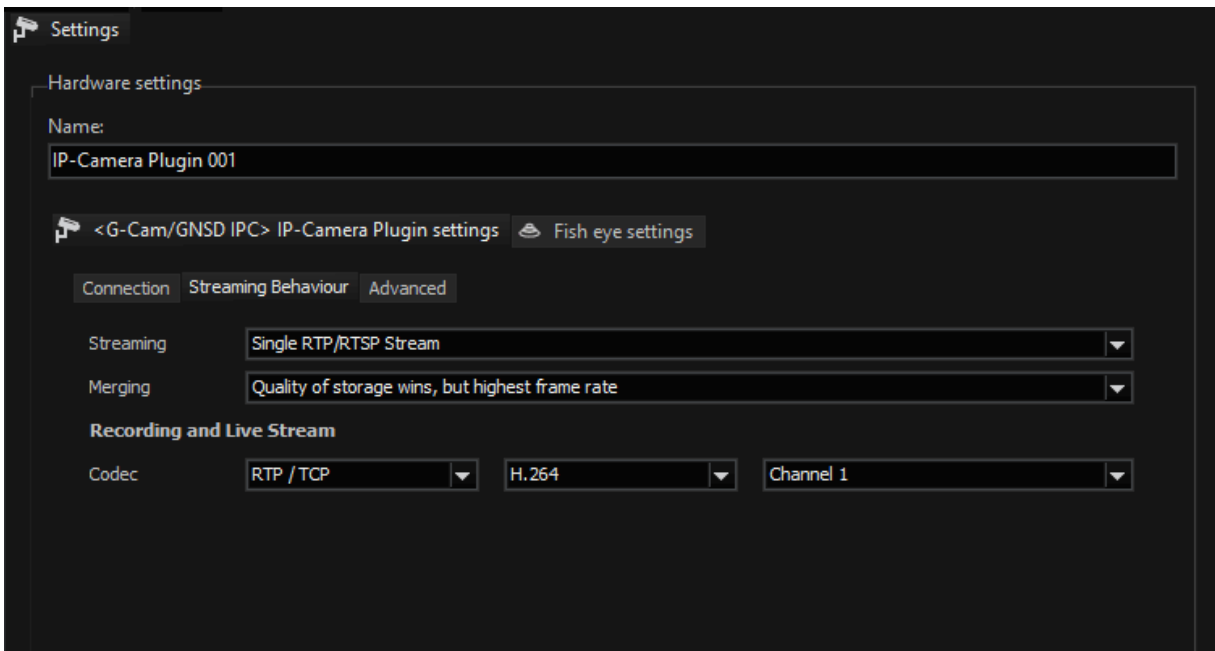
Streaming Behaviour

You specify the operating mode on the **Streaming Behaviour** tab:

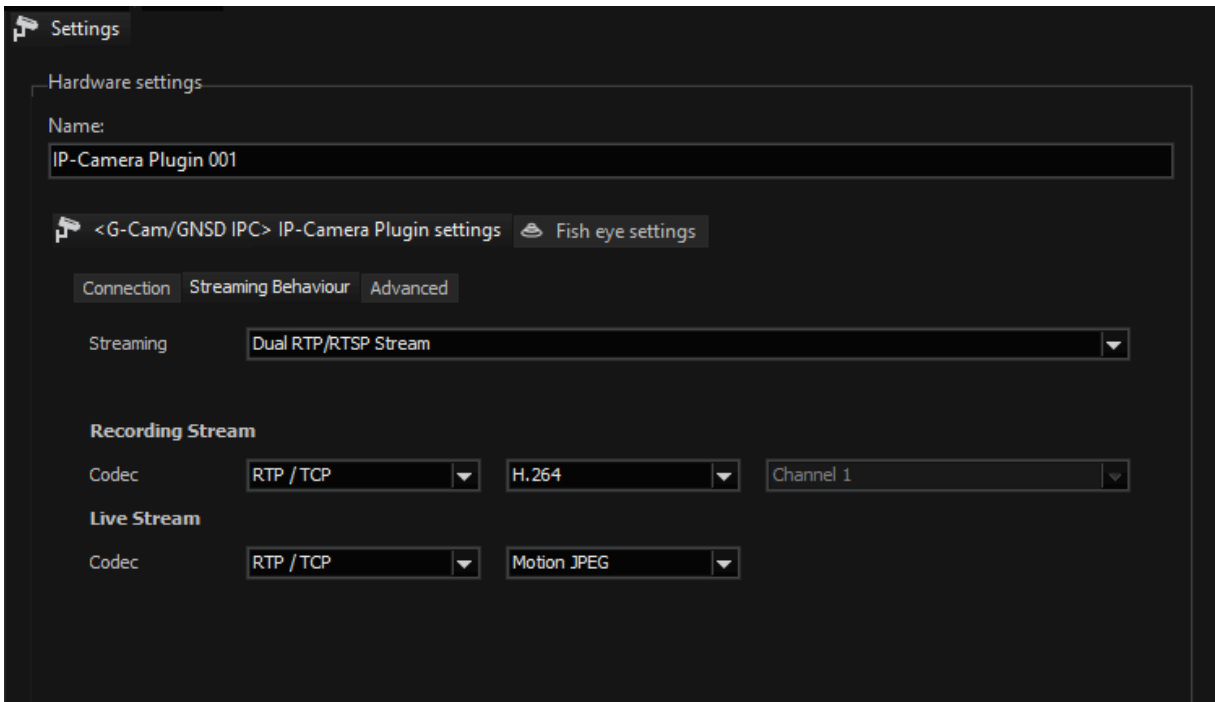
- Single RTP/RTSP Stream or
- Dual RTP/RTSP Stream.

In Single Mode, you can also set the type of merging. In addition, codecs can be configured for the recording and live streams.

IP-CAMERA PLUGINS



In Dual Mode, you specify the codecs separately:



The camera provides up to four independent streams, however only the first two channels are supported. The following stream channel combinations are possible:

IP-CAMERA PLUGINS

- H.264 Only
- MJPEG Only
- H.264 + H.264
- MJPEG + H.264

If the plugin is operated in H.264 Dual Streaming Mode, then the corresponding H.264 channel (channel 1/channel 2) can be selected for the recording and live streams.

Special aspects regarding the streaming behavior of the camera:

- Note that after a change is made to the stream, depending on the settings, the camera needs a number of seconds to make the change. This is due to the camera itself and cannot be influenced by the plugin. Due to the long switch-over time, DLS is deactivated by default in the plugin.
- If the plugin is operated in Dual Streaming Mode with H.264, the resolution of the second H.264 channel may not be greater than that of the first channel. If this is the case, then the resolution of the second H.264 channel is used for both channels, i.e. the larger resolution.
- The same applies for Dual Streaming with MJPEG and H.264. The MJPEG resolution may not be larger than the H.264 resolution. In this case as well, the larger of the two resolutions is used for both streams, i.e. the H.264 channel.
- It should also be noted that only in the first H.264 channel can the full bitrate of 8196 kbit/s be used. The other H.264 channels support a maximum bit rate of 2048 kbit/s.

Streaming Transfer:

- In the Streaming Behavior dialog, you can specify the transfer type of the stream.
- You can distinguish between RTP/TCP, RTP/UDP Unicast and RTP/UDP Multicast.

Settings in the Camera Web Interface

Streaming Transfer

- i** **If the streaming transfer is changed in the plugin, this fact must also be changed in the web interface of the camera. To do so, in the camera web interface go to Streaming and then to Video OCX Protocol. You can now select the streaming transfer to be used by the camera.**

1080p
Network PTZ

Home
System
Streaming
PTZ
Logout

Video Format

Video Compression

Video OCX Protocol

Video Frame Rate

Audio

Video OCX Protocol

Video OCX protocol setting :

RTP over UDP

RTP over RTSP(TCP)

RTSP over HTTP

MJPEG over HTTP

Multicast mode

Multicast IP Address	0.0.0.0
Multicast H.264-1 Video Port	51001
Multicast H.264-2 Video Port	51002
Multicast H.264-3 Video Port	51003
Multicast H.264-4 Video Port	51004
Multicast MJPEG Video Port	52000
Multicast Audio Port	53000
Multicast TTL	1

Save

Note:
This page only applies to video streams going to a DC Viewer.

Audio

To use audio, you must first activate it in the camera web interface. To do so, go to **Audio** under **Streaming**. You can specify the audio configurations here.

1080p Network PTZ

Home System Streaming PTZ Logout

Video Format

Video Compression

Video OCX Protocol

Video Frame Rate

Audio

Audio

Transmission Mode:

- Full-duplex (Talk and listen simultaneously)
- Half-duplex (Talk or listen, not at the same time)
- Simplex (Talk only)
- Simplex (Listen only)
- Disable

Server Gain Setting:

Input gain:

Output gain:

Bit Rate:

Save

Motion Detection

To use the camera-internal motion detection, it is necessary to activate it beforehand in the web interface of the camera. To do so, in the System tab, find the Motion Detection menu item.

If the motion detection has been activated, it is possible to specify new MD windows using the Add button.

Under **Sensitivity Level** the trigger threshold can be specified.

If a motion is detected by the internal motion detection, the plugin sends a "sensor video alarm" to the server.

Input Contacts

The plugin supports up to 4 input contacts, which should be configured accordingly in the setup of the camera:

The screenshot shows the web interface for a 1080p Network PTZ camera. The top navigation bar includes 'Home', 'System', 'Streaming', 'PTZ', and 'Logout'. The left sidebar lists various system settings: System, Security, Network, DDNS, Mail, FTP, HTTP, Application, Motion detection, Network failure detection, Storage management, Recording, File location, View information, Factory default, Software version, Software upgrade, and Maintenance. The main content area is titled 'Application' and contains two sections:

Alarm pin selection

Alarm	Switch	Type
1.	Off	Normal open
2.	Off	Normal open
3.	Off	Normal open
4.	Off	Normal open

Below the table is an 'Edit' button.

Alarm pin1 status

Alarm setting

Alarm switch: Alarm type:

Triggered action

<input type="checkbox"/> Enable alarm output 1	<input type="checkbox"/> Enable alarm output 2
<input type="checkbox"/> Send message by FTP	<input type="checkbox"/> Send message by E-Mail
<input type="checkbox"/> Upload image by FTP	<input type="checkbox"/> Upload image by E-Mail
<input type="checkbox"/> PTZ Function	<input type="checkbox"/> Send HTTP notification
<input type="checkbox"/> Record stream to sd card	

File name

File name :

Add date/time suffix
 Add sequence number suffix (no maximum value)
 Add sequence number suffix up to and then start over
 Overwrite

i The corresponding contacts should be added in G-Set.

G-Cam P1

The plugin embeds the thermal camera P1 and makes it easy to configure. The scope of P1 thermal camera plugin includes the files P1IPC.dll and P1IPCDialog.dlg.dll, located in MediaPlugins directory.

The plugin provides the following functionality:

- H.264 and MJPEG support
- TCP, UDP and multicast connections
- Actions

IP-CAMERA PLUGINS

- Stream control (changing resolution, quality and frame rate)
- NUC (Non-Uniformity Correction)
- OSD Test

Integrated motion detection of the camera and system update of the camera are not supported.

Like all other plugins, P1 plugin can be found in the plugin list. It is added using the same, familiar method that is used for hardware, licenses and media channels.

Connection

The camera IP address is entered under **IP Address**. Control commands for the camera are sent by through port 80 (cannot be modified). In the fields **Username** and **Password**, login data of the camera can be entered.

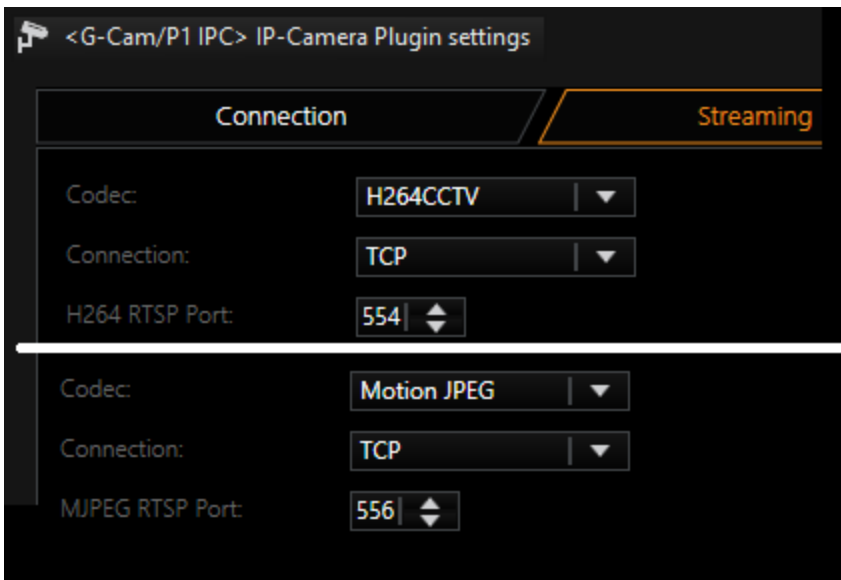
The screenshot shows the 'IP-Camera Plugin settings' window for a device labeled '<G-Cam/P1 IPC>'. The interface has three tabs: 'Connection' (selected), 'Streaming behaviour', and 'Image settings'. Under the 'Connection' tab, there are three input fields: 'IP Address' (empty), 'Username' (containing 'root'), and 'Password' (masked with 10 dots and a clear button icon).

Streaming Behaviour

Here the settings are defined for the video stream. Under **Codec** you can choose between H.264CCTV and Motion JPEG (MJPEG).

i **H.264CCTV and MJPEG use different ports. In the case of RTSP, the ports are 554 and 556.**

IP-CAMERA PLUGINS



If a UDP connection should be established, the specification of the **UDP port** can be performed manually or left to the plugin.

IP-CAMERA PLUGINS

<G-Cam/P1 IPC> IP-Camera Plugin settings

Connection	Streaming behaviour
Codec:	H264CCTV
Connection:	UDP
Use dynamic port	<input checked="" type="checkbox"/>
UDP port:	6000
H264 RTSP Port:	554
Codec:	Motion JPEG
Connection:	UDP
Use dynamic port	<input checked="" type="checkbox"/>
UDP port:	6002
MJPEG RTSP Port:	556

i Note that it may take up to 30 seconds until multicast is enabled.

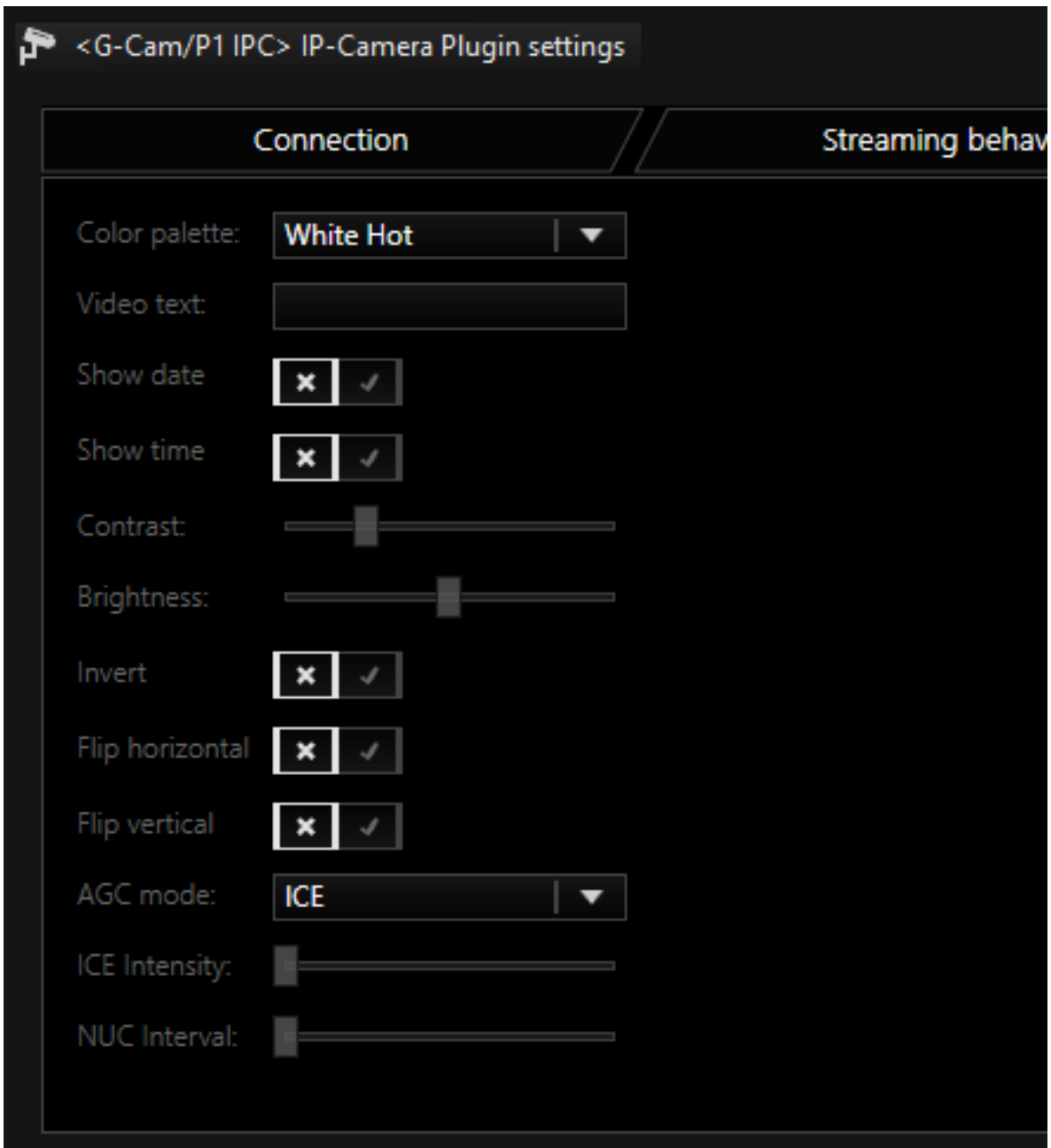
The screenshot shows the 'IP-Camera Plugin settings' window for '<G-Cam/P1 IPC>'. It features two tabs: 'Connection' and 'Streaming behaviour'. The 'Streaming behaviour' tab is active, displaying settings for two different streaming profiles.

Profile	Codec	Connection	RTSP Port	Multicast Address	Multicast Port
H264	H264CCTV	Multicast	554	232.100.0.0	6000
Motion JPEG	Motion JPEG	Multicast	556	232.100.0.1	6002

Image Settings

The entry for **Color Palette** determines how heat is displayed in the picture. The heat is depicted either black, white, blue or (as usual) in red/orange. It is also possible to adjust the contrast and the brightness. The image can be inverted, mirrored horizontally and vertically.

With the **NUC interval** controller you can determine the time intervals at which the infrared device is calibrated.



Quality Profile and Frame Rate Settings

The image quality and resolution of the camera can be set as usual using the quality profiles in G-Set. To do so, select the desired profile and then go to the **Plugin / IP Camera** tab. The resolutions supported by the plugin are shown in green.

IP-CAMERA PLUGINS

Quality profiles configuration

Quality profile list

- Video profiles
 - MAX (Maximum)
 - 4K2K (3840*2160)
 - FullHD (1080p)
 - HD (720p)
 - 4Cif (704*576)
 - 2Cif (704*288)
 - Cif (352*288)**
 - MIN (Minimum)
- Audio profiles

Quality profile

Name: Cif (352*288)

Description: Cif (352*288)

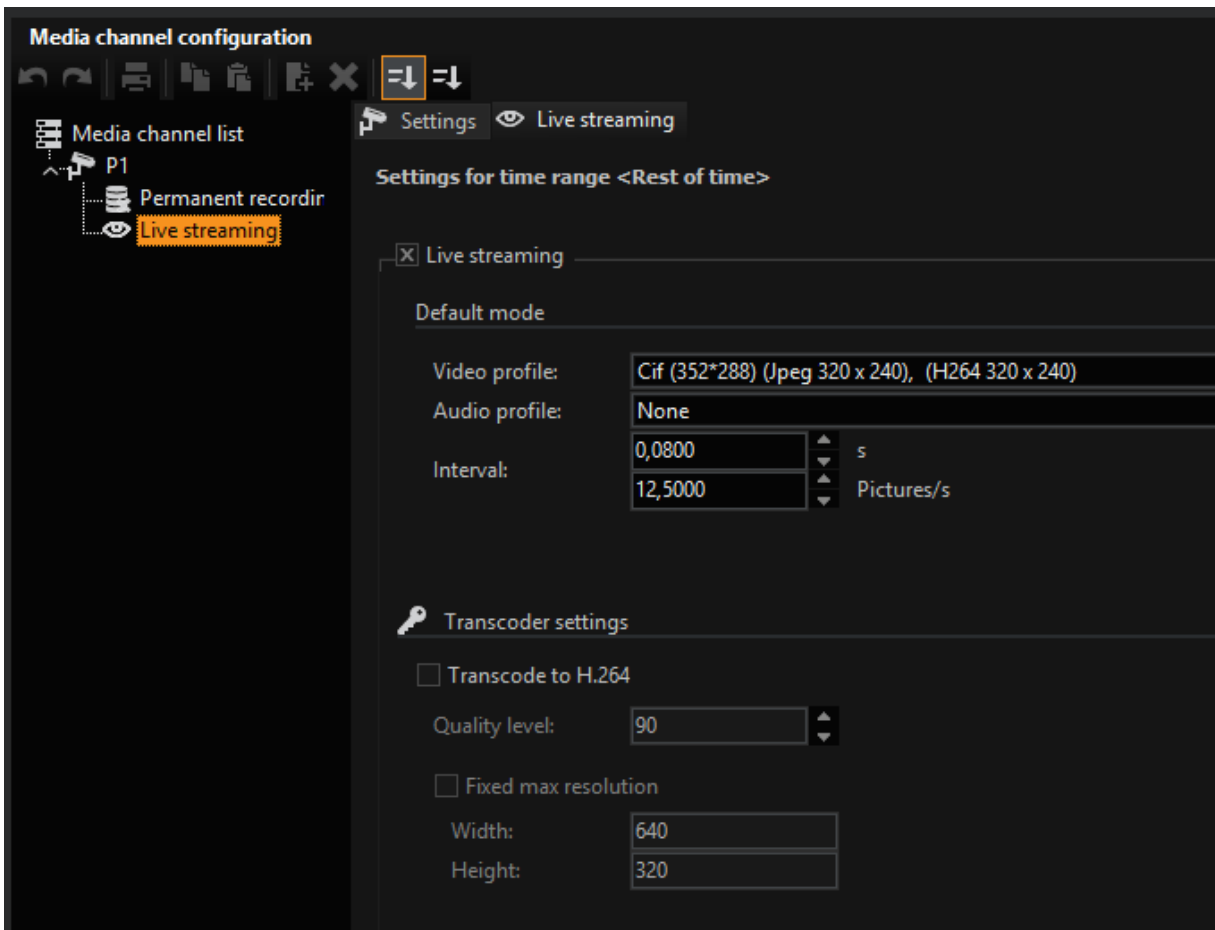
Quality level: 91

H264CCTV Plugin / IP-Camera H.264

Video size: 352 x 288

Plugin type	Image format
ArecontVision IPC	640 x 512
Axis IPC	384 x 288
Basler IPC	400 x 300
G-Cam/E2 IPC	352 x 288
G-Cam/E3 IPC	352 x 240
G-Cam/EcoLine IPC	320 x 240
G-Cam/GNSD IPC	352 x 240
G-Cam/P1 IPC	320 x 240
G-Cam/TopLine IPC	400 x 300
MBeg	704 x 576
Media Channel Simulator	352 x 288
ONVIF IPC	384 x 288
Panasonic Ex IPC	320 x 240
Procash 8000 IPC	640 x 480
Samsung IPC	352 x 288
Screen Grabber	640 x 480
Sony IPC	352 x 288

After the resolution and the quality of the corresponding quality profile have been specified, this profile only needs to be assigned to the corresponding media channel under **Video Profile**. The frame rate of the camera can be set using **Interval**.



Supported Actions

PTZ Actions

Using `SetCameraText (ChannelID, "TEXT")` it is possible to specify a video text. The text is only displayed when `CameraTextOn (ChannelID)` is active. With `CameraTextOff (ChannelID)`, the video text is deactivated.

Calibration (NUC) can be performed using `CameraSpecFuncUOn (ChannelID)`.

Camera Raw

Name	Description
PIFull	Full FPS bandwidth (30 fps, 2500 kbit/s)
PIHigh	High FPS & bandwidth (25 fps, 2000 kbit/s)

IP-CAMERA PLUGINS

Name	Description
P1Medium	Medium FPS & bandwidth (15 fps, 1000 kbit/s)
P1Low	Low FPS & bandwidth (5 fps, 500 kbit/s)

Since FPS and bitrate are automatically regulated by the plugin, you must set the `G-CoreRegistry` entry `system.AdjustQuality` to false so that your setting is not overwritten again immediately.

Default Values

Name	Value
Username	root
Password	admin
Codec	H.264
Type	TCP
H264 RTSP port	554
MJPEG RTSP port	556
Use dynamic port	Yes
H264 UDP port (static)	6000
MJPEG UDP port (static)	6002
H264 Multicast address	232.100.0.0
MJPEG Multicast address	232.100.0.1
H264 Multicast port	6000
MJPEG Multicast port	6002
Color palette	WhiteHot
Contrast	50
Brightness	50

IP-CAMERA PLUGINS

Name	Value
Invert	No
Flip horizontal	No
Flip vertical	No
NUC interval	5 minutes
Primary channel	0

Advanced default values (only visible in the G-Core Registry):

Name	Value
AGCMode	5
LapThreshold	5
CCTV	true(change requirescamera reboot)
H264 FPS	30
H264 bitrate	2500
H264 NetCache	1600
MJPEG quality	98
MJPEG FPS	30
MJPEG NetCache	200
StreamType	TCP[3]
Heater	true

G-Cam/TopLine

With this plugin, TopLine IP cameras can be used in GeViScope in M-JPEG mode and H.264CCTV mode.

Installation

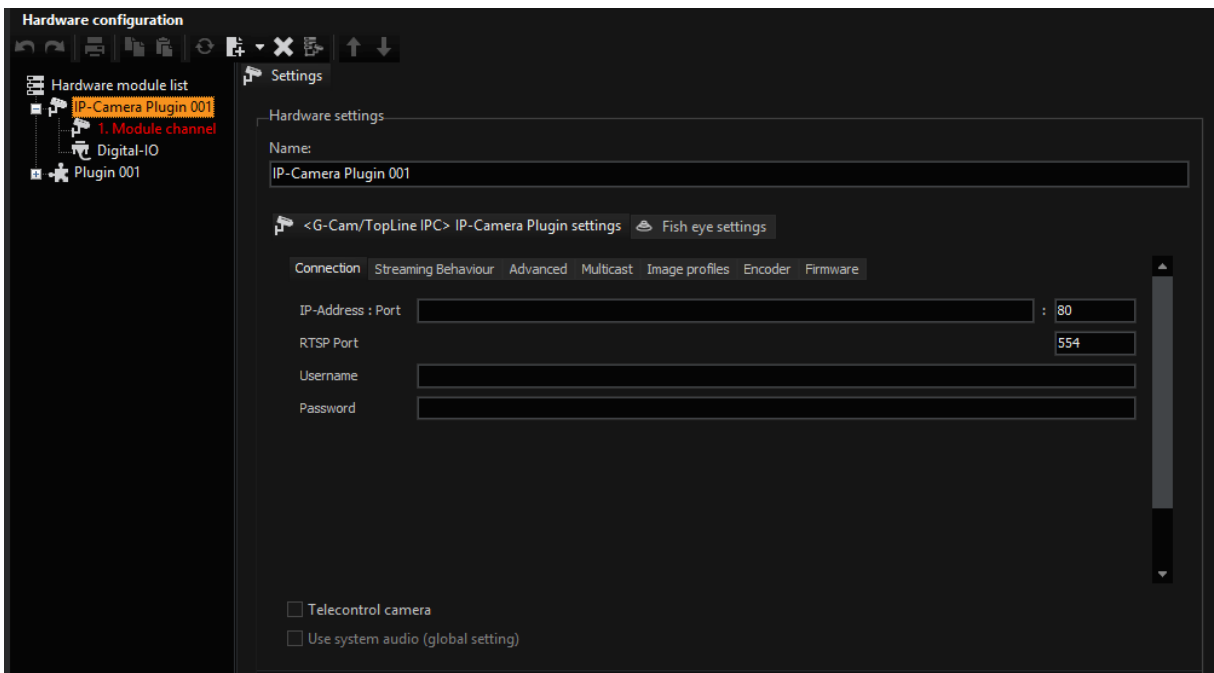
The plugin is part of GeViScope installation and does not need to be installed separately.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <G-Cam/TopLine IPC>** by selecting it and clicking **Add**.
 - The TopLine plugin is now entered in the hardware module list as a hardware resource.
4. Now select the plugin in the list and make the necessary changes to the settings.

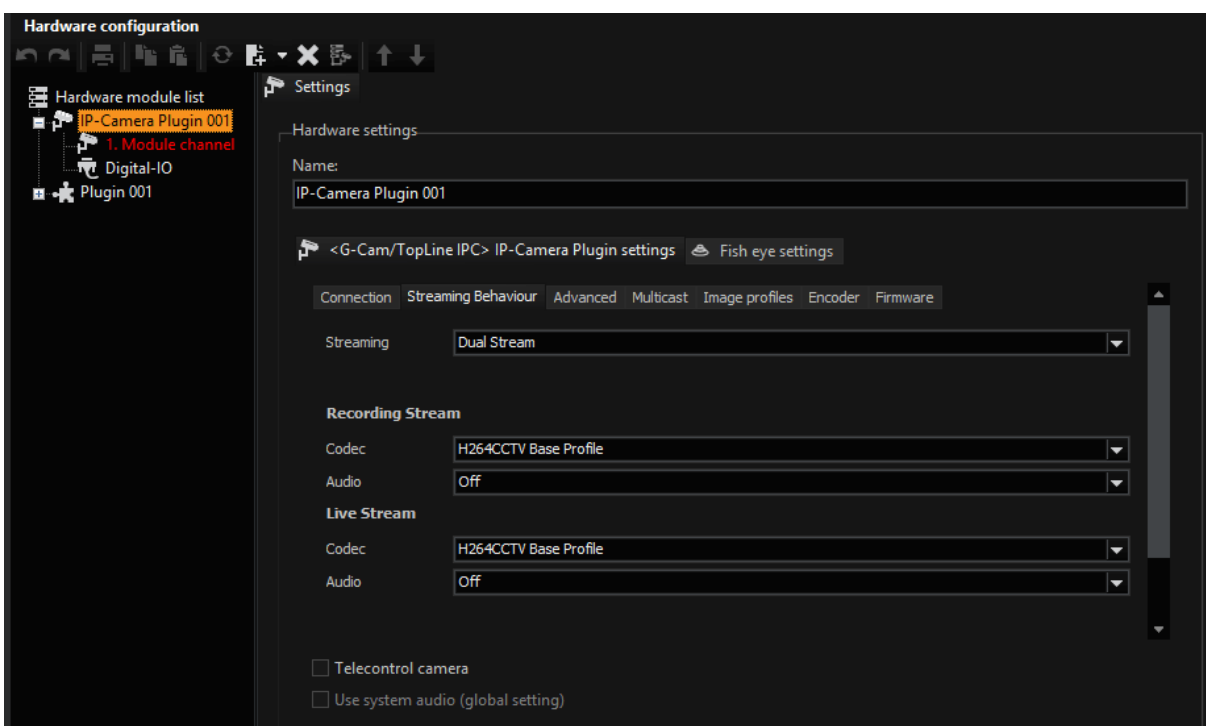
i Normally, you only change the connection settings and leave all other basic settings untouched.

Connection



Setting	Description
IP-Address	IP address or hostname of the camera (default: 192.168.1.100)
Port	HTTP port of the camera (default: 80)
RTSP-Port	RTSP port of the camera (default: 554)
Username	User name to connect as (default: empty)
Password	Password (default: empty)

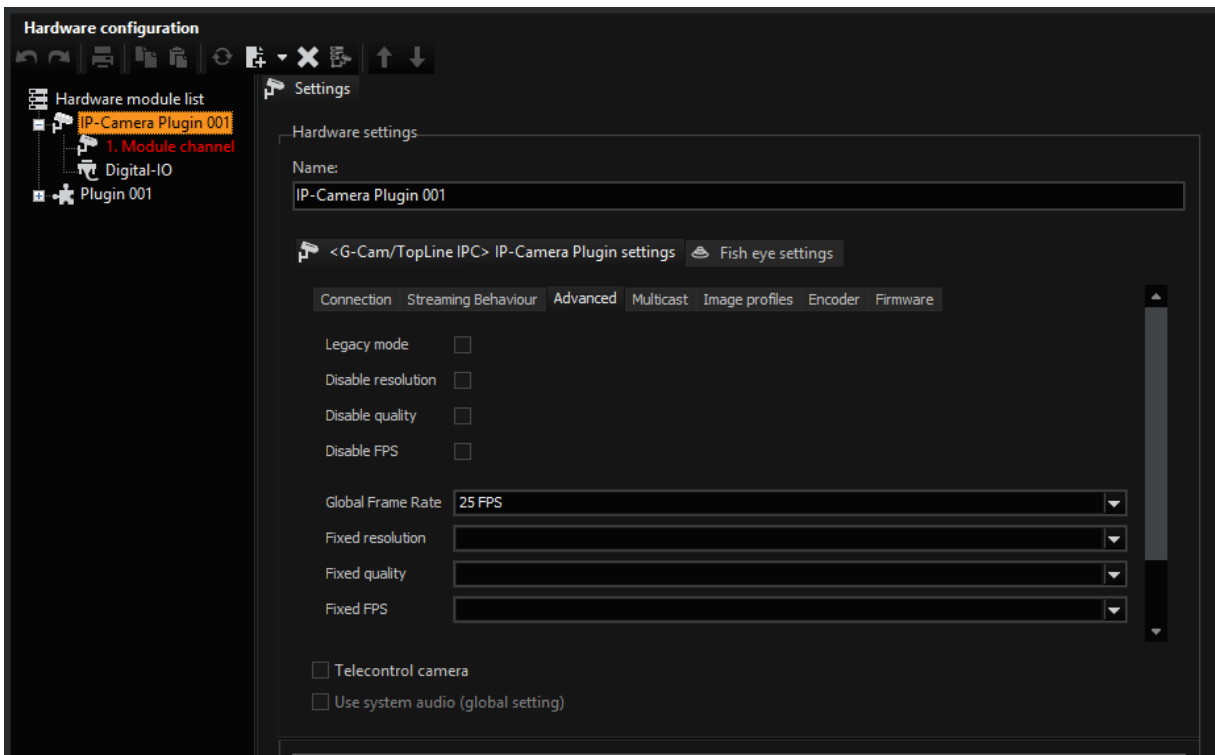
Streaming Behaviour



Setting	Description
Streaming	Single (default) or dual streaming mode
Merging	Different merging methods (for single mode only). Available values are: <ul style="list-style-type: none"> Quality of storage wins, but highest frame rate

Setting	Description
	<ul style="list-style-type: none"> • Best setting wins • Worst setting wins • Live profile wins • Storage profile wins
Recording Stream Codec	Codec for recording. Available values are: Motion JPEG, H.264CCTV Base Profil and H.264CCTV High Profil
Live Stream Codec	Codec for live stream. Available values are: Motion JPEG, H.264CCTV Base Profil and H.264CCTV High Profil

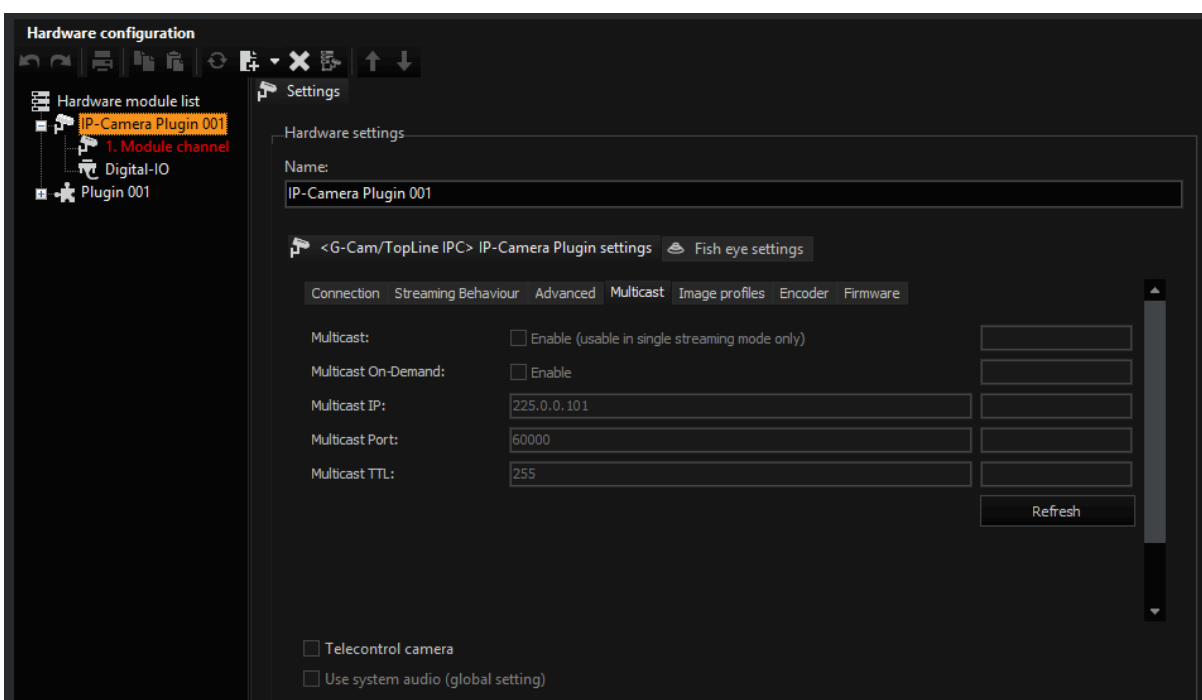
Advanced



IP-CAMERA PLUGINS

Setting	Description
Legacy mode	Legacy mode of the plugin, don't use it !
Disable resolution	Disable resolution control
Disable quality	Disable quality control
Disable FPS	Disable frame rate control
Global frame rate	Limit the sensor frame rate to the given value (default 25 fps)
Fixed resolution	If provided - this resolution decimation will be used instead of automatically calculated. Examples: <code>Scale_1_4</code> , etc.
Fixed quality	If provided - this quality level will be always used. Examples: 30, etc.
Fixed FPS	If provided - this frame rate decimation will be always used. Examples: <code>FpsScale_1_8</code> , etc.

Multicast



Setting	Description
Multicast	Check to enable multicast streaming. Please note that you can enable it only in single streaming mode!
Multicast On-Demand	Check to enable on-demand multicast streaming. The multicast stream will only be active when requested by a client. If multicast streaming is enabled and on-demand multicast streaming is disabled, the camera begins streaming to the multicast IP address as soon as multicast streaming is enabled and continues to stream to the multicast address until multicast streaming is disabled. If multicast streaming and on-demand multicast streaming are both enabled, the camera begins streaming to the multicast IP address when the first client issues an RTSP PLAY request.
Multicast IP	Specifies the destination IP address for multicasting (224.0.0.0 to 239.255.255.255).
Multicast Port	Specifies the destination port for multicasting (1 to 65535).

Setting	Description
Multicast TTL	Sets the time to live for multicast packets (1 to 255). The multicast Time-To-Live (TTL) value specifies the number of routers (hops) that multicast traffic is permitted to pass through before expiring on the network.

- i** Use the Refresh button to get the current settings directly from the camera.

Image Profiles

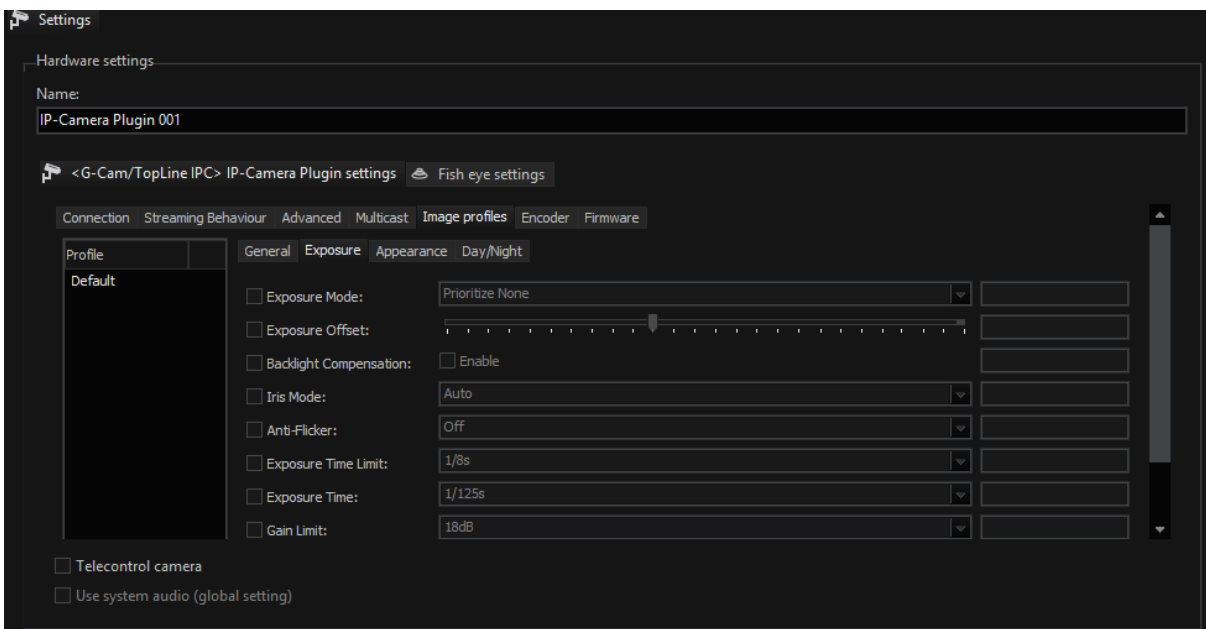
General

The screenshot displays the 'Hardware configuration' interface. On the left, a tree view shows the hardware modules: 'IP-Camera Plugin 001', '1. Module channel', 'Digital-IO', and 'Plugin 001'. The main area is titled 'Settings' and shows 'Hardware settings' for 'IP-Camera Plugin 001'. Below this, there are tabs for 'Connection', 'Streaming Behaviour', 'Advanced', 'Multicast', 'Image profiles', 'Encoder', and 'Firmware'. The 'Image profiles' tab is selected, showing a table with one profile named 'Default'. To the right of the table are sub-tabs for 'General', 'Exposure', 'Appearance', and 'Day/Night'. The 'General' sub-tab is active, showing 'Name: Default' and 'Load at start-up: Enabled'. A 'Submit settings now' button is located at the bottom right. At the bottom of the settings panel, there are two checkboxes: 'Telecontrol camera' and 'Use system audio (global setting)', both of which are currently unchecked.

Setting	Description
Name	Name of the profile
Load at start-up	Check to enable load at start-up
Submit settings now	Apply the image profile settings now

Exposure

Sets the operating mode for the auto exposure control and auto gain control features.



Setting	Description
Exposure Mode	Sets the camera's exposure mode (see below)
Exposure Offset	When the Exposure Mode parameter is set to one of the prioritize settings, increasing the Exposure Offset setting will make the camera produce lighter images and decreasing the setting will make it produce darker images. Value from -100 to +100.
Backlight Compensation	Check to enable backlight compensation feature that will automatically compensate when the main lighting is coming from behind the camera.
Iris Mode	Sets the camera's iris mode (see below)
Anti-Flicker	Enables or disables the anti-flicker feature. If the camera is operating in an environment where the lighting flickers at a 50 Hz or a 60 Hz rate, enabling the anti-flicker feature may reduce flickering in the captured images. The Anti-Flicker feature will only be available when the Expos-

Setting	Description
	<p>ure Mode parameter is set to one of the "prioritize" modes. Values:</p> <ul style="list-style-type: none"> • Off (the anti-flicker feature is disabled) • 50Hz (the anti-flicker feature is enabled and set for an environment where the lights flicker at a 50 Hz rate) • 60Hz (the anti-flicker feature is enabled and set for an environment where the lights flicker at a 60 Hz rate).
Exposure Time Limit	<p>When automatic exposure time control is enabled, the Exposure Time Limit parameter sets the maximum exposure time that the automatic exposure control can use. If the Exposure Time Limit is set to "Off", there will be no limit for the automatic exposure control.</p> <p>Available values are: from 1/30000s to 1s and "Off".</p> <p>i Note that if the Anti-Flicker feature is enabled, the Exposure Time Limit parameter setting:- must be 1/50 s or greater when the anti-flicker setting is 50 Hz.- must be 1/60 s or greater when the anti-flicker setting is 60 Hz.</p>
Exposure Time	<p>When automatic exposure time control is disabled, the Exposure Time parameter sets the exposure time for the captured images.</p> <p>Available values are: from 1/30000s to 1s.</p> <p>Note that if automatic exposure time control is enabled, the Exposure Time parameter will be read only and will indicate the current exposure time value as set by the automatic control.</p>
Gain Limit	<p>When automatic gain control is enabled, the Gain Limit parameter sets the maximum amount of gain that the automatic gain control can use. If the Gain Limit is set to "Off", there will be no limit for the automatic gain control.</p> <p>Available values are: from 0dB to 30dB and Off.</p>
Gain	<p>When automatic gain control is disabled, the Gain parameter sets the gain for the captured images. Gain refers to the amount of amplification that is applied to the pixel values in</p>

Setting	Description
	<p>each captured image. A higher setting means more amplification.</p> <p>Available values are: from 0dB to 30dB.</p> <p>i Note that if automatic gain control is enabled, the Gain parameter will be read only and will indicate the current gain value as set by the automatic control.</p>
Regulation Delay	<p>Regulation Delay in deciseconds.</p> <p>Value from 1 to 1800.</p>

Exposure Mode

Mode	Description
Prioritize None	<p>Automatic exposure time control and automatic gain control are both enabled. The camera will automatically adjust both the exposure time and the gain to maintain good overall image quality as lighting conditions change. Neither the exposure time adjustment nor the gain adjustment will have priority.</p> <p>If desired, the Exposure Time Limit and the Gain Limit parameters (see below) can be used to put limits on the auto controls.</p>
Prioritize Framerate	<p>Automatic exposure time control and automatic gain control are both enabled. The camera's automatic exposure and gain adjustments will be biased so that the frame rate is maintained at as high a level as possible. Maintaining image quality is given a lower priority.</p> <p>If desired, the Exposure Time Limit and the Gain Limit parameters (see below) can be used to put limits on the auto controls.</p>
Prioritize Quality	<p>Automatic exposure time control and automatic gain control are both enabled. The camera's automatic exposure and gain adjustments will be biased so that image quality is maintained at as high a level as possible. Maintaining the frame rate is given a lower priority.</p> <p>If desired, the Exposure Time Limit and the Gain Limit parameters (see below) can be used to put limits on the auto controls.</p>

Mode	Description
Manual Gain	Automatic gain control is disabled, and you must manually set the gain by using the Gain parameter (see below). Automatic exposure time control remains enabled. If desired, the Exposure Time Limit parameter (see below) can be used to put a limit on the auto exposure control.
Manual Exposure Time	Automatic exposure time control is disabled, and you must manually set the exposure time by using the Exposure Time parameter (see below). Automatic gain control remains enabled. If desired, the Gain Limit parameter (see below) can be used to put a limit on the auto gain control.
Manual Gain and Exposure Time	Automatic gain control and automatic exposure time control are both disabled. You must manually set the gain and the exposure time by using the Gain and Exposure Time parameters (see below).

i Note that the operation of the automatic gain and exposure time controls will be strongly influenced by the placement of the auto brightness mask.

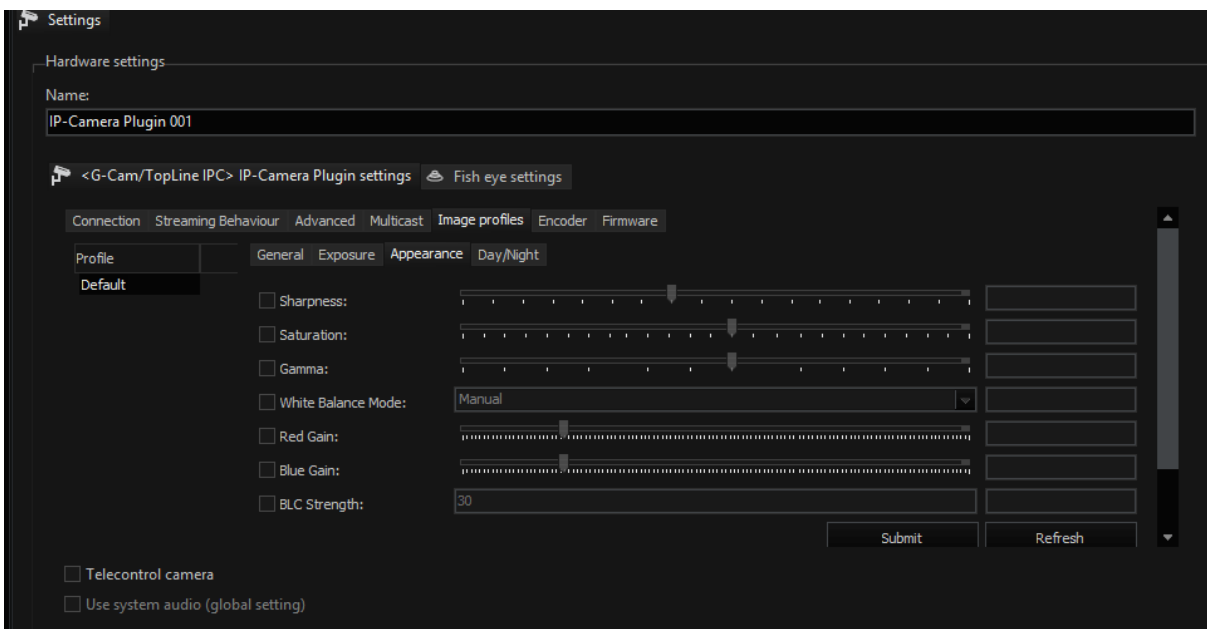
Iris Mode

Mode	Description	Note
Auto	The iris will be automatically controlled by the camera.	Note that the operation of the automatic iris control will be strongly influenced by the placement of the auto brightness mask.
Open	The iris is fully open.	The Open and Closed settings can be used to test the functionality of an iris mechanism.
Closed	The iris is fully closed. The Open and Closed settings can be used to test the functionality of an iris mechanism.	

Mode	Description	Note
Prioritize Open	The iris control will attempt to keep the iris as open as possible while still maintaining good image quality.	The Prioritize Open and Prioritize Closed settings may improve image quality in certain situations. Trying these settings under your actual conditions is the best way to determine whether one of the settings is appropriate for your application.
Prioritize Closed	The iris control will attempt to keep the iris as closed as possible while still maintaining good image quality.	

Appearance

i Click on the Refresh button to load the actually setup from the camera.



Setting	Description
Sharpness	Sets the sharpness of the images transmitted by the camera.

Setting	Description
	Higher settings produce sharper images. Value -40 to +100
Saturation	Sets the color saturation of the images transmitted by the camera. Higher settings produce more saturated (colorful) images. Value 0 to 200
Gamma	Sets the degree of gamma correction applied to captured images. Gamma corrects the captured images for non-linearities in the human eye's perception of brightness. A setting of 100 represents a gamma correction factor of 1, and the appearance of the captured images will not be changed. A setting of 50 represents a gamma correction factor of 0.5. A setting of 150 represents a gamma correction factor of 1.5. Value 50 to 150
White Balance Mode	Sets the camera's automatic white balance mode (see below)
Red Gain	If the White Balance Mode parameter is set to manual, then the Red Gain parameter can be used to adjust the intensity of the red in the captured images. Decrease the setting to make the images less red, and increase the setting to make the images more red. i Note that if the White Balance Mode parameter is set to a value other than manual, the Red Gain parameter will be read only and will indicate the current red gain value as set by the automatic white balance control.
Blue Gain	If the White Balance Mode parameter (see above) is set to manual, then the Blue Gain parameter can be used to adjust the intensity of the blue in the captured images. Decrease the setting to make the images less blue, and increase the setting to make the images more blue. i Note that if the White Balance Mode parameter is set to a value other than manual, the Blue Gain parameter will be read only and will indicate the current blue gain value as set by the automatic white bal-

Setting	Description
	i ance control.
BLC Strength	A high black level compensation strength creates an image with higher contrast but may lose some shadow detail.

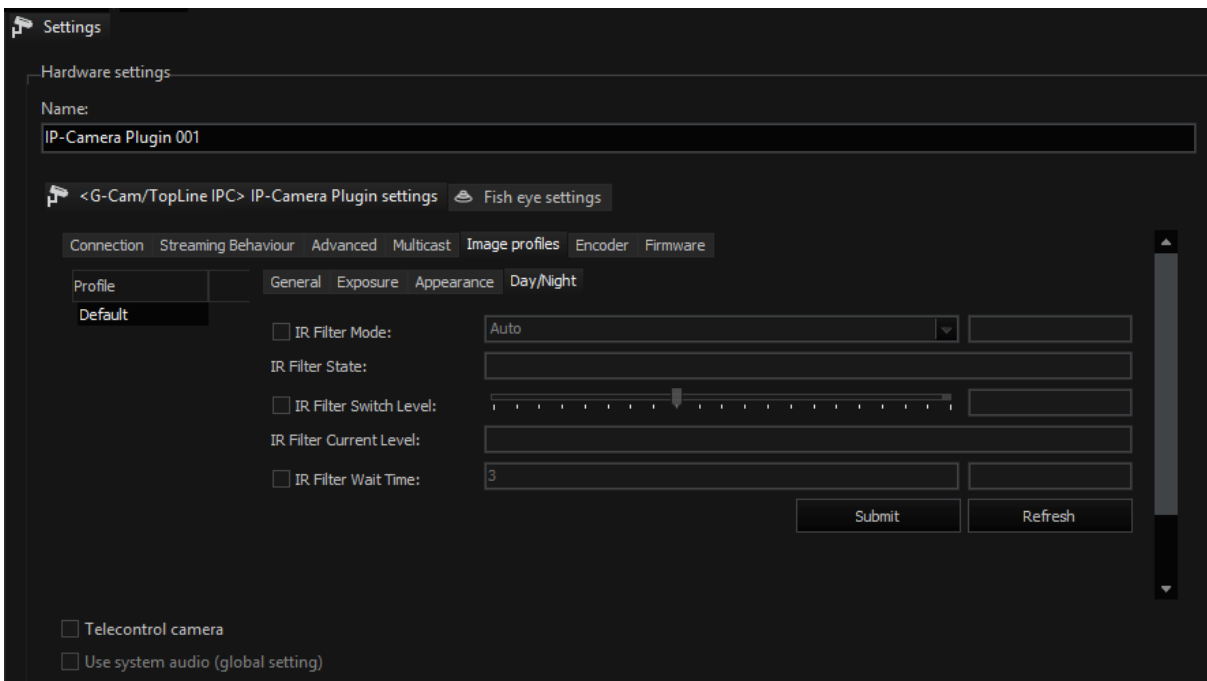
White Balance Mode

Mode	Description
Auto	<p>The camera will automatically adjust the white balance and the white balance adjustments will be continuously updated as lighting conditions change.</p> <p>The white balance control will assume average lighting conditions. The automatic white balance control attempts to continuously balance the intensity of the red, green, and blue pixels in the captured images so that the white areas of the captured images always appear white (and not, for example, red tinted or green tinted).</p> <p>i Note that the operation of the automatic white balancing function will be strongly influenced by the placement of the white balance mask</p>
Auto Preset	The camera will attempt to identify the type of lighting present (i.e., daylight, incandescent, fluorescent, etc.) and then will automatically adjust the white balance based on the lighting type detected. This selection works best when the lighting conditions are uniform.
Daylight	The camera will automatically change the white balance settings so that they are biased for daylight lighting conditions (a color temperature of 5500 K). Once the settings are changed, the white balance will stay fixed at that point.
Incandescent	The camera will automatically change the white balance settings so that they are biased for incandescent lighting (a color temperature of 3000 K). Once the settings are changed, the white balance will stay fixed at that point.
Fluorescent I	The camera will automatically change the white balance set-

Mode	Description
	tings so that they are biased for normal fluorescent lighting (a color temperature of 2700 K). Once the settings are changed, the white balance will stay fixed at that point.
Fluorescent II	The camera will automatically change the white balance settings so that they are biased for bright fluorescent lighting (a color temperature of 4000 K). Once the settings are changed, the white balance will stay fixed at that point.
Manual	White balance is manually controlled. You can adjust the white balance by using the Red Gain and Blue Gain parameters.

Day/Night

- i** Use the **Submit** button to submit the current settings directly to the camera.
- i** Click on the **Refresh** button to load the actually setup from the camera.

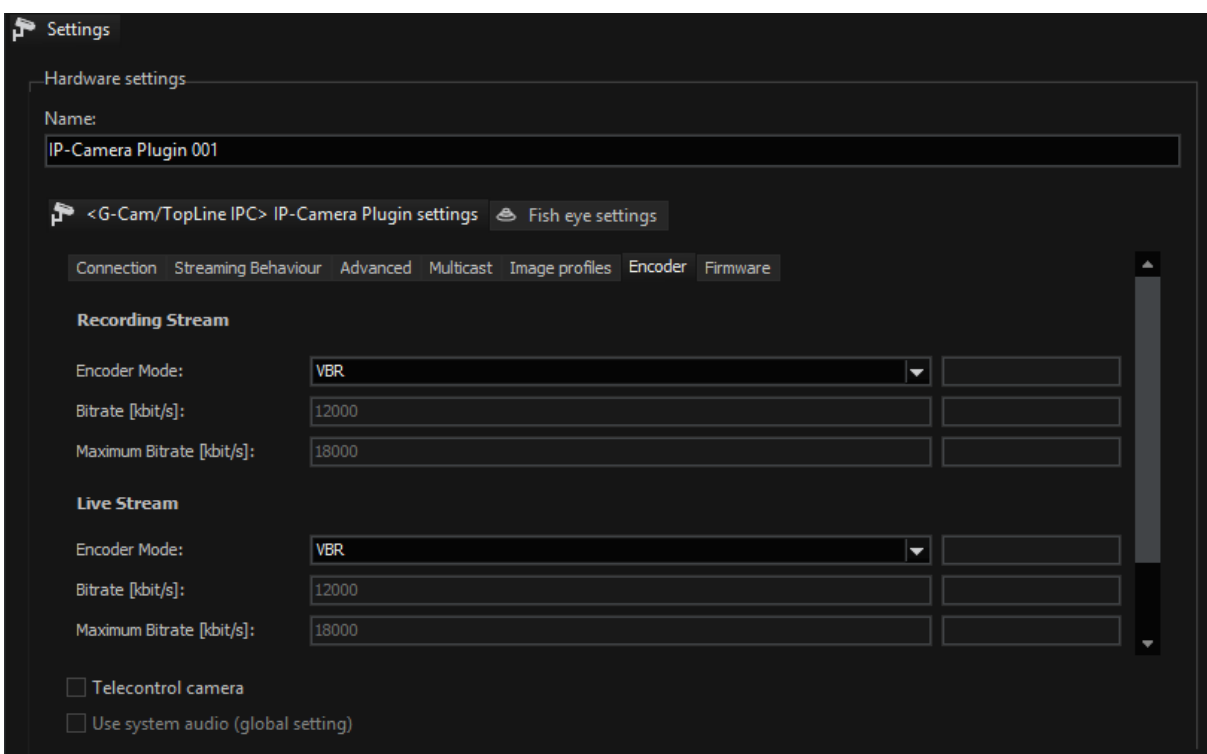


Setting	Description
IR Filter Mode	Sets the mode of operation for the camera's IR-cut filter (see below).
IR Filter State	Indicates the current state of the camera's IR-cut filter:- Night = The IR-cut filter is currently in the night position (filter is not in front of the sensor)- Day = The IR-cut filter is currently in the day position (filter is in front of the sensor).
IR Filter Switch Level	<p>When the IR Filter Mode parameter is set to auto, the IR Filter Switch Level setting is mainly used to adjust when the camera will switch from day mode to night mode. The higher the IR Filter Switch Level setting, the darker it must be before the camera will make the switch. Setting the switch level to a higher value typically means that the camera will switch from day mode to night mode later in the day, i.e., when it is darker.</p> <p>If the current level of darkness (as indicated by the IR Filter Current Level parameter) rises above the switch level setting and remains there longer than the IR Filter Wait Time (see below), the camera will switch from day mode to night mode.</p> <p>If the current level of darkness (as indicated by the IR Filter Current Level parameter) falls below the switch level setting and remains there longer than the IR Filter Wait Time (see below), the camera will switch from night mode to day mode.</p>
IR Filter Current Level	Indicates the current level of darkness as measured by the camera's auto IR filter control. As the area being viewed by the camera gets darker, the value of the IR Filter Current Level will rise (a high positive value indicates that the area being viewed is very dark). As the area being viewed by the camera becomes brighter, the value of the IR Filter Current Level will fall (a large negative value indicates that the area being viewed is very bright).
IR Filter Wait Time	Sets the amount of time in seconds that the value of the IR Filter Current Level must remain above the IR Filter Switch Level setting before the camera will switch from day mode to night mode. It also sets the amount of time in seconds that the value of the IR Filter Current Level must remain below the IR Filter Switch Level setting before the camera will switch from night mode to day mode.

IR Filter Mode

Mode	Description
Auto	The camera automatically senses the change from night to day or from day to night and sets the position of the camera's IR-cut filter accordingly.
Open (Night)	Move the IR-cut filter to the night position (filter is not in front of the sensor) and keep it there.
Closed (Day)	Move the IR-cut filter to the day position (filter is in front of the sensor) and keep it there.
Input Controlled	The position of the IR-cut filter will be controlled by the state of a camera I/O port. For the input controlled mode to work correctly, the Direction parameter must be set to "Input" on the I/O port you want to use to control the filter position, and the Function parameter for that port must be set to "IR Switch".
Input Pin 0 Controlled	
Fixed	

Encoder



Recording Stream

Setting	Description
Encoder Mode	<p>Sets the bit rate mode for the streamencoder.</p> <p>Available values are: Variable Bitrate mode VBR, Constant Bitrate mode CBR or in Constant-Variable Bitrate mode CVBR.</p> <p>CBR constant bitrate. The encoder attempts to maintain a constant output bitrate by adjusting image quality as necessary. The bitrate will be determined by the setting of the “Bitrate” parameter.</p> <p>VBR variable bitrate. The encoder attempts to maintain constant image quality by adjusting the output bitrate as necessary. The quality level will be determined by the setting of the Quality parameter.</p> <p>CVBR constant-variable bitrate. As long as there is no motion in the scene, the encoder attempts to maintain a constant output bitrate by adjusting image quality as necessary.</p>

Setting	Description
	<p>The bitrate will be determined by the setting of the Bitrate parameter. When the scene includes motion, the camera will increase the output bitrate (up to a maximum determined by the setting of the Maximum Bitrate parameter) for an extended period of time.</p> <p>When that time ends, the camera will reduce the bitrate as needed to achieve a long term average bitrate equal to the setting of the Bitrate parameter. (Variable Bitrate mode VBR, Constant Bitrate mode CBR or in Constant-Variable Bitrate mode CVBR)</p>
Bitrate (kbit/s)	<p>When the Encoder Mode parameter is set to CBR, sets the bit rate for the stream.</p> <p>When the Encoder Mode parameter is set to CVBR, sets the bitrate during the periods when the encoder is operating in constant mode.</p>
Maximum Bitrate (kbit/s)	<p>When the Encoder Mode parameter is set to CVBR, sets the maximum allowed bitrate for the stream during the periods when the encoder is operating in variable mode.</p>

Live Stream

Name	Description
Encoder Mode	<p>Sets the bit rate mode for the streamencoder (VBR, CBR or CVBR) (see above).</p>
Bitrate (kbit/s)	<p>When the Encoder Mode parameter is set to CBR, sets the bit rate for the stream.</p> <p>When the Encoder Mode parameter is set to CVBR, sets the bitrate during the periods when the encoder is operating in constant mode.</p>
Maximum Bitrate (kbit/s)	<p>When the Encoder Mode parameter is set to CVBR, sets the maximum allowed bitrate for the stream during the periods when the encoder is operating in variable mode.</p>

i Click on the Refresh button to load the actually setup from the camera.

Firmware

Settings

Hardware settings

Name: IP-Camera Plugin 001

<G-Cam/TopLine IPC> IP-Camera Plugin settings Fish eye settings

Connection Streaming Behaviour Advanced Multicast Image profiles Encoder **Firmware**

Manufacturer Name:

Model Name:

Firmware Version:

Serial Number:

MAC Address:

Refresh

Autoupdate Firmware: Update with embedded firmware automatically at startup

Available Firmware:

Upload now

Telecontrol camera

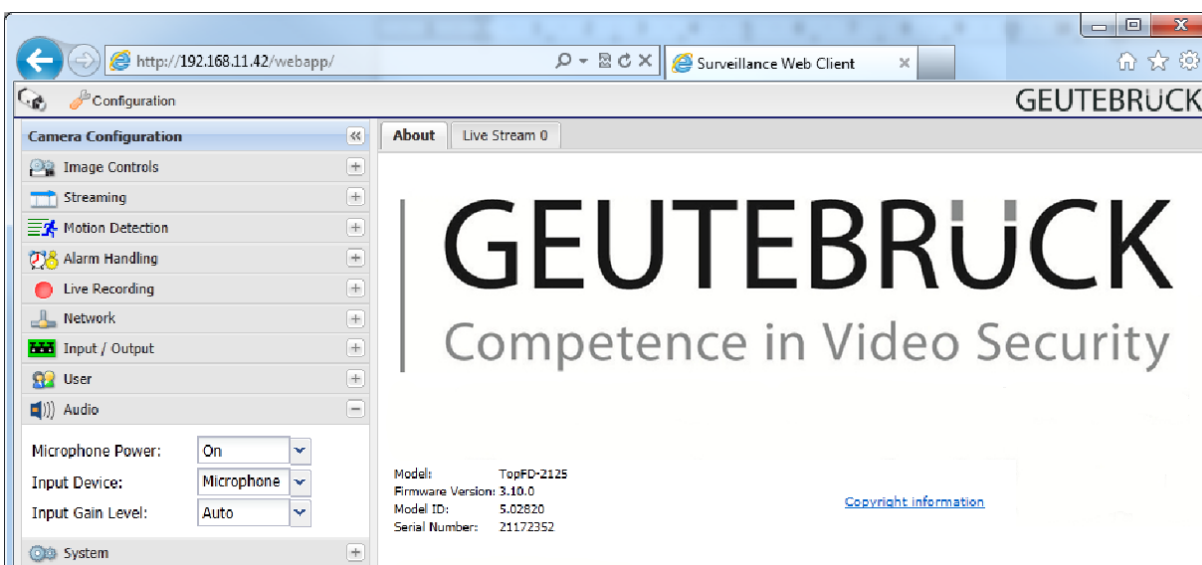
Use system audio (global setting)

i Click on the Refresh button to load the actually setup from the camera.

Setting	Description
Manufacturer Name	Shows manufacturer name
Model Name	Shows model name
Firmware Version	Shows firmware version
Serial Number	Shows serial number
MAC Address	Shows the camera's MAC address
Autoupdate Firmware	Check to update firmware automatically at startup
Available Firmware	Shows newest available firmware
Upload now	Click to upload the selected firmware

Audio Support

The plugin support video as well as audio. Setup the audio device in the camera setup:



You can select between **Microphone** and **Line-In** and enable the **Input Gain Level**. You don't need to modify anything else in the plugin dialog, just select any audio profile in the media channel settings.

The audio is supported in H.264 and JPEG mode.

Notes on Operation

All video streaming parameters (resolution, quality, frame rate) change dynamically according to the video requirements. The changeover time to set up and restart a new encoder stream is very short, making the camera DSL-capable.

The TopLine cameras use different "areas of interest" (AOI). The AOI of the sensor is not affected, the AOI of the stream is expanded to maximum size over all the available sensor area. We use the "OutputScaling" capability of the camera to reduce the image size. Usually this is done in the following steps: 1:1, 1:2, 1:4 and 1:8.

We set the frame rate of the sensor to the highest possible value (usually 25 or 30 fps) and use "FrameRateScaling" in order to reduce it to the required value. Usually this is done in the following steps: 1:1, 1:2, 1:4 and 1:8.

JPEG quality has the value 1 (lowest) to 100 (highest).

The cameras support three digital inputs and three digital outputs, which are supported by the plugin. Motion detection is also supported (must be activated in web setup).

In addition, plug-in supports raw commands by using CameraRAWOutput. You can specify a chain, which is connected to the path /cgi-bin/param_if.cgi?NumActions=1.

Example Note the capitalization:

```
CameraRAWOutput (<camera>, "&Action_0=Sensor.ImageRotation.SetValue&Parameter_0_0=ROT_180")
CameraRAWOutput (<camera>, "&Action_0=ImageControls.WhiteBalanceMode.SetValue&Parameter_0_0=Incandescent")
CameraRAWOutput (<camera>, "&Action_0=ImageControls.IRFilterMode.SetValue&Parameter_0_0=Open")
```

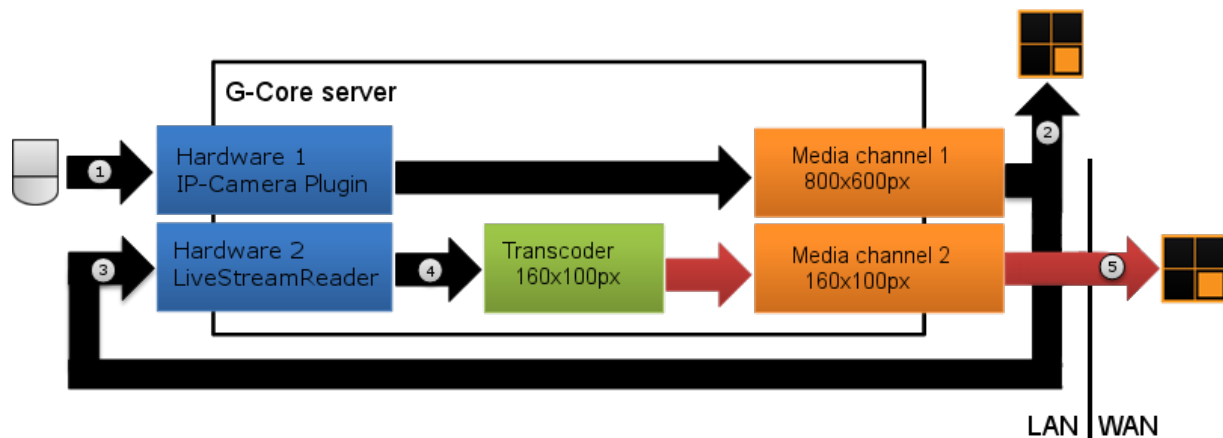
Live Stream Reader

Live Stream Reader is a plugin, which makes it possible to loop back any media channel of a G-Core server (local or remote) to a hardware interface. One channel of an IP-camera can be used to generate multiple media channels with different transcoder settings. With this plugin it is possible to view a media channel in the local network with full resolution and DLS (Dynamic Live Streaming) and to stream the same video with a low resolution to a viewer over a low-bandwidth network. It is also possible to transcode the video stream and to send PTZ actions to the original media channel.

Function

The figure gives an overview of a typical Live Stream Reader plugin setup:

Example configuration of Live Stream Reader plugin with two different media channels:



- One channel of an IP-camera is connected to the G-Core Server (Hardware 1).
- The video stream (output media channel 1) can be viewed in G-View with full resolution (800x600px) and with DLS.
- The media channel 1 is looped back to the Live Stream Reader plugin (Hardware 2).
- Now it is possible to transcode the video stream to a different resolution. In this example the stream will be transcoded to a resolution of 160x100px.
- The transcoded video stream can be transmitted over a low-bandwidth-network and viewed in G-View.

i To enable transcoding an additional license is needed.

Installation

The plugin consists of two DLLs:

- LiveStreamReader.dll
- LiveStreamReader.dlg.dll.

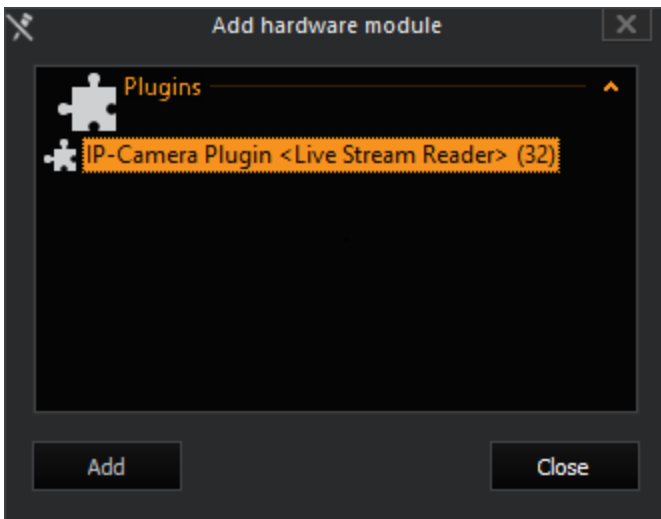
The first file represents the functionality of the plugin, the second for the configuration dialog.

If the plugin is not included in the installation after delivery, please copy the two files to the G-Core plugin directory (C:\Programme\Geutebrueck\GCore\MediaPlugins).

Add the Plugin

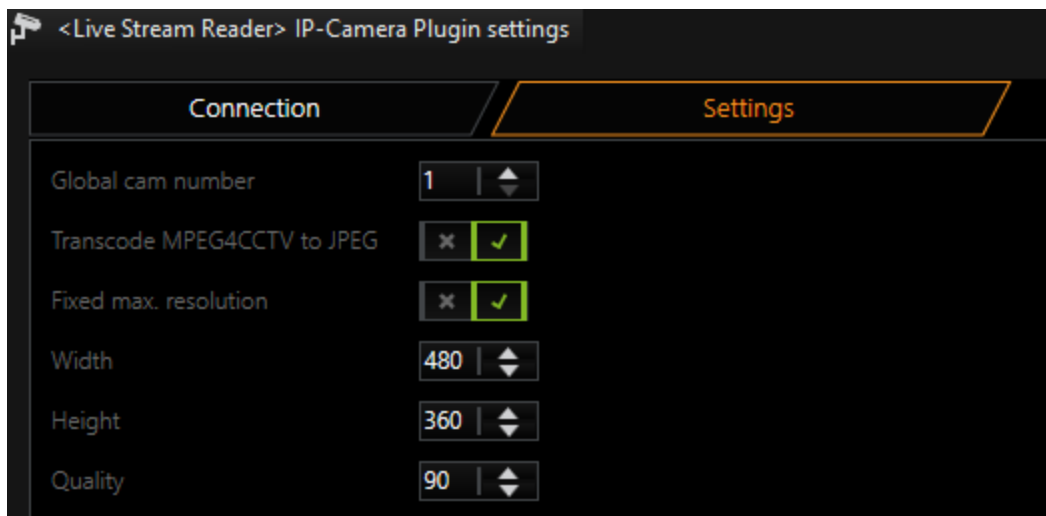
Add a new hardware module and choose IP-Camera Plugin <Live Stream Reader>.

IP-CAMERA PLUGINS

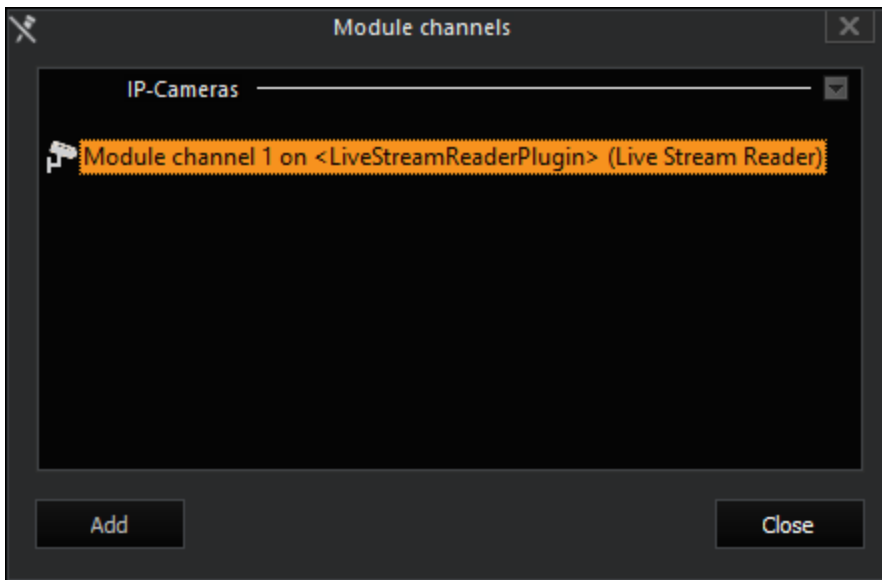


Configuration

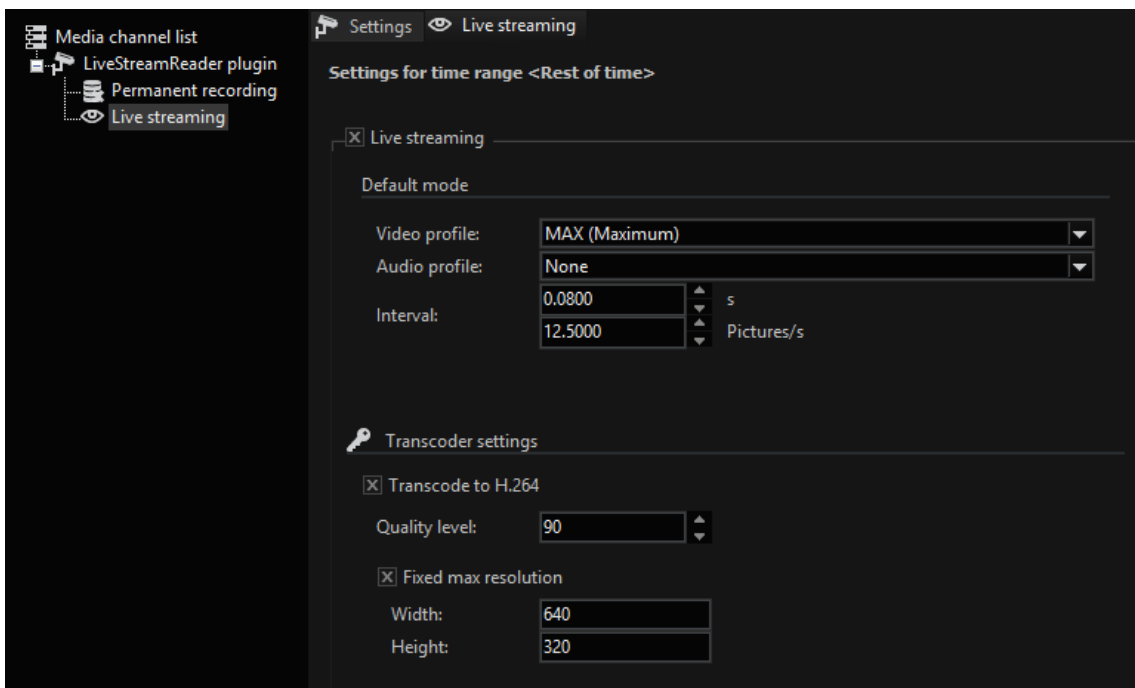
1. Setup the connection to the target G-Core Server and enter the **Global cam number** (global number of the media channel). It is also possible to configure a **Fixed max. resolution** and to enable **Transcode MPEG4CCTV to JPEG**.



2. Send the configuration to the G-Core server.
3. Add media channel.



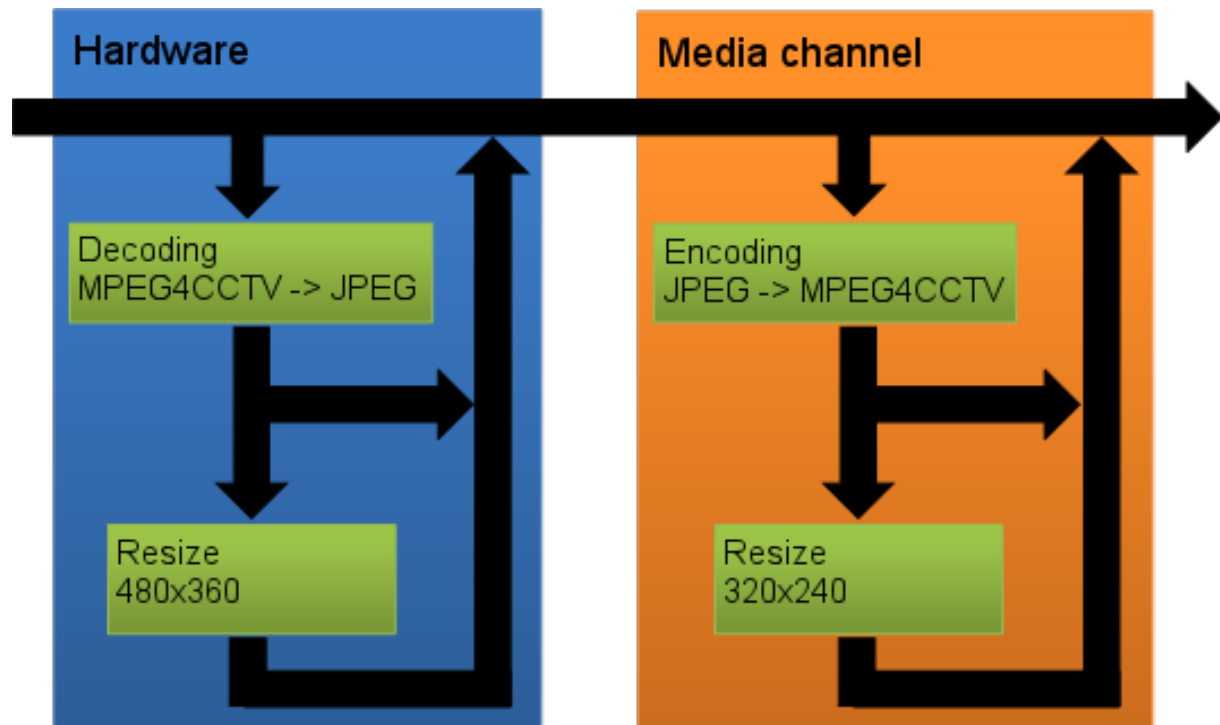
4. It is now possible to configure the media channel without affecting to the original media channel.



i Using H.264 the frame rate can't be configured! The frame rate settings of the source media channel will be used.

Transcoding

The transcoding settings can be adjusted by changing the hardware or media channel settings. Figure 6 shows the path through the transcoder which every picture takes. It is possible to setup the hardware and media channel separately which allows a transcoding (resize) of MPEG4CCTV.



The following table shows the possible hardware and media channel settings and the output video format and size:

i The most common settings are highlighted in green. It is also possible to transcode from H264 to MPEG4CCTV (highlighted in red). This path is not supported by default. Contact our technical support to get further information.

Input	Hardware Settings	Media Channel Settings	Output
MPEG4CCTV	-	-	MPEG4CCTV No resize
	-	JPEG →	MPEG4CCTV No resize

IP-CAMERA PLUGINS

Input	Hardware Settings	Media Channel Settings	Output
		MPEG4CCTV 320x240	
	Decode MPEG4CCTV 480x360 90%	-	JPEG Max 480x360 90%
	Decode MPEG4CCTV 480x360 90%	JPEG → MPEG4CCTV 320x240	MPEG4CCTV Max 320x240 90%
H264	-	-	H264 Dynamic Live Streaming
	-	JPEG → MPEG4CCTV 320x240	H264 Dynamic Live Streaming
	Decode MPEG4CCTV 480x360 90%	-	H264 Fixed, Res- olution of input
	Decode MPEG4CCTV 480x360 90%	JPEG → MPEG4CCTV 320x240	MPEG4CCTV Fixed, 320x240 90%
MJPEG	-	-	MJPEG Dynamic Live Streaming
	-	JPEG → MPEG4CCTV 320x240	MPEG4CCTV Max 320x240 90%
	Decode MPEG4CCTV 480x360 90%	-	MJPEG Fixed, 480x360 90%
	Decode MPEG4CCTV 480x360 90%	JPEG → MPEG4CCTV 320x240	MPEG4CCTV Max 320x240 90%

ONVIF

ONVIF is a standard developed in the industrial sector that enables the interconnection of IP devices in the CCTV world: With the help of ONVIF, it is possible to operate cameras from any manufacturer with a recording device from any

vendor as long as both devices are ONVIF compliant.



Geutebrück devices are **ONVIF Profile S** and **ONVIF Profile T** compliant (see **ONVIF Profile S and Profile T Features**).

This manual explains the functionality of the ONVIF IP camera plugin for G-Core.

The following functions are available:

- H.265, H.264 and MJPEG support
- Audio support for G.711, G.726 and AAC
- Dual streaming
- Dynamic Live Streaming (DLS)
- PTZ function of speed dome cameras
- Multicast
- Edge recording – receipt of footage from a camera using SD card
- Support for digital outputs
- Support for digital inputs
- Support the camera-side motion detection
- Support for general event handling and filtering via WS-BaseNotification, pull point and metadata streaming

i **ONVIF defines three different techniques for receiving information (events) from the camera, such as digital input contacts and motion detection: Real-time pull-point notification interface, Basic-notification interface (WS-BaseNotification), Notification streaming interface (metadata streaming).**

The ONVIF plugin supports all three techniques. A particular camera can only support one of them. Contact the camera manufacturer to find out which camera is best suited for your application. Read the chapter "Event Handling".

Installation

The plugin consists of two files: OnvifIPC.dll and OnvifIPC.dlg.

If the plugin is not included in the scope of installation with delivery, please copy both files (OnvifIPC.dll and OnvifIPC.dlg) to the plugin directory of G-Core (C:\Program Files\Geutebrueck\G-Core\MediaPlugins).

i The G-Core Server service must then be restarted.

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <ONVIF IPC>** by selecting it and clicking **Add**.
4. The ONVIF plugin is now entered in the hardware module list as a hardware resource.
5. Now select the plugin in the list and make the necessary changes to the settings.

Connection

The screenshot shows the configuration interface for the ONVIF IPC plugin. The 'Connection' tab is selected, displaying the following settings:

- Hostname:** 10.117.136
- Username:** root
- Password:** [masked]
- Use Http:** Selected
- Use Https:** Not selected
- Http Port:** 80
- Https Port:** 443
- RTSP Port:** 554
- Camera is behind NAT:** [checked]
- Use basic authentication at communication start for RTSP stream:** [checked]
- Do GETSystemDateAndTime with credentials:** [checked]

Under **Hostname**, enter the IP address of the camera.

Control commands for the camera are sent by default through port 80.

IP-CAMERA PLUGINS

ONVIF does use web services. The main-web service will be entered by using the IP address entered above. Via this main-web service the G-Core server will receive the information about RTSP Port automatically. Therefore the RTSP Port needed to be changed via the web page of the camera, and the G-Core server will receive this information automatically and use this port.

If you like to use HTTPS communication, you have to setup the camera to use HTTPS. For this you have to install or create a certificate on the camera.

If your camera is behind an NAT (Network Address Translation) web services might send wrong IP addresses and ports for communication.

If you are using a Router or WAN including NAT, you need to enable the checkbox **Camera is behind NAT**.

Whether these ports need to be changed depends on settings in the camera itself.

To achieve maximum performance when starting the stream, you can send basic authentication with the option **Use basic access authentication at communication start of RTSP stream**. If this option is not selected, Digest authentication is used, which is the best choice in terms of IT security.

If you have trouble setting up a camera and cannot see pictures, you can enable the **Do GetSystemDateAndTime with credentials** option. Some camera manufacturers have received incorrect interpretations of the ONVIF standard and therefore require this checkbox. This is a workaround for wrong camera behavior.

If you are using a PTZ camera, enable the check mark **Telecontrol Camera**.

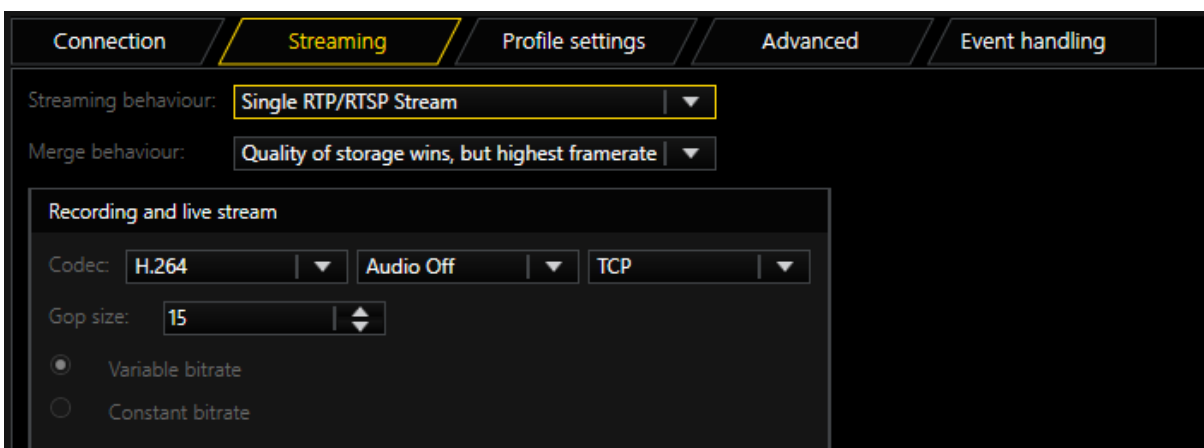
i **ONVIF unfortunately does not define default login data. It is important that the correct password is entered. Check the camera manufacturer's instructions to find the password that you must enter.**

Streaming

In **Streaming Behaviour** you can select settings for the video stream.

Single Stream

By default, only one stream is queried by the camera. Therefore, you do not have the option of using different frame rates for the stored images and the live stream. If you select **Single Stream** the dialog is presented as follows:



In **Merge Behavior** you can specify how the possibly different settings for Live and Storage under Media Channels are combined:

Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters, the highest value specified in the corresponding settings is used.
Worst settings wins	For all parameters, the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used.
Storage profile wins	The Storage settings are used.

As codec you can choose between H.265 and MJPEG. For H.265 and H.264 the following settings are available: Under **GOP size** (Group of Picture) you can specify the ratio of IDR to P frames.

In ONVIF version 2.4 and Profiles, there is still no setting for selecting between a variable bit rate (VBR) or constant bit rate (CBR). To be able to use some kind of VBR, the server uses the parameters resolution, quality and frame rate to calculate a bit rate and then passes this information to the camera. This setting is called **G-Core calculated bit rate**. This ensures that a suitable bit rate is always used. If using **Fix bit rate**, an bit rate resolution, quality and frame rate independent bit rate will be used.

i Also the G-Core server is not able to guarantee, that the correct settings are used with in the camera. Customer need to verify the settings within the web page of the camera, that bit rate is set in an currently running stream.

Audio support

If the camera supports the audio formats AAC, G.726, G.711 u-Law or a-Law, the audio data is played back and recorded via the plugin. Select format as you like.

To activate audio playback, you must select a profile for audio in G-Set. Whether you select the profile **high**, **medium** or **low** is irrelevant, it is important, however, that **none** is not selected.

Transport Protocol Selection

For each stream, recording or live, it is possible to choose the transport protocol.

TCP

Streaming communication with the camera takes place on port 554 by default. The **total** communication (audio, video + control data) takes place only over this port.

TCP is the preferred and best selection among the transport protocols.

UDP

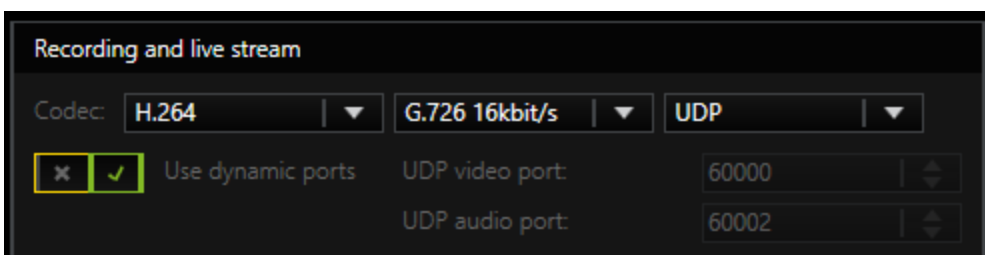
With UDP, streaming is also performed over port 554. However, video, audio and control information are transmitted over up to 4 additional ports.

It is possible to specify to the camera the preferred ports for steaming of data. It is preferable, however, for the camera to choose these ports itself.

If a manual assignment of ports is desired, they can be selected by disabling the **Use Dynamic Ports** option. 2 ports are needed each for video and audio.

The specified port is opened and the port directly above the specified port. In our example, this would be the ports 60000 + 60001 for video and 60002 + 60003 for audio.

Due to the higher number of ports and the associated problem of firewall configuration, UDP is less suitable than TCP.



Multicast

With multicast, streaming is also performed over port 554. Audio, video and control data are streamed over an additional multicast address plus port.

The choice of the multicast address and port is specified in most cases by the camera and cannot be specified via the stream of the G-Core server. The selection **Use camera settings** is also the (initially) best choice.

The screenshot shows the 'Recording and live stream' configuration window. At the top, there are three dropdown menus: 'Codec' set to 'H.264', 'G.726 16kbit/s', and 'Multicast' (highlighted with a yellow box). Below these are two rows of settings. The first row has a checked 'Use camera settings' checkbox, a 'Multicast address' field with '239.10.0.0', and a 'Multicast video port' spinner set to '60000'. The second row has a checked 'Same address for audio' checkbox, a 'Multicast address' field with '<IP Address>', and a 'Multicast audio port' spinner set to '60002'.

i For some camera types, such as Sony cameras, specification of the multicast address plus port is necessary. Please always note the information from the respective manufacturers on multicast parameters.

The use of multicast, unfortunately, brings with it a number of possible errors. Therefore, it is important to note the following:

- Each camera in the network must be assigned a unique multicast address. No two cameras may have the same multicast address.
- It is possible for multiple cameras to use the same port, but they must not have the same multicast address, as the separation in switches is performed primarily using the multicast addresses. Using identical multicast addresses will lead to network and device overload and incorrect display of the images.
- IP addresses in the range 224.0.0.0 to 239.255.255.255 are multicast addresses. In a private network, it is best to select addresses between 239.0.0.0 and 239.255.255.255. When you select multicast, a proposal for a multicast address will be auto-generated from the IP address entered in the connection-tab.
- It is imperative to use switches with multicast support. Simple switches, without multicast support, would generate broadcast streams from the multicast streams. With a large number of cameras, this would then mean that the entire network traffic of all cameras would arrive at each node in the network. This means that even a 1 GB network connection would quickly be

overloaded.

- As a number of ports are opened for multicast, it is advisable to add all applications, such as G-View, G-Set and G-Core Server to the firewall. The applications can thus open all ports and the ports do not need to be added manually.

Multicast Server Only

When starting a multicast stream, the stream is accepted from the G-Core Server and also from the corresponding client. Each application thus receives the multicast stream directly from the camera via the switch.

If "Multicast Server Only" is selected, the G-Core Server continues to receive the stream from the camera via multicast, however all clients receive their images as in TCP or UDP mode via the G-Core internal communication.

This mode is designed for the case when the G-Core Server receives the multicast data, but the clients are not multicast-enabled, or the data is not meant to be received by multicast.

MC Client Only

As already mentioned, when opening the stream, the stream is also received by G-Core Server itself. As the G-Core Server itself, however, does not need live images and cannot display them, these images only create additional network load to the G-Core server.

With this setting it is possible for the stream to be received only by the client and no images will go to the G-Core server.

This option, however, leads to problems when there are network clients that cannot handle multicast reception. These clients will then no longer receive images, because the G-Core Server does not receive them. In such cases, this setting is not useful.

In addition, this setting is only available for live stream

HTTPS

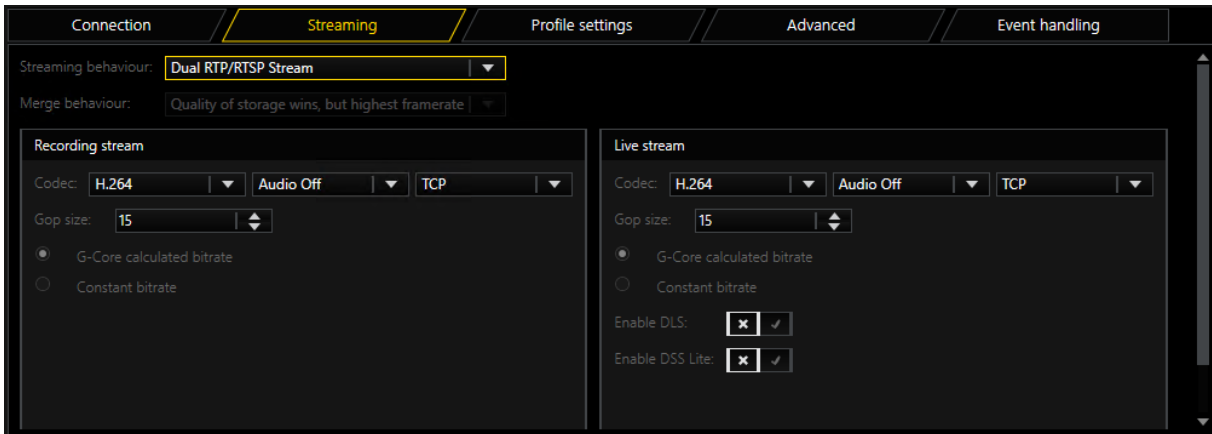
With HTTPS an encrypted RTSP stream is established over HTTPS port 443. (RTSP and RTP over HTTP).

Some cameras will not be able to support encrypted streaming. In this case you need to select another transport protocol.

Dual Stream

To circumvent the problem of having the same resolution for live playing and recording, you can attempt to query two streams from the camera. To do so, under **Streaming Behaviour** choose the option **Dual Stream**.

- i** Not every camera is dual-stream-capable. And even if the manufacturer specifies that it is, it may quickly hit the limits of its performance. Test independently in advance whether the camera still works properly in dual stream mode.



For settings for Codec, Gop size and Constant bitrate, refer to the explanations under Single Stream above.

DLS (Dynamic Live Stream) and DSS Lite (Dynamic Stream Selection) are special modes for dual streaming that you can enable or disable.

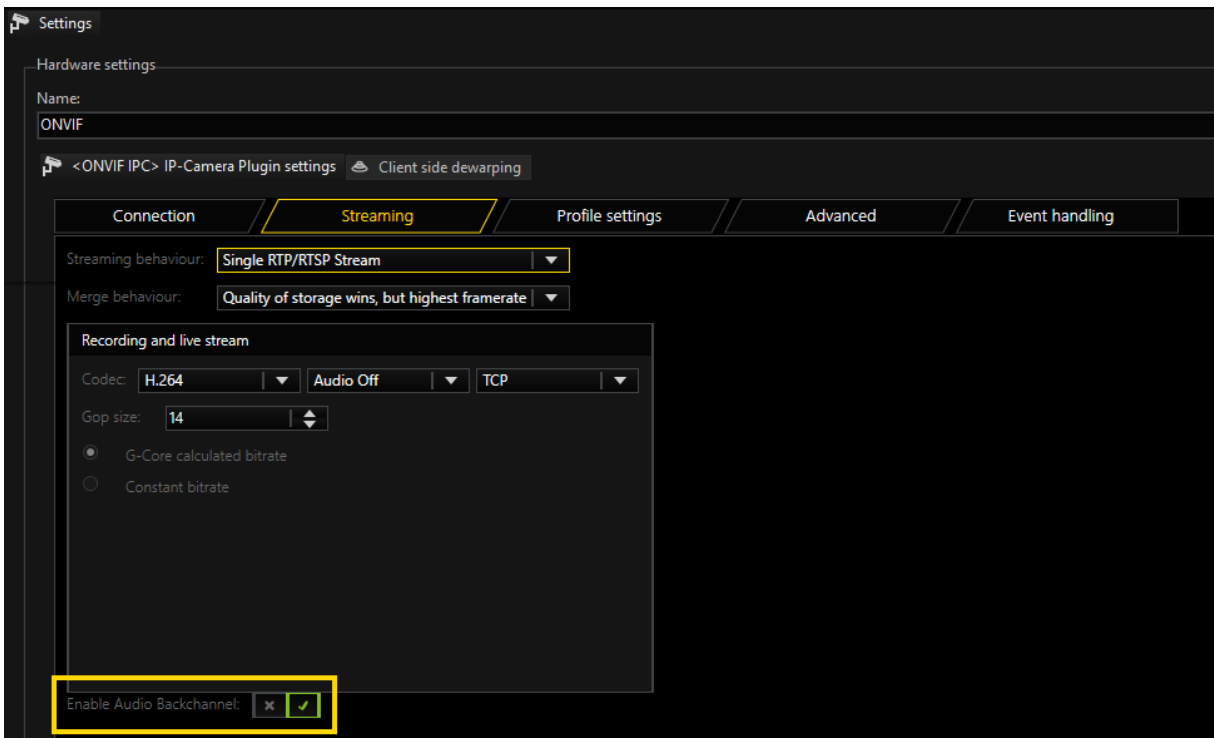
- i** If you are using a camera that, according to the manufacturer, can change resolution very quickly, you can enable this feature. If your camera is not capable of this, it is not recommended.

- **DLS:** The size of the livestream dynamically adjusts to the size of the viewer when switching between viewers. The minimum resolution used, to which the viewer image can be reduced for small viewers, can be set in the global settings in G-Set.
- **DSS Lite:** If any viewer size is larger than 600 pixels (horizontally or vertically), then the DSS kicks in and the recording stream is used for live viewing. This is useful if you are recording at a high resolution but using a small resolution for the live stream to reduce the decompression load.

Audio Transmission

With the audio transmission you can talk directly to specific people through the camera speakers.

If the connection is configured, G-Core checks whether audio transmission is available for the corresponding camera. If so, the feature is available and the **Enable Audio Backchannel** button is activated and can be enabled.



Profile Settings

The profile settings can vary depending on the settings of the steaming behavior and the settings in this dialog itself.

i The settings should be modified by advanced users only!

Profiles

In order to query images from a camera, you need **Profiles**. For each stream (recording and/ or live), there must be a separate profile. These profiles either already exist (then select **Use Media Profiles**) or they must be created (**Create New Profile**).

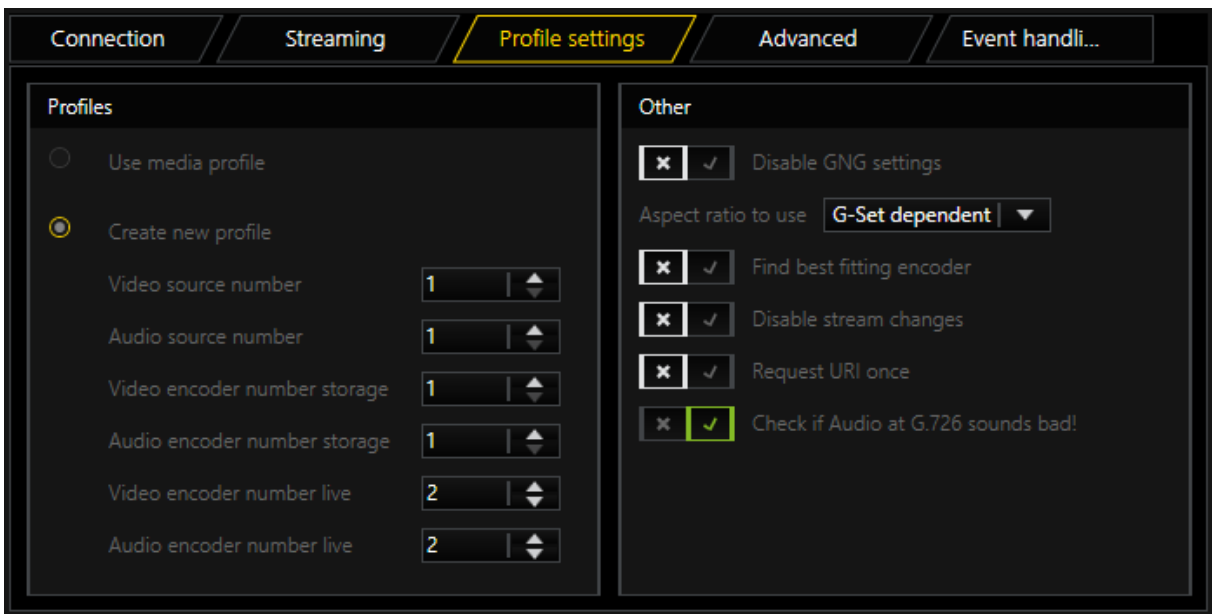
By default, an attempt is made to use the existing profile (**Profile number storage = 1**).

Using this profile an attempt is then made to change the settings according to the requirements for resolution, type of code, quality and frame rate.

Using the number of the profile, it is also often possible to select different video sources of a multiple channel device (e.g. a 4-channel analog encoder). If you use such a device, try to access, for example, the second camera of a multiple-channel encoder by changing the values under **Profile Number**.

Already existing profiles (Use Media Profile) sometimes have the problem that they cannot be configured, for instance, to change the resolution.

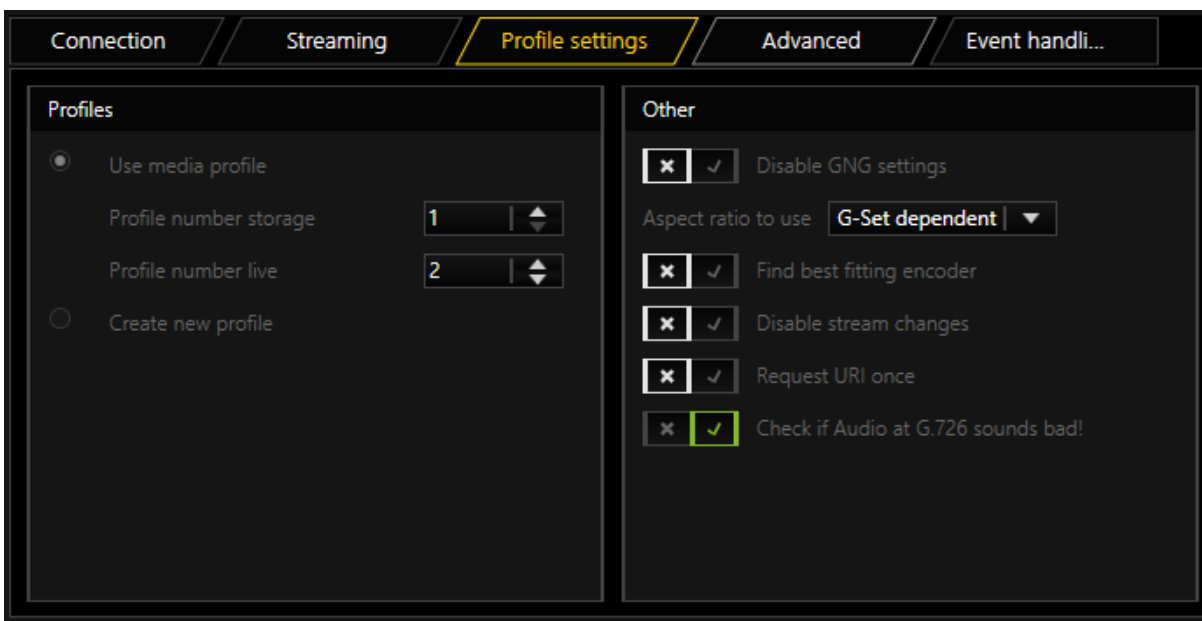
- i** **If you do not get the desired settings, enable the option Create New Profile. In contrast to Use Media Profile, here you have a high degree of freedom to get better performance out of the camera.**



A profile is always composed of Video Source and Video Encoder. Here you have the opportunity to compile the profile freely.

- i** **Here, unfortunately, it is important to know the capabilities that each encoder has. This in turn can only be determined by trial and error, as each camera manufacturer uses its own strategy.**

Other



Name	Description
Disable GNG settings	<p>With this option, you disable all setting requests of the G-Core Server to the camera.</p> <p>Cameras of different manufacturers react at different speeds to requests for changes and queries. Some cameras are not suitable for quickly changing the resolution, GOP structures, codes and qualities. If you activate the function, the necessary communication with the camera is reduced to a minimum. You will then only see images in the quality and resolution in G-View that correspond to the set camera values.</p>
Aspect ratio to use	<p>Most cameras support a variety of different aspect ratios. For an aspect ratio that does not correspond with the aspect ratio of the sensor, either the upper or lower, or the left or right border will be cropped somewhat.</p> <p>For instance, if the sensor has an aspect ratio of 16:10, but the user wishes to use a resolution of 640x480, which corresponds to an aspect ratio of 4:3, the image will be cropped somewhat on the right and left. This means that the entire camera scene is not used.</p> <p>You can freely specify which aspect ratio to use: 4:3, 16:9 and 16:10</p>

Name	Description
	<p>are the available aspect ratios.</p> <p>If you select Camera Sensor Dependent, the aspect ratio of the sensor is read out. You can thus be sure to always see the maximum recorded scene in the viewer.</p> <p>For G-Set Dependent the selection is taken from the settings of the corresponding quality profile. If you set a desired resolution of 1920x1080, then an attempt is always made to use a stream with an aspect ratio of 16:9.</p> <p>The default setting is Use all types of aspect ratio. Here the closest matching resolution is sought for the resolution set in the quality profile. The advantage of this procedure is that you will at least have a similar resolution, even if it is cut off somewhat.</p>
Find best fitting encoder	<p>Each camera has several so-called encoder instances. For some camera manufacturers the encoder can be modified freely. For others, each encoder is fixed to a particular setting (for example, JPEG with VGA resolution).</p> <p>If you enable the option Find best fitting encoder, an attempt is made to use the encoder that best fits the G-Core settings and assign it a profile.</p> <p>i Unfortunately, the camera manufacturers also use a wide range of strategies here. Use the option when, for instance, the codec (JPEG, H.264 or H.265) is not the one you want or does not achieve the highest possible resolution.</p>
Disable stream changes	<p>If you wish to switch from permanent recording at 5 FPS to 25 FPS when an event occurs, several cameras require up to 10 seconds for this transition. During this time, no images are streamed from the camera to the server. This means, that during the time of the event you will have no images.</p> <p>If you use a camera that exhibits these deficits, select the option Disable stream changes to disable general stream control.</p> <p>If this option is enabled, only images in the set resolution and quality of the camera are streamed from the camera.</p>
Request URI once	<p>For some cameras, activation times are longer than others. This means that when you activate the camera is G-View, it is possible that 2 to 5 seconds can pass before the camera displays the first</p>

Name	Description
	images. This is due to the slow response times of the camera to the server. Using this option, activation times can be shortened.
Check if Audio at G.726 sounds bad!	The G.726 standard does not specify whether a byte is decoded from 0-8 or 8-0. This can result in jerky sound. If the sound of G.726 sounds jerky check this box.

Advanced

Date and Time

Here you select how the clock in the camera should be configured. In the default setting **Synchronize with G-Core server** the time in the camera is set to the time used by the PC (the PC on which G-Core Server is running).

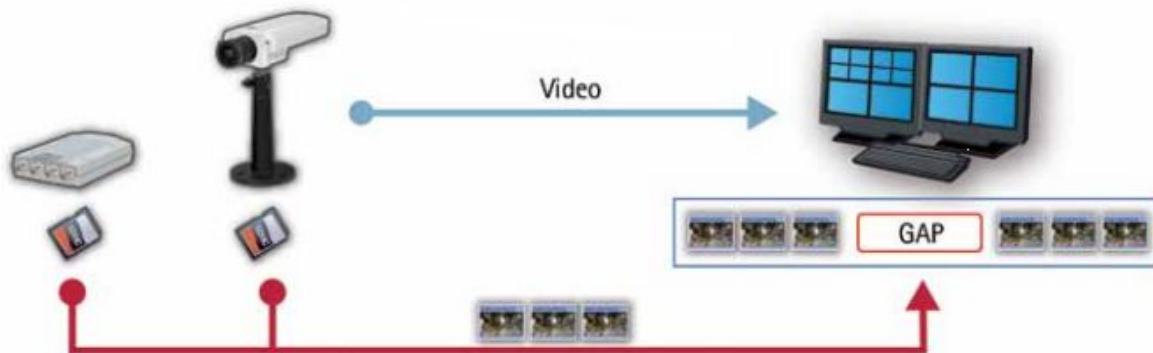
Time synchronization is done on base of UTC. UTC does not specify the time zone. If you select **Set time zone with G-Core time zone**, the camera will also be setup with the time zone from G-Core server.

Alternatively, the camera can also be provided with the time using NTP (**Synchronize with NTP**). Here you can designate a specific NTP server using an IP address or use DHCP. Or you can select not to have any time synchronization at all (**No time synchronization**).

Edge Recording

 Subject to license

Explanation of the function: Edge recording makes it possible to import video and audio recordings from a memory card used in the camera into G-Core. During this process, G-Core identifies any gaps in its own recording and fills these gaps with the video and audio data from the memory card.



To this end, G-Core starts permanent recording on the camera to the memory card.

If gaps are found in Video Stream from the camera to the G-Core server or if the G-Core server fails completely, these periods are detected and then subsequently exported by the camera from the memory card and transferred to G-Core.

This subsequent transfer of materials does not, however, take place on the original channel, instead it happens over a second media channel that must be configured for edge recording.

Using the failover functionality of G-SIM, it is possible display these two separate media channels as one channel in G-SIM.

Base Settings in the Camera for Edge Recording

First, the camera needs to support the ONVIF Profile G. Please check with the manufacturer whether the camera is certified for an ONVIF Profile G.

Formatting and initial use of the memory card must be performed using the web interface of the camera. Here is the example of the Geutebrueck EBC-3310 with firmware gb20160922NSZ or newer.

i For longer service life and better storage utilization, formatting the memory card using the “ext4” file system is recommended. However, it will then not be possible to read this card using a Windows

- i** **computer.**
If the card will be removed from the camera and read using a Windows computer, the card needs to be formatted using the “vfat” file system.

To continuously delete older entries and replace them with new entries, it is important to activate the function **Enable automatic disk cleanup** and enter sufficiently large values for the setting **Remove recordings older than**.

GEUTEBRÜCK Home System Streaming Camera Logout EBC-3310 English

System Management

- System
- Security
- Network
- DDNS
- Mail
- FTP
- HTTP
- Events
- Storage Management**
 - SD Card**
 - Network Share

Storage Management

Device Information

Device type:	SD Card - ext4		
Free space:	57130912KB	Total size:	60303388KB
Status:	Yes	Full:	No

Device Setting

Format device :

Disk Cleanup Setting

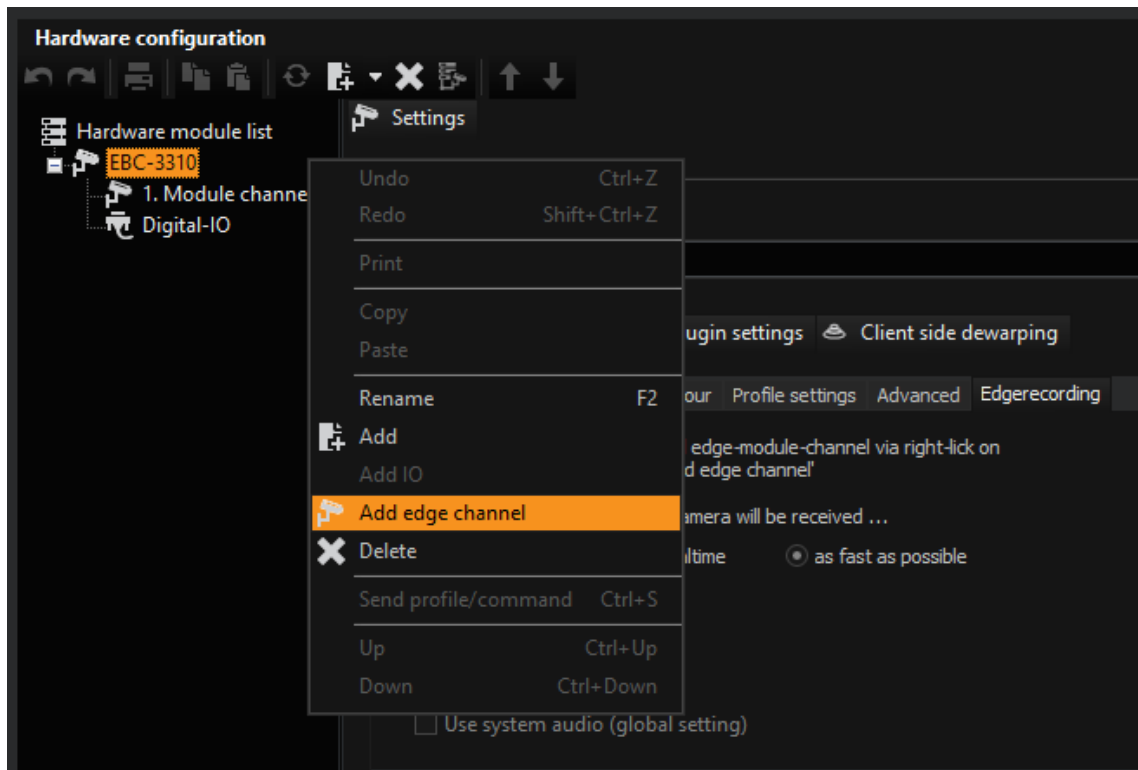
Enable automatic disk cleanup

Remove recordings older than:

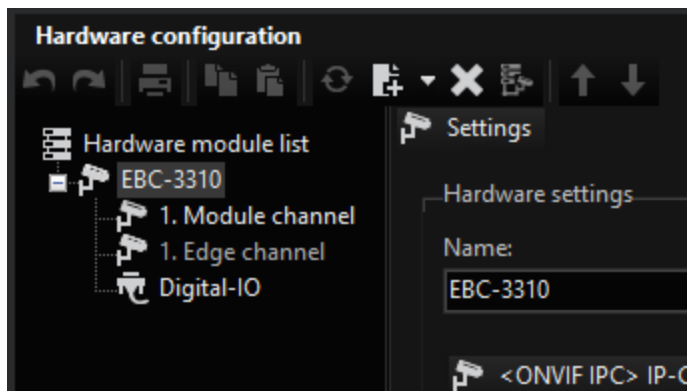
Remove oldest recordings when disk is: % full

Configuration in G-Set

1. First, create an ONVIF plugin with the associated media channel and check whether you receive images.
2. To activate edge recording, you need to create the edge channel in the hardware.
3. To do so, right click on the hardware node and select **Add edge channel**.

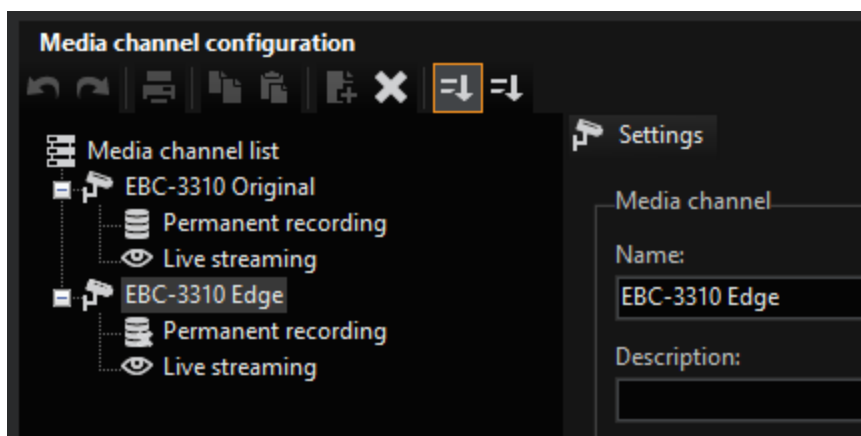


→ An edge channel is added to the hardware list.



4. Now go to the media channel settings and add the media channel.

i In this media channel, you will only see live images when the G-Core server is currently querying images from the memory card. Most of the time, you will not see any images here.



Media Channel Setting Options

G-Core will only identify gaps during times when a recording is supposed to take place. If the original media channel is not configured to record, due to permanent recording or an event, then this gap will not be subsequently filled from the memory card.

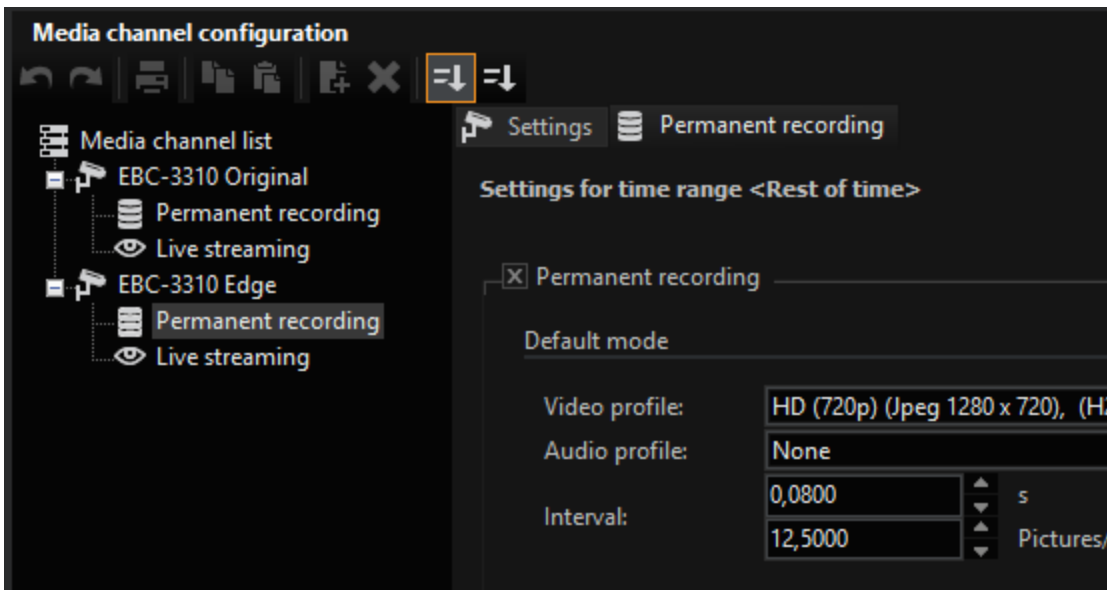
In case of a complete failure of the G-Core server, however, this downtime in its entirety is always considered to be a gap and will be requested from the camera later. The complete downtime of the server is thus independent of the recording settings of the original media channel.

Using the recording settings for the edge media channel you can control the times at which the G-Core server will retrieve the missing media data from the camera.

Therefore, you must ensure that recording is ensured, either using time ranges or, optimally, with permanent recording. To this end, activate recording for the edge media channel.

i The settings Video profile and Interval have no effect for the edge media channel. It is only necessary to ensure that at least one video profile is selected.

The resolution and frame rate of the recording to the memory card is always based on the settings for the original media channel.



Loadbalancing

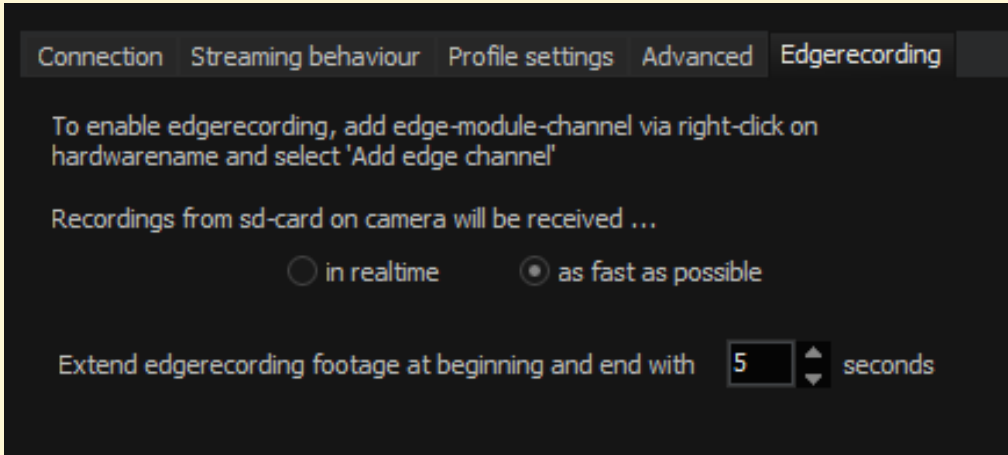
There are two ways to limit the network load associated with restoring lost video data.

In the case of a simultaneous interruption to the connection to all cameras and the resulting restore process, the video data from all cameras is requested through the network as quickly as possible.

The following options are available for limiting the network load:

Name	Description
SpeedControl	<p>There are two speeds for transferring the media data from the memory card to the G-Core server.</p> <p>1) In realtime</p> <p>This means, the images are transferred from the memory card at the speed at which they were recorded.</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>Example The recording is one hour long at 5 fps. In this case, images are transferred from the camera to the G-Core server at 5 fps and the transfer will also take one hour.</p> </div> <p>2) As fast as possible</p> <p>This means, the images will be transferred from the memory card to G-Core at the maximum speed that the camera permits.</p>

Name	Description
	<div style="border: 1px solid black; padding: 10px;"> <p>Example The recording is one hour long at 5 fps. In this case, the data is transferred at 30 fps and all images of the one-hour recording can be transferred within 10 minutes.</p> </div>
<p>Number of video streams</p>	<p>It is possible to limit the number of video streams that can be simultaneously transferred from the SD cards to the G-Core server. This option is off by default and all channels request their video in parallel.</p> <p>To activate it, open the Windows registry editor (Start > Run > Regedit). Under the path <code>HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck-\Gng\Server\IPCameras\Edgerecording\LoadBalancing</code> you will see two entries.</p> <ul style="list-style-type: none"> • Set EdgeRecBalancingEnabled to 1 to activate the function. • Using EdgeRecBalancingParallelRuns, you can define how many channels are allowed to load the network in parallel. <p>The values can be changed during the GCoreServer runtime and are applied directly.</p> <p>Windows Registry Editor Version 5.00</p> <pre>[HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck-\Gng\Server\IPCameras\Edgerecording\LoadBalancing] "EdgeRecBalancingEnabled"=dword:00000000 "EdgeRecBalancingParallelRuns"=dword:00000005</pre>
<p>Extend requested footage from memory card</p>	<p>A Gap detected by G-Core-Server will be requested from the camera. The camera might not send exactly this requested time-span. There might be a few seconds missing at the beginning and end.</p> <p>To avoid missing images between the original channel and the edge recording channel, the requested footage from the SD-card can be extended at the beginning and end.</p>

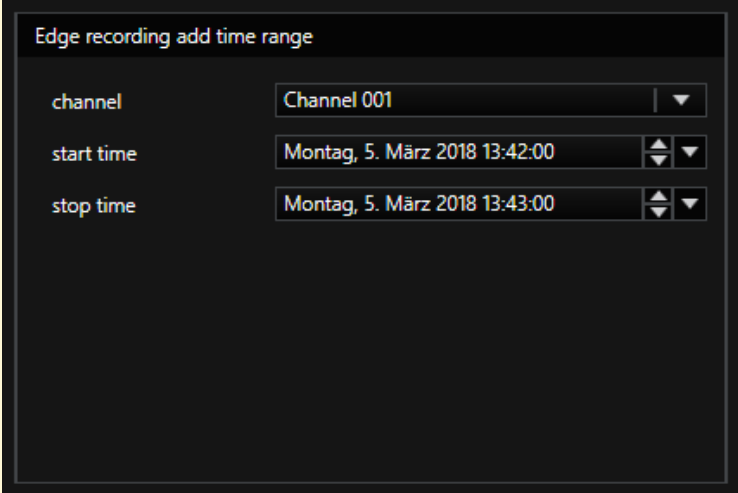
Name	Description
	

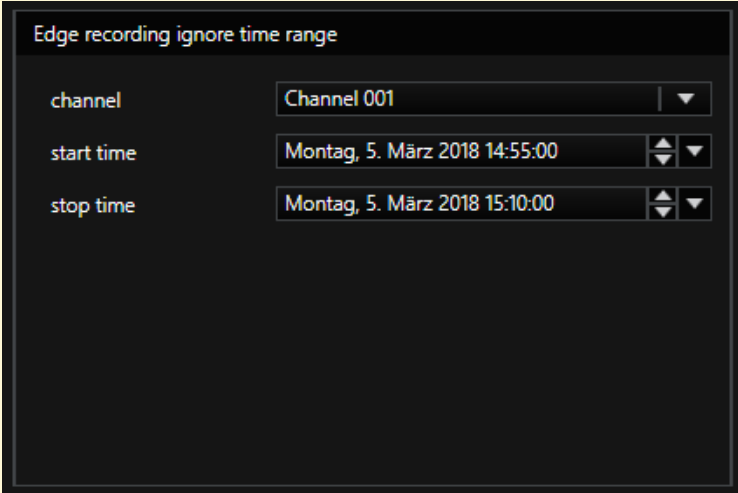
Possibilities to Modify the Gaps List

The list of video material that still needs to be retrieved from the camera's SD card can be manipulated by actions. This is mainly intended for GSIM and the "N: M Fail-over" functionality.

The following actions have been introduced:

Name	Description
EdgeRecAddTimeRange	<p>Edge recording add time range</p> <p>The time range specified with StartTime and StopTime is entered in the list of time ranges to be downloaded from the camera.</p> <p>The action is only valid if StartTime and StopTime are present or if both do not exist. If both are not available, a time range from the time of reception of the action is entered as StopTime and StopTime minus 5 minutes for StartTime.</p> <p>No gaps will be added to the list, which will be the case in the future. Only gaps up to the current date/time can be inserted.</p> <p>An information entry is made in the log file:</p> <pre>2018/03/05 14:52:55,534 GMT+01:00 Request to add timerange:</pre>

Name	Description
	<p>16010101T000000.000Z- 16010101T000000.000Z 20018/03/05 14:52:55,534 GMT+01:00 Added this range: 20180305T134755.533Z- 20180305T135255.533Z</p> 
EdgeReclgnoreTimeRange	<p>Edge recording ignore time range</p> <p>The time range specified with StartTime and StopTime is not queried by the edge recording channel.</p> <p>If this time range was already included in the list of time ranges to be downloaded, this time range is removed from the list. Therefore, this gap is not within the channel for edge recording.</p> <p>This action is mainly intended for the GSIM N: M RecorderFailover feature. GSIM will use this action to control the Main NVR. Action is only valid for StartTime and StopTime</p> <p>An information entry is made in the log file: 2018/03/05 15:04:51,263 GMT+01:00 Request to delete timerange: 20180305T135500.000Z- 20180305T141000.000Z</p>

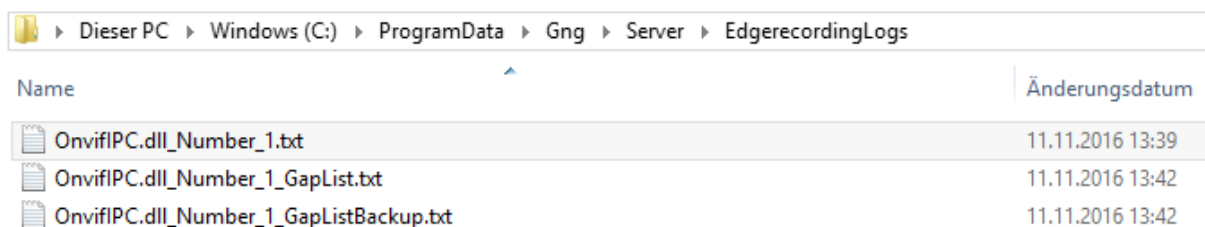
Name	Description
	
EdgeRecAllFine	<p>Edge recording all fine notifications</p> <p>This action is sent by the GCoreServer to indicate the date and time up to which all recordings on the original and the edge channel are valid.</p> <p>The action is sent only for the original media channel. But the transmitted date/time is the combined combination of original and edge recording channel.</p>

Technical Information

In order to be able to monitor the information about gaps that still need to be transferred and downtimes of the entire system, a log file is created on the hard drive for each ONVIF plugin. These files can be found in the following path:

C:\ProgramData\Gng\Server\EdgerecordingLogs.

The key files are OnvifIPC.dll_Number_X_GapList.txt and OnvifIPC.dll_Number_X_GapListBackup.txt. These two files are created for each ONVIF plugin and maintained by the G-Core server.



Name	Änderungsdatum
OnvifIPC.dll_Number_1.txt	11.11.2016 13:39
OnvifIPC.dll_Number_1_GapList.txt	11.11.2016 13:42
OnvifIPC.dll_Number_1_GapListBackup.txt	11.11.2016 13:42

IP-CAMERA PLUGINS

These files are backup copies of the original file and can be used in case a file is defective.

All time entries in these files are UTC times and most likely do not correspond to the times that are displayed in G-Core. UTC time is a global time that does not use time zones and therefore differs from the time shown in the G-Core system based on the time zone and summer/winter time.

The following entries can be seen in the files:

Name	Description
LastTimeRunning=20161111T123811.574Z	This time is rewritten every 30 seconds and is used to identify a complete failure of the system.
LastOriginalPicture=20161111T123824.178Z	This time is rewritten with every regularly incoming image on the original channel. If a gap of 10 seconds is identified from one image to the next, this is considered a gap and is registered as a gap below.
LastEdgeChannelPicture=20180305T142451.938Z	Time defines up to which date and time the recording is available without interruption, combined in the original and in the recording channel.
AdditionalInfos=IP-Address of Camera: 10.1.1.60	Here you can see the IP address of the camera for this log.
Gap=20161111T123742.623Z-20161111T123819.331Z	Here you can see multiple entries of Gap . Each entry corresponds to a gap in media data that still needs to be retrieved from the camera and inserted into the G-Core system.
GapFileEnds - All time-values are displayed as UTC	The last line serves as a signal that the file ends here.

Information for Technicians

For a deeper look into the processes associated with edge recording, you can look at another log file for each camera. To this end, the following registry key needs to be set:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck-
\Gng\Server\IPCameras\Edgerecording] "Log.EnableLog"=dword:00000001
```

If this key has been set and the G-Core setup retransmitted, the log files with the name OnvifIPC.dll_Number_x.txt will be saved in the folder C:\ProgramData\Gng\Server\EdgerecordingLogs.

Example Example 1

A gap from 13:53:06,679 to 13:53:47,393 is reported as pending for transfer. Overall, the G-Core system currently needs to look for 1 gap.

```
2016/11/11 14:56:23,495 GMT+01:00 ---> Searching for:
20161111T135306.679Z-20161111T135347.393Z. Current Size of
Gaps: 1
```

All current gaps are listed:

```
2016/11/11 14:56:23,495 GMT+01:00 Gap=20161111T135306.679Z-
20161111T135347.393Z
```

There is only output that has recordings on the camera. The camera reports here that it only has images up to 13:50:54:000.

```
2016/11/11 14:56:23,495 GMT+01:00 Found recordings:
20161111T120909.000Z-20161111T135054.000Z on camera with
Recordingtoken: 02
```

This means that the sought-after period is not present on the camera. The system waits a short period and then queries again.

This behavior is normal since the camera data is first stored to a temporary file, only becoming accessible for G-Core at a later point in time.

```
2016/11/11 14:56:23,495 GMT+01:00 ---> Found non fitting
```

Recording.

2016/11/11 14:56:23,495 GMT+01:00 Pictures found in this range: 20161111T120909.000Z-20161111T135054.000Z



Information about the temporary file: For the E3 camera, a check is also performed as to whether the recording is located on the memory card. Using `http://ip/cgi-bin/sd_list_file.cgi?` you receive the following list. When the page is queried repeatedly you should see a steadily increasing file "recording.tmp". This file contains the most recent recordings that are not yet accessible externally. Only once the file has been copied to an *.avi file is it accessible for G-Core.

```
<?xml version="1.0" encoding="UTF-8"?>
- <root>
  - <filelist>
    <file filesize="59377KB" filename="O2_20161111_120909_20161111_122545.avi" >
    <file filesize="59355KB" filename="O2_20161111_122545_20161111_123750.avi" >
    <file filesize="59399KB" filename="O2_20161111_123750_20161111_124442.avi" >
    <file filesize="59377KB" filename="O2_20161111_124442_20161111_125124.avi" >
    <file filesize="59366KB" filename="O2_20161111_125124_20161111_125830.avi" >
    <file filesize="59337KB" filename="O2_20161111_125830_20161111_130503.avi" >
    <file filesize="59293KB" filename="O2_20161111_130503_20161111_131144.avi" >
    <file filesize="59364KB" filename="O2_20161111_131144_20161111_131815.avi" >
    <file filesize="59393KB" filename="O2_20161111_131815_20161111_132448.avi" >
    <file filesize="59299KB" filename="O2_20161111_132448_20161111_133131.avi" >
    <file filesize="59420KB" filename="O2_20161111_133131_20161111_133822.avi" >
    <file filesize="59420KB" filename="O2_20161111_133822_20161111_134451.avi" >
    <file filesize="59335KB" filename="O2_20161111_134451_20161111_135054.avi" >
    <file filesize="59428KB" filename="O2_20161111_135054_20161111_135730.avi" >
    <file filesize="59415KB" filename="O2_20161111_135730_20161111_140409.avi" >
    <file filesize="59410KB" filename="O2_20161111_140409_20161111_141121.avi" >
    <file filesize="59440KB" filename="O2_20161111_141121_20161111_141815.avi" >
    <file filesize="59318KB" filename="O2_20161111_141815_20161111_142521.avi" >
    <file filesize="59399KB" filename="O2_20161111_142521_20161111_143239.avi" >
    <file filesize="3KB" filename="localstorage.db"/>
    <file filesize="54320KB" filename="recording.tmp"/>
  </filelist>
</root>
```

Example Example 2

This example is similar to example 1. Except, in this case a matching portion was found and the data was streamed from the camera to the G-Core server.

```
2016/11/11 2:58:32 PM,597 GMT+01:00 ---> Searching for:
20161111T135306.679Z-20161111T135347.393Z. Current Size of
Gaps: 1
2016/11/11 14:58:32,597 GMT+01:00 Gap=20161111T135306.679Z-
20161111T135347.393Z
2016/11/11 14:58:32,597 GMT+01:00 Found recordings:
20161111T120909.000Z-20161111T135730.000Z on camera with
Recordingtoken: 02
2016/11/11 14:58:32,597 GMT+01:00 ---> Found for:
20161111T135306.679Z-20161111T135347.393Z at 02
2016/11/11 14:58:32,628 GMT+01:00 Start streaming with this
URL: rtsp://10.1.1.60/playback?recordingtoken=02 with send
stream in fast speed
2016/11/11 14:58:32,628 GMT+01:00 Start streaming with
Range: 20161111T135306.679Z-20161111T135347.393Z
2016/11/11 14:58:56,692 GMT+01:00 Stream did stop. Last pic-
ture from Stream: 20161111T135347.299Z
```

Example Example 3

The G-Core server automatically starts permanent recording on the camera. This recording is checked every 5 minutes and restarted if necessary. The following entries are repeated every 5 minutes. The second-to-last line is important: `SetRecordingJobMode` for `RecordingJob: RJ2` to `Mode: Active`. `Result: 0` The recording is started here. If `result = 0`, recording is ensured.

```
2016/11/11 15:09:12,672 GMT+01:00 GetRecordings: Will search
```

IP-CAMERA PLUGINS

```
for SourceName: Geutebrueck
2016/11/11 15:09:12,707 GMT+01:00 GetRecordingsResult:
RecordingItems found: 9
2016/11/11 15:09:12,707 GMT+01:00 GetRecordingsResult:
RecordingToken: O1 got SourceName: O1
2016/11/11 15:09:12,707 GMT+01:00 GetRecordingsResult:
RecordingToken: A1 got SourceName: A1
2016/11/11 15:09:12,707 GMT+01:00 GetRecordingsResult:
RecordingToken: M1 got SourceName: M1
2016/11/11 15:09:12,707 GMT+01:00 GetRecordingsResult:
RecordingToken: N1 got SourceName: N1
2016/11/11 15:09:12,707 GMT+01:00 GetRecordingsResult:
RecordingToken: R1 got SourceName: R1
2016/11/11 15:09:12,708 GMT+01:00 GetRecordingsResult:
RecordingToken: T1 got SourceName: T1
2016/11/11 15:09:12,708 GMT+01:00 GetRecordingsResult:
RecordingToken: U1 got SourceName: U1
2016/11/11 15:09:12,708 GMT+01:00 GetRecordingsResult:
RecordingToken: V1 got SourceName: V1
2016/11/11 15:09:12,708 GMT+01:00 GetRecordingsResult:
RecordingToken: O2 got SourceName: Geutebrueck
2016/11/11 15:09:12,708 GMT+01:00 GetRecordingsResult: Found
SourceName: Geutebrueck in RecordingToken: O2
2016/11/11 15:09:12,708 GMT+01:00 GetRecordingJobs with
search for Recordingtoken: O2
2016/11/11 15:09:12,737 GMT+01:00 GetRecordingJobResult:
JobItems found: 2
2016/11/11 15:09:12,737 GMT+01:00 GetRecordingJobResult:
```

```
Found RecordingToken: 01 at Job:RJ1
2016/11/11 15:09:12,737 GMT+01:00 GetRecordingJobResult:
Found RecordingToken: 02 at Job:RJ2
2016/11/11 15:09:12,737 GMT+01:00 GetRecordingJobResult:
Found fitting RecordingToken: 02 at Job: RJ2. Mode is: Active
ive
2016/11/11 15:09:12,795 GMT+01:00 SetRecordingJobMode for
RecordingJob: RJ2 to Mode: Active. Result: 0
2016/11/11 15:09:12,796 GMT+01:00 Check recording on camera
again in: 5 minutes.
```

Example Example 4

The information on the “load-balancing” settings is output as follows:

4.1

If the stream is transferred from the SD card as quickly as possible, this is indicated with “Send stream in fast speed” in the following line:

```
2017/01/18 09:21:51,210 GMT+01:00 Start streaming with URL:
rtsp://10.1.92.254/playback?recordingtoken=02. Send stream
in fast speed
```

If the stream is transferred from the SD card at the original speed, this is indicated with “Send stream in normal-original speed” in the following line:

```
2017/01/18 09:21:51,210 GMT+01:00 Start streaming with URL:
rtsp://10.1.92.254/playback?recordingtoken=02. Send stream
in normal-original speed
```

4.2

If all channels are allowed to transfer their video material over the

network simultaneously, this is output as follows:

```
2017/01/18 09:52:43,093 GMT+01:00 -----Loadbalancing
is disabled
```

If the number is limited, the information looks something like this:

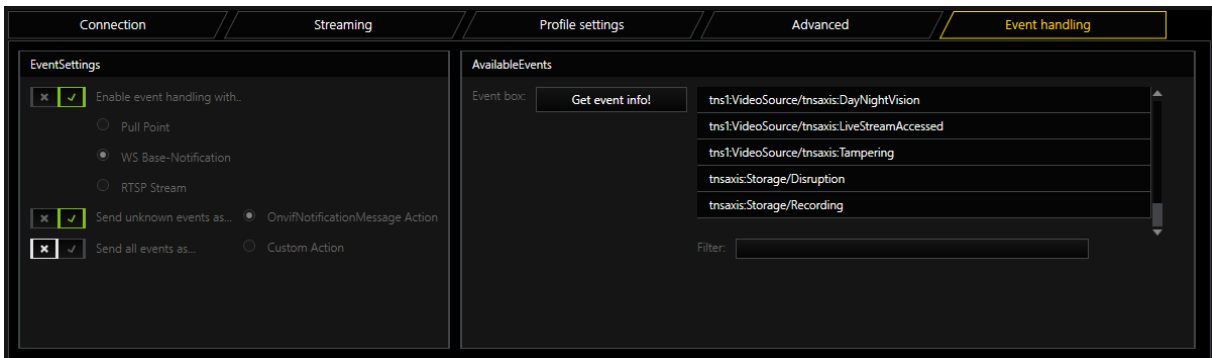
```
2017/01/18 09:52:43,093 GMT+01:00 -----Par-
allelrunning RTSP-Stream are set to: 5
```

When an RTSP stream stops, the number of streams still running in parallel is indicated:

```
2017/01/18 08:55:14,735 GMT+01:00 There are still 1 Edgere-
cording-RTSP-Streams-Running
```

Event Handling

With ONVIF, **Event handling** refers to the option of receiving information from the camera.



i ONVIF defines three different techniques for receiving information (events) from the camera, such as digital input contacts and motion detection: Real-time pull-point notification interface, Basic-notification interface (WS-BaseNotification), Notification streaming interface (metadata streaming).

The ONVIF plugin supports all three techniques. A particular camera can only support one of them. Contact the camera manufacturer to find out which camera is best suited for your application.

When the motion detection or digital inputs of the camera will be used, **Enable event handling with ...** must be activated.

IP-CAMERA PLUGINS

Cameras then report various events as a string similar to this:

```
tns1:VideoSource/tns1:MotionAlarm
```

Known and compliant strings for motion detection and digital input contacts are then displayed in the G-Core Server as a corresponding action ("Sensor Video Alarm" or "Digital Input").

However, if the character string sent by the camera is unknown, the generation of an action cannot be guaranteed.

To be notified of all Onvif events by the camera, you can use a **Custom Action** or an **OnvifNotificationMessage Action** to be notified.

Best you choose **OnvifNotificationMessage Action** because it is much easier to separate information from this action than the **Custom Action**. **Custom Action** is still supported for downward compatibility.

To check the string that the camera sends, you can forward all strings sent by the camera that were not understood to a Custom action or an OnvifNotificationMessage action and display this action in the PLC simulator. To do so, **Send unknown events as custom action** must be activated. All strings that can not be converted in to a corresponding action are then converted into a CustomAction or an Onvif-Notification-Message.

The function **Send all events as...** always sends custom actions. Strings identified as motion detection are sent as **CustomAction** and no longer as **VideoSensorAlarm**.

For debugging purposes, you can select **Send All Events as CustomAction** to send understandable strings sent by the camera as CustomAction. If this option is selected, there will no longer be any action (**Sensor Video Alarm** or **Digital Input**).

To get an overview of what kind of events a particular camera supports, click the **Get Event Info from Camera** button. All events that the camera offers to send are displayed in the event field. For more information on what the event can be, contact the camera manufacturer. Here are some examples:

- tns1:AudioAnalytics/Audio/DetectedSound
- tns1:Configuration/AudioEncoderConfiguration
- tns1:Configuration/VideoEncoderConfiguration
- tns1:Device/Trigger/DigitalInput
- tns1:Media/ConfigurationChanged
- tns1:Media/ProfileChanged
- tns1:RuleEngine/CellMotionDetector/Motion

IP-CAMERA PLUGINS

- `tns1:RuleEngine/FieldDetector/ObjectsInside`
- `tns1:RuleEngine/LineDetector/Crossed`
- `tns1:RuleEngine/TamperDetector/Tamper`
- `tns1:RuleEngine/VideoAnalytics/ObjectDetector/Face`
- `tns1:RuleEngine/VideoSource/FireAlarm`
- `tns1:RuleEngine/VideoSource/SceneTemperature`
- `tns1:VideoSource/MotionAlarm`

By default, G-Core listens to all events and receives information about them. Onvif suggests only requesting the necessary events to prevent camera and network overload. If you know which event you want to listen to, you can place the event from the event box in the filter box.

If only a specific event is required, simply copy an event from the event box to the filter box.

Example Example 1:

If `tns1:Device/Trigger/DigitalInput` is entered, only the digital input events are received by G-Core.

Example Example 2:

If you want to receive two different events, you must place them one after the other, separated by a "|".

If you want to receive digital inputs and motion detection, the filter will look like this: `tns1:Device/Trigger/DigitalInput|tns1:VideoSource/MotionAlarm`

Example Example 3:

If there are events with the same prefix, you can use a placeholder icon "//.". If you want to receive all `tns1:RuleEngine` events, enter this in the filter box: `tns1:RuleEngine//.`

Example Example 4:

Example 2 and 3 can be combined to receive all configuration and RuleEngine events. `tns1:Configuration//.|tns1:RuleEngine//`


Explanation of OnvifNotificationMessage Action

If you have not entered any filters, you can see a large number of actions in the PLC simulator.

01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "01.03.2018 13:43:19"; topic: "tns1:VideoSource/tnsaxis:LiveStreamAccessed"; source name: ""; source value: ""; data name: "accessed"; data value: "1"; key name: ""; key value: ""; property operation: "Initialized"; source string: ""; data string: "accessed,1"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:29"; topic: "tnsaxis:Storage/Recording"; source name: ""; source value: ""; data name: "recording"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: ""; data string: "recording,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:30"; topic: "tns1:Device/tnsaxis:HardwareFailure/StorageFailure"; source name: "disk_id"; source value: "SD_DISK"; data name: "disruption"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,SD_DISK"; data string: "disruption,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:30"; topic: "tnsaxis:Storage/Disruption"; source name: "disk_id"; source value: "SD_DISK"; data name: "disruption"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,SD_DISK"; data string: "disruption,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:26"; topic: "tns1:Device/tnsaxis:HardwareFailure/StorageFailure"; source name: "disk_id"; source value: "NetworkShare"; data name: "disruption"; data value: "1"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,NetworkShare"; data string: "disruption,1"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:26"; topic: "tnsaxis:Storage/Disruption"; source name: "disk_id"; source value: "NetworkShare"; data name: "disruption"; data value: "1"; key name: ""; key value: ""; property operation: "Initialized"; source string: "disk_id,NetworkShare"; data string: "disruption,1"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";
01.03.2018 13:43:59	Onvif notification message; channel: IP-Camera (1); time: "28.02.2018 15:12:24"; topic: "tns1:Device/tnsaxis:Status/Temperature/Above"; source name: ""; source value: ""; data name: "sensor_level"; data value: "0"; key name: ""; key value: ""; property operation: "Initialized"; source string: ""; data string: "sensor_level,0"; key string: ""; topic dialect: "http://docs.oasis-open.org/wsn/t-1/TopicExpression/Simple"; general processing timestamp: "01.03.2018 13:43:59";

The message received the following parameters:

IP-CAMERA PLUGINS

 **Onvif notification message:**
This action will forward the event notifications sent by a camera.

<input type="checkbox"/> channel	
<input type="checkbox"/> time	2018/03/01 13:47:25,417 GMT+01:00
<input type="checkbox"/> topic	
<input type="checkbox"/> source name	
<input type="checkbox"/> source value	
<input type="checkbox"/> data name	
<input type="checkbox"/> data value	
<input type="checkbox"/> key name	
<input type="checkbox"/> key value	
<input type="checkbox"/> property operation	
<input type="checkbox"/> source string	
<input type="checkbox"/> data string	
<input type="checkbox"/> key string	
<input type="checkbox"/> topic dialect	

Name	Description
channel	The media channel of the camera
time	The time at which the camera sent this event. Not to try to make a mapping event for it! This is mainly for information purposes.
topic	The topic is the event displayed in GSet in the Event field. This parameter should be used to create a mapping to a GCore event.
source name and source value	This describes the source of the event.
data name and data value	Describes the state of the event. You can often see here whether the event is active or not.

Name	Description
key name and key value	That's usually empty. Ask the vendor for the intended purpose
property operation	There are three states: Initialized, deleted and changed. Initialized is displayed when there is a new parameter or when GCore connects to the camera for the first time. Changed is displayed if there are changes to the event. Deleted is displayed when the source of the event is no longer available.
source, data, key string	Source, data and key can consist of several elements. The first element is entered for the name and value of the specified tuple. All elements of a given tuple are separated by comma in this string.
topic dialect	This is an information sent with the Onvif event. Mostly unnecessary.

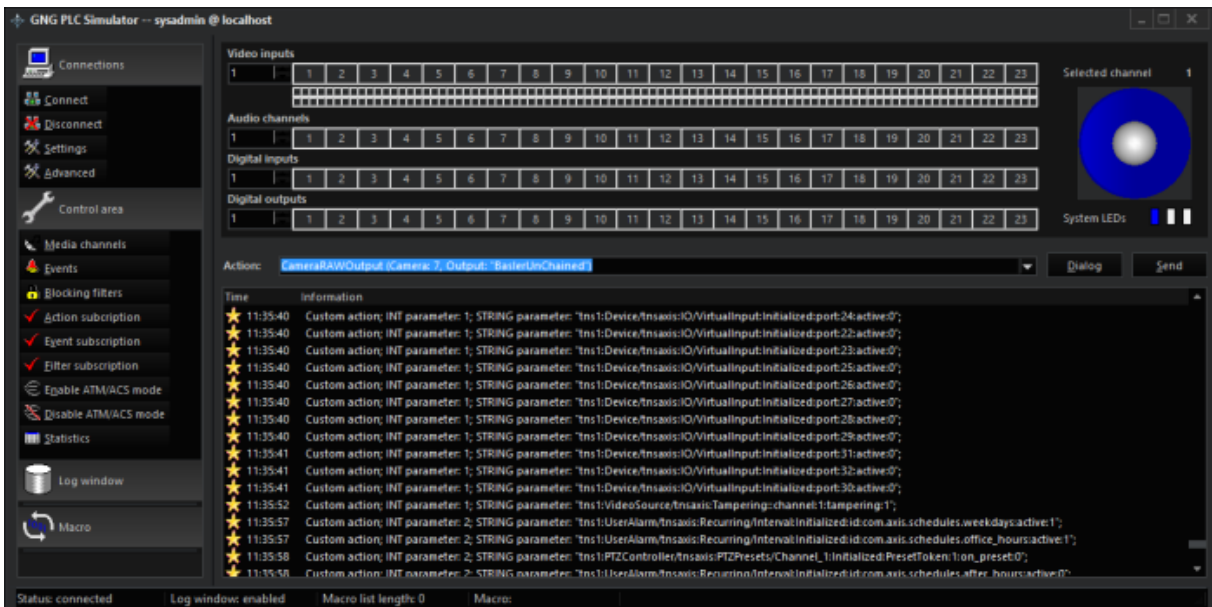
Explanation of Custom Action

The **INT parameter** is used to distinguish between different media channels. The **INT parameter** is the corresponding "Mediachannel ID" from G-Set. It is NOT the "Global number"!

"STRING parameter" is the string received from camera like mention above.

Media channel source:	Module channel 1 on <IP-Camera Plugin 001> (ONVIF IPC)
Mediachannel ID:	3

Here is an example in the PLC simulator:



If you know what was sent by the camera, you can start an event in G-Set that is triggered by this CustomAction.

Supported Actions

The following actions are supported:

- PTZ actions
- Camera Raw

PTZ Actions

In addition to the corresponding actions for pan, tilt and zoom, the ONVIF plugin also supports the following actions:

- Move to default position
- Move to preset position
- Move to absolute position
- Move to relative position
- Camera area zoom
- Move to preset position for Onvif

IP-CAMERA PLUGINS

- **Save default position**
- **Save preset position**
- **Clear default position**
- **Clear preset position**
- **Auto focus on**
- **Auto focus off**
- **Focus far**
- **Focus near**
- **Focus stop**
- **Camera wash-wipe on**
- **Camera wash-wipe off**
- **Camera pump on**
- **Camera pump off**
- **Camera day/night mode**
- **Camera light on**
- **Camera light off**

Camera Raw

Using the **Camera RAW output** action, it is possible to send any command to the camera at any time.

This also makes it possible to set values in the camera that were not previously set. Only manufacturer-specific CGI-GET commands can be sent, which are configured differently by each manufacturer. If you have questions on this topic, please contact the service department.

Using Camera Raw, it is also possible to delete all the existing fixed positions in the camera at once.

To do so, a Camera Raw Action will be sent to the server with the following string:
`DeleteAllPresetPos .`

When creating your own media profiles using **Create new profile** under **Profiles settings**, the camera's performance can be negatively affected. To delete all self-generated profiles, send the string `DeleteAllNotFixedMediaProfiles` as Camera Raw Actions to the G-Core Server.

There are several fixed strings to control washer and wiper functions via ONVIF which can be send via `CameraRawCommand` ("WasherOn", "WasherOff", "WiperOn", "WiperOff", "WashingProcedureOn", "WasherProcedureOff").

Hanwha Devices

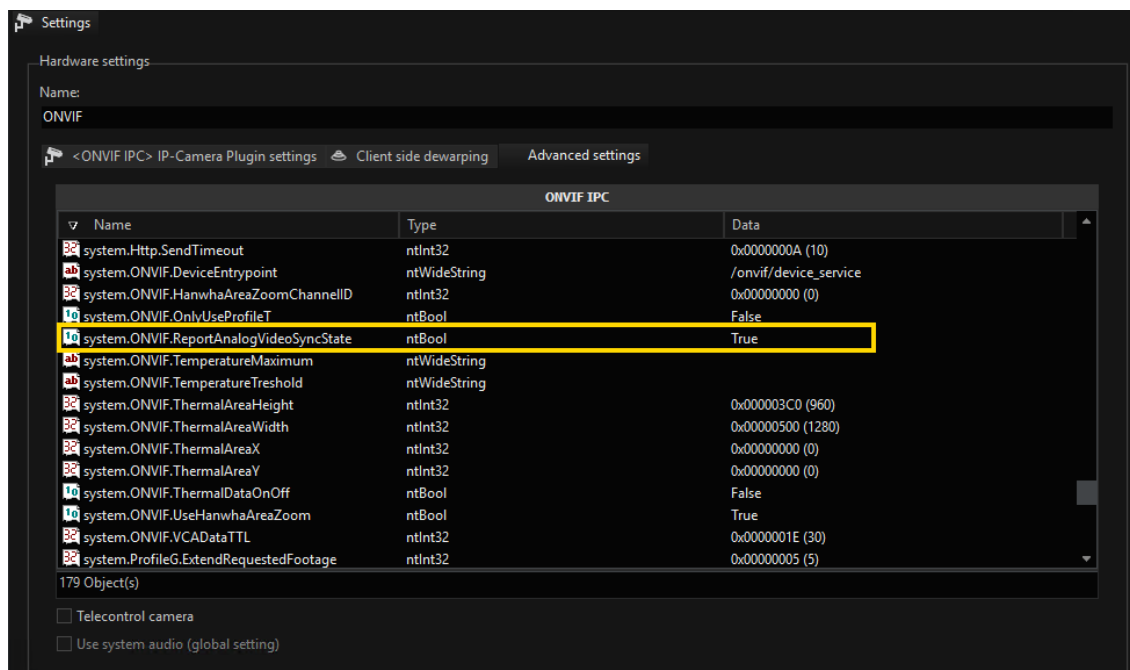
Wisenet Encoder Integration

The Wisenet Encoder integration enables the use of the exact channel synchronization loss for Wisenet Encoders with SUNAPI 2.0.

i **Only use this feature in combination with a Wisenet Hanwha Techwin Encoder.**

How to use the Wisenet Encoder integration:

1. Select the plugin in the **Hardware module list** and open the **Advanced settings** tab using the shortcut `Ctrl + Alt + R`.
2. Set the registry key `system.ONVIF.ReportAnalogVideoSyncState` to `True` to request the sync status on the encoder every 5 seconds. This enables G-Core to react to the exact sync state for the connected channel.

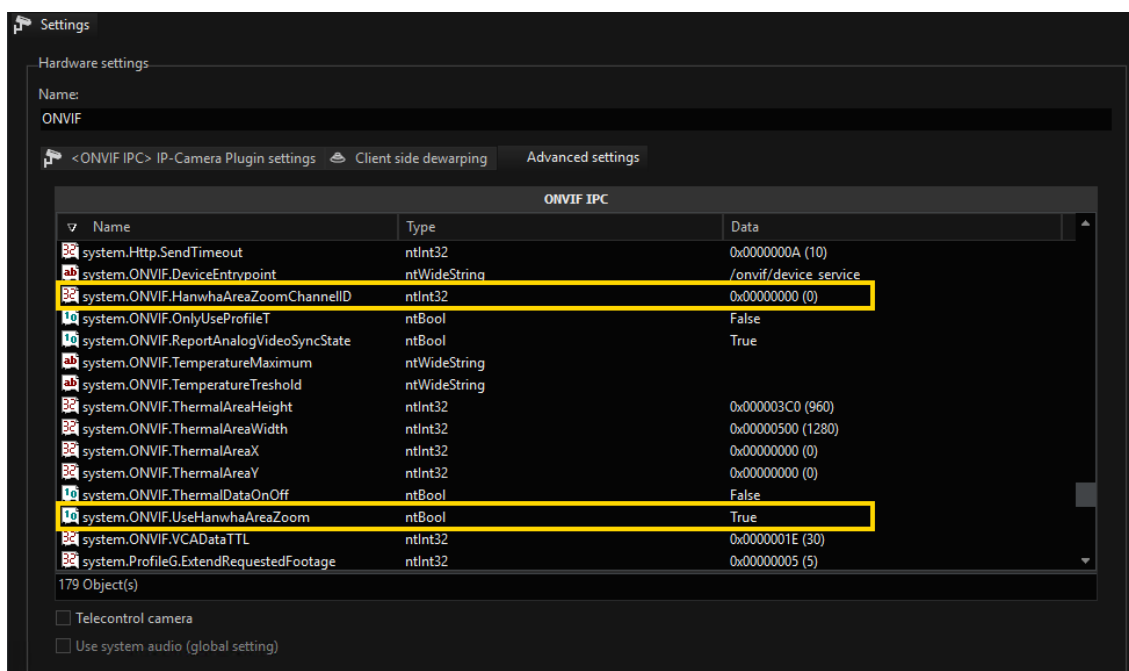


Hanwha Area Zoom

Some Hanwha cameras support area zoom via their own API, but not via ONVIF. The Hanwha area zoom settings enable the use of area zoom in the ONVIF plugin.

How to use the Hanwha area zoom:

1. Select the plugin in the **Hardware module list** and open the **Advanced settings** tab using the shortcut `Ctrl + Alt + R`.



2. Set the value `system.ONVIF.UseHanwhaAreaZoom` to `True`.
3. Enter the channel ID for the value `system.ONVIF.HanwhaAreaZoomChannelID`.
 - For single PTZ cameras, this is usually 0.
 - For multihead cameras, you must enter the correct channel ID. You can find this in the web interface of the camera. The IDs usually start with 0, i.e. channel 1 has the ID 0 and so on.

ONVIF Profile S and Profile T Features

Geutebrück supports the following features of the ONVIF Profile S (Client) and the ONVIF Profile T (Client):

Table legend:

= Feature is supported.

IP-CAMERA PLUGINS

 = Feature is not supported.

M = Mandatory

C = Conditional

Features		Profile	
General		S	T
System Settings		C	C
User Authentication	WS-Username Token	M	
	Digest Authentication	M	M
User Handling		C	C
Query Service and Capabilities		M	M
Device Discovery		C	M
Network Configuration		C	M
Zero Configuration		C	
IP Address Filtering		C	
NTP		C	C
Media Profile Configuration		C	C
Media Transport	RTP/UDP i Client must support at least one of UDP and HTTP.	M	M
	RTP/RTSP/HTTP/TCP i Client must support at least one of UDP and HTTP.	M	M
	RTP/RTSP/HTTPS/TCP	M	C
	RTP/UDP Multicast	C	C

IP-CAMERA PLUGINS

Features		Profile	
Video		S	T
Video Streaming	MJPEG	M	
	MPEG4	C	
	H.264	C	M
	H.265		M
Video Encoder Configuration		M	M
Video Source Configuration		C	C
Media Profile Streaming Ready out of the box		C	M
Video Streaming	RTSP/RTP	M	M
Imaging Settings			M
Events		S	T
Event Handling	Pull-point	M	M
	Base-notification	M	
Motion Alarm Events			M
Tampering Event			M
Audio		S	T
Audio Streaming	G.711	C	C
	AAC	C	C
	G726	C	C
Audio Encoder Configuration		C	C
PTZ		S	T

Features		Profile	
PTZ Move	Absolute	C	M
	Continuous	C	M
	Relative	C	
PTZ Presets		C	C
PTZ - Home Position		C	C
PTZ Configuration		C	C
Additional		S	T
Relay Outputs		C	C
Auxiliary Commands		C	C
Focus Control			C
Digital Inputs			C
Metadata Configuration		C	C
Metadata Streaming			C

Panasonic Ex

This plugin integrates the new Panasonic IP camera products, which can supply images in M-JPEG as well as H.264.

For integration, an explicit emphasis was placed on utilizing the new API from Panasonic, which reacts faster and more flexibly. The streaming parameters can now also be modified so that the stream is not interrupted.

Unfortunately, this process leads to incompatibility with older cameras that do not have these functions and cannot be upgraded with a firmware update.

Panasonic provides the compatibility table with respect to individual API calls. The cameras are compatible with the new plugin when they support the following calls:

- 3.1.11. Request JPEG video transmission ("UID" is unnecessary)
- 3.3.48. Change JPEG quality without disconnect the stream

IP-CAMERA PLUGINS

- 3.3.65. H.264 setup
- 3.3.67. Change H.264 1st stream quality / bitrate / resolution without disconnect the stream
- 3.3.56. Alarm output terminal setup
- 3.3.75. I/O and VMD status notification

The plugin was tested with cameras WV-NP502 and WV-SC385.

Since summer 2012 this plugin also support audio and multichannel encoder like WJGXE500.

Installation

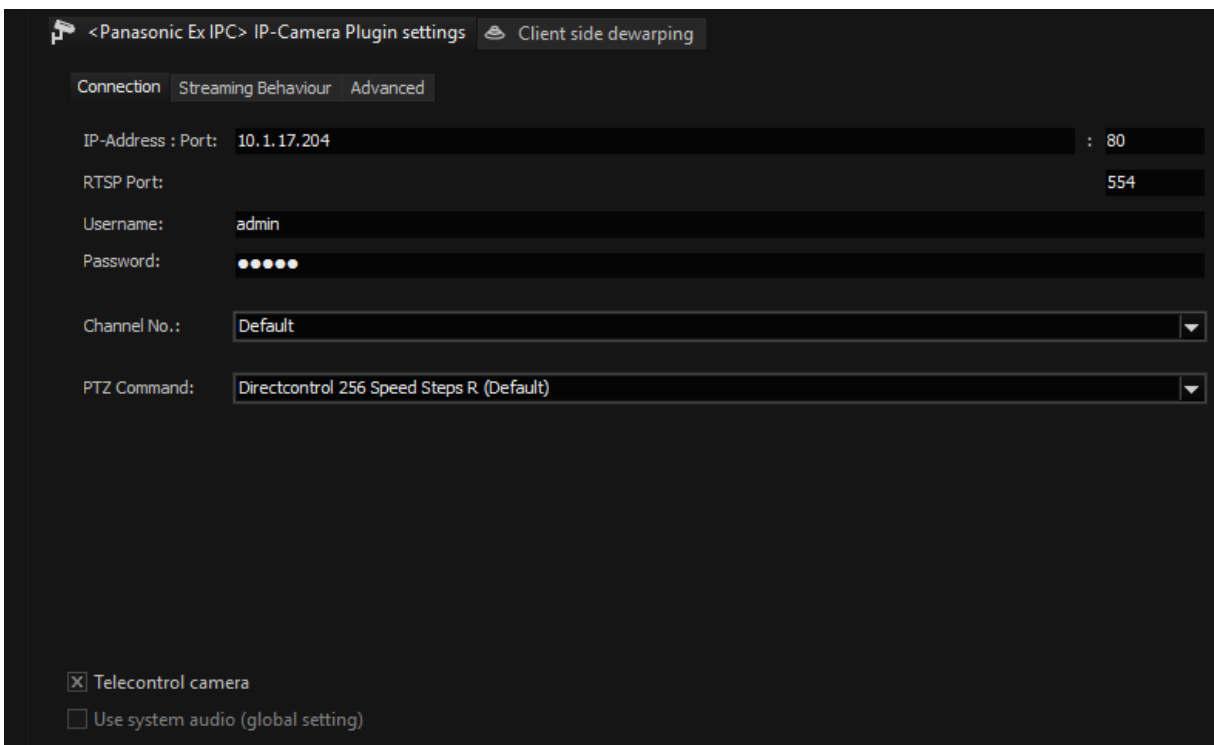
If not yet installed: Copy the PanasonicEXIPC.DLL file and the PanasonicEXIPC.DLG file to the subdirectory **MediaPlugins** in the directory G-Core (default: C:\Program Files\Geutebrueck\GCORE\MediaPlugins).

 **You have to restart the G-Core Server for the plugin to be initialized.**

Add the Plugin

1. In G-Set open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <Panasonic Ex IPC>** by double click it.
 - The Panasonic Ex plugin is now entered in the hardware module list as a hardware resource.
4. Select the plugin in the list and make the necessary changes to the settings.

Connection



The screenshot shows the 'IP-Camera Plugin settings' window with the 'Connection' tab selected. The settings are as follows:

Field	Value
IP-Address : Port:	10.1.17.204 : 80
RTSP Port:	554
Username:	admin
Password:	•••••
Channel No.:	Default
PTZ Command:	Directcontrol 256 Speed Steps R (Default)

At the bottom, there are two checkboxes:

- Telecontrol camera
- Use system audio (global setting)

In the **Connection** tab enter the **IP address** of the camera and enter a **Username** and **Password**.

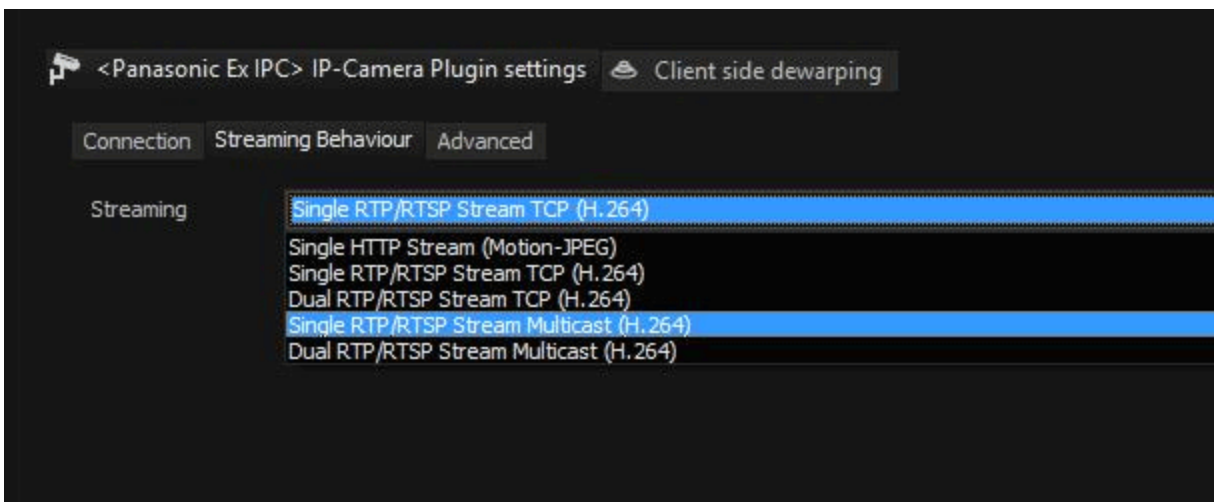
Control commands for the camera and the querying of the motion detection and digital inputs are performed by default over port 80. Streaming of the video image is processed via RTSP and thus port 554.

It is important that the correct password is entered. The default username and password for Panasonic products is **admin** (username) and **12345** (password).

If you use a speed dome camera, a camera with the functions solid PTZ, digital PTZ or ViewAreas, please also enable **Telecontrol camera**.

After the setup has been transferred to G-Core server and a media channel has been added, you should be able to see images in the setup. If not, check the IP address, and in particular the user name and password.

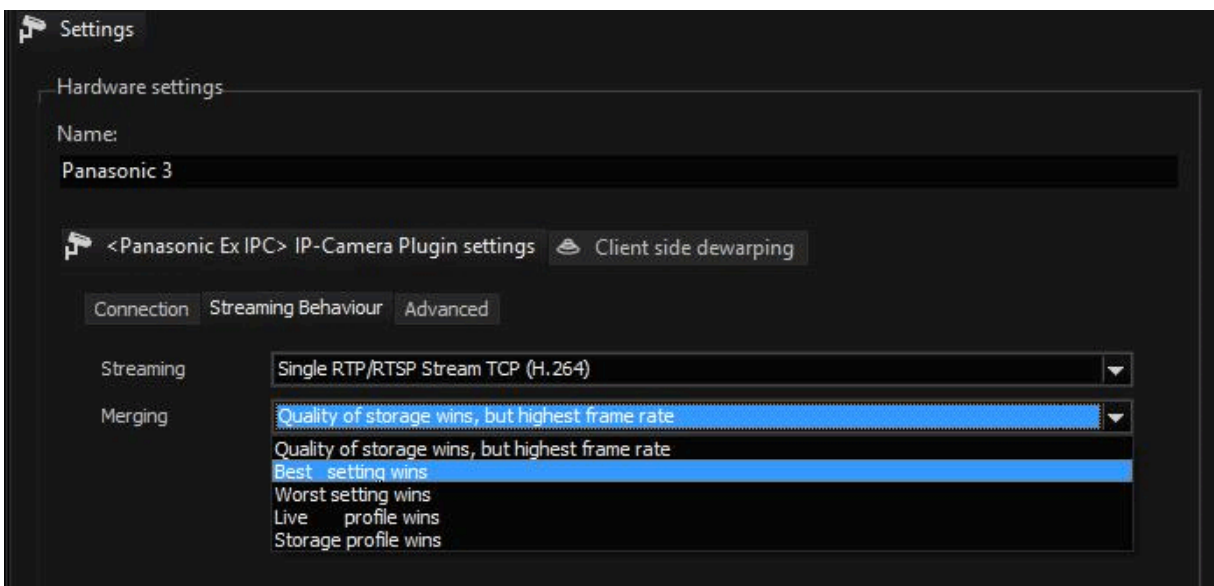
Streaming Behaviour



On the tab page, **Streaming Behaviour**, select the operating mode:

- Single HTTP Stream (Motion-JPEG)
- Single RTP/RTSP Stream (H.264)
- Dual RTP/RTSP Stream (H.264)

i Note that in dual-stream operation the parameters of the second stream (live) are often restricted. For instance, streaming in the MP range is not possible.



IP-CAMERA PLUGINS

With **Merging** you can specify for single streaming behaviours how the different settings for Live and Storage under Media Channels are combined:

Name	Description
Quality of storage wins, but highest frame rate	Resolution and quality are selected from the settings for the storage channel. The higher frame rate of the two, Live or Storage, is used.
Best settings wins	For all parameters, the highest value specified in the corresponding settings is used.
Worst settings wins	For all parameters, the worst value specified in the corresponding settings is used.
Live profile wins	The Live Stream settings are used Storage profile wins The Storage settings are used.

All other settings on this tab behave as in dual stream mode.

Advanced

Hardware module list

- IP-Camera Plugin 001
- IP-Camera Plugin 002
- Panasonic 3**

Settings

Hardware settings

Name: Panasonic 3

<Panasonic Ex IPC> IP-Camera Plugin settings Client side dewarping

Connection Streaming Behaviour **Advanced**

Disable DLS

Disable resolution

Disable quality

Disable FPS

Fixed resolution

Fixed quality

Fixed FPS

Name	Description
Disable res-	Disable resolution control

Name	Description
Resolution	
Disable quality	Disable quality control
Disable FPS	Disable frame rate control
Disable DLS	Disables the Dynamic Live Streaming function
Fixed resolution	If provided - this resolution decimation will be used instead of automatically calculated. Examples: <code>Scale_1_4</code> , etc.
Fixed quality	If provided - this quality level will be always used. Example: 30, etc.
Fixed FPS	If provided - this frame rate decimation will be always used. Example: <code>FpsScale_1_8</code> , etc.

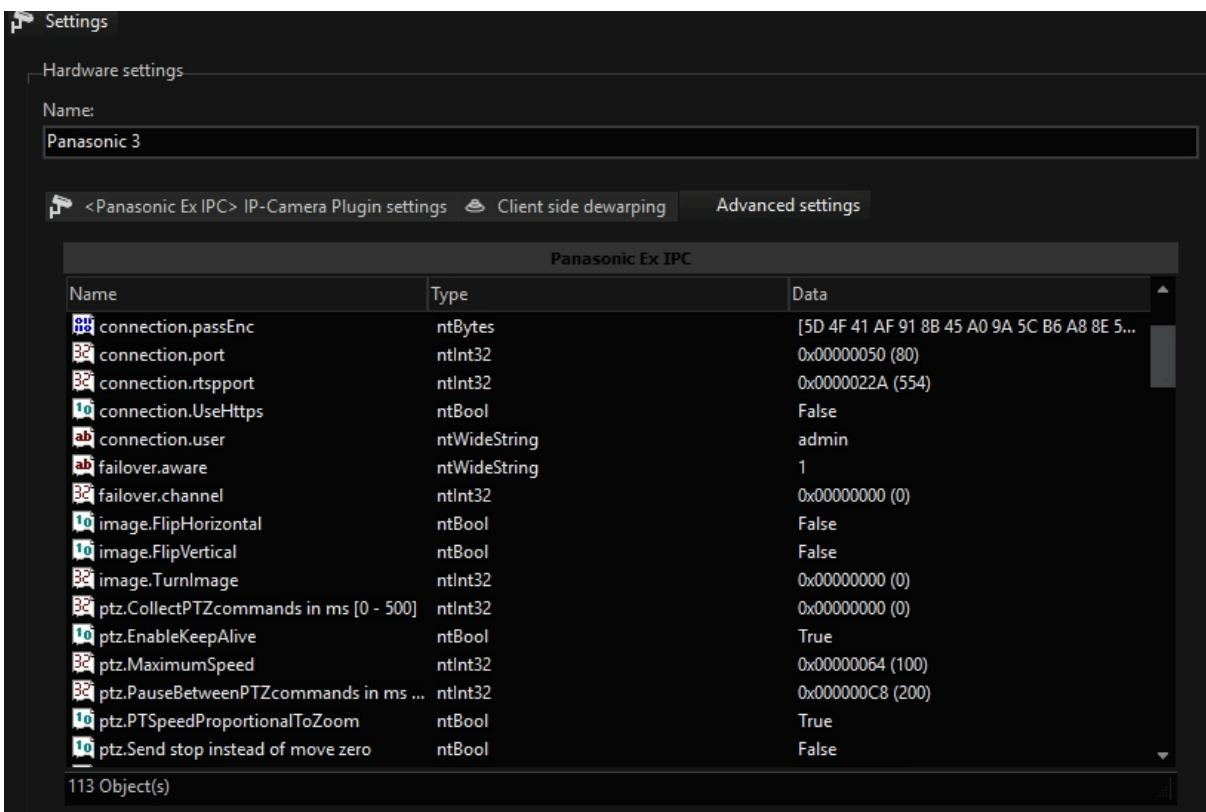
Advanced Settings



IMPORTANT: The following settings are only accessible via a hidden option. Change these parameters only if you explicitly need the corresponding options.

If you are in the Hardware dialog, press Ctrl + Alt + R. In addition to the dialogue, a new tab, **Advanced Settings**, should appear.

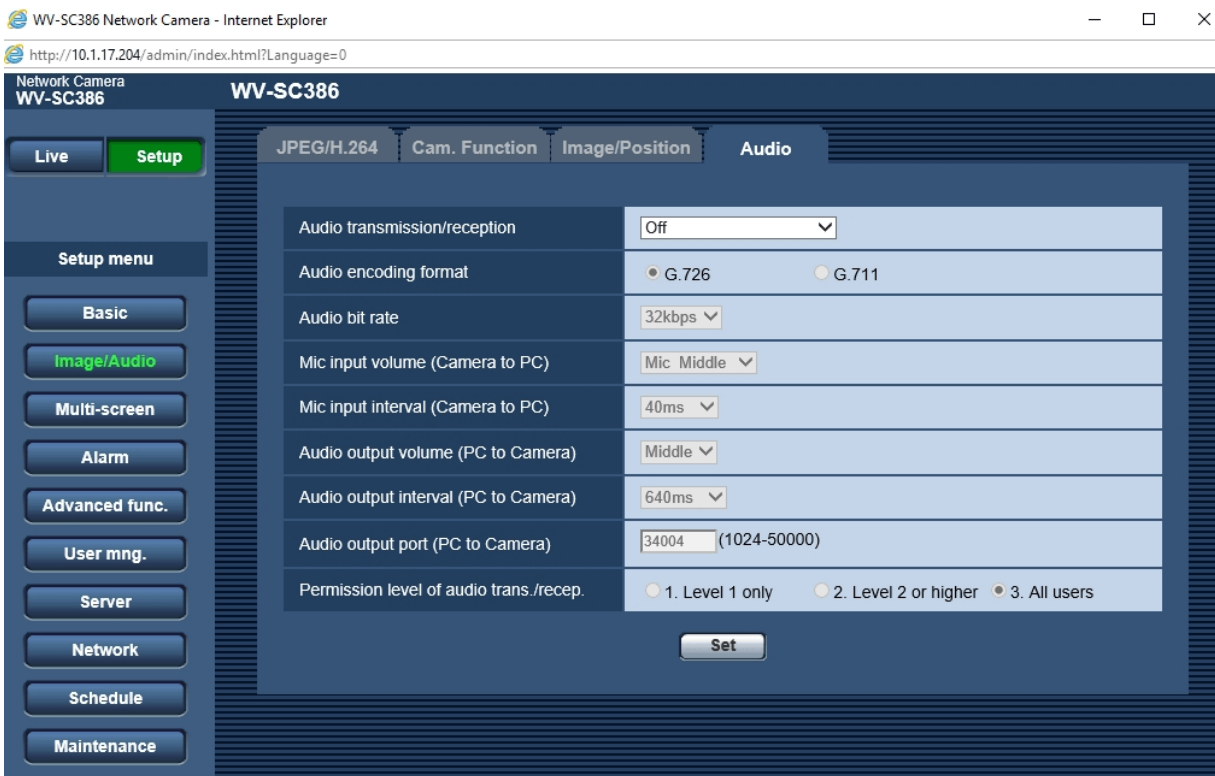
IP-CAMERA PLUGINS



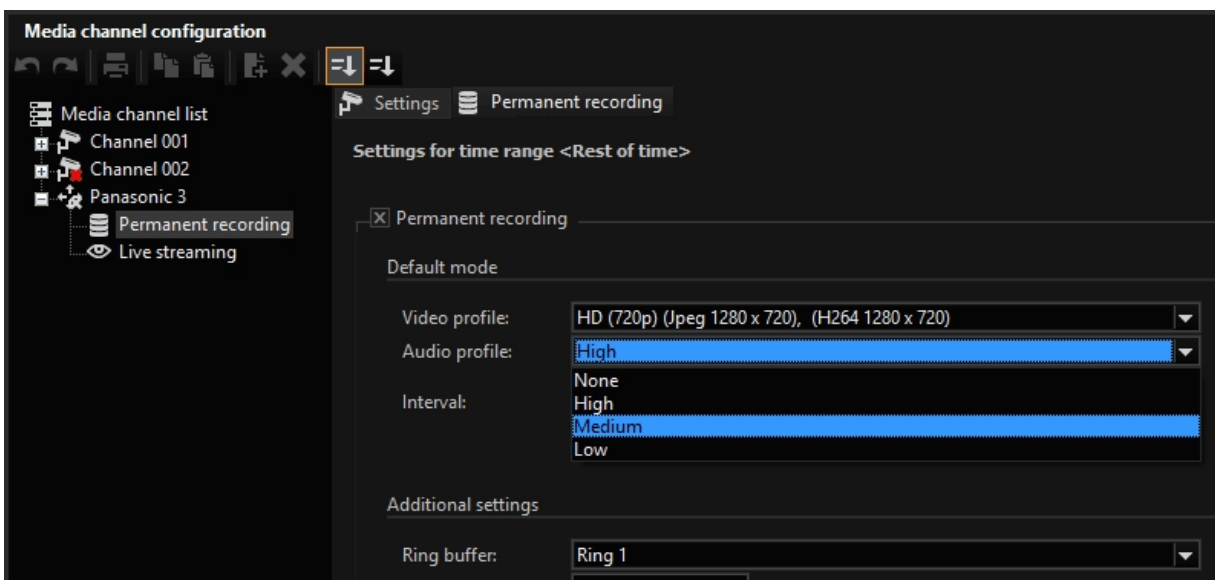
Audio Support

If the camera supports an audio input, it is possible to have it recorded and played with the G-Core server. The audio input can be a line-in or microphone. To stream audio, this feature must be configured in the camera.

IP-CAMERA PLUGINS



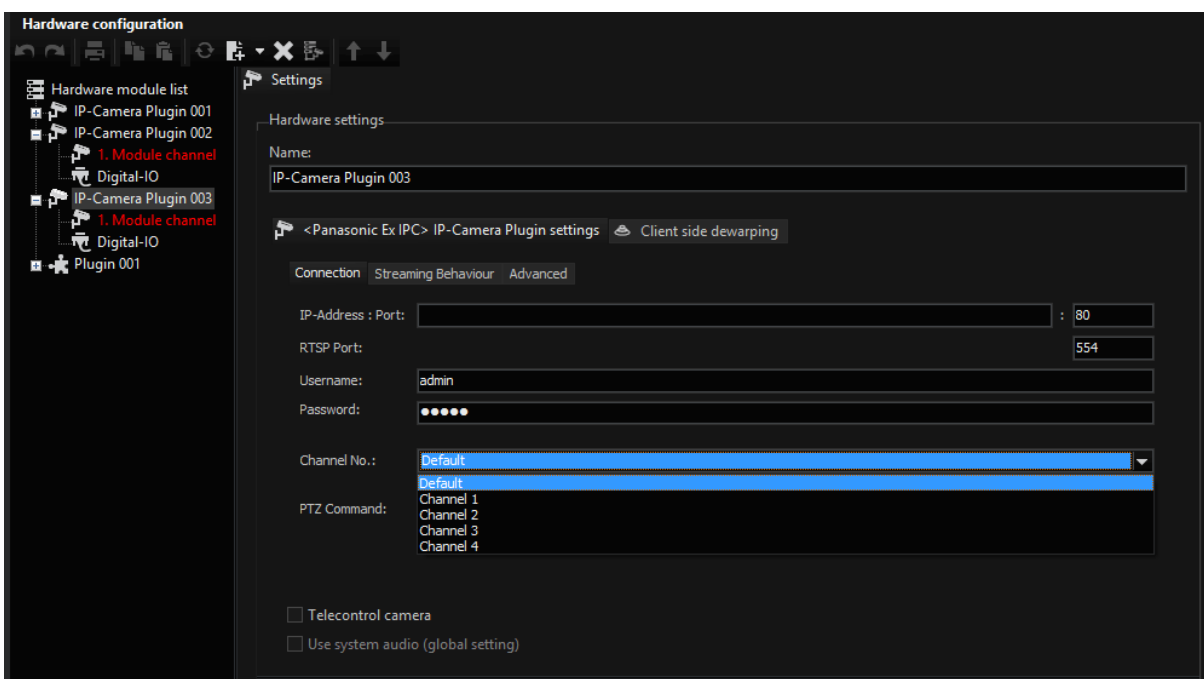
You have to choose whether to store audio should be used for recording and/or live streaming. In G-Set select an audio profile for the corresponding channel. It does not matter which profile you choose (high, medium, low), it is only important that you select one.



Multichannel Encoders

⚠ IMPORTANT: In certain circumstances, there may be performance problems on the part of the encoder. If this is the case, the Panasonic Ex plugin may not be able to display a stream if the encoder fails to deliver the stream.

The plugin supports multichannel encoder such as WJ GXE500. To use this feature, you must enter the individual encoder channels as separate cameras in G-Core and set the corresponding channel in the settings.



i **Note the following restrictions:**
Motion Detection works on all channels, however, channel 1 in the system must be configured for this feature. Input contacts work only if they are set on channel 1.

Procash 8000

 Subject to license

IP-CAMERA PLUGINS

This plugin enables a connection to be made between the new Wincor Nixdorf GAAs Procash 8000 and the Geutebrück systems. In contrast to GAA connections up until now, these GAAs feature two integrated USB cameras that are made available by the Wincor Nixdorf software 'Optical Security Interface' as IP cameras via a network.

The data connection will continue to be implemented via the serial interface and is therefore handled by GSCCOM or Multicom in the normal way. The plugin takes care of the transfer of video data.

The basis for implementation is provided in the document 'Optical Security Interface, User Manual, Edition January 2011' by WINCOR NIXDORF International GmbH.

The software from Wincor Nixdorf differentiates between two cameras: portrait and slot camera. The parameters for these cameras are set via the Wincor Nixdorf Services initialisation file 'optical_security.conf'. Among other functions, this features settings for the resolution, for the compression quality, and for the frame rate.

The following values are set by default:

- Resolution: auto; full, half, third, quarter, and auto are permitted
- Compression quality: 85; values between 1 and 100 are permitted
- Frame rate: 2 fps; values between 0.1 and 4 fps are permitted

The parameters for both cameras may be set independently from one another. Please see the additional information in the OSI user handbook from Wincor Nixdorf.

i **Note that the portrait is always active by default, while the slot camera is switched on during the transaction by default. During PIN entry, the slot camera switches off automatically; only a black image is transmitted during this time!**

For GeViScope, integration has been implemented in the form of an IP camera plugin. Following one of the next release versions, this plugin will be a component of the installation package. In the meantime, it needs to be installed manually.

Installation

The plugin consists of two files: Procash8000IPC.dll and Procash8000IPCDialog.dlg.

IP-CAMERA PLUGINS

If the plugin is not included in the scope of installation with delivery, please copy both files (Procash8000IPC.dll and Procash8000IPCDialog.dlg) to the plugin directory of G-Core (C:\Program Files\Geutebrueck\GCore\MediaPlugins).

 **The G-Core server service must then be restarted.**

Add the Plugin

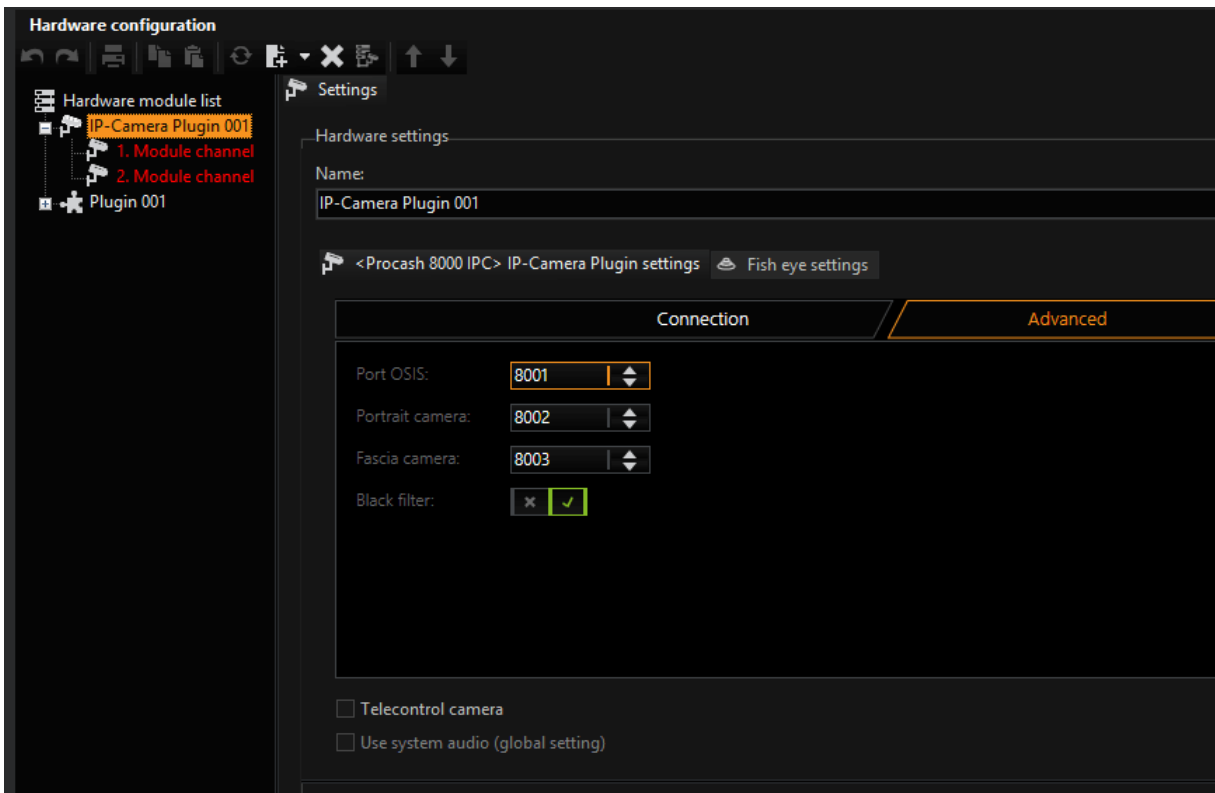
1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <Procash 8000 IPC>** by selecting it and clicking **Add**.
 - The Procash 8000 plugin is now entered in the hardware module list as a hardware resource.
4. Add the corresponding number of plugins.

Configuration

Select the plugin in the list and make the necessary changes to the settings:

- IP address of the OSI services (default is localhost with IP port 8001)
- IP ports for the portrait and slot camera (default is 8002 and 8003)
- Username and password
- Filter for black images (during PIN entry)

IP-CAMERA PLUGINS












While configuring events, bear in mind that the cameras do not constantly deliver images under some circumstances! Above all, note that the timeout is set to 60 seconds by default and that the slot camera is set to record triggered by events.

i Don't forget to license the cameras!

Simulation Server

Wincor Nixdorf offers a simulation server for test purposes. Download and install 'osi_sim_setup' to access this. Parameters are set via the configuration file. Details are provided in the documentation included with the install.

During installation, two streaming services will be set up for the simulation:

Name	Beschreibung	Status	Starttyp
 Windows-Verwaltungsinstrumentation	Bietet eine sta...	Gestartet	Automa
 Windows-Zeitgeber	Behält Datum...		Manuell
 WinHTTP-Web Proxy Auto-Discovery-...	WinHTTP imp...		Manuell
 WMI-Leistungsadapter	Bietet Leistun...		Manuell
 WN Optical Security Interface Service	Captures and ...	Gestartet	Automa
 WN Optical Security Streaming Service	Provides curre...	Gestartet	Automa
 WWAN - automatische Konfiguration	Mit dem Dien...		Manuell
 Zertifikatverteilung	Kopiert Benut...		Manuell
 Zugriff auf Eingabegeräte	Ermöglicht ei...	Gestartet	Manuell

Samsung

 Subject to license

With this plugin, Samsung IP cameras can now be used in M-JPEG mode.

The development was based on the several documents provided by Samsung:

- “CGI Specification for IP Surveillance Products, SIS Division”, version 2.8, 2010-09-04
- “Samsung Network Camera SDK, HTTP API Development Guide”, revision 1.71.5, 2010-09-02
- “SAMSUNG NETWORK CAMERA SDK, RTSP API Development Guide”, version 1.4, 2010-05-14

According to the specification, the following cameras are supported: SNC-570, SND-560, SND460V, SNC-550, SNP-1000/1000A, SNP-3300/3300A, SNS-100/400, SNC-1300, SNP-3750/3350, SNP-3370/3370TH, SNP-3301/3301H.

The first implementation was extended to support a second line of cameras according to the second specification. The following cameras should be supported by the new release: SNC-B2315, SNC-B5395, SNC-M300, SNC-C6225, SNC-C7225, SNC-C7478, SNC-C7478C, SNC-B2331, SNC-B5368, SNC-B2335, SNC-B5399, SNB-2000, SND-3080, SNB-3000, SNV-3080, SNB-5000, SND-5080, SND-5080F, SNV-5080, SNB-5000TJ, SNV-3120, SNP-3120, SNP-3120V, SNP-3120VH, SNB-1000, SND-1010, SPE-100, SNV-5010, SNP-3430H.

i Note that the plugin was tested only with **SND-460V, SNV-3080, SNV-5080, SNV-5010, SNP-3371 and SNP-6320RH.**

Installation

The plugin is not installed by default with the G-Core software.

If the plugin is not included in the scope of installation with delivery, run the installer again and select the **Samsung Plugin** within the installer.

i **To initialize the plugin, you must reboot the G-Core server.**

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <Samsung IPC>** by selecting it and clicking **Add**.
 - The Samsung plugin is now entered in the hardware module list as a hardware resource.
4. Now select the plugin in the list and make the necessary changes to the settings.

Connection

On the **Connection** tab page specify the contact data of the camera: its IP address, HTTP and RTSP ports. Specify also the valid account data. Different Samsung cameras use different default accounts:

- user “admin” and password “11111111”
- user “admin” and password “4321”
- user “root” and password “4321”.

i **Newer Samsung cameras require the user to assign a separate password.**

If **Use HTTPS** is enabled, all connections to the camera are encrypted.

Hardware settings

Name:
Samsung 1

< Samsung IPC > IP-Camera Plugin settings Fish eye settings

Connection

IP Address: 10.1.1.141 Use Https Https Port: 443

RTSP Port: 554 Http Port: 80

Username: admin

Password:

Telecontrol camera

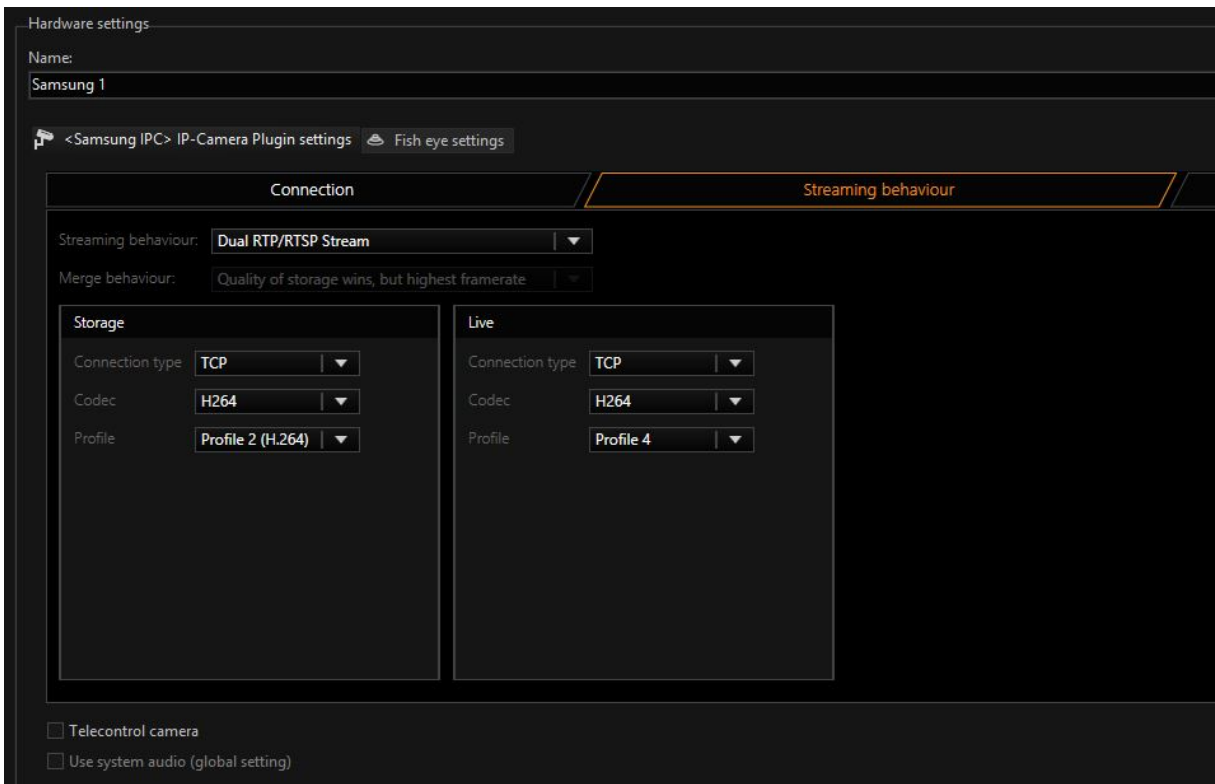
Use system audio (global setting)

Streaming Behaviour

On the **Streaming behavior** tab you can specify the streaming behavior. The plugin supports M-JPEG streaming over HTTP and M-JPEG/H.264 streaming over RTP connections. In RTP mode you can use two different streams for live and recording (dual streaming).

- i** If M-Jpeg Streaming over HTTP is selected, it will not be possible to encrypt with HTTPS - this mode should only be used for older cameras that do not support RTSP.

IP-CAMERA PLUGINS



The plugin also support different kinds of RTP communication:

- RTP / TCP / Unicast – the default, the reliable end-to-end connection is established
- RTP / UDP / Unicast – non-reliable stateless communication
- RTP / UDP / Multicast – stream broadcasting

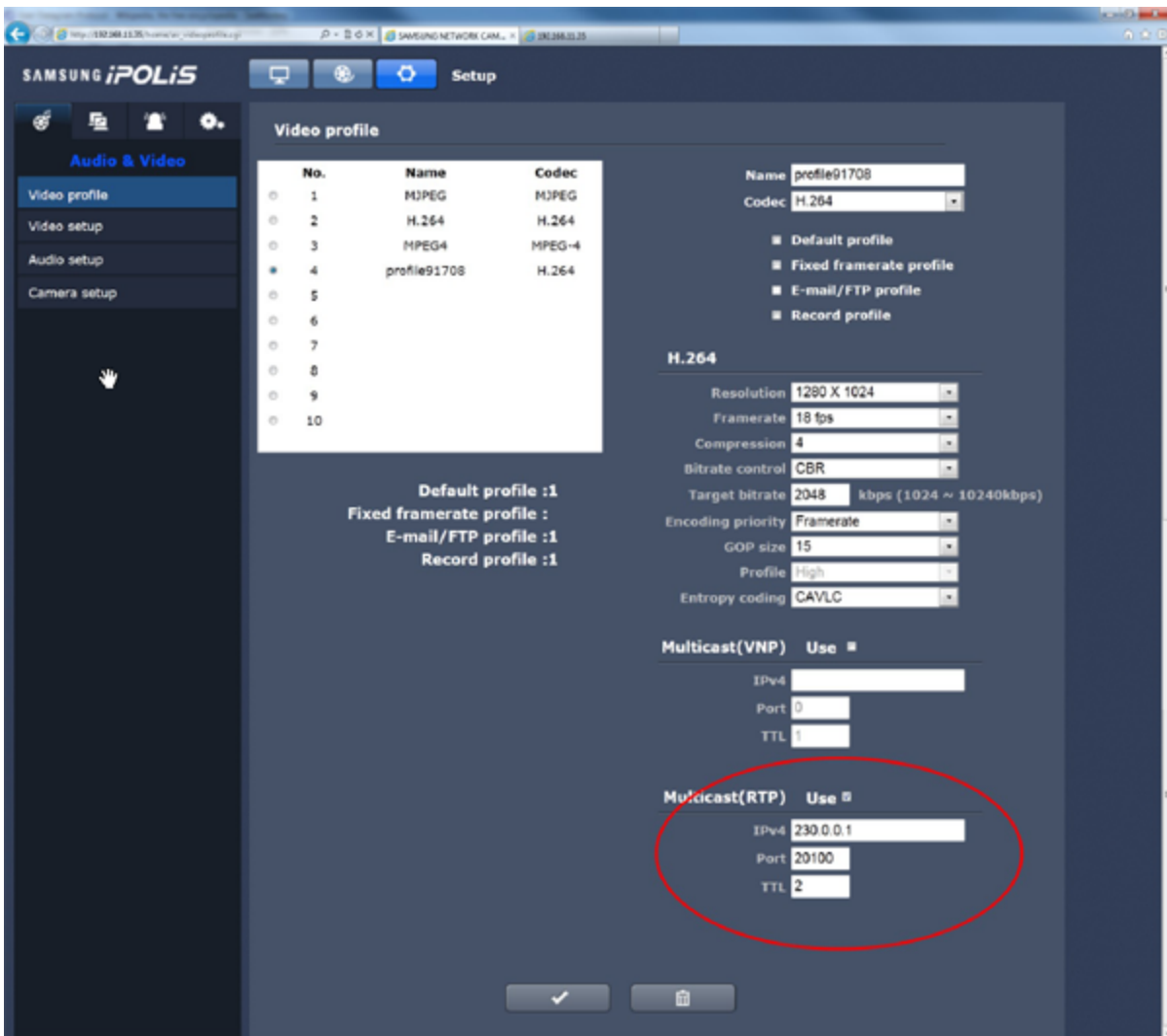
You can use M-JPEG and/or H.264 in all these modes.

The Samsung cameras use profiles to store the camera settings. Some of these profiles are fixed to special encoder:

- Profile 1 – JPEG
- Profile 2 – H.264
- Profile 3 – MP4.

The other profiles (4 – 10) are free to use with any codec. Please use different profiles for live and recording.

To enable multicast you have to make a special setting in the certain profiles. Please specify the multicast group address and port as well as the TTL:

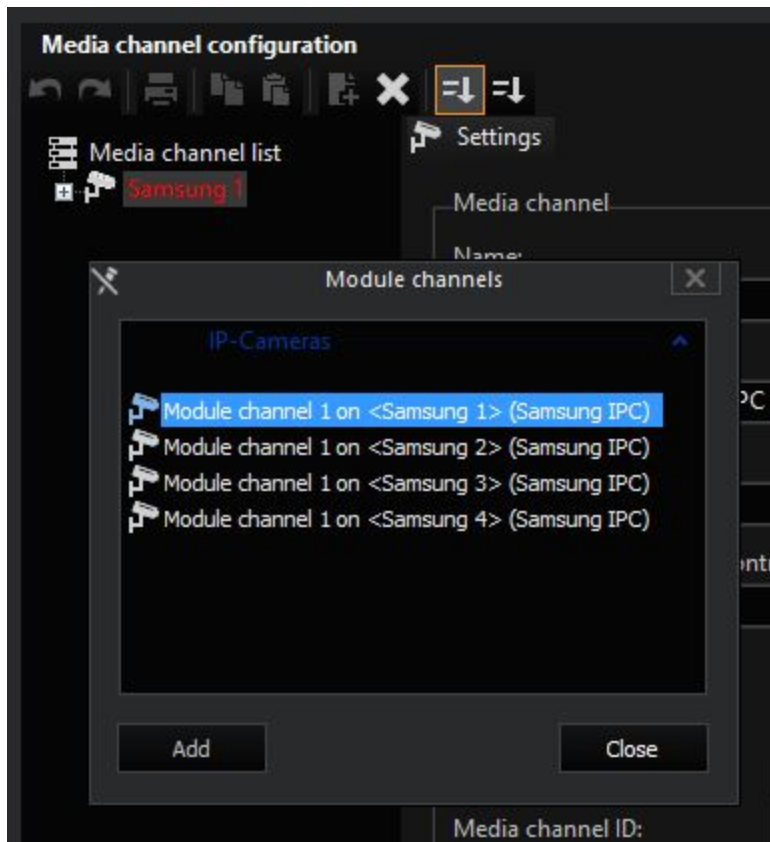


Media Channels and Digital Contacts

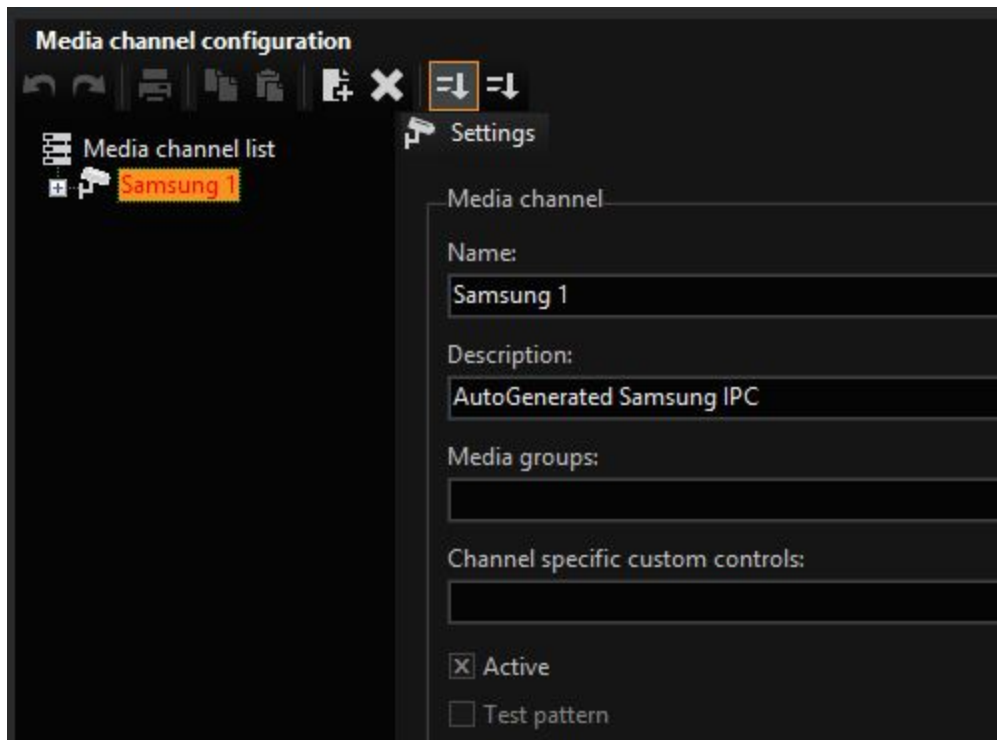
You need to create a media channel and digital contacts for the plugin:

IP-CAMERA PLUGINS

1.

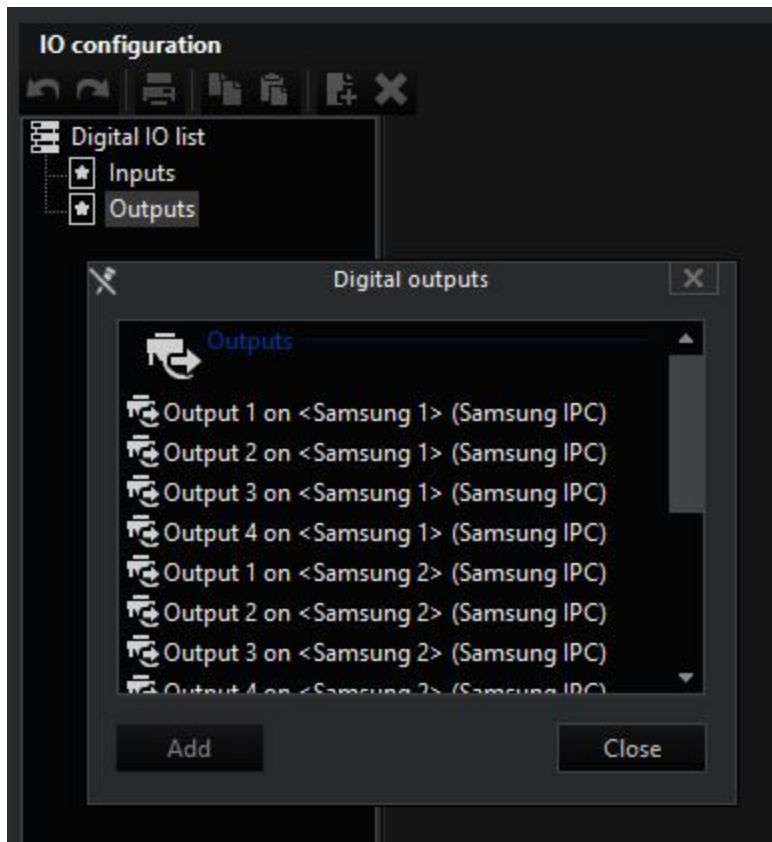


2.

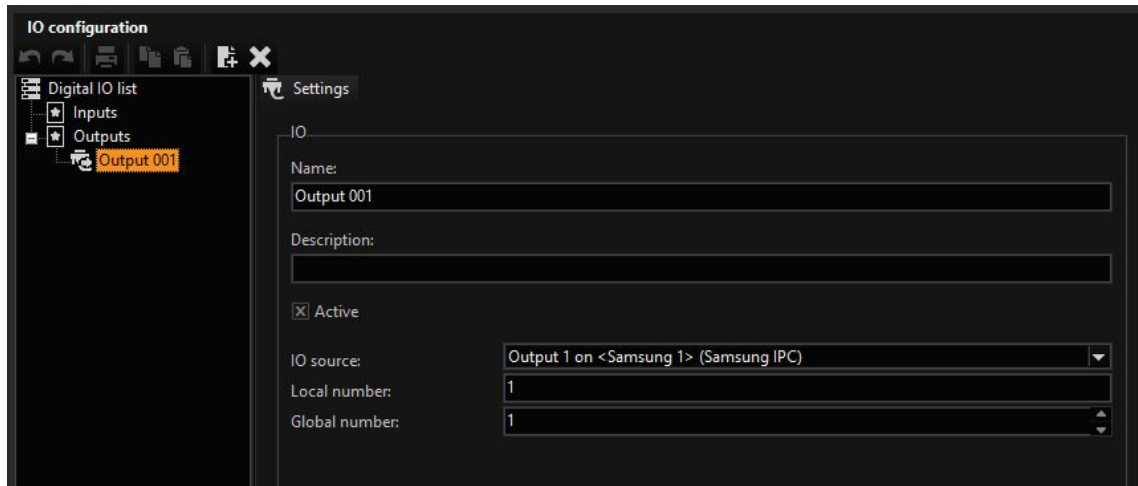


IP-CAMERA PLUGINS

3.



4.



SmartphoneConnect

 Subject to license

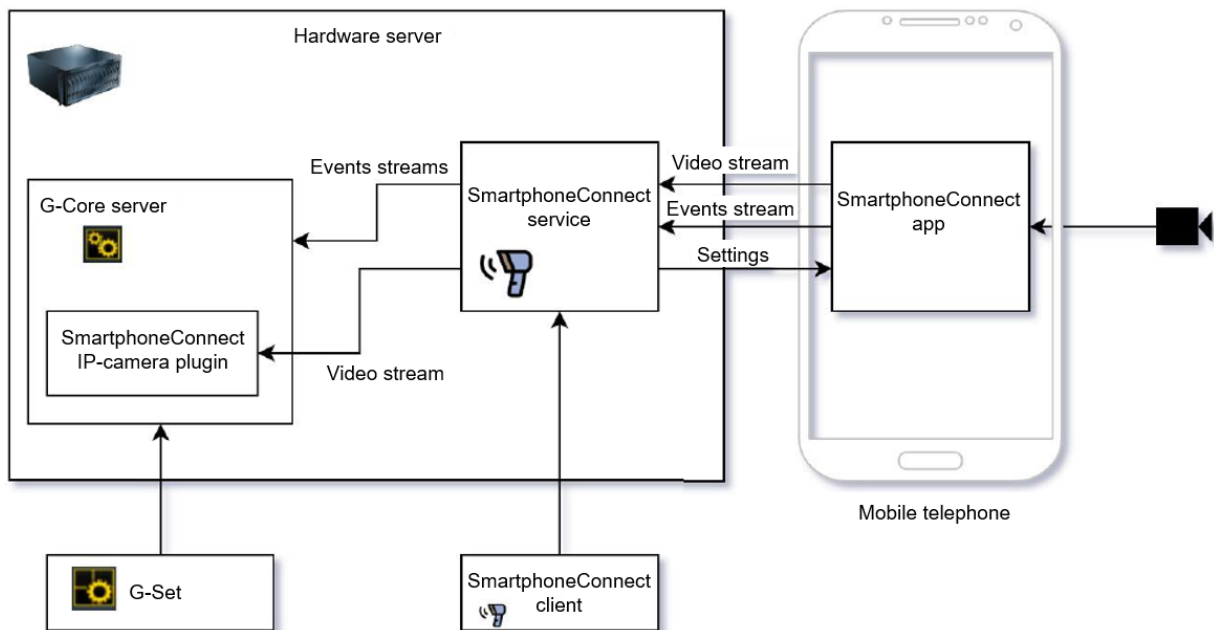
IP-CAMERA PLUGINS

SmartphoneConnect is a combination of server and smartphone application. It allows a smartphone to be used as a mobile IP camera and to transfer and process the video streams as well as alarms and events to G-Core in real time.

The application consists of four components:

Component	Description
SmartphoneConnect app	Mobile app for Android smartphones. It establishes a connection between a smartphone and the SmartphoneConnect service (via service address, login and password), receives settings and sends videos and events to the service.
SmartphoneConnect service	Windows service that receives the video streams and events from the SmartphoneConnect app and sends them to G-Core. The service uses two different connections to the G-Core server: <ul style="list-style-type: none">• Connection to the SmartphoneConnect IP-camera plugin, for sending video streams.• Direct connection to the G-Core server to send events.
SmartphoneConnect client	The user interface for setting up the SmartphoneConnect service.
SmartphoneConnect IP-camera plugin	G-Core plugin that allows receiving video streams and events from the SmartphoneConnect app.

The following overview shows the application with its described components and their relationships to each other.



Installation

Requirements

1. Install .Net Core 3.1: <https://dotnet.microsoft.com/download/dotnet-core/3.1>
 - Download and install ASP.NET Core Runtime (for SmartphoneConnect service)
 - Download and install Desktop Runtime (for SmartphoneConnect client)
2. Install Visual C++ 2015-2019 Redistributable: https://aka.ms/vs/16/release/vc_redist.x86.exe
3. Install Visual C++ 2010 Redistributable: https://download.microsoft.com/download/5/B/C/5BC5DBB3-652D-4DCE-B14A-475AB85EEF6E/vcredist_x86.exe





Software Package Content

The software package of the SmartphoneConnect application consists of three folders:

- **Client** (SmartphoneConnect client)
- **Service** (SmartphoneConnect service)

IP-CAMERA PLUGINS

- **SmartphoneConnectGeutebrueckPlugin** (SmartphoneConnect IP-camera plugin)

 Client	30.09.2021 13:12	File folder	
 Service	30.09.2021 19:13	File folder	
 SmartphoneConnectGeutebrueckPlugin	04.10.2021 17:16	File folder	
 ReleaseNotes.txt	04.10.2021 17:16	Text Document	10 KB

How to Install the IP-Camera Plugin

To install the IP-camera plugin, do the following:

1. Copy the contents of the **SmartphoneConnectGeutebrueckPlugin** folder to the folder on your machine that contains the `GCoreServer.exe` file.
2. The DLL files must be located in the same folder as `GCoreServer.exe`, and the contents of the **MediaPlugins** folder must be placed in the **MediaPlugins** folder of the G-Core server.

How to Install the Service

To install the SmartphoneConnect service, copy the contents of the Service folder to any folder on the hard disk to which your user has full access.

Running in Console Mode

To run the SmartphoneConnect service in the console mode, run the `SmartphoneConnectService.exe` file.

Running as a Windows Service

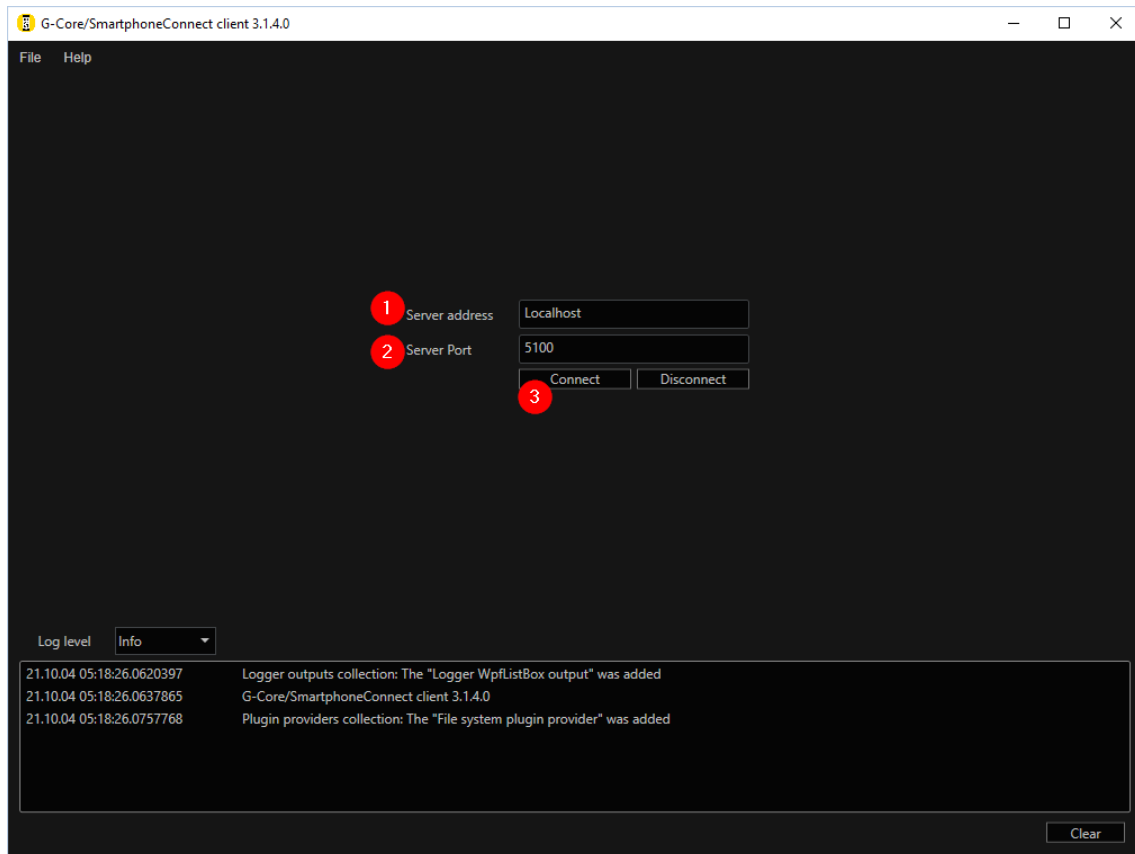
To run the SmartphoneConnect service as a Windows service, do the following:

1. Open the command line with the administrative permissions.
2. Register the application as a Windows service using the command (space after `binPath=` is mandatory): `sc create SmartphoneConnectService binPath= "path to SmartphoneConnectService.exe"`.
3. Start the service using `sc start SmartphoneConnectService`.

i **If you want to stop the service, use:** `sc stop SmartphoneConnectService`.
If you want to unregister the service, use: `sc delete SmartphoneConnectService`.

How to Start the Client

1. Run the `SmartphoneConnectClient.exe` file from the **Client** folder.
2. Set the **Server address** **1** and **Server Port** **2** of the SmartphoneConnect service.
3. Click the **Connect** button **3**.



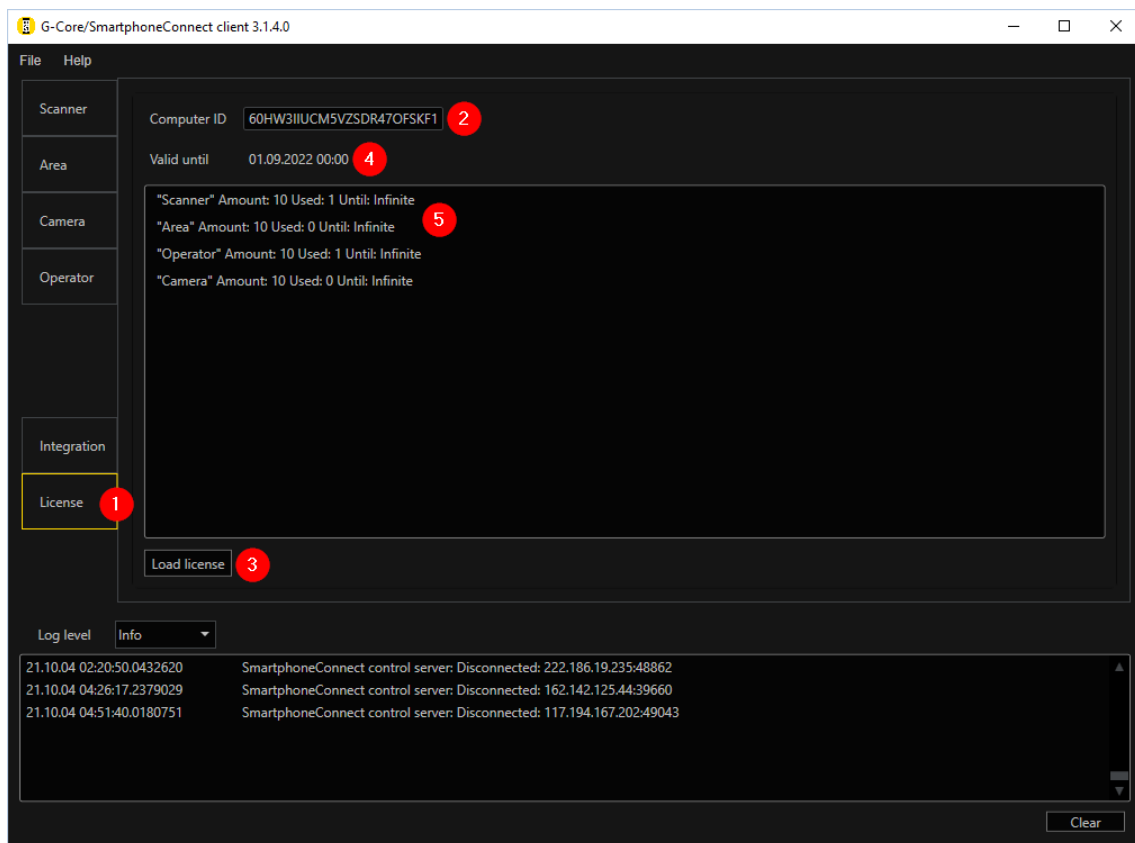
Licensing

The SmartphoneConnect service requires a license. By default, it has a demo mode that allows working without restrictions for a maximum of 6 hours before the functions are limited and the service has to be restarted. To remove this limitation, you need a license for the SmartphoneConnect service.

- i** **The SmartphoneConnect app is a free Android application that can be downloaded from the play store of your smartphone. No license is required for this.**

How to Get a License for the SmartphoneConnect Client:

1. Start the SmartphoneConnect client and open the **License** view **1**.
 2. Copy the **Computer ID** **2**.
 3. Send the copied ID to the person responsible for generating licenses. The license is generated as a file.
 4. Click the **Load license** button **3** and import the license file.
- After successful import you will see the validity period **4** and the details **5** of the license.



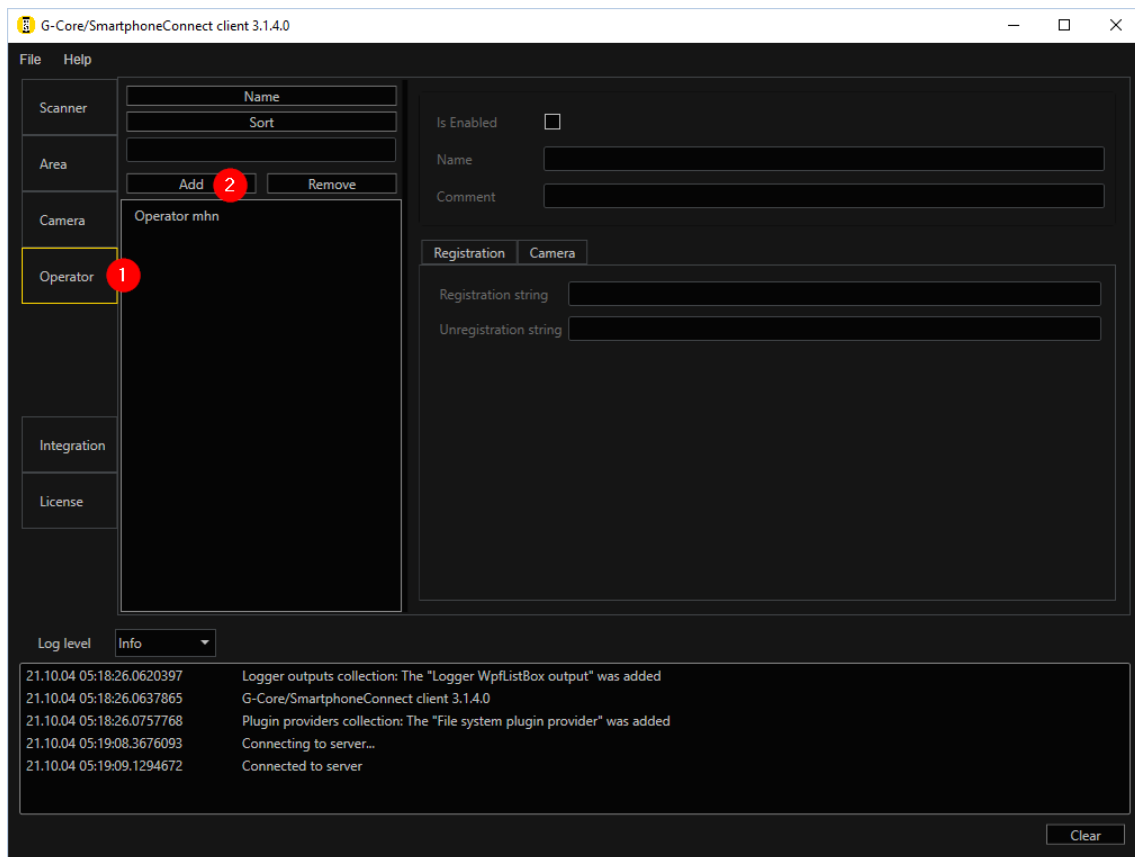
Configuration

How to Set Up the SmartphoneConnect Service

Create and Edit an Operator

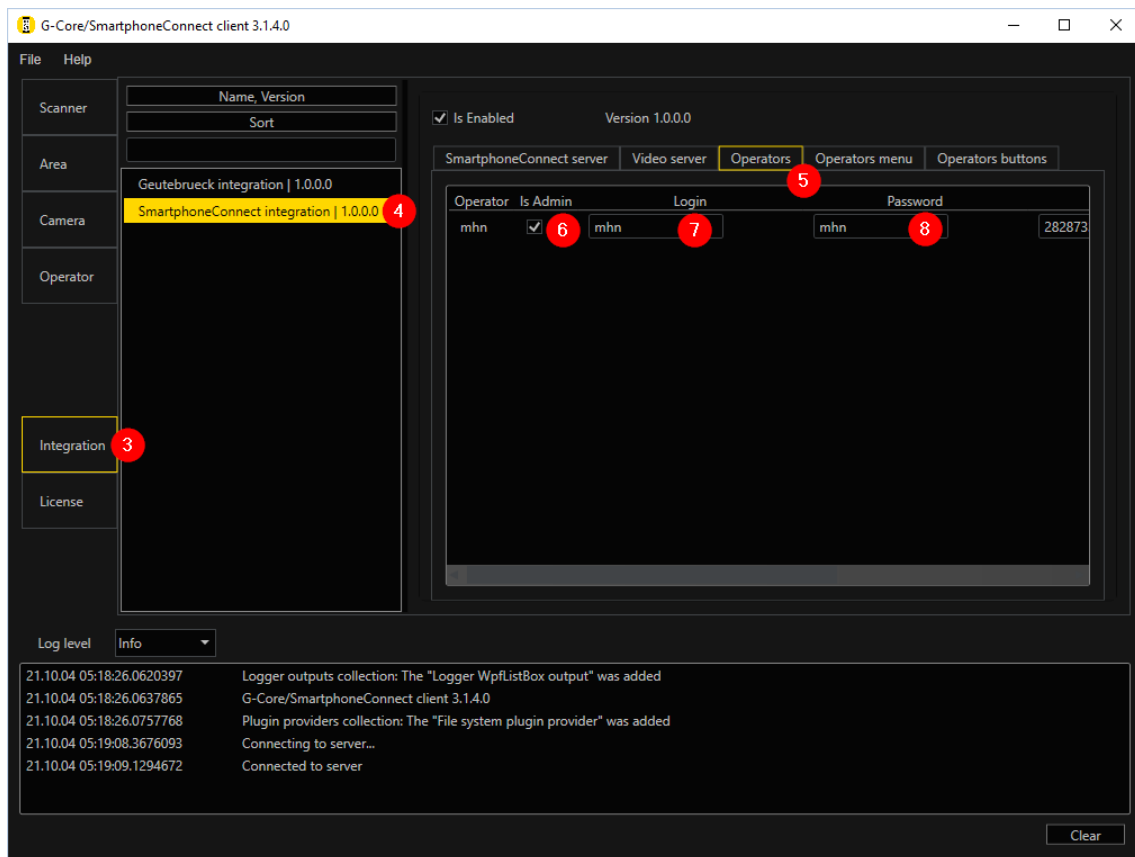
1. Open the **Operator** view **1** and click the **Add** button **2** to create an operator.

i There should be only one operator per smartphone.



2. Open the **Integration** view **3** and select **SmartphoneConnect** integration **4**.
3. Open the **Operators** tab **5** to edit the login data of each operator.
4. Select the **Is Admim** checkbox **6** to give an operator access to additional settings of the SmartphoneConnect app.

- Verify the specified data **Login** 7 and **Password** 8 for all operators using the SmartphoneConnect app and change them if necessary.

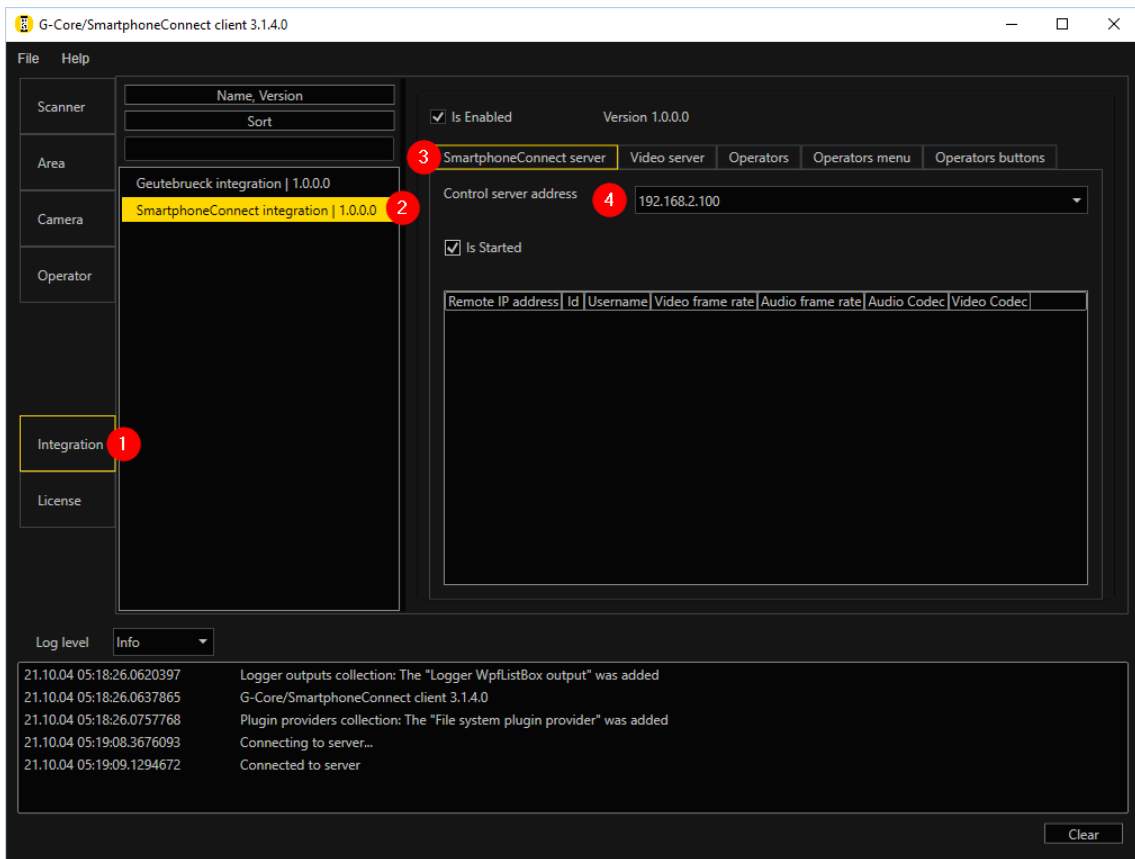


Set Up the IP Address of the SmartphoneConnect Server

- Open the **Integration** view 1 and select **SmartphoneConnect integration** 2.
- Open the **SmartphoneConnect server** tab 3.
- Set up the **Control server address** 4.

i This address will be used as the server address for the Smart-

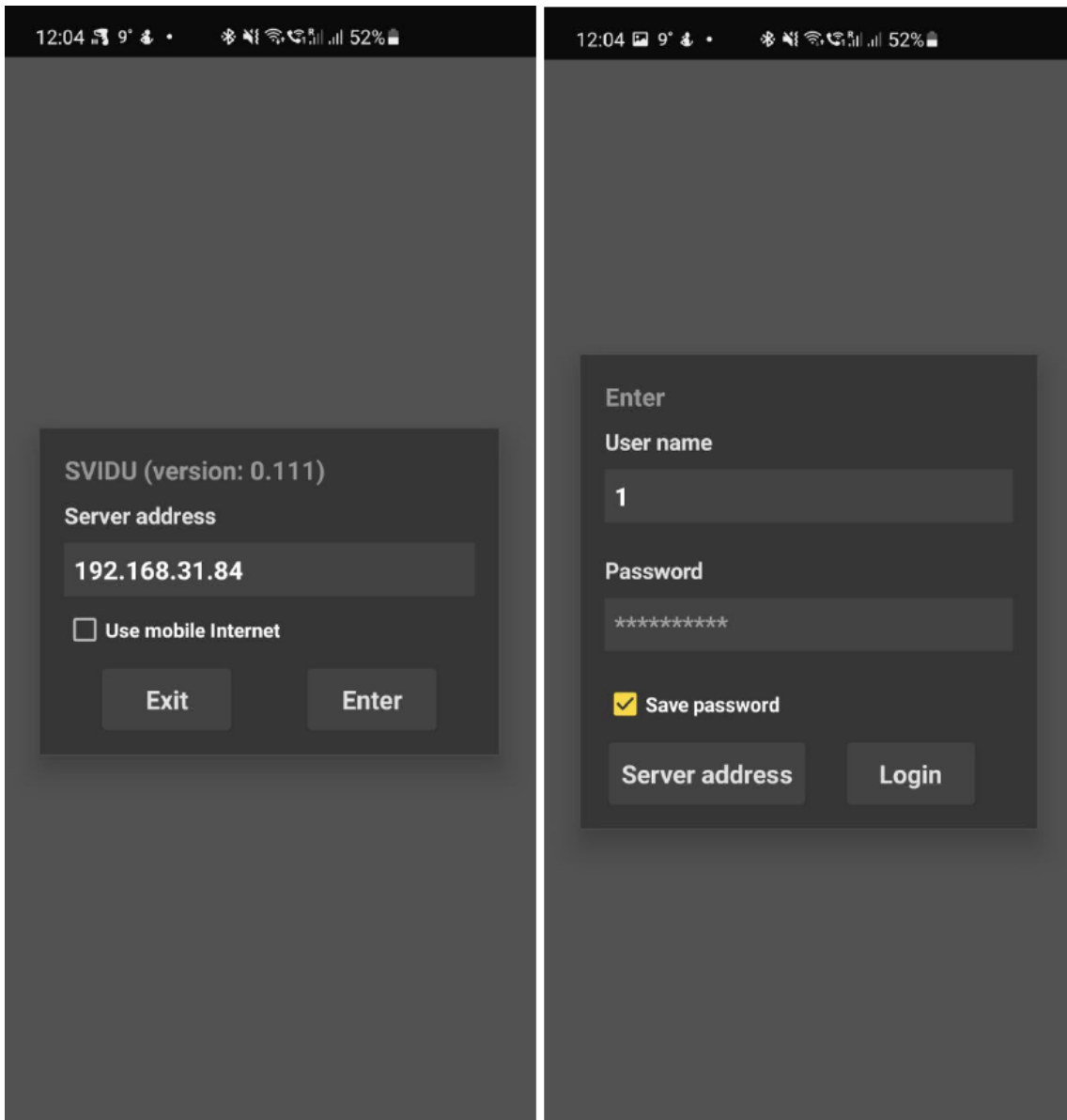
 **phoneConnect app.**



Set Up the Connection with the SmartphoneConnect App

1. Start the SmartphoneConnect app.
2. Enter the Server adress.

3. Enter your **User name** and **Password** and click the **Login** button.



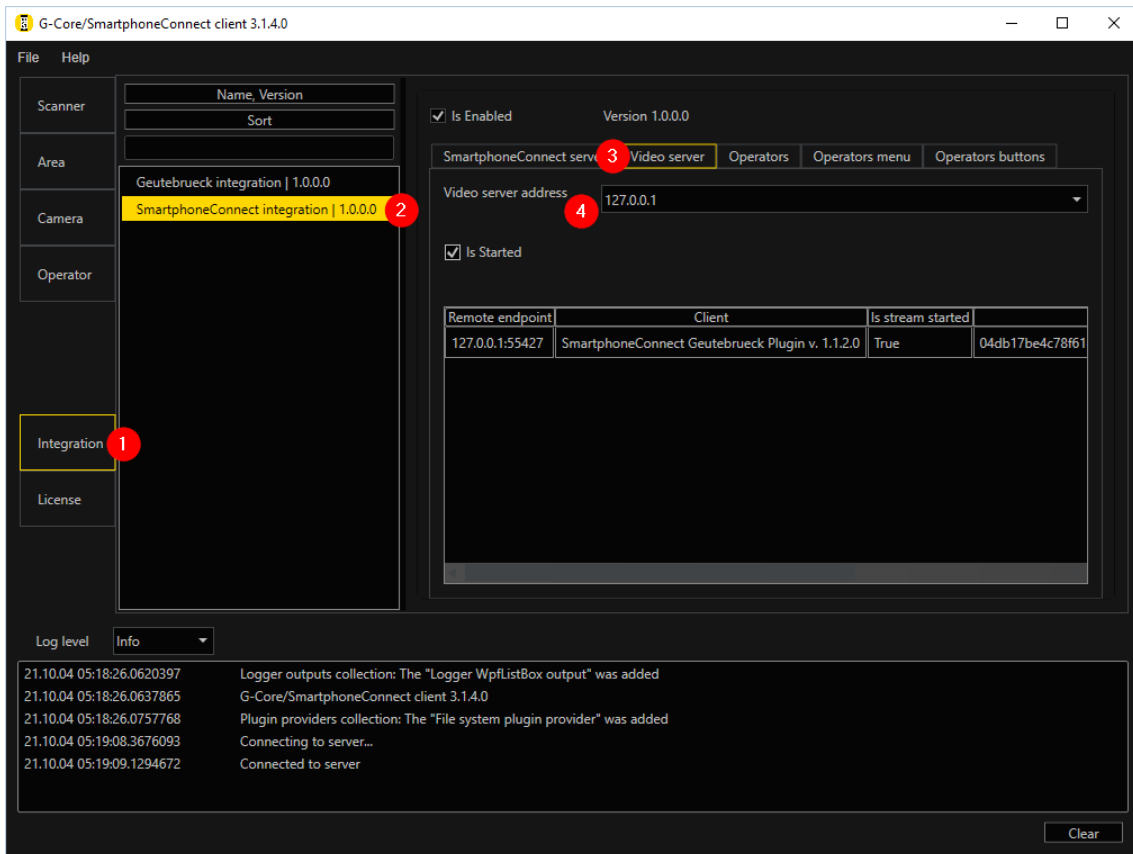
How to Set Up the G-Core Connection

Settings in the SmartphoneConnect Client

1. Open the Integration view **1** and select SmartphoneConnect integration **2**.
2. Open the Video server tab **3**.

- Set up the Video server address 4.

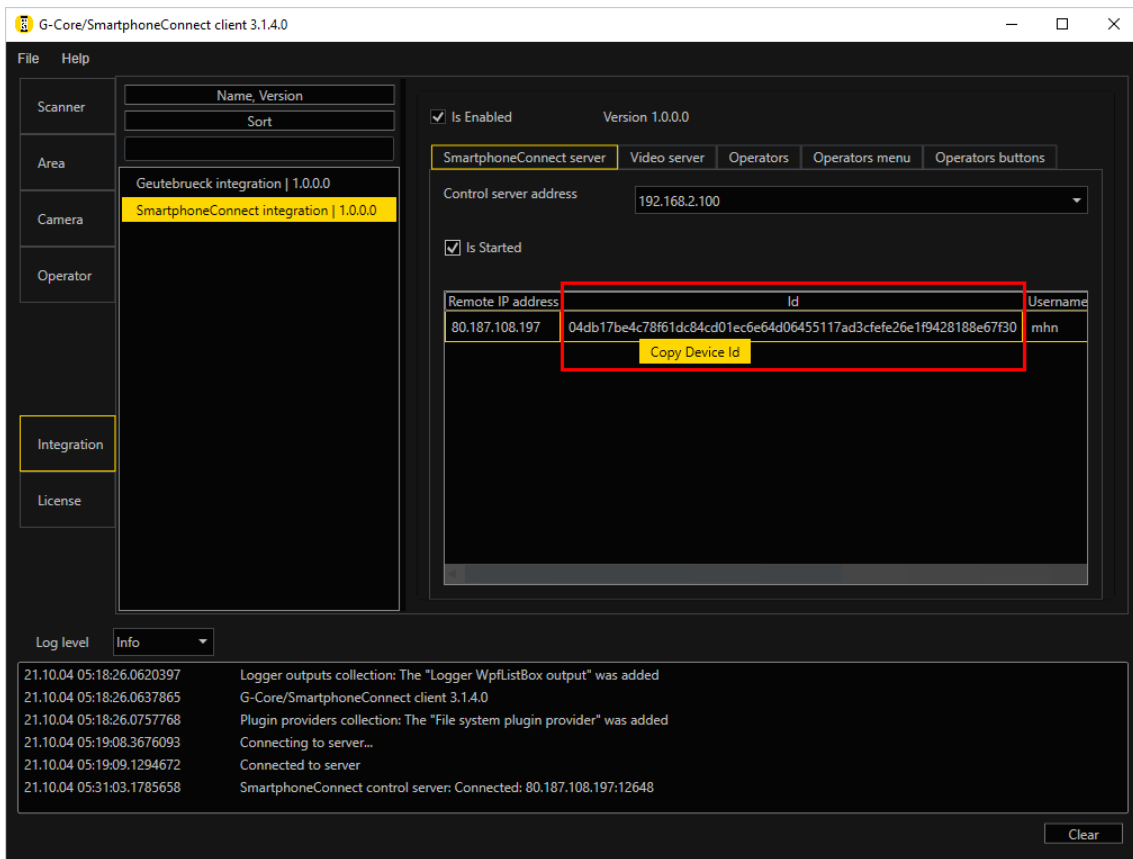
i This address will be used as the server address for the SmartphoneConnect IP-camera plugin.



- Open the Integration view and then the SmartphoneConnect server tab.
- Copy the Device Id of the SmartphoneConnect application by right-clicking in the Id column of the table.

i Each SmartphoneConnect app has a unique device Id value that you can use to retrieve its video stream.

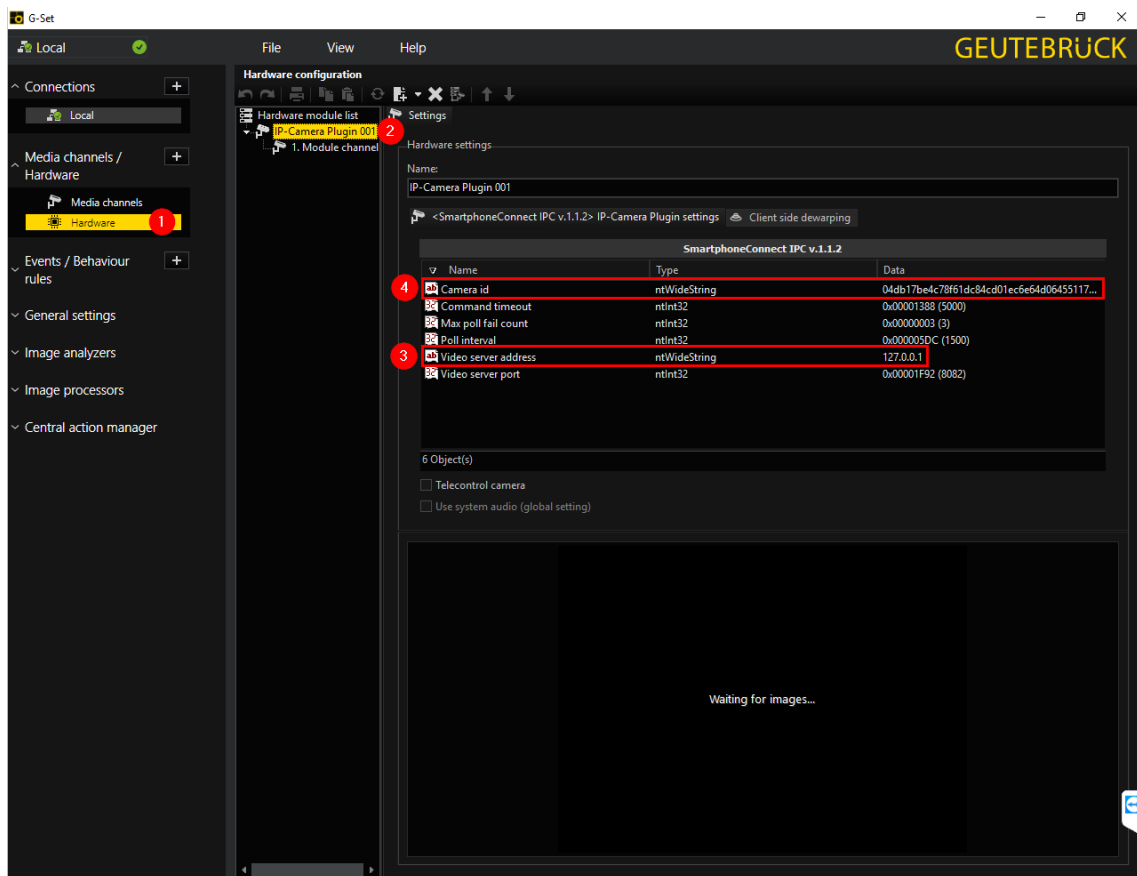
IP-CAMERA PLUGINS



Settings in G-Set

1. Open G-Set.
2. Open the **Hardware** view **1** and select the **IP-Camera Plugin** **2**.
3. Specify the **Video server address** **3** that you have set up in the SmartphoneConnect client.
4. Specify the **Camera Id** **4** that you copied from the SmartphoneConnect client.

IP-CAMERA PLUGINS



5. Create a G-Core media channel and connect the SmartphoneConnect IP-camera plugin instance to this media channel.
6. Send the settings to the server.
→ You should then see the video from the SmartphoneConnect app in G-Core.

How to Set Up Events

Connection to G-Core

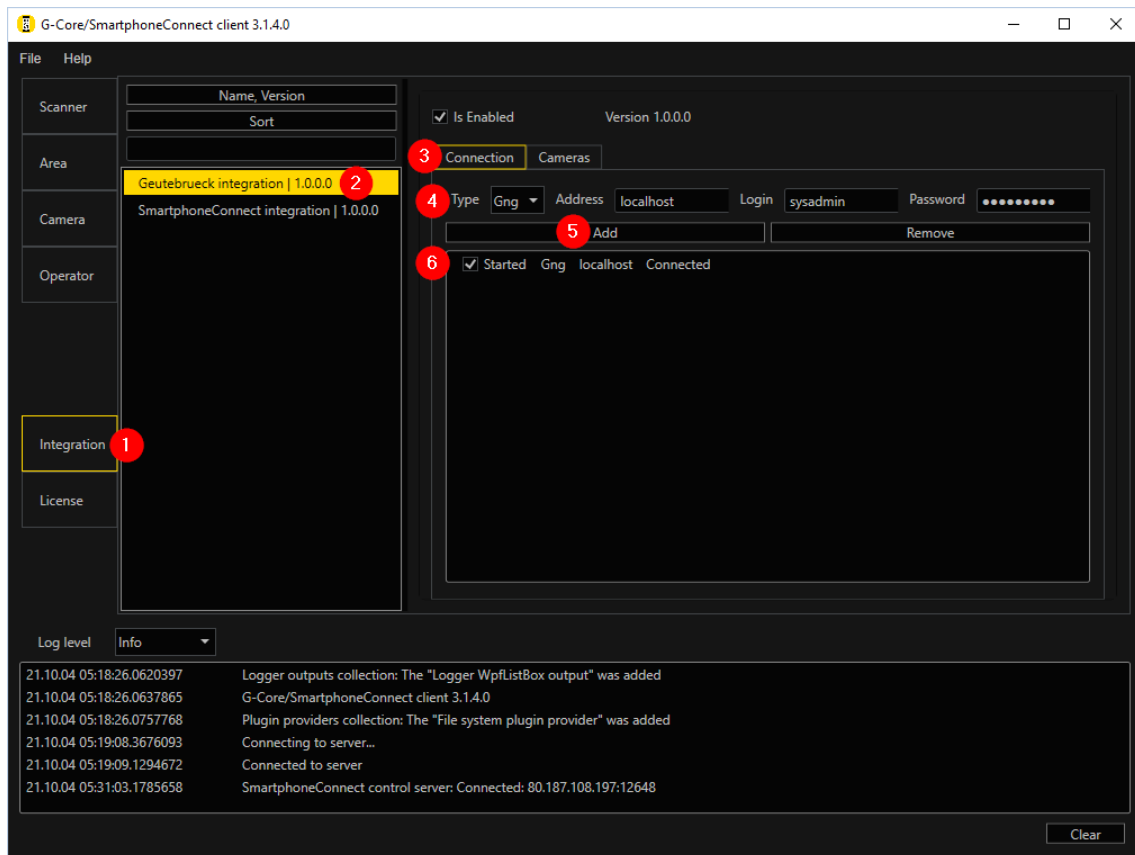
To enable the SmartphoneConnect service to send events to G-Core, you need to set up a connection to G-Core.

1. Open the **Integration** view **1** and select **Geutebrück integration** **2**.
2. Open the **Connection** tab **3**.
3. Select the Type **Gng** **4** and click the **Add** **5** button.

IP-CAMERA PLUGINS

- The connection details and the connection status are displayed. Activate the checkbox to start the connection **6**.

→ After successful connection, each connected G-Core server receives the events from the SmartphoneConnect service.

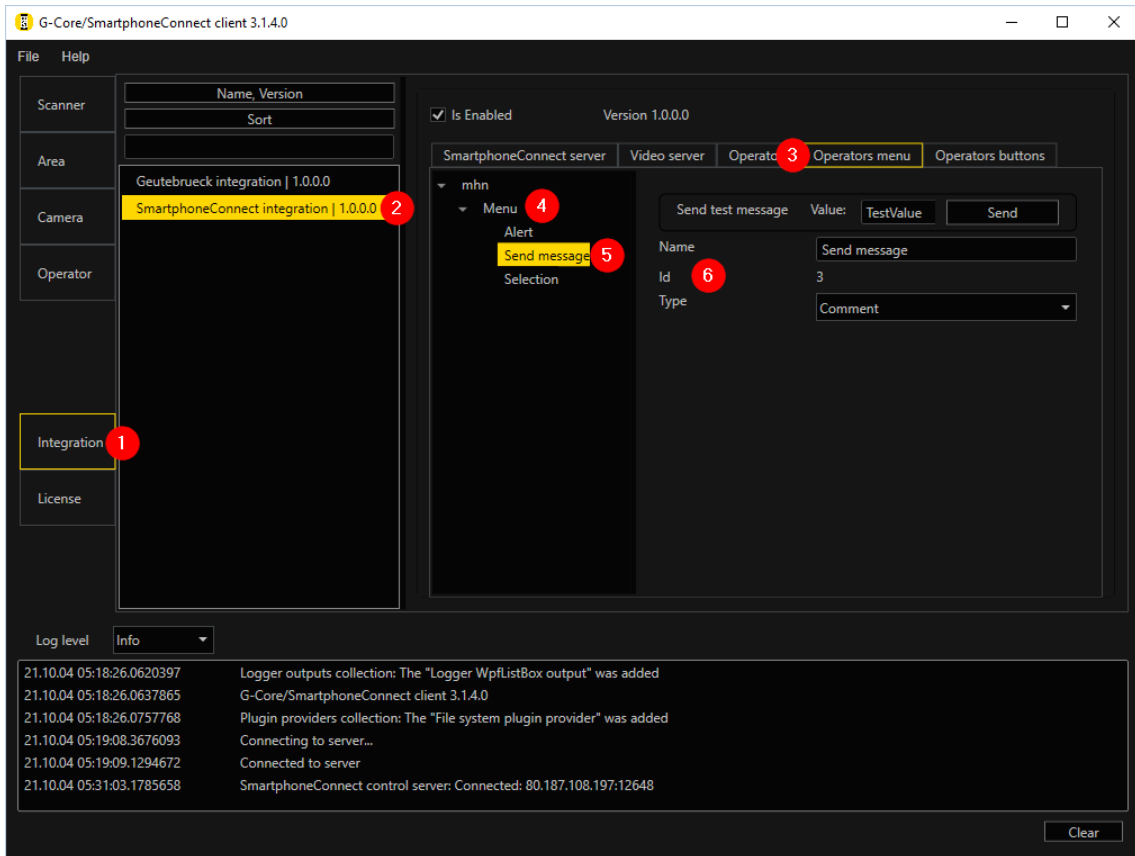


Create Events

To create and set up events for an operator, you need to create a menu for each operator where you can configure the event settings.

- Open the **Integration** view **1** and select **SmartphoneConnect integration** **2**.
- Open the **Operators** menu tab **3**.
- Select the relevant operator and right-click to add a menu **4**.
- Right-click on the menu to add events **5**.

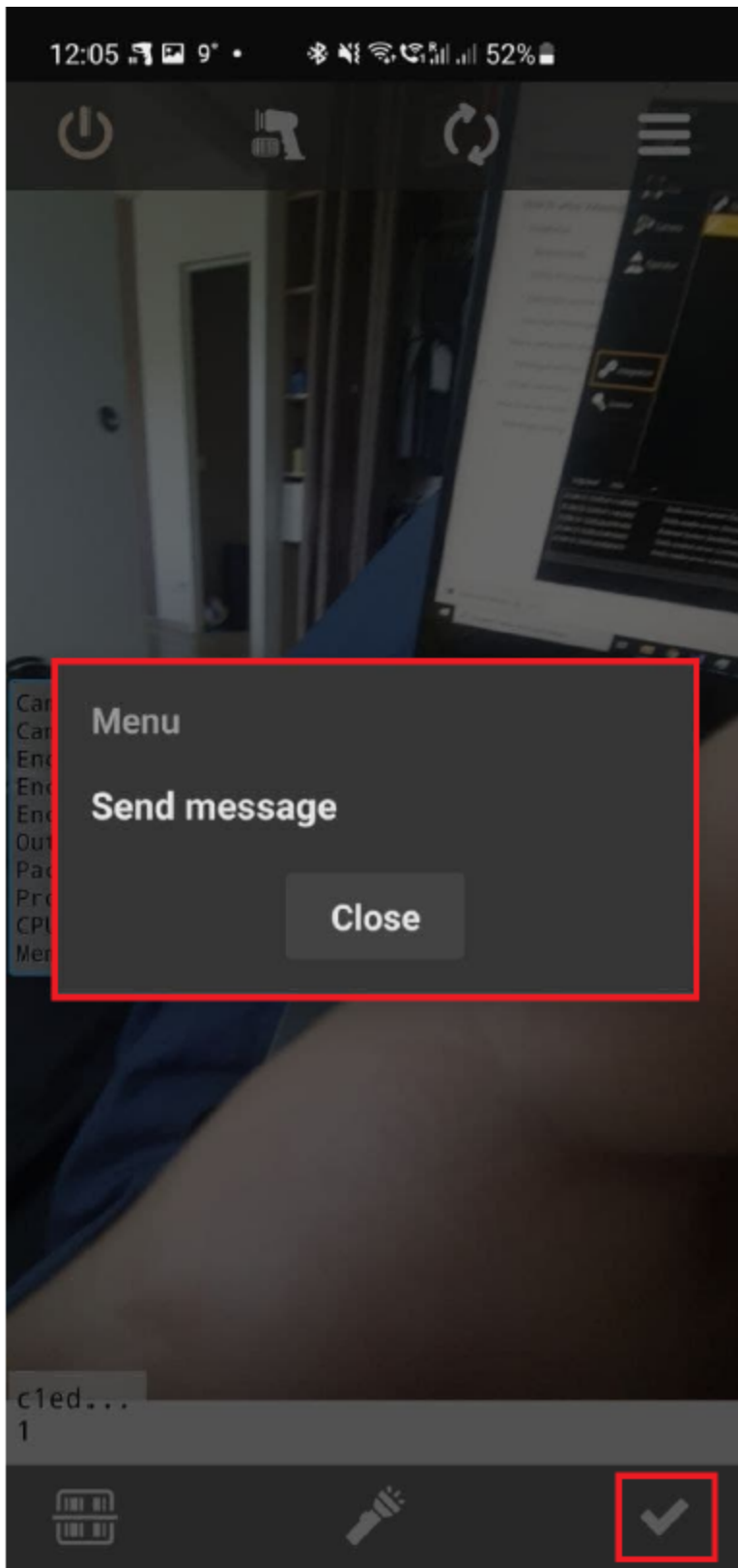
5. Set the settings of the events 6.



Send an Event

To send an event with the SmartphoneConnect app, click the event icon at the bottom left of the screen and select the event you want to send.

IP-CAMERA PLUGINS



Sony

With this plugin, Sony IP cameras can be used in G-Core.

Cameras of the generations 1-6 are supported by the plugin and also VM-772R of the 7th Generation is tested successful.

Additional information on 7th Gen Cameras are at the end of the documentation.

Installation

The plugin consists of the SonyIPC.DLL (the SonyIP camera plugin) and the file SonyIPC.dlg.dll (for the visualization of the user dialog in G-Set).

The plugin is included in the scope of installation with delivery (C:\Program Files\Geutebrueck\GCore\MediaPlugins).

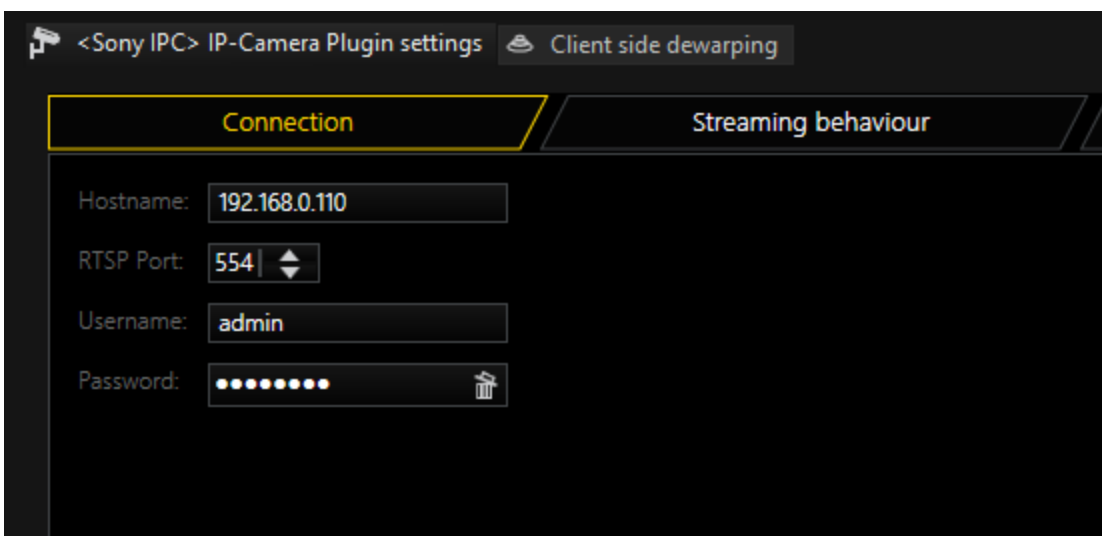
Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <Sony IPC>** by selecting it and clicking **Add**.
→ The Sony plugin is now entered in the hardware module list as a hardware resource.

i **In addition: You can add several Sony IP camera plugins. Many more Sony IP cameras can be connected to and operated on a G-Core server than the 32 specified here.**

4. Now select the plugin in the list and make the necessary changes to the settings.

Connection



The screenshot shows the 'IP-Camera Plugin settings' window for a Sony IPC camera. The 'Connection' tab is selected, and the 'Streaming behaviour' tab is also visible. The settings are as follows:

Field	Value
Hostname:	192.168.0.110
RTSP Port:	554
Username:	admin
Password:	••••••••

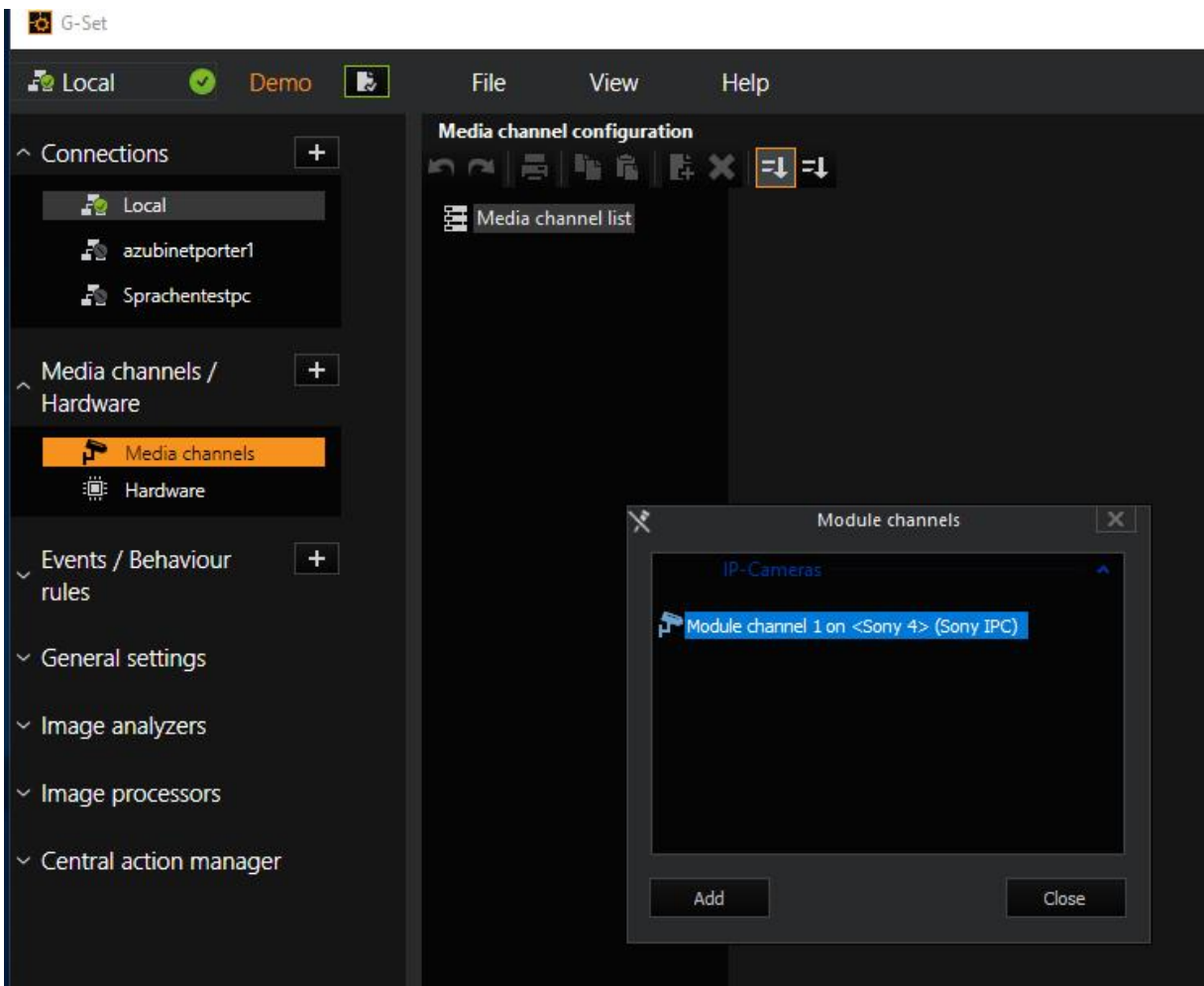
At **Hostname** enter the network address and at **RTSP Port** the port of the camera. Standard **Username** and **Password** is "admin/admin".

Furthermore **Https** is useable. This function depends on which camera is used and has to be set in web interface of the camera to be able to use. Check the manual of camera how to setup HTTPS on camera.

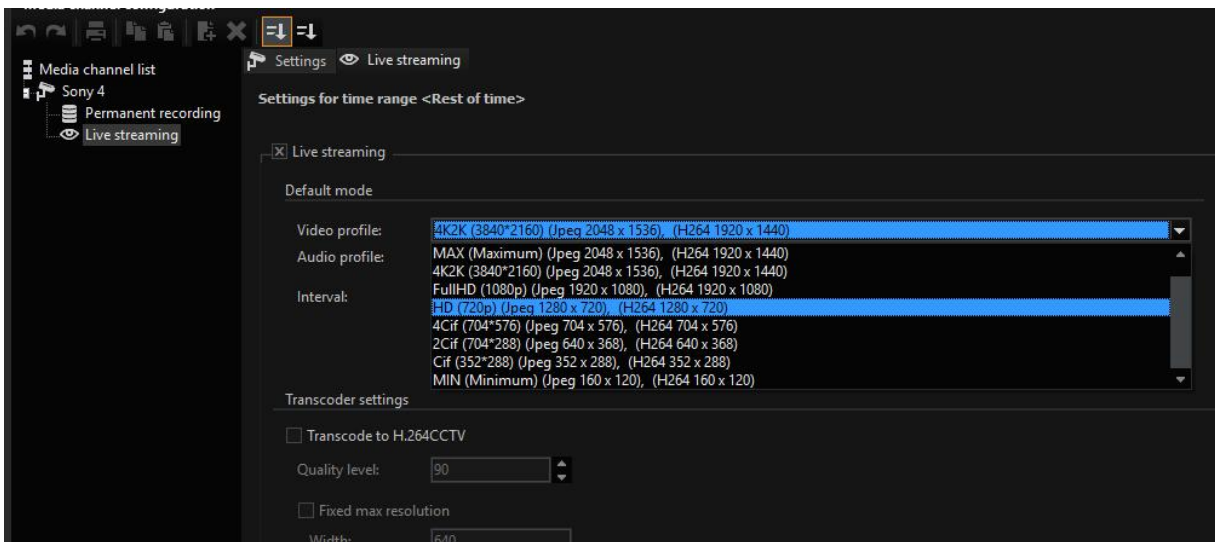
- i** **HTTPS support begins with Generation 5 cameras. Only Generation 5 cameras does support HTTPS for regular communication (like PTZ-Control and configuration the camera) and streaming. Generation 6 and 7 cameras does only support HTTPS for regular communication and not for streaming.**

Now go to the dialog for the media channels and add a media channel for each Sony IP camera. If the IP address is properly configured, you should now see a camera picture.

IP-CAMERA PLUGINS



In View profile you will now always see those resolutions:



Streaming Behaviour

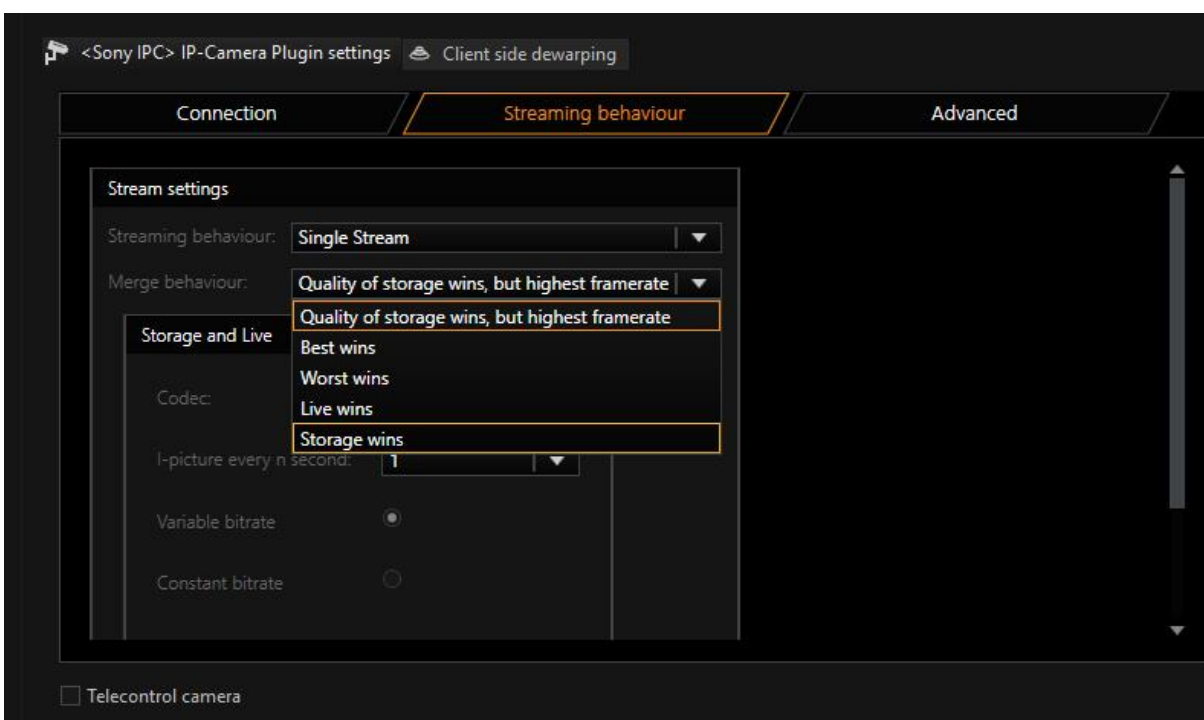
Stream Settings

All cameras beginning the fifth generation are able to deliver two separate streams. Here, the first stream is used for recording and the second stream for the live channel. Thus it is possible to record at a resolution different from the live image stream.

All other generations below generation 5 have only one stream. If the plugin detects a single-stream camera, an internal switch to single stream is performed automatically.

In **Single stream** mode, the two requirements of recording and live playback must be consolidated into a single request on the camera. How this is done is determined using the **Merge Behaviour** Settings.

If the camera only supports a single stream for live playback and recording, then you have the following setting options:



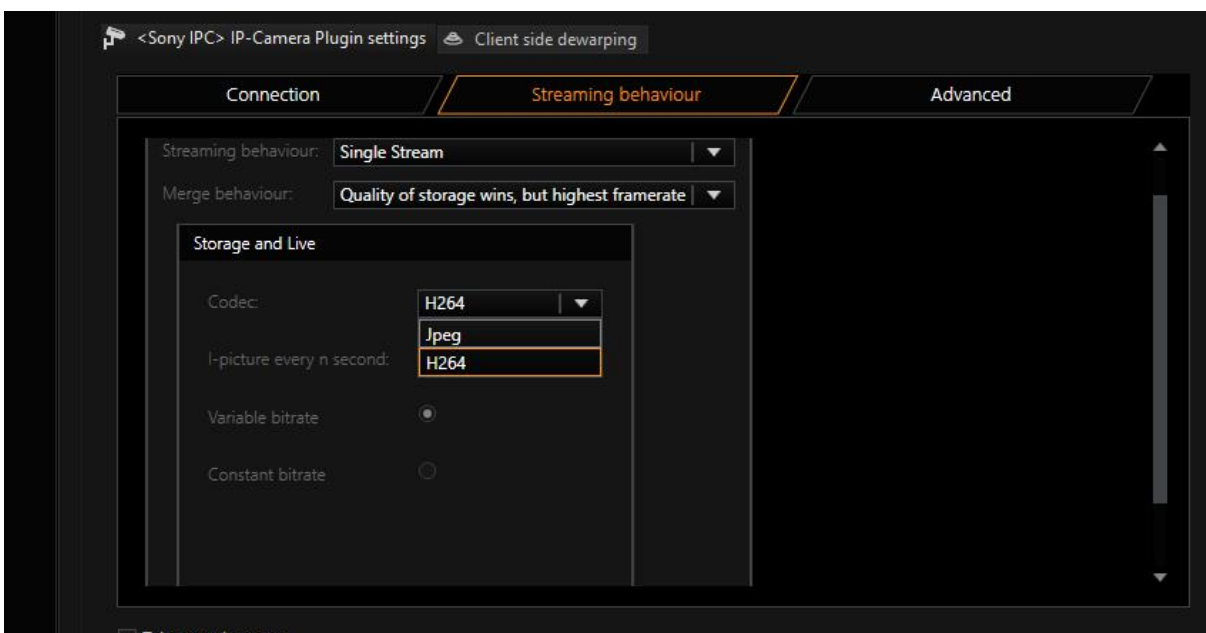
Name	Description
Quality of storage wins, but	For recording and live streaming, the quality is used that is specified for recording. For the frame rate, however, the higher of

Name	Description
high frame rate	the two values (live playback or recording) is used
Best settings wins	The higher value of resolution, quality and frame rate is used for recording and the live stream
Worst settings wins	The lowest value of resolution, quality and frame rate is used for recording and the live stream
Live profile wins	The live stream settings are used for both the live stream and recording
Storage profile wins	The recording settings are used for both the recording and the live stream

Storage and Live

Codec

You can choose between H.264 and JPEG for the codec setting.



- i** Only cameras of the third, fifth and higher generations support H.264 streams. Cameras that do not support H.264 are operated automatically in JPEG mode.

The quality of JPEG images results from the quality regulator in the profiles and the following table:

i **Sony cameras of the first and second generations have only 5 quality levels. All the newer generations support 10 quality levels.**

Quality	Generations 3 - 5 Image Quality	Generations 1 - 2 Image Quality
1 - 15	Level 1	Level 1
16 - 30	Level 2	Level 1
31 - 45	Level 3	Level 2
46 - 50	Level 4	Level 2
51 - 70	Level 5	Level 3
71 - 80	Level 6	Level 3
81 - 92	Level 7	Level 4
93 - 95	Level 8	Level 4
96 - 97	Level 9	Level 5
98 - 100	Level 10	Level 5

I-picture every n second

The higher the value, the smaller the bandwidth of the streams at the same quality. But the higher the value, showing up of video may longer, as streaming only can start with an I-Frame

Bit Rate control

Sony cameras do not use VBR, but only a CBR. With CBR, however, when the frame rate is increased, for instance, the quality of the video image goes down, as more images must share between them the same bit rate of 2048 kBit.

Simulate variable bit rate (VBR):

If an event occurs, increasing the frame rate would thus decrease image quality. As this is not a desirable effect in a security system, with the option Simulate Variable Bit Rate activated, the bit rate is always recalculated using the factors resolution, frame rate, I-picture interval and quality.

Use constant bit rate (CBR):

IP-CAMERA PLUGINS

For the selection of CBR, the bit rate is selected according to the table:

Quality	Generation 5 cameras Resulting bit rate in Kbits per second	Generation 3 cameras Resulting bit rate in Kbits per second
1	64 kbps	32 kbps
2 - 4	128 kbps	32 kbps
5 - 6	256 kbps	64 kbps
7 - 10	384 kbps	128 kbps
11 - 17	512 kbps	128 kbps
18 - 21	768 kbps	256 kbps
22 - 32	1024 kbps	384 kbps
33 - 44	1536 kbps	512 kbps
45 - 76	2048 kbps	768 kbps
77 - 89	3072 kbps	1024 kbps
90 - 92	4096 kbps	1536 kbps
93 - 94	5120 kbps	1536 kbps
95 - 96	6144 kbps	1536 kbps
97 - 98	7168 kbps	1536 kbps
99 - 100	8192 kbps	1536 kbps

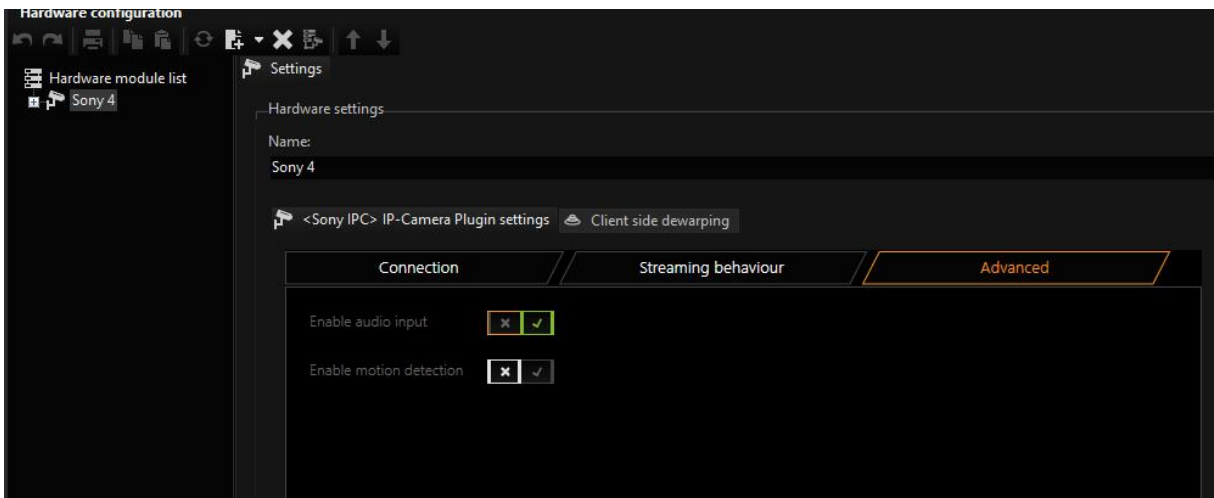
Advanced

Enable Audio Input (Only G.711 64Kpbs)

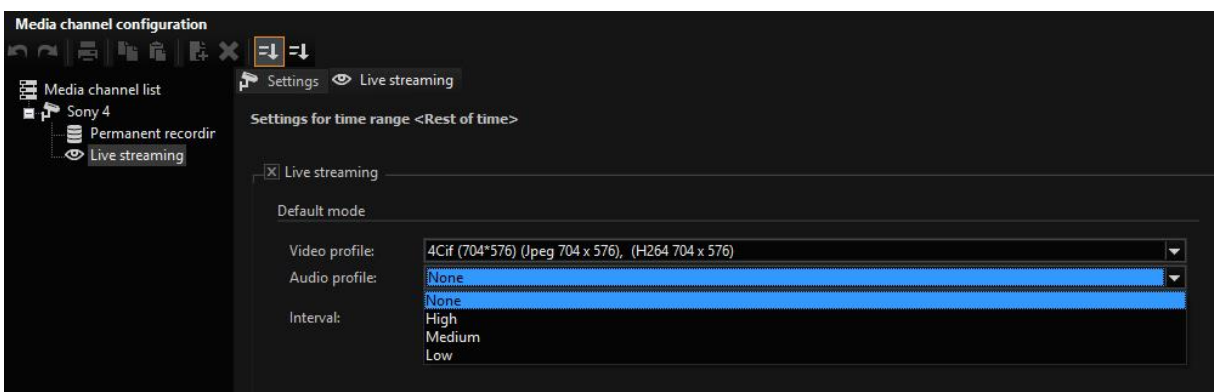
If a camera provides an audio input, this audio signal can be reproduced by the G-Core server.

To do so, you must set a check at **Enable audio input** in **Advanced** options.

IP-CAMERA PLUGINS



In addition, a profile must be selected under the settings of the media channel. Whether high, medium or low is chosen is irrelevant.



Enable Motion Detection

If you wish to use the Motion Detection and/or digital inputs of the camera, you must set a check here.

The cameras have a wide variety of detection algorithms. Below it is explained which action will be seen in the G-Core server if the camera delivers a specific message.

Name	Description
Motion detection	In G-Core server the Sensor Video Alarm action with the sensor type IP-AD will appear if the camera detects motion. For Sony cameras, there are at most four alarm fields. This can be further differentiated with AD alarm area.

Name	Description
	When there is motion detection, there is no Sensor Finished message. When creating an event, an event duration should be used.
Unattended objects	Some cameras have Unattended Object recognition. This is triggered by the same actions as the motion detection. For this alarm type, there is no Sensor Finished message. When creating an event, an event duration should be used.
VMF	This function is an advanced motion detection function. The alarm is reported using the Sensor Video Alarm action with the sensor type Dual . For this alarm type, there is no Sensor Finished message. When creating an event, an event duration should be used.
Camera manipulation (tampering)	The twisting or spray-painting over (darkening) of a camera (fifth generation or higher) leads to a camera tampering alarm. This will also be reported using a Sensor Video Alarm with the sensor type CPA. This alarm is reset via the web interface of the camera. When the alarm is reset, a Sensor Alarm Finished action with the sensor type CPA appears.
Audio	Some cameras have noise switch. This alarm is configured via the web interface of the camera. If the audio level exceeds the threshold, a SensorAudioAlarm action is triggered in G-Core server.

Cameras with Infrared Light (IR Illuminator)

Some cameras (SNC-DH180 and SNC-CH180) have built-in infrared lights.

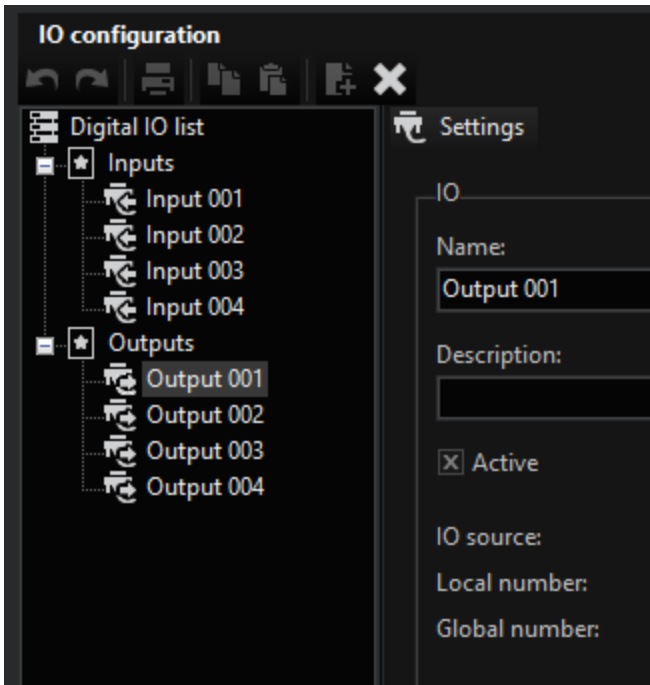
The IR light can be switched on and off using the Camera Light On and Camera Light Off actions. This will, however, disable automatic switching.



IMPORTANT: Whether the light actually turns on depends on several settings in the camera. For example, the setting for view-DR, XDNR and exposure. Please see the Sony manual.

Digital Inputs and Outputs

To be able to use the digital inputs and outputs, they must first be added under IO Settings in G-Set.



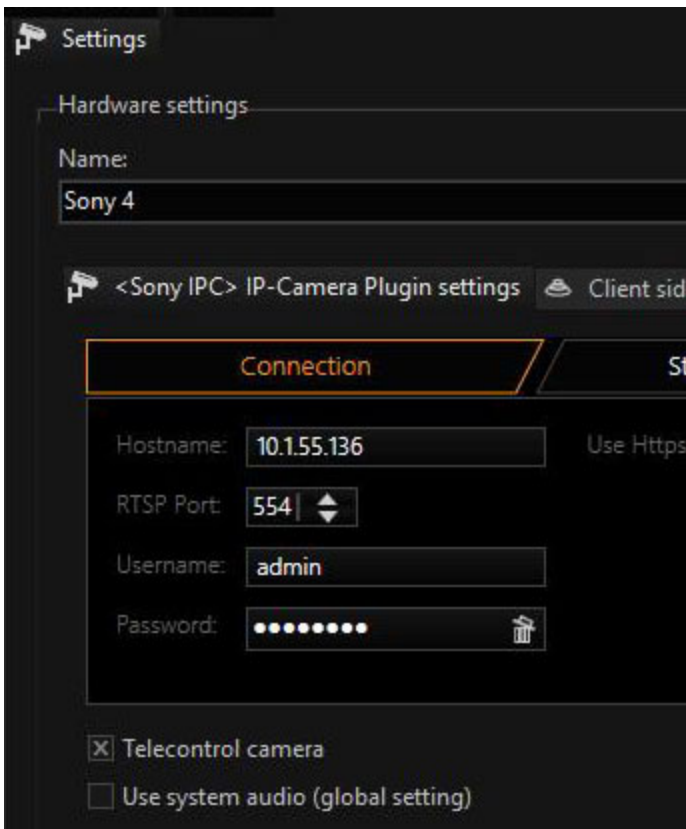
For each camera, you can add four inputs and outputs.

- i** Only a few cameras actually support this many, however. Check the data sheet of the camera and add only the specified number. Also note that the check mark for Enable Motion Detection (DEPA) and digital inputs must be set.

After being added, the inputs and outputs can be used like all other inputs and outputs in G-Core server. It is also possible to switch the outputs using Toggle and open or close to set them to a defined state.

PTZ Cameras

To initiate operation of PTZ cameras, you must activate the checkmark **Telecontrol camera** below the setting dialog of the hardware.



In standard mode, you can now let the camera pan, tilt and zoom. In addition, you can save and move to fixed positions.

The camera by default has an autofocus, i.e. the camera does not respond to focus commands.

If you want to switch the camera to manual focus, you must first send the **Auto Focus Off** action. Now it is possible to change the focus using **FocusNear** and **FocusFar**.

All Sony PTZ cameras support preset tour and the fifth generation of cameras also support shadow tour. The default preset-tours configured in the camera are started and stopped using the **Camera Tour Start** and **Camera Tour Stop** actions.

The default shading tours configured in the camera are started using the **PanAuto** action with a value greater than 0 in Mode and stopped with 0 in Mode.

Error Messages

Sync Lost and Sync Detected

If the G-Core server can no longer receive pictures from the IP camera, the **Video Sync Failed** action is sent. When the camera is recognized again, the **Video Sync Detected** action is sent.

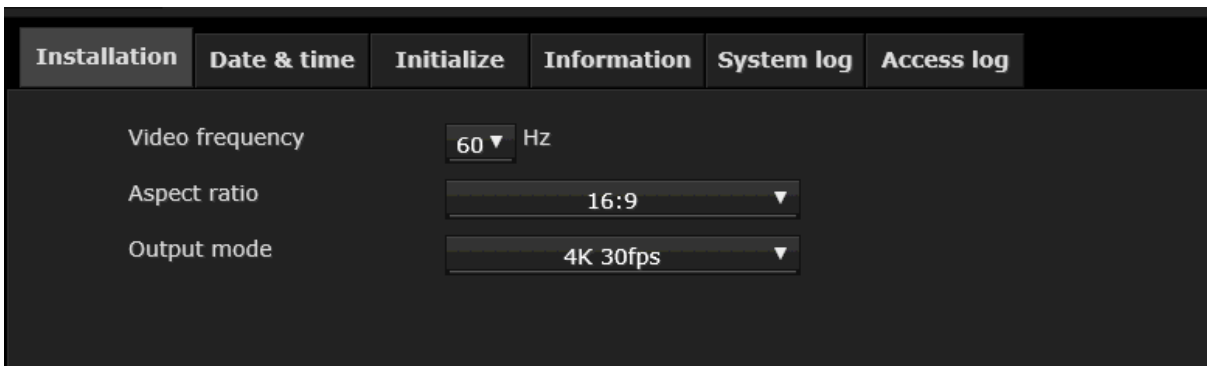
Error Message in the Live Stream

It is possible that you will see an error message in the live stream when you use cameras of the fifth generation.

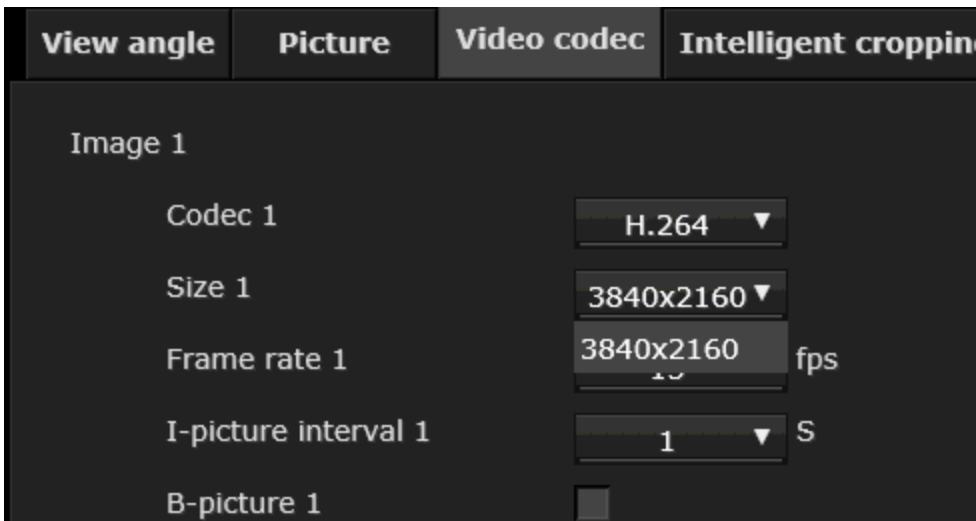
This error indicates that the overall requirements of live pictures and recorded images are too high. Not all cameras can deliver two independent streams in any combination. Thus, it is unfortunately not possible with the HD models to record in 640x480 resolution and to stream live at 1280x1024. Further, it is not possible to activate both streams at the highest resolution in H.264 at 25 fps.

If you want to receive the live stream, you should switch the camera to single-stream mode.

Additional Information for Newest Generation (7th) in Web Interface

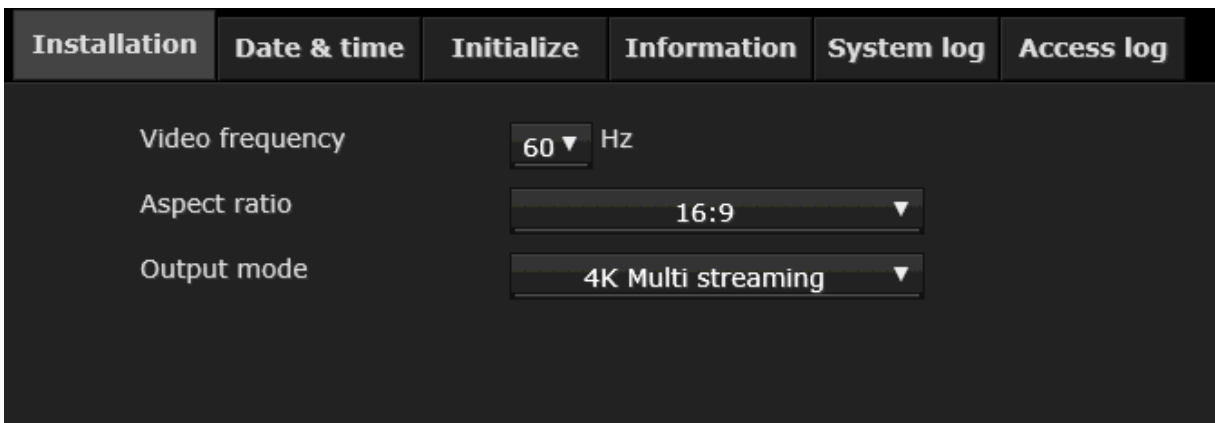


This means, the camera does not support Dualstream. The first stream only does allow one resolution with 30 or 15 fps and only H264 here.



So you have to setup the SonyPlugin as Singlestream with H264. Then it will run and also be able to select the frame rate by the G-Core server.

If you like to have Dualstreaming, you have to select **4K Multi Streaming** in camera.



Also at this point the camera got limitation: First, recording-Stream only got 4K-Resolution up to 10 FPS, and second stream (Live stream) will only have Full HD or HD resolution up to 10 FPS.

IP-CAMERA PLUGINS

Image 1

Codec 1 H.264 ▼

Size 1 3840x2160 ▼

Frame rate 1 10 ▼ fps

I-picture interval 1 3 ▼ S

P-picture 1

Image 2

Codec 2 H.264 ▼

Size 2 1920x1080 ▼

Frame rate 2 10 ▼ fps

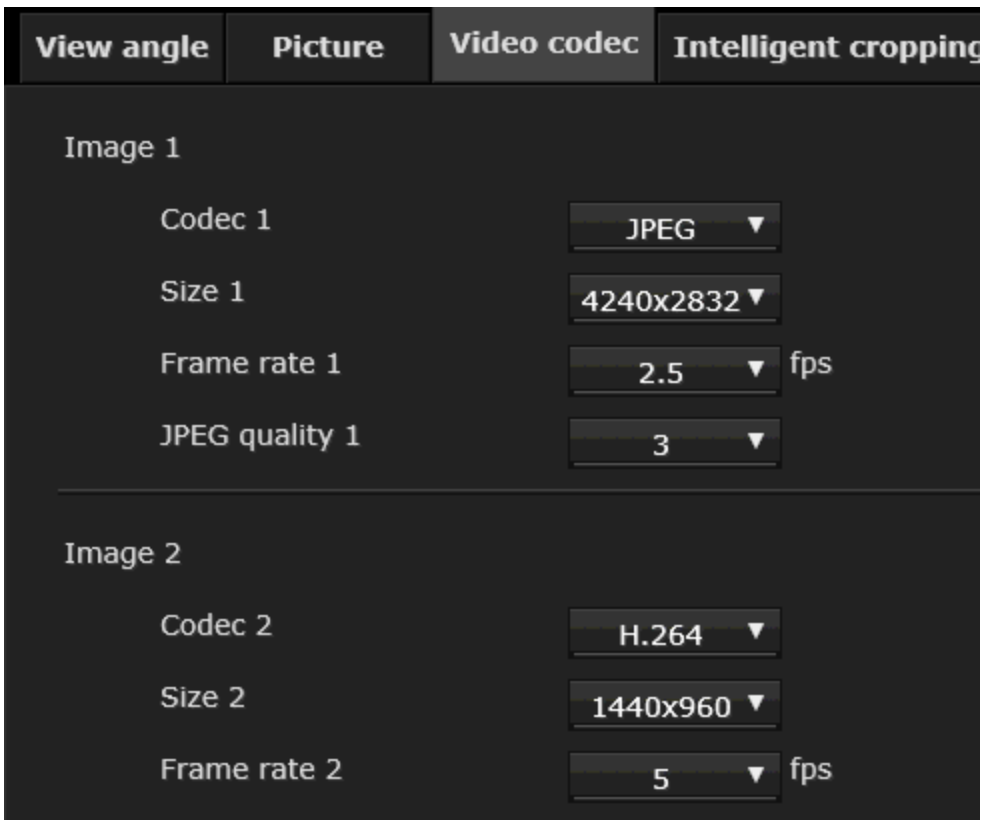
I-picture interval 2 3 ▼ S

H264 Profile 2 high ▼

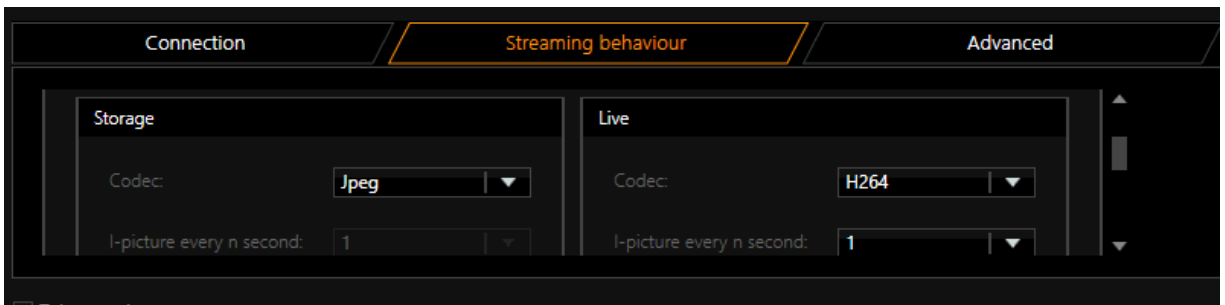
If you like to have the 20 Megapixel Jpeg-picture, you need to enable **Evidence Shot** with a 3:2 Aspect Ratio.

Installation	Date & time	Initialize	Information	System log	Access log
Video frequency	60 ▼ Hz				
Aspect ratio	3:2 ▼				
Output mode	Evidence shot ▼				

In this mode, the camera can only have a first stream with Jpeg and 2.5 FPS with 20 Megapixel, and second stream with 1440x960 in H264 with 5 fps maximum.



To use this, set Plugin into **DualStream** and select **Jpeg** for recording and **H264** for Live.



Supported Cameras

List of supported cameras up to Generation 5.

Generation	Supported Cameras
Generation 1	SNC-RZ30N; SNC-RZ30P; SNC-Z20N; SNC-Z20P

Generation	Supported Cameras
Generation 2	SNC-CS10; SNC-CS11; SNC-DF40N; SNC-DF40P; SNC-DF70N; SNC-DF70P; SNC-P1; SNC-P5; SNC-RZ25N; SNC-RZ25P
Generation 3	SNC-CS50N; SNC-CS50P; SNC-DF50N; SNC-DF50P; SNC-DF80N; SNC-DF80P; SNC-DF85N; SNC-DF85P; SNC-RX530N; SNC-RX530P; SNC-RX550N; SNC-RX550P; SNC-RX570N; SNC-RX570P; SNC-RZ50N; SNC-RZ50P
Generation 4	SNC-CM120; SNC-CS20; SNC-DM110; SNC-DM160; SNC-DS10; SNC-DS60
Generation 5	SNC-CH110; SNC-CH120; SNC-CH140; SNC-CH180; SNC-CH210; SNC-CH220; SNC-CH240; SNC-CH260; SNC-CH280; SNC-DH110; SNC-DH110T; SNC-DH120; SNC-DH120T; SNC-DH140; SNC-DH140T; SNC-DH160; SNC-DH180; SNC-DH210; SNC-DH210T; SNC-DH220; SNC-DH220T; SNC-DH240; SNC-DH240T; SNC-DH260; SNC-DH280; SNC-RH124; SNC-RH164; SNC-RS44N; SNC-RS44P; SNC-RS46N; SNC-RS46P; SNC-RS84N; SNC-RS84P; SNC-RS86N; SNC-RS86P
Generation 5 Video server	SNT-EX101; SNT-EX101E; SNT-EX104; SNT-EX154; SNT-EP104; SNT-EP154

Universal HTTP

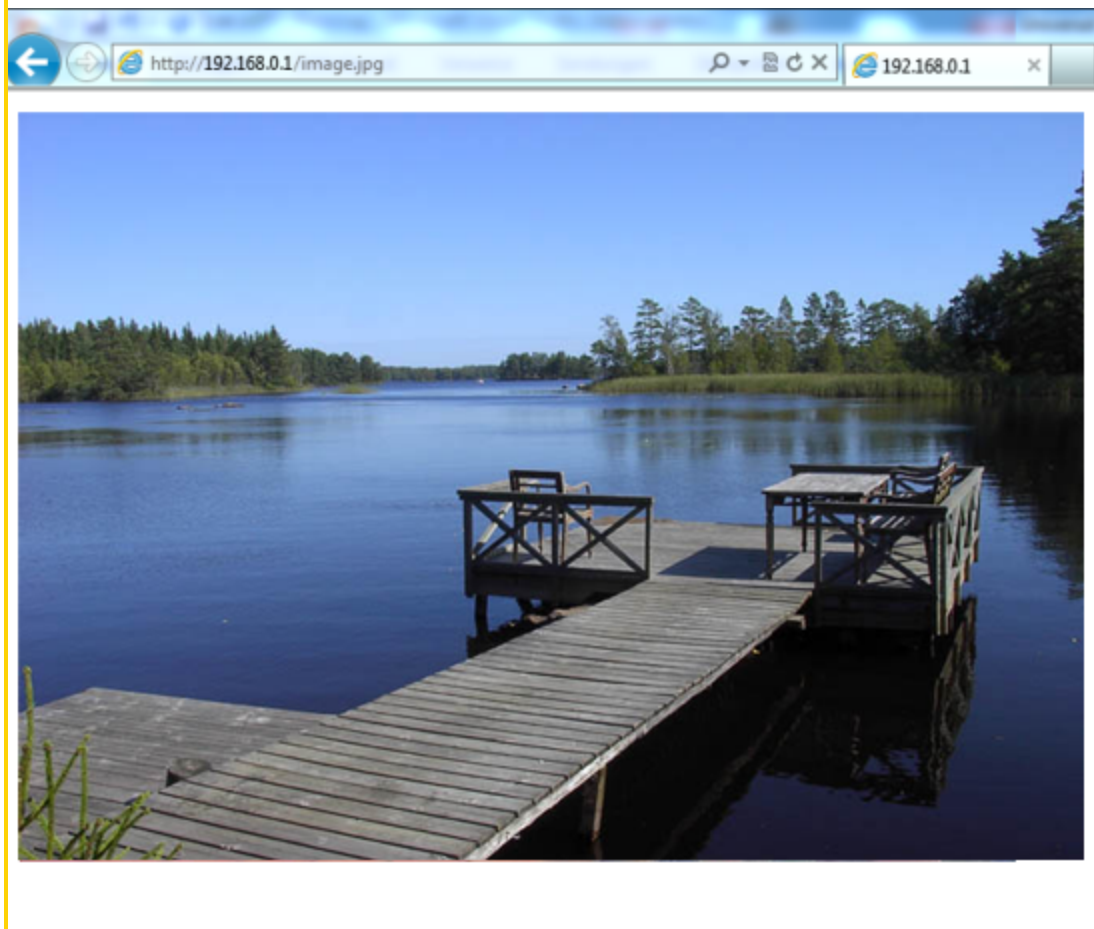
The Universal HTTP plugin allows for easy integration of IP cameras that provide a single JPEG image via an HTTP URL.

This URL is different for each camera manufacturer. Read the manual of the camera or contact the manufacturer to obtain the correct URL.

Example

The manufacturer "Commend" specifies for its WS series cameras the following URL: `http://ip/image.jpg`. For this URL, you only need to enter a valid IP address. To make sure that the URL is correct, enter it in the Internet Explorer. If you do not see an image, the URL is invalid and must

be checked again. GscServer will only be able to record an image if one can be found at the corresponding URL.



Installation

The plugin consists of two files: - JpegSinglePictureUniversalIPC.dll and - JpegSinglePictureIPCDialog.dlg.

If the plugin is not included in the scope of installation with delivery, copy both files (JpegSinglePictureUniversalIPC.dll and JpegSinglePictureIPCDialog.dlg) to the plugin directory of G-Core (C:\Program Files\Geutebrueck-\GCore\MediaPlugins).

i The G-Core server service must then be restarted.

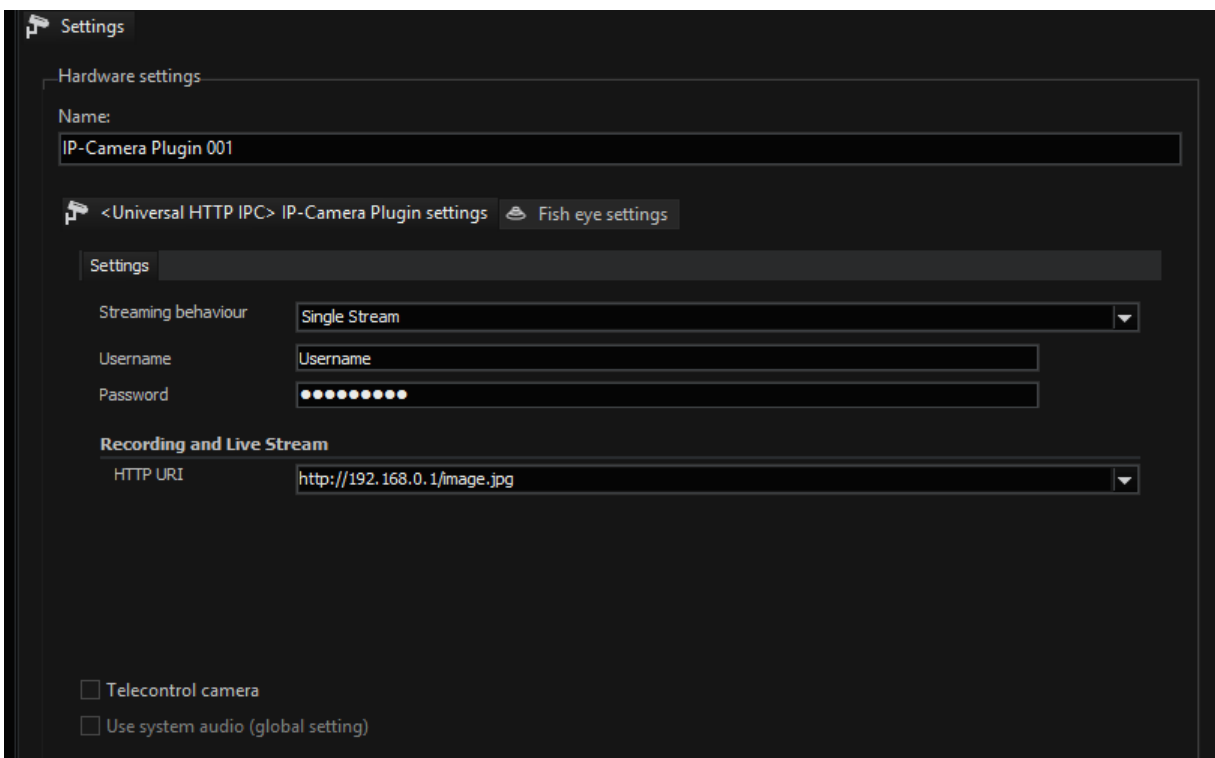
Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.
3. In the following pop-up, select the **IP-Camera Plugin <Universal HTTP IPC>** by selecting it and clicking **Add**.
 - The HTTP plugin is now entered in the hardware module list as a hardware resource.

Configuration

Select the plugin in the list and make the necessary changes to the settings.

i Do not forget to configure the corresponding licenses.

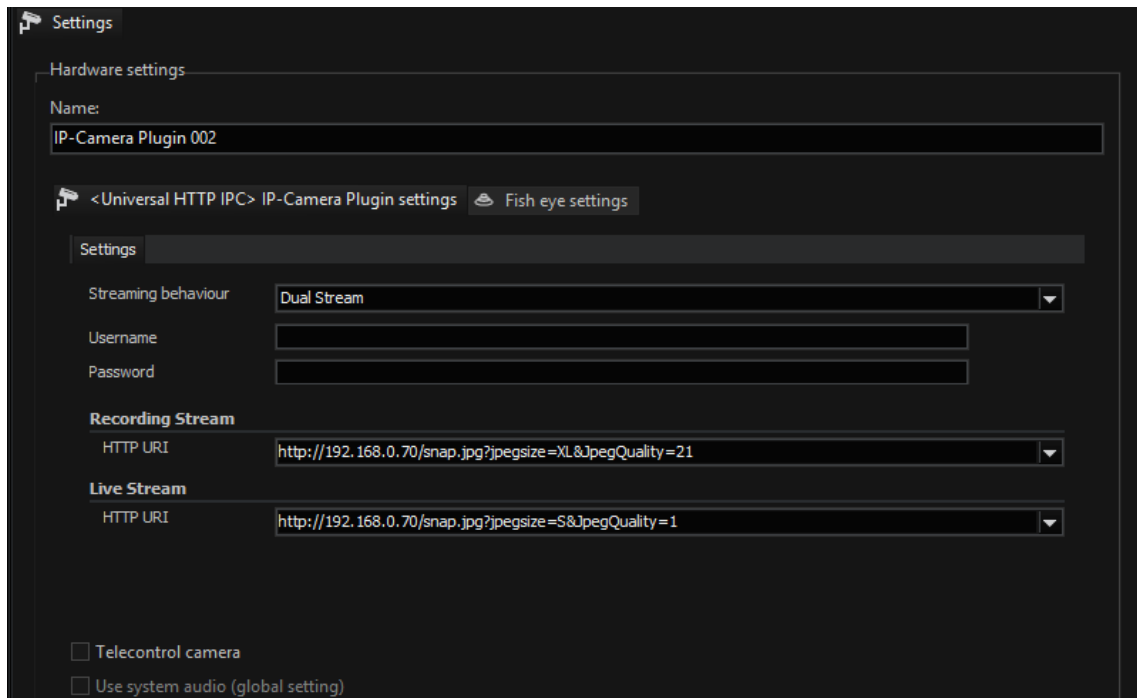


The **Username** and **Password** correspond to the login data of the camera and must be entered here.

Under **Streaming behaviour** you can select between **Single Stream** or **Dual Stream**.

IP-CAMERA PLUGINS

- If you select **Single Stream**, only one entry is available for an HTTP-URL. The stream that arrives at the GSCServer over this URL is used both for recording as well as the live stream. This means that the live image and the recording will both have the same quality level.
- If the camera is capable of **Dual Stream** mode (refer to the **List of Supported Camera Manufacturers and Types**), and the plugin is set to **Dual Stream** the dialog will appear as follows:



You can now enter two different HTTP-URLs: One for the live image, and one for recording.

i **It does not make sense to enter the same HTTP-URL in both lines. This creates twice the load for the camera and network. If you use the same HTTP-URLs, you will always use the same quality level for both recording and the live playback. If you only wish to use one HTTP-URL, you should therefore always use single-stream mode.**

List of Supported Camera Manufacturers and Types

Bosch

- Bosch cameras require no login data by default. For this purpose, the URL be varied as follows: `http://ip/snap.jpg?JpegSize=<JpegSize>&JpegQuality=<JQ>`
- JpegSize determines the resolution. S, M, L or XL are valid values.
- JQ is a quality value from 1 to 100, with 100 being the worst quality.

i **Not all types of cameras from Bosch react to these parameters. If the parameters are accepted by the camera, this camera can also be operated as dual-stream camera.**

Commend

- Commend cameras in the WS series do not need login data by default. You can only send pictures in a single resolution and quality. Set this using the camera interface. Dual stream is not possible!

- The URL to query the images is: `http://ip/image.jpg`.

Camera - 192.168.0.1 IP

Live View Snapshots Freeze Image Settings

Camera Configuration

Camera Type: IP VGA (640x480) ▼

Camera Description:

Camera Text:

Lighting Mode: Off ▼

Heating Mode: Auto ▼

Framerate: 30 FPS ▼

Quality: 100% ▼

White Balance: Auto standard ▼

Advanced Mode:

Firmware Version: 1.1

Save

Universal RTSP

RTSP is an acronym for Real Time Streaming Protocol and is described in RFC 2326. The plugin makes it possible for video sources (IP cameras) that provide a video stream over an RTSP-URL to stream to the GCoreServer and to be further processed there. A video source must provide an RTSP-URL; `rtsp://` must be at the start of the URL.

Example Here is an example of a Basler BIP2 network camera:

```
rtsp://IP-Address/h264?stream=0&mode=live
```

An RTSP stream always delivers a video stream of a certain quality. By quality we mean parameters such as resolution, compression, GOP structure, bit rate and frame rate (FPS). Since a stream only provides one quality level, this is the only quality level that will be seen in GSCView.

This plugin does not make it possible to parameterize the stream or to switch to a better quality on an event basis. Thus, all quality settings that you selected in G-Set are ignored and have no influence on the streamed video.

Only for JPEG images is it possible to affect the frame rate with the FPS value specified in G-Set. This means that if a camera delivers 25 FPS but only 10 FPS are set in G-Set, the extra images are discarded by the GCoreServer.

This does not work when fewer images are supplied by the camera than are specified in G-Set. It also does not work with H.264/H.265, since the decompression of the stream requires all the images. Our advice here: Do not be confused by the settings that can be made under Video Profile or Interval in G-Set. These values are just placeholders and have no influence on the RTSP stream.

There is also no standard RSTP-URLs. This means that each camera manufacturer uses a different URL specification. These URLs are typically found in the camera manuals or by contacting the manufacturer.

i **Currently, the RTSP universal plug supports the video formats H.264/H.265 and JPEG. Supported audio formats are G.726, G.711 u-Law and a-Law. In the current state there is no support for other video codes such as MPEG4 or AAC audio.**

i **In addition, Geutebrück does not guarantee that any arbitrary RTSP stream will work in conjunction with the RTSP universal plugin. Only cameras made by Geutebrück and tested models are approved for use (see below).**

Installation

The plugin consists of two files: RTSPUniversalIPC.dll and RTSPUniversalIPCDialog.dlg.

If the plugin is not included in the scope of installation with delivery, please copy both files (RTSPUniversalIPC.dll and RTSPUniversalIPCDialog.dlg) to the plugin directory of G-Core (C:\Program Files\Geutebrueck\GCore\MediaPlugins).

i **The G-Core server service must then be restarted.**

Add the Plugin

1. In G-Set, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select **Add**.

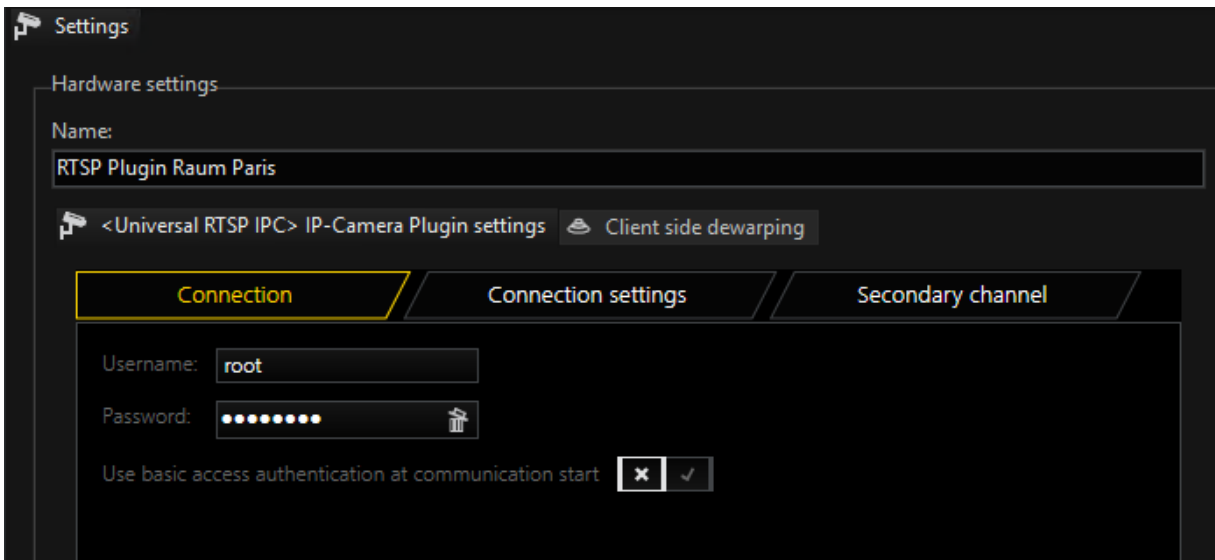
IP-CAMERA PLUGINS

3. In the following pop-up, select the IP-Camera Plugin <Universal RTSP IPC> by selecting it and clicking **Add**.
 - The RTPS plugin is now entered in the hardware module list as a hardware resource.

Select the plugin in the list and make the necessary changes to the settings.

i Do not forget to configure the corresponding licenses.

Connection



The **Username** and **Password** correspond to the login data of the camera and must be entered here.

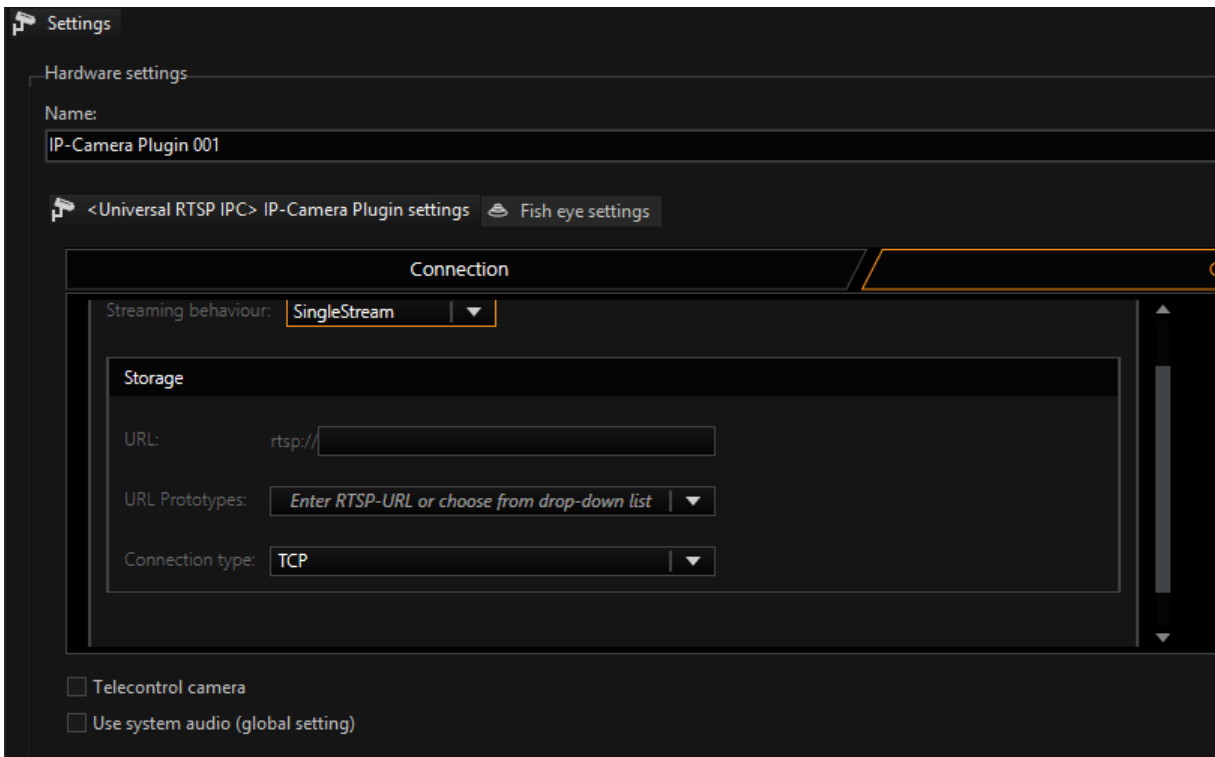
i Information on the default values of the manufacturer can be found in the section **List of Supported Camera Manufacturers and Types**.

Connection Settings

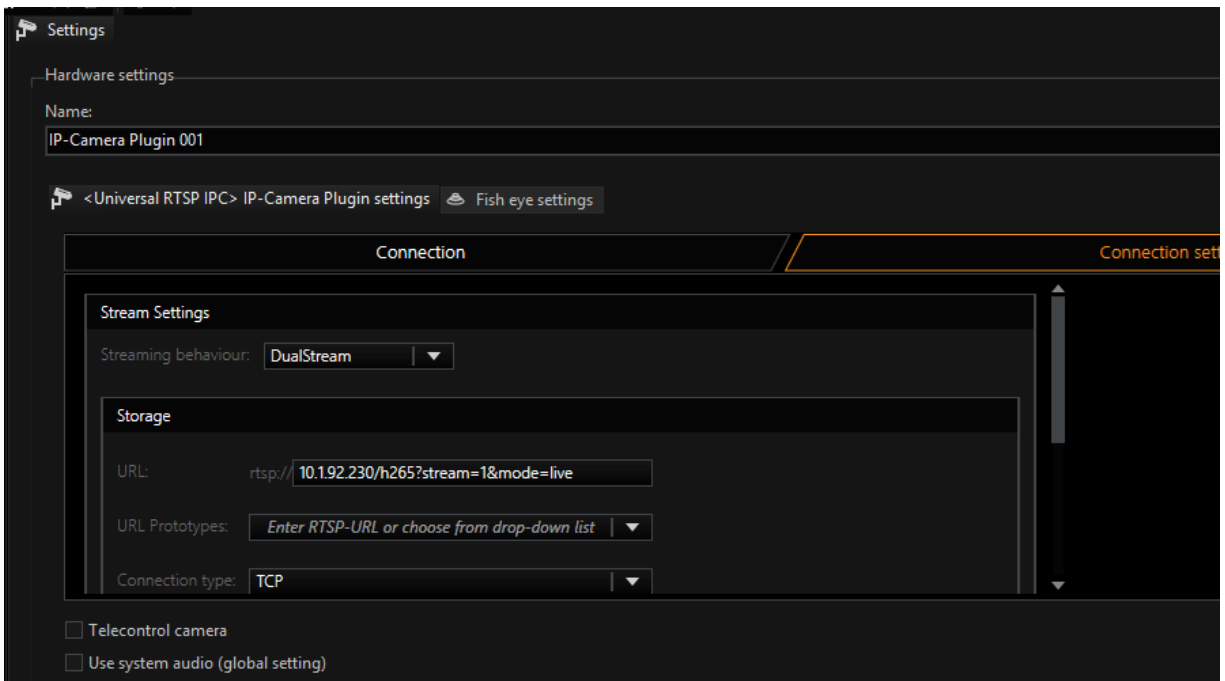
Under Connection Settings you can select between **Single Stream** or **Dual Stream**.

If you select **Single Stream**, only one entry is available for an RTSP-URL. The stream that arrives at the GSCServer over this URL is used both for recording as well as the live stream. This means that the live image and the recording will both have the same quality level.

IP-CAMERA PLUGINS



If the camera is capable of **Dual Stream** mode (refer to the **List of Supported Camera Manufacturers and Types**), and the plugin is set to **Dual Stream** the dialog will appear as follows:



You can now enter two different RTSP-URLs: One for the live image, and one for recording.

- i** **BIP2 Basler cameras deliver up to 4 different streams. They are selected using the various "stream=x" parameters. Here, stream 0 is selected for recording and stream 1 for live playback.**
- i** **It does not make sense to enter the same RTSP-URL in both lines. This creates twice the load for the camera and network. If you use the same RTSP-URLs, you will always use the same quality level for both recording and the live playback. If you only wish to use one RTSP-URL, you should therefore always use single-stream mode.**

Transport Protocol Selection

For each stream, recording or live, it is possible to choose the transport protocol.

TCP

Communication with the camera takes place on port 554 by default. The total communication (audio, video + control data) takes place only over this port. If you prefer a different port, the port can be changed with a specification in the URL as follows:

- `Rtsp://ip:Portnummer/stream1`
- `Rtsp://192.1.2.3:8081/stream1`

TCP is the preferred and best selection among the transport protocols.

UDP

With UDP, streaming is also performed over port 554. However, video, audio and control information are transmitted over up to 4 additional ports.

It is possible to specify to the camera the preferred ports for steaming of data. It is preferable, however, for the camera to choose these ports itself. If a manual assignment of ports is desired, they can be selected by disabling the **Use Dynamic Ports** option. 2 ports are needed each for video and audio. The specified port is opened and the port directly above the specified port. In our example, this would be the ports 60000 + 60001 for video and 60002 + 60003 for audio. Due to the higher number of ports and the associated problem of firewall configuration, UDP is less suitable than TCP.

Recording Stream

URI

Use dynamic ports

UDP video port:

UDP audio port:

Multicast

With multicast, streaming is also performed over port 554. Audio, video and control data are streamed over an additional multicast address plus port. The choice of the multicast address and port is specified in most cases by the camera and cannot be specified via the stream of the GSCServer. The selection **Use camera settings** is also the (initially) best choice.

Recording Stream

URI

Use camera settings Multicast video address:

Same address for audio Multicast audio address:

Multicast video port:

Multicast audio port:

i **For some camera types, such as Sony cameras, specification of the multicast address plus port is necessary. Always note the information from the respective manufacturers on multicast parameters.**

The use of multicast, unfortunately, brings with it a number of possible errors. Therefore, it is important to note the following:

- Each camera in the network must be assigned a unique multicast address. No two cameras may have the same multicast address.
- It is possible for multiple cameras to use the same port, but they must not have the same multicast address, as the separation in switches is performed primarily using the multicast addresses. Using identical multicast addresses will lead to network and device overload and incorrect display of the images.
- IP addresses in the range 224.0.0.0 to 239.255.255.255 are multicast addresses. In a private network, it is best to select addresses between 239.0.0.0 and 239.255.255.255.
- It is imperative to use switches with multicast support. Simple switches, without multicast support, would generate broadcast streams from the multicast streams. With a large number of cameras, this would then mean that the entire network traffic of all cameras would arrive at each node in the network. This means that even a 1 GB network connection would quickly be overloaded.

- As a number of ports are opened for multicast, it is advisable to add all applications, such as G-View, G-Set and GCoreServer to the firewall. The applications can thus open all ports and the ports do not need to be added manually.

Multicast Server Only

When starting a multicast stream, the stream is accepted from the GCoreServer and also from the corresponding client. Each application thus receives the multicast stream directly from the camera via the switch.

If **Multicast Server Only** is selected, the G-Core server continues to receive the stream from the camera via multicast, however all clients receive their images as in TCP or UDP mode via the G-Core server, the G-Core internal communication. This mode is designed for the case when the G-Core server receives the multicast data, but the clients are not multicast-enabled, or the data is not meant to be received by multicast.

MC Client Only

As already mentioned, when opening the stream, the stream is also received by G-Core server itself. As the G-Core server itself, however, does not need live images and cannot display them, these images only create additional network load to the G-Core server.

With this setting it is possible for the stream to be received only by the client and no images will go to the G-Core server. This option, however, leads to problems when there are network clients that cannot handle multicast reception. These clients will then no longer receive images, because the G-Core server does not receive them. In such cases, this setting is not useful.

In addition, this setting is only available for live stream.

Audio Support

If the camera supports the audio formats G.726, G.711 u-Law or a-Law, the audio data is played back and recorded via the plugin. In the section "List of supported camera manufacturers and types" you can see which cameras have been checked successfully.

To activate audio playback, you must select a profile for audio in G-Set. Whether you select the profile **high**, **medium** or **low** is irrelevant, it is important, however, that none is not selected.

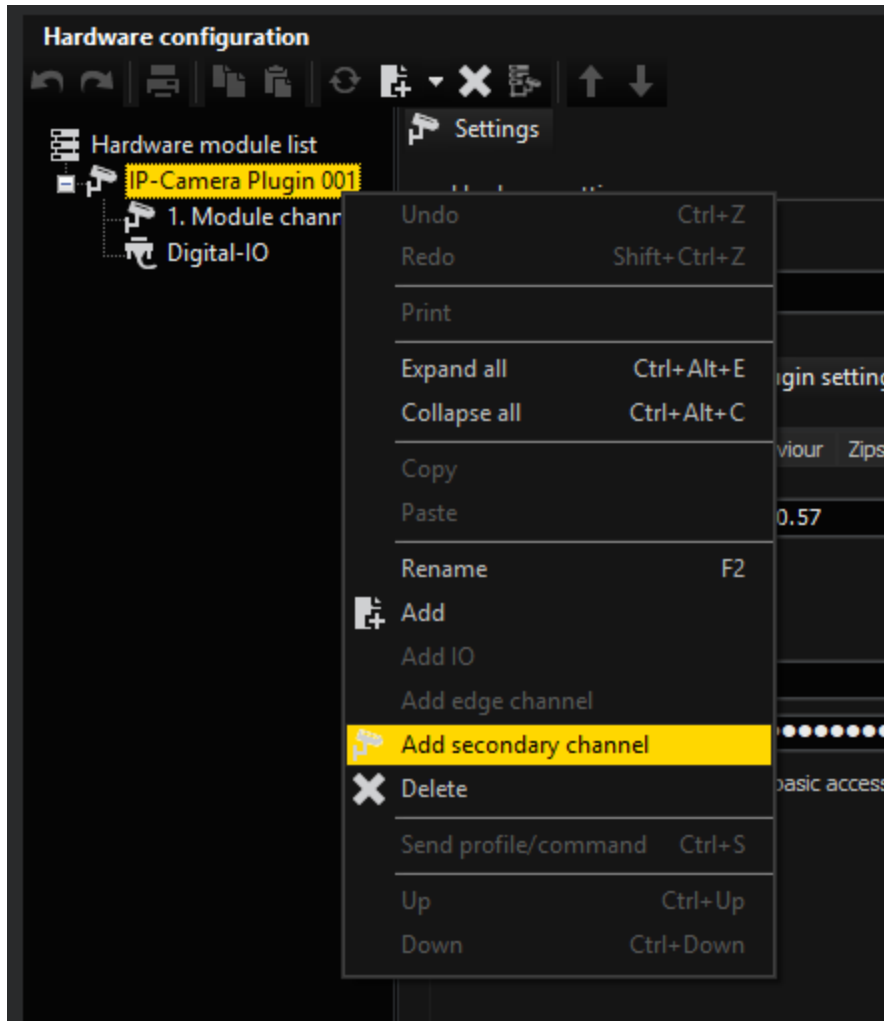
Secondary Channel Function

The "Secondary channel" function makes it possible to create a second media channel for a camera that provides the same source in a second resolution/quality. Thus it is possible to obtain recording and live stream of a camera in two different

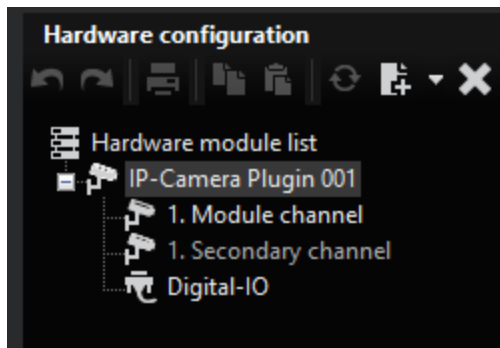
IP-CAMERA PLUGINS

resolutions. Applications are e.g. a low bandwidth stream for a WAN connection or an extra stream for VCA processing.

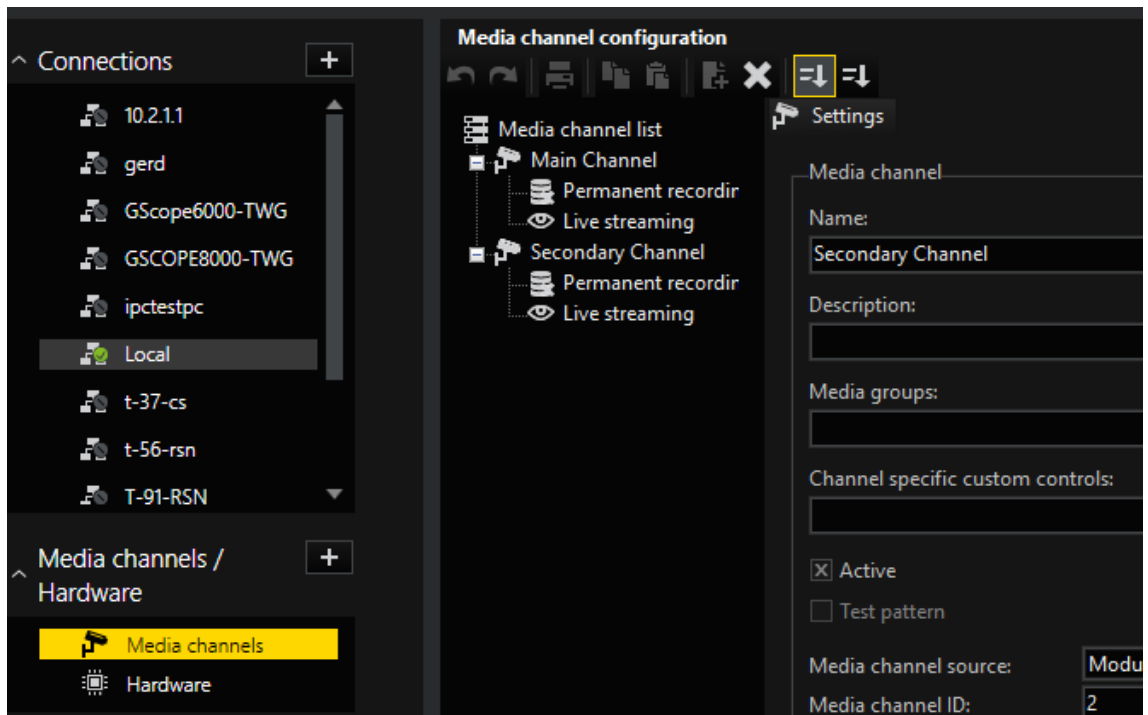
1. To activate the secondary channel, right-click on the root node of the corresponding hardware and select **Add secondary channel**.



2. The module channel "1st Secondary channel" then appears.



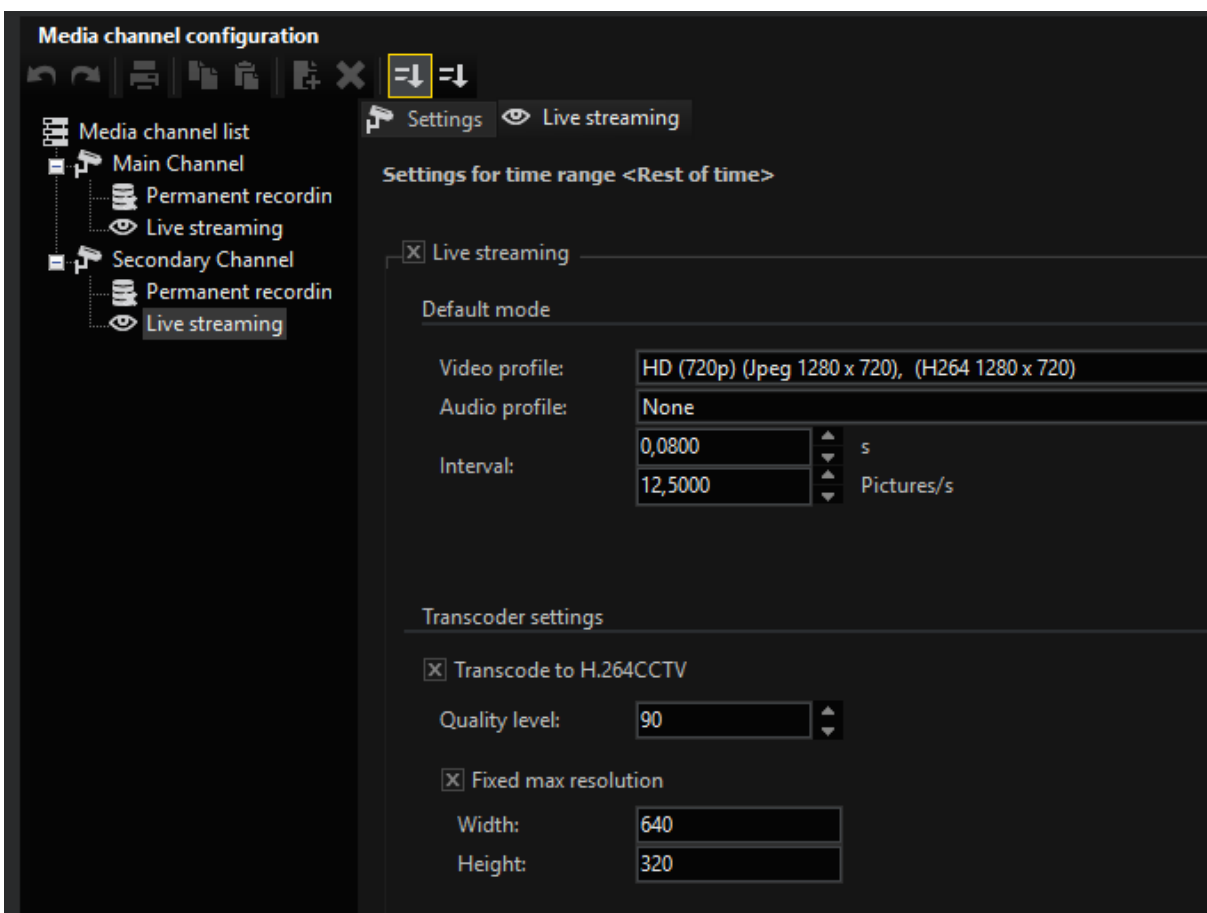
3. Then add the now accessible media channel via **Media channels**.



Duplicate Mode

In standard operation, the Secondary Channel will always receive a copy of the images that are intended for the main channel. In this mode, called **Duplicate Mode**, the existing stream of the camera is used and made available to the second media channel again.

This mode is useful if the camera is not capable of delivering multiple streams simultaneously. The second media channel must then be transcoded to a lower resolution in order to achieve the desired goal of a different quality/resolution.



Individual Mode

The second mode is called **Individual Stream** and asks the camera for another own stream (or in the case of dual stream two additional streams) for the secondary channel. This doubles the number of streams picked up by the camera as opposed to **Duplicate Mode**.

If the main channel is set to **Single stream**, the secondary channel also receives only one stream, so the camera requests a total of two streams.

If the main channel is set to **Dual stream**, the secondary channel also receives two streams, and thus a total of up to four streams are requested from the camera.

Advantages and Disadvantages of Both Modes

	Duplicate Mode	Individual Mode
Advantages	The stream from the cam-	The resolution/framerate can be

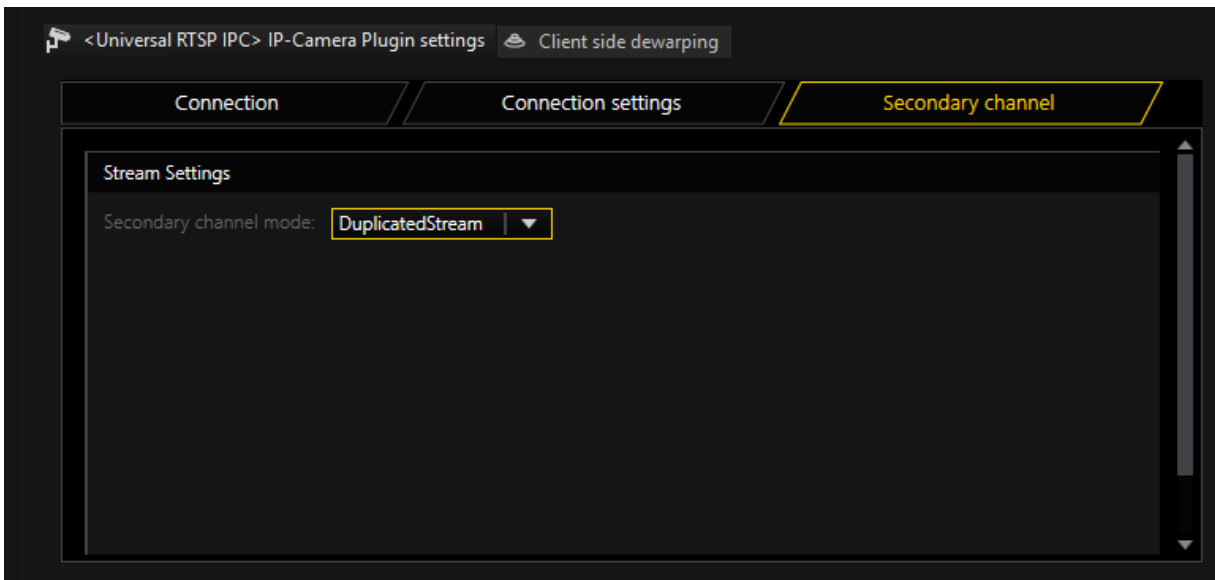
	Duplicate Mode	Individual Mode
	<p>era can be received with maximum resolution and frame rate.</p> <p>It can then be transcoded to any lower resolution/frame rate.</p> <p>4K cameras can often only deliver one stream at 25FPS and are often not DualStream capable in this mode.</p>	<p>freely selected.</p> <p>No transcoding is required and the resolution can be higher than that of the main channel depending on the camera.</p>
Disadvantages	<p>You have to use transcoding to get a lower resolution/quality. This requires additional CPU power on the G-Core.</p> <p>Furthermore, only smaller resolutions are available for the secondary channel, not larger ones.</p>	<p>Since up to four streams are requested from the camera in dual stream mode, it will rarely be possible to achieve the highest frame rate.</p>

i **Special features in Duplicate mode: If the main channel is not streaming live or in memory, the secondary stream can select the resolution and quality itself. As soon as the main channel needs images, however, the resolution/quality of the main channel is used again and these are also duplicated into the secondary channel.**

Secondary Channel with RTSP Plugin

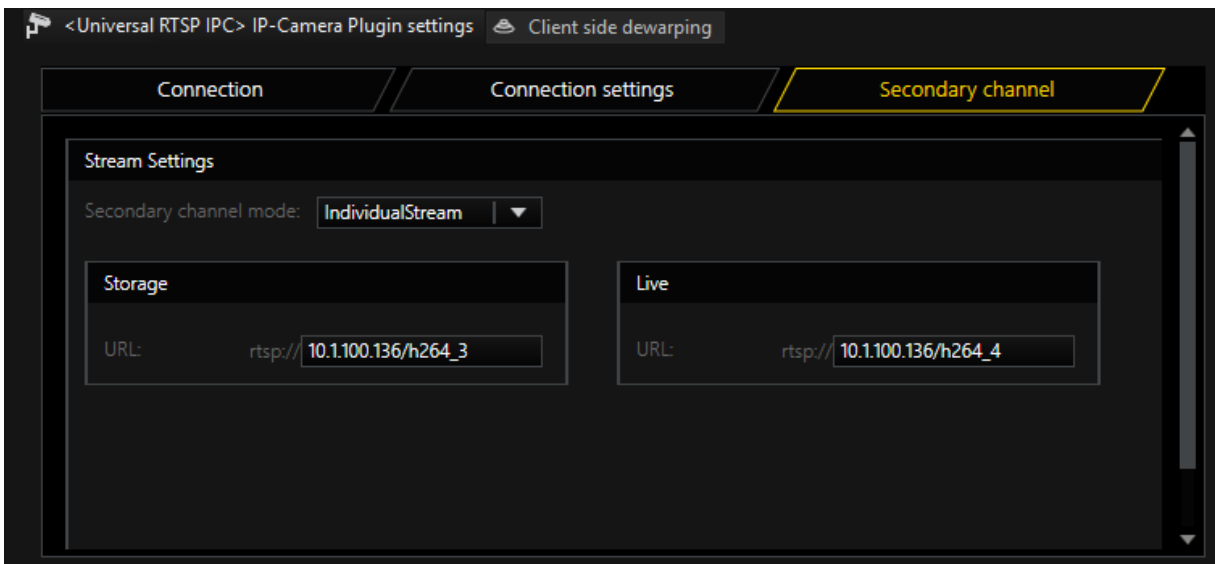
In the RTSP plugin, the secondary mode is visible in the hardware by selecting **Secondary channel**. There you can decide between **Duplicate stream** and **Individual stream**.

In **Duplicate stream** mode, no further settings are required.



In **Individual stream** mode, it is necessary to enter an RTSP URL for the stream. If the plugin works in **Dual stream**, it is necessary to enter up to two additional RTSP URLs.

i At this point it does not make sense to enter the same URLs that were already used under **Connection settings**. Same URLs do not lead to a different resolution/quality of the stream, but only to a double load on the camera and the network. In the case of **Dual stream**, the parameterization must be set up with four individually different URLs.



List of Supported Camera Manufacturers and Types

Arecont Vision

For Arecont Vision, only H.264 cameras can be operated over RTSP (designation ends in 5, such as AV3105).

All cameras that only provide JPEG support (designation ends in 0, such as AV1300) do not provide RTSP support. None of the Arecont Vision cameras supports Audio! Only TCP and UDP are allowed as transport protocols. No support of multicast for all Arecont Vision cameras.

For Arecont Vision, the setting of the stream is controlled solely via the RTSP request. To specify the request, open the camera in the browser and set up the camera as desired using the following menu:

The screenshot shows the configuration interface for an Arecont Vision camera. The navigation bar includes 'About', 'Image', 'H.264', 'Network', 'Administration', and 'Motion_detector'. The 'Image' tab is selected. Below the navigation bar are 'Help' and 'Exit' buttons. The main configuration area is divided into two sections: 'Picture' and 'Resolution'. The 'Picture' section includes sliders for Brightness (-50..+50) set to 5, Sharpness (0..4) set to 2, Saturation (0..6) set to 5, Blue (-10..+10) set to 0, and Red (-10..+10) set to 0. Each slider has a 'Set' button. The 'Resolution' section includes a 'JPEG Quality (1..21)' slider set to 15, an 'H.264 QP (36..16)' slider set to 20, a 'Resolution' dropdown menu set to 'half', and four input fields for 'Left' (0), 'Top' (0), 'Right' (1920), and 'Bottom' (1200). At the bottom of the 'Resolution' section are 'Apply' and 'Set as default' buttons.

Then go to **H.264** and have an RTSP request generated using **Update link**. Then enter the Update link in GSCSetup.

About	Image	H.264	Network	Administration	Motion_detector
					<input type="button" value="Help"/> <input type="button" value="Exit"/>
- H.264 RTSP/RTP/AVP stream					
RTSP port		<input type="text" value="554"/>	<input type="button" value="Set"/>		
RTP stream bitrate (0..65535 kbs)		<input type="text" value="65535"/>			
- H.264 RTSP stream link for external media players					
<input type="button" value="Update link"/>					
<input type="text" value="rtsp://10.1.92.162:554/h264.sdp?res=half&x=0&y=0&x1=1920&y1=1200&qp=20&doublescan=0&bitrate=65535&ssn=20"/>					

Example `rtsp://10.1.92.162:554/h264.s-`

`dp?res-`

`=half&x-`

`0=0&y-`

`0=0&x-`

`1=1920&y1=1200&qp=20&doublescan=0&bitrate=65535&ssn=20`

Arecont Vision cameras are dual-stream capable. Generate two different RTSP requests. Note, however, that the possible number of images can drop significantly when more streams are opened.

i Login Data

By default, there is no password assigned for Arecont Vision cameras for the users admin and viewer. Therefore, with default settings you do not need to enter a password for either user. However, if passwords have been assigned, it is important to enter the admin user with the corresponding password in GSCSetup. Otherwise, you may see images but not be able to control the Image Settings.

Axis

The plugin works in conjunction with Axis cameras firmware version 5.xx and up. You can find a list of cameras with these firmware versions here: <http://www.axis.com/techsup/firmware.php>

To change the camera to the desired configuration, make the modifications here:

The screenshot shows the configuration interface for an Axis P1346 Network Camera. The left sidebar contains a navigation menu with the following items: Basic Setup (with sub-items: Instructions, 1 Users, 2 TCP/IP, 3 Date & Time, 4 Video Stream, 5 Focus, 6 Audio Settings), Video & Audio, Live View Config, Applications, and Events. The main content area is titled 'Video Stream Settings' and has four tabs: Image, Audio, H.264, and MJPEG. The 'Image' tab is active, showing 'Image Appearance' settings: Capture mode (3 MP 2048x1536 (4:3) @ 20fps), Resolution (2048x1536 (4:3) pixels), Compression (30 [0..100]), and a checkbox for 'Mirror image'. Below this is the 'Video Stream' section with 'Maximum frame rate' options: 'Unlimited' (radio button) and 'Limited to 2 [1..30] fps per viewer' (radio button selected).

The RTSP request for Axis cameras for FW 5.xx or higher is:

RTSP Request	Description
<code>rtsp://ip/axis-media/media.amp?videocodec=h264</code>	This will provide you with an H.264 video stream.
<code>rtsp://ip/axis-media/media.amp?videocodec=jpeg</code>	This will provide you with an MJPEG video stream.

Axis cameras are perfectly suited for dual streaming. But this only makes sense if you add additional parameters to the RTSP request.

Example For example, you could record at maximum resolution and low FPS while live streaming with high FPS and low-resolution:

```
rtsp://192.168.0.50/axis-media/
```

```
media.amp?videocodec=jpeg&resolution=2048x1536&fps=3
```

```
rtsp://192.168.0.50/axis-media/
```

```
media.amp?videocodec=jpeg&resolution=640x480&fps=25
```

- i** In the section **Axis Plugin**, the activation of the audio support is explained.
- i** For the use of the audio support, **&audio=1** must be added to the RTSP-URL!

The transport protocols TCP, UDP and multicast are supported. All three use the same URL. For multicast, the check box **Use Camera Settings** must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by Axis.

AXIS P1346 Network Camera Live View | Setup

RTP Settings

Port Range

Start port: [1024..65534]

End port: [1025..65535]

Multicast

Video address:

Video port: [0, 1024..65534; even values only]*

Audio address:

Audio port: [0, 1024..65534; even values only]*

Time to live: [1..255]

Always Multicast Video

Always Multicast Audio

*0 = Port automatically selected within the port range specified above.

i **Login Data**

There is no default password for Axis products. During first use of a camera, when the user opens the camera IP in the web browser, a password must be entered for the user root. The password selected there must also be entered in the GSCServer.

Basler

Cameras from Basler that support H.264 can be streamed via RTSP. JPEG cannot be streamed via RTSP and is therefore not supported.

BIP cameras, first-generation Basler cameras, can only provide one stream in H.264. Therefore, they cannot be used for dual streaming. All BIP2 camera models, second-generation Basler cameras, are dual-stream capable and can provide two and more H.264 streams.

The stream settings are made on the page shown. It is also important to pay attention to the settings under Global. Audio is supported as well, if camera is able. For detailed information, refer to the camera instructions.

The screenshot displays two main windows. The left window, titled 'Camera Configuration', has tabs for 'Global', 'Stream0', and 'Stream1'. Under the 'Stream0' tab, the following settings are visible:

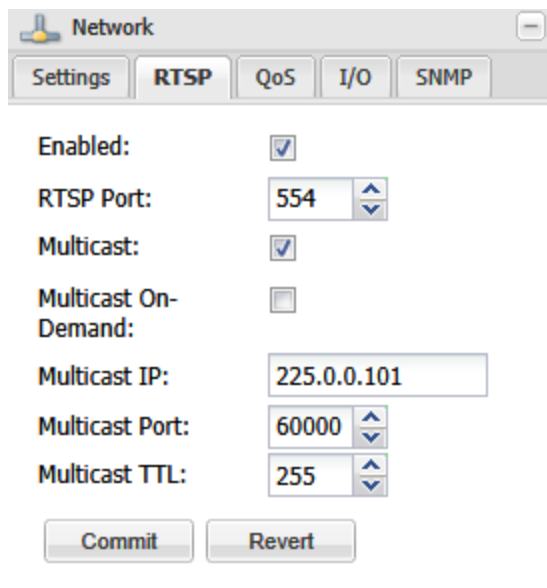
- Encoder Type: H.264 Base Prof
- Encoder Mode: VBR
- Quality: 80
- Bitrate [kbit/s]: 12000
- Output Size: Auto
- Stream AOI Left: 0
- Stream AOI Top: 0
- Stream AOI Width: 2560
- Stream AOI Height: 1920
- Output Scaling: 1:1
- Frame Rate Scaling: 1:1
- GOP Length [ms]: 1000
- Live Buffer Size [kbyte]: 16384
- Alarm Buffer Size [kbyte]: 32768
- Post Alarm Buffer Size [kbyte]: 16384

A 'Text Overlay' button is located at the bottom of this panel. The right window, titled 'Stream 0 AOI Editor', shows a video stream of a red poster with a glass of beer. The poster text reads 'Wenn Blicke trinken könnten.' Below the video are four buttons: 'Full Size', '1/4 Size', 'Align Top-Left', and 'Center Frame'.

The transport protocols TCP, UDP and multicast are supported.

i **Note that only the stream=0 can be transmitted per multicast and that for the query another URL is to be entered. See example.**

For multicast, the **Use Camera Settings** check box must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by Basler.



The RTSP-URL is composed as follows, where X is replaced by the stream numbers 0 to 3: `rtsp://ip/h264?stream=<X>&mode=live`

Example

`rtsp://ip/h264?stream=0&mode=live`

`rtsp://ip/h264?stream=1&mode=live`

`rtsp://ip/h264?multicast` (Only for Multicast)



Login Data

By default, no login data is required for Basler cameras.

Bosch

Bosch cameras can be operated in dual stream mode. In addition, audio and all three transmission protocols (TCP, UDP and multicast) are supported.



The transmission mode TCP is possible, but not recommended, as problems continually arise from the camera side. UDP is the preferred type of transmission. UDP is the preferred type of transmission.

The following URLs must be selected for this method. Keep in mind that for multicast, modified URLs must be used.

Example

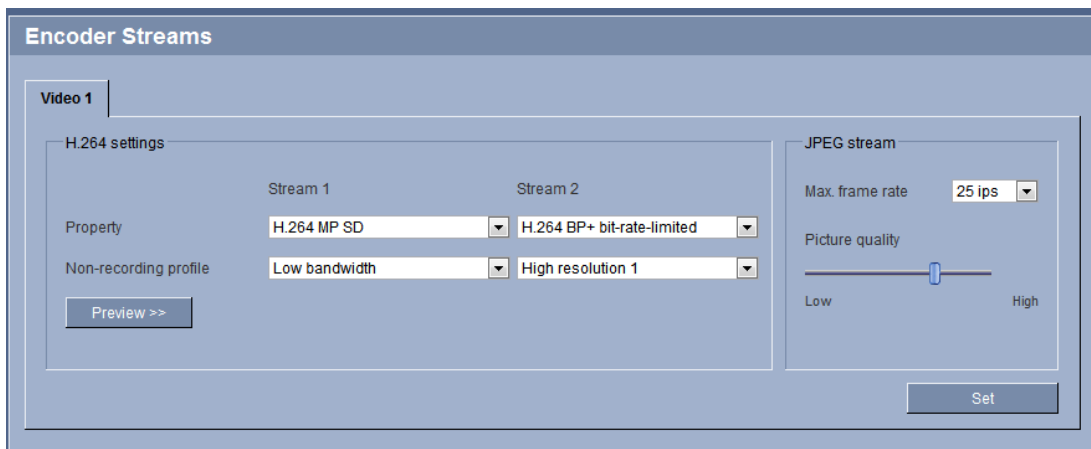
rtsp://ip/?inst=1&enableaudio=1 (Bosch Stream 1)

rtsp://ip/?inst=2&enableaudio=1 (Bosch Stream 2)

rtsp://ip/?h26x=4&line=1&inst=1&multicast=1 (Bosch Multicast Stream 1)

rtsp://ip/?h26x=4&line=1&inst=2&multicast=1 (Bosch Multicast Stream 2)

The basic settings of the streams are specified here:



The settings for frame rate, quality and bit rate are controlled using the selected profiles:

Encoder Profile

Profile 1 | Profile 2 | Profile 3 | Profile 4 | Profile 5 | Profile 6 | Profile 7 | Profile 8

Profile name: High resolution 1

Target bit rate: 4000 kbps

Maximum bit rate: 4800 kbps

Encoding interval: (25.00 ips)

Video resolution: VGA

Expert Settings >>

Default Set

When multicast is to be used as a transport protocol, the corresponding stream must first be activated under settings **Advanced Mode > Network > Multicast**. Do not forget to enter a valid multicast address!

Multicast

	Enable	Multicast Address	Port	Streaming
Video 1	<input checked="" type="checkbox"/>	224.1.92.55	60001	<input type="checkbox"/>

Stream 1 | Stream 2

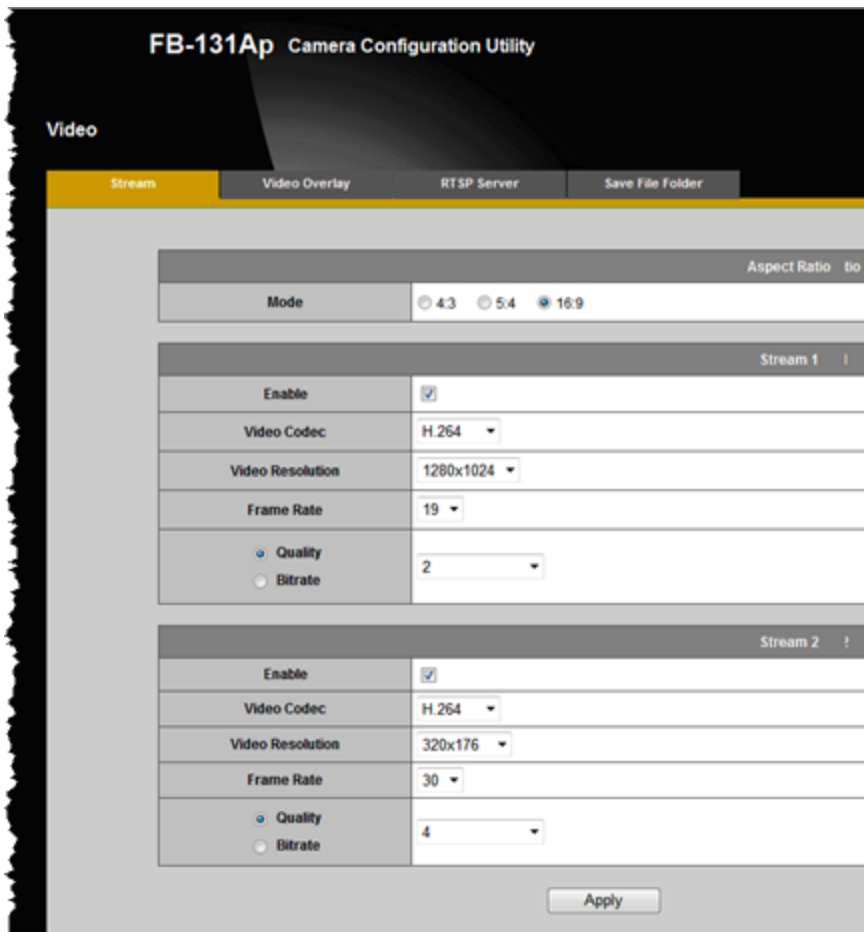
Multicast packet TTL: 64

Set

i **Login Data**
 By default, no login data is required for Bosch cameras.

Brickcom

The stream settings are made at the location shown.



The cameras are dual-stream capable. Only the transport protocols TCP and UDP are supported. No multicast support!

The following RTSP request must be used.

- For stream 1: `rtsp://ip/channel1`
- For stream 2: `rtsp://ip/channel2`

BrickCom can transmit H.264 as well as JPEG over RTSP.

i **Login Data**
The default user and password for BrickCom is admin.

Activate the audio streaming by setting a check mark in the Audio menu. You must select **G.711** as **Audio Codec**.

Audio

Stream **Advanced Settings**

Stream 1	
Enable	<input checked="" type="checkbox"/>
Audio Codec	G.711

Stream 2	
Enable	<input type="checkbox"/>
Audio Codec	G.711

Apply

Audio

Stream **Advanced Settings**

Camera MIC	
MIC Type	Line in
Volume	-0db

Camera Speaker	
Enable	<input checked="" type="checkbox"/>
Volume	50%

Echo Cancellation	
Enable	<input type="checkbox"/>

Apply

CNB/EcoLine

For CNB, there are different types of cameras with different RTSP-URLs. Up till now, only the following types have been tested and approved. Both types are dual-stream capable. MJPEG and H.264 are supported. Not

MPEG4!

G-Model: IGx10xx, IxP40xx, IxP4000xx

- To open the main stream: `rtsp://ip`
- To open the substream: `rtsp://ip:665`

A2-Model: IDC4050x, IGC2085F

- To open the main stream: `rtsp://ip/main`
- To open the substream: `rtsp://ip/sub`

The configuration of the camera is performed via the website (see below). To activate the substream, the check mark **Enable Dual-Codec** must be selected. This is not always possible, however, and depends on a number of criteria. Refer to the camera instructions.

System Setup

- Status
- Users
- Date & Time
- Multi Viewer
- PTZ Configuration
- Maintain Server
- System / Log

Audio & Video

- Audio
- Video**
- RTP
- Camera Conditions

Network Setup

- TCP/IP
- IP Filtering
- HTTP
- UPnP / DynDNS / BJR
- CMS

Event Configuration

- Event Types

Main Stream

Resolution : VGA (640 x 480)

Codec : MPEG4

Enable Dual-Codec

Frame Rate Control

Frame rate : 24 fps

RTCP Callback Control

MJPEG Appearance

Quality : 100

MPEG4 & H.264 Appearance

Bit rate : 3M bps

Sub Stream(MJPEG)

Resolution : VGA (640 x 480)

Frame Rate Control

Frame rate : 15 fps

MJPEG Appearance

Quality : 80

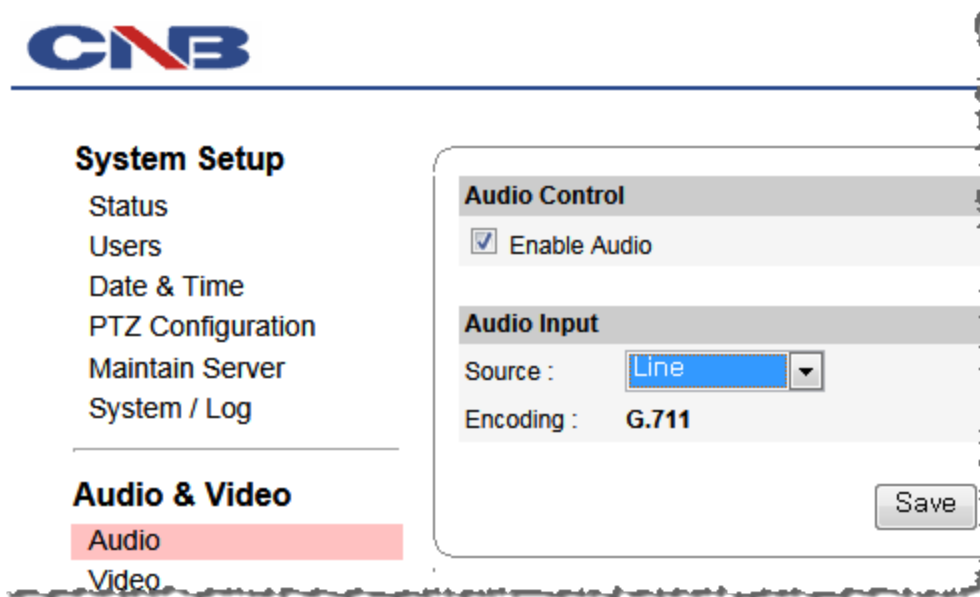
Save Reset



Login Data

The default setting is: Username admin and Password root.

Audio is supported upon activation:



The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

For multicast, the check box **Use Camera Settings** must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by CNB.

The screenshot shows the CNB web interface with the 'Setting' tab selected. The left sidebar contains a navigation menu with the following sections:

- System Setup**
 - Status
 - Users
 - Date & Time
 - PTZ Configuration
 - Maintain Server
 - System / Log
- Audio & Video**
 - Audio
 - Video
 - RTP** (highlighted)
 - Camera Conditions
- Network Setup**
 - TCP/IP
 - IP Filtering
 - HTTP(s)
 - UPnP/DynDNS/Bonjour
 - QoS
 - SNMP
 - CMS

The main content area displays the 'RTSP Configuration' settings:

RTSP Configuration		
RTSP Port :	<input type="text" value="554"/>	[1..65535]
RTP Configuration		
RTP Start Port :	<input type="text" value="2000"/>	[1024..65435]
RTP End Port :	<input type="text" value="3000"/>	[1124..65535]
Maximum number of users to connect :	<input type="text" value="10"/>	
Multicast Configuration		
TTL Value :	<input type="text" value="1"/>	[1..255]
1st Address :	<input type="text" value="224.2.2.104"/>	
2nd Address :	<input type="text" value="224.2.2.105"/>	
3rd Address :	<input type="text" value="224.2.2.106"/>	
Video Port :	<input type="text" value="49990"/>	[1124...65535]
Audio Port :	<input type="text" value="49992"/>	[1124...65535]

At the bottom right of the configuration area, there are two buttons: 'Save' and 'Reset'.

FLIR

FLIR supports cameras with the Nexus web service. These include the F series cameras. Up until now, F-334 has been tested with firmware: Nexus Server v2.5.4.62

The Universal RTSP plugin supports the H.264 and MJPEG formats of this camera. There is no audio support.

The settings are made at the following location. **Login** as admin and then use **Modules > Video**.

Settings	
Codec Type	H.264 ▾
Bit Rate	3000000 bps
Rate Control	CBR ▾
I-Frame Interval	10
Image Size	4CIF ▾
Frame Rate	5

i Note that the settings are not applied until the **Save** button below is pressed. In addition, the Nexus server must be restarted with **Stop** and **Start**. Refresh is not sufficient!



The image shows the FLIR SYSTEMS Nexus Configuration web interface. It features the FLIR SYSTEMS logo on the left, the title "Nexus Configuration" in a large, stylized font in the center, and a status indicator "Server Running..." on the left. Below the status indicator are two buttons: "Refresh" and "Stop". On the right side, there is a timestamp: "Last Modification: 01/01/1970 05:57:02".

The RTSP-URL is the same for JPEG and H.264. The ending depends on the text entered under **Stream Name**. The default is `ch0: rtsp://ip/ch0`

RTP Settings	
Interface	eth0:10.1.92.116 ▾
Port	554
RTP/RTSP over HTTP Port	<input type="text"/> (default 8080)
Stream Name	ch0
Use External IP	no ▾

The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

For multicast, the check box **Use Camera Settings** must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by FLIR.

The preferred protocol is UDP. In addition, streaming over TCP and UDP is possible only when the setting **Enable Multicast** is set to **No**.

If multicast is to be used, multicast must be enabled as shown in the figure below. Then, transport is only possible via multicast and not over TCP or UDP.

Network Options	
Enable Multicast	yes ▾
Destination Network	232.0.1.1
Destination Port	50000
TTL	3



Login Data

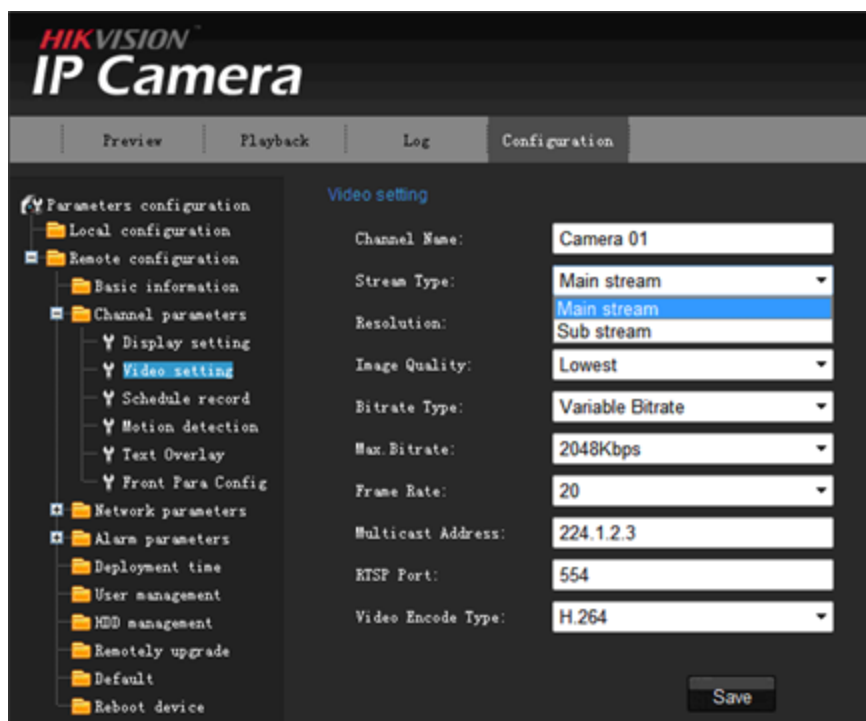
The default login details are: Username admin and Password indigo or Username: basic and Password: Nothing has to be entered here.

HIKVISION

So far, the type DS2CD852MF-E and DS-2CD854F-E could be tested from HIKVISION. These cameras provides both H.264 and JPEG over RTSP. For this application, firmware V2.0 110131 or higher is required. Audio is as well supported and by default activated.

The camera has a main stream and a substream. These can be operated in dual stream mode, however the substream is only available at low resolutions (CIF resolution).

The quality settings are made in the following menu:



The RTSP-URL is always the same for JPEG and H.264:

- For the main stream: `rtsp://ip/mpeg4/ch01/main/av_stream`
- For the substream: `rtsp://ip/mpeg4/ch01/sub/av_stream`

i Login Data
The default setting is: Username: admin and Password 12345.

The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

For multicast, the **Use Camera Settings** check box must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by HIKVISION.

Hitron

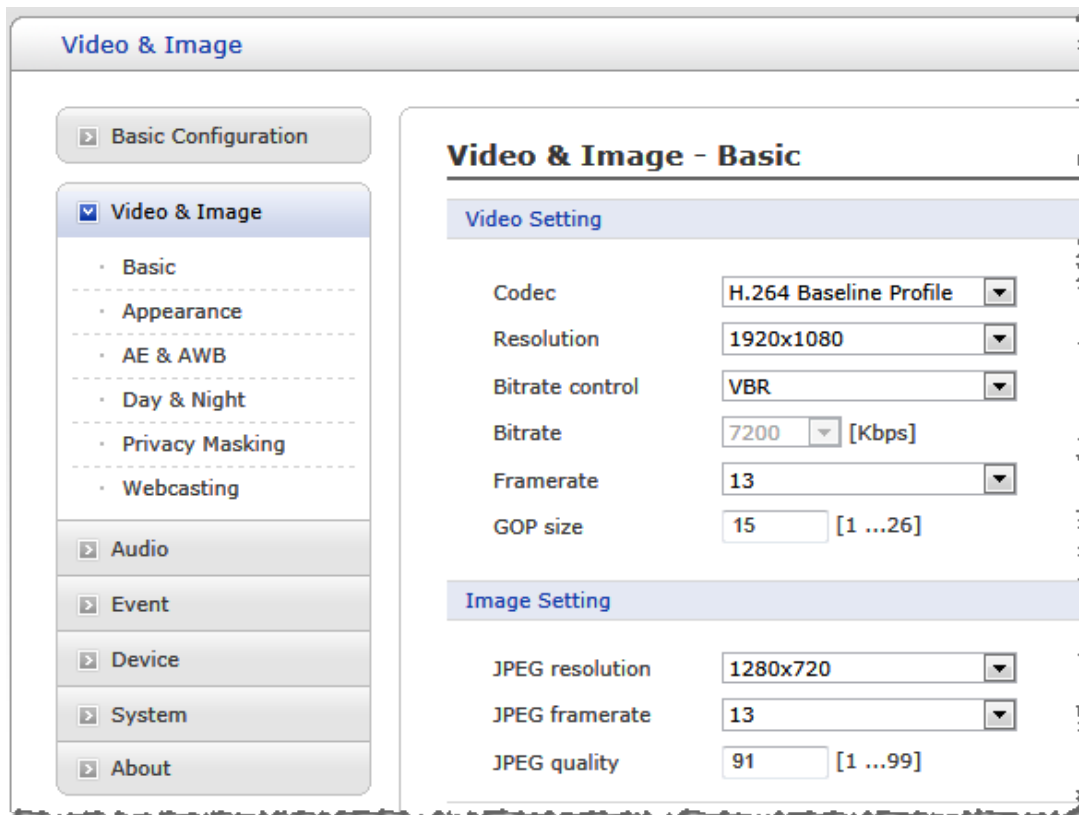
So far, the type HDB-T320 and HDB-M120 could be tested from Hitron. These cameras provides both H.264 and JPEG over RTSP.

The two cameras, however, have different RTSP-URLs and a different number of streams.

The camera HDB T320 has two streams: A H.264 stream and a JPEG stream.

- For the H.264 stream: `rtsp://ip/1/stream1`
- For the Jpeg stream: `rtsp://ip/1/stream2`

The quality of the streams can be set here:



The camera HDB M120 has up to four streams. Three in H.264 and one in JPEG.

- Stream 1 (H.264): `rtsp://ip/ch1/stream0`
- Stream 2 (Jpeg): `rtsp://ip/ch1/stream1`

IP-CAMERA PLUGINS

- Stream 3 (H.264): `rtsp://ip/ch1/stream2`
- Stream 4 (H.264): `rtsp://ip/ch1/stream3`

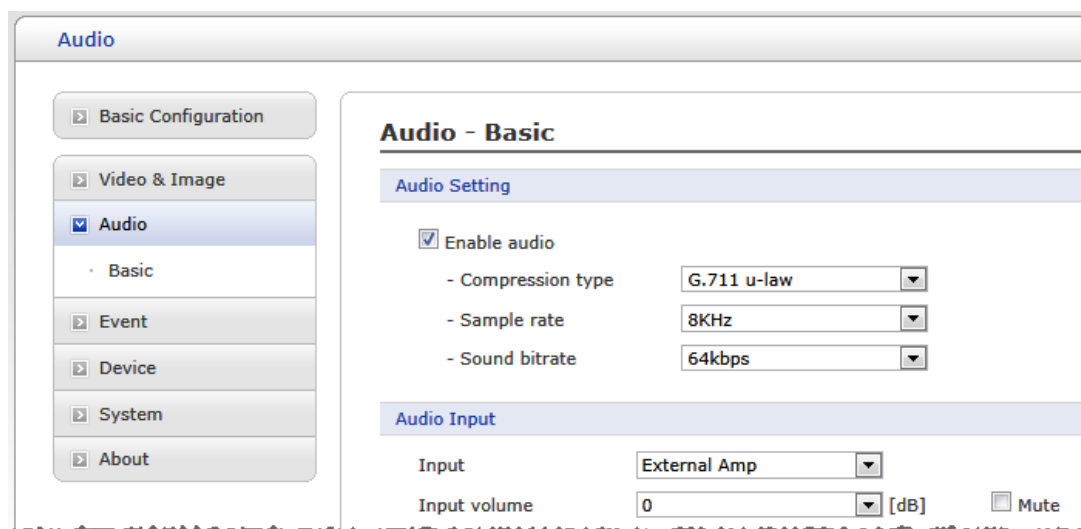
The quality of the streams can be set here:

The screenshot shows a web-based configuration interface for an IP camera. The main window is titled "Video & Image". On the left, there is a sidebar menu with the following items: "Basic Configuration", "Live View", "Video & Image" (which is selected and expanded to show "Image", "Stream1", "Stream2", "Stream3", "Stream4", and "Webcasting"), "Audio", "Event", "Device", "System", and "About". The main content area is titled "Stream 1" and contains "H.264 Setting" options:

Profile	Baseline	▼
Resolution	1280x720	▼
Bitrate control	CBR	▼
Bitrate	4000	▼ kbps
Quality	Middle	▼
Frame rate	30	▼
GOP structure	IP	▼
GOP size	60	[1 ...60]

At the bottom right of the configuration area, there are two buttons: "Save" and "Reset".

Audio functionality is available. Enable the codec G.711 for this purpose:



i **Login Data**
The default setting is: Username admin and Password admin.

The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

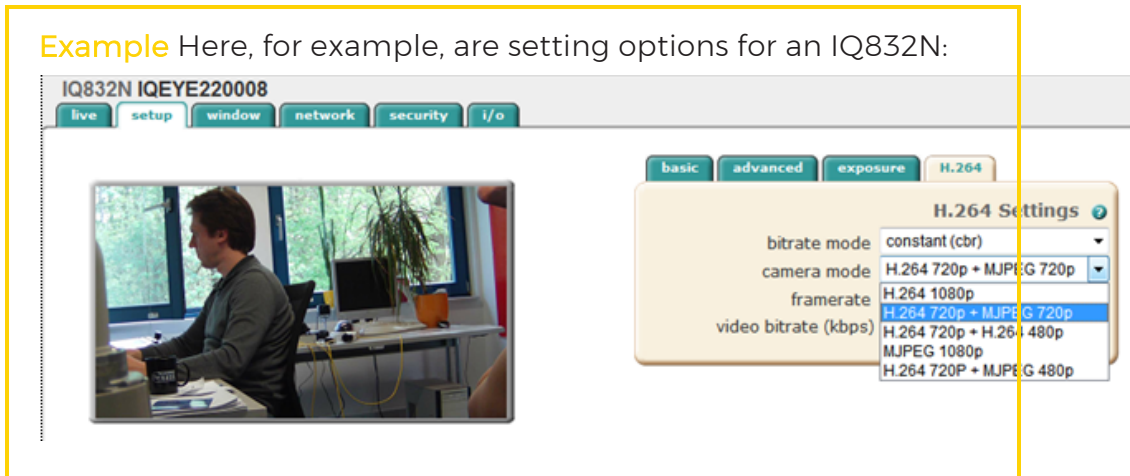
For multicast, the "Use Camera Settings" check box must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by Hitron.

IQinVision

Some cameras do not support streaming over TCP in RTSP mode. This includes IQA22SI (Alliance). These cameras cannot be operated with the plugin.

With this plugin, only cameras that enable RTSP over TCP can be operated. This includes the IQ73xx, IQ83xx and IQD3xx models. Depending on the operating mode, these cameras can make dual streaming possible.

Example Here, for example, are setting options for an IQ832N:



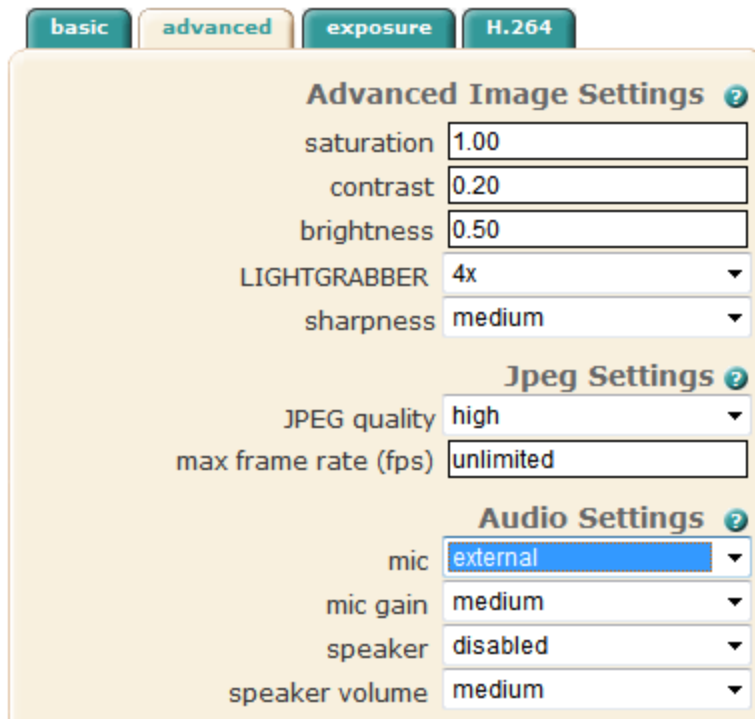
If the high-resolution stream is an H.264 stream, it is opened with `rtsp://ip/rtsp/now.mp4`.

If the second stream is also an H.264 stream (one at 720P the other at 480P), then the first stream is opened as specified above and the second stream is opened with `rtsp://ip/rtsp/now.mp4?res=low`.

If the second or even the main stream is an MJPEG stream, it is opened with `rtsp://ip/now.jpg`.

i Login Data
The default setting is: Username root and Password system.

Some cameras also support audio. Once the audio function is activated, it is possible to use the audio data in GSCServer.



The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

For multicast, the **Use Camera Settings** check box must be activated and the multicast-specific settings must be specified via the web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by IQinVision.

The image shows a configuration window for a camera with two tabs: 'basic' and 'advanced'. The 'advanced' tab is selected. The window is titled 'Network' and contains the following settings:

nameserver	
domain name	(none)
HTTP port	80
HTTPS port	443
RTSP port	554
bandwidth limit (kbits/sec)	unlimited

Below the Network section is a 'Multicast' section with the following settings:

video IP	239.192.0.8
video port	55000
audio IP	239.192.128.8
audio port	56000

JVC

The camera series VN-Hxxx from JVC supports video streaming of H.264 and JPEG over RTSP. The cameras support up to three streams. The settings of the streams can be found here:

Network Camera VN-H157WP

OK Cancel Keep power to camera at least for 10 seconds after change of settings.

Encode

Encode	<input type="radio"/> Single-Encode JPEG <input checked="" type="radio"/> Multi-Resolution H.264 Baseline <input type="radio"/> Multi-Encode1 JPEG + H.264 Baseline <input type="radio"/> Multi-Encode2 JPEG(1280x960) + MPEG4(640x480)
Aspect Ratio	<input type="radio"/> 16:9 <input checked="" type="radio"/> 4:3
Encoder No.1	H.264 Baseline
Framesize	<input type="radio"/> 1920x1080 <input type="radio"/> 1280x720 <input type="radio"/> 640x360 <input checked="" type="radio"/> 1280x960 <input type="radio"/> 640x480 <input type="radio"/> 320x240
Framerate	<input type="radio"/> 15 fps <input type="radio"/> 10 fps <input type="radio"/> 7.5 fps <input checked="" type="radio"/> 5 fps <input type="radio"/> 3 fps <input type="radio"/> 2 fps <input type="radio"/> 1 fps
Bitrate	CBR 2048 kbps
I Frame Interval	5 Frame
Encoder No.2	H.264 Baseline
Framesize	<input type="radio"/> 1920x1080 <input type="radio"/> 1280x720 <input type="radio"/> 640x360 <input type="radio"/> 1280x960 <input checked="" type="radio"/> 640x480 <input type="radio"/> 320x240
Framerate	<input type="radio"/> 15 fps <input type="radio"/> 10 fps <input type="radio"/> 7.5 fps <input checked="" type="radio"/> 5 fps <input type="radio"/> 3 fps <input type="radio"/> 2 fps <input type="radio"/> 1 fps
Bitrate	CBR 2048 kbps
I Frame Interval	5 Frame
Encoder No.3	<input type="radio"/> H.264 Baseline <input checked="" type="radio"/> OFF
Framesize	<input type="radio"/> 1920x1080 <input type="radio"/> 1280x720 <input type="radio"/> 640x360 <input type="radio"/> 1280x960 <input type="radio"/> 640x480 <input checked="" type="radio"/> 320x240
Framerate	<input type="radio"/> 15 fps <input type="radio"/> 10 fps <input type="radio"/> 7.5 fps <input checked="" type="radio"/> 5 fps <input type="radio"/> 3 fps <input type="radio"/> 2 fps <input type="radio"/> 1 fps
Bitrate	CBR 2048 kbps
I Frame Interval	5 Frame
Monitor Output	<input type="radio"/> ON <input checked="" type="radio"/> OFF

Encoders no. 1 - no. 3 are queried as follows:

- Encoder No.1: `rtsp://ip/PSIA/Streaming/channels/1`
- Encoder No.2: `rtsp://ip/PSIA/Streaming/channels/2`
- Encoder No.3: `rtsp://ip/PSIA/Streaming/channels/3`

i Login Data
The default setting is: Username admin and Password jvc.

Only the transport protocol UDP is supported. TCP or multicast can also be set, however, the camera currently only sends UDP. Nevertheless, pictures can be seen.

Panasonic

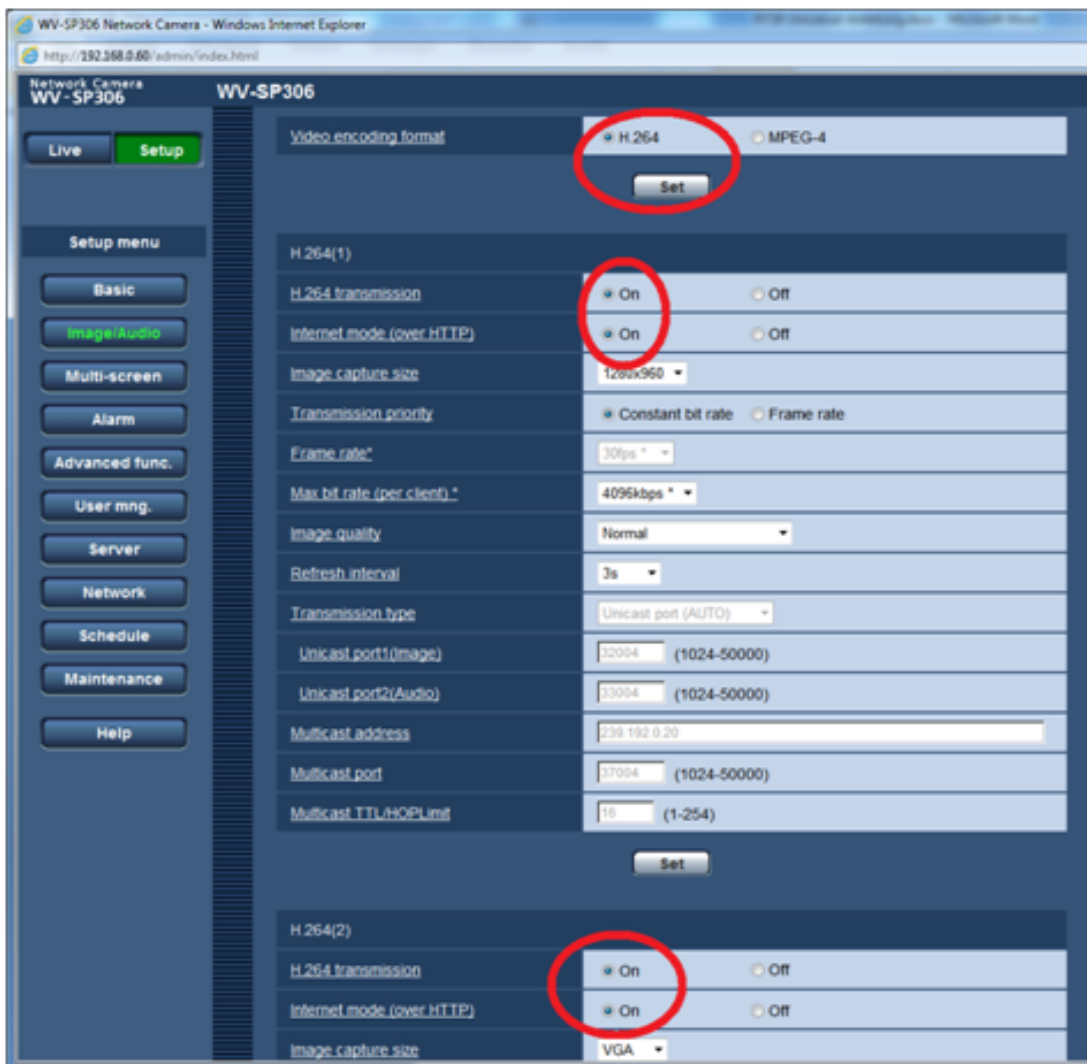
IP-CAMERA PLUGINS

Up until now, we have only tested the WV-SP306 camera. Other types of Panasonic may use other RTSP URLs.

The WV-SP306 camera is dual-stream capable. It can not provide MJPEG over RTSP. It is only possible to stream H.264 via the universal plugin. Also, streaming audio is not possible!

It is important to make the following settings:

- Under **Video encoding format**, **H.264** must be selected.
- In addition, for the two streams H.264(1) and H.264(2), the options **H.264 transmission** and **Internet mode (over http)** must be enabled.



To open the first stream H.264(1) you must use the URL `rtsp://ip/MediaInput/h264/stream_1`.

To open the second stream H.264(2) you must use the URL `rtsp://ip/MediaInput/h264/stream_2`.

i Login Data
The default login details are: Username admin and Password 12345.

Pelco

Pelco Sarix cameras with FW: 1.8.2.1 could be successfully tested.

The settings of the stream can be specified here:

PELCO Sarix™
 by Schneider Electric

Settings: IP Camera - IX30C-AAMGCH4

System Network Imaging A/V Streams

Custom Video Stream Configuration

Primary Stream
H264, 10 IPS, 1280x960, 1,400 kbit/sec Clear

Name: QoS (DSCP) Codepoint:

Compression Standard: Endura Signing:

Resolution:

Image Rate:

Bit Rate (kbit/sec)

I-frame Interval

Image Processing: Advanced Sharpening:

The following RTSP URL must be used: `rtsp://ip/stream1`

i Login Data
The default login details are: Username admin and Password admin.

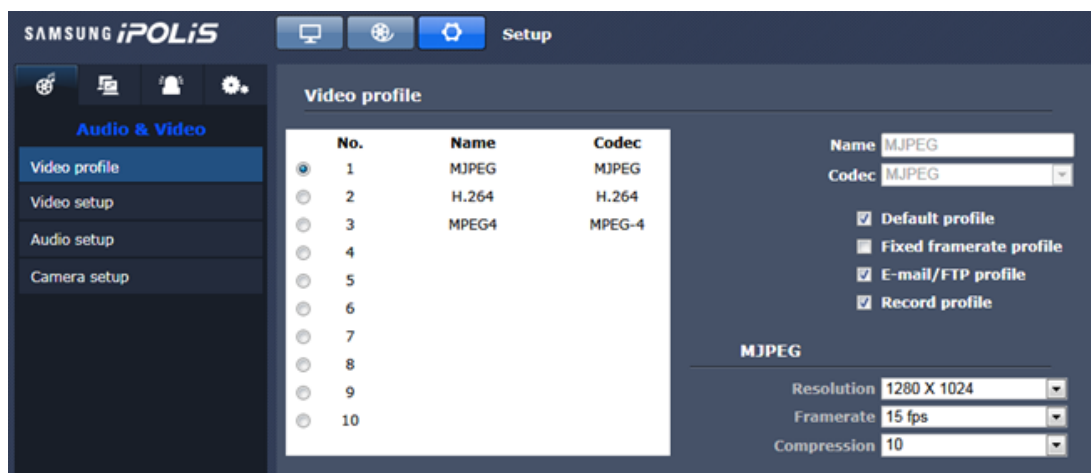
Only TCP and UDP are allowed as transport protocols. For all Pelco cameras, there is no support for multicast.

Samsung

Samsung cameras have very different RTSP-URLs. Up till now, only the SNV-5080 camera could be tested. The camera is capable of dual streaming and can be accessed by multiple profiles.

To do so, you must setup the profiles using the Samsung interface.

- Profile 1 is always JPEG.
- Profile 2 is always H.264.
- Profile 3 is not supported by the plugin. To make possible a second H.264 stream, for instance, this stream must be created using a new profile, for instance number 4.



The screenshot displays the Samsung iPOLiS camera's web interface for configuring video profiles. The interface is titled "SAMSUNG iPOLiS" and "Setup". On the left, a navigation menu includes "Audio & Video" (with sub-items: "Video profile", "Video setup", "Audio setup", "Camera setup") and "Setup". The main content area is titled "Video profile" and features a table of profiles and configuration options.

No.	Name	Codec
<input checked="" type="radio"/> 1	MJPEG	MJPEG
<input type="radio"/> 2	H.264	H.264
<input type="radio"/> 3	MPEG4	MPEG-4
<input type="radio"/> 4		
<input type="radio"/> 5		
<input type="radio"/> 6		
<input type="radio"/> 7		
<input type="radio"/> 8		
<input type="radio"/> 9		
<input type="radio"/> 10		

Configuration options for the selected profile (MJPEG):

- Name: MJPEG
- Codec: MJPEG
- Default profile
- Fixed framerate profile
- E-mail/FTP profile
- Record profile

Specific settings for the MJPEG profile:

- Resolution: 1280 X 1024
- Framerate: 15 fps
- Compression: 10

- i** To ensure smooth operation in the GSCServer, it is absolutely necessary to disable the option Use Timeout in the camera. If this is not done, disconnections will occur continuously.



For Samsung cameras, there are different types of RTSP-URLs. The following are known:

- For the types: SNB-5000, SND-5080, SNV-5080, SNV-3120, SNP-3120V the URL is `rtsp:// IP/profile<no>/media.smp`, where <no> stands for the number of the profile.

Example Here as an example is JPEG: `rtsp://ip/-profile1/media.smp`.

- For types: SNC-B2331/SNC-B5368/SNC-B2335/SNC-B5399/ NB-2000/SND-3080/SNB-3000/SNV-3080 the URL for JPEG is: `rtsp://IP/mjpeg/media.smp` and for H.264: `rtsp://IP/h264/-media.smp`.

- i** **Login Data**
The login data are also dependent on the camera type. Refer to the following table:

Model Name	Default Login ID	Password
SNC-B2315, SNC-B5395, SNC-M300, SNC-C6225, SNC-C7225, SNC-C7478, SNC-C7478C, SNC-B2331, SNC-B5368, SNC-B2335, SNC-B5399.	root	4321
SNB-2000, SND-3080, SNB-3000, SNV-3080,SNB-5000, SND-5080, SNV-5080, SNV-3120, SNP-3120V	admin	4321

- i** **For Samsung cameras, it may take a long time to switch to the camera, which is due to the performance of the camera. After the stream is opened, up to 3 seconds may pass before the first image arrives at the GSCServer.**

Samsung cameras also support audio. The User Admin always has the right to stream audio. All other users must be assigned this right. The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

For multicast, the **Use Camera Settings** check box must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by Samsung.

Sanyo

For Sanyo there are three different camera types that are supported.

- i** **Login Data**
All types have the same login information: admin for user-name and password.

VCC-HD4000

This type supports only H.264 over RTSP. JPEG over RTSP is not possible. In addition, this camera can only supply one stream. Therefore, dual-stream mode is not possible.

Firmware version 1.06 or higher must be installed. Specify the quality settings using the Sanyo interface.

MODE	CODEC / STREAMING SETTINGS		HELP
NETWORK	JPEG		
CLOCK	RESOLUTION	1280x720	
CODEC/STREAMING	PICTURE QUALITY	ENHANCED	
CAMERA	LIVE FRAME RATE	admin	MAX
ALARM		operator	MAX
RECORD		guest	MAX
E-MAIL	H.264		
TRANSMISSION	RESOLUTION	1280x720	
SECURITY	PICTURE QUALITY	ENHANCED	
TV OUT	FRAME RATE	25 ips	
SCHEDULE	STREAMING		
OPTION	RTSP/RTP	ON	
HELP	PROTOCOL	HTTP	
LIVE	UDP(Unicast)PORT	3939 1025-65535 (4000-5000,10000,10001,38214,AND 49152 ARE NOT AVAILABLE)	
	RTSP PORT	554 554,1025-65535	
	RTP(UDP Unicast)PORT	5002 1026-65534	
	ACCESS NAME	admin	
	MULTICAST SET	ON	
	UDP(Multicast)IP	239 . 136 . 54 . 85	
	UDP(Multicast)PORT	34344 1025-65535 (4000-5000,10000,10001,38214,AND 49152 ARE NOT AVAILABLE)	
	RTP(Multicast)PORT	50002 1026-65534	

The RTSP-URL is composed as follows: `rtsp:// IP/ <ACCESS NAME>`.

The **ACCESS NAME** is **admin** by default and can be changed in the interface, as shown above.

VCC-HD2100P, VCC-HD2300P, VDC-HD3100P and VDC-HD3300P

These cameras are so-called 1-chip models. They can provide JPEG and H.264 over RTSP.

In principle, it is possible with these cameras to stream both streams, one H.264 and one JPEG stream, at the same time, in practice however, the cameras have demonstrated that they are prone to crashing in this mode. Therefore, only use one stream. Dual stream is also not recommended unless you select a low resolution for both JPEG as well as H.264.

Specify the settings using the Sanyo interface. Make sure that under **Protocol** the option **RTP over RTSP** is selected.

IP-CAMERA PLUGINS

ASPECT RATIO		HELP
SETTING ITEMS	SET VALUE	
TV SYSTEM	PAL	
ASPECT RATIO	4:3	

JPEG	
SETTING ITEMS	SET VALUE
RESOLUTION	640x480
PICTURE QUALITY	ENHANCED
LIVE FRAME RATE	
admin	5ips
operator	5ips
guest	5ips

H.264	
SETTING ITEMS	SET VALUE
RESOLUTION	640x480
PRIORITY	QUALITY
PICTURE QUALITY	ENHANCED
FRAME RATE	12.5ips
PROTOCOL	RTP over RTSP

The RTSP-URL is composed as follows: `rtsp://IP/<ACCESS NAME>`.

The **ACCESS NAME** is set using the following interface under Network:

STREAMING(JPEG)	
SETTING ITEMS	SET VALUE
ACCESS NAME	STREAM
STREAM	VideoInput/1/jpeg/1

STREAMING(H.264)	
SETTING ITEMS	SET VALUE
ACCESS NAME	STREAM
STREAM	VideoInput/1/h264/1

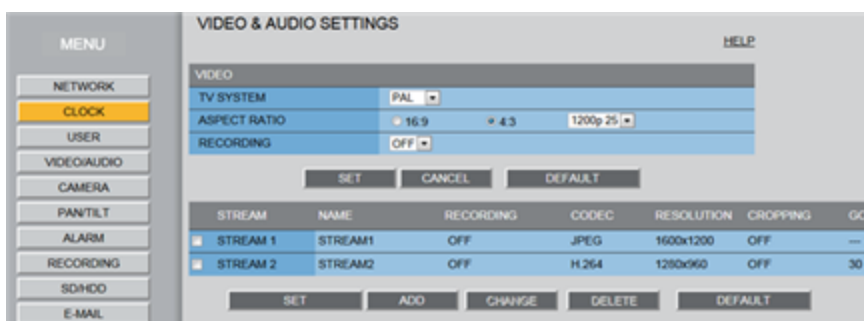
Thus, the following default values result:

- For H.264: `rtsp://ip/VideoInput/1/h264/1`
- For JPEG: `rtsp://ip/VideoInput/1/jpeg/1`

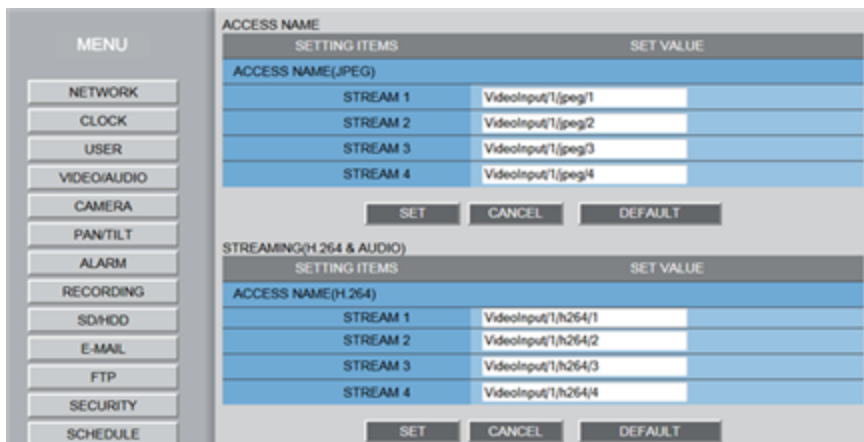
VCC-HD2500P, VDC-HD3500P, VCC-HD4600P, VCC-5400P and VCC-5600P

These cameras are so-called 2-chip models and have the highest performance. It is possible to parameterize up to four different streams. These streams, however, are all dependent on each other and cannot be parameterized freely.

With the plugin it is possible to stream JPEG as well as H.264. The cameras also operate very well in dual-stream mode. To do so, it is necessary to parameterize two streams as shown here. It is also possible to use two H.264 or JPEG streams.



To select the correct RTSP-URL, first check again in the **Network** settings.



As you can see, there are different URLs for H.264 and for JPEG. Therefore, during setup you must decide whether stream 1 will be parameterized as JPEG or H.264.

You must then compose the URL as follows: `rtsp://IP/<ACCESS NAME>`

- For stream 1 in JPEG, this is the resulting URL: `rtsp://ip/VideoInput/1/jpeg/1`

IP-CAMERA PLUGINS

- For H.264 for stream 1, this is the resulting URL: `rtsp://ip/VideoInput/1/h264/1`

The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

For multicast, the **Use Camera Settings** check box must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by Sanyo.

All cameras that have an audio input can also be recorded by GSCServer. Audio must be activated in the cameras.

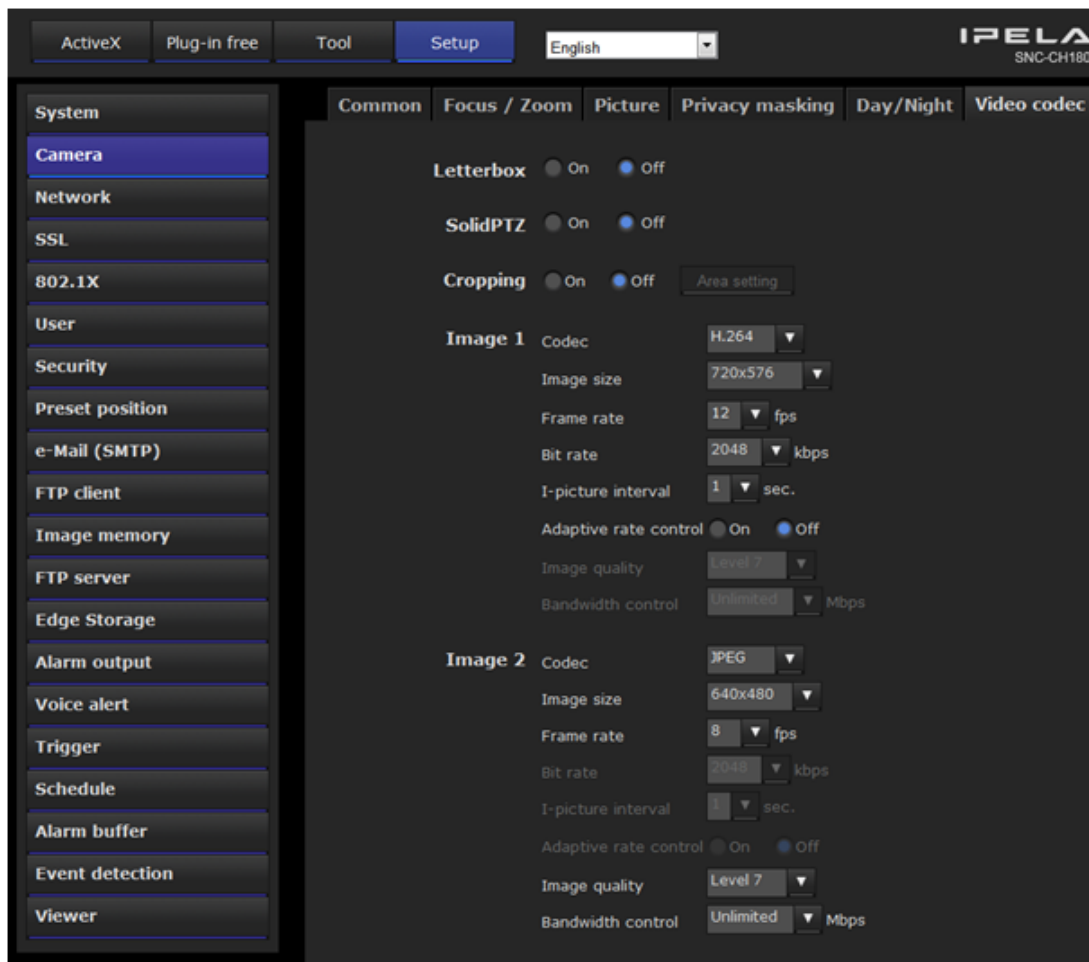
AUDIO	
AUDIO	ON(NETWORK) ▾
MIC SENSITIVITY	0 ▾
FILTER(500Hz)	OFF ▾
OUTPUT LEVEL	0 ▾
MUTE	PAN/TILT OFF ▾
	ZOOM OFF ▾

SET CANCEL DEFAULT

Sony

All 5th generation Sony IP cameras can be operated with the Universal RTSP plugin. The formats JPEG and H.264 incl. audio are supported. The cameras are dual-stream capable.

The settings for the video codec are configured in the menu **Setup > Camera**. The settings under **Image 1** apply to the Main Stream, those under **Image 2** to the Sub Stream.



For audio settings, it is absolutely necessary to select the format G.711 or G.726. In addition, the Audio codec must be set to On .

i Login Data
The default login details are: Username admin and Password admin.

To open the mainstream, use this RTSP URL: `rtsp://ip/media/video1`.

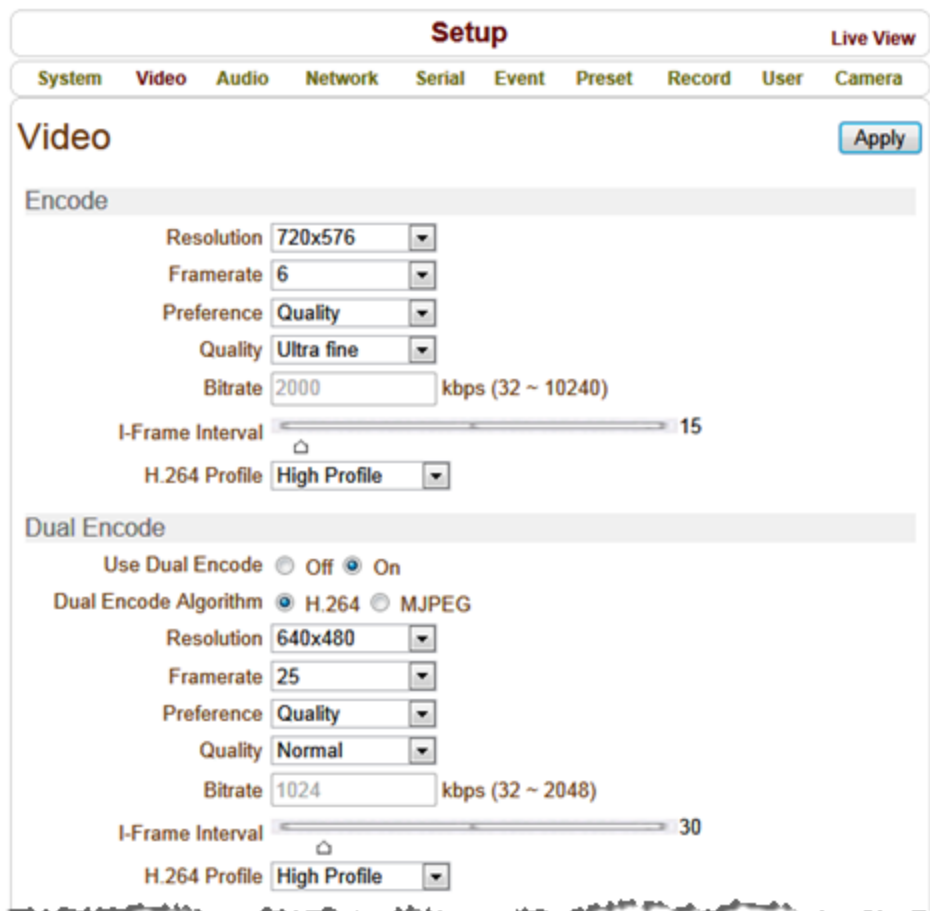
To open the substream, use this RTSP URL: `rtsp://ip/media/video2`.

The transport protocols TCP, UDP and multicast are supported. All three use the same URL. For multicast, the **Use Camera Settings** check box must be deactivated and the multicast-specific settings must be specified via the Universal RTSP plugin.

Truen

From the company Truen, the TCS-400 and TCAM-5320 devices were tested. Both devices deliver H.264 and JPEG over RTSP and are dual-stream capable. You can also transmit audio.

The settings for the video codec are made in the menu **Setup > Video**. The settings under **Encode** apply to the Main Stream, those under **Dual Encode** to the Sub Stream.



Setup Live View

System **Video** Audio Network Serial Event Preset Record User Camera

Video

Apply

For audio settings, it is absolutely necessary to select the format G.711. In addition, the mode **Tx-only** or **Tx & Rx** must be selected so that the camera provides audio data.

The screenshot shows the 'Setup' interface for an IP camera, specifically the 'Audio' tab. The interface is titled 'Setup' and has a 'Live View' button in the top right corner. Below the title bar, there are several tabs: System, Video, Audio (selected), Network, Serial, Event, Preset, Record, User, and Camera. The 'Audio' tab is active, and it contains the following settings:

- Algorithm:** A dropdown menu showing 'Algorithm' with radio buttons for 'G.711' (selected) and 'AAC'.
- Mode:** A dropdown menu showing 'Mode' with 'Tx & Rx' selected.
- Input Gain:** A slider control showing 'Input Gain' with a value of 25.

An 'Apply' button is located in the top right corner of the 'Audio' tab.

i **Login Data**
The default login details are: Username admin and Password 1234.

To open the mainstream, use this RTSP URL: `rtsp://ip/video1+audio1`.

To open the substream, use this RTSP URL: `rtsp://ip/video1s+audio1`.

If the device is a multi-channel video server, you must specify the corresponding video channel.

It should be noted that the same audio input is always used.

Example

```
rtsp://ip/video1+audio1 for the first MainStream
rtsp://ip/video1s+audio1 for the first SubStream
rtsp://ip/video2+audio1 for the second MainStream
rtsp://ip/video2s+audio1 for the second SubStream
rtsp://ip/video3+audio1 for the third MainStream
rtsp://ip/video3s+audio1 for the third SubStream
rtsp://ip/video4+audio1 for the fourth MainStream
rtsp://ip/video4s+audio1 for the fourth SubStream
```

IP-CAMERA PLUGINS

The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

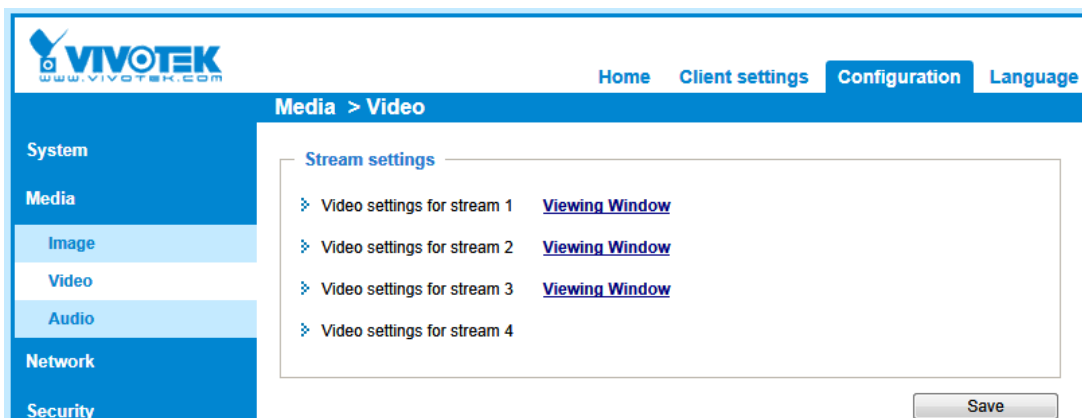
For multicast, the **Use Camera Settings** check box must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by Truen.

Multicast

Multicast IP (224.0.0.0 ~ 239.255.255.255)

VIVOTEK

The stream settings are made at the location shown:



The camera is able to deliver up to four different streams. Thus, it is also possible to operate it as a dual-stream camera.

The transport protocols TCP, UDP and multicast are supported. All three use the same URL.

For multicast, the **Use Camera Settings** check box must be activated and the multicast-specific settings must be specified via the Web interface of the camera. Specification of the multicast parameters via the Universal RTSP plugin is not allowed by Vivotek.

The screenshot shows the Vivotek web interface for configuring RTSP streaming. The navigation menu includes System, Media, Network, Security, PTZ, Event, Applications, Recording, and Local storage. The 'Network' section is expanded to show 'Streaming protocols'. The 'RTSP streaming' tab is active, displaying the following settings:

Setting	Value
Authentication:	disable
Access name for stream 1:	live.sdp
Access name for stream 2:	live2.sdp
Access name for stream 3:	live3.sdp
Access name for stream 4:	live4.sdp
Access name for stream 5:	liveany.sdp
RTSP port:	554
RTP port for video:	5556
RTCP port for video:	5557
RTP port for audio:	5558
RTCP port for audio:	5559
<input type="checkbox"/> Always multicast	
Multicast group address:	239.128.1.99
Multicast video port:	5560
Multicast RTCP video port:	5561
Multicast audio port:	5562
Multicast RTCP audio port:	5563
Multicast TTL [1~255]:	15

The following RTSP request must be used:

Example

For stream 1: `rtsp://ip/live.sdp`

For stream 2: `rtsp://ip/live2.sdp`

For stream 3: `rtsp://ip/live3.sdp`

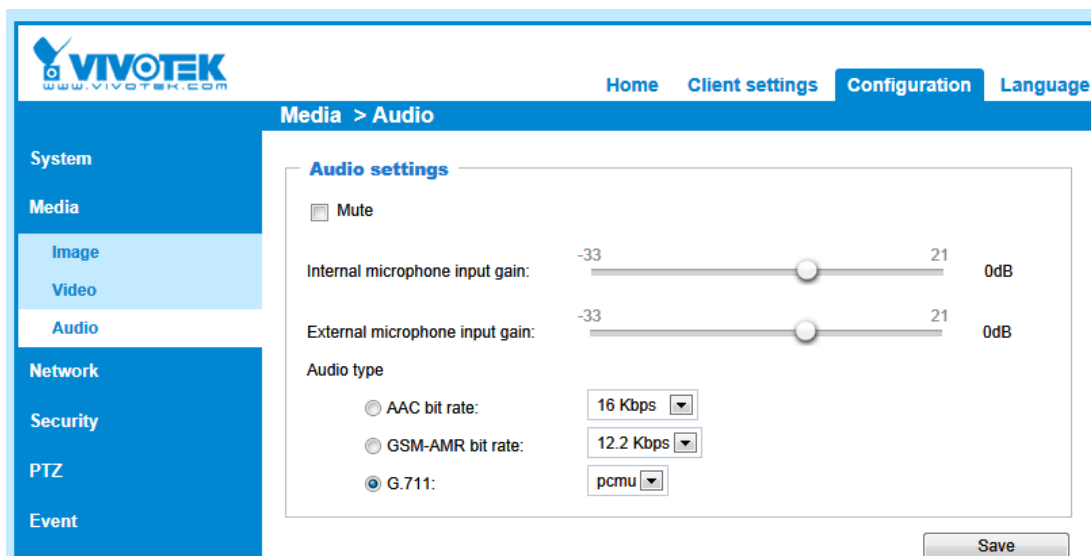
For stream 4: `rtsp://ip/live4.sdp`



Login Data

By default, the cameras have no confirmation prompt. The main user is root with no password, which is the same as no user management.

Audio is also supported. It is only necessary to set the audio codec to **G.711**. The subcategories (**pcmu** or **pcma**) can be freely selected.



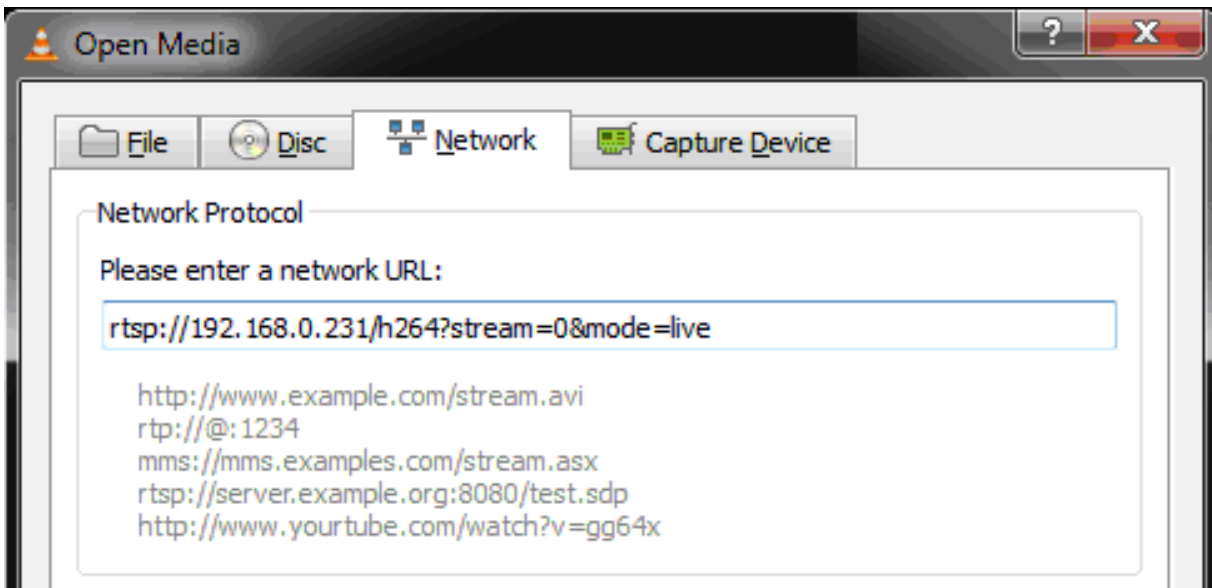
Troubleshooting

Message "Waiting for Images" and Blue Screen

If only a blue screen appears, then typically **Sync Lost** is also reported at the same time. In most cases, the IP address is invalid, for instance, or the RTSP-URL is not accepted by the camera.

To ensure that a camera can understand an RTSP-URL at all, you should use the free software VLC media player. The tool can be found at <http://www.video-lan.org/>.

After the installation, start the VLC Player and open the following dialog using **Media** and open **Network** stream:



After entering the RTSP-URL, press **Play**. If you still do not see an image here after entering a username and password (if prompted), then playback in the GSCServer is not possible. In this case, check the settings of the camera, the network and the IP address.

Message "Authorization failed!"

If a screen appears with the message **Authorization failed!** this means that there was a problem with the user login information. Double check the entries under **Username** and **Password** in the RTSP plugin.

Authorization failed!
Check username and password for this IP-Camera.

Der Zugriff wurde verweigert.
Bitte überprüfen Sie Benutzernamen und Passwort für diese IP-Camera.

Message "404 File not found!"

This message indicates that the camera cannot currently provide an RTSP stream. Here is an example of an error message from a Basler BIP2. The stream was set in the camera to JPEG. However, Basler does not support JPEG over RTSP. For Basler models, only H.264 can be streamed over RTSP.

```
RTSP/1.0 404 File Not Found, Or In Incorrect  
Format  
CSeq: 32  
Date: Thu, Jan 01 1970 16:51:37 GMT
```

Otherwise, try to get a connection working again using the VLC Player.

Message "200 OK"

Even though this response of the camera indicates "OK", there appears to be a problem with the RTSP-URL. Check the RTSP-URL using VLC Player.

```
RTSP/1.0 200 OK  
CSeq: 16  
Date: Fri, 15 Apr 2011 10:07:41 GMT
```

Message "Unsupported video format"

If the following screen appears, the video format is unfortunately not supported by the GSCServer. In this case, you will be able to see an image in VLC Player, but not in GSCView.

```
Unsupported video format.  
Please change settings within camera to H.264 or  
MJPEG.
```

```
Dieses Videoformat wird nicht unterstützt.  
Bitte ändern Sie die Einstellung der Kamera in  
H.264 oder MJPEG.
```

```
VideoFormat: MP4V-ES 96
```

Here, for instance, a CNB camera was set to MPEG4. The GSCServer cannot process this format, however. The GSCServer can only process JPEG or H.264. Set the camera accordingly in such a case.

Message "Unsupported Transport"

In this case, the camera does not work together with the transport protocols that the GSCServer uses.

```
RTSP/1.0 461 Unsupported Transport  
CSeq: 89  
Date: Thu, Jan 01 1970 00:05:58 GMT
```

In this case, the camera does not support the transport protocol. Some cameras can use only TCP and not UDP, or vice versa. Try one of the other available options.

Message "501 Not Implemented"

This case indicates that the camera does not accept the RTSP-URL. You can try with a different RTSP-URL. This does not necessarily mean that the camera does not support it at all.

```
RTSP/1.0 501 Not Implemented  
CSeq: 108
```

General Failure Message "Sync Lost"

The plugin always reports a loss of the connection with a Sync Lost action. This makes it possible to listen to and respond to this event in the GSCServer. In such a case, check your network again and availability using the VLC Player.

GeViScope/GeViSoft

This chapter contains additional technical information about GeViScope and GeViSoft.

Camera Cycles with MBeg/GCT (GeViSoft)

Camera cycles are camera sequences that are automatically displayed on a selected monitor in a defined order. You can start, stop or continue the sequence or jump to the next or previous camera through the sequence, etc.

The cameras that belong to the camera cycle and the length of the display period are set in GeViSoft Setup.

To be able to utilize all properties of the camera cycles, some settings must first be made on MBeg/GCT:

1. Switch the MBeg/GCT to GCT mode:

```

---- Return to Operation ----
Mode [0..4] ..... MBeg/GCT
Port [0..4] ..... Autom.
Baudrate [0..9] ..... 115200
Partyline [0/1] ..... Yes
-----
| | | ▾10 | ▾4 | ▲4 | ▲10 | | Exit
    
```

2. Activated the advanced camera section:

```

Highest Position Number . 40
Highest Tour Number .... 16
Exit, determined Cam. +/- . Yes
Camera Cycle on Monitor Group
Highest Cycle Number ... 1
-----
| | | ▾10 | ▾4 | ▲4 | ▲10 | | Exit
    
```

Standard Camera Cycles vs. Special Cycles

GeViSoft supports a large number of camera cycles, limited only by the available resources. For each monitor, a special camera cycle can be generated, i.e. the standard camera cycle. MBeg/GCT works in two modes:

Using Standard Cycles

The **Highest Cycle Number** (figure above) is set to 1. In this mode, you can only start the standard cycle. Pressing **Start Cycle** on the MBeg/GCT automatically starts the assigned standard camera cycle.

Using Special Cycles

The **Highest Cycle Number** is set to a different value than 1 (typically the highest assigned camera cycle ID in GeViSoft). In this mode, you do not have access to the standard cycles and must explicitly specify which cycle you wish to start. After pressing **Start Cycle** on the MBeg/GCT, you can enter the desired CycleID.

i Note for compatibility reasons you need a special registry entry on the GiViIO host.

`HKLM\SOFTWARE\Geutebrück-
 \GeViSoft\GeViIO\Settings\MBegGCTSupportsCycles`
Set the key to the DWORD value 1.



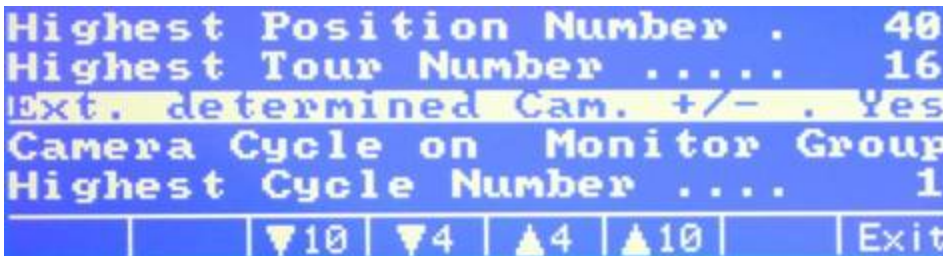
Monitor Group vs. Individual Monitor

MBeg/GCT also supports two different modes for starting camera cycles:

i The first mode is typically used for standard cycles and the second mode for special cycles.

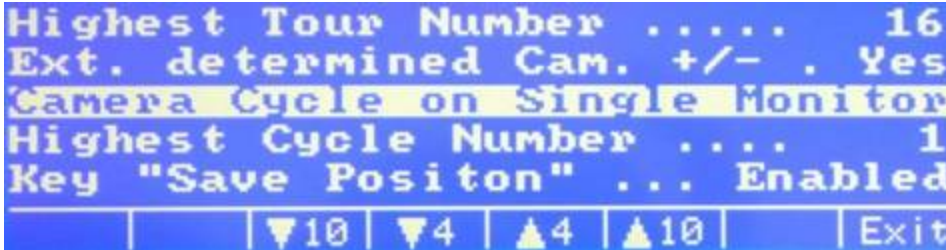
On Monitor Group

Select **Camera Cycle on Monitor Group**. In this mode MBeg/GCT starts camera cycles on all monitors that belong to the monitor group.



On Single Monitor

Select **Camera Cycle on Single Monitor**. In this mode the camera cycle starts only on the selected monitor.



Working with Cycles

Working with cycles is simple: To start a cycle, press **Cycle Start** and enter the CycleID when prompted. To stop, press **Cycle Stop**. To interrupt the cycle, press **Previous Camera** or **Next Camera**. Also use these buttons to navigate through the camera cycle. Press **Cycle Start** to start the cycle again.



C·CURE 9000 (GeViScope)

This section describes the Geutebrück GeViScope Integration with the C·CURE 9000 software (Integration Version 7.3.940.100).

Overview

The GeViScope integration is a C·CURE 9000 integration which allows accessing GeViScope video servers and their media channels. The operator can display live and recorded video footage, configure video tours, send PTZ commands, and trigger alarm events or camera actions. Furthermore, single pictures as well as video sequences can be exported.

Features

The following is a list of major features supported by this integration:

- Playback of live video
- Playback of recorded video
- Simultaneous display of live and recorded video from up to 16 cameras
- Audio support
- Up to four live video camera windows based on events
- Video Export
- PTZ control and presets
- Audio control
- Video views
- Video tours
- Video alarms
- PTZ presets based on events, alarm inputs or video tours

Installation

This topic provides instructions for installing the Geutebrück GeViScope Integration on a C·CURE 9000 server or client system.

Installation Overview

Before installing the C·CURE 9000 GeViScope integration, you must first install the C·CURE 9000 software on your target computer.

Similar to the G·CURE 9000 system, GeViScope Integration has Client and Server components. You must install the client components on every computer that runs C·CURE 9000 client applications, and you must install the server components on the C·CURE 9000 server computer. It is recommended that GeViScope Integration client has at least 4 GB.

i GeViScope C·CURE Server Integration does not support being installed on 64 bit operating systems. The client can run on 32 or 64 bit operating systems.

To install and register the GeViScope Integration on each computer in your C·CURE 9000 system, perform the following steps:

1. Install C·CURE 9000.
2. Close any open applications and disable virus checking software.
3. Perform the pre-installation steps.
 - i Stop the Crossfire servers if C·CURE 9000 is already installed.**
4. Start the GeViScope Integration installation program.
5. When the installation and registration is complete, restart the services.

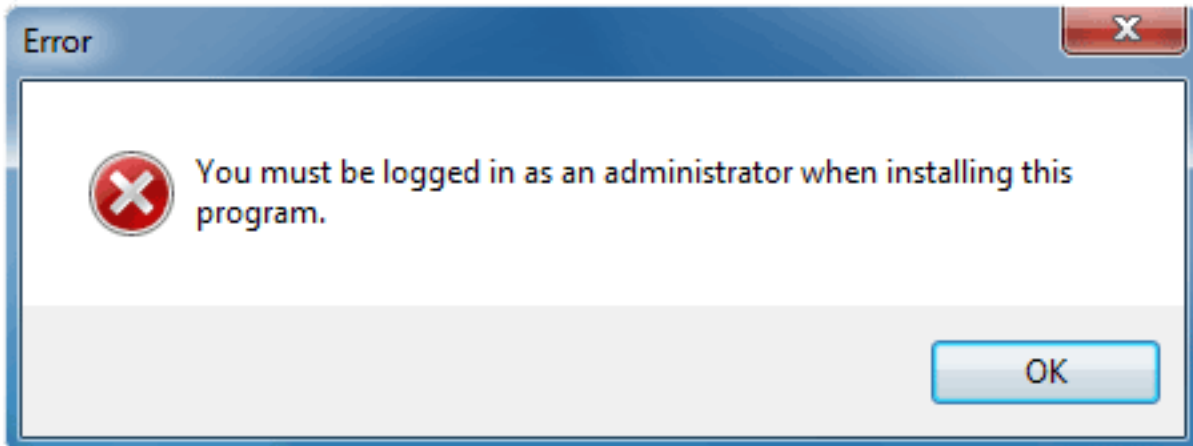
Pre-Installation Steps

You may need to perform some pre-installation steps before you install the C·CURE 9000 Installing GeViScope Integration.

Checking System Privileges

To perform the installation, you must have appropriate Windows permissions. You must be in the local administrators group, or have equivalent privileges. See the Microsoft Operating System documentation or consult your system administrator for more information.

If you do not have sufficient permissions, an error message is displayed.



Installing the GeViScope Integration

You can install the C·CURE 9000 GeViScope Integration software on a local computer either from a local drive or from a shared drive over a network.

Install on a Local Computer:

1. Log into the server or client with Windows administration privileges.
2. Run the `CCureGeViScopeInstaller-7.3.940.100.exe` from the installation kit.
3. Follow the instructions, as described in **Running the Setup Program**.

Install over the Network:

1. Log into the server or client with the appropriate Windows privileges.
2. Copy the installation kit for the C·CURE 9000 GeViScope Integration to a share on another machine.
3. From your system, map a share to the remote share over the network.
4. Run the `CCureGeViScopeInstaller-7.3.940.100.exe` from the installation kit, as described in **Running the Setup Program**.

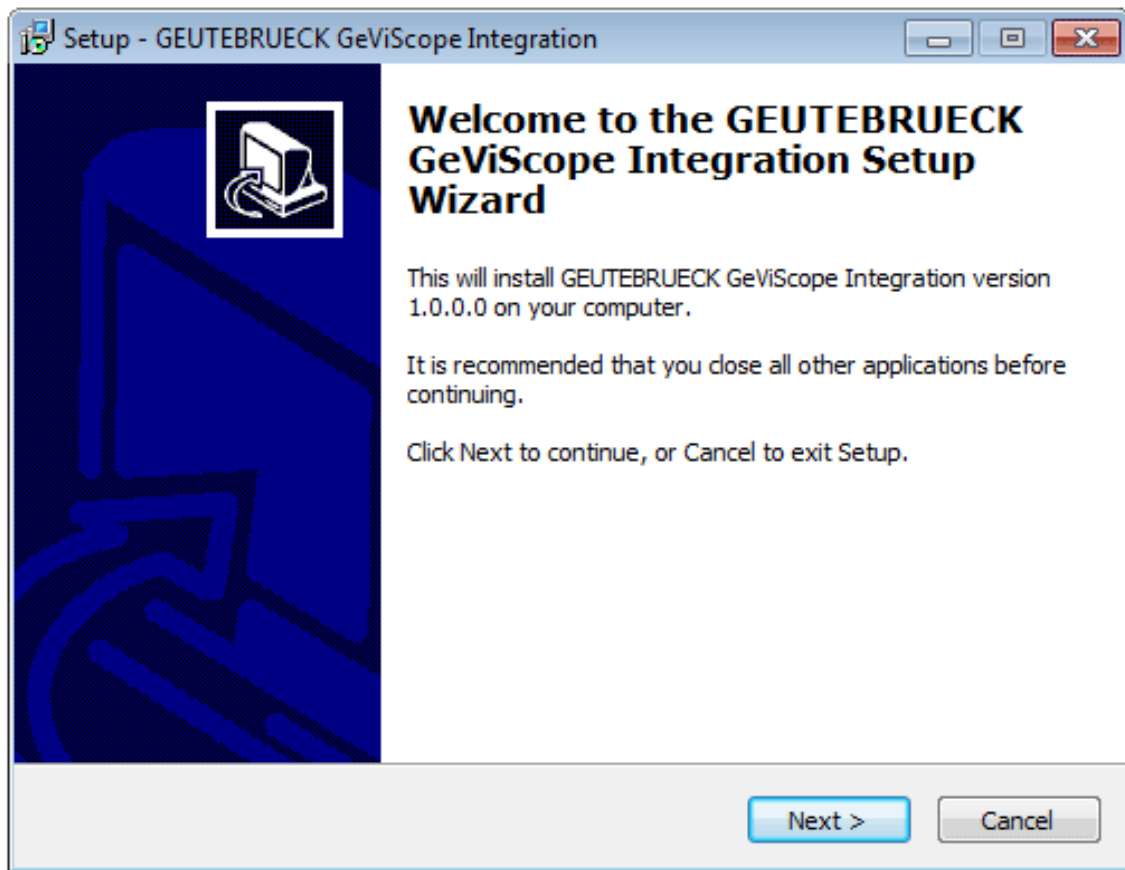
 **For information about shared folders, refer to your Microsoft documentation or consult your system administrator.**

Running the Setup Program

To install the C·CURE 9000 GeViScope Integration software, run the `CCureGeViScopeInstaller-7.3.940.100.exe` from the installation kit.

To run the setup program:

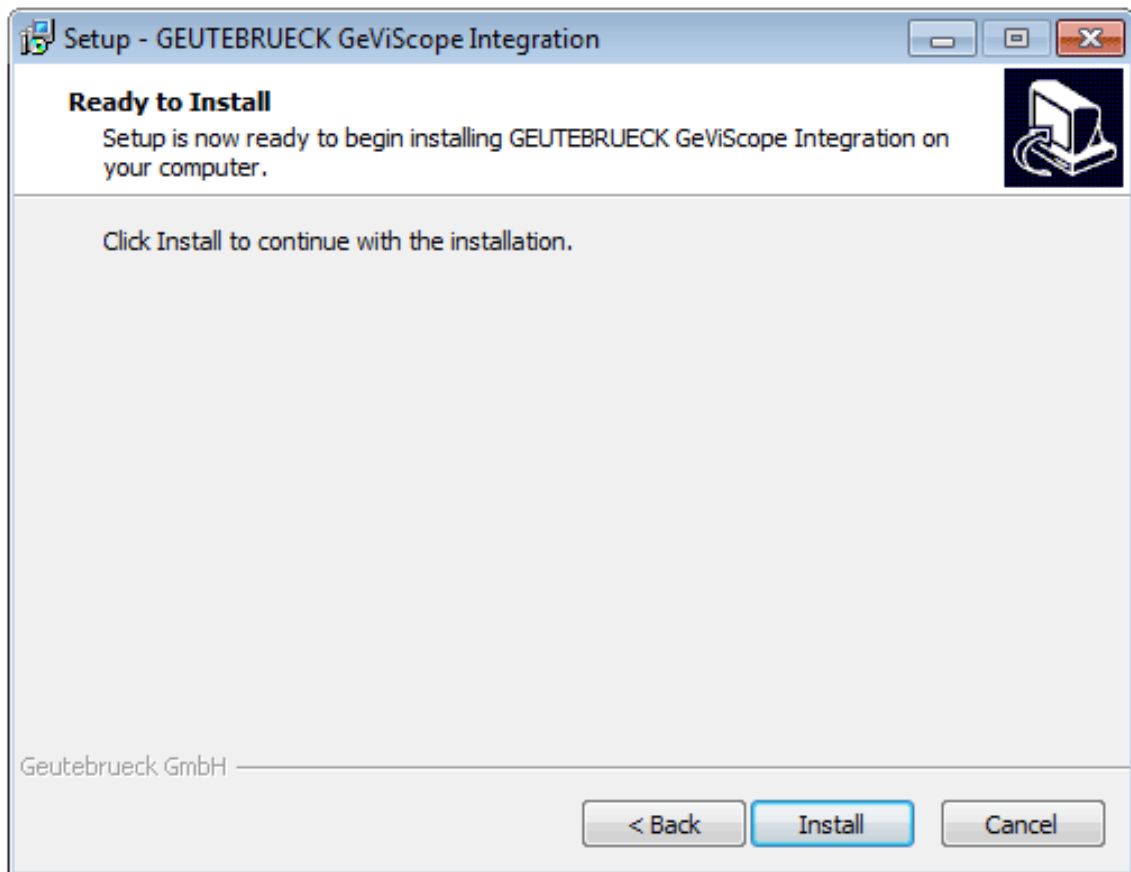
1. Navigate to the installation kit folder.
2. Double-click `CCureGeViScopeInstaller-7.3.940.100.exe`.
3. The setup program checks the system to see if it meets minimum requirements. If minimum requirements are met, a Welcome dialog box opens.



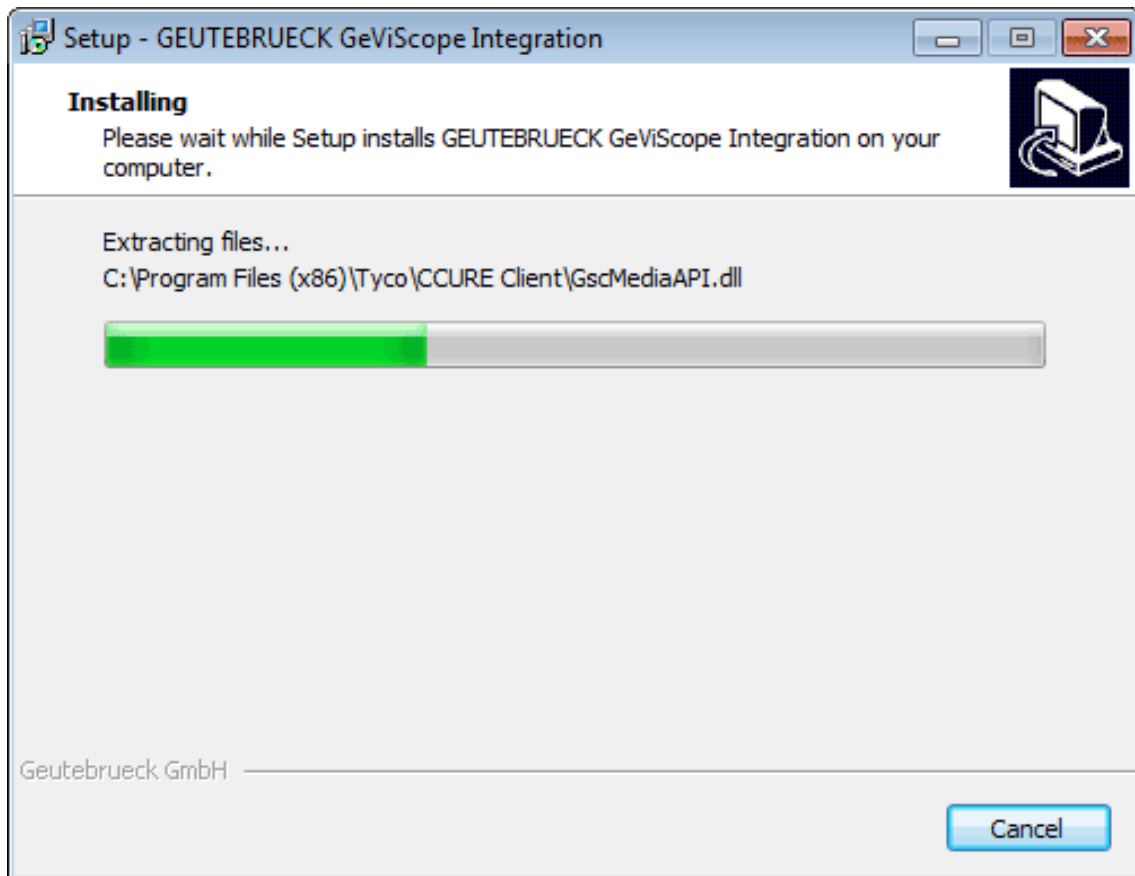
4. Click **Next** to continue with installation. Setup will determine the target directory and the components automatically. It will install client component files to client directory and server components to the server directory.

i **You do not have to browse for a target directory.**

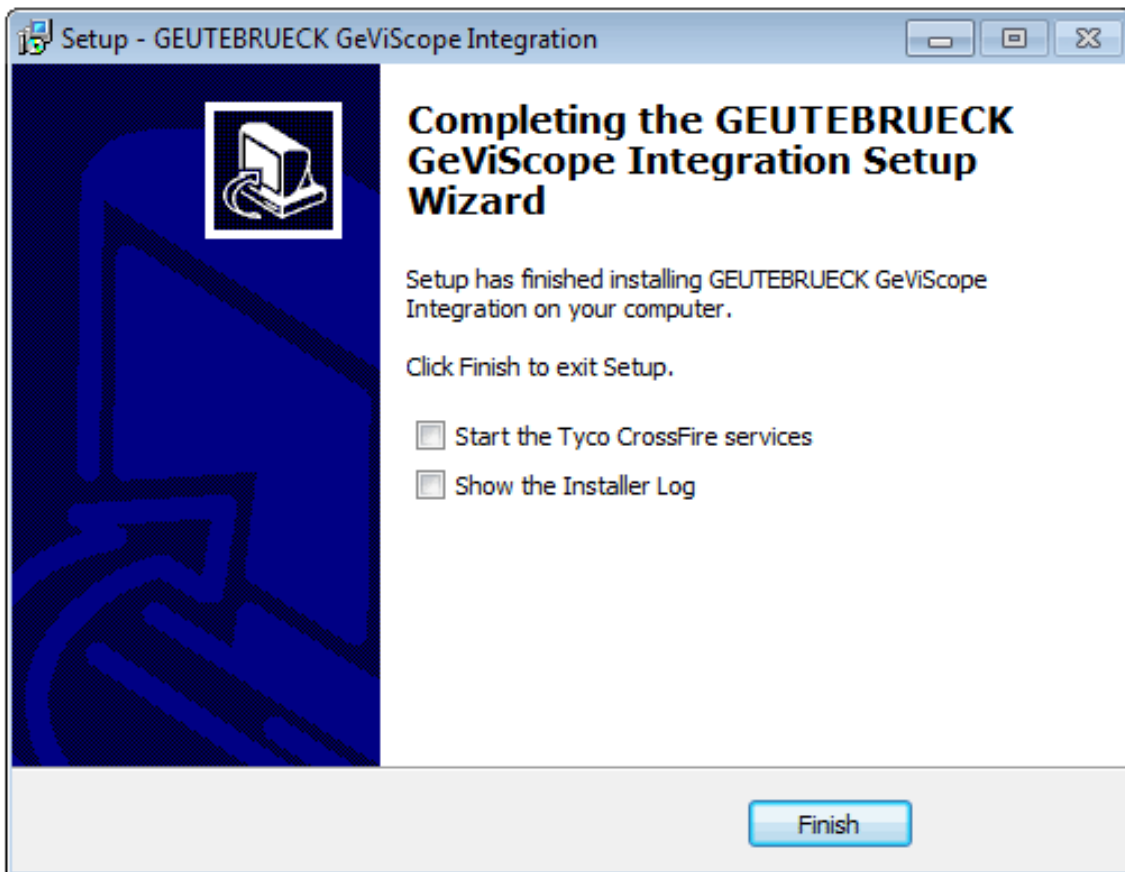
5. After configuration is done by the setup, the **Ready to Install** dialog box will be opened.



6. Click **Install**. The **Installing** Progress dialog box appears.



7. After a moment, the Installation Complete dialog box appears.



8. Click Finish to complete the installation progress.

i **Start the Tyco CrossFire services will only be displayed, if the server component is installed. This is only done on 32 bit operating systems.**

Starting the C-CURE 9000 Services

Before you can configure a GeViScope video server and video camera, you must verify that the C-CURE 9000 Services are running.

1. From the Start Menu, select **Start > All Programs > Software House > Server Configuration**. The C-CURE 9000 Server Management Application opens.
2. Select the **Services** tab.
3. Start the **Services** (CrossFire Framwork Service, CrossFire Server Component Framework Service, and Geutebrueck GeViScope Video Driver Service), if they are not running.

Uninstallation

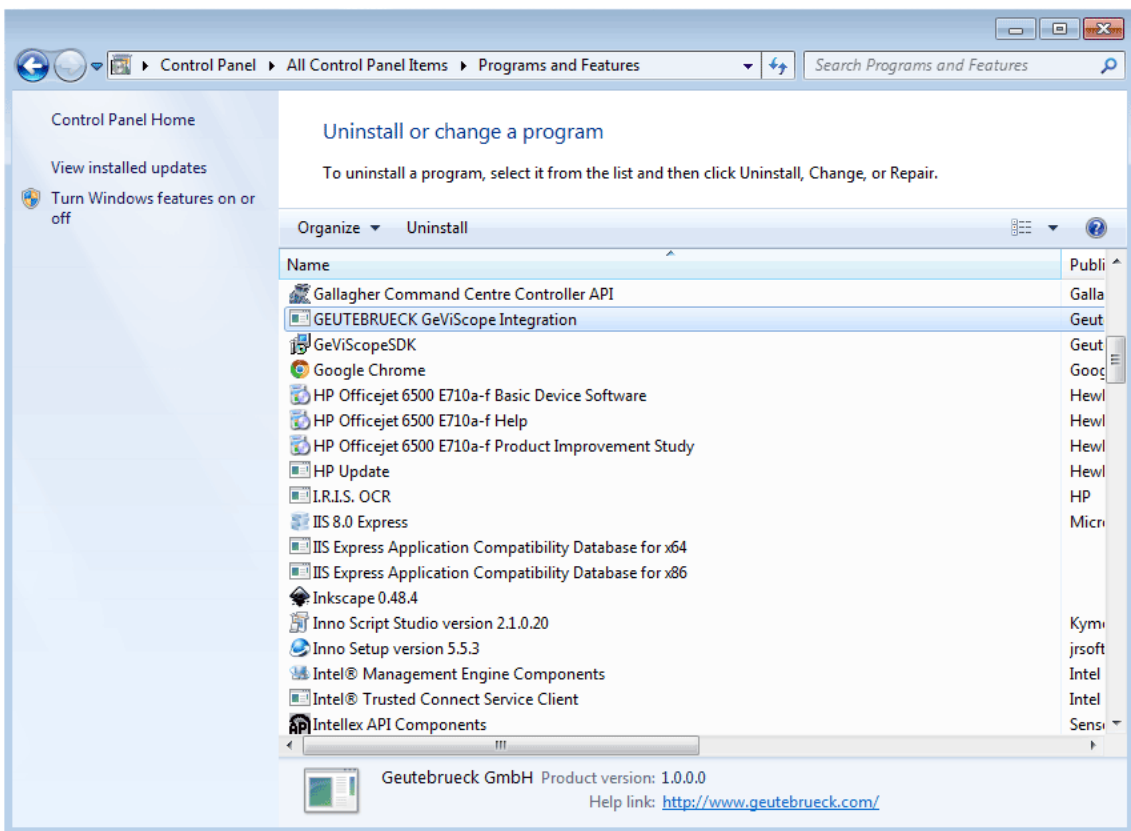
This section describes how to uninstall the GeViScope Integration software from the server and from each client in your security system.

The uninstallation process removes all software components that were installed on the computer by the GeViScope Integration software program.

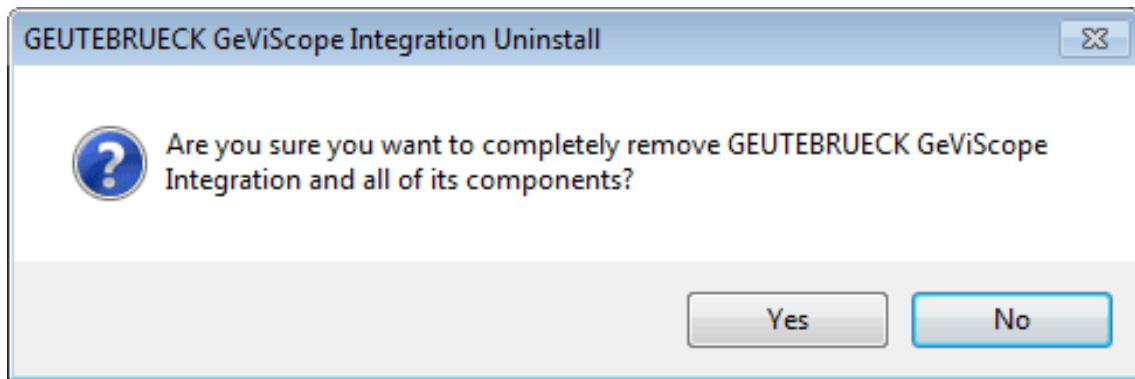
Once the uninstallation process completes, the computer will be in a “clean” state.

To uninstall the GeViScope integration:

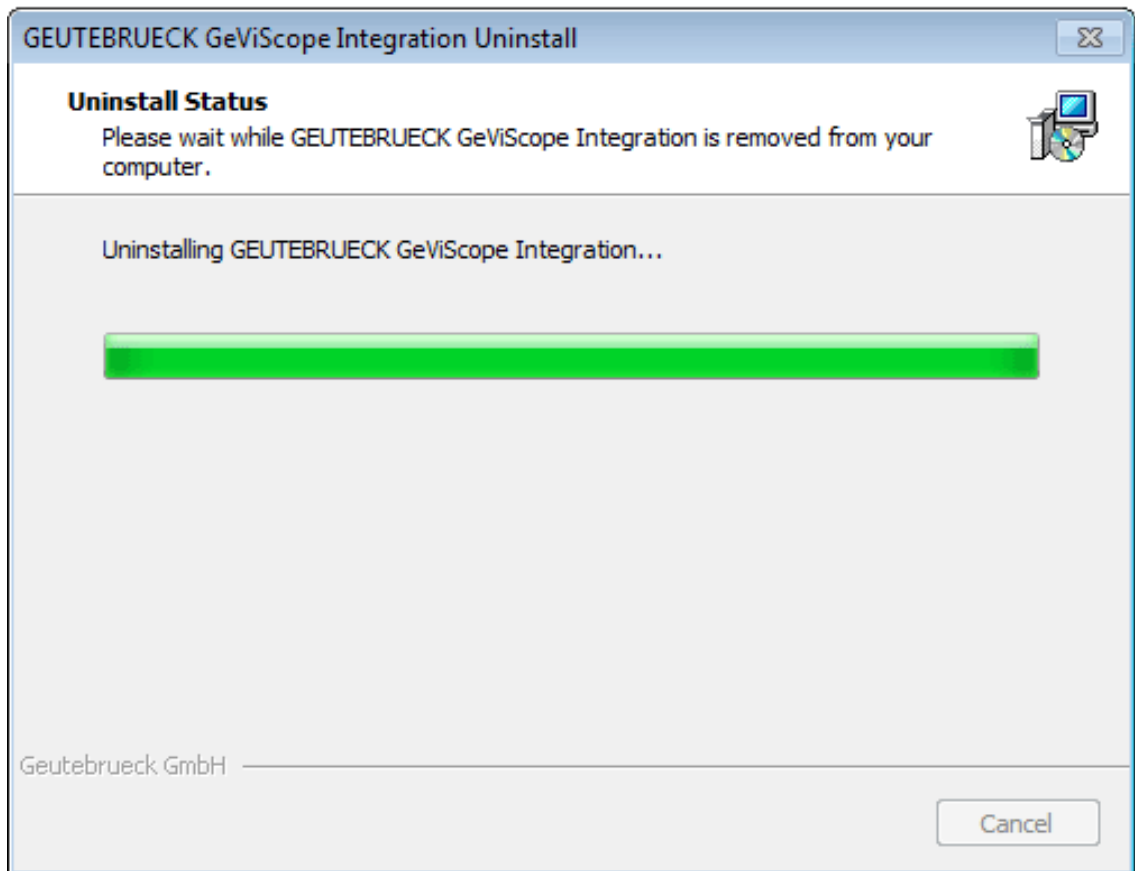
1. On the Windows **Start** menu, select **Settings > Control panel**.
2. Double-click **Add/Remove**. The **Add/Remove Programs** dialog box appears.



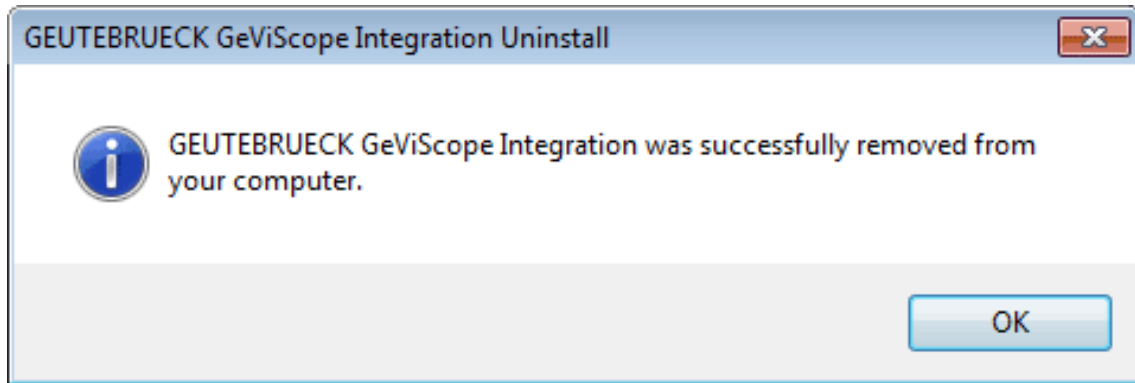
3. Select **GEUTEBRUECK GeViScope Integration** from the list.
4. Click **Uninstall**. The dialog box opens.



5. Click **Yes**, to uninstall GeViScope Integration program or **No** to cancel uninstalation.
6. The **Uninstall Status** dialog box appears.



7. After a few moments, the Uninstallation Complete message box appears.



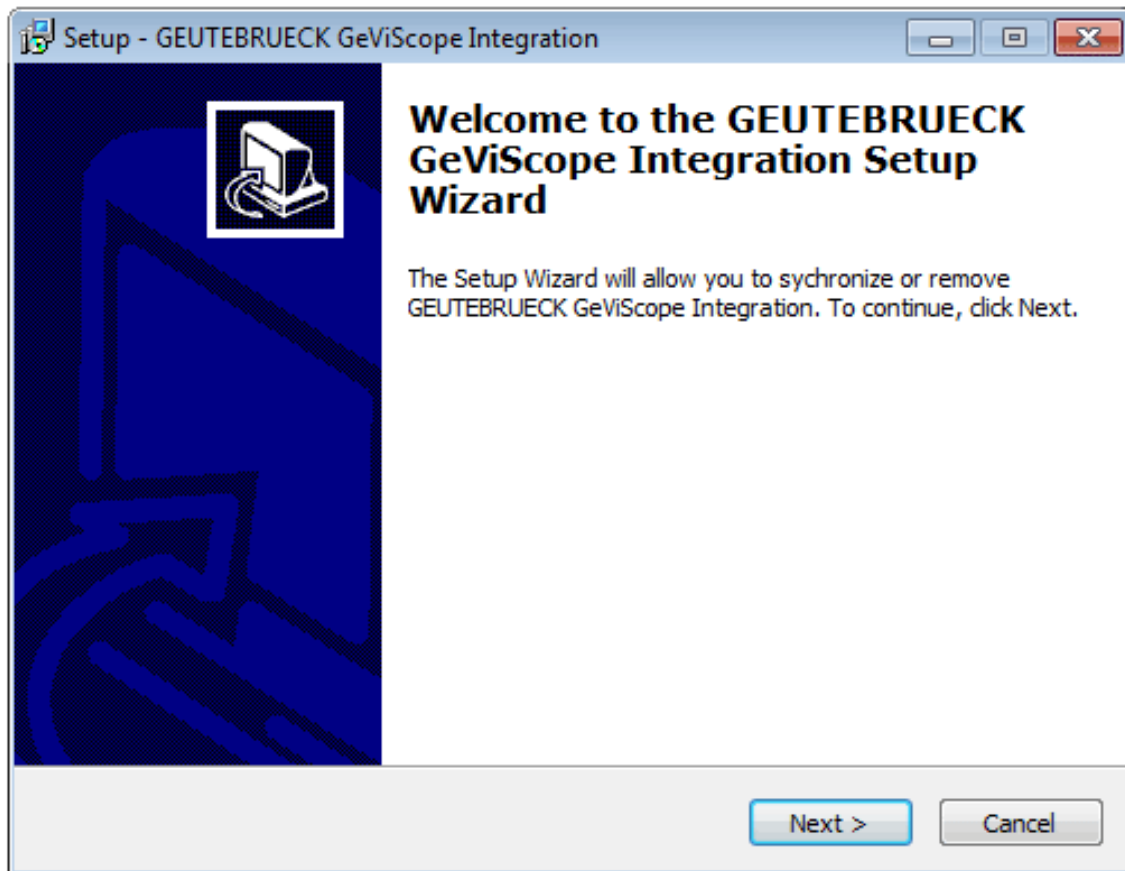
8. Click **OK** to terminate the progress.

Maintenance

In case of a change in C-CURE 9000 configuration the Integrators program has to be adjusted.

Run the Maintenance Installer

1. Navigate to the installation kit folder.
2. Double-click `CCureGeViScopeInstaller-7.3.940.100.exe`.
3. The Setup program checks the system to see if it meets the installed version of the GeViScope integration. If the versions are similar, a Maintenance Welcome dialog box opens.

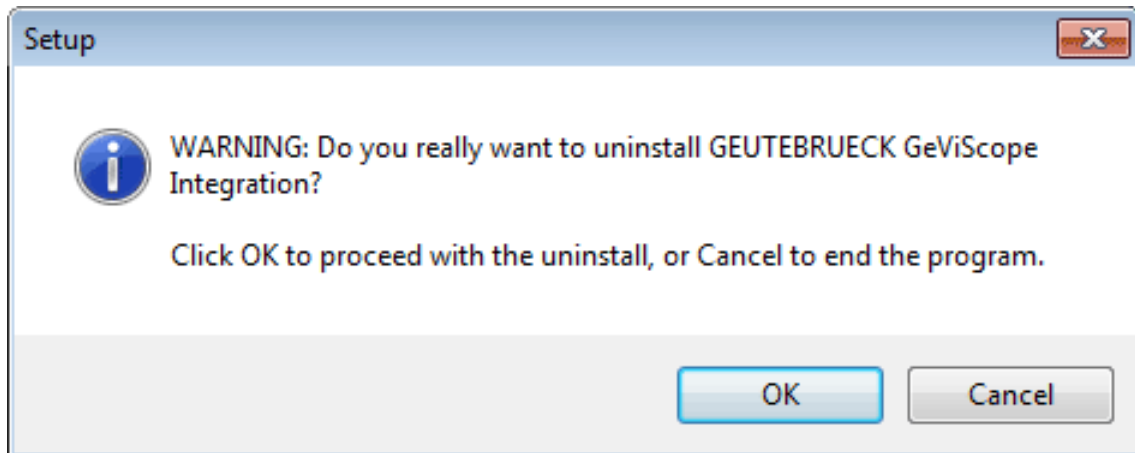


4. Click **Next** to continue with the maintenance. Setup will determine the target directory and the components automatically. It will maintain client component files in the client directory and server components in the server directory.
5. The Program Maintenance dialog box opens. You can either **Remove** or **Synchronize** the GeViScope installation.



Remove the Installation

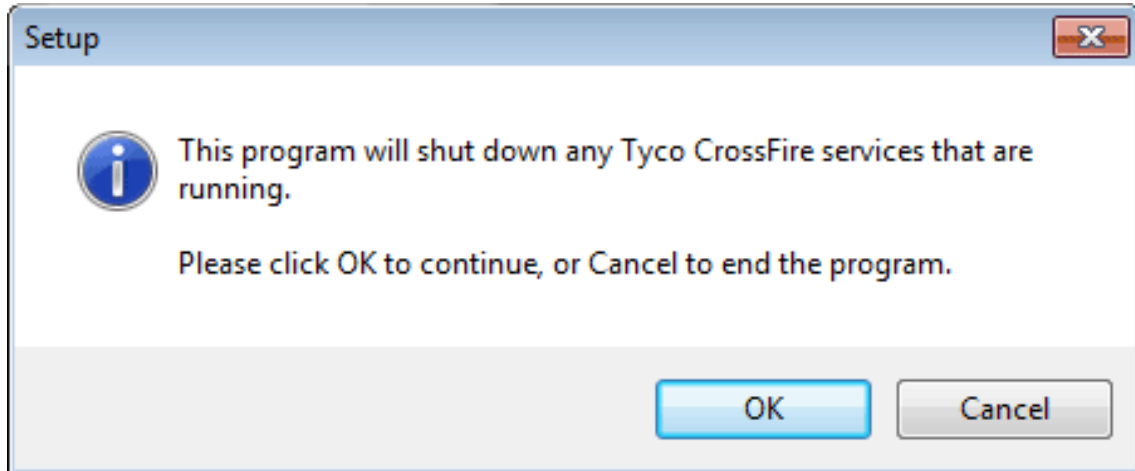
1. Select **Remove** and click **Next** to Remove the GeViScope Integration to uninstall. A warning message appears.



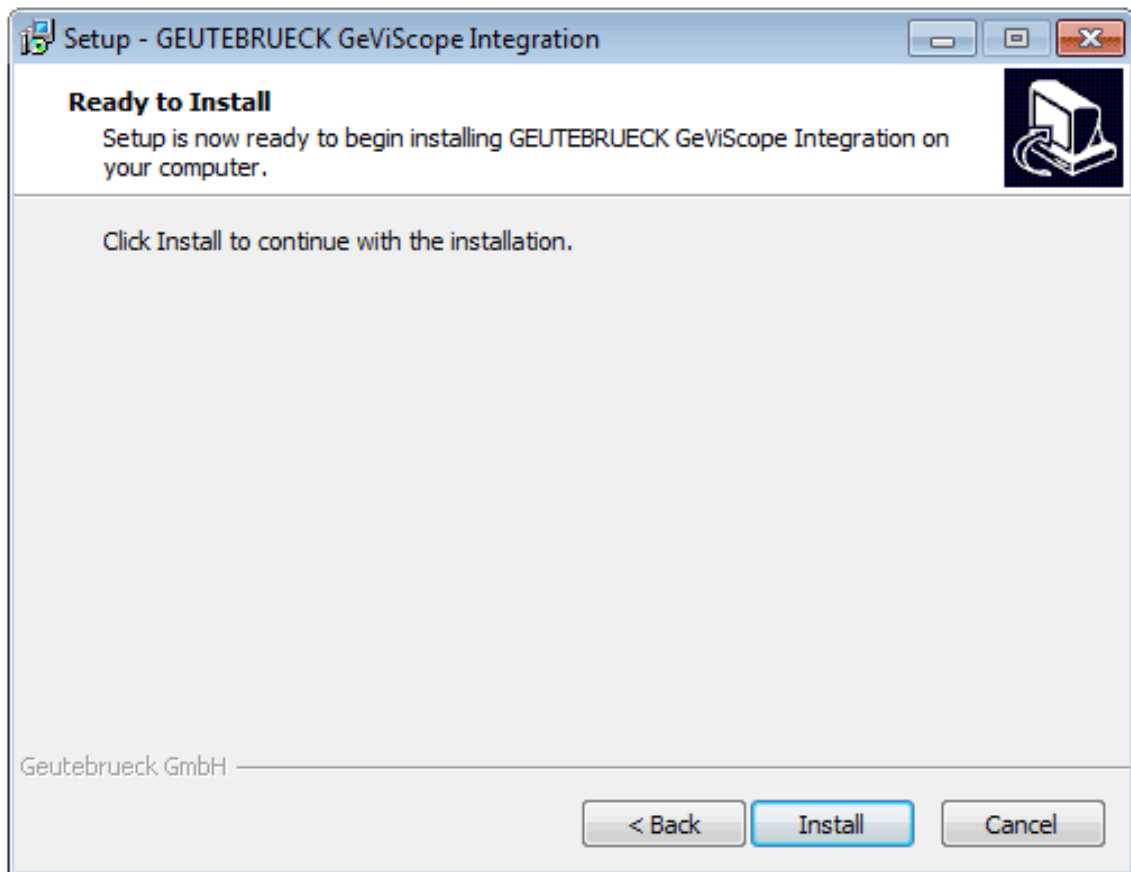
2. Click **OK** to remove the program.

Synchronize the Installation

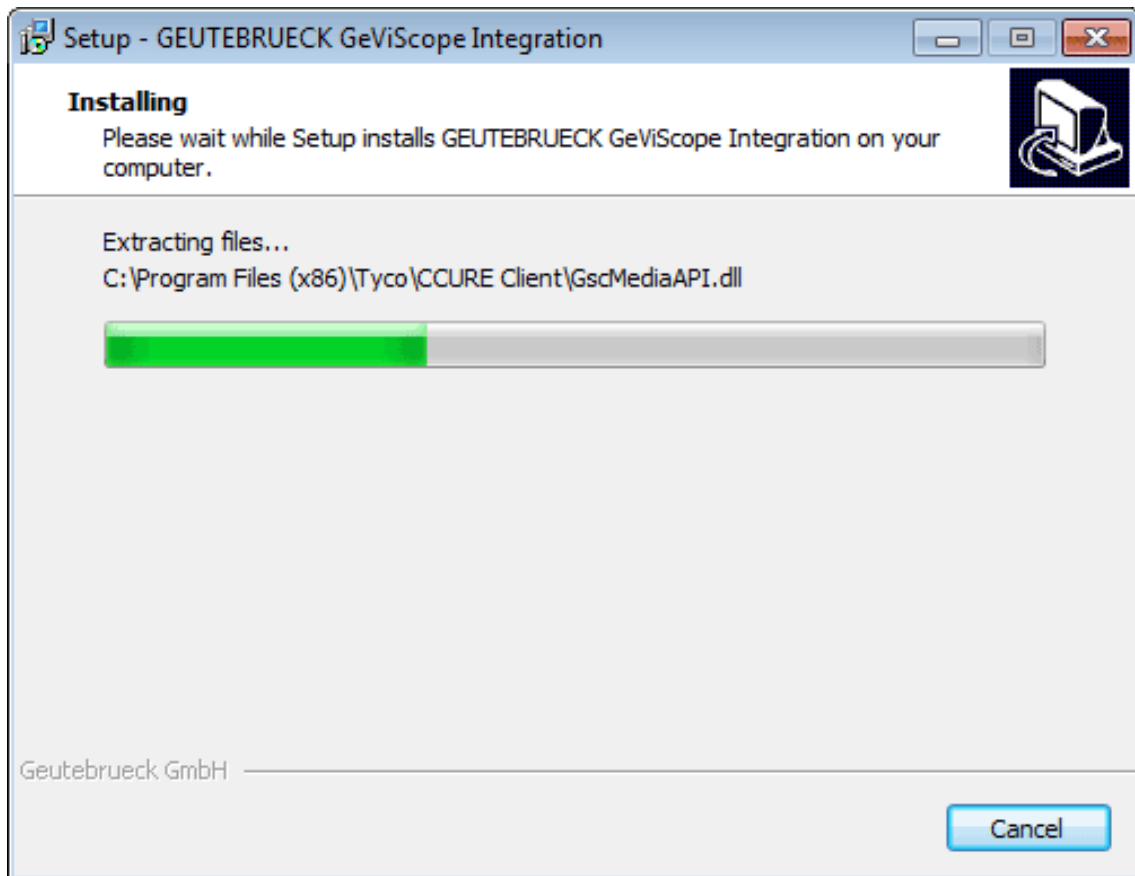
1. Select **Synchronize** and click **Next** to maintain the Integration program. A warning message will be displayed.



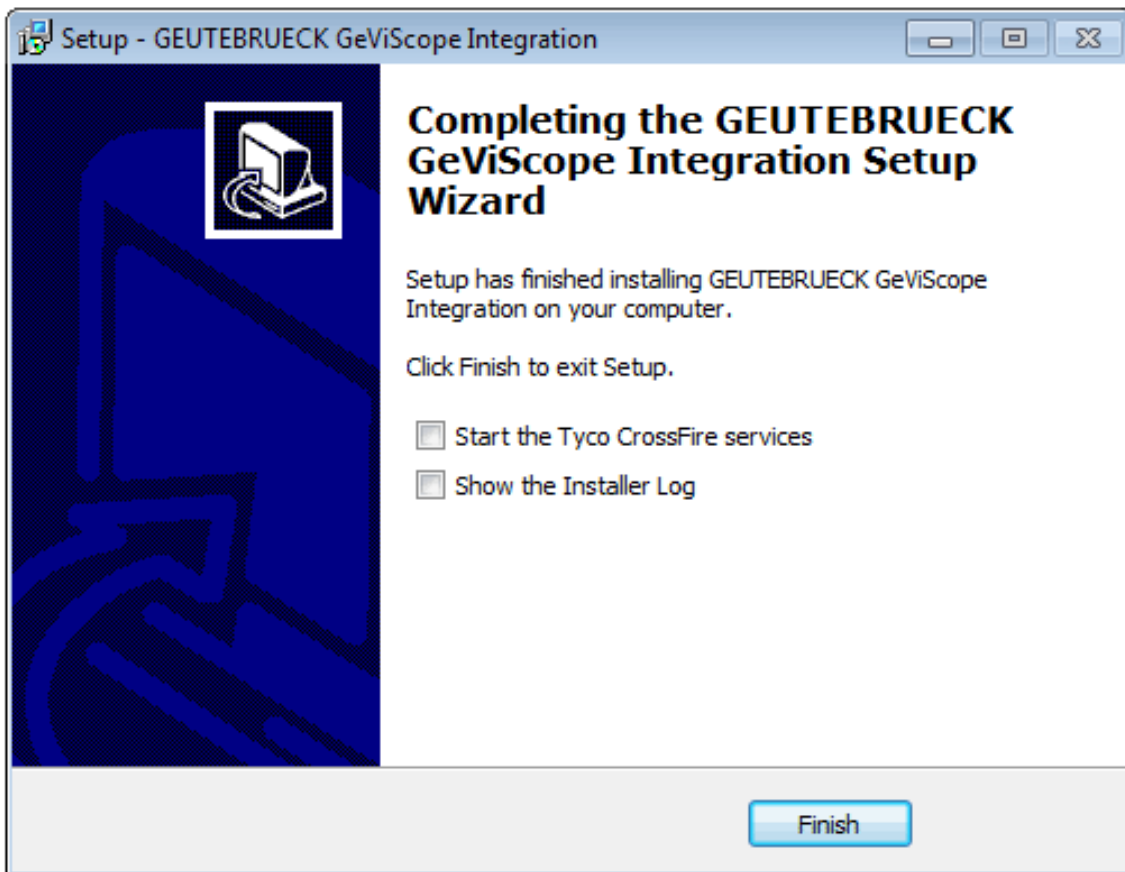
2. Click **OK** to continue, or **Cancel** to cancel to maintenance program. The **Ready to Install** dialog box opens.



3. Click Install to start maintenance. The **Installing** progress dialog box appears.



4. After a few moments, the Maintenance Complete dialog box appears.



5. Click **Finish** to terminate progress.

i **Start the Tyco CrossFire services will only displayed, if server component is installed.**

GeViScope Integration Server

This topic describes how to create and configure a GeViScope server connection.

The GeViScope Server Editor lets you create GeViScope Server objects. You can associate the video server objects with cameras, alarms and server action objects.

Accessing the GeViScope Server Editor

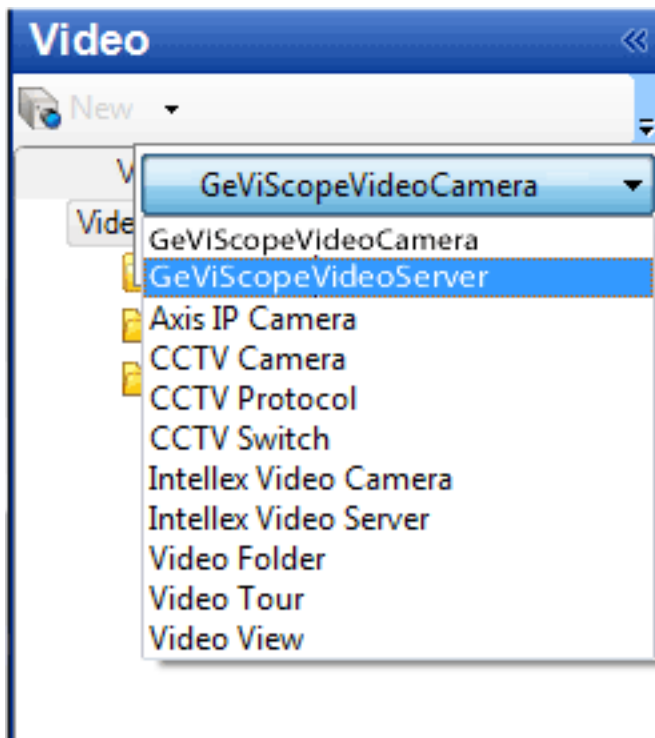
Access the GeViScope Server on the Video Tree


1. In the Navigation pane of the C-CURE 9000 Administration Station, click **Video**. The Video pane opens.
2. Expand the Video tree. Open the Company Name folder by clicking to the left of the folder.

3. Right-click the GeViScope that you want to access. Select **Edit** from the context menu to open the GeViScope Server Editor with the **General** tab available.
4. You can also open a GeViScope Server by double-clicking its name.

Access the GeViScope Server Editor in Dynamic View

1. In the Navigation pane of the Administration Station, click **Video** to open the Video pane.
2. Select **GeViScopeVideoServer** from the Video pane drop-down list.



3. Click  to open a Dynamic View showing all GeViScope objects.
4. Double-click on the GeViScope in the list that you want to access and select **Edit** from the context menu. The GeViScope Server editor opens with the **General** tab available.

Creating a GeViScope Server

To create a GeViScope Server:

1. In the Navigation pane of the C-CURE 9000 Administration Station, click **Video** to open the Video pane.

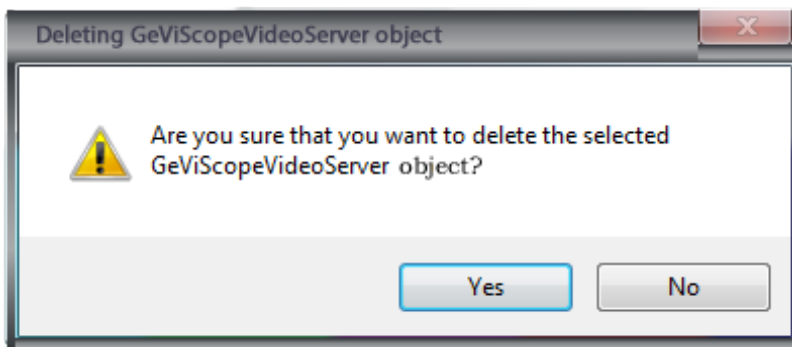
2. Expand the Video tree. Right-click the Company Name folder and select **GEUTEBRUECK GeViScope Server > New**.
3. The **GEUTEBRUECK GeViScope Server** editor opens allowing you create a configuration. See **Configuring a GeViScope Server**.
4. After you finish your configuration, click **Save** and **Close** to save and exit.

i **Alternatively, if you want to save the Video server and then create a new one, click Save and New. The current Video Server is saved and closed, but the Video Server Editor remains open to allow you create a new Video Server.**

Deleting a GeViScope Server

Delete a GeViScope Server on the Video Tree

1. In the Navigation pane of the C-CURE 9000 Administration Station, click **Video** to open the Video pane.
2. Expand the Video tree. Open the Company Name folder by clicking to the left of the folder.
3. Right-click the **GEUTEBRUECK GeViScope** that you want to delete, select **Delete** from the context menu.
4. A message box appears stating **Are you sure that you want to delete the selected GeViScopeVideoServer?**



5. Click **Yes** in the message box to delete the GeViScope Server.

Delete a GeViScope Server in Dynamic View

1. In the Navigation pane of the Administration Station, click **Video** to open the Video pane.
2. Select **GEUTEBRUECK GeViScope** from the Hardware pane drop-down list.
3. Click to open a Dynamic View showing all GeViScope Server objects.

4. In the list, right-click the **GEUTEBRUECK GeViScope Server** that you want to delete and select **Delete** from the context menu.
5. A message box appears stating **Are you sure that you want to delete the selected GeViScopeVideoServer?**
6. Click **Yes** in the message box to delete the GeViScope Server.

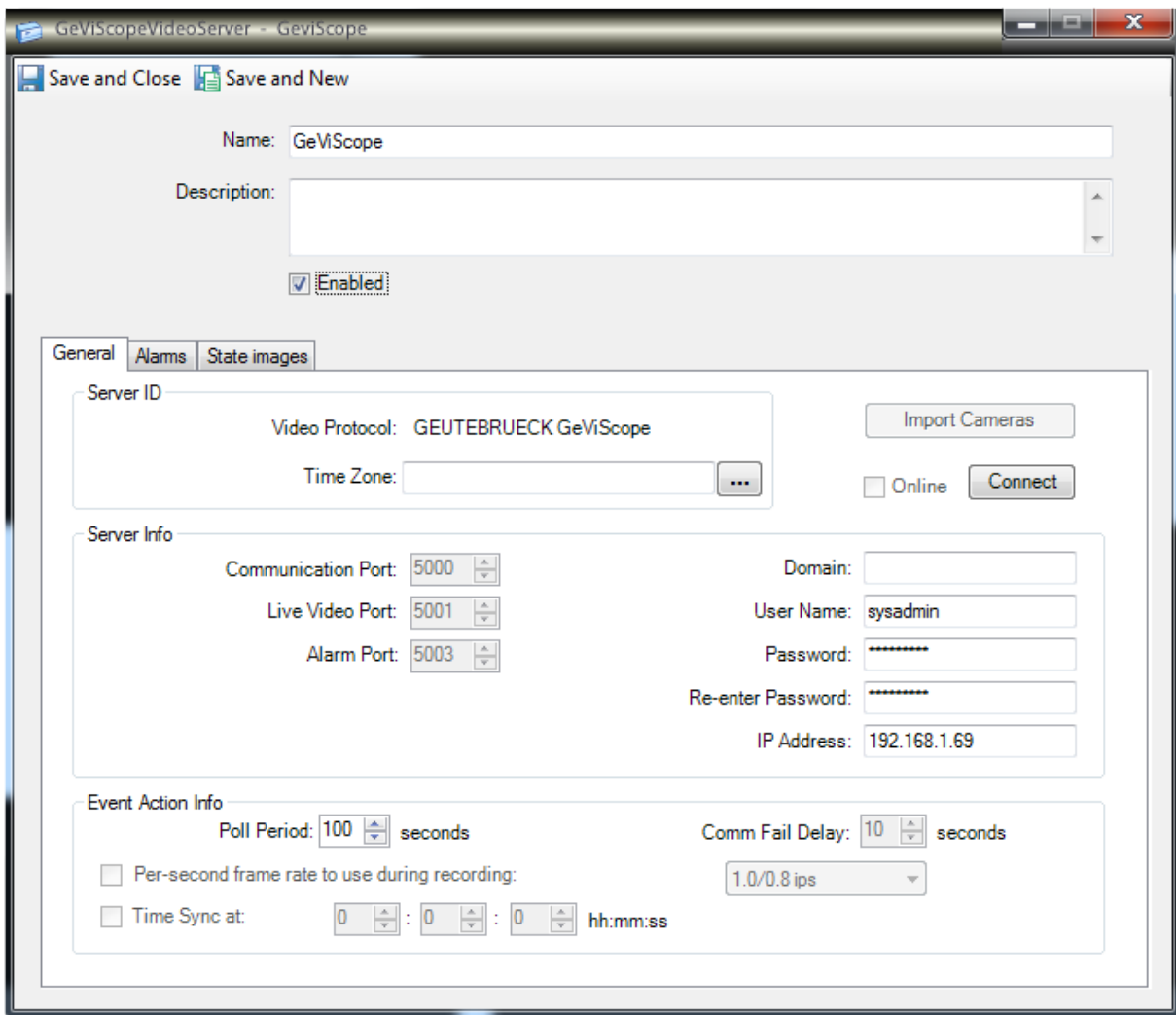
Configuring a GeViScope Server

Configure a GeViScope Server

1. Create a new GeViScope Server or open an existing one with the **General** tab available. See **Creating a GeViScope Server** and **Accessing the GeViScope Server Editor**.
2. Enter a unique name up to 100 characters long in the **Name** field.
3. Enter a textual description up to 500 characters for the GeViScope Server in the **Description** field.
4. Click the **Enabled** option to establish communication between C-CURE 9000 and the GeViScope Server.
5. Make a basic configuration in the **General Tab**.
6. Click the **Alarms Tab** to configure alarm for the GeViScope Server.
7. Click the **State Images Tab** to view the state images for GeViScope Server.
8. If you finish editing, click **Save** and **Close** to save the configuration.

General Tab

The GeViScope Server General tab, lets you configure the GeViScope Server basic information, check the video server connection, and open a GeViScope Web page. It also shows the current Video Protocol.



The following settings are available:

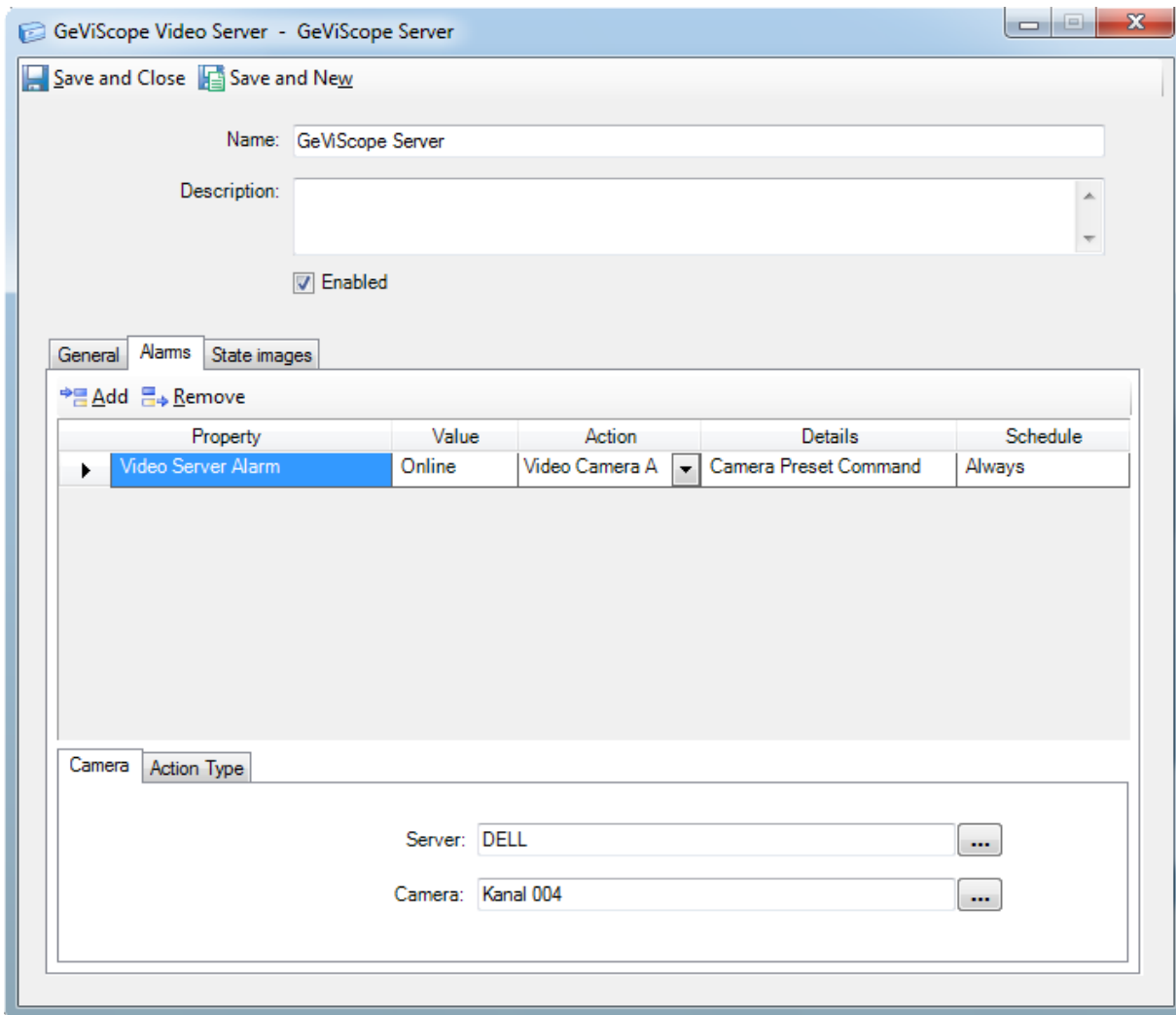
Name	Description
Name	Enter a unique name up to 100 characters long to identify the server.
Description	Enter a textual description up to 500 characters for the server.
Enabled	If enabled, C-CURE 9000 attempts to communicate with the server. If not enabled C-CURE 9000 does not attempt to communicate with the server.

Name	Description
Server ID	
Video Protocol	Automatically populated with the video protocol: GEUTEBRUECK GeViScope.
Time Zone	Not applicable for GeViScope. Specify the time zone of the physical location of the video server.
Import Cameras	Imports all camera set up information from the video server. Does not delete cameras that have been imported in a prior run.
Connect	Checks the server connection. If all user credentials are entered and validated, the server's status is changed to online.
Online	After the connection is successfully established, indicates if the current video server is online.
Server Info	
IP Address	Enter the IP Address for the specific video server.
Communication Port	Not applicable for GeViScope.
Live Video Port	Not applicable for GeViScope.
Alarm Port	Not applicable for GeViScope.
Open NVR Configuration	Not applicable for GeViScope.
Domain	Not applicable for GeViScope.
User Name	Enter the user name used to login the GeViScope Server.
Password	Enter the password used to login the GeViScope Server.
Re-enter Password	Re-enter the password.
IP Address	Enter the IP address for the specified video server.
Event Action Info	


Name	Description
Poll Period	Indicates how often you want the video server polled for status information. Range is 0 to 999. The default is 100 seconds.
Comm Fail Delay	Not applicable for GeViScope.
Pre-second frame rate to use during recording	Not applicable for GeViScope.
Time Sync at hh:mm:ss	Not applicable for GeViScope.

Alarms Tab



The Alarms tab provides a list of alarms you have configured for this video server. You must set up server alarms using the vendor utility on the video server side before the alarms can work in C·CURE 9000.



The following settings are available:

Field	Description
Add	Click Add in the Alarms tab to create a new alarm.
Remove	Click Remove in the Alarms tab to delete a selected alarm.
Property	Click within the Property column, and then click  . The Property browser opens presenting properties available for the server. Click a Property to select it and add it to the column. For GeViScope Server, available properties are: Video Server Alarm
Value	Click within the Value column to display a drop-down list of Val-

Field	Description
	<p>ues associated with the Property that you have selected. Click a Value you want to include as a parameter for the trigger to assign it to the column.</p> <p>If you select the property of Video Server Alarm, click within the Value column to display a drop-down list with two values available for you to select: Online, offline.</p> <p>i You must select the Property before you can select the Value.</p>
Action	<p>Click within the Action column to display a drop-down list of valid actions. Click on Action that you want to include as a parameter for the trigger to add it to the column. Two types of actions are available: Activate Event and Video Camera Action.</p> <p>If you select Activate Event, the lower pane in the Alarm tab displays an Event field for you to define the Action details. See “Activate an Event”.</p> <p>If you select Video Camera Action, the lower pane displays two sub-tabs: Camera tab and Action Type tab. See “Video Camera Action”.</p>
Details	<p>Displays details about how the Action was configured.</p>
Schedule	<p>Available Schedules:</p> <ul style="list-style-type: none"> • Always • Audit Log Backup Schedule • Journal Log Backup Schedule • Never • Nightly
Event	<p>Allows you select an event for the alarm.</p> <p>i Event is available only if Activated and Event was selected in the Action column drop-down list.</p>
<p>Camera tab (available if Video Camera Action was selected in the Action</p>	

Field	Description
field)	
Server	Specify the server for the action. Click  to open a list of pre-defined video servers. i You must select the server before you can select the camera.
Camera	Specify the camera for the action. Click  to open a list of pre-defined video cameras.
Action Type tab (available if Video Camera Action was selected)	
Action Type	Select the action type, such as Record Camera, Camera Preset Command and Camera Pattern Command. Enter the parameters for the action type. The parameters vary according to the action type selected.
Parameters	
Pre Alarm Time	Set pre-alarm recording time for the camera when you select Record Camera as the action type.
Post Alarm Time	Set post-alarm recording time for the camera when you select Record Camera as the action type
Preset	Select the preset number to set this preset as the object when you select Camera Preset Command as the action type.
Pattern	Select the pattern number to set this pattern as the object when you select Camera Pattern Command as the action type.

The following table contains an example of how an alarm is configured:

Setting	Value
Property	Video Server Alarm
Value	Online
Action	Video Camera Action

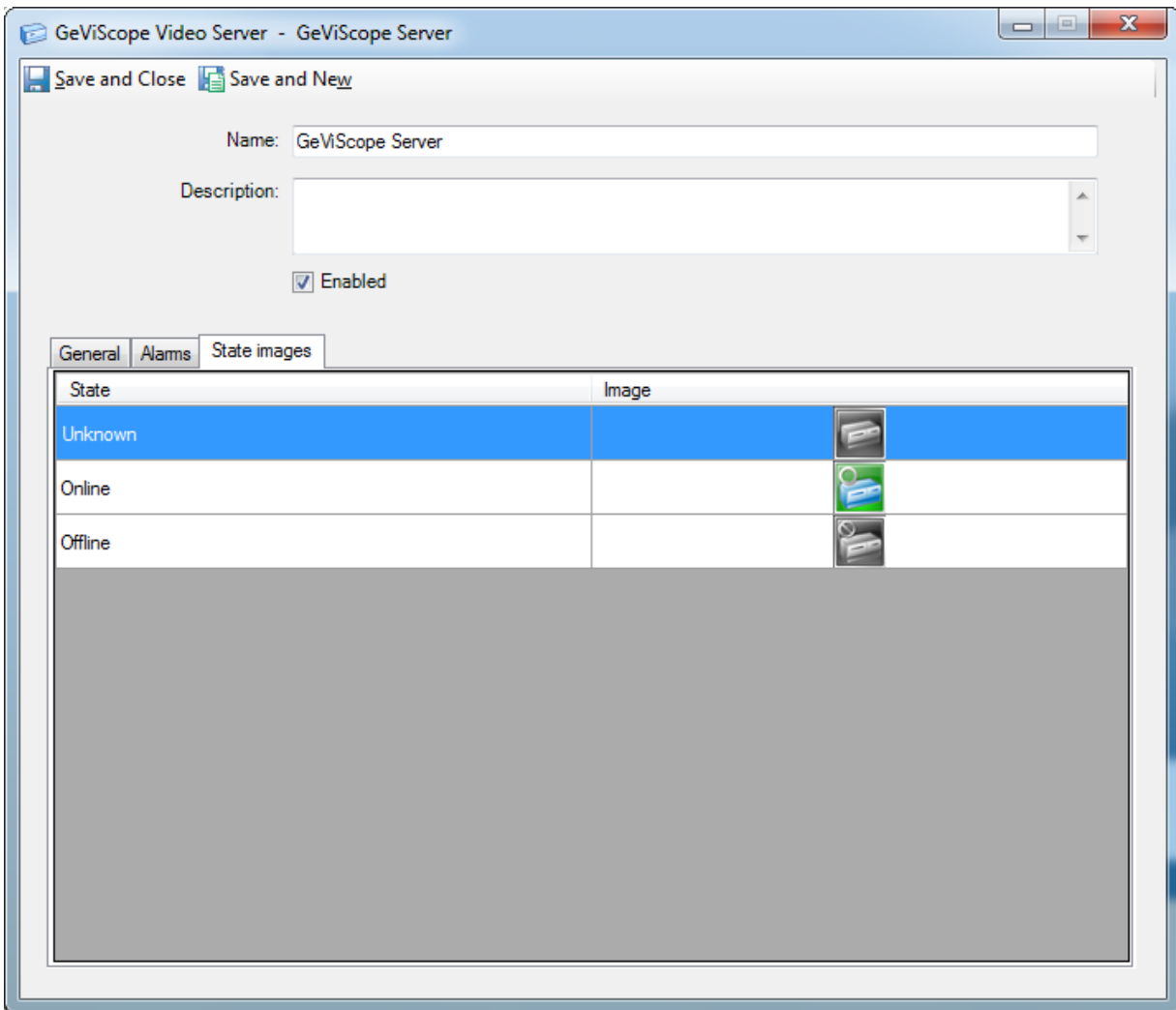
Setting	Value
Details	Camera Preset Command
Schedule	Always

Would create the following event:




Anytime (Always Schedule) the Video Server Alarm (Property) equals Online (Value), activate the event (Action) named Camera Preset Command (Details).

State Images Tab

The **State Images** tab, provides a way to change the default images used to indicate the GeViScope Server states on the Monitoring Station.



The following table lists the name and description of the icons:

Icon	Name	Description
	Unknown	The video server is in unknown state.
	Online	The video server is online.
	Offline	The video server is offline.

Customize GeViScope Images

From the State Images tab, you can change the images that appear in the Monitoring Station to represent GeViScope Server.

To customize GeViScope Images:

1. From the GeViScope Server State Images tab, double-click the existing image. A Windows Open dialog box appears allowing you to browse for a folder that holds your images.
2. After locating the replacement image, select it and click **Open** to replace the default image with this image.
3. When you are done editing the GeViScope Server Editor, click **Save** and **Close** to save the configuration.

GeViScope Video Camera Editor

The GeViScope Video Camera Editor lets you associate the GeViScope Video Camera object with camera alarm and camera action objects.

Accessing the GeViScope Video Camera Editor

Access the GeViScope Video Camera Editor on the Video Tree

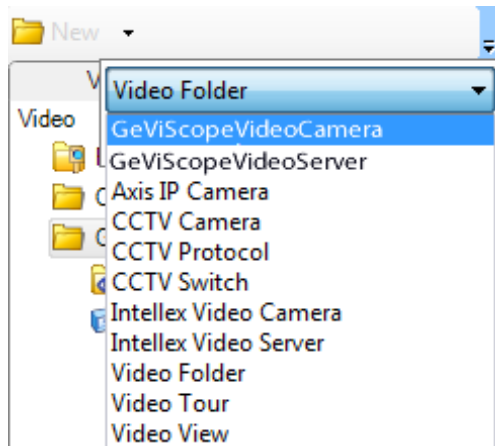
1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video**. The **Video** pane opens.
2. Expand the **Video** pane. Open the Company Name folder by clicking to the left of the folder.
3. Expand the GeViScope tree clicking to the left of the folder.
4. In the GeViScope folder, right-click the camera that you wish to access, select **Edit** from the context menu to open the GeViScope Video Camera


Editor with the **General** tab available.

5. You can also open the camera by double-clicking the camera name.

Access the GeViScope Video Camera Editor in Dynamic View

1. In the **Navigation** pane of the Administration Station, click **Video** to open the **Video** pane.
2. Select **GeViScopeVideoCamera** from the Video pane drop-down list.

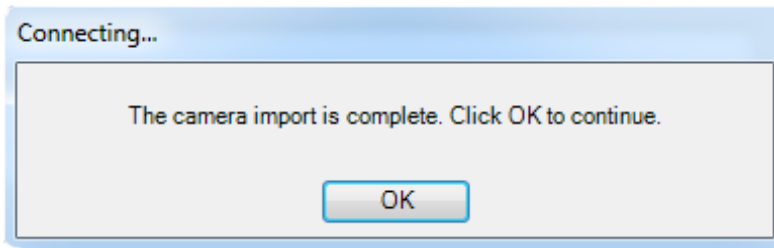


3. Click  to open a Dynamic View showing all camera objects.
4. Double-click on the camera in the list that you want to access and select **Edit** from the context menu. The GeViScope Video Camera editor opens with the **General** tab available.

Importing a Camera

To Import a Camera:

1. Open the **GeViScope Server** panel with the **General** tab available.
2. In the **General** tab, click **Import Cameras** button to import cameras set up with the current video server.
3. After a while, a message box appears stating **The camera import is complete**. Click **Save and Close** to take effect.



4. Click **OK**. Click **Save** and **Close**. You can see the imported cameras listed in the GeViScope tree in the left **Video** pane.

i **If the newly added camera's name already exists, C-CURE 9000 will throw an exception. You have to delete the old one and add new camera.**

Creating a Camera

To Create a Camera:

1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** pane.
2. Open the Company Name folder by clicking to the left of the folder.
3. Right-click the GeViScope folder, select **GEUTEBRUECK GeViScope Video Camera > New**.
4. The **GeViScope Video Camera Editor** opens allowing you to configure the camera.
5. After you have configured the camera, click **Save** and **Close** to save and exit.
6. Alternatively, if you want to save the video camera and then create a new one, click **Save** and **New**. The current video camera is saved and closed, but the Video Camera Editor remains open to allow you create a new video camera.

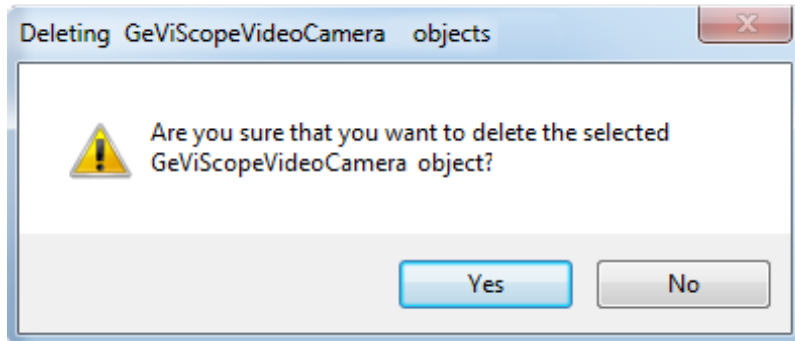
i **When GeViScope server changes from offline to online, if the camera index in C-CURE 9000 didn't exist on GeViScope server, this camera will be deleted automatically.**

Deleting a GeViScope Video Camera

Delete a GeViScope Video Camera on the Video Tree


1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** pane.

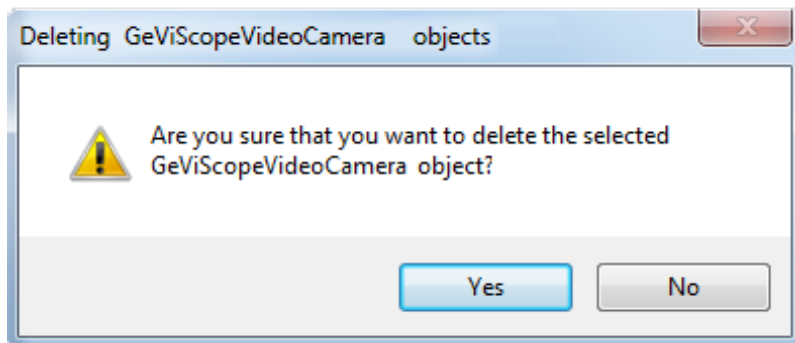
2. Open the Company Name folder by clicking to the left of the folder.
3. Expand the GeViScope tree by clicking to the left of the folder.
4. In the GeViScope Tree, right-click the camera that you want to delete, select **Delete** from the context menu.
5. A message box appears stating **Are you sure that you want to delete the selected camera?**



6. Click **Yes** in the message box to delete the GeViScope Video Camera.

Delete a GeViScope Video Camera in Dynamic View


1. In the **Navigation** pane of the Administration Station, click **Video** to open the **Video** pane.
2. Select **GEUTEBRUECK GeViScope Video Camera** from the Video pane drop-down list.
3. Click  to open a Dynamic View showing all camera objects.
4. In the list, right-click the camera that you want to delete and select **Delete** from the context menu.
5. A message box appears stating **Are you sure that you want to delete the selected camera?**



6. Click **Yes** in the message box to delete the GeViScope Video Camera.

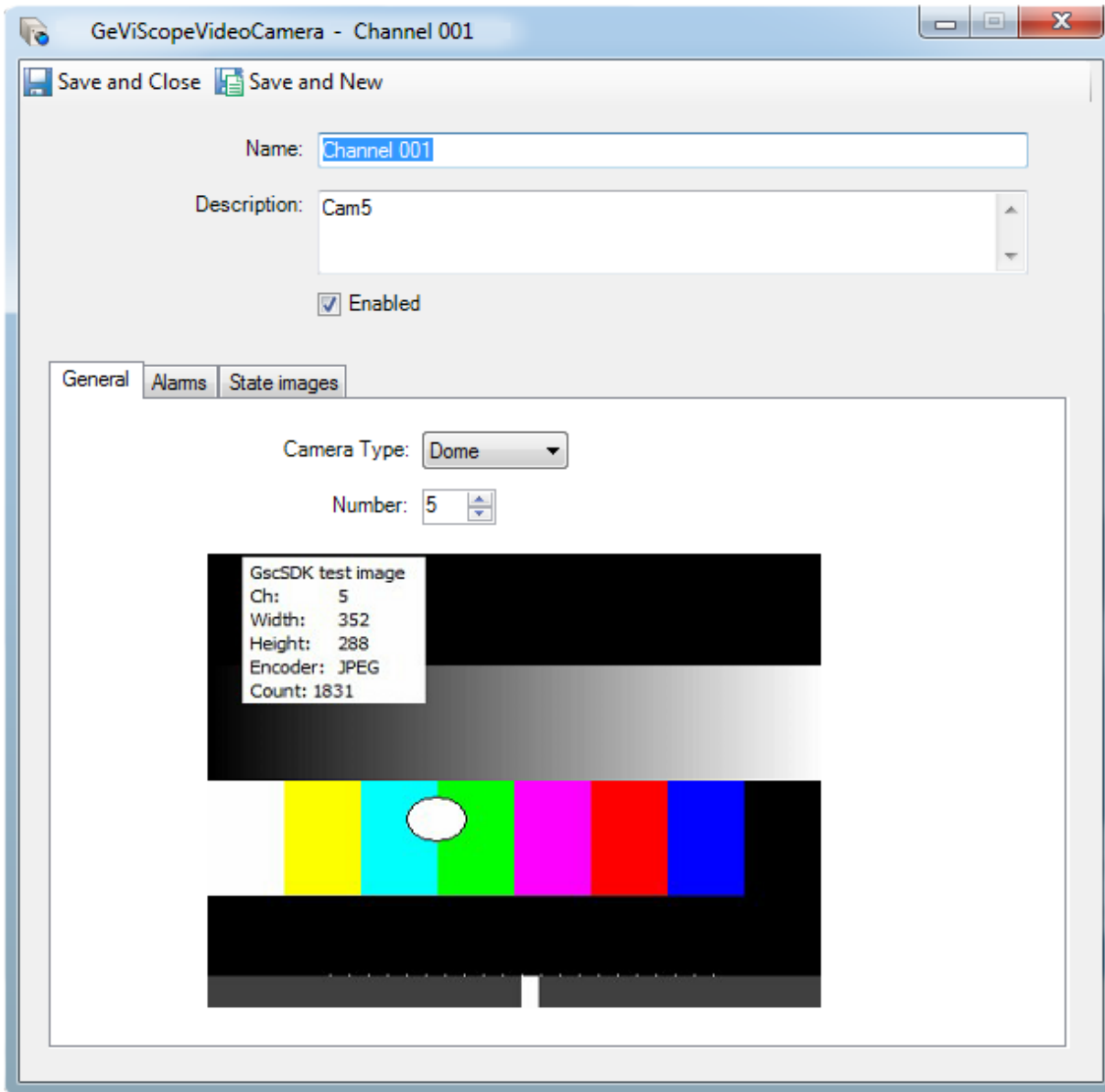
Configuring a GeViScope Video Camera

Configure a GeViScope Video Camera

1. In the **Navigation** pane of the Administration Workstation, click **Video** to open the **Video** pane.
2. Select **GEUTEBRUECK GeViScope** from the Video pane drop-down list.
3. Click  to open a Dynamic View showing all GeViScope Video Camera objects.
4. Double-click the GeViScope Video Camera in the list that you want to configure. The GeViScope Video Camera Editor opens.
5. Type a unique name of up to 100 characters in the **Name** field.
6. Type a textual description of up to 500 characters in the **Description** field.
7. Click the **Enabled** option to establish the communication between C·CURE 9000 and the GeViScope Video Camera.
8. Create a basic configuration in the **General Tab**.
9. You can click the **Alarms Tab** to configure Alarms for the GeViScope Video Camera Editor panel.
10. You can click the **State Images Tab** to view the state images for the GeViScope Video Camera Editor panel.
11. After having finished editing, click **Save** and **Close** to save the configuration.

General Tab

The GeViScope Video Camera **General** tab, lets you create basic settings for cameras.

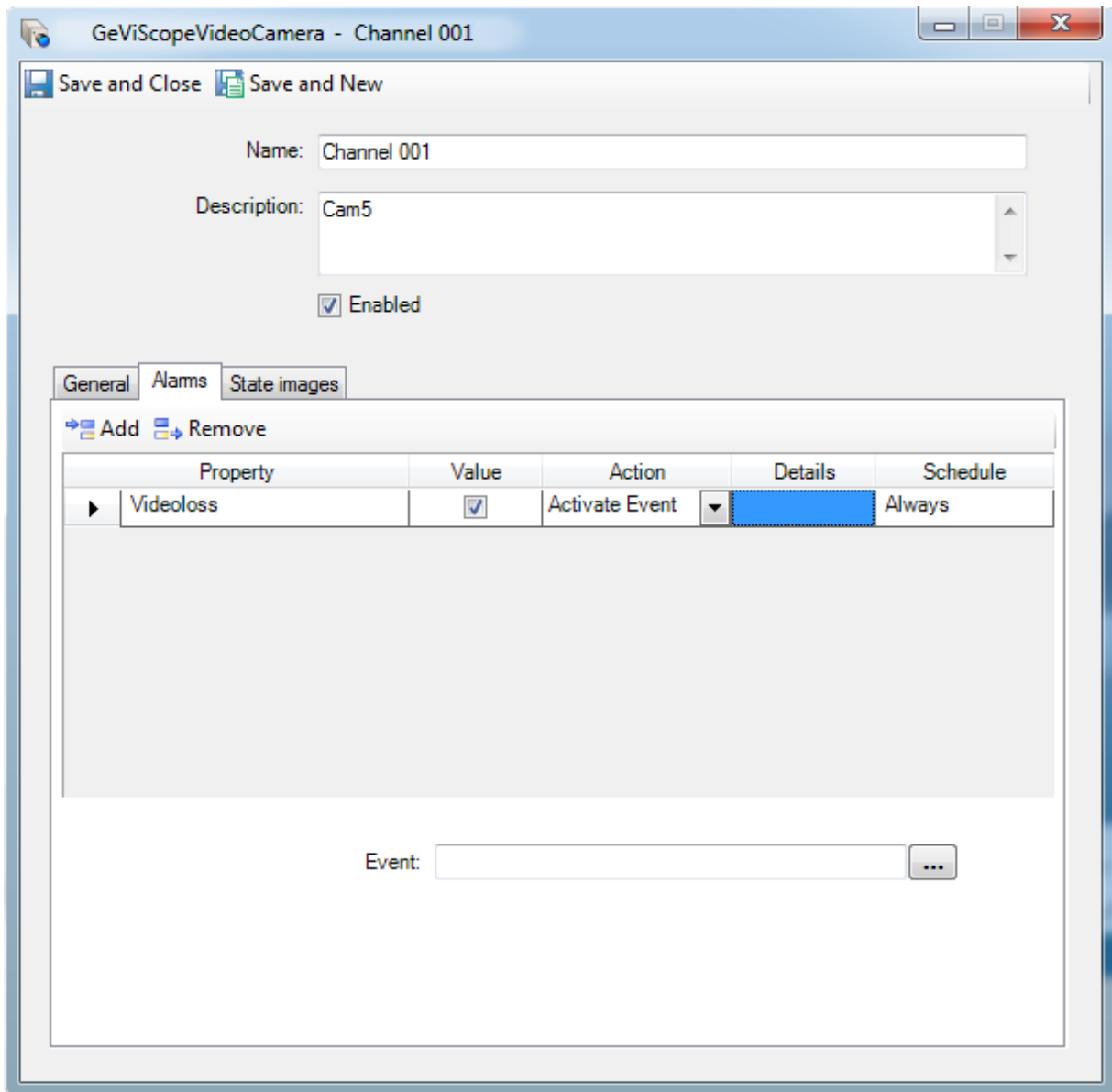


The following settings are available:


Name	Description
Name	Enter a unique name of up to 100 characters for the GeViScope Video Camera.
Description	Enter a general comment of up to 500 characters for the camera.
Enabled	Select the Enabled option to establish the communication between the video camera and C-CURE 9000.
Camera Type	Select the camera type from the drop-down list. Two types are available: Fixed and Dome.
Number	Number The unique channel number used to identify the camera. It is recommended to keep the numbers consistent with the Media Channels on the GeViScope.


Alarms Tab


The GeViScope Video Camera **Alarms** tab provides a list of alarms you have configured for this video camera. You must set up camera alarms using the vendor utility on the video server side before the alarms can work in C-CURE 9000.



The following settings are available:

Field	Description
Add	Click Add in the Alarms tab to create a new alarm.
Remove	Click Remove in the Alarms tab to delete an alarm.
Property	Click within the Property column, and then click  . The Property browser opens with a list of properties available for the panel.

Field	Description
	<p>Click a Property to select it and add it to the column. Available properties are listed below:</p> <ul style="list-style-type: none"> • Video Camera • Alarm Videoloss
Value	<p>Click within the Value column to display a drop-down list of Values associated with the Property that you have selected. Click a Value you want to include as a parameter for the trigger to assign it to the column.</p> <p>If you select the property of Video Camera Alarm, click within the Value column to display a drop-down list with four values available for you to select: Normal, Motion, Analytics and Alarm.</p> <p>If you select the property of Video loss, two values are available: True and False. To enable the value of True, select the check box that appears when you click in the field. To change the value of False, clear the check box.</p> <p> You must select the Property before you can select the Value.</p>
Action	<p>Click within the Action column to display a drop-down list of valid actions. Click on an Action that you want to include as a parameter for the trigger to add it to the column. Two types of actions are available now: Activate Event and Video Camera Action.</p> <p>For more information on Activate Event, take “Activate an Event” as reference. For more information on Video Camera Action, see “Video Camera Action”.</p>
Details	<p>Displays details about how the Action was configured.</p>
Schedule	<p>Available Schedules:</p> <ul style="list-style-type: none"> • Always • Audit Log Backup Schedule • Journal Log Backup Schedule • Never

Field	Description
	<ul style="list-style-type: none"> Nightly
Event	<p>Allows you select an event for the alarm.</p> <p>i Event is available only if Activated an Event was selected in the Action column drop-down list.</p>
Camera tab (available if Video Camera Action was selected in the Action field)	
Server	<p>Specify the server for the action. Click  to open a list of pre-defined video servers.</p> <p>i You must select the server before you can select the camera.</p>
Camera	Specify the camera for the action. Click to open a list of predefined video cameras.
Action Type tab (available if Video Camera Action was selected)	
Action Type	<p>Select the action type, such as Record Camera, Camera Preset Command and Camera Pattern Command.</p> <p>Enter the parameters for the action type. The parameters vary according to the action type selected.</p>
Parameters	
Pre Alarm Time	Set pre-alarm recording time for the camera when you select Record Camera as the action type.
Post Alarm Time	Set post-alarm recording time for the camera when you select Record Camera as the action type
Preset	Select the preset number to set this preset as the object when you select Camera Preset Command as the action type.
Pattern	Select the pattern number to set this pattern as the object when you select Camera Pattern Command as the action type.

Defining an Alarm for a Camera

The following table contains an example of how an alarm is configured:


Setting	Value
Property	Videoloss
Value	True
Action	Activate Event
Details	
Schedule	Always

Would create the following Event:

Anytime (Always Schedule) the Videoloss (Property) equals True (Value), activate the event (Action) named in Details.

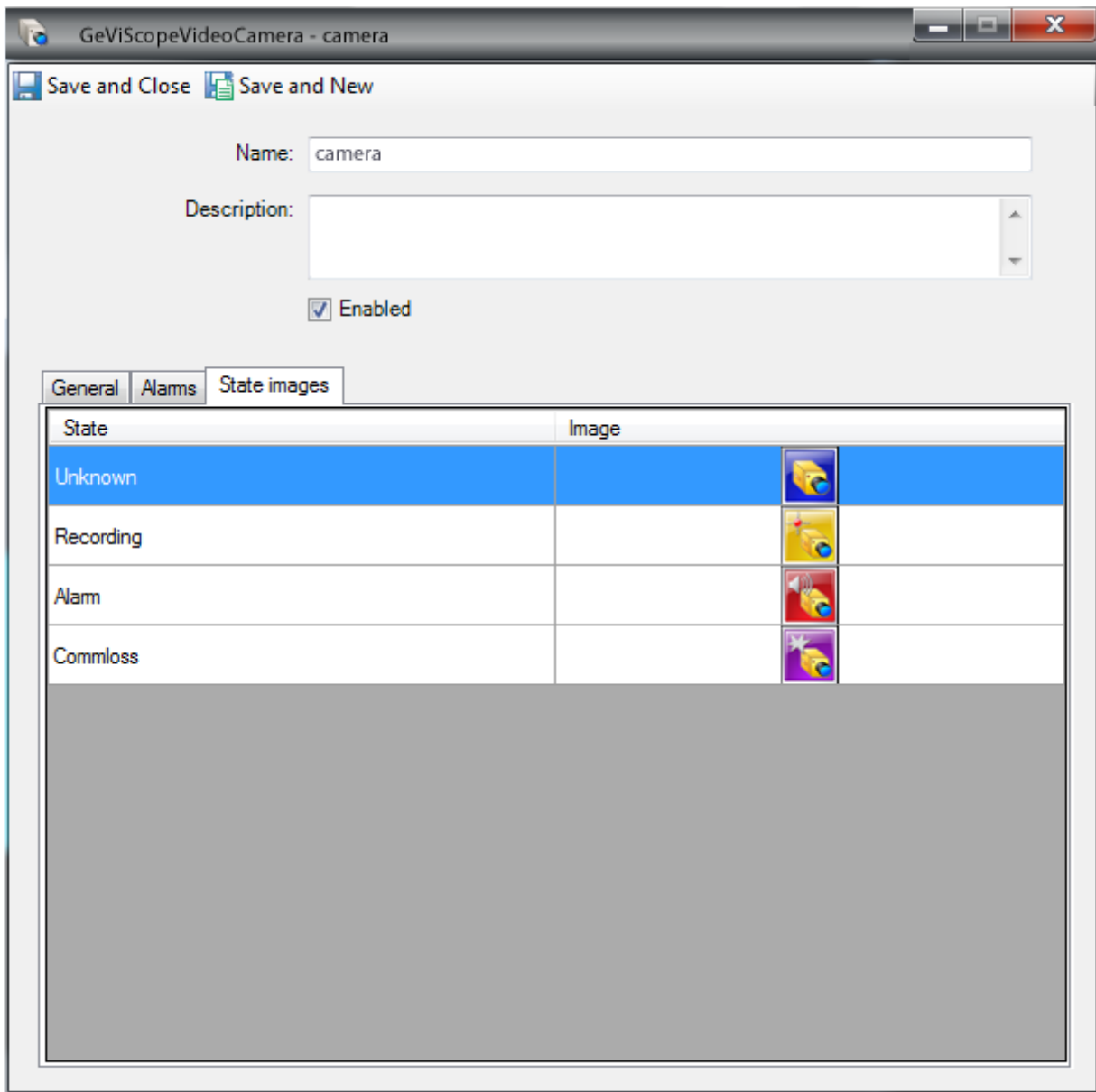
Details contain the name of an event, which you select in the Action Type pane.

Remove an Alarm


1. From the GeViScope VideoCamera dialog box, navigate to the **Alarms** tab.
2. Use  to select the row in the Alarms table for the Alarm you want to remove.
3. Click **Remove**.
4. Click **Save** and **Close** to save and exit.




State Images Tab

The State Images tab, lets you change the default images used to indicate the GeViScope Video Camera states on the Monitoring Station.



The following table lists the name and description of the icons:

Icon	Name	Description
	Unknown	The camera is in unknown state.

Icon	Name	Description
	Recording	The camera is in recording state.
	Alarm	The camera is in alarm state.
	Commloss	The communication between camera and video server is lost.

Customizing State Images

From the GeViScope Video Camera **State Images** tab, you can change the images that appear in the Monitoring Station to represent GeViScope Video Camera.

To Customize GeViScope Video Camera State Images:

1. From the GeViScope Video Camera **State Images** tab, double-click the existing image. A Windows Open dialog box appears allowing you to browse for a folder in which you have placed replacement images.
2. When you locate the replacement image, select it and click **Open** to replace the default image with this image.
3. When you are done editing, click **Save** and **Close** to save the configuration.

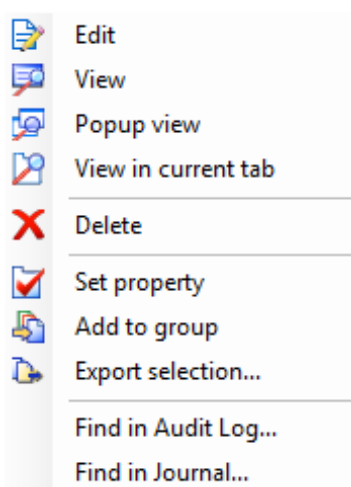
GeViScope Video Camera Viewer

The GeViScope Video Camera Viewer enables you to view video from all cameras connected to the GeViScope Server in the Administration Workstation.

i **The video server name and camera name displayed on top of the video stream come from the GeViScope server, not the names configured on C-CURE 9000.**

Views







There are three views that can be accessed from the context menu:



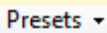


View	Description
View	Displays the video in Dynamic View.
Popup view	Displays the video in a pop-up view.
View in current tab	Displays the video in the current tab in the content area.

Buttons


The following table lists the buttons of the video Camera Viewer:

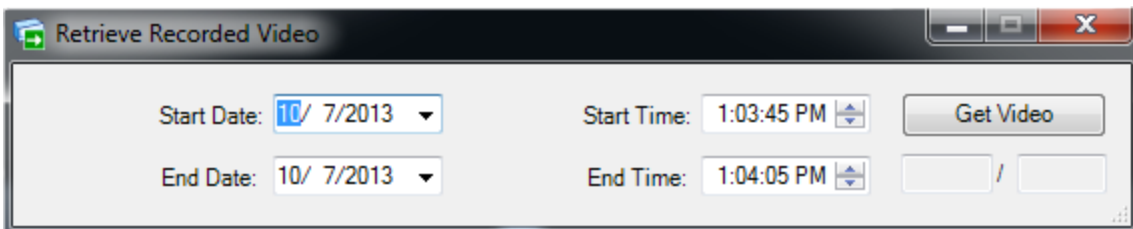
Button	Description
	Display camera information on the top of the video stream and playback controls on the bottom of the video stream.
	Take a snapshot. This function is not available now.
	Retriever a recorded video. Opens a Recorded Video Configuration so that you can select a certain period of time to retrieve a video.
	Begin to record a video.
	Reconnect the camera.
	Take a snapshot and Email.

Button	Description
	<p>Camera PTZ Controls. Use horizontal arrows to pan left/ right. Use the vertical arrows to tilt up/ down.</p> <p>i This function is only available for PTZ cameras (domes).</p>
	<p>Zoom the image in or out.</p> <p>i This function is only available for PTZ cameras.</p>
	<p>To access the Camera Preset, click on the arrow near Presets. This function is only available when PTZ camera already has presets.</p>

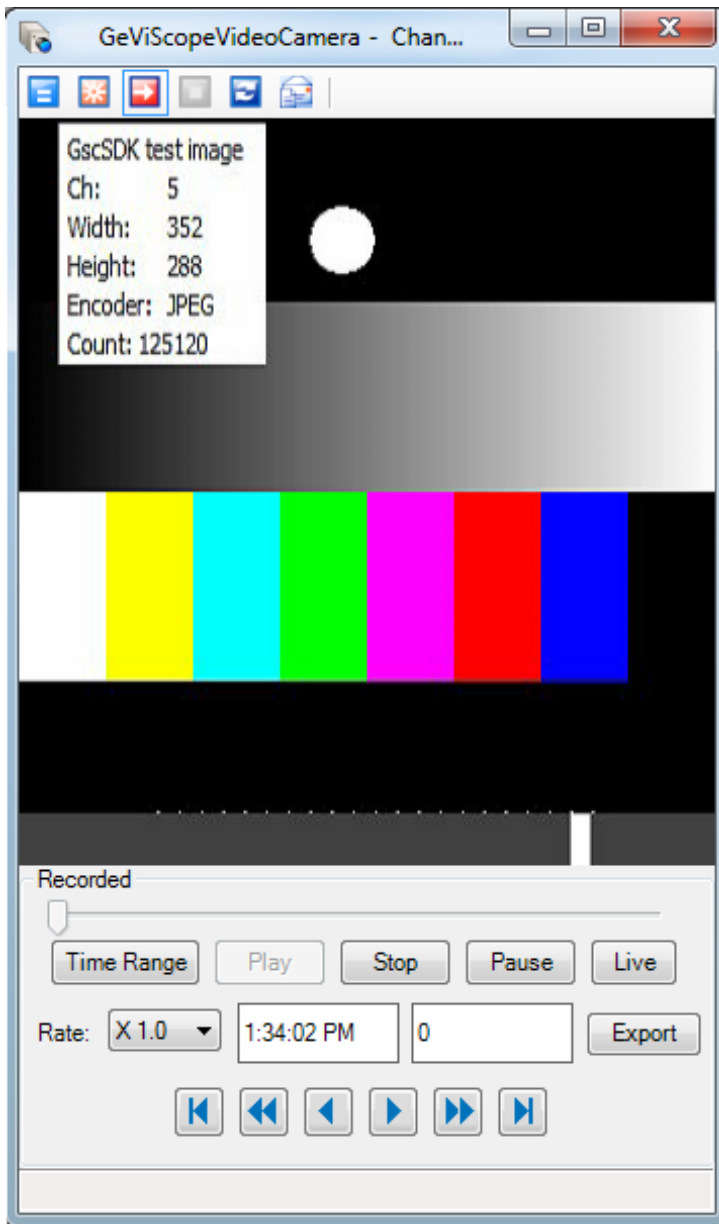
Retrieving a Recorded Video




To Retrieve a Recorded Video:

1. Click  to open a Recorded dialog box at the bottom of the window.
2. Click **Time Range**. The **Retrieve Recorded Video** dialog box opens to enter the dates and times to retrieve the recorded video.



3. Click **Get Video** to retrieve the recorded video for the dates and times specified. You are returned to the GeViScope Video Camera viewer and the video starts playing immediately.



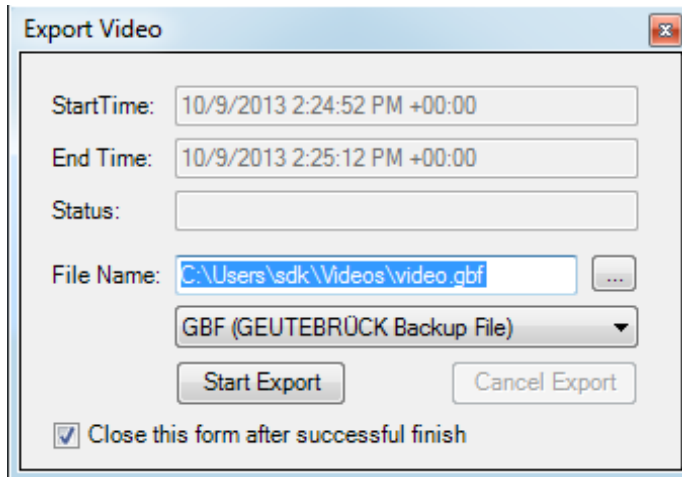
4. The Retrieve recorded video button  turns red  when you are retrieving recorded video.
5. Click on  to launch live video.

Exporting a Video

Video clips are exported in Backup file .gbf. You can open GBF files with GSCViewer to play recorded videos.

To Export a Video:

1. Click **Export** to export a pre-recorded video. The **Retrieve Recorded Video** dialog box opens to enter the dates and times to retrieve the recorded video that you want to export.
2. Click **Get Video** to open the Export as dialog box.

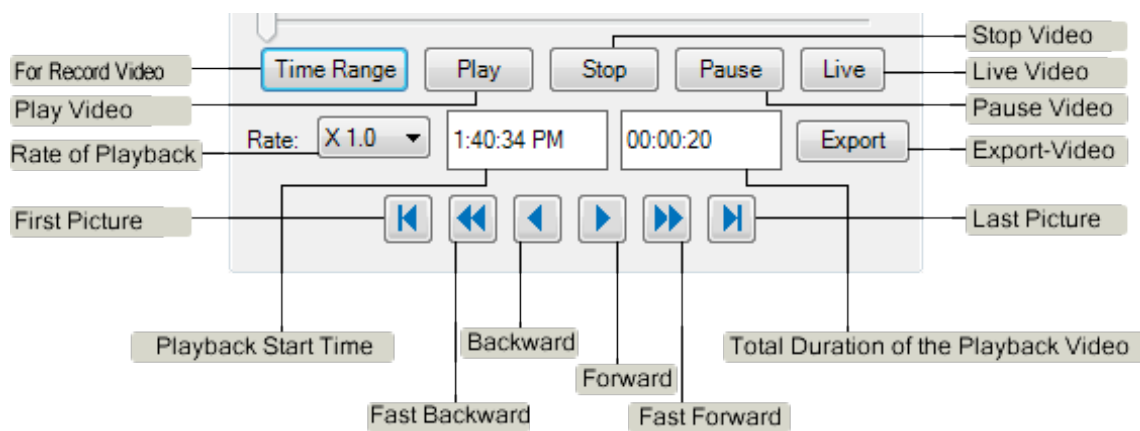


3. Select a folder to save the exported file in a drop-down list and enter the file name.
4. Click **Start Export**. When save is complete, a dialog box opens informing of completion of export.

GeViScope Playback Controls

Playback Control provides all of the standard VCR operations (Fast Backward, Backward, Play, Pause, Forward, Fast Forward, Live) giving users total control over a video stream.

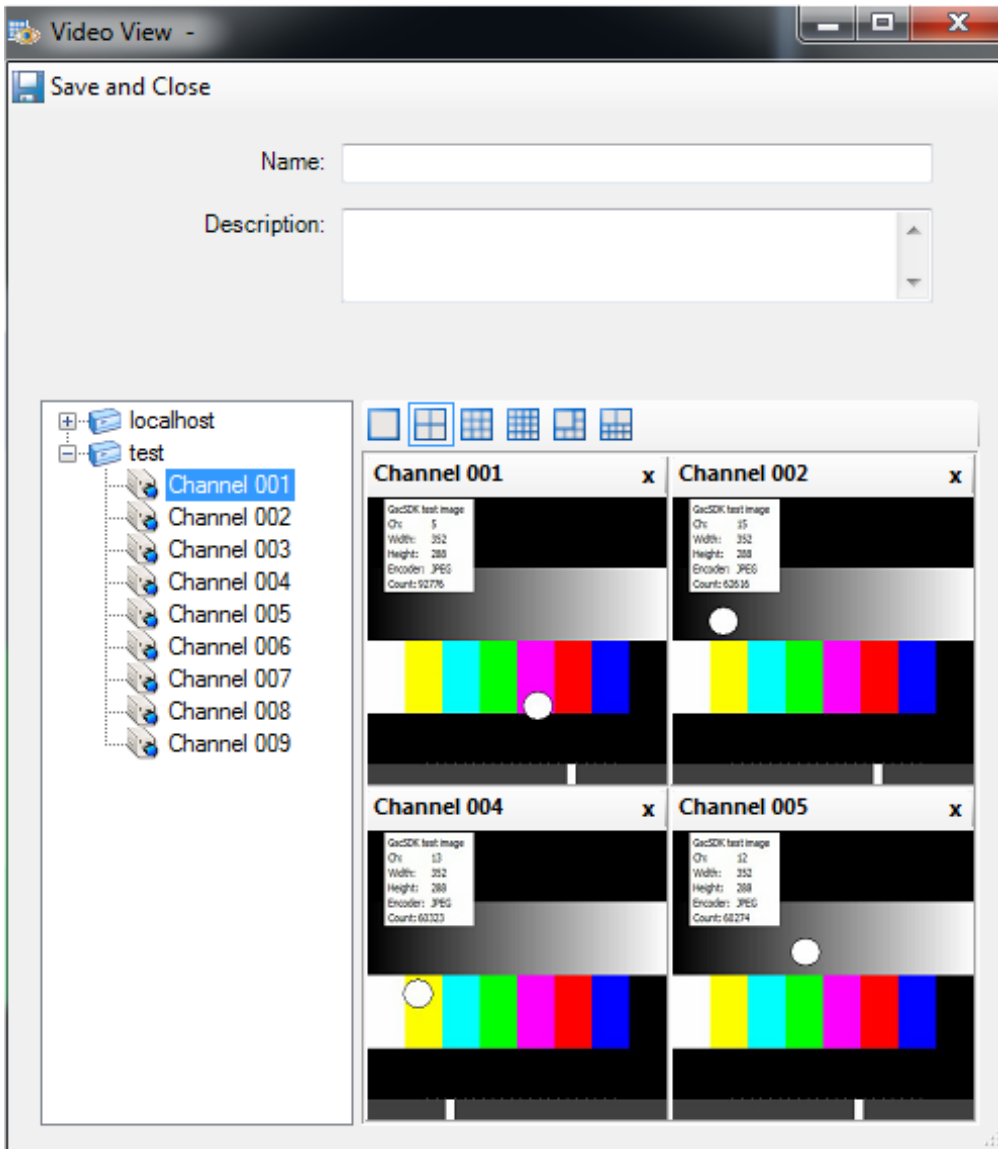
Instant Playback controls are illustrated in the following figure. These are the controls available when displaying live/ recorded video.



Video View

This topic describes how to create and configure a Video View with GeViScope Video Camera.


The Video View Editor lets you create Video View objects. A Video View allows you to arrange a group of cameras. It serves as a building block to construct a video tour. Video View provides different grid types to display video.



Field	Description
Name	Enter a unique name up to 100 characters long to identify the GeViScope Video View.
Description	Enter a description up to 500 characters to identify the Video View.
Camera List	List all the video hardware starting with the video server and the cameras connected to it. To add a camera to the view, you must select a view grid type, and then drag and drop the camera into the appropriate view grid.
View Grid Type	<p>Enables you to select the number of cameras displayed inside the view. After you select a view grid type, the appropriate view grid appears in the view area. Each grid is linked to a camera and shows the video for that camera. Without a link to the camera, the grid remains blank. You can choose 1x1, 2x2, 3x3, 4x4, 1x5 and 2x8 grid types.</p> <p>i If you create a 1x5 or 2x8 view which only has GeViScope Cameras, there may be several seconds latency when open the view.</p>

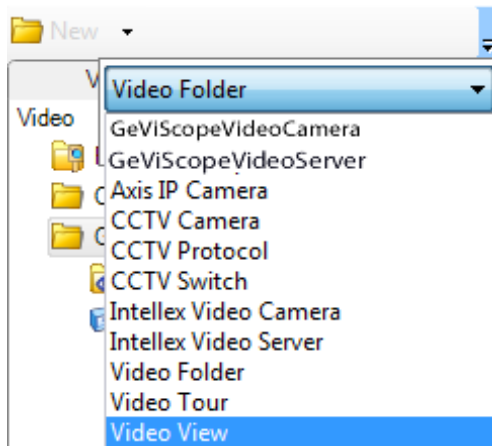
Accessing the Video View Editor


Access the Video View Editor on the Video Tree

1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** pane.
2. Expand the Video tree. Open the Company Name folder by clicking to the left of the folder.
3. Open the **Views** folder by clicking  to the left of the folder.
4. In the Views folder, right-click the Video View that you want to access. Select **Edit** from the context menu to open the Video View Editor.

Access the Video View Editor in Dynamic View

1. In the **Navigation** pane of the Administration Station, click **Video** to open the **Video** pane.
2. Select **Video View** from the Video pane drop-down list.



3. Click  to open a Dynamic View showing all Video View objects.
4. Double-click on the Video View in the list that you want to access and select **Edit** from the context menu. The **Video View Editor** opens.



Creating a Video View

To Create a GeViScope Video View:

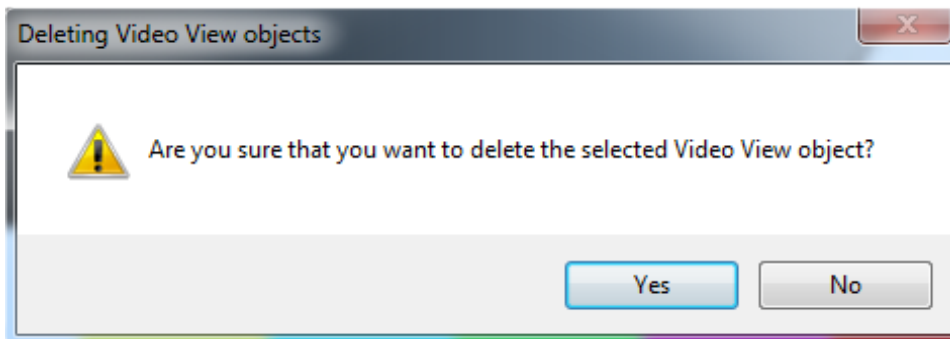
1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** pane.
2. Open the Company Name folder by clicking to the left of the folder. In the Company Name folder, right-click the **Views** and select **New**.
3. The Video View Editor opens, allowing you create a new view. See **Configuring a Video View**.
4. After you finish your configuration, click **Save** and **Close** to save and exit.
5. Alternatively, if you want to save the video view and then create a new one, click **Save** and **New**. The current video view is saved and closed, but the Video View Editor remains open to allow you create a new video view.

Deleting a Video View

Delete a Video View on the Video Tree


1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** pane.
2. Open the Company Name folder by clicking  to the left of the folder.
3. Open the Views folder by clicking  to the left of the folder.

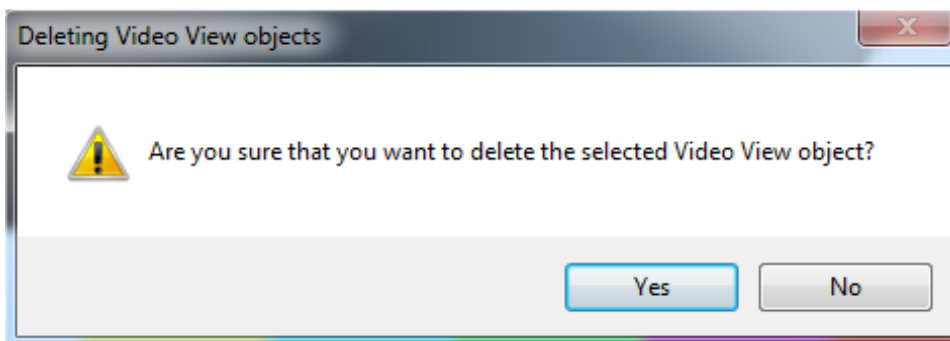
4. In the Video Tree, right-click the Video View that you want to delete, select **Delete** from the context menu.
5. A message box appears stating **Are you sure that you want to delete the selected view?**



6. Click **Yes** in the message box to delete the view.

Delete a Video View in Dynamic View

1. In the **Navigation** pane of the Administration Station, click **Video** to open the **Video** pane.
2. Select **Video View** from the Video pane drop-down list.
3. Click  to open a Dynamic View showing all View objects.
4. In the list, right-click the View that you want to delete and select **Delete** from the context menu.



5. Click **Yes** in the message box to delete the view.

Configuring a Video View

To Configure a Video View:

1. Create a new View or open an existing View. See **Creating a Video View** and **Accessing the Video View Editor**.
2. Enter a unique name, up to 100 characters, in the **Name** field.
3. Enter a textual description, up to 500 characters, in the **Description** field.
4. Click on the type of grid that you want to use for the Video View.
5. Expand the server folder and select the GeViScope Video Camera that you want to add to the Video View using drag and drop into the area below the grid icons.
6. Or, if you want to use all cameras on a GeViScope Server, drag and drop the server into the area below the grid icons.
7. Click **Save** and **Close** to save the configuration.

To Delete a Camera from the View:

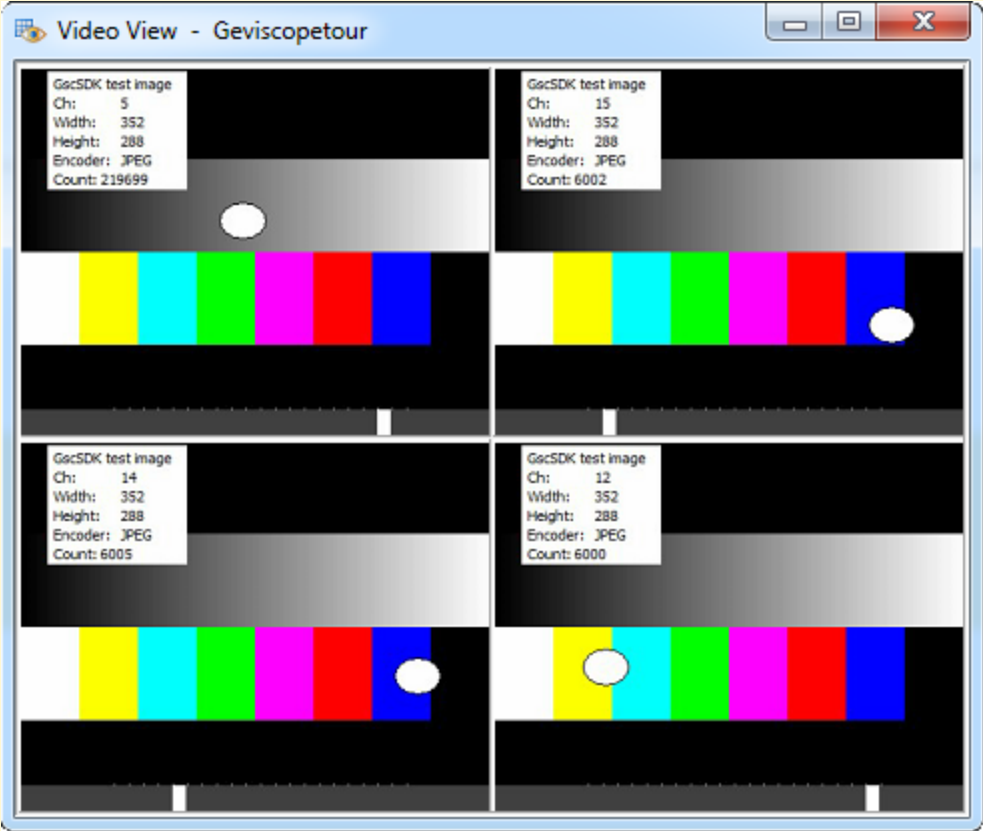

1. After you successfully add a camera, the camera name and a **x** mark will appear on the top of the image.
2. To delete the camera from the view, click **x**.
3. Click **Save** and **Close** to save and exit.

Video View Viewer

The Video View Viewer enables you to view a Video View in Administration Workstation.

There are three ways to view a video view.

View	Description
Video View	Displays the video in a Dynamic View.
Popup View	Displays the video in a pop-up window.

View	Description
	 <p>i The Video View buttons are hidden. To view them, move your mouse over the top of the view. To keep the buttons visible, click .</p>
View in Current Tab	Displays the video on the current tab in the content area.

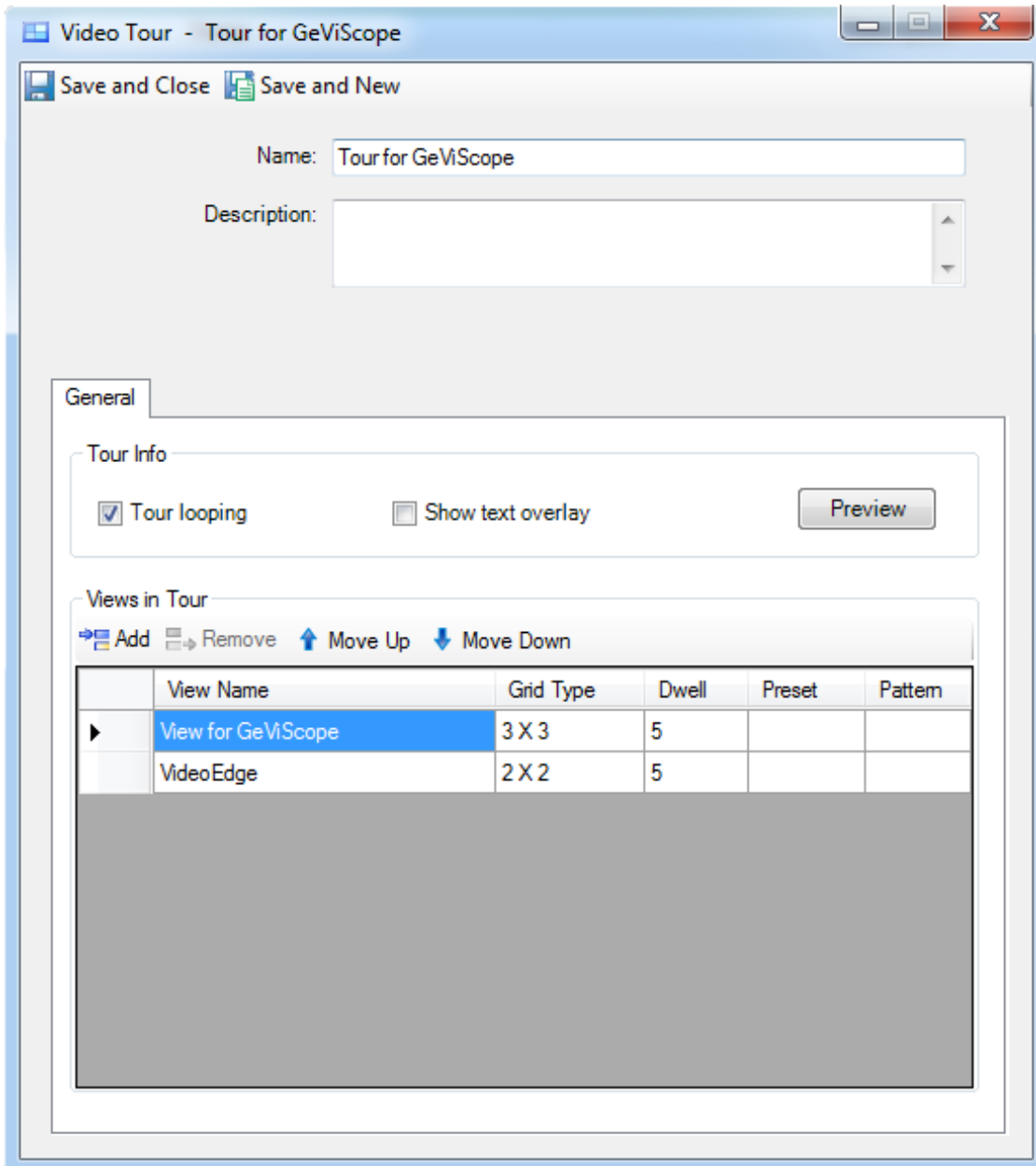
Video Tour

This topic describes how to create and configure a Video Tour with GeViScope Video Camera.

A video tour is a list of views that will be changed in sequence for a user-defined dwell time in a Live Video Window. The Video Tour Editor, lets you add or remove a video view on a video tour and adjust the sequence of video views.

This feature enables you to view live video from a configured collection of views that are configured to display different cameras and camera groups in a time sequence.

Beginning with the first camera, video is displayed for a fixed amount of time before automatically proceeding to the next camera. This process continues until the last camera in the tour is reached, or indefinitely if looping is enabled. Looping is the ability for a user to continuously replay the video tour. In addition, users retain full access to PTZ Camera Control.



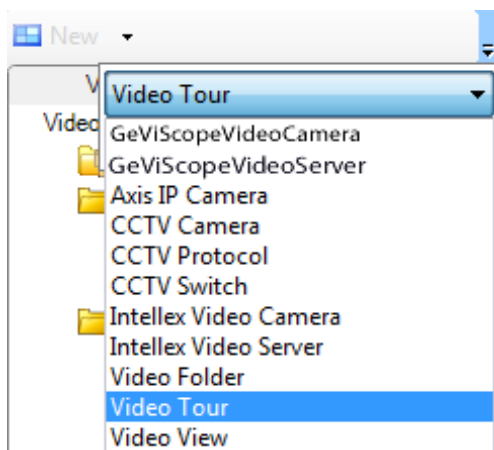
Accessing the Video Tour Editor


Access the Video Tour Editor on the Video Tree

1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** pane.
2. Expand the Video tree. Open the Company Name folder by clicking ▶ to the left of the folder.
3. Open the **Tours** folder by clicking ▶ to the left of the folder.
4. In the Tour Tree, right-click the Tour that you want to access, select **Edit** from the context menu to open the Video Tour Editor.

Access the Video Tour Editor in Dynamic View

1. In the **Navigation** pane of the Administration Station, click **Video** to open the Video pane.
2. Select **Video Tour** from the Video pane drop-down list.



3. Click  to open a Dynamic View showing all Video Tour objects.
4. Double-click on the **Video Tour** in the list that you want to access and select **Edit** from the context menu. The Video Tour Editor opens.

Creating a Video Tour

To Create a Video Tour:

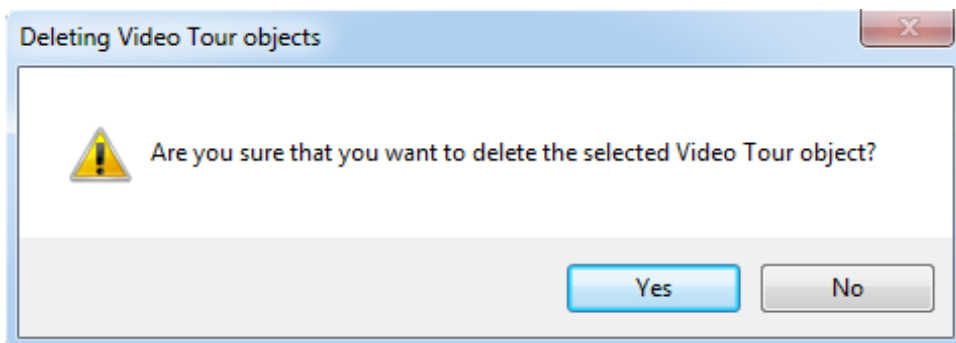
1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** pane.
2. Open the Company Name folder by clicking to the left of the folder. In the Company Name folder, right-click the **Tours** and select **New**.

3. The Video Tour Editor opens, allowing you create the configuration. See **Configuring a Video Tour**.
4. After you finish your configuration, click **Save** and **Close** to save and exit.
5. Alternatively, if you want to save the video tour and then create a new one, click **Save** and **New**. The current video tour is saved and closed, but the Video Tour Editor remains open to allow you create a new video tour.

Deleting a Video Tour

To Delete a Video Tour on the Video Tree:

1. In the **Navigation** pane of the C-CURE 9000 Administration Station, click **Video** to open the **Video** Pane.
2. Open the Company Name folder by clicking to the left of the folder.
3. Open the **Tours** folder by clicking to the left of the folder.
4. In the Tour Tree, right-click the Tour that you want to delete, select **Delete** from the context menu.
5. A message box appears stating **Are you sure that you want to delete the selected tour?**



6. Click **Yes** in the message box to delete the tour.

Configuring a Video Tour

To Configure a Video Tour

1. Create a new tour or open an existing tour. See **Creating a Video Tour** and **Accessing the Video Tour Editor**.
2. Enter a unique name, up to 100 characters, in the **Name** field.
3. Enter a textual description, up to 500 characters, in the **Description** field.

4. Create a configuration in the **General Tab**.
5. Click **Save** and **Close** to save the configuration.

General Tab

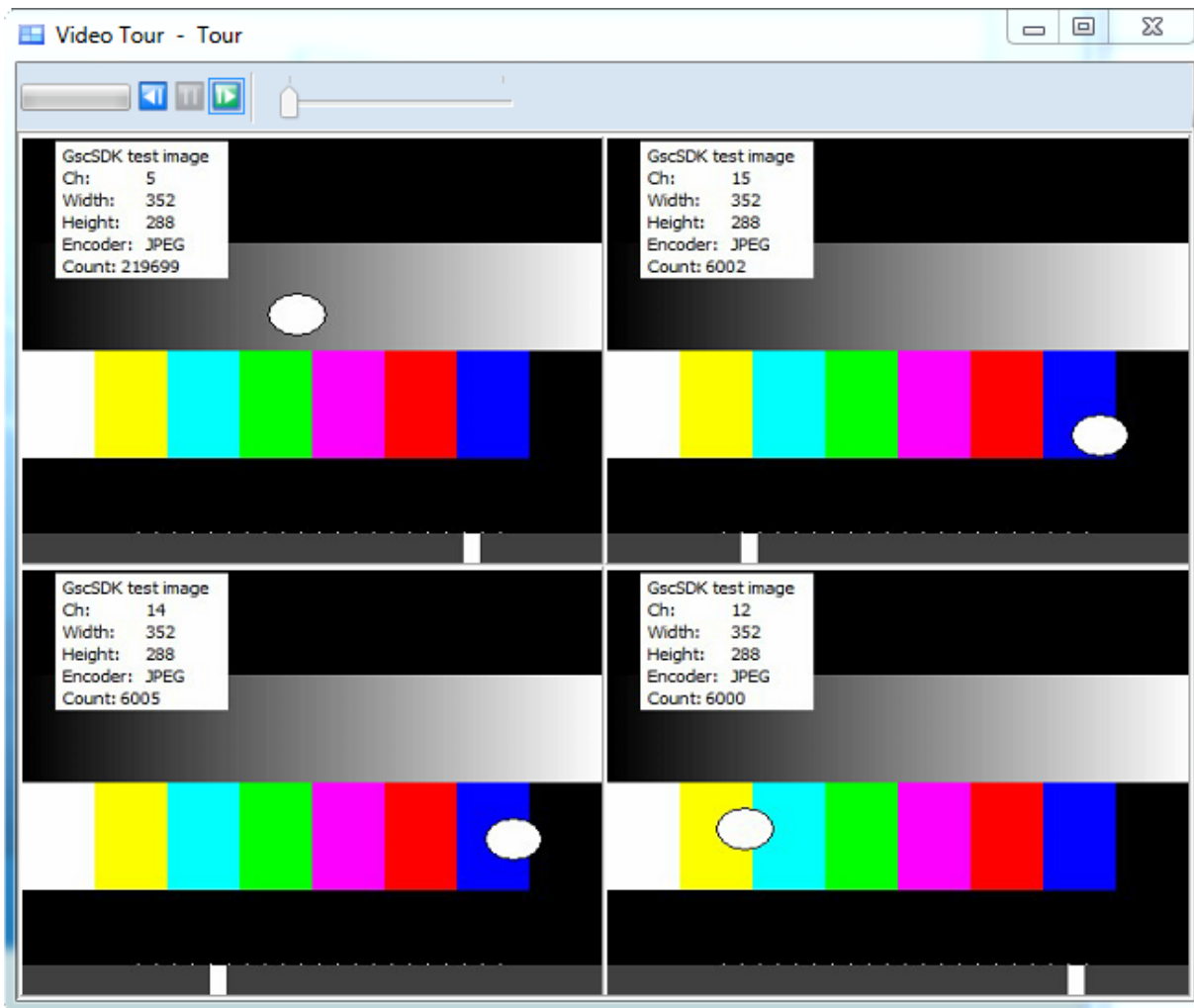
The Video Tour **General** tab lets you configure the Video Tour properties.

The following settings are available:




Field	Description
Name	Enter a unique name of up to 100 characters to identify the GeViScope Video Tour.
Description	Enter a description of up to 500 characters to identify the Video Tour.
Tour Looping	If you select Tour Looping, the Video Tour continuously starts over again. If unchecked, the tour runs only once.
Show text overlay	If you select Show Text Overlay, predefined text appears over video. This function is not available now.
Preview	Enables you to preview the tour. A separate window is created and displays all the views of the tour one-by-one in sequence.
Add	Open the Video Tour Editor to add a Video View to the tour.
Remove	Removes a Video View from the tour.
Move Up	In the View list, click the cell to the left of a View to select the View. Then click Move Up to move the selected video view up in the view sequence.
Move Down	In the View list, click the cell to the left of a View to select the View. Then click Move Down to move the selected video view down in the view sequence.



Preview Window

In the Preview window, all the views of the tour are displayed one-by-one.



The following table lists the name and description of the buttons:

Button	Description
	Progress bar. Show the display progress of a video view.
	Backward the video.
	Pause the video.

Button	Description
	Forward the video.
	As videos of the tour display one by one, the slide will automatically move.

GeViScope Journal Messages

This topic describes the customized Journal messages available from GeViScope integration.

The following table lists the Journal Messages that can be reported by the GeViScope Integration to the C·CURE 9000 database.

In the table, objects, such as a panel name, point name, or computer name are represented by the “#” symbol. The actual value for the object property will replace the “#” in the Journal.

Journ- alLogNetVideo ActivityCode	Logged	GeViScope Action/Event	CCURE Log
PresetCMD	x	On PrePosCallup Action	CameraJournalLog
PatternCMD	x	On PrePosCallup Action	CameraJournalLog
ServerOnline	x	On connection estab- lished	ServerCommStatus
ServerOffline	x	On connection loss	ServerCommStatus
ServerRecord	x	On CustomAction (X, “CCureRe- cordingStarted”)	RecordVideoJourn- alLog
SaveBitmapFile	x	On Snapshot (ImageEx- portNotification)	CameraJournalLog
EmailBitmapFile	x	From Client on Export (ImageEx-	CameraJournalLog

JournalLogNetVideo ActivityCode	Logged	GeViScope Action/Event	CCURE Log
		portNotification)	
SaveVideoFile	x	On GBF Export (ImageExportNotification)	CameraJournalLog
ExportVideo	x	On GBF Export (ImageExportNotification)	CameraJournalLog
CameraAlarmed	x	respective SensorVideoAlarm	CameraJournalLog
CameraAlarminBegin			
CameraVideolossBegin	x	VideoSyncFailed	CameraJournalLog
CameraMotionBegin	x	Respective SensorVideoAlarm	CameraJournalLog
CameraVideolossEnd	x	VideSyncDetected	CameraJournalLog
CameraMotionEnd	x	Respective SensorVideoAlarm	CameraJournalLog
ServerRecordEnd	x	On CustomAction (X, "CCureRecordingStopped")	RecordVideoJournalLog

GeViScope Limitations

- i** It is recommended that the machine running the GeViScope Integration has at least 4 GB memory and that the 3 GB switch in 32 bit OS systems is enabled. Otherwise, an out of memory error message might be displayed and the C-CURE 9000 Administration Workstation might be closed.

Limitations:

- The server component of the GeViScope Integration can only be installed on 32 bit operating systems.
- The GeViScope Integration requires a network environment with enough bandwidth to allow video streaming.
- Viewers use a lot of resources (memory and display card), so keep the number of open viewers as small as possible at any time (this is also true for the view in tour).
- It will take a few seconds to open a view for the first time, but subsequent viewings will load faster.
- In maps, the GeViScope server icon will only change to reflect the online, offline, unknown states.
- When you add a GeViScope Camera into a view, only the GeViScope server name and VideoEdge4.0 camera name will be displayed. No video will stream in the camera preview window.
- GeViScope Integration client is not supported over remote desktop.
- If you install the GeViScope Integration, and do repair or upgrade installation of C-CURE 9000, GeViScope Integration will need to be reinstalled/ synchronized.
- Recorded video play rates, which are less than 1, are not supported.

DTE Peacock (GeViScope)

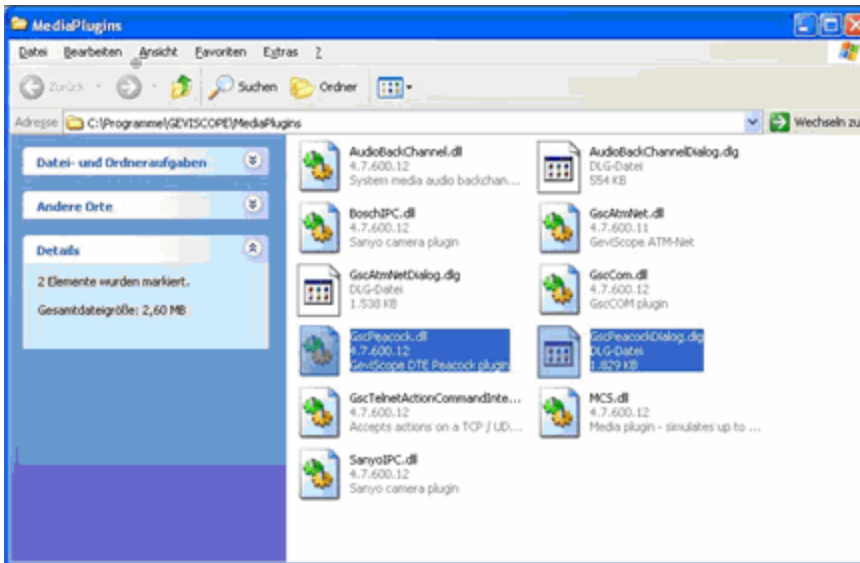
With this plugin, Peacock cash register systems can now be used in GeViScope. Cash register systems can be connected using a serial connection or also over COM/IP routers.

Installation

The plugin consists of two DLLs: GscPeacock.DLL (the DTE Peacock plugin) and GscPeacockDialog.DLG (the DTE Peacock setup GUI).

If the plugin is not included in the scope of installation with delivery, please copy the two files to the plugin directory of GeViScope (C:\Program Files\GEVISCOPe\MediaPlugins).

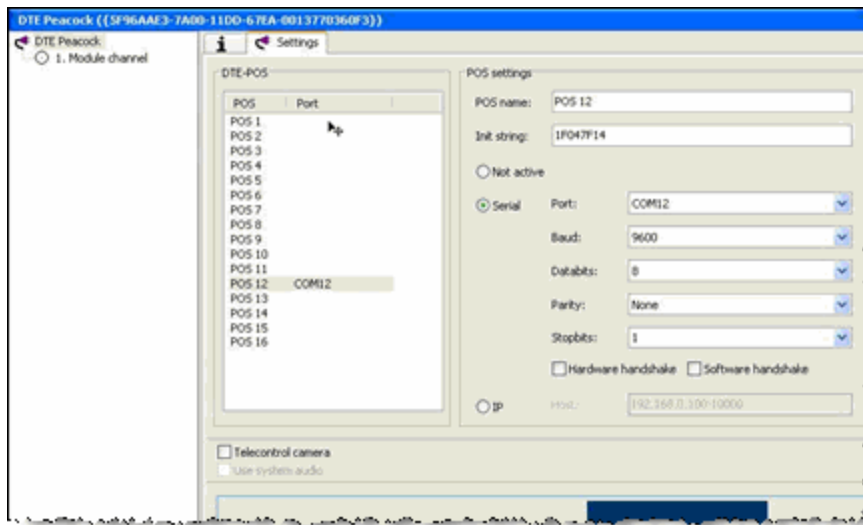
 **The GeViScope server service must then be restarted.**



i Note that the plugin only works with the newer version of GeVISCOPY (from 600.12 on).

Configuration

1. In GSCSetup, open the **Hardware** selection menu.
2. Right-click on the list view and in the pop-up menu select on **Add**.
3. In the following pop-up, select the plugin **DTE Peacock** by selecting it and clicking **Add**.
4. The DTE Peacock plugin is now entered in the hardware module list as a hardware resource.



- The plugin supports up to 16 cash register systems. For each system, you can configure the serial parameters individually, initialization character string, etc. For active interfaces, the port is displayed in the overview list.

Messages

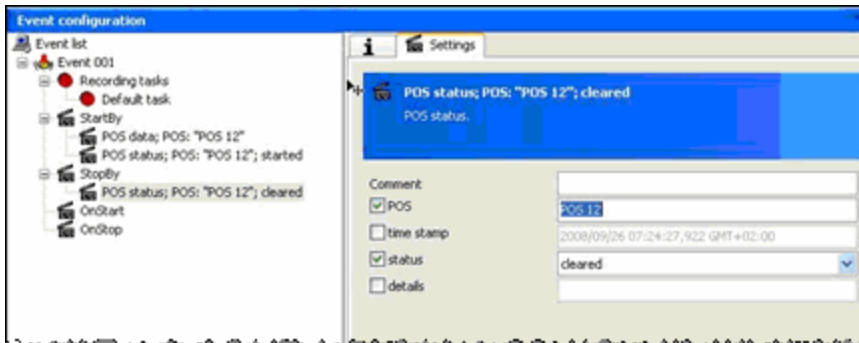
The plugin produces three messages during operation:

Message	Description
POS data	This message contains the name of the cash register, time of the message, the three transmitted rows (unprocessed), summarized article designation (from row 1 and 2) and the price (from row 3).
POS status with status = cleared	This message occurs when deleting the register display when all transmitted character strings were empty. Usable information includes the name of the register and the time stamp.
POS status with status = started	This message occurs when receiving the initialization sequence when switching the register on.

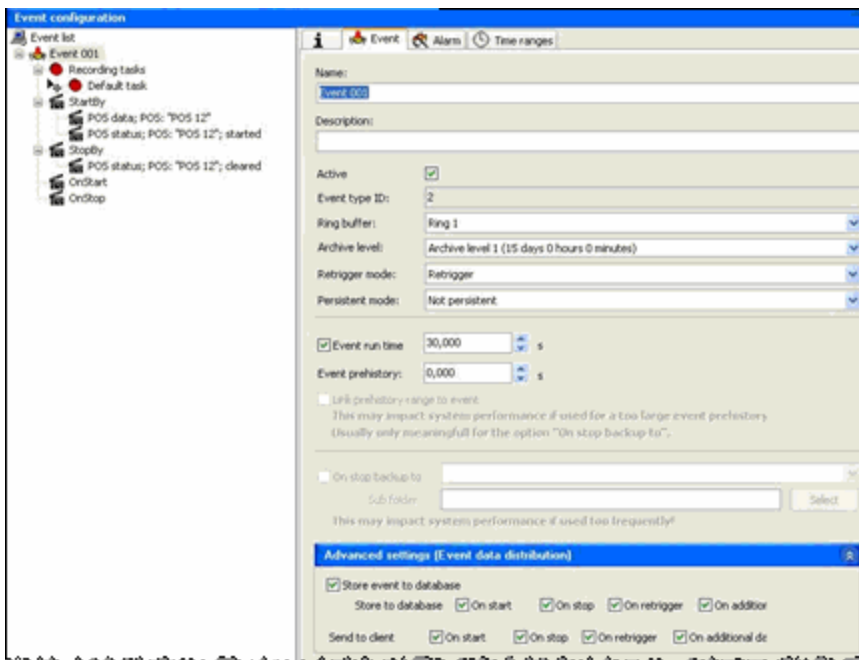
Settings

For recording the data, these must be stored as accompanying data of an event.

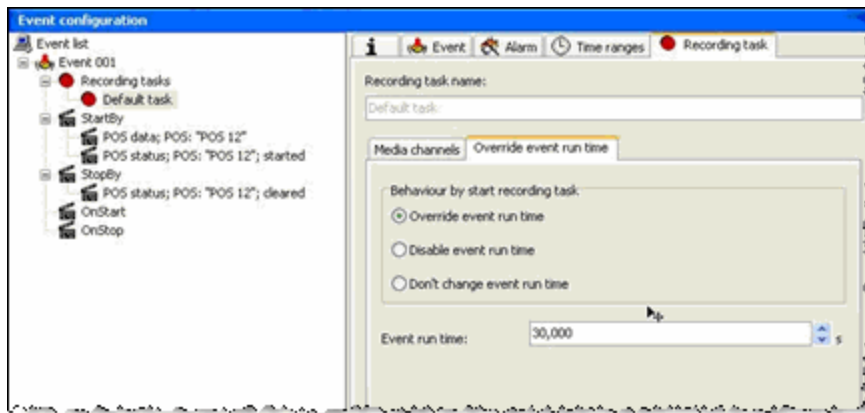
1. Create an event for this purpose. The event should retriggered when the register starts and for each article booking, so that the data are saved and displayed. Deleting the register display should also delete the event display:



2. To reach the required display parameters (fade in, 30 s display, refresh or delete), you should configure the event as follows:

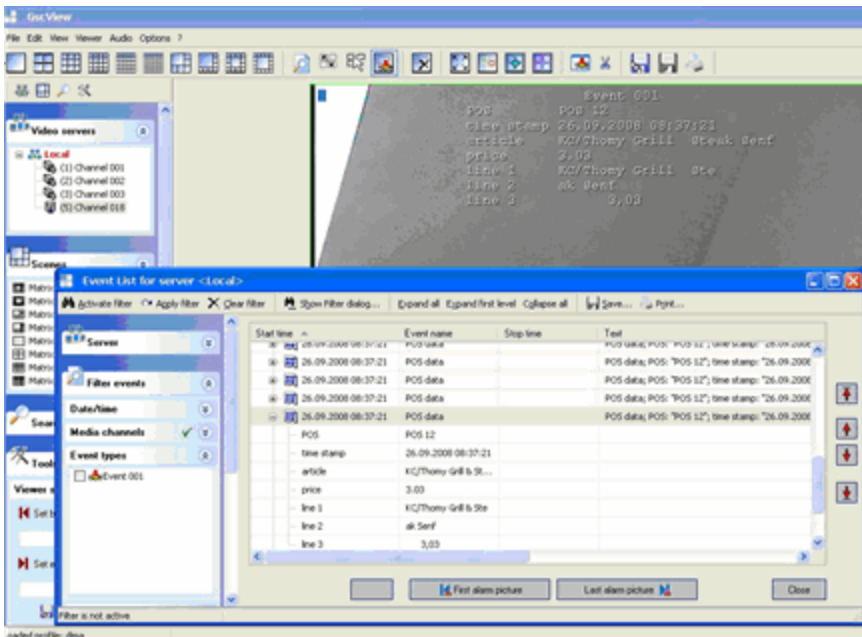


3. In addition, the following adjustment should be made to the run time:

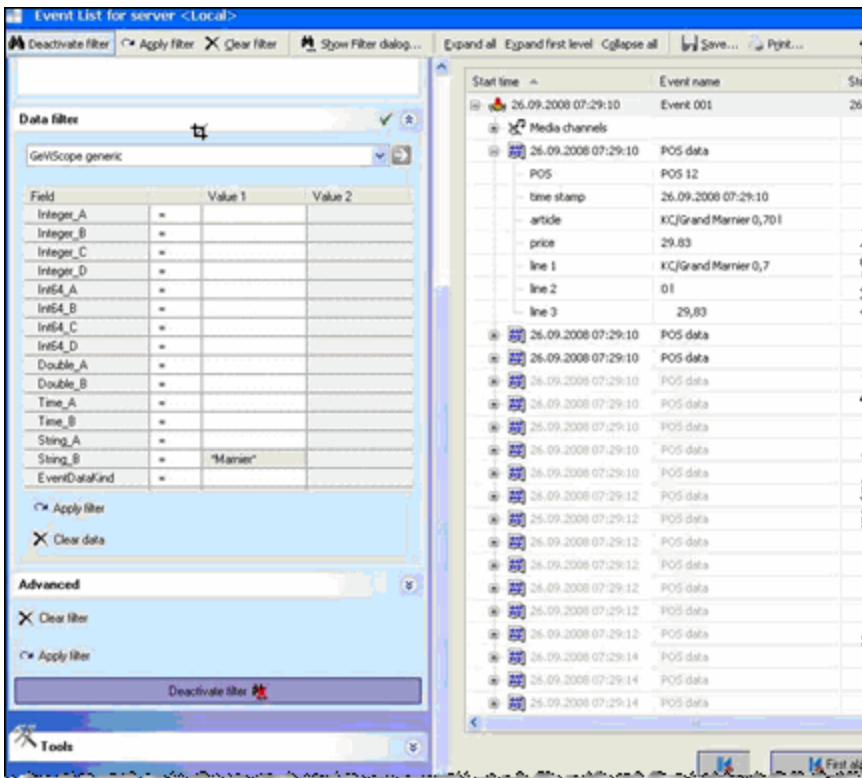


GSCView

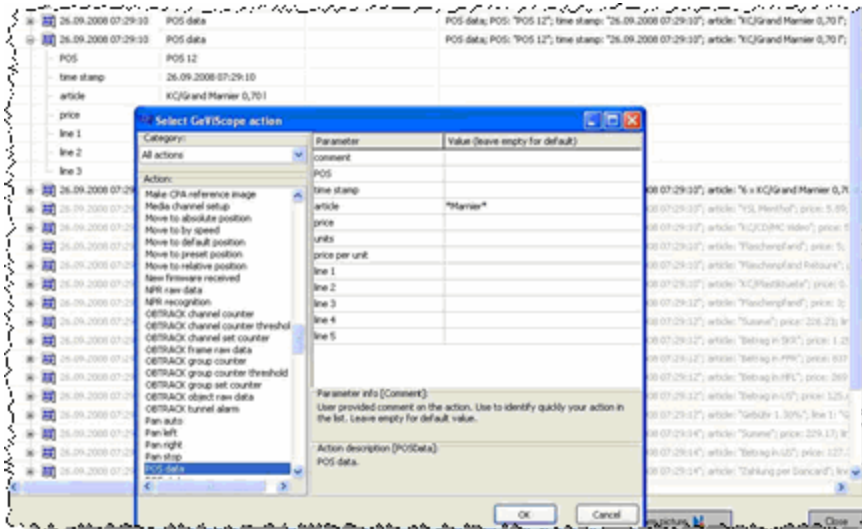
Display of the data in GSCView is still performed in default mode:



Accordingly, the search dialogs have not yet been modified. However, you can now use the standard search dialogs "GeViScope generic" and "GeViScope action filter":



Here the excerpt of the event list:



G-CIS (GeViSoft)

G-CIS is a service which allows communication between a COMMEND INTERNATIONAL system and the Geutebrück system. Basically G-CIS consists of a service (G-CIS.exe) and a front-end application (G-CISEdit.exe) to setup the service.

G-CIS is shipped with its own installer and is not part of the GeViSoft package. In order to use G-CIS it is necessary to purchase a license.

i G-CIS allows only one dongle per server.

Functionality

Basically G-CIS listens on the COMMEND INTERNATIONAL system and the Geutebrück system and works as a gateway between COMMEND INTERNATIONAL and GeViSoft. GeViSoft is connected with the GeViScope servers and delivers the commands using action mapping. The cameras and monitors in a COMMEND INTERNATIONAL system are identified by call numbers. In a Geutebrück system the monitors and cameras are identified by a unique global number. The following table shows a comparison of the different terms in the systems.

i In COMMEND INTERNATIONAL systems the call numbers are treated as strings. So “1” and “0001” are different call numbers.

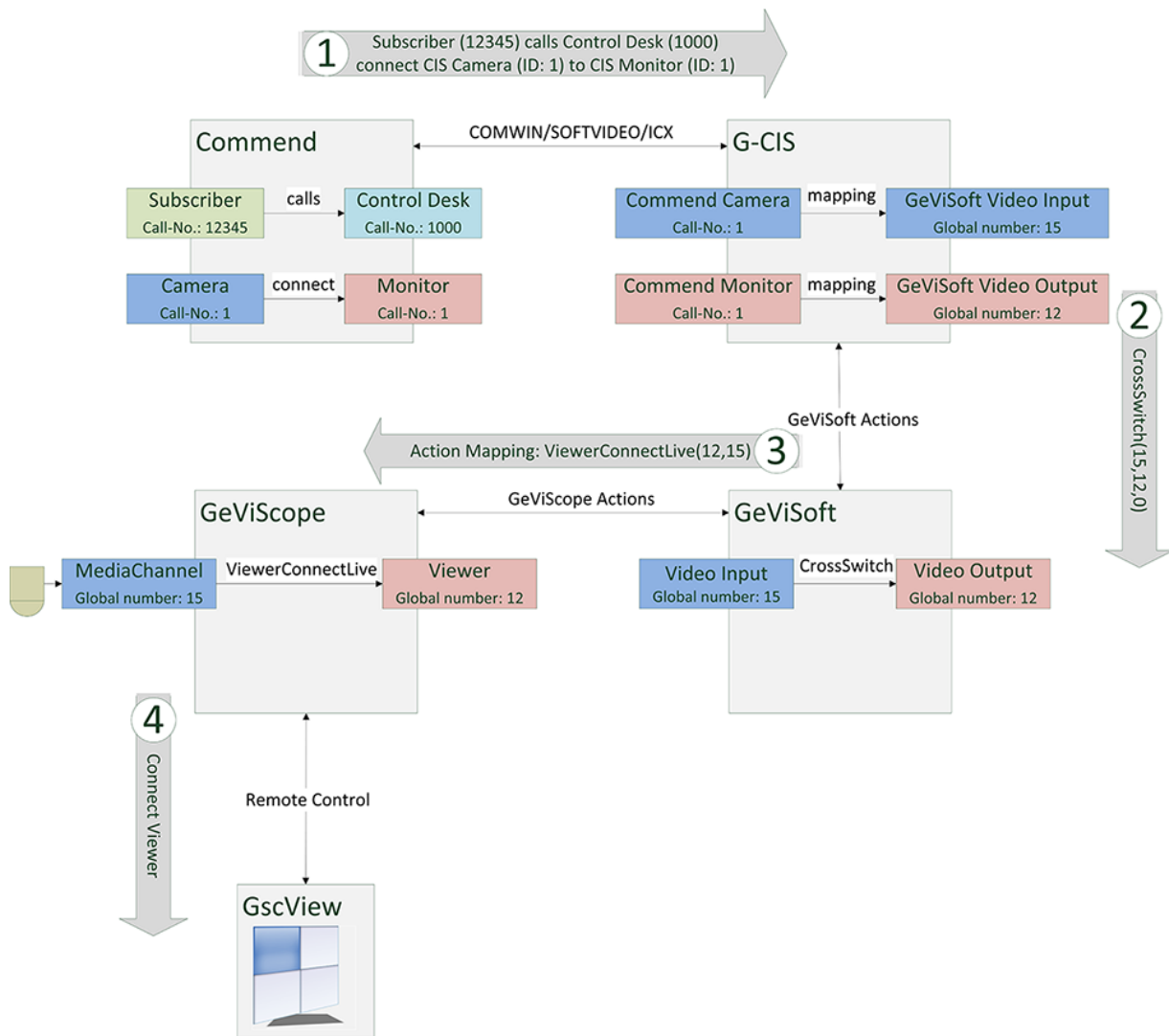
COMMEND INTERNATIONAL System	GeViSoft	GeViScope
Monitor (COMMEND call number)	Video output (GeViSoft global number)	Viewer (GeViScope global number)
Camera (COMMEND call number)	Video input (GeViSoft global number)	Media channel (GeViScope global number)

i All actions in GeViSoft/GeViScope require the global number as an input parameter. Do not use the MediaChannel ID.

i In this example the protocol “Softvideo” is used.

The following figure shows an overview of a G-CIS setup. If subscriber 12345 calls control desk 1000 the media channel with global number 15 connects to the viewer with the global number 12 in GSCView. The following steps are necessary to achieve the desired result:

1. **Subscriber 12345** calls **control desk 1000**. In the **COMMEND INTERNATIONAL** system there is a rule, that **COMMEND Camera 1** should be connected to **COMMEND Monitor 1**.
2. G-CIS listens on the **COMMEND INTERNATIONAL** system and receives the request. The **COMMEND call number** must not match the **GeViScope global number**. To map between the two systems there are two lookup tables: **Camera mappings** and **Monitor mappings**. In this setup the **COMMEND Camera 1** is mapped to **GeViSoft video input 15** and **COMMEND Monitor 1** to **GeViSoft video output 12**.
3. G-CIS now generates and sends a **CrossSwitch action** to GeViSoft to propagate the request.
4. GeViSoft receives the request and translates the **CrossSwitch** action to a **ViewerConnectLive action (GeViSoft: Action Mapping)** and sends it to all connected GeViScopes.
5. GeViScope receives the **ViewerConnectLive action** and connects **media channel 15** with **viewer 12**.



Installation

Install G-CIS

An installation wizard guides you through the installation of G-CIS. It is necessary to install the proper dongle driver and the Geutebrück GLA service to obtain the license.

i If no GLA service is installed or the license is not found, a 120 minutes demo mode is provided.

After installing G-CIS the settings editor can be launched: **Start > Programs > Geutebrück GmbH > GeViSoft > G-CIS Settings Editor.**

Uninstall G-CIS

The uninstall wizard can be launched: **Start > Programs > Geutebrück GmbH > GeViSoft > G-CIS uninstall.**

i **If Geutebrück software still remains on the system the GLA service and drivers should not be uninstalled.**

Comwin Protocol (ICX) vs. Softvideo

COMMEND Intercom servers provide two types of events sent out on an ICX interface: **Comwin protocol** (which was renamed to **ICX**) and **Softvideo**.

Comwin protocol triggers messages for typical call and conversation events. As soon as a call request arrives in the call queue of a control desk station, a message is triggered. The same occurs for the conversation start and end. In this case, all the configurations of assigned cameras and monitors in the VMS have to be based on these events in the video system.

Softvideo provides additional messages on the data connection, which already include information about logical camera numbers and monitor numbers. Therefore all the assignment of cameras and monitors have to be configured in the COMMEND Intercom System. And in this case the VMS only has to follow the logical control messages to switch a certain camera (logical number) onto a certain monitor, which is identified by a logical number as well.

GeViSoft: Action Mapping

G-CIS generates GeViSoft actions to signal calls in the COMMEND INTERNATIONAL system. In GeViSoft action mapping is used to route actions from GeViSoft to GeViScope and vice versa.

Actions

The following tables describe the actions used in G-CIS.

Direction: **GeViSoft > GeViScope**

GeViSoft	GeViScope	Description
CrossSwitch	ViewerConnectLive	In GscView a media channel is connected to a Viewer.
Clearvideo output	ViewerClear	In GscView the viewer is cleared.

GeViSoft	GeViScope	Description
PrePosCallUp	MovePresetPosition	PTZ camera moves to pre-set position.
CloseContact	User-defined	The user-defined action is executed after a digital output is closed.
OpenContact	User-defined	The user-defined action is executed after a digital output is opened.
InputContact	User-defined	The user-defined action is executed after a digital input has changed.

Direction: GeViScope > GeViSoft

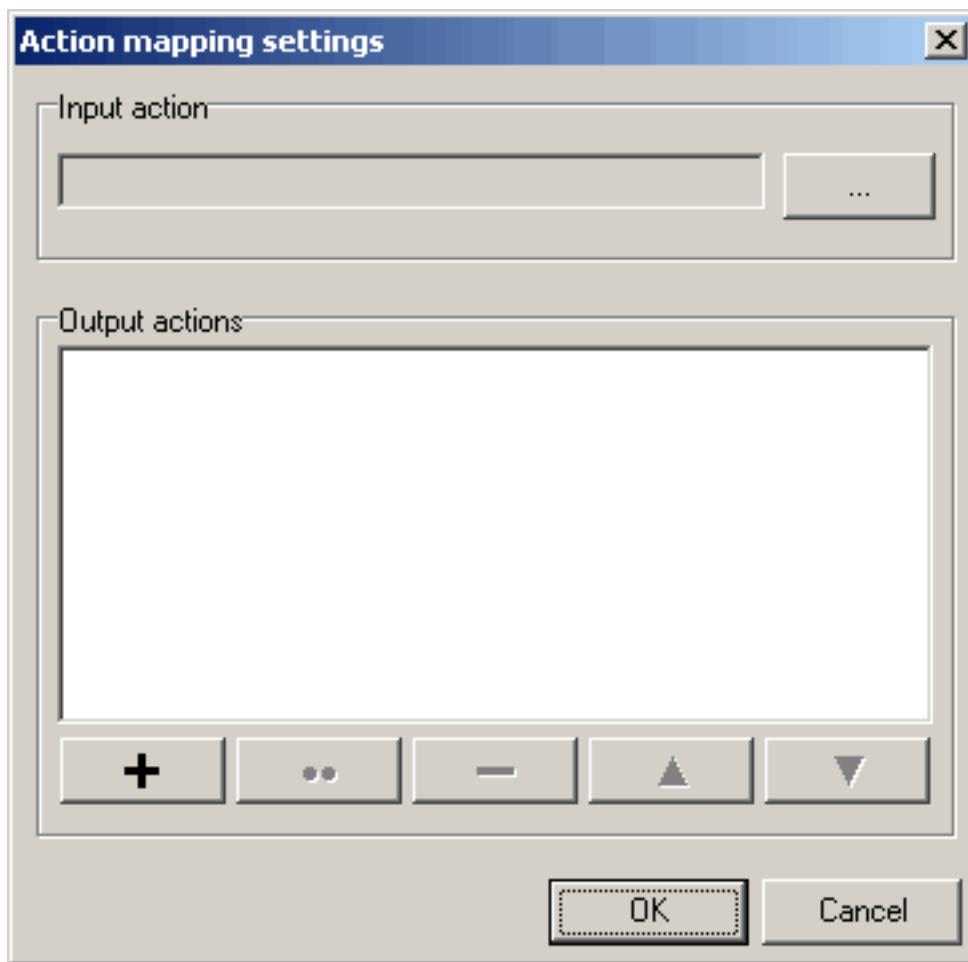
GeViSoft	GeViScope	Description
ViewerConnected	CrossSwitch	Signals GeViSoft that a viewer is connected to a media channel. If a “Hot Monitor” is configured, a call will be initiated.
CustomAction	CloseContact	Closes the digital output after receiving the user-defined CustomAction.
CustomAction	OpenContact	Opens the digital output after receiving the user-defined CustomAction.
CustomAction	InputContact	Sets the digital input after receiving the user-defined CustomAction.

Working with Mapping Rules

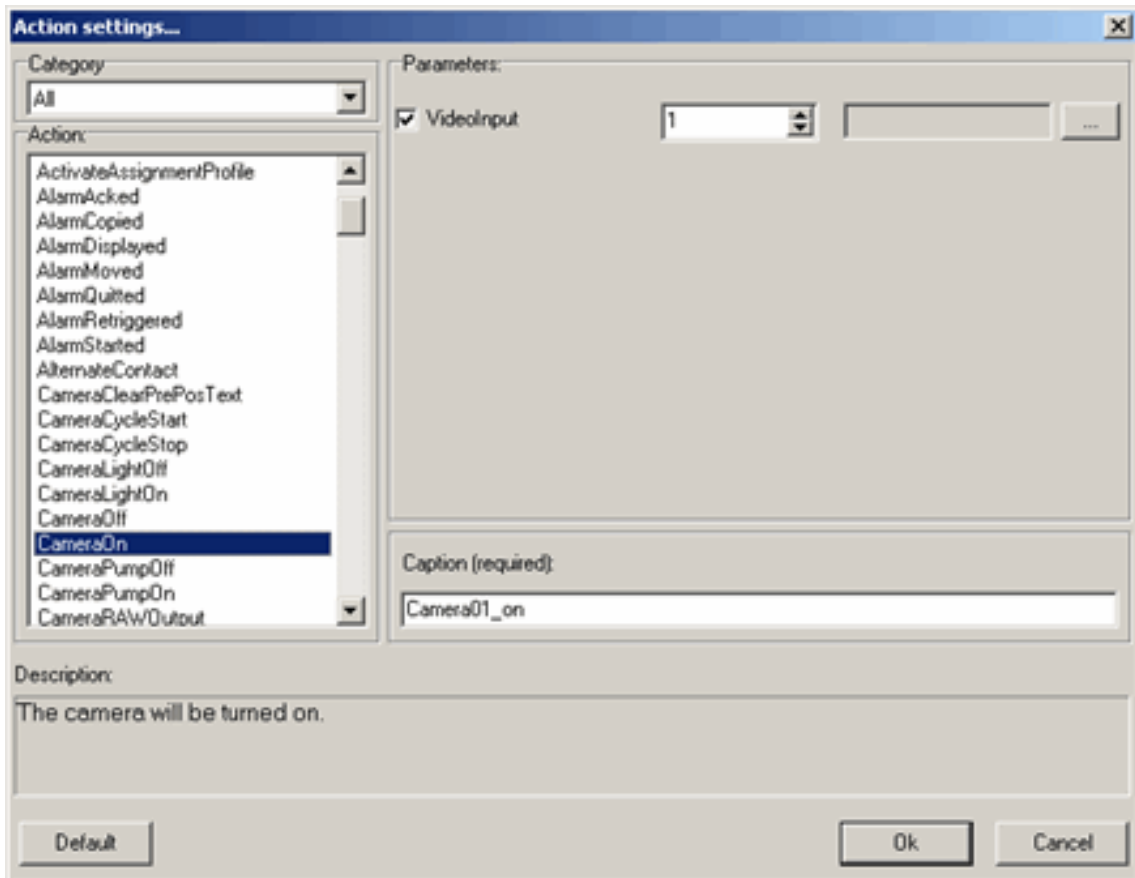
Mapping rules are the activation of several selectable actions by allocating this mapping to an action that can be addressed as a new, configurable action due to its allocation.

How to Create a New Mapping Rule

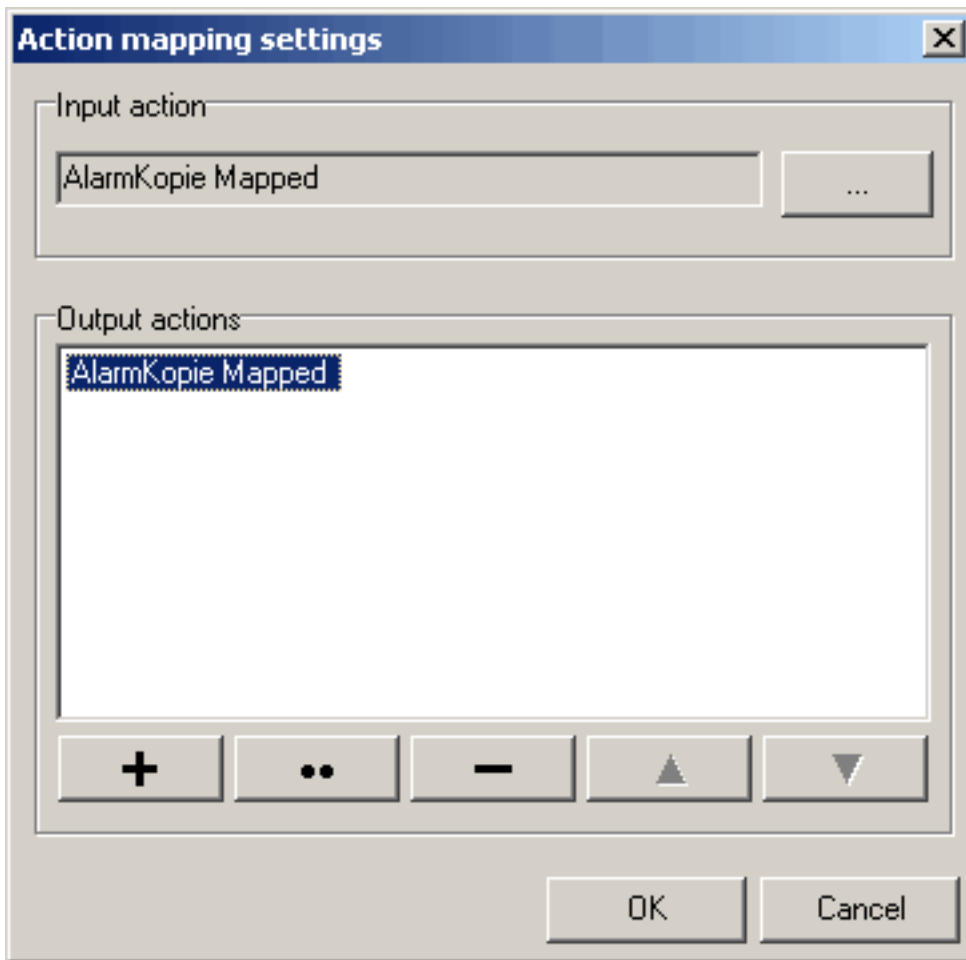
1. In the **Server** menu select the item **Mapping rules**. A dialog box opens.
2. Press the **Add...** button. The following dialog box is opened:



3. Click the Button ... Here you can create a desired action. The dialog box **Action settings...** is opened:



4. Enter the required values and confirm with Ok.

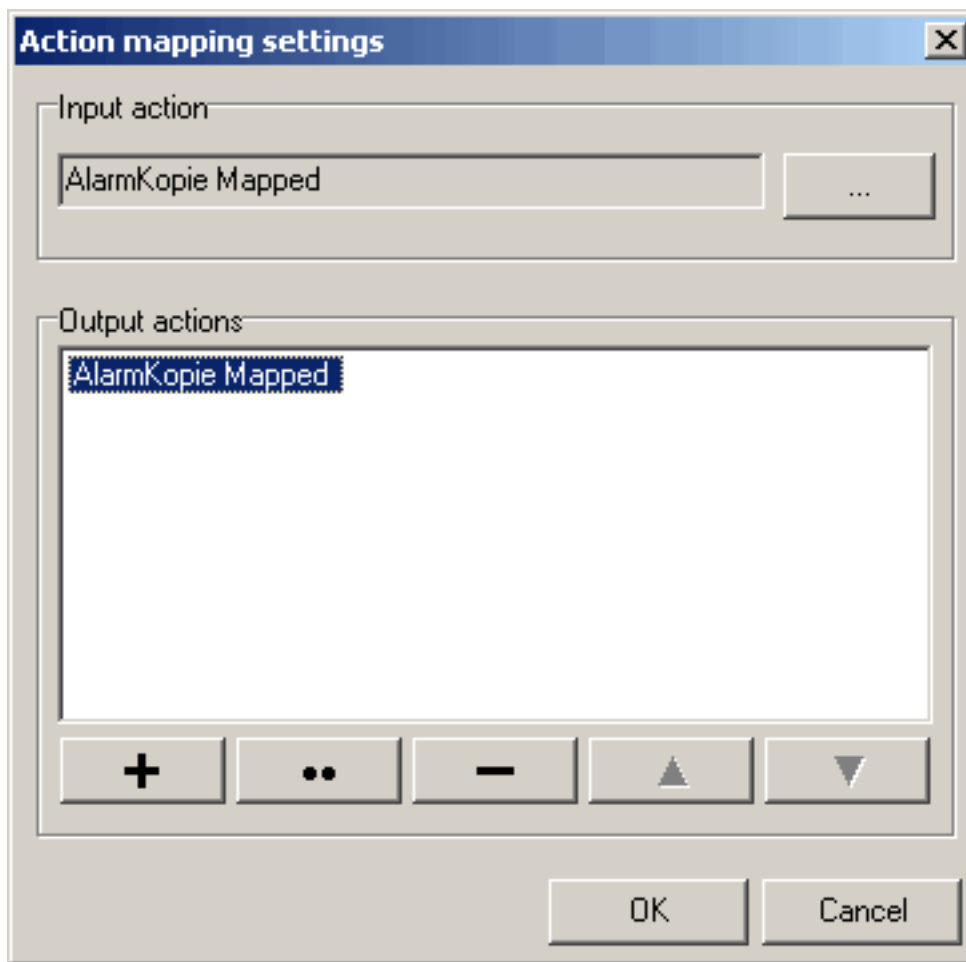


Name	Description
Mapped action	Here the planned actions are displayed.
+	Adding a planned action. Press the button. The dialog box Action settings is opened (see above illustration). Enter the required values. Confirm with OK.
..	Here you can edit the planned actions from Mapped action. Select the desired action. Press the Edit... button. The dialog

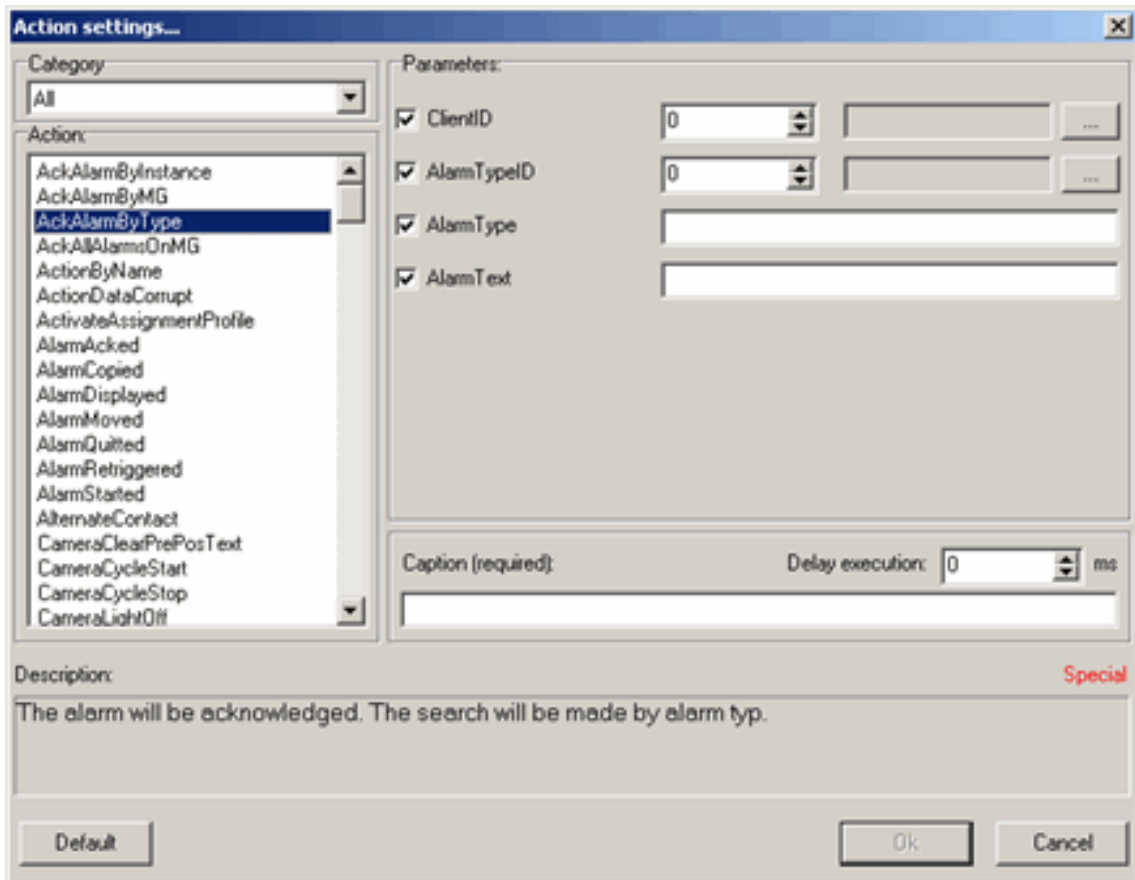
Name	Description
	box Action settings is opened (see above illustration). Enter the required values. Confirm with OK.
-	Here you can remove actions from Mapping actions that are no longer required. Select the desired action. Press the Remove button. The entry is removed.
OK	The changes are applied. You return to the window Mapping rules.

How to Configure a Mapping Rule

1. Open the dialog box **Mapping rules**. At least one mapping rule must have been created.



2. Select the mapping rule that you want to configure. Press the **Edit ...** button. The following dialog box opens:



3. You can now make the desired changes.
4. Confirm with **OK**.

How to Remove a Mapping Rule

1. Select the mapping rule.
2. Press the **Remove** button.
3. A query dialog is opened.
4. Press a button:

Name	Description
Yes	One mapping rule is removed. If you have selected several

Name	Description
	rules, they are removed individually.
No	This mapping rule is not removed. If you have selected several rules, you can remove the following rules or leave them.
Yes to all	All selected mapping rules are removed immediately.

Configuration

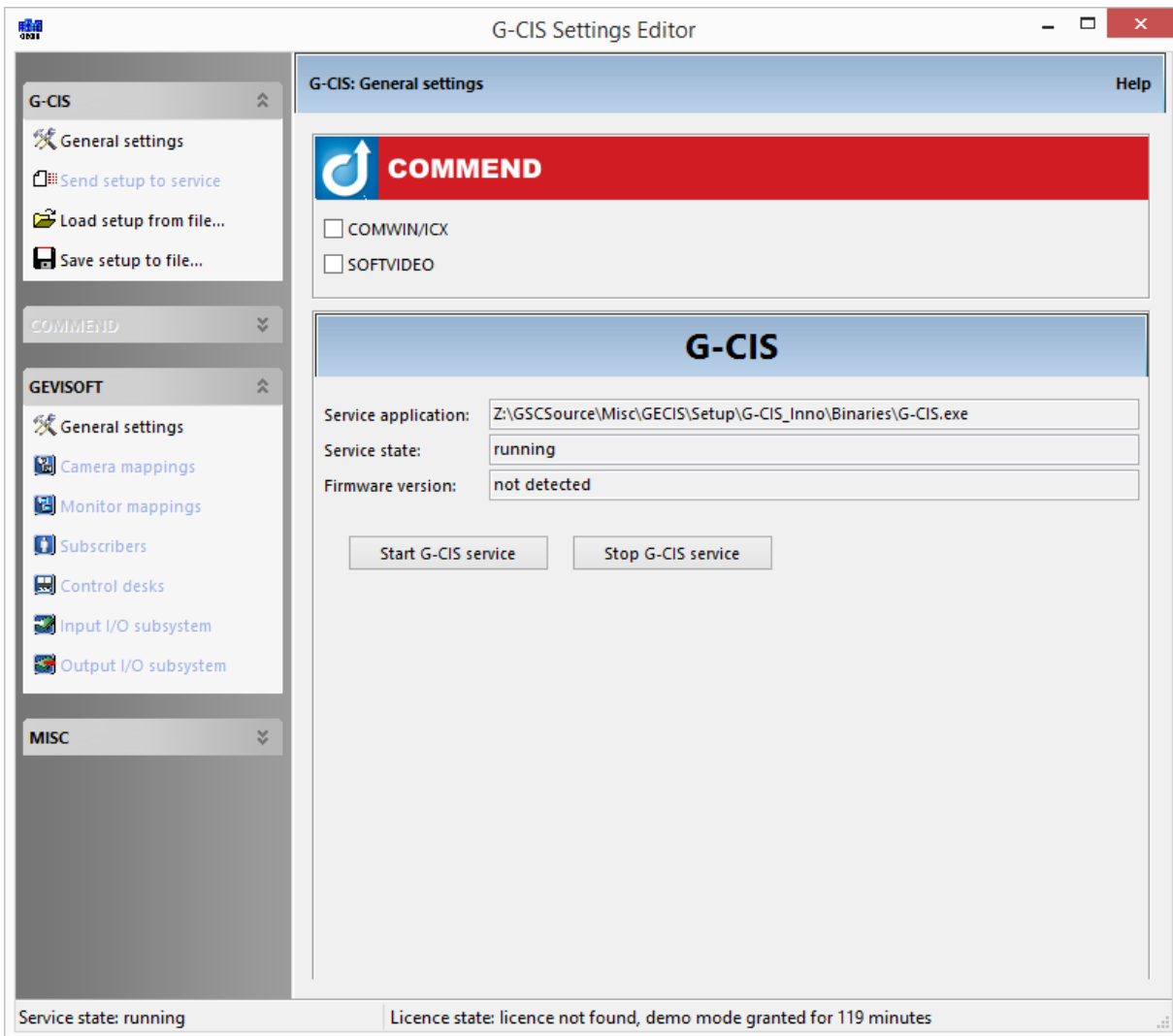
The configuration consists of three parts:

- **G-CIS** – General settings, managing of setup
- **Commend** – General connection settings and camera texts
- **GeViSoft** – Setup communication between COMMEND INTERNATIONAL and Geutebrück systems

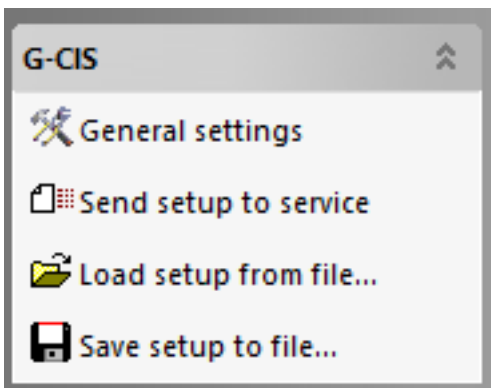
G-CIS

G-CIS is started by executing G-CISEdit.exe or **Start > Programs > GEUTEBRÜCK GmbH > GeViSoft > G-CIS Settings Editor**.

The following figure shows the start screen of the G-CIS settings editor. It is possible to select the protocol **COMWIN/ICX** or **SOFTVIDEO** and to start and stop the G-CIS service.



After changing the settings the setup has to be sent to the server. It is also possible to save or load a setup from a file:



Commend

Basically the communication is based on two different protocols: COMWIN and SOFTVIDEO. It is possible to use one serial port for both protocols or a different serial port for each protocol.

In current systems ICX is used and the communication runs over TCP/IP. To use TCP/IP it is necessary to use the correct IP address and port.

Default ports:

- ICX: 18000
- SOFTVIDEO: 17600

The use of alive messages is optional: In a periodic interval alive messages are sent from G-CIS to the COMMEND system. If G-CIS no longer sends alive messages, COMMEND detects an error and calls the notification number. It is possible to disable the alive check if the G-CIS service is shut down.

If the option **Terminate call request if contacts open again** is enabled a call request is terminated by changing the state of the digital output. If not, the call request must be terminated explicitly.

COMMENT: General settings
Help

COMWIN interface

Port:

Baud:

Data bits:

Parity:

Stop bits:

Handshake:

Echo:

SOFT VIDEO interface

Same as COMWIN interface

Port:

Baud:

Data bits:

Parity:

Stop bits:

Handshake:

Echo:

ICX settings

ICX/TCP

IP address:

Default ports: ICX=18000, SOFTVIDEO= 176

Options

Send alive message:

Notification number:

Deactivate alive check on service shutdown

Terminate call request if contact is open again.

After a contact is closed a call request is started.If this checkbox is selected the call request is terminatedby opening the contact.Otherwise the call request must be terminated explicitly.

GeViSoft

The general settings of GeViSoft are divided into two parts:

- **Interface settings** - The hostname, username and password of the GeViSoft server

927

- **Options** - Additional options of the protocol usage and PTZ cameras

The following options are adjustable:

- **Accept unmapped cameras** - Unmapped cameras are routed through G-CIS, the GeViSoft global number of the video input equals the COMMEND call number
- **Accept unmapped monitors** - Unmapped monitors are routed through G-CIS, the GeViSoft global number of the video output equals the COMMEND call number
- **Control video over COMWIN messages**
- **Accept extended COMWIN messages**
- **Control video over SOFTVIDEO messages**
- **Accept extended SOFTVIDEO messages**
- **PTZ Camera** - The default speed of pan, tilt, zoom and focus can be defined.

Camera Mappings

A lookup table maps the COMMEND cameras to the GeViSoft video inputs. It is possible to set a pre-set position to which the camera moves if the assigned COMMEND camera is called.

Monitor Mappings

A lookup table maps the COMMEND monitors to the GeViSoft video outputs.

Subscribers

A subscriber is a device that calls a control desk. Every subscriber has its own COMMEND call number. It is possible to assign multiple video inputs with different pre-set positions to each subscriber.

In case the subscriber calls a control desk the video inputs will be connected with the video outputs defined in the section "Control desks".

Control desks

A control desk is a device which is called by a subscriber. The following options can be configured:

- **COMMEND call number**
- **Hot Monitor** - Is a video output. After connecting a video input to this video output a call to the mapped subscriber (identified by video input global number) is initiated. It is also possible to use a virtual video output.
- **Assigned Monitors** - Are video outputs which can be connected with the video inputs from a subscriber.

Options of Assigned Monitors:

- **Video output** - Assigned video output.
- **On Disconnect**- Determines the behavior after hanging up a call.
 - **Nothing** - The connected video inputs are still connected.
 - **Clear** - The video outputs are cleared.
 - **Last manual** - If a video input is connected to this video output manually it will persist or else it will be cleared.
 - **GeViSoft video input** - A predefined video input is connected to the video output.
- **Video input and pre-set position** - Can be configured if On Disconnect is set to "GeViSoft video input".

Main- and preview monitors:

The number field **GeViSoft Main monitors** defines how many of the assigned monitors are main monitors. The main monitors in the assigned monitor list are marked with a star. The other monitors are preview monitors.

For further information read **Advanced Subscriber and Control Desk Configuration**.

The screenshot shows the 'GEVISOFT: Control desks' interface. On the left is a table with columns: 'COMMENT Call no.', 'GeViSoft Hot m...', 'GeViSoft Main ...', 'GeViSoft Video...', and 'On disconnect'. The first row has a checked checkbox, '10000', 'First assigned', '2', and four '1 - Video out...' entries with 'clear' buttons. Below the table are 'Add' and 'Remove' buttons. On the right is a 'Settings' panel with fields for 'COMMENT Call no.' (10000), 'GeViSoft Hot monitor' (radio buttons for Disabled, First assigned GeViSoft Video output, and GeViSoft Video output), and 'GeViSoft Main monitor' (2). Below this is an 'Assigned Video outputs' table with columns: 'GeViSoft Video o...', 'On disconnect', 'Ge...', and 'Preset'. It lists four outputs, with the first two marked with stars.

COMMENTInput Settings

It is possible to connect digital inputs of the COMMENT INTERNATIONAL system to Geutebrück systems. Therefore the digital inputs of the COMMENT INTERNATIONAL system are configured in G-CIS. One COMMENT INTERNATIONAL digital input can be connected to multiple Geutebrück digital inputs/ outputs.

The following settings are possible:

- COMMENT call number of the digital input
- Behavior of the digital input
- GeViSoft digital input/ output
- Operation type, clear on, close level – same parameters as in COMMENT INTERNATIONAL setup

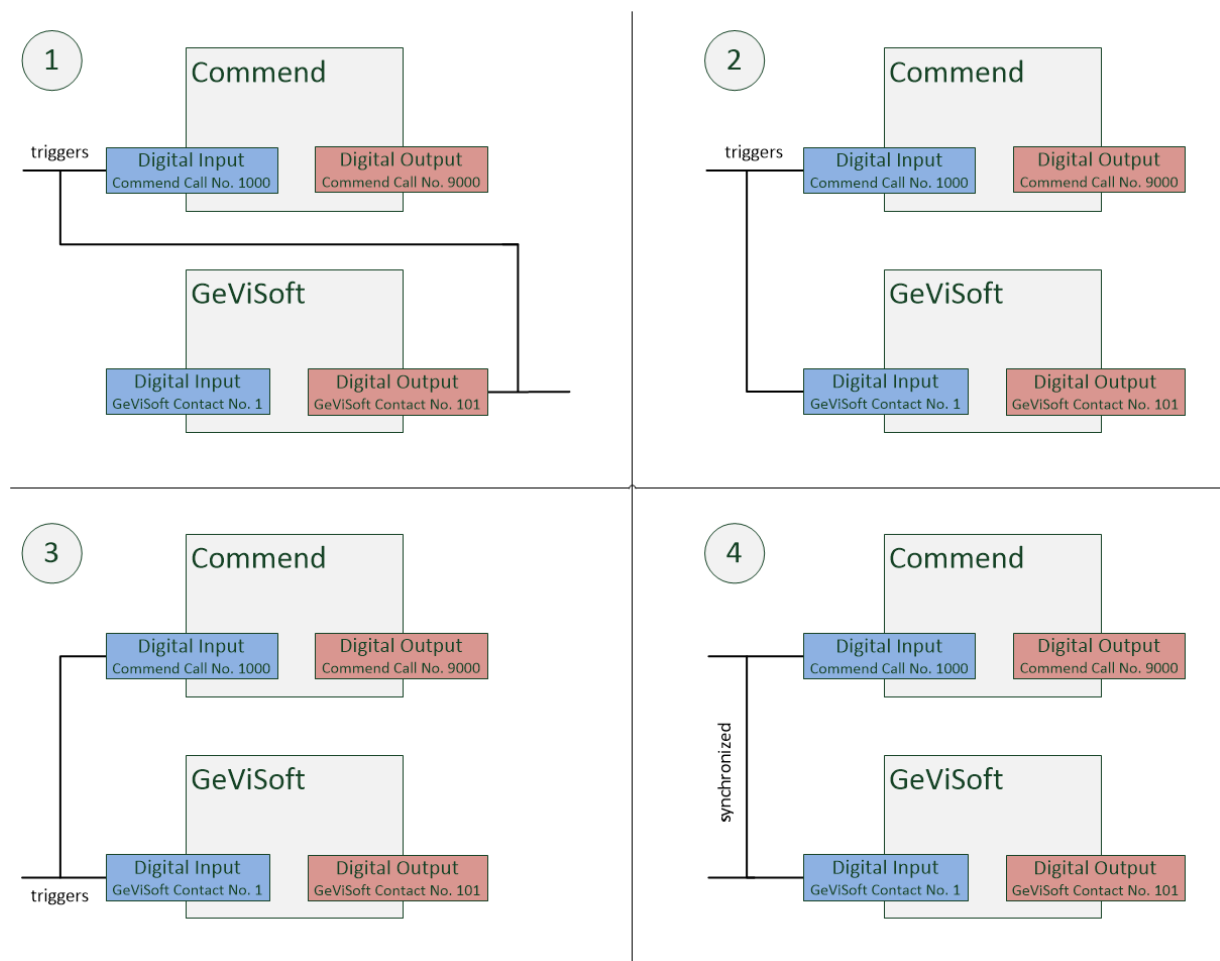
To signal the change of an in-/ output the commands `OpenContact (<ContactNumber>)` and `CloseContact (<ContactNumber>)` are used.

i It is possible to use virtual GeViSoft digital input/outputs.

Behavior of the input:

As shown in the following figure there are four different configurations possible:

1. COMMEND digital input triggers the digital output of GeViSoft
2. COMMEND digital input triggers the digital input of GeViSoft
3. GeViSoft digital input triggers COMMEND digital input
4. COMMEND and GeViSoft digital inputs are synchronized



COMMEND Output settings

It is possible to connect digital outputs of the COMMEND INTERNATIONAL system to Geutebrück systems. Therefore the digital outputs of the COMMEND INTERNATIONAL system are configured in G-CIS. One COMMEND INTERNATIONAL

digital output can be connected to multiple Geutebrück digital in-/ outputs.

The following settings are possible:

- COMMEND call number of the digital output
- Behavior of the digital output
- GeViSoft digital input/ output
- Operation type, sabotage monitoring – same parameters as in COMMEND INTERNATIONAL setup

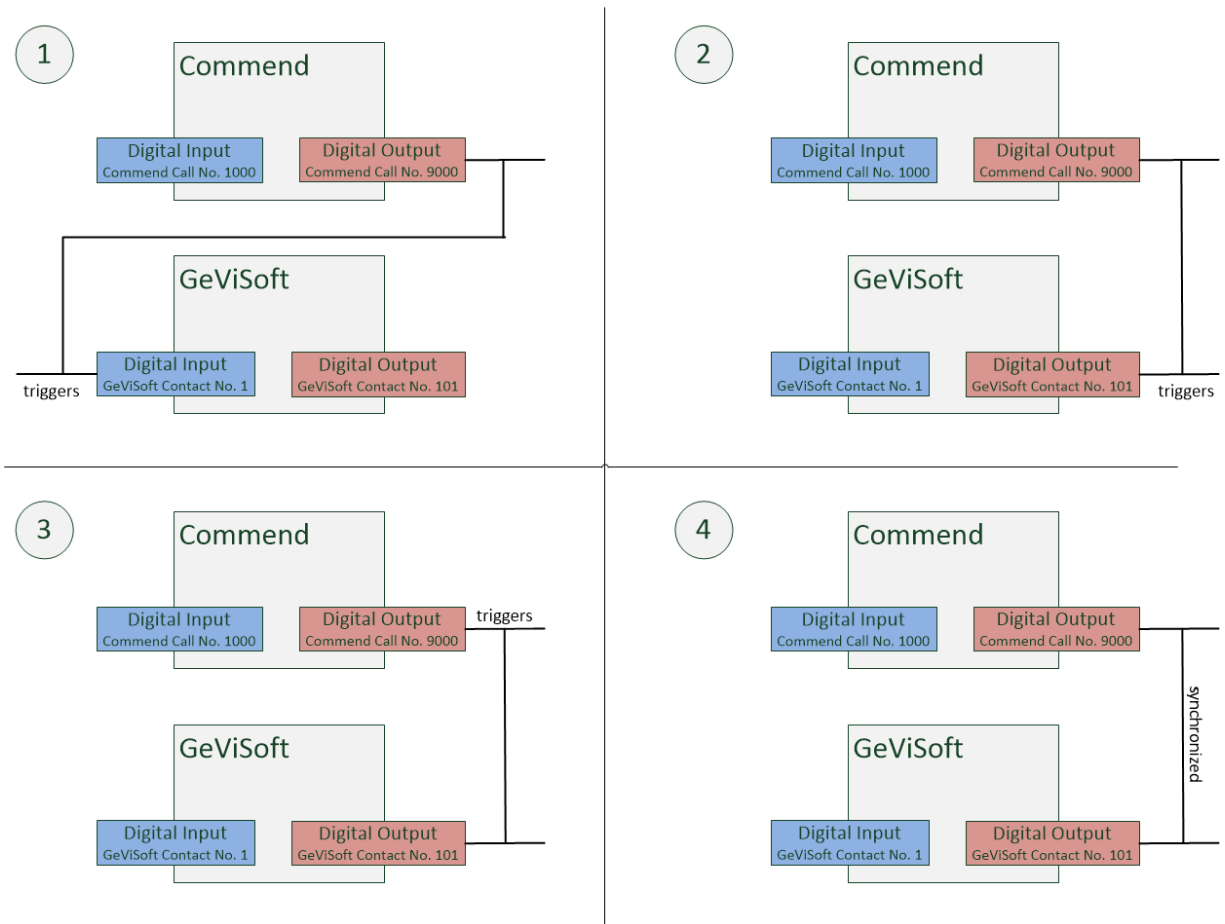
To signal the change of an input/ output the commands `OpenContact (<ContactNumber>)` and `CloseContact (<ContactNumber>)` are used.

i **It is possible to use virtual GeViSoft digital input/outputs.**

Behavior of the output:

As shown in the following figure there are four different configurations possible:

1. GeViSoft digital input triggers COMMEND digital output
2. GeViSoft digital output triggers COMMEND digital output
3. COMMEND digital output triggers GeViSoft digital output
4. GeViSoft and COMMEND digital output are synchronized



Misc

Diagnostic

The diagnostic section of the G-CIS Settings Editor shows the actual status of the system. It shows whether the services are running or not. If there is a failure in a hardware card in the COMMEND hardware interface it will be shown in the **Intercom Server failure** section.

If no firmware version is detected, G-CIS cannot establish a connection with the COMMEND server. Ensure that you configure the correct IP and port.

G-CIS: Diagnostic		Help
G-CIS		
Service application:	C:\Program Files (x86)\G-CIS\G-CIS.exe	
Service version:	2.0.3.2	
Service state:	running	
Licence state:	licence found	
GEVISOFT		
Controller state:	running	
COMMEND		
COMWIN state:	running	
SOFTVIDEO state:	running	
Firmware version:		
Watchdog no.:		
Alive check no.:	1000	
Intercom Server failure:	!	
Central	1	2 3 4 5 6 7 8 9 10 11 12 A B C

Setup Manipulations

It is possible to reset the G-CIS service to the factory settings with a simple click on **Clear GEVISOFT Settings** or **Clear COMMEND Settings**.

Examples

To get a better understanding of the collaboration of COMMEND INTERNATIONAL system and the Geutebrück system, examples are provided:

- Simple Configuration: Camera and Monitor Mappings**
 Connecting a media channel to a viewer using camera and monitor mappings
- Advanced Subscriber and Control Desk Configuration**
 Connecting multiple media channels to viewers with preview monitors using subscriber and control desk options.
- Hot Monitor: Start a call from GSCView**
 Start a call request via GSCView using the “Hot Monitors” option.

- **Using Geutebrück Digital Outputs to Trigger COMMEND INTERNATIONAL Outputs**

Use digital inputs/outputs cross-system.

Simple Configuration: Camera and Monitor Mappings

The target of this example is a simple configuration of G-CIS. If a call is detected a video input should connect with a video output. There are two possible methods:

- Match the COMMEND INTERNATIONAL monitor and camera call numbers to the GeViSoft video input and video outputs. After enabling **Accept unmapped cameras** and **Accept unmapped monitors** in **G-CIS > GeViSoft > General settings** G-CIS will route the request from COMMEND INTERNATIONAL system to GeViSoft.
- If the COMMEND INTERNATIONAL monitor and camera call numbers do not match the global numbers of the GeViSoft video inputs/ outputs it is necessary to use the lookup tables **Camera mappings** and **Monitor mappings** to map between the two systems.

COMMEND Camera...	GeViSoft Video input	Preset position
<input checked="" type="checkbox"/> 10	1 - Video input1	Home

Settings

COMMEND Camera no.

GeViSoft Video input

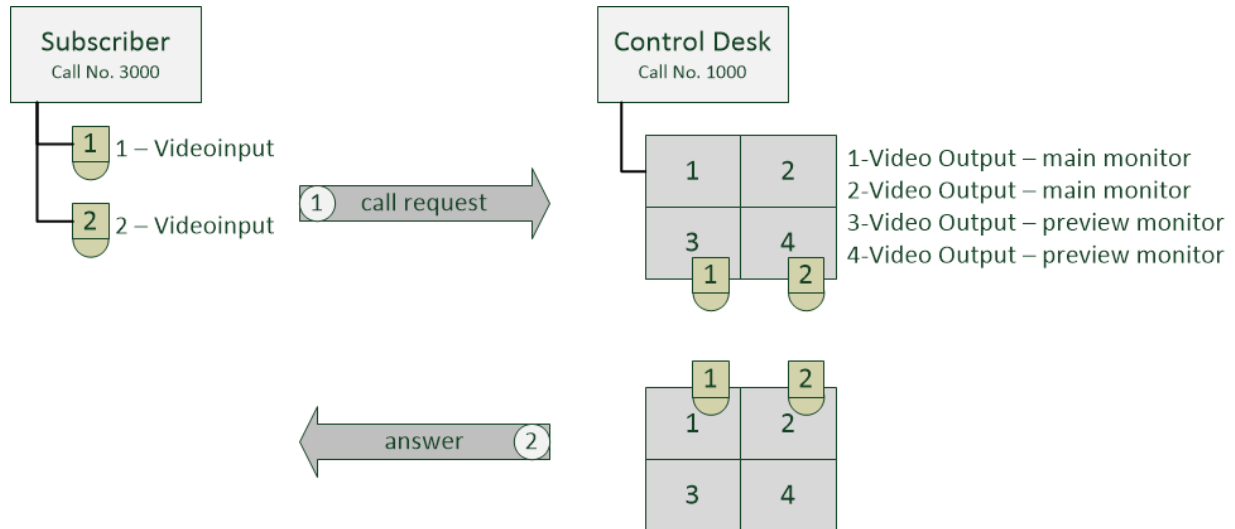
Preset position

Advanced Subscriber and Control Desk Configuration

i To execute this example the use of protocol COMWIN is required

The goal of this example is advanced configuration of G-CIS. In the following it will be shown how to configure G-CIS to use preview monitors and to connect multiple video inputs with video outputs with one call.

1. If a call request is detected the video inputs connect to the video outputs configured as preview monitors.
2. After the call is answered the video inputs will be connected to the video outputs configured as main monitors.



Commend

It is necessary to configure a subscriber and a control desk. In this example the subscriber uses the **COMMEND call number 3000** and the control desk the **COMMEND call number 1000**.

G-CIS

As shown in Figure 8 the video inputs 1 and 2 are assigned to the subscriber (**COMMEND call number 3000**). Assigned to the control desk are video outputs 1-4. The first two video outputs are defined as main monitors. The remaining video outputs will be used as preview monitors.

GeViSoft

If a call request is initiated G-CIS detects it and sends a **CrossSwitch action** to GeViSoft. This CrossSwitch action should be mapped to the GeViScope action **ViewerConnectLive**. The following figure shows the action mapping in the GeViAPITestClient.

There are always two corresponding actions:

- Line 1 CrossSwitch(1, 3, 0)
- Line 2 GscAction("",ViewerConnectLive (3, 1))

GeViAPIstClient communication log:

1. Call request: After detecting a call request video inputs 1 and 2 are connected with video outputs 3 and 4 (line 1-4) which are configured as preview monitors.
2. Answer: If the connection between subscriber and control desk is established video inputs 1 and 2 are connected with video outputs 1 and 2 (line 5-8) and the video outputs 3 and 4 are cleared (line 9-12).
3. Hang up: After disconnect the video outputs 1 and 2 are cleared (line 13-16).

```

Communication log
2013-11-18 10:44:46.042 Received 1 >> CrossSwitch(1,3,0)
2013-11-18 10:44:46.043 Received 2 >> GscAction("",ViewerConnectLive (3, 1))
2013-11-18 10:44:46.044 Received 3 >> CrossSwitch(2,4,0)
2013-11-18 10:44:46.045 Received 4 >> GscAction("",ViewerConnectLive (4, 2))
2013-11-18 10:44:46.046 Received >> GscAction("GEVISOPE",ViewerConnectLive ({ 0, 3, "virtual" }
2013-11-18 10:44:46.047 Received >> GscAction("GEVISOPE",ViewerConnectLive ({ 0, 4, "virtual" }
2013-11-18 10:44:47.391 Received 5 >> CrossSwitch(1,1,0)
2013-11-18 10:44:47.392 Received 6 >> GscAction("",ViewerConnectLive (1, 1))
2013-11-18 10:44:47.393 Received 7 >> CrossSwitch(2,2,0)
2013-11-18 10:44:47.394 Received 8 >> GscAction("",ViewerConnectLive (2, 2))
2013-11-18 10:44:47.395 Received 9 >> ClearVideoOutput(3)
2013-11-18 10:44:47.396 Received 10 >> GscAction("",ViewerClear (3))
2013-11-18 10:44:47.397 Received 11 >> ClearVideoOutput(4)
2013-11-18 10:44:47.398 Received 12 >> GscAction("",ViewerClear (4))
2013-11-18 10:44:47.399 Received >> GscAction("GEVISOPE",ViewerConnectLive ({ 0, 1, "virtual" }
2013-11-18 10:44:47.400 Received >> GscAction("GEVISOPE",ViewerConnectLive ({ 0, 2, "virtual" }
2013-11-18 10:44:47.402 Received >> GscAction("GEVISOPE",ViewerClear ({ 0, 3, "virtual" )))
2013-11-18 10:44:47.403 Received >> GscAction("GEVISOPE",ViewerClear ({ 0, 4, "virtual" )))
2013-11-18 10:44:47.785 Received >> GscAction("GEVISOPE",LiveCheck (581, "2013/11/18 10:44:47,7
2013-11-18 10:44:47.896 Received 13 >> ClearVideoOutput(1)
2013-11-18 10:44:47.898 Received 14 >> GscAction("",ViewerClear (1))
2013-11-18 10:44:47.900 Received 15 >> ClearVideoOutput(2)
2013-11-18 10:44:47.901 Received 16 >> GscAction("",ViewerClear (2))
2013-11-18 10:44:47.903 Received >> GscAction("GEVISOPE",ViewerClear ({ 0, 1, "virtual" )))
2013-11-18 10:44:47.906 Received >> GscAction("GEVISOPE",ViewerClear ({ 0, 2, "virtual" )))
    
```

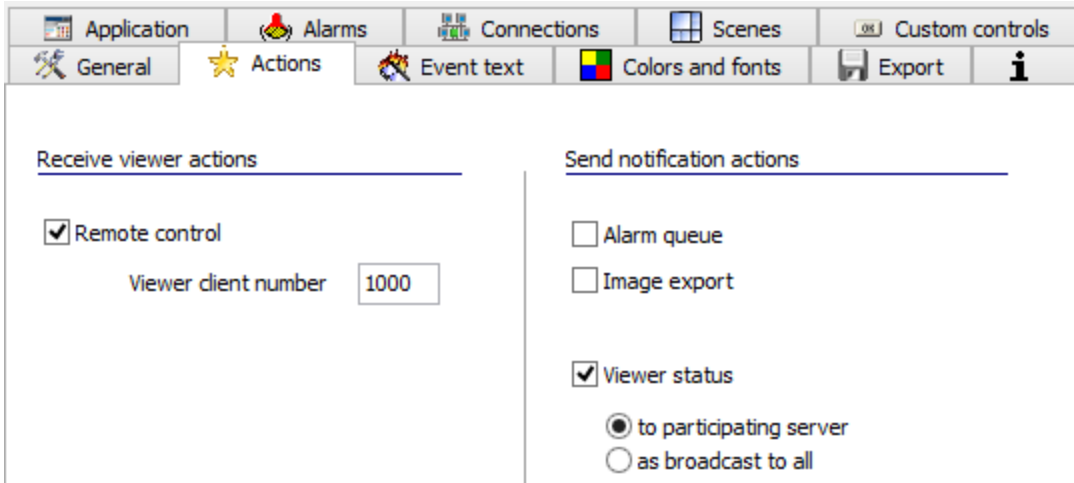
GSCView

GeViSoft receives the actions from G-CIS and generates GeViScope actions. The GeViScope actions are forwarded from GeViScope to GSCView. To receive actions from GeViScope GSCView has to allow remote control and a unique viewer client number has to be set (GSCView > Options > Profile Manager > Actions).

Hot Monitor: Start a call from GSCView

It is possible to start a call from inside GSCView. To do so a video output needs to be configured as a hot monitor in G-CIS (G-CIS > GeViSoft > Control desks). In GSCView remote control needs to be enabled and the viewer status should be sent to participating servers. GeViSoft is now receiving ViewerConnected actions

from GeViScope. This action needs to be mapped to a CrossSwitch action. G-CIS receives the CrossSwitch action and initiates a call request in the COMMEND INTERNATIONAL system.



If a Media channel in GSCView is connected to a viewer, a video input is connected to a video output in GeViSoft. If the video output is defined as hot monitor of a control desk and the video input is assigned to a subscriber then a call is initiated from the corresponding control desk to the subscriber.


i To avoid infinite loops please assure that the SwitchModes of two CrossSwitch action mappings are not equal.

Using Geutebrück Digital Outputs to Trigger COMMEND INTERNATIONAL Outputs

It is possible to connect digital inputs and outputs of Geutebrück systems with COMMEND INTERNATIONAL outputs and vice versa. This example shows how to configure G-CIS to trigger a COMMEND INTERNATIONAL output from GeViSoft.

A COMMEND INTERNATIONAL output with a call number and a Geutebrück digital output are required. In this example the GeViSoft digital output 2 and the COMMEND INTERNATIONAL output with the call number 9058 are configured in G-CIS. It is necessary that the configuration of the digital output in G-CIS and COMMEND INTERNATIONAL match.

GEVISOFT: output I/O subsystem

Contact call no. ▲	Contact no.	Operation type	Sabotage monit...
<input checked="" type="checkbox"/> 9058	 2 - Digital o...	Normally open	Enabled

Settings

Contact call no.:

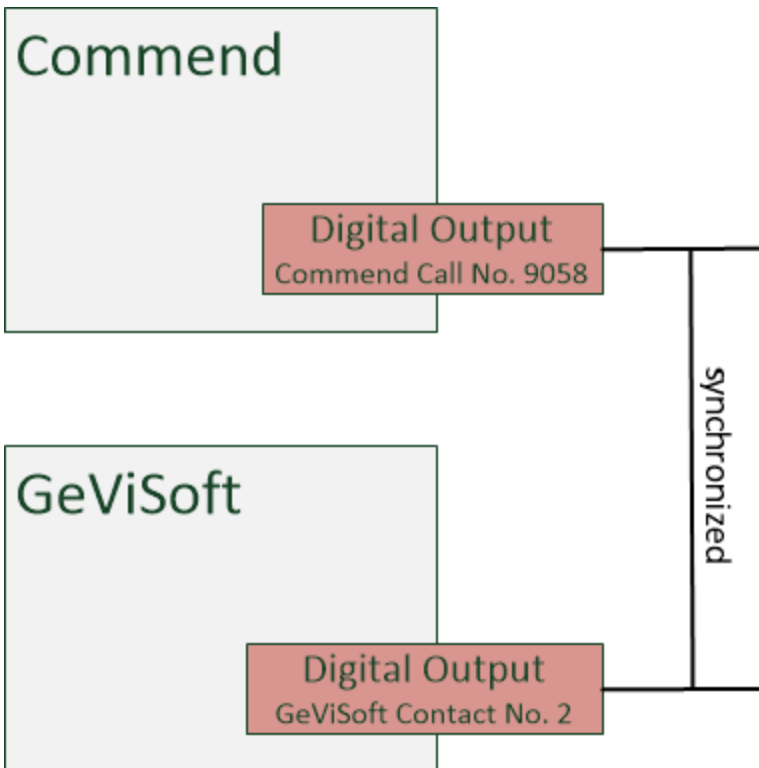
Contact is triggered by digital input
 Contact is triggered by digital output
 Contact triggers digital output
 Contact is synchronized with digital output

Contact no.:

Operation type:

Blink on sabotage:

The option “synchronized” is chosen so if one output changes, the other changes as well. If the GeViSoft digital output 2 is closed the COMMEND INTERNATIONAL output 9058 is closed as well.



G-MakroPlayer (GeViSoft/GeViScope)

G-MakroPlayer is a special extension of GeViSoft to simplify situations with complex action playback. The idea behind it is the following:

- We introduce several independent time traces
- Each trace has a start condition and eventually a special stop condition
- Each trace has a list of timed actions.

If the start condition of the trace is satisfied, then we start to replay all specific actions according to the stored time stamps.

Server

The playback part of the G-MakroPlayer is a part of the GeViSoft server. It does not have a special setup dialog in GeViSet, just an initialization file. Whenever GeViSoft receives a new setup (e.g. via GeViSet), the GeViSoft server checks the GeViSoft directory (usually `C:\GeViSoft`) for a file named `GmakroPlayer.ini` and reloads the settings if this file is found.

The layout of this file is as follows:

```

[Trace 1 ]
Name=Trace 1
StartBy=InputContact(1,true )
StopBy =
Retrigger= 0
Action1=0;PanLeft(1,50 )
Action2=0;TiltUp(1,10 )
Action3=2000;TiltUp(1,50 )
Action4=8000;TiltStop(1 )
Action5=10000;PanStop(1 )
...
[Name of the next trace ]
Name=Name of the next trace
StartBy=<start condition >
StopBy=<stop condition >
Retrigger=<retrigger condition >
<list of actions >
...

```

Each trace is defined in a separate section:

- The name of the trace is the name of the section and is defined in the entry `Name`.
- The start condition is an action and is defined in the entry `StartBy`.
- The stop condition is also an action and is defined in the entry `StopBy`.

i **Note that you can use GeViScope actions (packed in a GeViSoft container) as well as leave both entries empty (the corresponding condition is disabled in that case).**

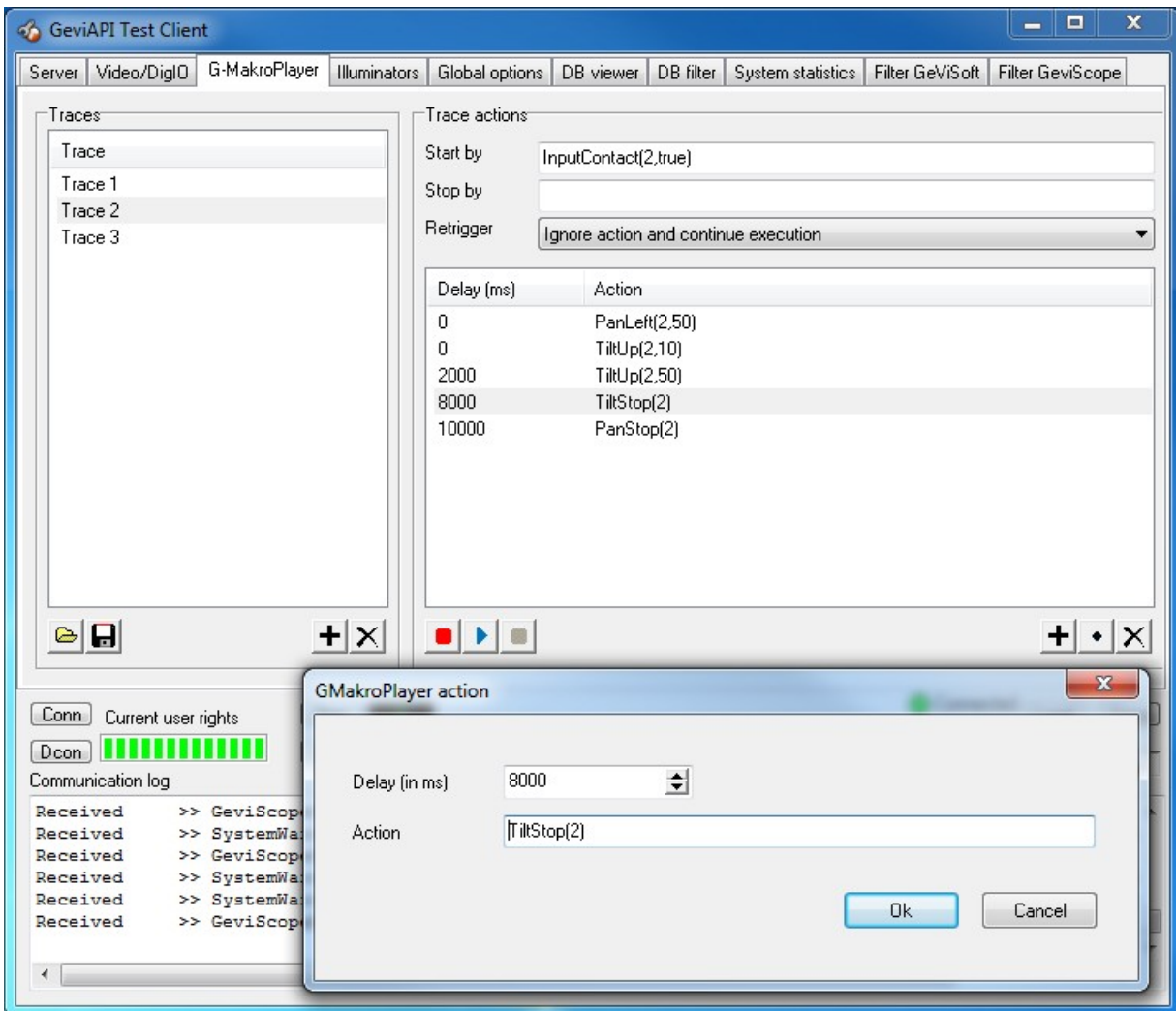
- The retrigger condition is specified in the entry `Retrigger` and defines what happens if the playback is interrupted by a new start action. You have two possibilities: ignore the action and continue the playback or restart the playback again.

After that you have a list of timed actions. Each entry is a pair separated by a semi-colon consisting of:

- time delay in milliseconds (relative to the start point)
- action to execute

APITestClient

Although it is possible to write the settings file using just a notepad, it is time consuming. To simplify this process, we have enhanced the APITestClient tool:



You see a trace list on the left side of this dialog. You have the possibility to load and save settings to the file, create a new trace or delete an existing one. When you select a trace on the left, you see its settings on the right. You can specify the start and stop conditions, the retrigger behavior as well as create and modify the list of timed actions.

To further simplify the process, it is possible to record the trace. Perform the following steps:

1. Connect to the GeViSoft server.
2. Enable action filtering on the **Filter GeViSoft** and **Filter GeviScope** tab pages.
3. Select a trace (create if necessary) and specify the start and eventually the stop condition.
4. Click on the red record button.
 - The APITestClient waits until the start condition is triggered and starts to record all incoming actions until the stop condition is triggered or the user press the stop button.

You can also simulate the playback of the trace: Select the trace and click the play button. The APITestClient waits until the start condition is triggered and starts to replay all actions.

Example Example of use: A watergate project

This plugin was initiated by a watergate project in France. There is nothing specific to be aware of, just some advice:

- Use separate traces for different watergates
- Consider using different traces for different cameras on the watergate
- Enable just pan/tilt actions in filter dialogs
- Enable also trigger actions (e.g. input contacts) in these filters
- You can open the ini-file in any plain text editor and copy and modify sections
- You can simplify the GeviScope actions, remove the specific server and use only global numbers: use `GscAction("", PanLeft (2, 100))` instead of `GscAction("GSC", PanLeft ({ 2, 2, "Channel 002" }, 100))`

G-SWM (IPP II Interface) (GeViScope)

The plugin is used as a software interface between GeViSoft / GeViScope and for the new generation of perimeter monitoring systems from **Southwest Microwave (SMI)** (connection to the Southwest Microwave INTREPID II Polling Protocol (IPP II)).

i **Previous generations of SMI devices (Micro Point, MicroTrack) are NOT supported by this interface because the manufacturer API is not compatible with them. To connect MicroPoint systems, the Plugin GeMIP (GeViSoft) can still be used. For MicroTrack devices, no interface exists.**

SMI provides a proprietary API to connect external software systems: **INTREPID Polling Protocol II**. The corresponding protocol documentation describes the master/slave communication via the serial interface or via the RS422 multi-drop bus. The software to be developed is the only master on the RS422 bus. All devices from SMI operate as passive slaves.

The API currently supports the following SMI devices (data sheets in the appendix) in mixed mode:

- MicroPoint II (PM II)
- MicroTrack II (MTP II)
- MicroWave 330
- Relay Output Module II-8 / -16 (ROM II-8 / II-16)
- Alarm Input Module II (AIM II)

System Architecture

Communication with the devices of SMI is performed via the serial interface. The G-SWM service (Windows 32-bit service application) makes it possible to manage up to 32 RS-422 bus segments, each with a master. The G-SWM services represents the corresponding master on the RS422 bus segment and cyclically polls all slaves (maximum of 16 per RS422 bus segment). The response time of a slave is a maximum of 125 ms. This results in a maximum cycle time of 2 seconds.

If fewer slaves are operated on the bus, it must be ensured that a slave is not polled more frequently than once per second.

- i** Thus, the latency in case of alarm is always at least 1 second. This means that alarm-driven activities in the CCTV system (recording, moving to PTZ preset positions, ...) can occur delayed accordingly. SMI provides no option for pushing information from the perimeter alarm system to other systems.

The polling differs depending on the device type. Therefore, an appropriate assignment of the type must be performed in the configuration G-SWMSetup.EXE (device address <-> device type).

The slave response contains the actual alarm information. It also differs depending on the device.

Micro Point II and MicroTrack II devices each manage a certain number of sub-areas (subcells) of the perimeter. MicroWave manages only perimeter subcell, but provides different alarm types for that area: Sensor alarm, tamper alarm, path alarm, auxiliary alarm and service alarm.

Relay output modules are switched via the polling request and provide as response the current state of the relay as well as a device-wide tamper alarm.

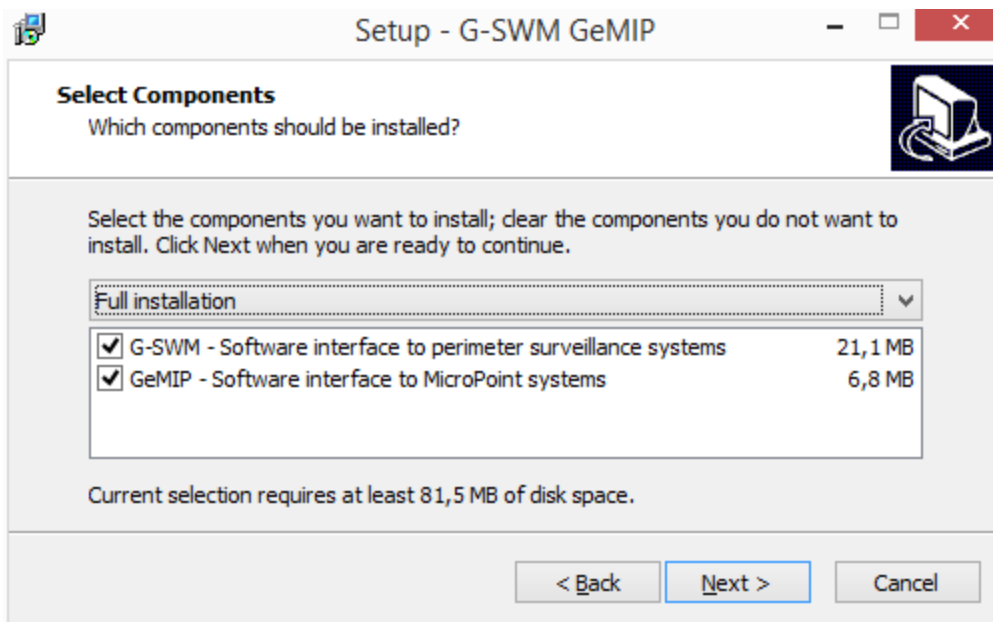
Alarm input modules provide the current status of the digital inputs and also a device-wide tamper alarm.

The G-SWM service evaluates the received alarm information and uses it to generate corresponding actions, which can be used in the system network (GeViSoft/GeViScope) for recording control or alarm handling.

- i** The MIP actions (GeMIP) already available in GeViSoft are NOT used for the new software interface G-SWM. Instead, new GeViScope actions are defined, which are generated by the GeViSoft G-SWM.EXE client.

Configuration

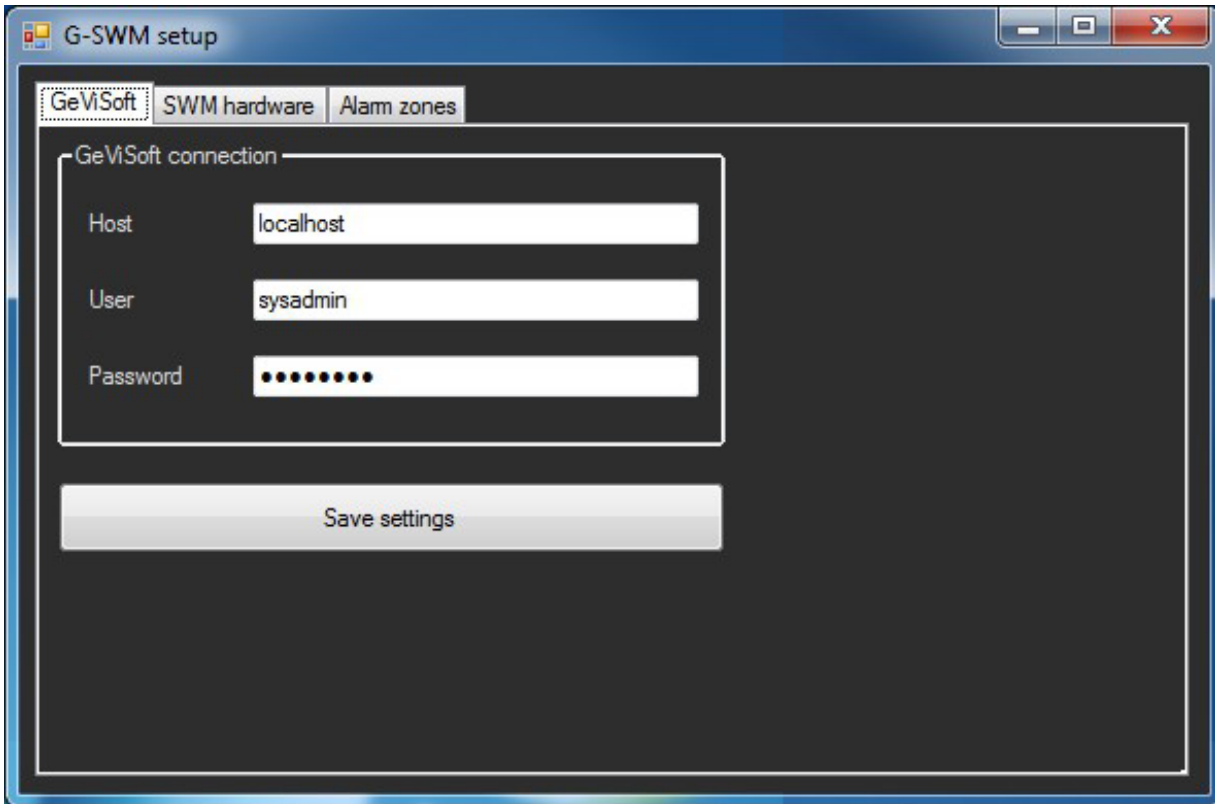
Configuration is performed using the setup program **Setup - G-SWM GeMIP**. Select **G-SWM** to install the G-SWM software interface.



The GUI is divided into three sections:

- Detection of GeViSoft connections
- Detection and allocation of SWM hardware
- Definition of alarm zones

Detection of GeViSoft Connections

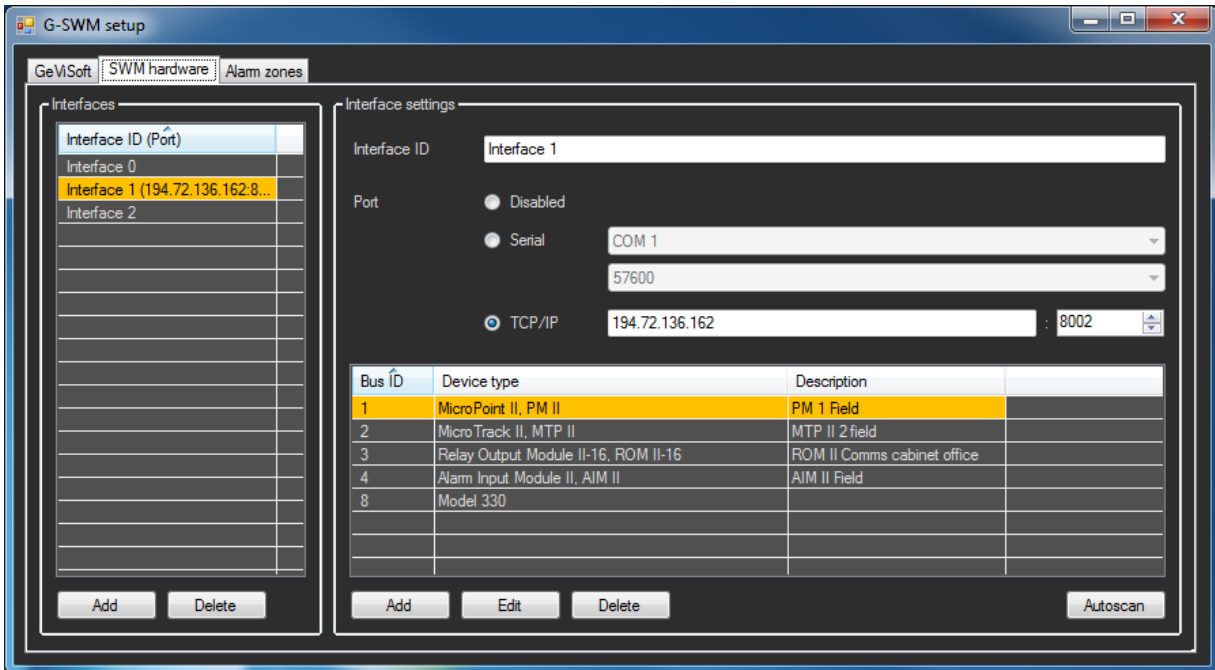


Entering the following data here:

Data	Description
Host	Address of the GeViSoft server.
User	Log-on data of the GeViSoft server.
Password	Log-on data of the GeViSoft server.

Then click **Save settings** to save the information.

Detection and Allocation of SWM Hardware

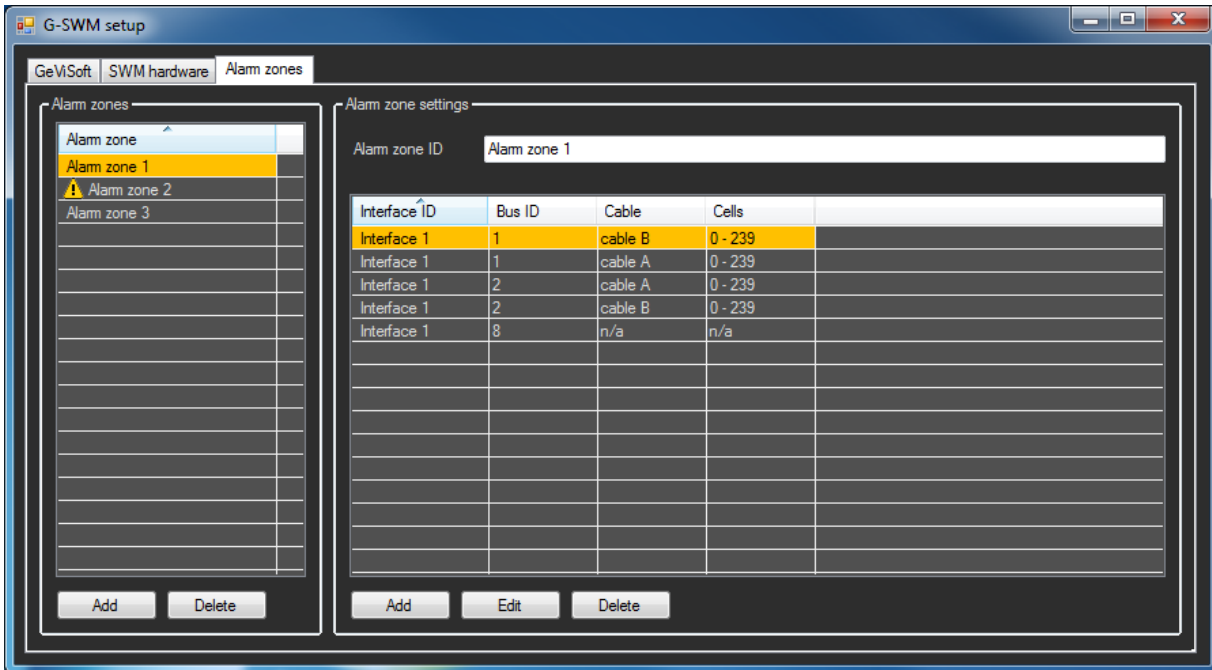


In the **SWM hardware** area, you can configure multiple SWM interfaces. Each interface represents a bus and enables the connection of multiple sensor modules.

For each interface, the name of the interface and the connection can be specified.

The sensor modules can then be identified.

Definition of Alarm Zones



In the area **Alarm zones**, multiple alarm zones can be defined. Alarm zones combine multiple alarm cells of the hardware modules together, facilitating the configuration of the system (**Bundling of Cell Alarms to Zone Alarms**).

Operation

The module connects to all configured interfaces and continuously polls all connected devices. If an interface or device is no longer available, a corresponding notification message is issued.

Notification also occurs if the state of a sensor changes. The following messages are used:

- PP device alarm
- PP device input
- PP device offline
- PP device online
- PP device offline
- PP interface online

- PP query interface
- PP set device output
- PP subcell alarm
- Alarm zone

They all belong to the group **Perimeter Protection**.

Depending on the alarm information from the polling, G-SWM generates different GeViScope actions:

- PPSubcellAlarm(InterfaceID, DeviceAddress, Cable, SubCell, State)
- PPDeviceInput(InterfaceID, DeviceAddress, InputNumber, State)
- PPSetDeviceOutput(InterfaceID, DeviceAddress, OutputNumber, State)
- PPDeviceAlarm(InterfaceID, DeviceAddress, AlarmKind, State)
- PPZoneAlarm(Zone, State)
- PPDeviceComFailure(InterfaceID, DeviceAddress, State)

The abbreviation PP in the action names stands for **Perimeter Protection**. The action names were deliberately chosen to be manufacturer-neutral in order to use them in future also for connecting other perimeter monitoring systems can (e.g. as part of the SDK).

The parameter types and names result from the alarm information received from the respective devices.

Action	Description
PP device alarm	<p>Perimeter protection device alarm.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. • device address: Bus address of the device. • sensor: Sensor type (cable A fault, cable B fault, tamper, trap, sensor, path, aux, service). • state: State (normal or alarm).

Action	Description
	<p>This action is triggered when a device triggers an device alarm. A notification is also generated when the alarm is stopped.</p>
<p>PP device input</p>	<p>Perimeter protection device input. Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. • device address: Bus address of the device. • input: Contact cumber. • state: State (normal or alarm). <p>This action is triggered when the state of one of the input contact changes. The message contains the contact number and the new state of the contact.</p>
<p>PP device offline</p>	<p>Perimeter protection device offline. Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. • device address: Bus address of the device. <p>This action is triggered when a sensor device is no longer accessible (does not answer to the state requests).</p>
<p>PP device online</p>	<p>Perimeter protection device online. Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. • device address: Bus address of the device. <p>This action is triggered when a sensor device becomes available.</p>
<p>PP set device output</p>	<p>Perimeter protection set device output. Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. • device address: Bus address of the device.

Action	Description
	<ul style="list-style-type: none"> • output: Contact number. • state: State (normal or alarm). <p>You can set the output contacts with this action.</p>
<p>PP subcell alarm</p>	<p>Perimeter protection subcell alarm. Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. • device address: Bus address of the device. • cable: Sensor cable (A, B or unnamed). • state: State (normal or alarm). <p>This action is triggered when a cell changes its state.</p>
<p>PP zone alarm</p>	<p>Perimeter protection zone alarm. Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. • device address: Bus address of the device. • cable: Sensor cable (A, B or unnamed). • subcell: Subcell (device dependent) . • state: State (normal or alarm). <p>This action is triggered when an alarm zone change its state.</p> <p>i The action PPZoneAlarm is generated only exactly twice during an alarm of a zone. Once at the beginning of the alarm (i.e., when the first subcell within a zone alarm reports) and once at the end of the alarm (i.e. when the last subcell within a zone goes returns from the alarm state to the normal state). This action is not retriggered when additional subcells within a zone report an alarm.</p>

In addition, G-SWM generates the following actions (analog to GeMIP) depending on the state of the individual RS422 bus segments:

- PPOnline(InterfaceID)
- PPOffline(InterfaceID)
- PPQueryInterface(InterfaceID)

Action	Description
PP inter- face offline	<p>Perimeter protection interface offline.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. <p>This action is triggered when an interface is no longer available (e.g. network failure).</p>
PP inter- face online	<p>Perimeter protection interface online.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. <p>This action is triggered when an interface becomes available.</p>
PP query interface	<p>Perimeter protection query interface.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • interface id: Name of the interface. <p>You can query the state of the sensors with this action. Note that the non-alarmed cells are not reported.</p> <p>i After receiving the PPQueryInterface action, G-SWM generates the corresponding actions for the respective RS422 bus segment (PPSubcellAlarm, PPDeviceInput, PPSetDeviceOutput ...) according to the current or most recently polled state. The PPSubcellAlarm action is only generated for subcells in the alarmed state.</p>

Bundling of Cell Alarms to Zone Alarms

In particular for the alarm information of the MicroPoint II and MicroTrack II devices, G-SWM must group the individual alarm reports from the perimeter sub-areas (**subcells**). In general a CCTV alarm or recording of an individual camera relates to a zone (**zone**) consisting of a set of continuous perimeter subareas (**subcells**). This logical grouping of perimeter alarms to a zone alarm should already have been performed in G-SWM to simplify configuration in GeViSoft/GeViScope accordingly.

So instead of, for instance, starting recording through perimeter alarms in subcells 42 to 49, which would require configuration of 8 (42..49) individual PPSucellAlarm actions as "StartBy" criterion, a zone is defined that contains these **subcells**. Thus, only one PPZoneAlarm action needs to be specified as **StartBy** criterion.

The alarm information of the MicroWave 330 are represented by the PPDeviceAlarm action. These alarms can also be combined, mixed with alarms of MicroPoint II, MicroTrack II, to a zone alarm.

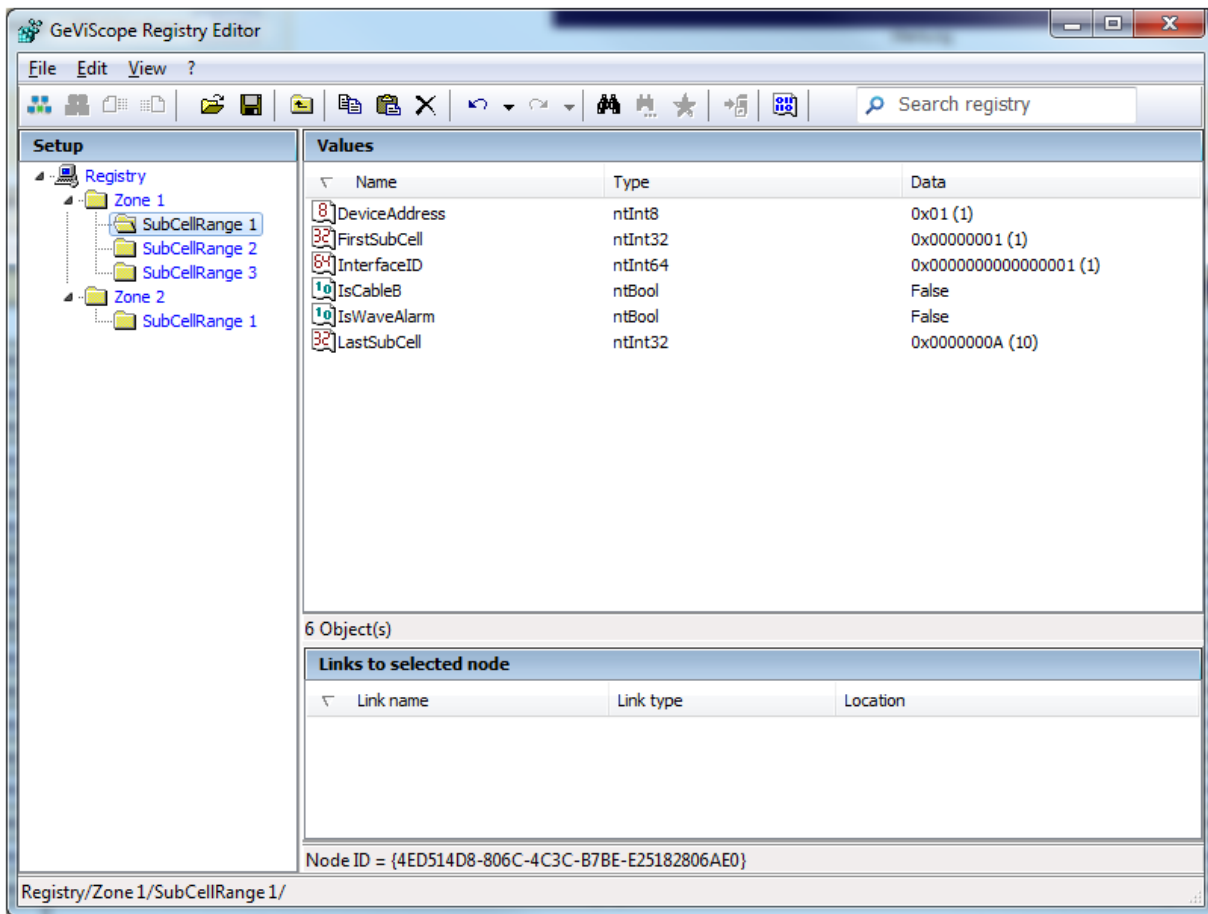
The definition of the **zones** with the respective assignment of the **subcells** or cables and equipment is defined in the local configuration of the G-SWM. This local configuration is stored as a file in GeViScope registry format and managed by the configuration software G-SWMSetup.EXE (G-SWMSetup.EXE is a Windows GUI application).

A **zone** consists of a list of elements with the following data structure (the above-mentioned parameters will be explained below):

- InterfaceID
- DeviceAddress
- Cable A or Cable B
- SubCell x to y
- IsWaveAlarm

The number of list entries is not limited. The number of zones that can be defined is also not limited.

The following figure shows an example of the structure of configuration data:



SMI DOES NOT provide an option for identifying automated information that supports the user when configuring the zones. As part of GeMIP, importing a configuration file from the associated SMI configuration tool was possible.

When commissioning the devices, according to SMI, the technicians usually proceed as follows:

1. The entire system is completely assembled and ready for use.
2. Each device (Micro Point II, MicroTrack II, Micro Wave 330) is configured individually via its serial interface and with the commissioning tool from SMI.
3. For zone definition, at each of the zone boundaries an alarm is intentionally triggered.
4. This alarm is then reported in the commissioning tool and **cable** and **subcell** are shown. The collected data can be used to define a **zone** in G-SWMSSetup.EXE.

5. To simplify this process, G-SWM should always generate the PPSubcellAlarm actions and PPDeviceAlarm actions, regardless of whether zones have been configured or not.
6. Then the relevant information can be read centrally for an entire system directly in the GeViAPITestClient or in the GscPLCSimulator.

G-SWM.exe

The Windows 32-bit service application “G-SWM.EXE” perform cyclical polling of the alarm information of the configured devices as background application.

It manages the different master/slave connections to the devices as well as the connections to the GeViSoft server established by the GeViSoft SDK.

For all connections (TCP/IP and serial) the usual applications apply so that the system operates independently and fault-tolerant:

- Automatic connection after the start of the service / cyclical repetition in case of failure (every 30 seconds)
- Detection of TCP/IP connection failures (within 30 seconds) / cyclic resumption of the connection (every 30 seconds)

The service access its configuration data from the local configuration file (GeViscope registry format) that is in the directory `All Users\Application Data` (`CSIDL_COMMON_APPDATA`). If the file is missing, it is automatically generated with reasonable default data. Reasonable default data represents a simple, minimal system.

Changes to the configuration are signaled by the GUI application “G-SWMSetup.EXE” by system global event to the service. The service applies the changes in ongoing operation WITHOUT an explicit restart.

Analogous to GeMIP, G-SWM is also protected by the Geutebrück dongle. If G-SWM does not find a dongle or the license is not on it, the service generates corresponding SystemWarning actions and operates for 6 hours with full function in demo mode. After the end of the demo period, the service stops operating with a corresponding SystemWarning action.

G-SWMSetup.exe

The GUI application “G-SWMSetup.EXE” is used for the configuration of the local G-SWM service. The user can, in addition to the

- Connection parameters for the connection GeViSoft, also configure the
- Parameters of the serial interfaces (max. 32),

- The devices with their bus addresses and
- The zones

Optionally, the GUI provides an autoscan function for identifying the devices on the bus.

After defining the parameters for the corresponding serial interface, the service also attempts to identify the devices (including type) on the bus by sending corresponding Get Slave Node Information requests.

For this simple scan, the bus address is simply incremented from 1 to 255. This results in a maximum scan time of about 8 minutes.

The user has the option to cancel the scan prematurely. By using the scan function, all previously configured devices for the bus segment are deleted after confirmation by the user. Any resulting inconsistencies in the zone configuration are NOT indicated and must be corrected by the user manually.

GeMIP (GeViSoft)

- i** **For the new generation of perimeter monitoring systems from Southwest Microwave (SMI) (connection to the Southwest Microwave INTREPID II Polling Protocol (IPP II)) see Plugin G-SWM (IPP II Interface) (GeViScope).**

GeMIP is an integration of the Southwest Intrepid MicroPoint sensor system into the GeViSoft video management system. This integration is based on the TPI v. 3.3.3 from Southwest Microwave Inc., which has been modified by Geutebrück.

The Southwest Intrepid MicroPoint sensor system is a sophisticated security system enclosure, which makes it possible to precisely locate alarms. It is based on the MicroPoint(tm) cable technology, which recognizes any disturbance on the fence and locates this disturbance with an accuracy of 1 to 3 m. With this exact locating and the special algorithms for digital signal processing (DSP), all attempts to cut through or climb over the fence are recognized, whereas a distributed noise from wind, rain or heavy vehicles will be ignored. This ensures reliable recognition.

The MicroPoint cable also transmits alarm signals and the operating voltage to all modules and additional sensors along the enclosure.

How Does the MicroPoint System Work?

The processor module sends a pulse over the MicroPoint cable. The pulse is reflected by the disturbance, making it possible to locate the break along the cable. The received signal is sampled to create a signature that describes the reflected pulse.

Using digital signal processing (DSP), MicroPoint sensor can measure the location and form of the reflected pulse. The microprocessor recognizes the form of the response of a point attack (cutting or climbing) and distinguishes them from feedback from distributed signals, such as rain, wind and vehicle traffic.

The installation technician uses any PC to calibrate the MicroPoint cable sensor and assign zones. During calibration, the sensitivity of each cable meter is set, to provide a uniform sensitivity along the entire length of the MicroPoint cable. For fence installations, the sensitivity adjustment takes into account differences in the type and voltage of the fence material. Zones are defined by the user in the software. Freely definable zones make it possible to easily modify the number and location of the zones, so that variable site conditions can be taken into account. The Windows-based installation software guides the user through the installation and records details "as installed" for the purpose of subsequent maintenance and diagnostics.

The GeMIP interface consists of the following components:

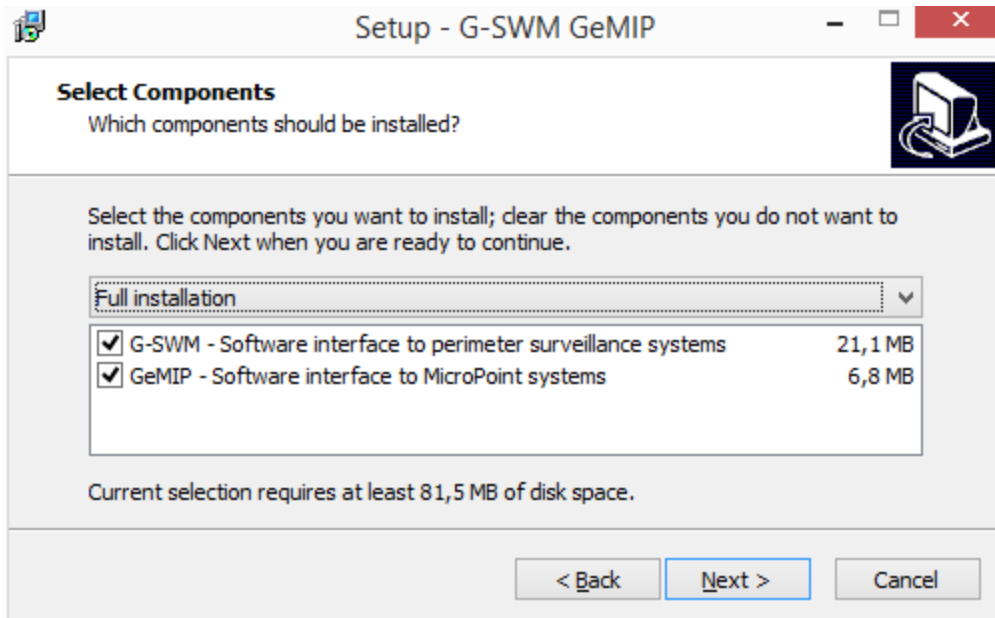
Competent	Description
MicroPointTPI333.dll	Third Party Interface DLL modified by Geutebrück.
GeMIP.exe	GeMIP background service.
GeMIPEditor.exe	GeMIP setup editor.
GeMIPTester.exe	Optional system viewer.

For the use of the GeMIP interface, you need at least Version 112 of the GeViSoft software and a GeMIP license for GeViSoft.

Installation

How to install the Interface:

1. Open the installation package for GeMIP.

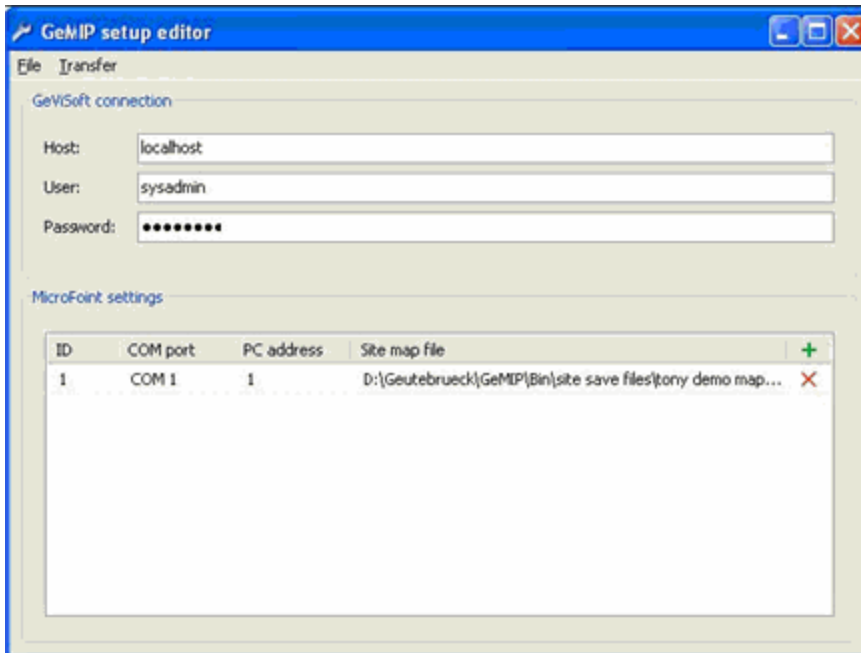


2. Select **GeMIP**.
3. Click **Next**.
4. Follow the further installation instructions.

Configuration

How to configure the Interface:

1. Start the **GeMIP setup editor** to configure the interface. The file **GeMIP setup editor** is found in the GeViSoft directory.



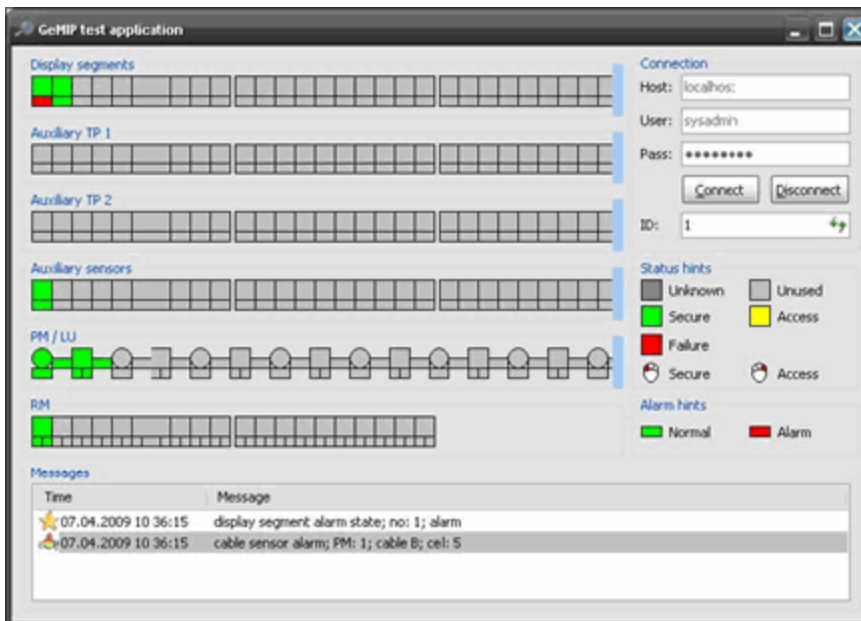
2. Under **GeViSoft connection**, enter GeViSoft system data, either the hostname or the IP address of the PC upon which the GeViSoft server is running (in our example, localhost). Also enter the user data that the GeMIP service requires to establish contact with the server.
3. Under **MicroPoint settings**, you can enter up to 32 MicroPoint connections. You need the following data for each connection:

Name	Description
ID	The GeMIP interface ID is required by GeViSoft to distinguish between different MicroPoint interfaces.
COM	The serial port over which the MicroPoint sensor is connected.
PC Address	This ID is required to differentiate various PCs. Enter 1 if there is nothing else connected with MicroPoint system besides the GeMIP.
Site map file	This (site map) file is generated by the Intrepid DrawTool and identifies the system elements.

Test Application

How to test the Interface:

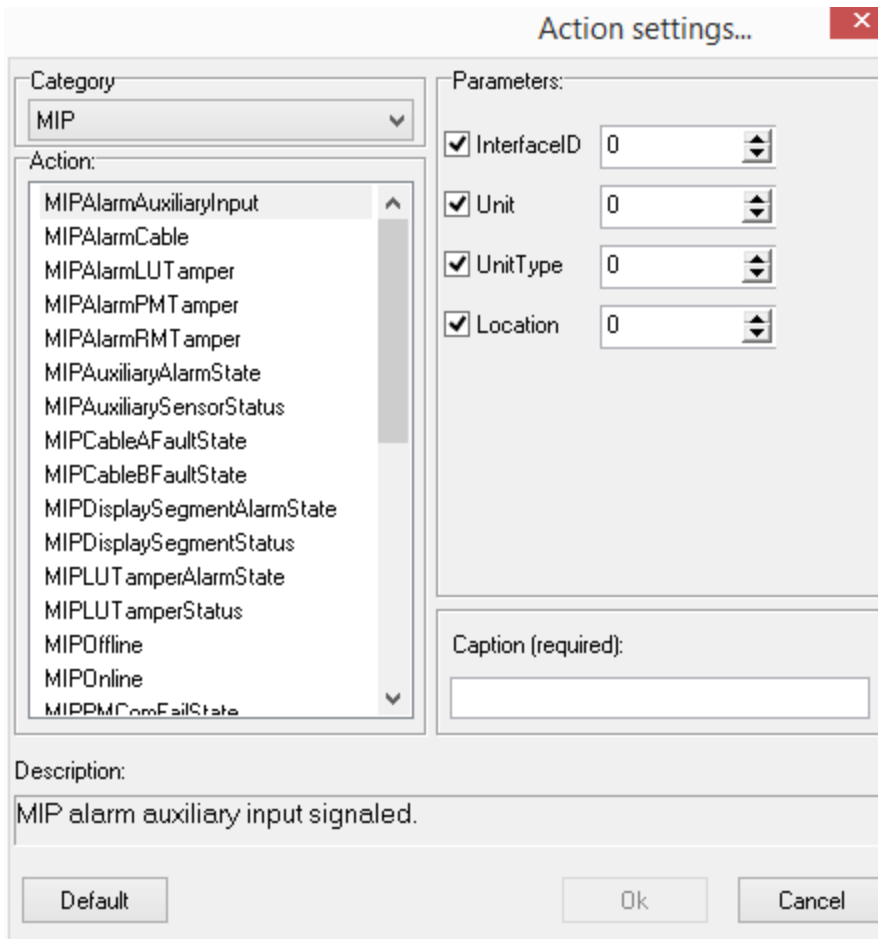
1. Start the program **GeMIP test application**. The program is found in the GeViSoft directory.



2. First specify the connection parameters and connect to the GeViSoft server. Set the desired GeMIP interface ID and click **Refresh** if necessary.
3. You will now see all connected elements of the MicroPoint system and you can enable or disable the segments, the tamper sensors, etc.

GeViSoft Actions for the MicroPoint System

All changes in the MicroPoint system are reported via GeViSoft actions. You can use all options for action processing that are supported by GeViSoft. All MicroPoint actions are found in the MIP action group:



We distinguish between the following types of MicroPoint actions:

- Service information actions - Service information
- Status information actions - Status information
- Alarm actions - Alarms
- Command actions - Commands

Server Information Actions

Action	Description
MIPOnline	MIP interface is online. Triggered if the connection to the MicroPoint system is established.

Action	Description
	<p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP.
MIPOffline	<p>MIP interface is offline. Triggered every 30 seconds for the period during which the connection to the MicroPoint system has failed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP.
MIPQuery	<p>Interface MIP query interface. You can trigger this action to query the current state of the MicroPoint system. The GeMIP answers with status actions of all units. Use 0 as InterfaceID to query all connected interfaces.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface of the corresponding GeMIP.
System Warning	<p>System warning. This action is used to indicate license problems as long as GeMIP service is in demo mode.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • ClientID: The user ID of the GeMIP user account. • WarningCode: Warning code (value 22000 - GeMIP). • Warning SubCode: Warning sub code (Value 206 - GeMIP demo mode granted message). • Warning Text: Warning description.

Status Information Actions

Action	Description
MIPDisplaySegmentStatus	MIP display segment status

Action	Description
	<p>changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the display segment in the range 1 - 50. • Status: Current unit status: 0 - inactive, 1 - access, 2 - secure, 3 - failure.
MIPAuxiliarySensorStatus	<p>MIP auxiliary sensor status.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the auxiliary input in the range 1 - 60. • UnitType: Unit type: 1 - PM, 2 - LU, 3 - RM. • Status: Current unit status: 0 - inactive, 1 - access, 2 - secure, 3 - failure.
MIPPMTamperStatus	<p>MIP PM tamper status changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the PM in the range 1 - 8. • Status: Current unit status: 0 - inactive, 1 - access, 2 - secure, 3 - failure.
MIPPMTamperStatus	MIP LU tamper status changed.

Action	Description
	<p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the LU in the range 1 - 9 • Status: Current unit status: 0 - inactive, 1 - access, 2 - secure, 3 - failure.
MIPPMTamperStatus	<p>MIP RM tamper status changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the RM in the range 1 - 20. • Status: Current unit status: 0 - inactive, 1 - access, 2 - secure, 3 - failure.
MIPDisplaySegmentAlarmState	<p>MIP display segment alarm state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the display segment in the range 1 - 50. • AlarmState: Current alarm state: 0 - normal, 1 - alarm.
MIPAuxiliaryAlarmState	<p>MIP auxiliary alarm state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of

Action	Description
	<p>the auxiliary input in the range 1 - 60</p> <ul style="list-style-type: none"> • UnitType: Unit type: 1 - PM, 2 - LU, 3 - RM. • AlarmState: Current alarm state: 0 - normal, 1 - alarm.
MIPPMTamperAlarmState	<p>MIP PM tamper alarm state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the PM in the range 1 - 8. • AlarmState: Current alarm state: 0 - normal, 1 - alarm.
MIPPMTamperAlarmState	<p>MIP LU tamper alarm state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the LU in the range 1 - 9. • AlarmState: Current alarm state: 0 - normal, 1 - alarm.
MIPPMTamperAlarmState	<p>MIP RM tamper alarm state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the RM in the range 1 - 20. • AlarmState: Current alarm state: 0 - normal, 1 - alarm.

Action	Description
MIPCableAFaultState	<p>MIP cable A failure state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the PM in the range 1 - 8 • AlarmState: Current alarm state: 0 - normal, 1 - alarm.
MIPCableBFaultState	<p>MIP cable B failure state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the PM in the range 1 - 8. • State: Current alarm state: 0 - normal, 1 - alarm.
MIPPMComFailState	<p>MIP PM COM failure state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the PM in the range 1 - 8. • State: Current alarm state: 0 - normal, 1 - alarm.
MIPPMComFailState	<p>MIP RM COM failure state changed.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the RM in the range 1 - 20. • State: Current alarm state: 0 - normal, 1 - alarm.

Alarm Actions

Action	Description
MIPAlarmCable	<p>MIP alarm cable signaled.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the PM in the range 1 - 8. • Cable: Cable: 0 - cable A, 1 - cable B. • Location: Alarm cell location.
MIPAlarmAuxiliaryInput	<p>MIP alarm auxiliary input signaled.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the auxiliary input in the range 1 - 60. • UnitType: Unit type: 1 - PM, 2 - LU, 3 - RM. • Location: Alarm location: 0 - tamper 1, 1 - tamper 2, 2 - sensor.
MIPAlarmPMTamper	<p>MIP alarm PM tamper signaled.</p> <p>Parameters:</p> <p>InterfaceID: Interface ID of the corresponding GeMIP.</p> <p>Unit: Unit no. The number of the PM in the range 1 - 8.</p>
MIPAlarmLUTamper	<p>MIP alarm LU tamper signaled.</p> <p>Parameters:</p> <p>InterfaceID: Interface ID of the corresponding GeMIP.</p> <p>Unit: Unit no. The number of the LU in the</p>

Action	Description
	range 1 - 9.
MIPAlarmRMTamper	MIP alarm RM tamper signaled. Parameters: <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the RM in the range 1 - 20

Command Actions

Action	Description
MIPSecureDisplaySegment	MIP secure display segment. Parameters: <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the display segment in the range 1 - 50. • Status: Secure unit if true, grant access otherwise.
MIPSecurePM	MIP secure PM. Parameters: <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the PM in the range 1 - 8. • Status: Secure unit if true, grant access otherwise.
MIPSecureLU	MIP secure LU. Parameters: <ul style="list-style-type: none"> • InterfaceID: Interface ID of the cor-

Action	Description
	<p>responding GeMIP.</p> <p>Unit: Unit no. The number of the LU in the range 1 - 9.</p> <p>Status: Secure unit if true, grant access otherwise.</p>
MIPSecureRM	<p>MIP secure RM.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the RM in the range 1 - 20. • Status: Secure unit if true, grant access otherwise.
MIPSecureAuxiliaryTP1	<p>MIP secure TP 1.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the auxiliary input in the range 1 - 60. • Status: Secure unit if true, grant access otherwise.
MIPSecureAuxiliaryTP2	<p>MIP secure TP 2.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the auxiliary input in the range 1 - 60. • Status: Secure unit if true, grant access otherwise.
MIPSecureAuxiliarySensor	<p>MIP secure auxillary sensor.</p> <p>Parameters:</p>

Action	Description
	<ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the auxiliary input in the range 1 - 60. • Status: Secure unit if true, grant access otherwise.
MIPTurnRelaysOnOneZone	<p>MIP turn relay on one zone.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the zone in the range 1 - 70. • Status: Secure unit if true, grant access otherwise.
MIPTurnARelayControl	<p>MIP turn a relay control.</p> <p>Parameters:</p> <ul style="list-style-type: none"> • InterfaceID: Interface ID of the corresponding GeMIP. • Unit: Unit no. The number of the RM in the range 1 - 20. • Status: Secure unit if true, grant access otherwise.

GSCIPDialUp (GeViScope)

GeViSoft was originally conceived as CCTV management software for LAN environments. For this reason GeViSoft is (currently) limited with respect to the number of simultaneously connected GeViScope connections.

The network-oriented headquarters/ branch office structure of banks and similar projects now make expansion necessary:

- The effective number of connections needs to be raised from around one hundred to several thousand.

- A differentiation is made between permanent and temporary connections.
- Temporary connections are established automatically for specific tasks and are then automatically closed afterward.

As part of the development of this expansion, the first stage has been realized and implemented in the form of an action-triggered push variant.

Installation

GSCcIPDialUp is a component of the default installation package. For this reason, no special installation is required.

- i** **GSCcIPDialUp is not currently subject to licensing restrictions. While the number of permanent GeViScope connections is limited by the corresponding licenses, the number of dial-up connections is not limited.**

Configuration

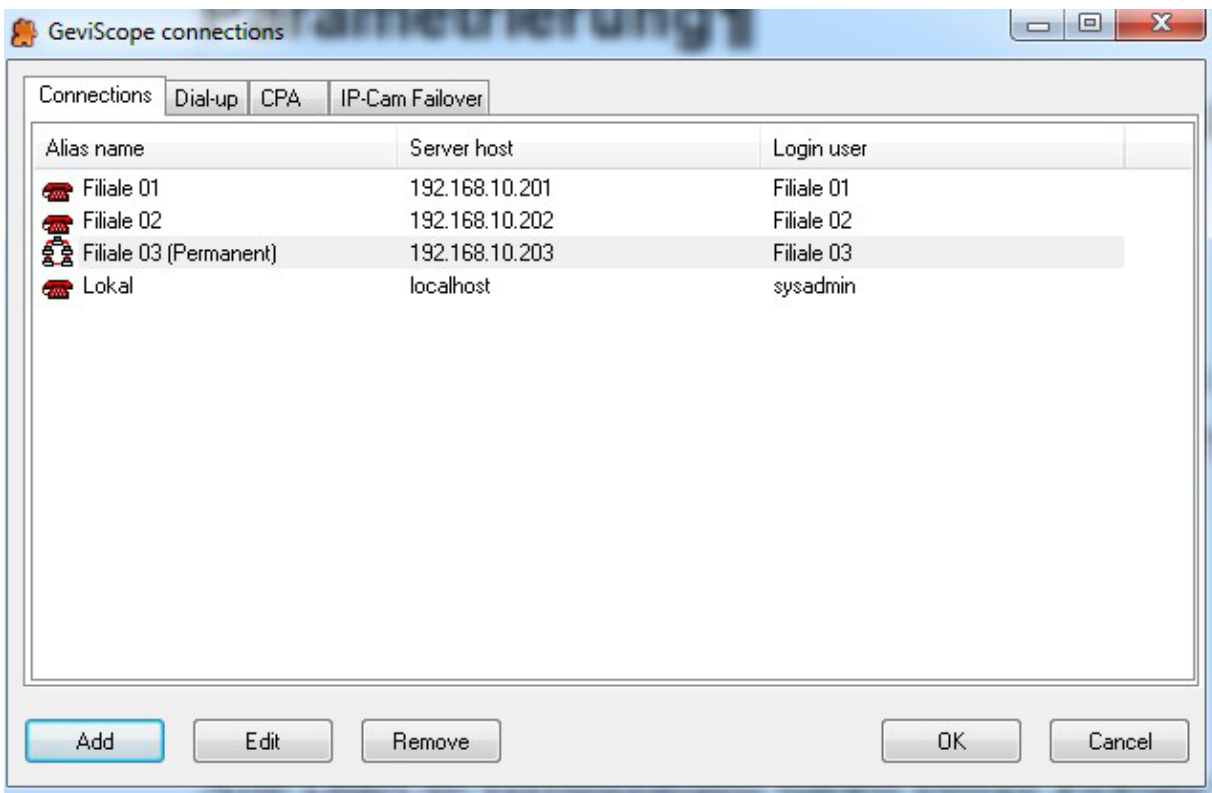
The configuration of permanent and dial-up connections is performed at the same location: when GeViScope connections are recorded.

Connections

The tab **Connections** shows a list of already configured connections. The following is specified:

- Connection alias
- GeViScope server
- GeViScope user name

Permanent and dial-up connections are differentiated by the corresponding icons.

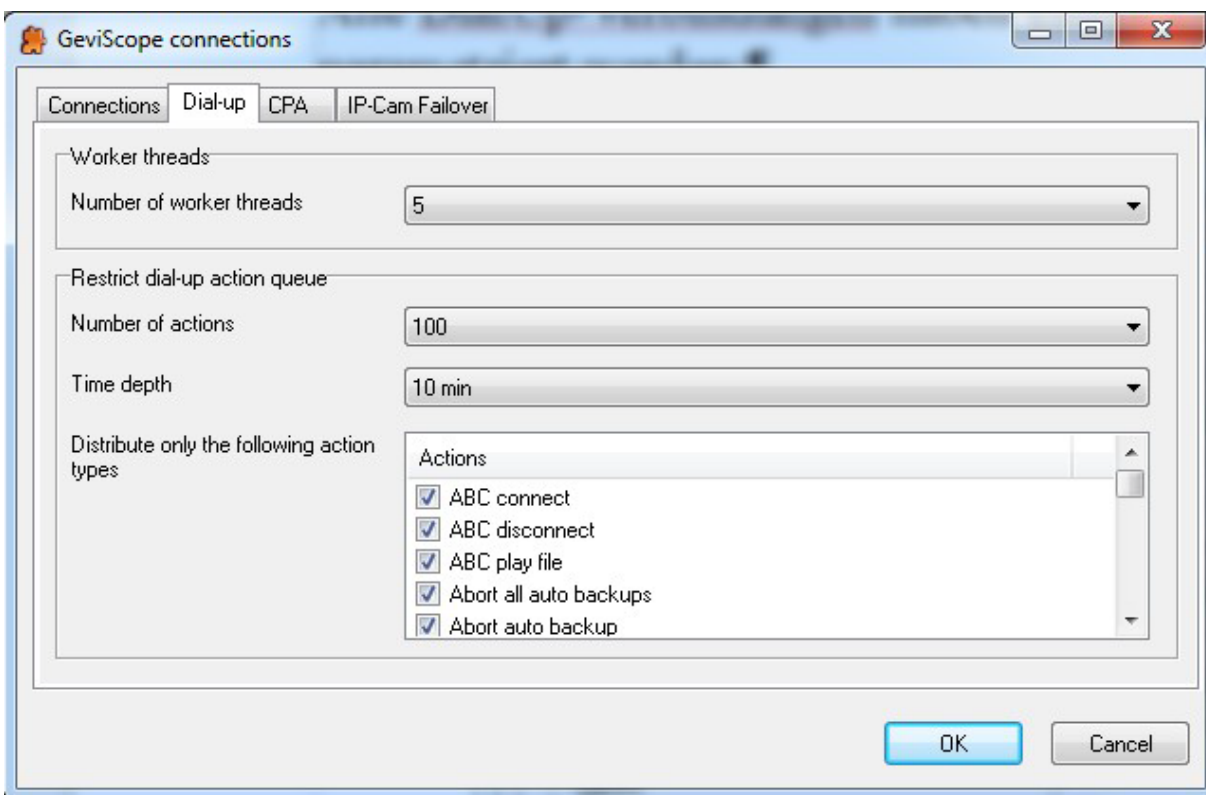


Dial-up

All dial-up connections have several global settings, which are set on the **Dial-up** tab.

These include:

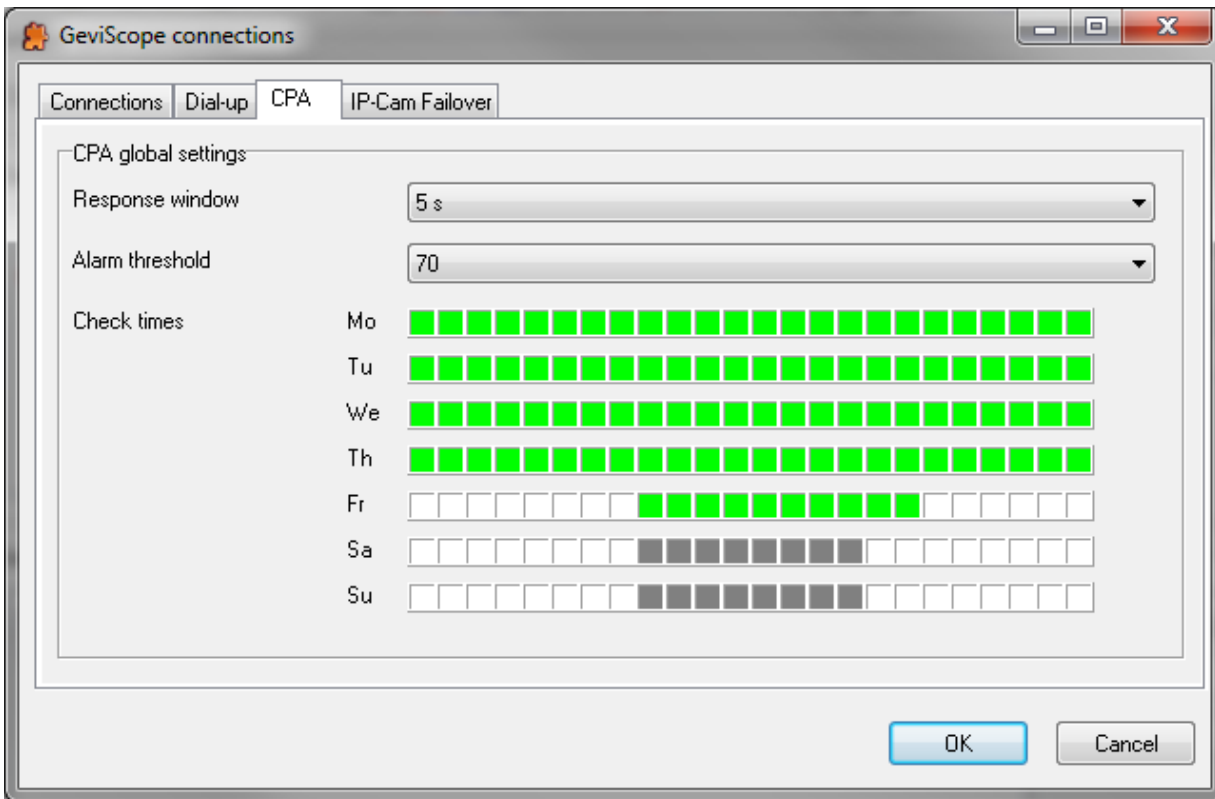
- The number of simultaneous dial-up connections (the number is limited by the number of work threads. The default value is 5, the maximum value is 20.)
- Restrictions and action queues for individual connections (you can limit both the number of actions in the queue as well as the temporal depth. You can also exclude selectively several action types from processing.)



CPA

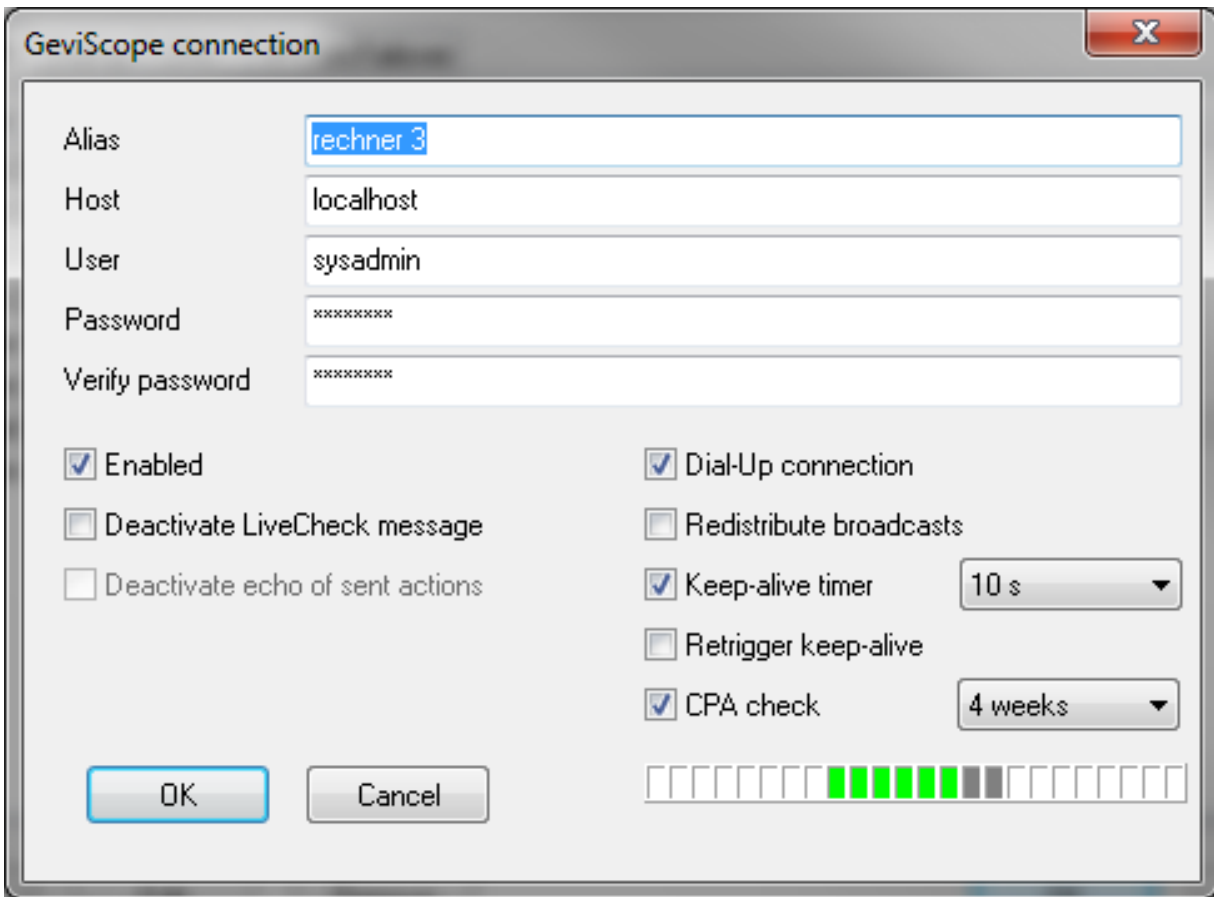
In addition to the global settings for the dial-up connections, there are also global functions that regulate the behavior of the CPA check. They are found under the CPA tab.

The time window defines how long the connection is kept open to wait for a response from the individual GeViScope system. The alarm threshold indicates the limit at which compounds are indicated as **OK** or as an **alarm**. Values greater than the threshold are **OK** and values smaller than the threshold are linked with **alarm**.



In addition, there is the global CPA measurement windows here. With the left mouse button the measurement can be activated in the corresponding area, the time slot will turn green. With the right mouse button the measurement can be deactivated in the corresponding area. A click on the weekday-mark disables the measurement for the whole day or vice versa.

Individual GeviScope connections have the following parameters:



- **Alias**, **Host**, **User**, **Password** and **Enabled** are used both for permanent and dial-up connections and are already described in the GeviScope documentation.
- The option **Deactivate LiveCheck message** limits processing of the incoming live-check actions and is thus only relevant for permanent connections.
- With the option **Dial-Up connection** you specify whether the connection is established permanently or on demand. The dial-up connections have the following special parameters:

Name	Description
Redistribute broadcasts	Normally, a dial-up connection only process messages directed explicitly to it, broadcasts to all GeviScopes via the GscAction("", ...) are not taken into account. By activating this option, the connection is registered for processing of these broadcasts.

Name	Description
Keep-alive timer	<p>Normally, a dial-up connection is deactivated directly after the entire action queue has been sent. When this option is active, the connection remains open for a specified amount of time, so that additional actions can be sent without delay.</p> <p>i Note that an active connection occupies a work thread, meaning that this thread is not available for further connections.</p>
Retrigger keep-alive	<p>With this option, the keep-alive timer is reset after the reception of additional actions, further delaying the connection from being deactivated.</p>
CPA check	<p>This option enables the CPA test for the specific GeViScope systems. For this purpose, a measurement action is sent to the corresponding GeViScope system to which a response is made with the CPA status of the various connected channels/cameras. This information is collected and saved with an associated time stamp every 24 hours in a new CSV file in the GeViSoft directory (C:\Program Data\GeViSoft\). The CPA test interval can be selected in different steps (1/2/3/6/12 hours, 1/2/3 days or weeks 1/2/3/4). If during the 24 hour cycle multiple tests are performed, only those with the most current results of a successful connection are saved in the measurement file. For fault-prone connections, it can thus be beneficial to carry out multiple tests during the 24-hour cycle.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>⚠ IMPORTANT: The CPA-time measurement is carried out only if both CPA time windows allow.</p> </div>

Operation

Communication: GeViSoft → GeViScope

The incoming actions are first checked according to their type to determine whether they have to be processed at all. If the action type is on a restricted list, the action is dismissed. Otherwise, the actions to be processed are distributed to the appropriate connection objects.

A connection object is appropriate when the action is addressed directly to this connection or, for a broadcast action, when the connection object is registered for processing the broadcasts.

The action is now put into the queue. If the corresponding connection has already been established, the corresponding work thread is informed; the work thread subsequently forwards the action to its target. The keep-alive timeout is retriggered where relevant. After the keep-alive timeout expires, the work thread is available for other jobs.

The assignment of the jobs is performed according to the FIFO principle: the waiting connection with the oldest action in the queue is next in line. The temporal depth of the corresponding queue is checked and the oldest entries are deleted, if necessary, according to the configuration.

In parallel, the connections are checked at regular intervals to see whether a connection can be established immediately if needed.

Communication: GeViScope → GeViSoft (CPA Measurement)

To detect the CPA status of the connected GeViScope systems, when activating the corresponding switch ("CPA check") an additional thread is started that manages all measurements. The list of configured GeViScope connections is gone through in a random order with a check whether the interval timer has expired. If applicable, a CPA check is then performed. The corresponding result is written to a CSV file.

When the server starts, it reads a CSV file with dial-up server settings and integrates them into its setup.

⚠ IMPORTANT: The CSV file must be named "dialup-servers.csv" and be in the same directory as the GeViSoft server.

The CSV file has the following layout:

```
Group;Branch;StartScan;Window Length;Host;User;Password
groupe south;store dd 1;8;6;127.0.0.1;sysadmin;masterkey
groupe south;store dd 2 no cpa;0;0;127.0.0.1;sysadmin;masterkey
```

Descriptions:

- Group is a string and is ignored.
- Branch is a string and is used as the alias name of the connection.
- Host, user and password parameters are for the connections.

- `Start Scan` and `Window Length` define the measurement window. The pair of values (0, 0) disables the CPA check, otherwise `Start Scan` indicates the beginning of the measurement window and `Window Length` the length (for length 0 the measurement for the whole day is allowed).

For the first time reading of this file, no parameterization is required: The file must only be located in the correct directory and the server will be restarted.

If no connection to the GeViScope server has been successful since the start of the test, `disconnected` is output to the CSV file. In case of successful connection query, the status of the last positive test is noted in the CSV file.

For newly parameterized connections, or those where the **CPA check** option is reactivated, an immediate check is performed and output in the latest CSV file. This makes it possible to check whether the GeViScope system can be reached. If a connection to the corresponding GeViScope is possible, the channel list will only be queried and initialized with timeout. The actual check is then performed and the corresponding measurement fields are updated. In the CSV file, the **connection alias**, the **channel name**, the **channel number**, the **measurement time**, the **channel correlation factor** and the **channel status** are output.

The channel status can be one of three categories: **timeout**, **alarm** and **OK**.

If the channel cannot be reached or no response is received to a corresponding CPA check, the channel is indicated with **timeout**. The **Response Window** option makes it possible to freely configure the window in which a response is being waited for. If a **correlation factor**, is received that is smaller than value defined under **alarm threshold**, the channel is indicated with **alarm**, for larger values with **OK**.

24 hours after the activation of the first CPA check, a new data file is created, while the time stamp is transferred to the file name. Overall, the last 10 measurement files remain on the computer to allow a retrospective examination. The files can be found in `C:\ProgramData\GeViSoft\` and can be imported into Excel for subsequent analysis.

Importing of the file is noted under `HKEY_LOCAL_MACHINE\SOFTWARE\Geutebrueck\GeViSoft\GeViServer\ImportCPAList [DWORD]`. If this entry is missing or the value is not equal to 0, the file is re-imported.

During the import, for already present GSC servers, only the CPA settings are changed.

- i** **For a large number of systems (including many bank systems) complex configuration is not necessary. You should simply try to record the GeViScope connections as dial-up connections and leave the settings in their default values.**

Expansion of CPA Logging

Number of Connection Attempts

The number of attempts for failure of a connection can be set via the Windows registry. Use for the following key:

- **Key:** HKLM\SOFTWARE\Geutebrueck\GeViSoft\GeViServer\GscDialUp
- **Value:** ConnectRetryCount
- **Type:** DWORD
- **Default value:** 3
- **Value range:** 1 .. 10

If the connection to a GeViScope-dialup server fails, an attempt to connect is made for the preset number of attempts.

Number of Measurement Attempts

The number of measurement experiments can be adjusted via the Windows registry. Use the following key:

- **Key:** HKLM\SOFTWARE\Geutebrueck\GeViSoft\GeViServer\GscDialUp
- **Value:** MeasurementRepeatCount
- **Type:** DWORD
- **Default value:** 3
- **Value range:** 1 .. 10

For a CPA measurement, the GeViSoft server initiates a measurement action and waits for the response of the individual cameras. If no answer has arrived during the wait time, the action is repeated and the wait time extended accordingly.

Logging

If the measurement process could not be successfully completed, an entry is still made in the .CSV file for each GeViScope server. The columns then contains the following information:

Column	Contents
Alias	Connection alias
Channel Name	empty
Channel Number	empty
Measurement Time	Time stamp of the message
Channel Correlation	empty
Channel Status	Message text: <ul style="list-style-type: none"> • Connection not checked yet • Connection to server failed • Cannot establish the back channel (the PLC action channel could not be established) • Cannot access the setup (it was not possible to read out the setup of the server) • Camera list is empty (setup of the server could be received, but does not contain any video sources)

Response Times

The response times for the measuring action have been extended to 60 seconds. In the range from 10 to 60 seconds, you can set the waiting time in 10 seconds steps.

IOI43a/ab USB Alarm-I/O (GeViScope)

The plugin enables integration of IOI43a/ab USB alarm I/O module in GeViScope. Connection of IOI43x devices is currently not intended.

Installation

The plugin consists of two DLLs: IOI43.DLL and IOI43.DLG. The first file represents the functionality of the IOI43 plugin, the second for the configuration dialog.

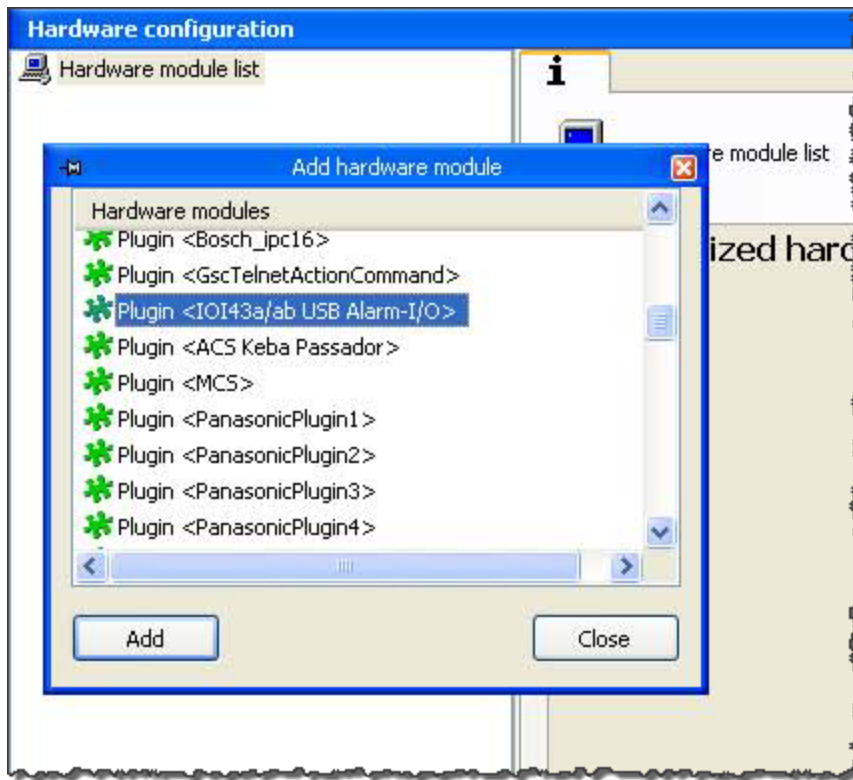
If the plugin is not included in the installation after delivery, copy the two files to the plugin directory of the GeViScope
(C:\Programme\GEVISCOP\MediaPlugins).

i Note that the plugin only functions with newer versions of GeViScope (>5.0.790.70).

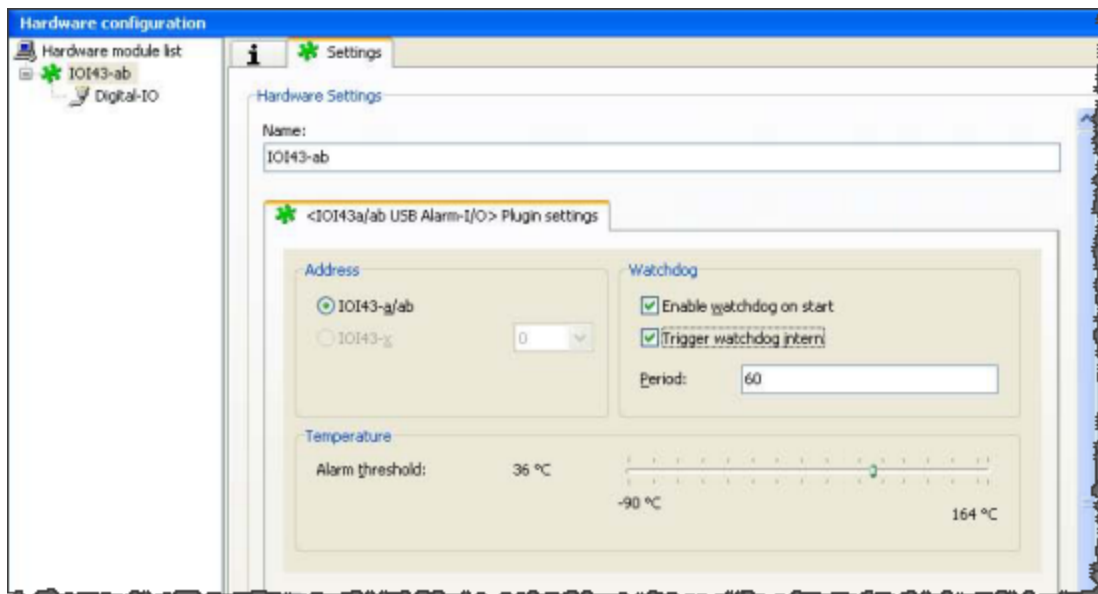


Configuration

1. In GSCSetup, open the **Hardware** Selection menu.
2. Click with the right mouse button in the list view and select **Add** in the pop-up menu.
3. Select the **Plugin <IO143a/ab USB Alarm-I/O>** in the following pop-up by marking it and clicking on **Add**.

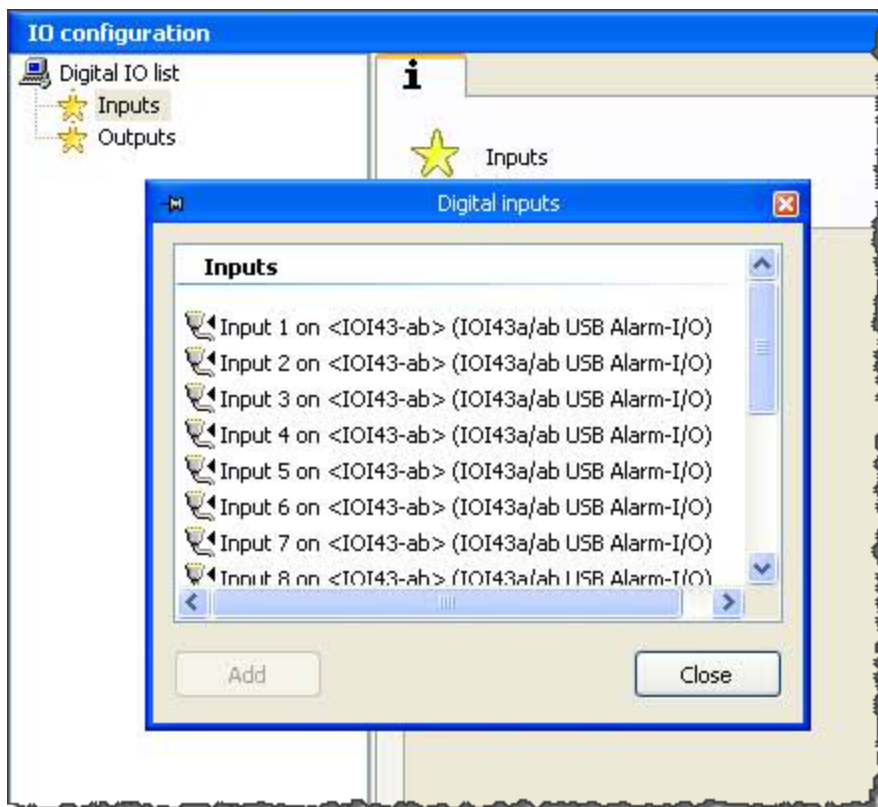


4. The IOI43a/ab USB Alarm-I/O plugin is now entered as a hardware resource in the hardware module list. If you click on it, you can set the required parameters.

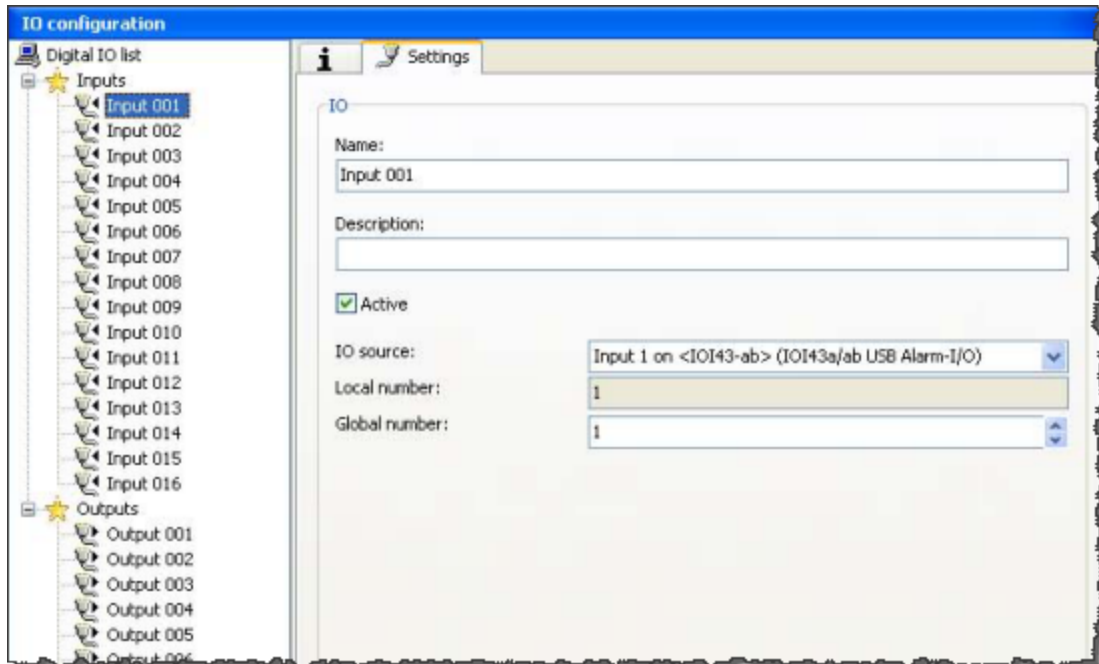


Name	Description
Enable watchdog on start	Activates the watchdog when the plugin is started.
Trigger watchdog internal	Activates internal retriggering of the watchdog. In this case, you do not need an external action; the watchdog is always retriggered by the plugin.
Period	The watchdog periods. During this time period, no retrigger actions are initiated, and then a reset is triggered on the mainboard.
Temperature	IOI43 modules have an integrated temperature sensor. The current value is checked every 60 seconds. If this value exceeds the preset threshold, a corresponding system warning is issued.

5. After setting the plugins, the contacts must be assigned. Go to **IO Settings**.



6. The IOI43a modules have 8 input contacts and 4 output contacts. With an IOI43b expansion module, the number of contacts is increased to 16 input contacts and 8 output contacts.

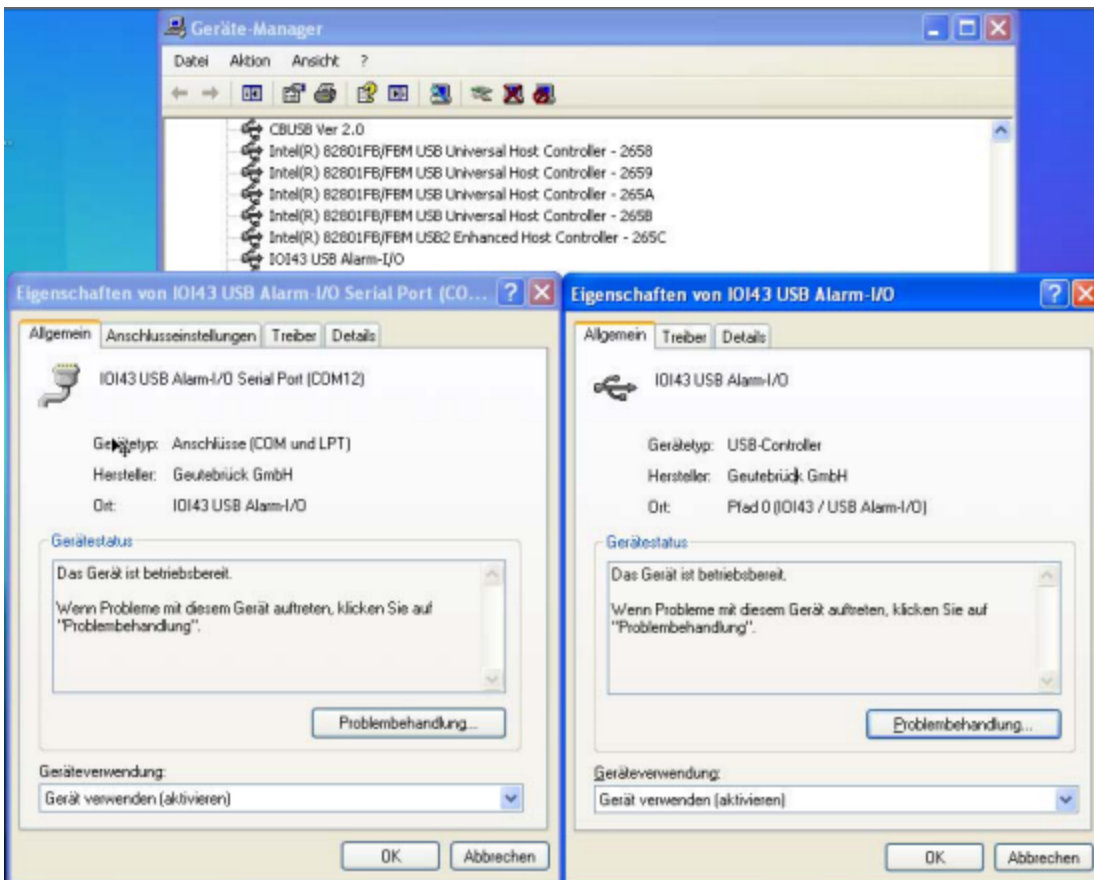


7. The GeViScope server service must be restarted.

Driver Installation

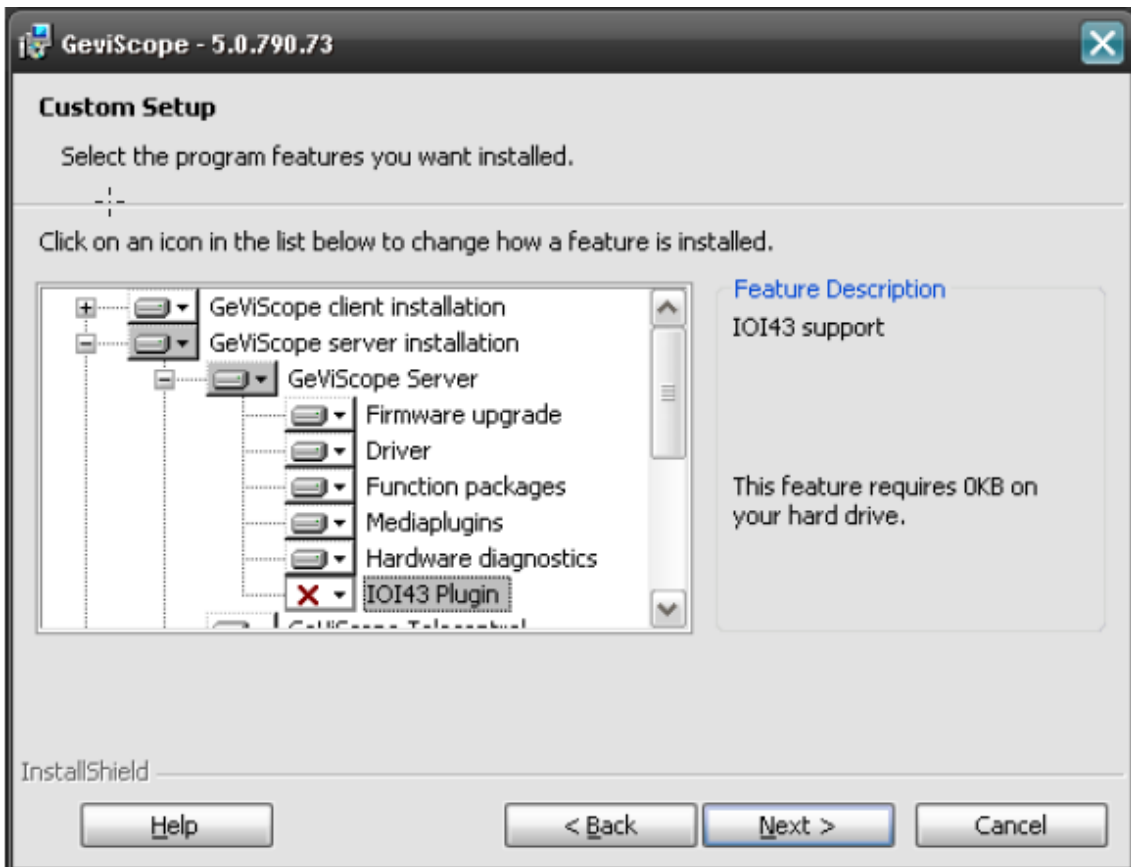
Install the included drivers for IOI43 USB alarm I/O devices: A combined driver is installed, which allows both a direct use of the devices and the use via a virtual serial port (e.g. for service use).

i Note that the two types of interfaces cannot be used simultaneously.



How to Install the Driver

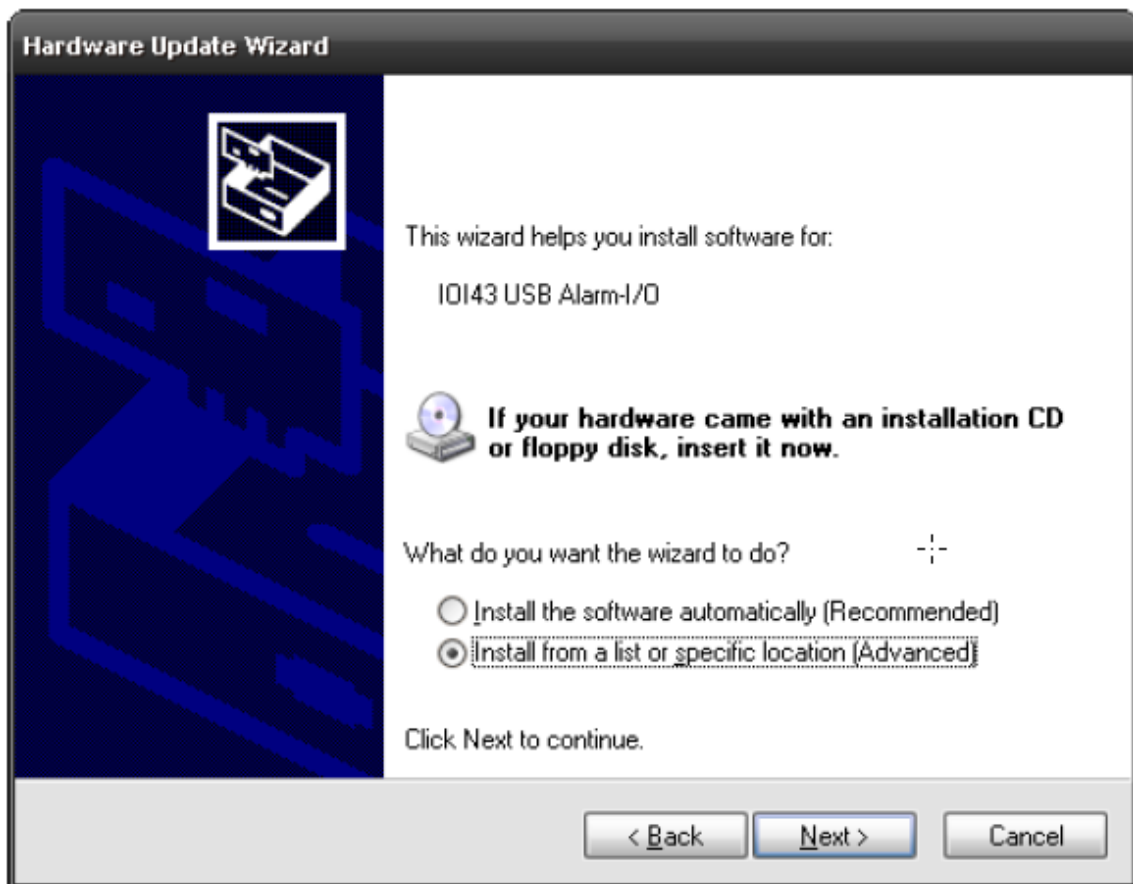
1. Start the GeViScope Installer.



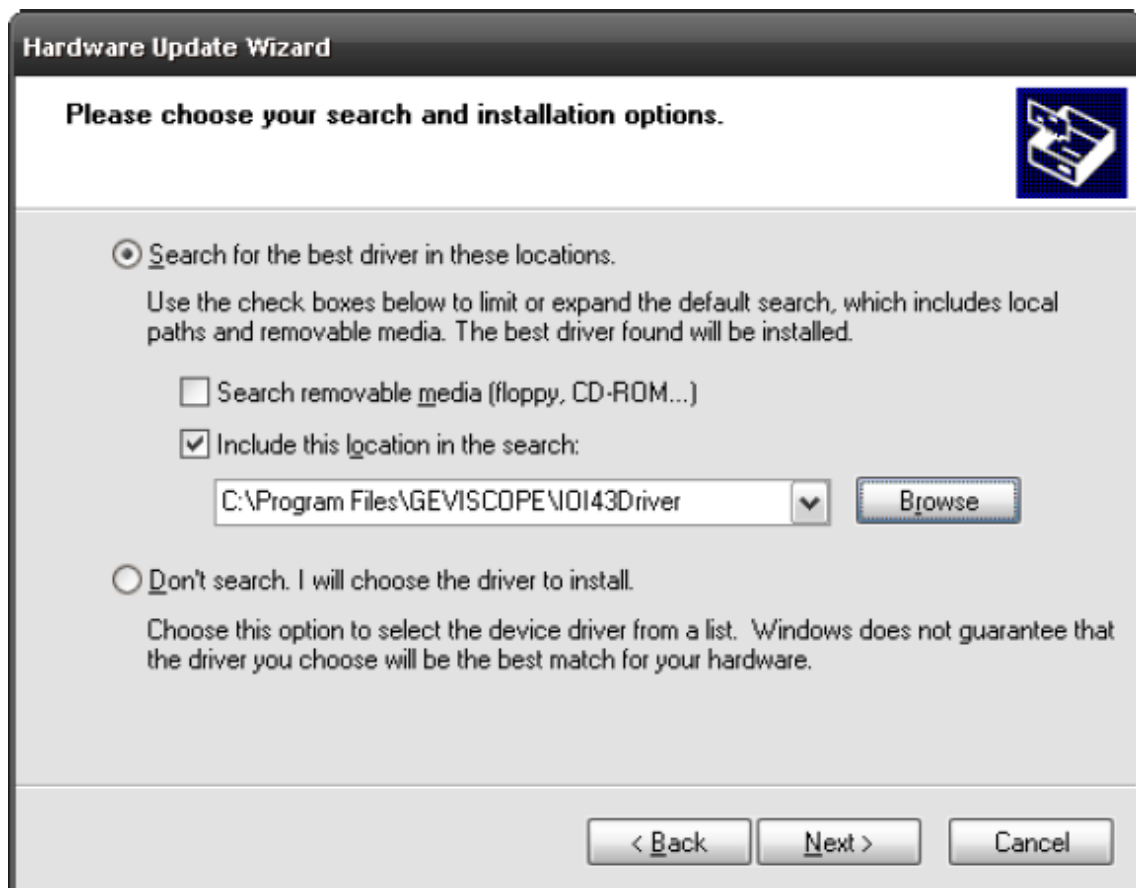
2. Select the **IOI43 Plugin** and start the Installer with a mouse click on the button **Next**.
3. The installed drivers can be found in the directory `C:\Program Files\GEVSCOPE`.
4. This is the time to install the hardware. Switch off your equipment and install the hardware / IO-Contact-16/8. More information in the included manual (chapter 9).
5. After installing the hardware, switch on your equipment. After booting MS Windows the Windows Hardware Update Wizard starts automatically.
6. If the hardware is installed, start the Windows **Hardware Update Wizard** manually.
7. Disable the Windows Update and click on button **Next**.



8. Choose the option **Install from a list or specific location (Advanced)**.



9. Choose the option Search for the best drivers in these locations.



10. The necessary drivers are in the following directory on the hard disk: C:\Program Files\GEVSCOPE\IOI43Driver.



11. Go there and confirm with **OK**.
12. The Windows **Hardware Update Wizard** installs the necessary drivers and asks you to complete the installation. Please confirm to finish the installation.

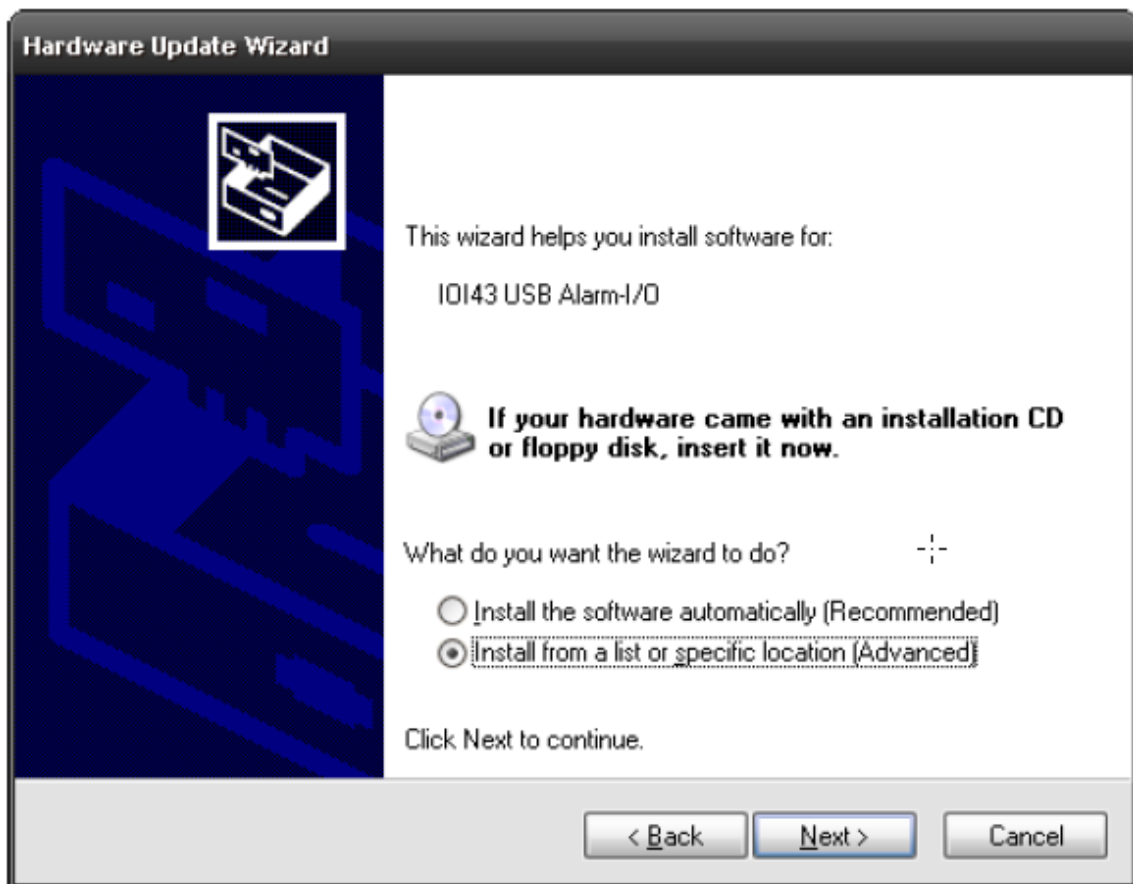
Serial Port

Additionally the drivers for the serial port IOI43 USB Alarm-I/O must be installed. For this complete the following steps:

1. Start the Windows **Hardware Update Wizard**.
2. Disable the Windows Update and click on button **Next**.



3. Choose the option Install from a list or specific location (Advanced).



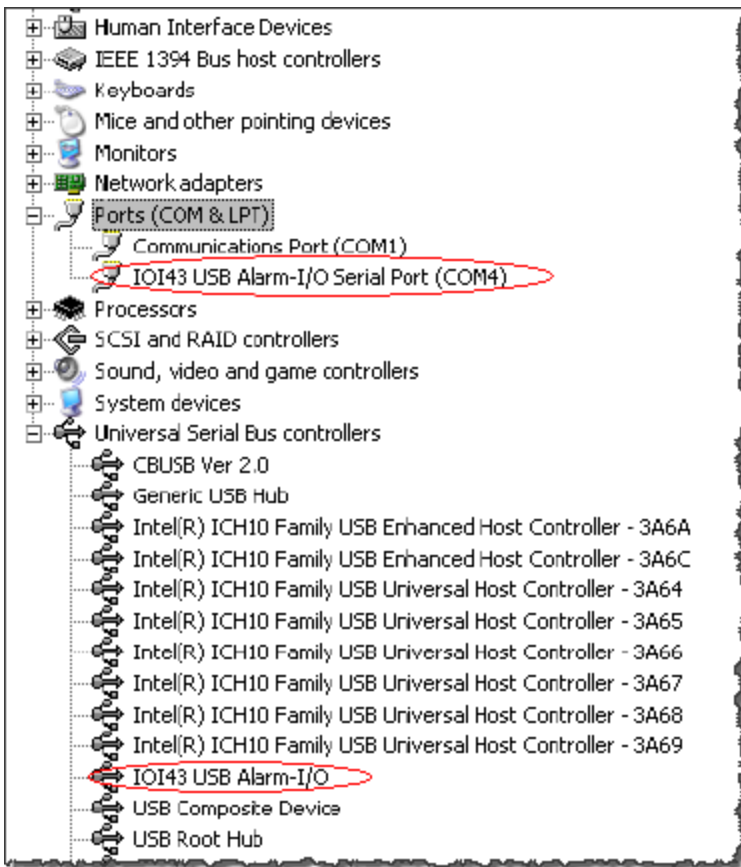
4. Choose the option Search for the best drivers in these locations.



5. The necessary drivers are in the following directory on the hard disk: C:\Program Files\GEVSCOPE\IOI43Driver.



6. Go there and confirm with **OK**.
 7. The Windows **Hardware Update Wizard** installs the necessary drivers and asks you to complete the installation. Confirm to finish the installation.
- Now you can find the new installed components in the computer management.



Raytec Remote Control (GeViSoft)

The GeViSoft KDec interface GeViTel has been expanded with commands/ messages that serve the integration of Raytec LED lights via the RayPSU_RCB module. These commands/ messages affect:

- The control of the light intensity via the command: RliiTDIII
- The output of camera commands via the command: RliiOCcamdata
- Querying lighting and photocell status.

i In a subsequent version, reporting of the Aux Input status of Raytec will also be possible via the input message RliiQA. Currently, this function is not available.

For the new KDec commands and messages, appropriate actions have been defined, which provide access to the commands/messages using the usual GeViSoft behavior rule mapping.

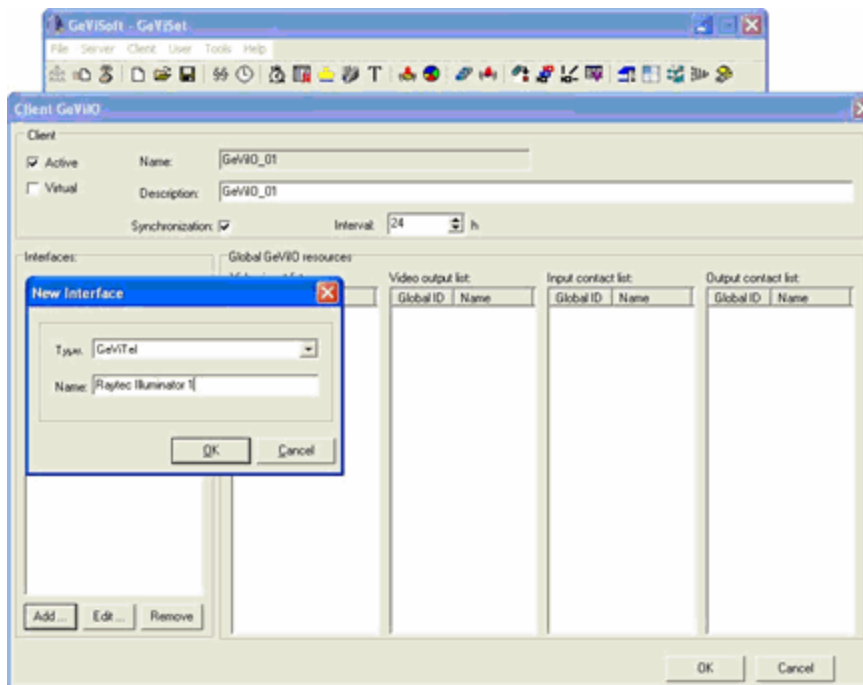
The basis for implementation is the document "Raytec PSU-RCB, Technical and User Documentation, Rev. 1 (RCB 0.3, PSU-RCB_Set 0.3)", which defines all aspects of serial communication with the light module.

Installation

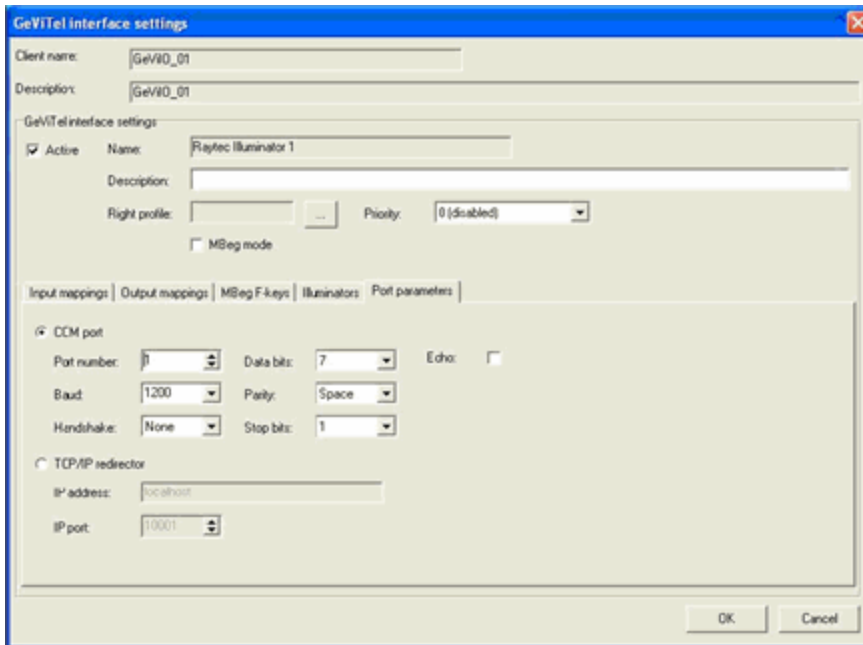
The Raytec functionality described above is a core part of the GeViSoft system and requires no specific installation.

Configuration

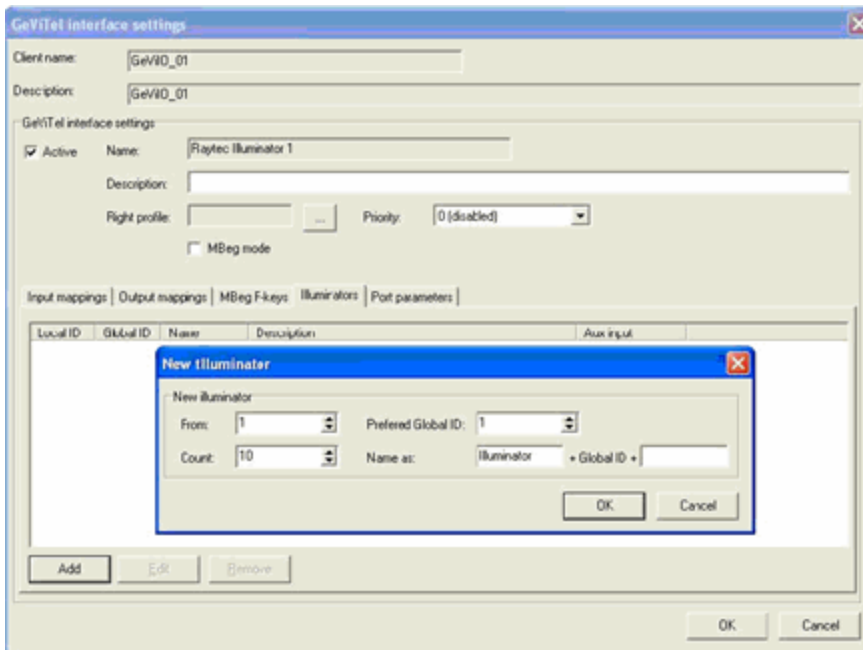
1. Start GeViSoft GeViIO Setup and select the GeViIO client that is running on the computer to which the RayPSU_RCB module is connected directly. If the connection is via TCP/IP, then select any GeViIO clients.
2. If you do not have a GeViIO client, create one.

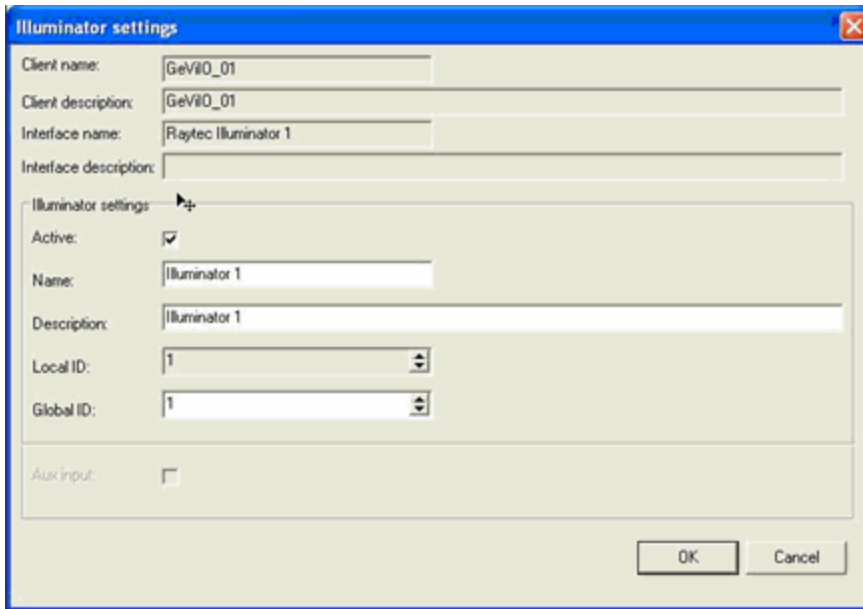


3. In this GeViIO client, you create a new GeViTel interface:



4. The next step is to add the appropriate number of lights instances:

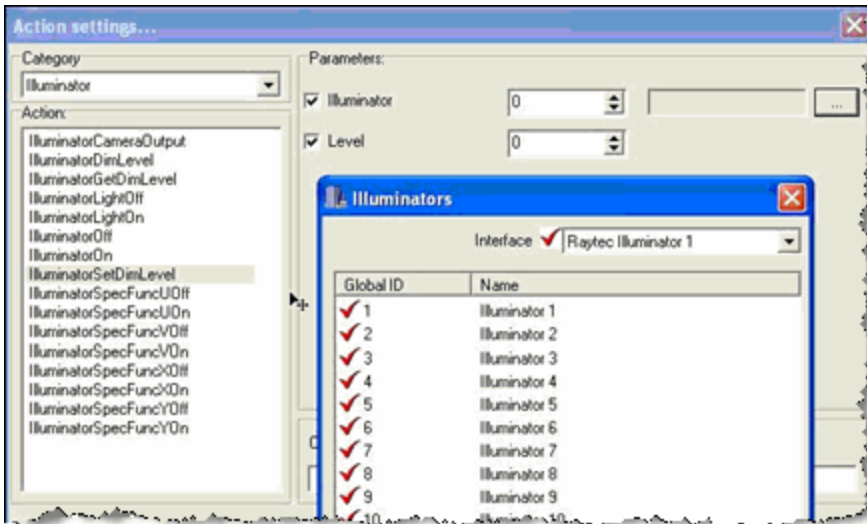




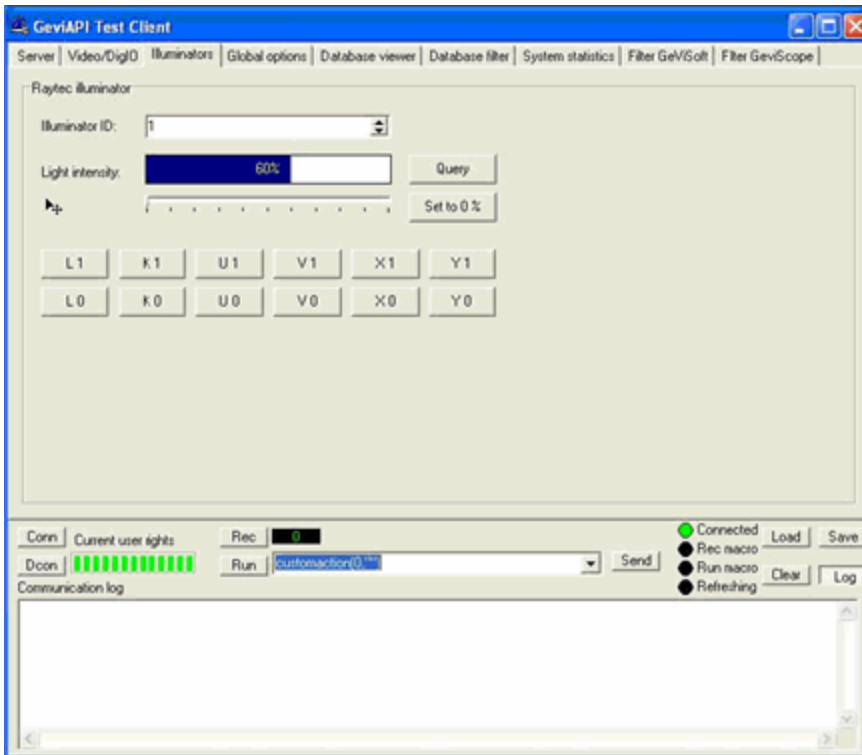
5. Confirm your entries and transfer the setup to the server. This concludes configuration of the lights.

Control

Control of the lights is action-based and takes place through the normal GeViSoft behavior rule mapping:



API test client integrates support for all basic functions:



Action Overview

All actions that are used to control the lights are included in the action group **Illuminator**.

The following actions are available:

Action	Description
IlluminatorLightOn IlluminatorLightOff	Switching the lights on or off using Lx commands. i Note that here only one of three parallel switches is switched. For more details, see the documentation of RayPSU-RCB module. Parameter: <ul style="list-style-type: none"> • Illuminator: Number of the lamp whose the lights are switched.
IlluminatorOn IlluminatorOff	Switching the lights on or off using Kx commands.

Action	Description
	<p>i Note that here only one of three parallel switches is switched. For more details, see the documentation of RayPSU-RCB module.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • Illuminator: Number of the lamp whose the lights are switched.
<p>IlluminatorSpecFuncUOn IlluminatorSpecFuncUOff</p>	<p>Triggering the Ux commands.</p> <p>i Note that the response to this command is specified in the setup of the Raytec module. For more details, see the documentation of RayPSU-RCB module.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • Illuminator: Number of the lamp whose the lights are switched.
<p>IlluminatorSpecFuncVOn IlluminatorSpecFuncVOff</p>	<p>Triggering the Vx commands.</p> <p>i Note that the response to this command is specified in the setup of the Raytec module. For more details, see the documentation of RayPSU-RCB module.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • Illuminator: Number of the lamp whose the lights are switched.
<p>IlluminatorSpecFuncXOn IlluminatorSpecFuncXOff</p>	<p>Triggering the Xx commands.</p> <p>i Note that the response to this command is specified in the setup of the Raytec module. For more details, see the documentation of RayPSU-RCB module.</p> <p>Parameter:</p>

Action	Description
	<ul style="list-style-type: none"> • Illuminator: Number of the lamp whose the lights are switched.
<p>IlluminatorSpecFuncYOn IlluminatorSpecFuncYOff</p>	<p>Triggering the Yx commands.</p> <p>i Note that the response to this command is specified in the setup of the Raytec module. For more details, see the documentation of RayPSU-RCB module.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • Illuminator: Number of the lamp whose the lights are switched.
<p>IlluminatorGetDimLevel</p>	<p>Query brightness of the light.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • Illuminator: Numbers of the light whose brightness is queried.
<p>IlluminatorSetDimLevel</p>	<p>Adjust brightness of the light.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • Illuminator: Numbers of the light whose brightness is set. • Level: Brightness level.
<p>IlluminatorDimLevel</p>	<p>Current brightness of the light.</p> <p>Parameter:</p> <ul style="list-style-type: none"> • Illuminator: Numbers of the light whose brightness is specified. • Level: Brightness level
<p>IlluminatorCameraOutput</p>	<p>Output of a command to the connected camera.</p> <p>i For more details, see the documentation of RayPSU-RCB module.</p> <p>Parameter :</p> <ul style="list-style-type: none"> • Illuminator: Numbers of the light.

Action	Description
	<ul style="list-style-type: none"> • Command: Camera command. Note the escape sequences (e.g., ~OD~OA).

Remote Snapshot (GeViScope)

There are a number of programs that allow you to record procedures on remote desktops. With the GeViScope plugin Remote Snapshot, you can now do this from your GSC.

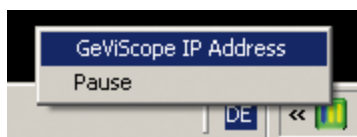
The only conditions are:

- The Remote Snapshot plugin must be installed on all computers involved and only one recording procedure can be carried out at a time.
- You should also keep in mind that it takes significantly more processing power to retrieve pictures from the graphic card than it does to send them there. For this reason, for older PCs it may be better to switch off hardware acceleration or to at least turn it down. For newer PCs, this should no longer matter.
- But you should nonetheless make reasonable settings (priority, picture size and picture rate), even for new PCs. High picture rates and high resolutions require high processing power.

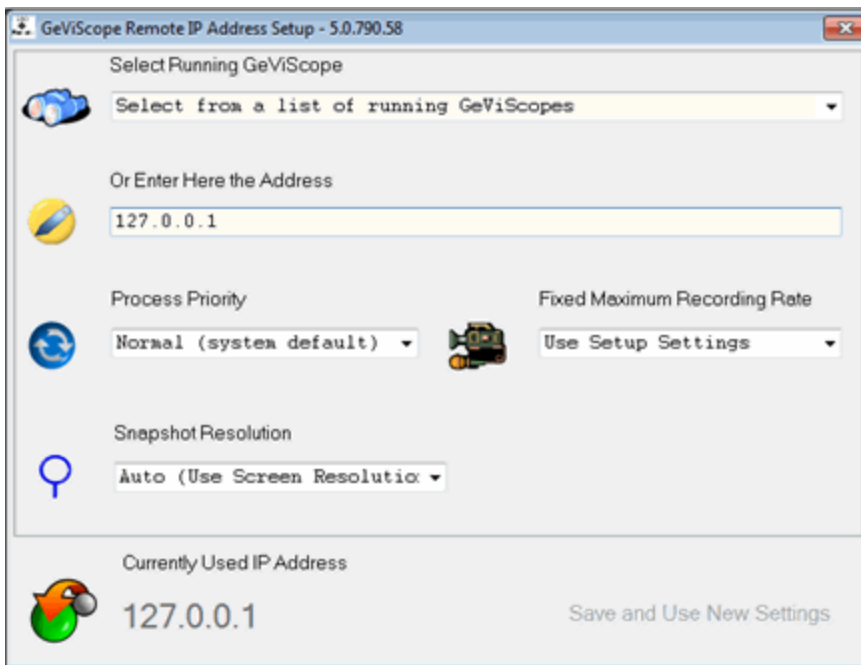
Before you can use the plugin, you have to install it, configure it, and register and license it in GSCSetup.

Installation and Configuration

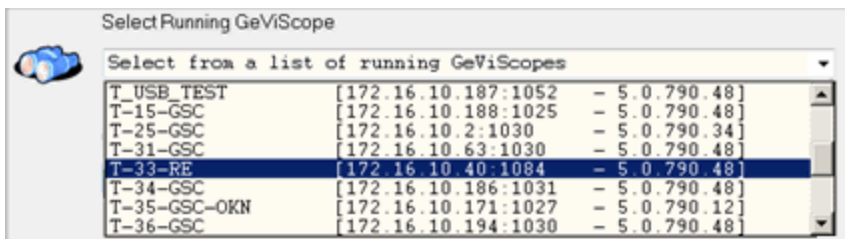
1. Double click `Program PluginRemoteStarter.MSI`.
2. The installation will run fairly quickly in the background. When it has been completed, a symbol will appear in the taskbar.
3. Right click on the symbol and then on **GeViScope IP Address** to open the configuration dialog.



4. The dialog only has a few settings:



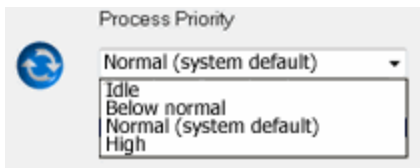
5. First, you are asked to select from a list the GeViScope whose desktop you wish to record.



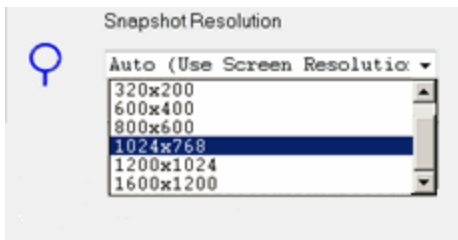
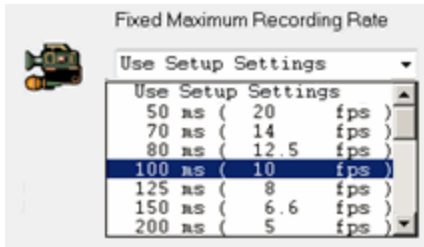
i Depending on various factors, it can take a moment before all devices in the network appear. If you wish to record the desktop of the local GeViScope, you should enter the address localhost or the IP address 127.0.0.1 in the following field.



6. The recording procedure requires a fair amount of processing power. If other, important processes are running, then you should lower the priority of the recording process.



7. For these same performance reasons, the settings for the recording rate and resolution should be chosen carefully. Often, only a low picture rate can be sufficient, in particular if they are recorded with a high resolution.

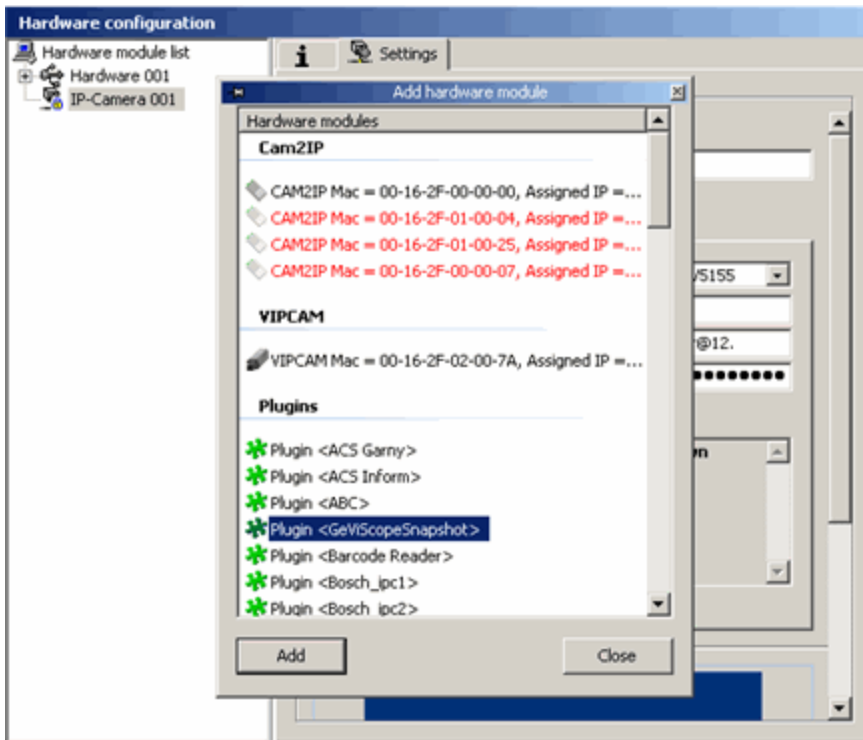


8. When the configuration is complete, click **Apply settings** and close the dialog.

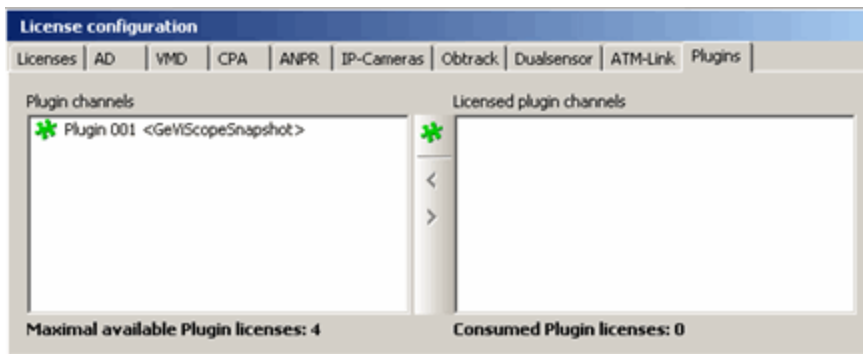
i You must install the plugin on the GeViScope that will perform the recording as well as all other devices whose desktop you wish to record. And remember, you can only start one recording process at a time.

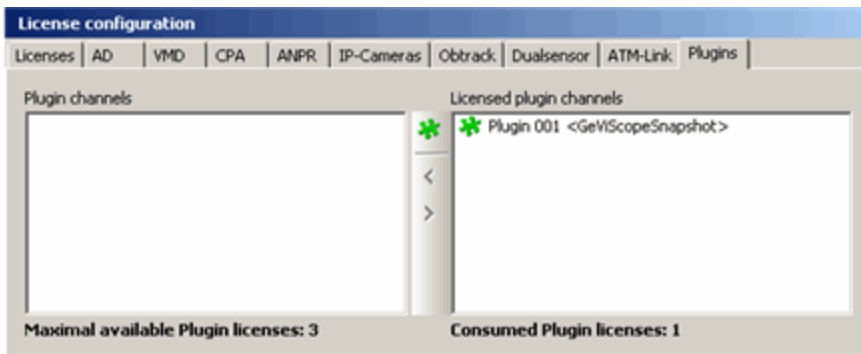
Installation in GSCSetup

1. Open GSCSetup.
2. Connect with the GSCServer and select the menu item **Hardware** from the menu.
3. Right click the **Hardware module list** and select **Add** in the pop-up menu.
4. In the open hardware module window, select under **Plugins** the **Plugin <GeViScopeSnapshot>** and confirm by clicking **Add**.



5. Close the window by clicking **Close**.
6. As you can see, the plugin has been entered. Now only the necessary license is needed. To enter the license, click **License** in the menu to go to the license dialog.

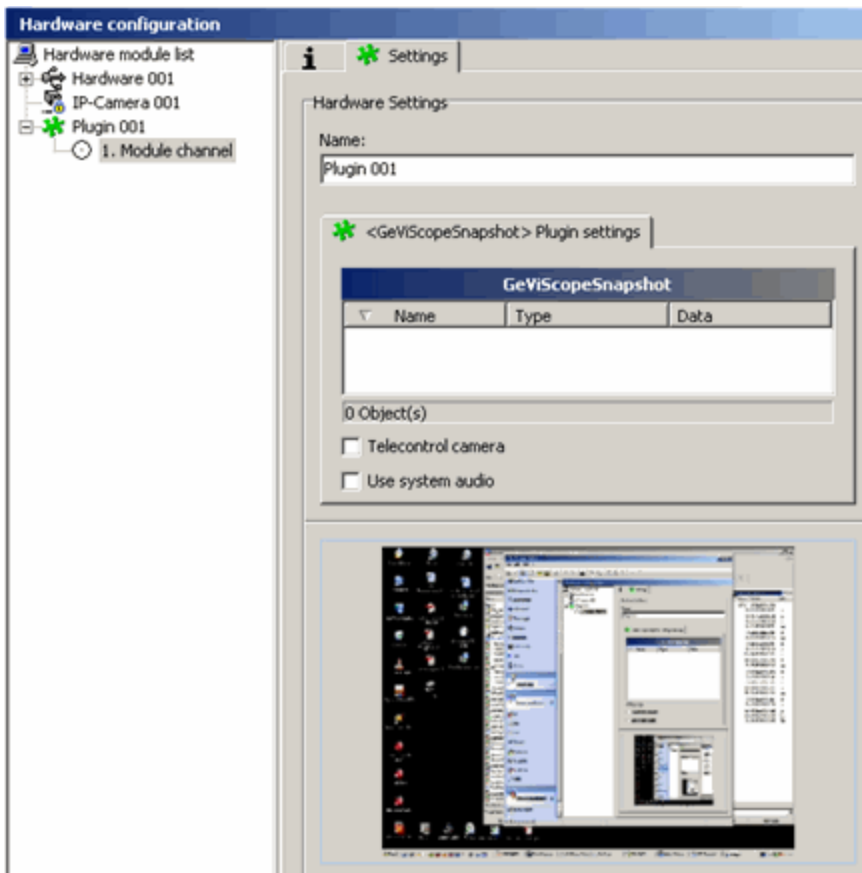





- Now send your settings to the server by clicking on the adjacent symbol.

Recording




If you return to the hardware dialog, you will now see that the recording is running.



The symbol in the taskbar has also changed: A blue stripe runs from left to right, indicating the recording .

Pausing the Recording

You can pause the recording at any time by right clicking on the symbol and then clicking **Pause**.

- The changed appearance of the symbol indicates that the recording has been paused .
- If you lose contact to the server, you will be notified and the icon will start flashing . If contact is re-established, recording starts up again automatically.
- If you lose contact to the server while the recording is paused, you will be notified and the icon will change its appearance .
- If contact is re-established, you can continue recording by right clicking on the symbol in the taskbar and then clicking on **Send pictures again**.

TMS-20 (GeViScope)

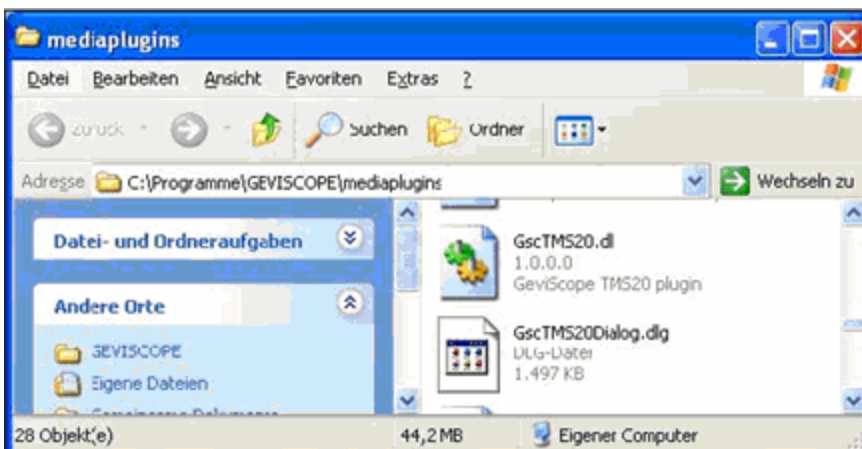
With this plugin, the TMS-20 interface, known from Multiscope, can be used in GeViScope. TMS-20 devices can be connected using a serial connection or also over COM/IP routers.

Installation

The plugin consists of two DLLs: GscTMS20.DLL (the TMS-20 plugin) and GscTMS20Dialog.DLG (the TMS-20 setup GUI).

If the plugin is not included in the scope of installation with delivery, please copy the two files to the plugin directory of GeViScope (C:\Program Files\GEVSCOPE\MediaPlugins).

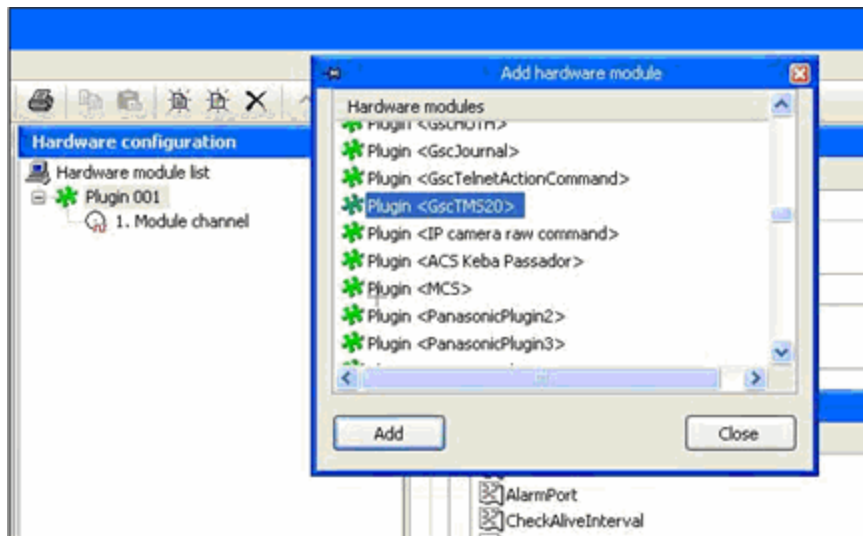
The GeViScope server service must then be restarted.



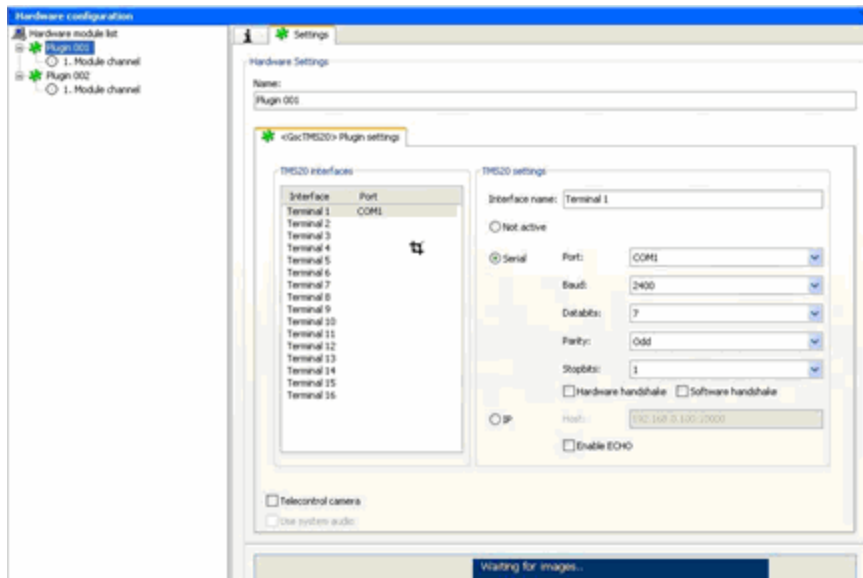
- i** Note that the plugin only works with the newer version of GeViscope (from 790.76 on).

Configuration

1. In GSCSetup, open the Hardware selection menu.
2. Right-click on the list view and in the pop-up menu select on **Add**.
3. In the following pop-up, select the **Plugin <GscTMS20>** by selecting it and clicking **Add**.



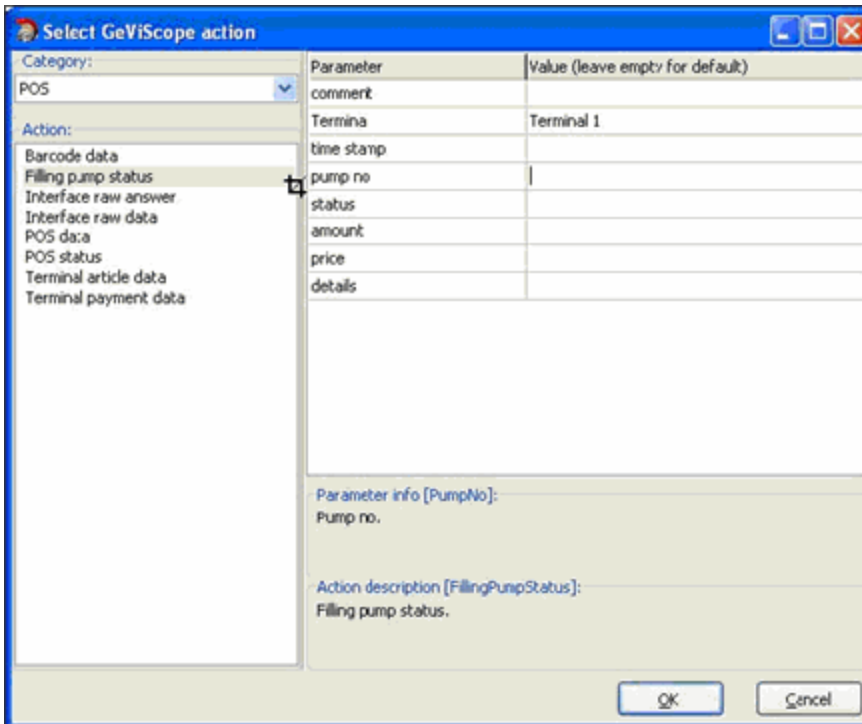
4. The GSCTMS20 plugin is now entered in the hardware module list as a hardware resource. When you click on it, you can configure the necessary serial parameters.



The plugin supports up to 16 devices. Because the status of the pumps is sent every 55 ms, the reception echo has been deactivated by default. When looking for connection problems, you can activate it.

Messages

The plugin reacts to status messages of the individual pumps. If a change of the status is recognized, a **Filling pump status** message is triggered, which contains the details:



The message contains the following parameters:

Name	Description
Termina	Name of the device (configured in the setup).
time stamp	Current date and time.
pump no	Pump number (numbering begins with 1).
status	Status (removed, inserted, authorized).

Additional fields are not used by the TMS-20 plugin and remain empty.

Telecontrol

This chapter contains information about telecontrol.




American Dynamics Matrix

The commands of the American Dynamics Matrix are not compatible with the commands of the KDec system. A complete conversion must take place. The protocol is described in the following table of figures. Speed-dependent pan/ tilt commands can be used. American Dynamics Matrix understands up to 8 speed levels for both movements. The 255 levels of the KDec system will be converted accordingly.















Number of fixed positions: 72 (via MBeg only 40)




Available camera numbers: 1...32

- i** **Meaning of variables:**
- **kkk** = Insert number of the dome camera, possibly with leading zeros.
 - **pp** = Insert fixed position of the dome camera, possibly with leading zeros.
 - **vvv** = Additional variable speed parameters.

American Dynamics function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With  buttons (stop = release)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Pan and tilt at high speed	SNkkk++	Hold  button	Automatically via joystick
Pan and tilt at normal speed	SNkkk--	Release  button	Automatically via joystick

TELECONTROL

American Dynamics function	KDec command	MBeg	MBeg/VS
Focus near	SNkkkF-	With the 	With Focus rocker switch
Focus far	SNkkkF+	With the 	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the 	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the 	
Zoom stop	SNkkkZO	Release  / 	Release zoom
Open iris. The dome is then in manual iris mode	SNkkkB-	Hold  button (stop = release)	
Close iris. The dome is then in manual iris mode	SNkkkB+	Hold  button (stop = release)	
Save fixed position or pattern	PPkkk.pp	Program fixed position	
1	SNkkkL1	Lighting on 	
2	SNkkkW1	Press  button	
3	SNkkkLO	Automatic light 	
4	SNkkkK1	Camera on 	

American Dynamics function	KDec command	MBeg	MBeg/VS
5	SNkkkP1	Press  button	
6	SNkkkK1	Camera automatic 	
Program	SNkkkX1	Special functions X	
Run Seq	SNkkkY1	Special functions Y	
Hold	SnkkkSA	Automatic panning 	









Argovision (Lederer) Platon AFX

The commands of the Argovision PTZ are not compatible with the commands of the KDec system. Complete conversion is necessary. This procedure is described in the following table.

The conversion is based on version 1.1.2 from November 2000.

- i** **Meaning of variables:**
- **kkk = Enter number of dome camera, with leading zeroes if necessary.**
 - **pp = Enter preset position of selected dome camera, with leading zeroes if necessary.**
 - **vvv = Additional variable speed parameters.**

TELECONTROL

Argovision function	KDec command	MBeg	MBeg/VS
Pan right (fixed speed)	SNkkkS-	with keys 	with joystick
Pan right (variable speed)	SNkkkS-vvv		
Pan left (fixed speed)	SNkkkS+		
Pan left (variable speed)	SNkkkS+vvv		
Pan stop	SNkkkSO	release keys	
Tilt down (fixed speed)	SNkkkN-	with keys 	
Tilt down (variable speed)	SNkkkN-vvv		
Tilt up (fixed speed)	SNkkkN+		
Tilt up (variable speed)	SNkkkN+vvv		
Tilt stop	SNkkkNO	release keys	
Focus near	SNkkkF-	with key 	with rocker switch focus
Focus far	SNkkkF+	with key 	
Focus stop	SNkkkFO	release key 	release focus
Zoom wide	SNkkkZ-	with key 	with rocker switch zoom
Zoom tele	SNkkkZ+	with key 	
Zoom stop	SNkkkZO	release key 	release zoom

Argovision function	KDec command	MBeg	MBeg/VS
Set preset (Home = 0)	PPkkk.pp	Program preset	
Call preset	SNkkk.pp	Go to preset	

Address Specifics

- Shareable are 32 PTZ at the same RS485 bus.
- The RS485 point-to-multipoint protocol is used.
- The RS485 address of the PTZ must be adjusted with MS2SNK or Argovision CT40 operator.

BBV System

The commands of the BBV system are not compatible with the commands of the KDec system. Complete conversion is necessary. This procedure is described in the following table.















In the same way as with KDec, BBV pan/ tilt heads can be controlled with faster and slower speed stages (MBeg). When using MBeg/VS, the 16 speed stages of the BBV system are used for speed-dependent control with joystick. Up to 16 pan/ tilt heads can be controlled per BBV system. The BBV system manages up to 16 pre-set positions per pan/ tilt head.

Number of preset positions: 16 including home position (home position is preset 1)

Number of possible camera numbers: 1 ...16

- i** **Meaning of variables:**
- **kkk = Enter number of dome camera, with leading zeroes if necessary**
 - **pp = Enter preset position of selected dome camera, with leading zeroes if necessary**
 - **vvv = Additional variable speed parameters**

TELECONTROL

BBV function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	Key     (stop = release) at currently set speed (normal/ fast)	with joystick
Pan left	SNkkkS+		
Tilt down	SNkkkN-		
Tilt up	SNkkkN+		
Tilt up/down, pan right/left at variable speed	SNkkk++	Press and hold 	Automatic with joystick
Tilt up/down, pan right/left at normal speed	SNkkk--	Release key	
Focus near (manual mode)	SNkkkF-	Focus near 	
Focus far (manual mode)	SNkkkF+	Focus far 	
Zoom wide	SNkkkZ-	Zoom wide 	
Zoom tele	SNkkkZ+	Zoom tele 	
Iris open (manual mode)	SNkkkB-	Iris open 	
Iris close (manual mode)	SNkkkB+	Iris close 	
Store preset or home position	PPkkk.pp	Program preset (1 - 16) Home position = 1	
Go to preset	SNkkk.pp	Go to preset (1 - 16)	
Go to home position	SNkkk.Gp	Press key 	
Auto iris on	SNkkkKO	Camera off 	
Wiper on/off	SNkkkW1SNkkkW0	Press key 	

TELECONTROL

BBV function	KDec command	MBeg	MBeg/VS
Light on	SNkkkL1	Light on 	
Light off	SNkkkLO	Light off 	
Automatic pan	SNkkkSA	Automatic pan 	
Pump on/off	SNkkkP1SNkkkPO	Wash on/ off 	

Bosch (Old Philips) Protocol Integration

Protocol base:

- OSRD Protocol for Bosch PTZ Cameras 1.0 – 2008/04
- Products: Receiver/Drivers, G1, G2, G3, VEZ and VG4 series AutoDomes.
- Supports now extended Bosch functions especially for G3 AutoDomes version 5.00
- Supports the full address range for Bosch dome products (14 Bit = 16384 addresses)
- Functionality is supported with major release versions 8xx of GSC.

Extension of the old Philips protocol driver. Still support old Philips products: TC8560 and TC700

GSCTelecontrol supports the following functions of the Bosch PTZ system:

GSC / GeViSoft Action	Details
PanRight	Pans right with variable speed.
PanLeft	Pans left with variable Speed
PanStop	Stops panning. Other motions (tilt, zoom, focus) are not influenced.
TiltDown	Tilts Down with variable speed

TELECONTROL

GSC / GeViSoft Action	Details
TiltUp	Tilts Up with variable speed
Tilt stop	Stops tilting. Other motions (pan, zoom, focus) are not influenced.
FocusNear	Focusing near
Focus far	Focusing far
Focus stop	Stops focusing. Other motions (pan, tilt, zoom) are not influenced.
ZoomIn	Zooms in with variable speed
ZoomOut	Zooms out with variable speed
Zoom stop	Stops zooming. Other motions (pan, tilt, focus) are not influenced.
PrePosSave	Stores current position as preset.
PrePosCallUp	<p>Recalls a preset position. The following preset positions have a special meaning:</p> <ul style="list-style-type: none"> • 71: AUX3 ON • 72: AUX4 ON • 73: AUX8 ON • 74: AUX46 ON • 75: AUX50 ON • 76: AUX51 ON • 77: AUX52 ON • 78: AUX53 ON • 79: AUX56 ON • 80: AUX78 ON • 81: AUX78 OFF

TELECONTROL

GSC / GeViSoft Action	Details
	<ul style="list-style-type: none"> • 82: AUX87 ON • 83: AUX100 ON • 84: AUX100 OFF • 85: AUX101 ON • 86: AUX101 OFF • 87: AUX90 OFF
IrisOpen	Opens iris
IrisClose	Closes iris
IrisStop	Stops iris opening/closing
DefaultPosCallUp	Calls preset position 1
CameraTourStart	Starts either Tour A or Tour B (controlled by TourID 0 or 1) – AUX50 ON or AUX52 ON
CameraTourStop	Stops either Tour A or Tour B (controlled by TourID 0 or 1) – AUX50 OFF or AUX52 OFF
CameraLightOn	AUX1 ON
CameraLightOff	AUX1 OFF
CameraOn	AUX90 ON
CameraOff	AUX90 OFF
CameraPumpOn	AUX3 ON
CameraPumpOff	AUX3 OFF
CameraWashOn	AUX2 ON
CameraWashOff	AUX2 OFF
CameraSpecFuncUOn	AUX 12 with Data: Return On Preset 1
CameraSpecFuncUOff	AUX 12 with Data: Return On Off

GSC / GeViSoft Action	Details
CameraSpecFuncVOn	AUX 12 with Data: White Balance/ Outdoor
CameraSpecFuncVOff	AUX 12 with Data: White Balance/ Auto
CameraSpecFuncXOn	AUX100 ON (Record Tour A ON)
CameraSpecFuncXOff	AUX100 OFF (Record Tour A OFF)
CameraSpecFuncYOn	AUX101 ON (Record Tour B ON)
CameraSpecFuncYOff	AUX101 OFF (Record Tour B OFF)
CameraVersionOn	AUX66 ON (Display Software version)
PanAuto	AUX2 ON (Auto pan)
DefaultPosSave	Save Preset 1
SetCameraText	AUX61 ON (Display Adjust)
CameraSelectCharMode	AUX 12 with Data: On Screen Display Adjust
ClearPrePosText	Clears text of preset position.
SetPrePosText	Set the text of a preset position
CameraManuallIrisOn	AUX 12 with Data: Iris Control Manual
CameraManuallIrisOff	AUX 12 with Data: Iris Control Auto
CameraAutoFocusOn	AUX 12 with Data: Focus Control Contineous Auto
CameraAutoFocusOff	AUX 12 with Data: Focus Control Contineous Manual
CameraTextOn	AUX 12 with Data: On screen Display ON
CameraTextOff	AUX 12 with Data: On screen Display Off

Additional Remarks (Tested with Autodome 5 (600 series))

The functionality which is bound to the AUX On/ Off commands of the Auto-domes is not completely documented in the Bosch OSRD protocol specification. The following paragraph contains the meaning of AUX functions which have been found out by directly testing them with an Autodome. The list is not complete.

Control of the OSD Menu of Bosch Autodomes

To open the On Screen Display (OSD) menu the following Actions must be send:

TELECONTROL

- The OSD open command is normally locked. It is not executed until an unlock command was sent to the dome.
- The command for locking / unlocking critical commands is the following:
 - **PrePosSave 103** (lock)
 - **PrePosSave 104** (unlock)

Bosch does not use the position numbers 103/104 for preset control but for special purposes (lock / unlock command).

- After the unlock command was sent the OSD may be opened. The command for that is: **PrePosCallUp 74**
GscTelecontrol maps that preset position to the Bosch AUX 46 ON command which opens the OSD menu.
- After the OSD is opened it is possible to navigate through its items by using TiltUp/ TiltDown commands.
- To select an Option or to leave the OSD the Focus/ Iris commands are used as long as the OSD is displayed.

Control of the Auto Pan Function of Bosch Autodomies

To set the left/ right limits for the Auto Pan function the following actions must be sent:

- **PrePosSave 101** (left)
- **PrePosSave 102** (right)

Before sending these commands the dome must be moved to the left (or right) Pan Position which is to be used for the Auto Pan function. If there was not yet a Pan position defined the dome accepts the current position directly. Otherwise it asks for a confirmation (On Screen Display) to overwrite the current position with the new one. The confirmation can be done by using either the Focus or Iris command).

The Autodome Auto Pan function may be started in 2 ways by GscTelecontrol.

- directly by using the PanAuto Action
- by using the WashOn or WashOff command of GscTelecontrol

Dennard Protocol

The protocol applies for all Dennard dome cameras that are connected via the RS485 bus of UniLink.

A Dennard dome camera uses a pan/ tilt speed that is proportional to the zoom: If distant objects are observed (zoom out), the camera moves more quickly when panning and tilting than for objects that are close up (zoom in).

The protocol supports programming and control of 40 fixed positions; position 40 is of particular significance. It is the position in which the camera can be cleaned by external devices. If the user starts the wash cycle, then the dome moves to position 40, stays there for the duration of the washing process and, after completion of the washing process, begins the standard sequence.

The standard sequence is composed of all programmed fixed positions in chronological order. It is always performed after the camera is switched on and a wash procedure is completed. Any other operation interrupts the standard sequence. The Dennard dome cameras have on-screen menus. Activation of the on-screen menu is possible by using the special function Y. On the on-screen menus you can navigate using pan/ tilt commands. A selection is made using the special function X.

For more information on the scope of functions of the on-screen menus, see documentation of the dome camera.

Number of fixed positions: 40 including cleaning position (cleaning position = fixed position 40)

Available camera numbers: 1...254 (32 cameras physically possible on the RS485 bus)



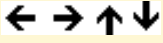



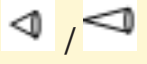

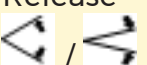
Meaning of variables:

kkk = Number of the dome camera to use, when appropriate, with leading zeros.






pp = Fixed position of the selected dome camera, possibly with leading zeros.

vvv = Additional variable speed parameters.

TELECONTROL

Dennard functions	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With the button 	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Pan and tilt at high speed	SNkkk++	Hold  button	Automatically via joystick
Pan and tilt at normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+		
Focus stop	SNkkkFO	Release 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+		
Zoom stop	SNkkkZO	Release 	Release zoom

TELECONTROL

Dennard functions	KDec command	MBeg	MBeg/VS
Save fixed position	PPkkk.pp		Program a fixed position (1 - 40), cleaning position = 40
Move to a fixed position	SNkkk.pp		Move to fixed position (1-40)
Wiper on/off	SNkkkW1/ SNkkkW0	Press  button	
Move to cleaning position - wipe/wash; wash on/off and start of the default sequence	SNkkkP1/ SNkkkP0	Press  button	
Lighting on	SNkkkL1		
Lighting off	SNkkkL0		
"Accept" in the user menu	SNkkkX1		Special function X
Display menu	SNkkkY1		Special function Y
Reset a P/T head	SNkkkK1		

Ernitec (ERNA) Protocol Integration Unilink

The commands of the Ernitec Telemetry Decoder are not compatible with the commands of the KDec system. A complete conversion must take place. This is described in the following table of figures.

The conversion is performed on the basis of ERNA documentation version 2.0. Telemetry decoders BDR-550/2 and BDR-551/2 are supported. Neither decoder supports variable speeds for PTZF.

KDec format	KDec meaning	ERNA command	Thomson meaning
SNkkkS-	Pan right(at variable speed)	Pan right	Pan right (fixed speed) For com-

TELECONTROL

KDec format	KDec meaning	ERNA command	Thomson meaning
			mands with vv, Pan right is only generated starting at >50.
SNkkkS+SNkkkS+vv	Pan left(at variable speed)	Pan left	Pan left (fixed speed) For commands with vv, Pan right is only generated starting at >50.
SNkkkSO	Pan stop	Pan stop	Pan stop
SNkkkN-SNkkkN-vv	Tilt down(at variable speed)	Tilt down	Tilt down (fixed rate). For commands with vv, Pan right is only generated starting at >50.
SNkkkN+SNkkkN+vv	Tilt up(at variable speed)	Tilt up	Tilt up (fixed rate). For commands with vv, Pan right is only generated starting at >50.
SNkkkNO	Tilt stop	Tilt stop	Tilt stop
SNkkkF-	Focus near	Focus near	Focus near
SNkkkF+	Focus far	Focus far	Focus far
SNkkkFO	Focus stop	Focus stop	Focus stop
SNkkkZ-	Zoom near	Zoom near	Zoom near. For commands with vv, Pan right is only generated starting at >100.
SNkkkZ+	Zoom tele	Zoom tele	Zoom tele. For commands with vv, Pan

TELECONTROL

KDec format	KDec meaning	ERNA command	Thomson meaning
			right is only generated starting at >100.
SNkkkZ0	Zoom stop	Zoom stop	Zoom stop
SNkkkB+	Open iris	Iris open	Open iris
SNkkkB-	Close iris	Iris close	Close iris
SNkkkB0	Stop iris	Iris stop	Stop iris
SNkkkX1	Special function X on	Start Sequence Prepos	Start fixed position sequence
SNkkkY1	Special function Y on	Clear stack sequence	Delete sequence list
SNkkkU1	Special function U on	Show sequence stack	Show sequence list
SNkkkV1	Special function V on	Text on/off	Switches the text display on/off
SNkkkL1	Lighting on	Sequence extension	Activates a mode in which each following programming command for fixed positions is used to add the specified position to the sequence. Fixed position programming is then disabled. The first command that is not a fixed position programming command switches the mode back off.

TELECONTROL

KDec format	KDec meaning	ERNA command	Thomson meaning
SNkkkW1	Wiper/washer on	Sequence shortening	Activates a mode in which each following programming command for fixed positions is used to delete the specified position from the sequence. Fixed position programming is then disabled. The first command that is not a fixed position programming command switches the mode back off.
SNkkkP1	Pump on	Sequence wait time	Activates a mode in which each following programming command for fixed positions is used to control the wait time at positions of the sequence. Fixed position programming is then disabled. The first command that is not a fixed position programming command switches the mode back off.
PPkkk.pp	Save fixed position	Save prepos	Saves the current position to the specified fixed position. Function depends

KDec format	KDec meaning	ERNA command	Thomson meaning
			on the programming mode (see SNkkkW1, SNkkkP1, SNkkkL1). Positions 1...90 can be used. Positions 91-96 are used for the AUX relay.
SNkkk.pp	Call fixed position	Call prepos	Moves to the specified fixed position. Positions 1...90 can be used. Positions 91-96 are used for the AUX relay. With the first command the AUX relays are switched on and with the second command they are switched off.
SNkkkGP	Move to home position	Call prepos 1	Moves to fixed position 1

Special Characteristics of Addressing

- The Ernitec decoders use an address range of 0..255.
- The addresses start at 0.
- Unilink addresses begin at 1.
- When entering the address in Wunidome, 1 must therefore be added to the address.
- Address 0 corresponds to the Unilink address 1, address 1 to Unilink address 2, etc.

GVD640





The commands of the GVD640 dome system are not compatible with the commands of the KDec system.








Complete conversion is necessary. This procedure is described in the following table.

Number of preset positions: 24 including home position (home position is preset 1)

Number of possible camera numbers: 1...254

- i** **Meaning of variables:**
- **kkk = Enter number of dome camera, with leading zeroes if necessary**
 - **pp = Enter preset position of selected dome camera, with leading zeroes if necessary**
 - **vvv = Additional variable speed parameters**

GVD 640-Functions	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With keys ← → ↑ ↓	With joystick
Pan left	SNkkkS+		
Tilt down	SNkkkN-		
Tilt up	SNkkkN+		
For command: Right, left, up, down, zoom at fast speed (fast mode)	SNkkk++		With joystick
For command: Right, left, up, down, zoom at normal speed (normal mode)	SNkkk--		
Focus near (manual mode)	SNkkkF-	Focus near 	
Focus far (manual mode)	SNkkkF+	Focus far 	
Zoom wide	SNkkkZ-	Zoom wide 	

GVD 640-Functions	KDec command	MBeg	MBeg/VS
Zoom tele	SNkkkZ+	Zoom tele	
Iris open (manual mode)	SNkkkB-	Iris open	
Iris close (manual mode)	SNkkkB+	Iris close	
Set preset	PPkkk.pp	Position 1 - 24	
Recall preset	SNkkk.pp	Position 1 - 24	
Go to preset 1	SNkkk.Gp		
Menu	SNkkkK1	Camera on	
Menu ESC	SNkkkK0	Camera off	
Menu enter	SNkkkP1	Wiper on/off	
Start Tour 1	SNkkkX1 / SNkkkX0	Special function	X
Start Tour 2	SNkkkY1 / SNkkkY0	Special function	Y

JVC Dome TK-C675

The commands of TK-C675 dome systems are not compatible with the commands of the KDec system. A complete conversion must take place. This is described in the following figure table.









Number of fixed positions: 38 incl. home position (home position is fixed position 40)

Available camera numbers: 1...32

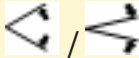







- i** **Meaning of variables:**
- kkk = Number of the dome camera to use, when appropriate, with leading zeros.

TELECONTROL





- **pp** = Fixed position of the selected dome camera, possibly with leading zeros.
- **vvv** = Additional variable speed parameters.

TK-C675 function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With buttons ← → ↑ ↓ (stop = release)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Pan and tilt at high speed	SNkkk++	Hold  button	Automatically via joystick
Pan and tilt at normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the  button	

TELECONTROL

TK-C675 function	KDec command	MBeg	MBeg/VS
Zoom stop	SNkkkZO	Release 	Release zoom
Open iris. The dome is then in manual iris mode	SNkkkB-	Hold  button (stop = release)	
Close iris. The dome is then in manual iris mode	SNkkkB+	Hold  button (stop = release)	
Stop iris	SNkkkB0		
Save fixed position or home position	PPkkk.pp		Program fixed position (1 - 37), home position = 40)
Move to a fixed position	SNkkk.pp		Move to fixed position (1-37, 40).
Move to home position	SNkkk.GP	Press  button	
Start tour 0; the tour spots corresponds to the first 8 fixed positions	SNkkkL1	Press  button	
Stop tour 0	SNkkkLO	Press  button	
Activate auto focus and auto iris operating modes	SNkkkW1	Press  button	
Switch autoflip mode on/off	SNkkkP1	Press  button	
Switch VarPan on/off (adjust pan speed to zoom)	SNkkkX1	Press X button (toggle = press again)	
Stop all move-	SNkkkY1	Hold Y button	

TELECONTROL

TK-C675 function	KDec command	MBeg	MBeg/VS
ments, show the firmware vers. On			
Display the firm-ware vers. Off	SNkkkY0	Release Y button	
Set starting position for automatic panning	PPkkk.38	Save fixed position 38	
Set return position for automatic panning	PPkkk.39	Save fixed position 39	
Set automatic panning between two positions	Send SNkkkSA once send SNkkkSA second time send SNkkkSA third time send SNkkkSA fourth time	Press  button once	
Automatic panning in clockwise direction		Press  button second time	
Automatic panning in counterclockwise direction		Press  button third time	
Stop automatic panning		Press  button fourth time	





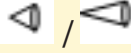

JVC Dome TK-C676

The commands of TK-C676 dome systems are not compatible with the commands of the KDec system. A complete conversion must take place. This is described in the following figure table.








Number of fixed positions: 38 incl. home position (home position is fixed position 40)

Available camera numbers: 1...32





- i** **Meaning of variables:**
- **kkk** = Number of the dome camera to use, when appropriate, with leading zeros.
 - **pp** = Fixed position of the selected dome camera, possibly with leading zeros.
 - **vvv** = Additional variable speed parameters.

TK-C676 function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With buttons ← → ↑ ↓ (stop = release)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Pan and tilt at high speed	SNkkk++	Hold  button	Automatically via joystick
Pan and tilt at normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the	

TELECONTROL

TK-C676 function	KDec command	MBeg	MBeg/VS
		 button	
Zoom stop	SNkkkZO	Release 	Release zoom
Open iris. The dome is then in manual iris mode	SNkkkB-	Hold  button (stop = release)	
Close iris. The dome is then in manual iris mode	SNkkkB+	Hold  button (stop = release)	
Save fixed position or home position	PPkkk.pp	Program fixed position (0 - 39), home position = 40)	
Move to a fixed position	SNkkk.pp	Move to fixed position (0 - 39).	
Move to home position	SNkkk.GP	Press  button	
Start tour 0; the tour spots corresponds to the first 8 fixed positions	SNkkkL1	Press  button	
Stop tour 0	SNkkkLO	Press  button	
Activate auto focus and auto iris operating modes	SNkkkW1	Press  button	
Switch autoflip mode on/off	SNkkkP1	Press  button	
Switch VarPan on/off (adjust pan speed to zoom)	SNkkkX1	Press X button (toggle = press again)	

TELECONTROL

TK-C676 function	KDec command	MBeg	MBeg/VS
Stop all movements, show the firmware vers. On	SNkkkY1		Hold Y button
Display the firmware vers. Off	SNkkkY0		Release Y button
Set starting position for automatic panning	PPkkk.38		Save fixed position 38
Set return position for automatic panning	PPkkk.39		Save fixed position 39
Set automatic panning between two positions	Send SNkkkSA once send SNkkkSA second time send SNkkkSA third time send SNkkkSA fourth time		Press button  once
Automatic panning in clockwise direction			Press button  second time
Automatic panning in counterclockwise direction			Press button  third time
Stop automatic panning			Press button  fourth time

Advanced TK-C676 Commands

(Menu Commands, see camera manual)

TK-C676 function	KDec command	MBeg
Menu on/off	SNkkkK1	
Set	SNkkkKO	

JVC Dome TK-C675/C676-m

Except for the quick focus/ zoom speed, TK-C675/C676-m is identical to TK-C675/C676. The configuration menu of the dome can now be additionally activated with the command 'Func-V ON' and the Set function can be sent with the command 'Func-V OFF'.

KDec-200

For the KDec-200, the input commands are analyzed and, if the corresponding camera number is found in the mapping table of one of the output ports, the commands are issued on this port. For most KDec-300 commands, only the camera numbers are exchanged according to the mapping table.

The KDec-200 cannot process the speed-dependent KDec-300 commands for panning and tilting. Therefore, the speed parameter in the KDec-300 command is removed. The output command is KDec-200 compatible. This allows the KDec-200, for example, to be controlled with an MBeg/VS, which issues KDec-300 commands.

The following KDec-300 commands are converted to KDec-200 commands:

- SNkkkS+vw > SNkkkS+
- SNkkkS-vw > SNkkkS-
- SNkkkN+vw > SNkkkN+
- SNkkkN-vw > SNkkkN-

In addition, received broadcast commands (P/T commands with camera number 0) are issued unmodified on all KDec-200 ports.

Other commands that will be transmitted unmodified between input port and KDec-200 output port are the priority command PRxxx (000<=X<= 999) and the start/stop cycle commands (ZYnmmST or SP).

The command KPmmkkk is also forwarded unchanged (unless the camera number is located in the mapping table, then the number is converted accordingly).

- PRkkk > Priority command
- KPmmkkk > Matrix node selection
- PZnnkkk > Program cycle

TELECONTROL

- ZYaabbST > Start cycle
- ZYaabbSP > Stop cycle

The KDec-200 mode of an output interface opens up the possibility of controlling KDec-200 and KDec-300 systems in parallel.

i **Camera number 999 has a special meaning in KDec-300 system.**

Do not use it as a starting camera!

KDec-200-m

Except for the fast pan/ tilt speed, KDec200-m is identical to KDec200. Before sending a pan/ tilt command, a switch is made to the faster pan/ tilt mode.

KDec-300

Protocol of the telemetry commands

Interface parameters:

- Baud rate: 300 to 19200 Bd
- Parity bit: Space (logical 0)
- Start bit: 1
- Stop bit: 1
- Data bits: 7
- Handshake: None

The telemetry commands are transmitted in plain text using ASCII characters.

Complete command set = [command] + CR + LF

i **Meaning of the command short forms and variables within the table:**

- **SN = Command short form for camera telemetry control**
- **PP = Command short form "Program camera pre-position / fixed position"**
- **kkk = Camera number (000 - 999)**
- **vvv = Variable speed for pan/tilt (000 - 255)**

TELECONTROL

- **pp** = Camera pre-position / fixed position (01 - 99)
The meanings of the remaining short forms may be seen from context.

Command	Function	Command	Function
SNkkkS-	Pan (fast/normal) right	SNkkkB0	Iris stop
SNkkkS+	Pan (fast/normal) left	SNkkkL1	Switch on illumination (light on)
SNkkkS0	Pan stop	SNkkkL0	Switch off illumination (light off)
SNkkkS-vvv	Pan (with variable speed) right*	SNkkkK1	Switch on camera
SNkkkS+vvv	Pan (with variable speed) left *	SNkkkK0	Switch off camera
SNkkkN-	Tilt (fast/normal) downwards	SNkkkW1	Switch on wiper motor (wash/wipe)
SNkkkN+	Tilt (fast/normal) upwards	SNkkkW0	Switch off wiper motor (wash/wipe)
SNkkkN0	Tilt stop	SNkkkP1	Switch on water pump (wash/wipe)
SNkkkN-vvv	Tilt (with variable speed) downwards*	SNkkkP0	Switch off water pump (wash/wipe)
SNkkkN+vvv	Tilt (with variable speed) upwards*	SNkkkX1	Activate auxiliary function X
SNkkk++	Switch on fast mode for P/T head	SNkkkX0	De-activate auxiliary function X
SNkkk--	Switch on normal (slow) mode for P/T	SNkkkY1	Activate auxiliary function Y

TELECONTROL

Command	Function	Command	Function
	head		
SNkkkF-	Focus near	SNkkkY0	De-activate auxiliary function Y
SNkkkF+	Focus far	SNkkkU1	Activate auxiliary function U *
SNkkkF0	Focus stop	SNkkkU0	De-activate auxiliary function U *
SNkkkZ-	Zoom wide	SNkkkV1	Activate auxiliary function V *
SNkkkZ+	Zoom tele	SNkkkV0	De-activate auxiliary function V *
SNkkkZ0	Zoom stop	SNkkk.pp	Recall camera fixed position **
SNkkkB-	Iris open	PPkkk.pp	Program camera fixed position **
SNkkkB+	Iris close	SNkkkGP	Recall home position



* These functions cannot be carried out via MBeg.

** Camera fixed positions 01 to 40 may also be programmed and recalled via MBeg.

Example

SN012S=- Pan camera 12 to the right

SN012S0 = Stop pan of camera 12

SN012S-075 = Pan camera 12 to the right with speed value 75

PP003.05 = Store actual position of camera 3 as fixed position No 5

KDec-300 Version 3.x

Current status: V3.3

The new KDec-300 firmware makes the following new features available:

TELECONTROL

1. The KDec can run 1 tour
2. The KDec's parameterisation can be carried out remotely
3. Other detailed improvements

Features 3.x:

Firmware	3.x
Changes to hardware required	No
Number of tours	1
Maximum number of stops in each tour	16
Number of fixed positions	99
Maximum baud rate	19200

Existing KDecs fitted with firmware version 2.x can be upgraded to version 3.x by exchanging the existing processor for a new one. Upgrading to version 3.x does not require any other changes to the hardware.



Using the Windows registry key

**HKLM\SOFTWARE\Geutebrueck-
\GeViScope\Telecontrol\ClientData\KDec300Ex
DWORD**

or

**HKLM\SOFTWARE\Geutebrueck-
\Gng\Telecontrol\ClientData\KDec300Ex
DWORD**

(on the machine on which Telecontrol is running) the fixed position commands (save/call) can be switched to another range.

Normally the KDec driver only supports fixed positions up to 99. If the value of KDec300Ex is set to 1, fixed positions up to 255 can be used. These are needed, for instance, when controlling Argus using the KDec 300 protocol from Telecontrol.

Summary of the KDec-300 Version 3.3 Commands

Commands must be given using upper-case letters. Lowercase letters in the following tables indicate variables.

All commands are concluded with cr (0x0D); lf (0x0A) is ignored.

TELECONTROL

All responses are concluded with cr lf (0x0D 0x0A).

Commands already found in version 2.x:

Command	Function
SNcccS-	Pan right slow
SNcccS-spd	Pan right variable
SNcccS+	Pan left slow
SNcccS+spd	Pan left variable
SNcccS0	Pan stop
SNcccN-	Tilt down slow
SNcccN-spd	Tilt down variable
SNcccN+	Tilt up slow
SNcccN+spd	Tilt up variable
SNcccN0	Tilt stop
SNccc++	Pan / Tilt fast
SNccc--	Pan / Tilt slow
SNcccF-	Focus near
SNcccF-spd	Focus near variable*
SNcccF+	Focus far
SNcccF+spd	Focus far variable*
SNcccF0	Focus stop
SNcccZ-	Zoom wide
SNcccZ-spd	Zoom wide variable*
SNcccZ+	Zoom tele
SNcccZ+spd	Zoom tele variable*
SNcccZ0	Zoom stop

TELECONTROL

Command	Function
SNcccB-	Iris open
SNcccB+	Iris close
SNcccB0	Iris stop
SNcccL0	Light off
SNcccL1	Light on
SNcccK0	Camera off
SNcccK1	Camera on
SNcccW0	Wiper off
SNcccW1	Wiper on
SNcccP0	Washer off
SNcccP1	Washer on
SNcccX0	Function X off
SNcccX1	Function X on
SNcccY0	Function Y off
SNcccY1	Function Y on
SNcccU0	Function U off
SNcccU1	Function U on
SNcccV0	Function V off
SNcccV1	Function V on
SNcccPT	Motor/Pot. Test
SNcccGP	Goto Homeposition
SNkkk.pos	Goto Position
PPkkk.pos	Save Position

- i** * The "Focus variable" and "Zoom variable" commands are available in versions 3.3 onwards. They are interpreted in such a way that speeds $\neq 100$ cause the motor to run, while speeds $= 100$ make it stop.

New commands and functions in version 3.x:

Command	Function	Response from KDec
SNcccQV	Query Version	SNccc=QV KDEC-300 Vv.r PP
SNcccQS	Query Status	SNccc=QSptfziww1234
SNcccQA	Query Alarm	SNccc=QAa
SNcccQPpos	Query Position / ADC	SNccc=QPpos,pan,tlt,foc,zom
SNcccQTtour,stop	Query Tour	SNccc=QTtour,stop,pos,spd,tim
SNcccGPpos	GotoPosition	
SNcccSPpos	Save Position	SNcccACK
SNcccPPpos,pan,tlt,foc,zom	Program Position	SNcccACK
SNcccGCpan,tlt,foc,zom	Goto Coordinates	
SNcccSA	Start Tour Nr. 1	
SNcccTStour	Tour Start	
SNcccTPtour,stop,pos,spd,tim	Tour Program	SNcccACK
SNccc!xxyyy	Set Parameter	SNcccACK
SNccc?xx	Query Parameter	SNccc=xxyyy
RESTART	Restart KDec-300	

Explanation of the Variables

Variables can be quoted at any length, with or without leading zeros.

Variable	Description
ccc	KDec address, numerical, 0 - 999 (0: global)
kkk	KDec address, 3-figure, 000 - 999 (000:global)
spd	Motor speed, numerical, 0 - 255
v,r	Version and revision numbers, two digits separated by a comma
ptfziww1234	Motor running directions PTFZ (0, +, -) and the statuses of the Wipe, Wash and Aux1..4 (0, 1) relays
a	Alarm:0: no alarm is pending at present1: an alarm is currently pending2: an alarm is not pending at present, but has occurred since the last interrogation3: an alarm is currently pending, and has also occurred since the last interrogation
pos	Number of position, numerical, 1 to 99. Can also be 0 in the following special cases:With SNcccGPO (go to home position): as SNcccGPWith SNcccTPtour,stop,0,spd,tim (tour program): end of the tourWith SNcccQPO (query position / ADC): output the current ADC value
pan	Co-ordinates (ADC value) pan, numerical, 0 - 4095
tlt	Co-ordinates (ADC value) tilt, numerical, 0 - 4095
foc	Co-ordinates (ADC value) focus, numerical, 0 - 4095
zom	Co-ordinates (ADC value) zoom, numerical, 0 - 4095
tour	Number of a tour, numerical, 1 under version 3.xAlso 0 in the following special case:With SNcccTS0 (tour start 0): stop the tour that is in progress
xx	Represents an adjustable parameter, 2 characters
yyy	Setting, numerical, value range depends on the parameter concerned

i For further information see KDec manual.

MIC1-300




The commands of the MIC1-300 dome system are not compatible with the commands of the KDec system .

Complete conversion is necessary. This procedure is described in the following table.













Number of preset positions: 255 including home position (home position is preset 1)

Number of possible camera numbers: 1...255

i **Meaning of variables:**
kkk = Enter number of dome camera, with leading zeroes if necessary.
pp = Enter preset position of selected dome camera, with leading zeroes if necessary
vvv = Additional variable speed parameters.

MIC1-300-Functions	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With keys ← → ↑ ↓	With joystick with joystick with joystick with joystick
Pan left	SNkkkS+		
Tilt down	SNkkkN-		
Tilt up	SNkkkN+		
For command: Right, left, up, down, zoom at fast speed (fast mode)	SNkkk++		With joystick
For command: Right, left, up, down, zoom at normal speed (normal mode)	SNkkk--		
Focus near (manual mode)	SNkkkF-	Focus near 	
Focus far (manual mode)	SNkkkF+	Focus far 	

TELECONTROL

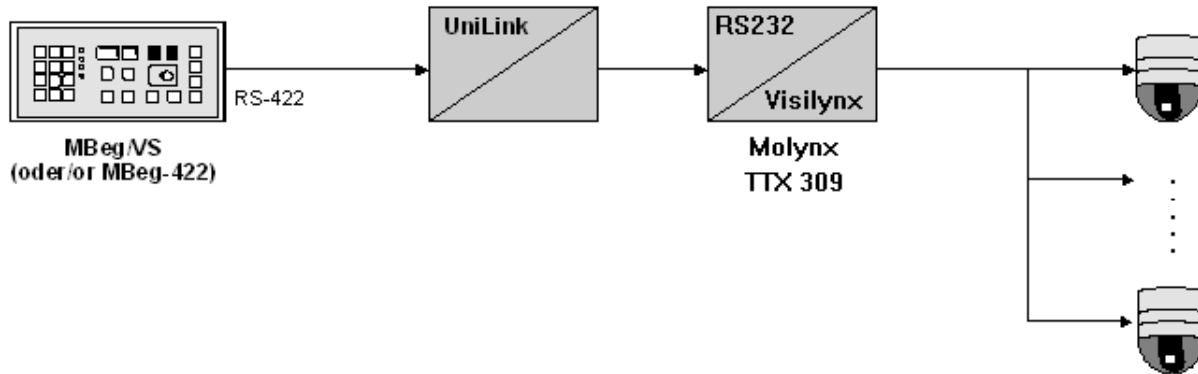
MIC1-300-Functions	KDec command	MBeg	MBeg/VS
Zoom wide	SNkkkZ-	Zoom wide	
Zoom tele	SNkkkZ+	Zoom tele	
Iris open (manual mode)	SNkkkB-	Iris open	
Iris close (manual mode)	SNkkkB+	Iris close	
Set preset	PPkkk.pp	Position 1 - 40	
Recall preset	SNkkk.pp	Position 1 - 40	
Go to preset 1	SNkkk.Gp		
Auto focus on	SNkkkK1	Camera on	
Auto iris on	SNkkkK0	Camera off	
Wiper motor on/off	SNkkkW1SNkkkW0	Wiper on/off	
Light on	SNkkkL1	Light on	
Light off	SNkkkL0	Light off	
Automatic pan	SNkkkSA	Automatic pan	
Wash on/off	SNkkkP1SNkkkP0	Wash on/off	

Molynx Protocol

The Molynx protocol can be used to control the Molynx TTX 309 telemetry transmitter. The TTX 309 telemetry transmitter is connected to the UNILINK converter

TELECONTROL

via the COM2 serial port. On the output side the TTX 309 then controls dome cameras and pan/tilt heads that are compatible with the "Visilyn Data" protocol (Molynx internal).



For the connection between UNILINK and Molynx TTX 309, a zero-model cable is used.



The protocol supports 100 speeds for panning and tilting, which are converted to the 256 levels possible in the KDEC300.

Number of fixed positions: 16 incl. home position (home position is fixed position 1)













Available camera numbers: 1...255 possible

i Meaning of variables:







- **kkk** = Number of the dome camera to use, when appropriate, with leading zeros.
- **pp** = Fixed position of the selected dome camera, possibly with leading zeros.
- **vvv** = Additional variable speed parameters.

Molynx function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With buttons  (stop = release)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Pan and tilt at high speed	SNkkk++	Hold  button	Automatically via joystick

TELECONTROL

Molynx function	KDec command	MBeg	MBeg/VS
Pan and tilt at normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the 	
Zoom stop	SNkkkZO	Release  / 	Release zoom
Open iris. The dome is then in manual iris mode	SNkkkB-	Hold  button (stop = release)	
Close iris. The dome is then in manual iris mode	SNkkkB+	Hold  button (stop = release)	
Save fixed position or home position	PPkkk.pp	Program fixed position (1 - 16, home position = 1)	
Move to a fixed position	SNkkk.pp	Move to fixed position (1-16).	
Move to home position	SNkkk.Gp	Press  button	

TELECONTROL

Molynx function	KDec command	MBeg	MBeg/VS
Wiper on/off	SNkkkW1SNkkkW0	Press  button	
Wash on/off	SNkkkP1SNkkkP0	Press  button	
Lighting on	SNkkkL1		
Lighting off	SNkkkL0		
"Lens Slow" mode on/off	SNkkkX1SNkkkX0	X auxiliary function	
Automatic iris on/off	SNkkkY1SNkkkY0	X auxiliary function	
Camera on	SNkkkK1		
Camera off	SNkkkK0		

Panasonic Protocol Integration (Extensions)

The following just describes extensions of the Panasonic protocol support compared with the currently available documentation. The extensions are based on the protocol version 3.1 for WV-CS850(A).

Controlling the OSD Setup Menu

The following commands are supported:

Command	Meaning	Telecontrol and MBeg/GCT translation
72	Setup menu on	Controlled with the action CameraSpecFuncXOn. The MBeg Key X may be used to turn the OSD menu on and off.
73	Setup menu off	Dito 72.
75,77	Setup menu	If in menu mode the menu cursor may be

Command	Meaning	Telecontrol and MBeg/GCT translation
	cursor up/-down	controlled with Pan/ Tilt actions and with the MBeg/GCT joystick. Tilting Up/ Down moves the OSD cursor Up/ Down.
79	Setup menu SETI	Controlled with the action CameraSpecFuncYOn. The MBeg Key Y may be used to move between the menu layers up/down of the OSD.

The following functions are controlled by sending preset position commands. Panasonic supports 64 preset positions. All positions above 64 may be used for command extensions.

Controlling Autopan

i The functions 31,32,33,34,35 require that Auto pan is stopped.

Command	Meaning	Telecontrol and MBeg/GCT translation
29	AUTO PAN On	Preset 90 toggles AUTO PAN on/off
30	AUTO PAN Off	Preset 90 toggles AUTO PAN on/off
31	AUTO PAN Reverse	Preset 91
32	AUTO PAN left end set	Preset 92
33	AUTO PAN right end set	Preset 93
34	AUTO PAN speed inc	Preset 94
35	AUTO PAN speed dec	Preset 95

Presets, Sequences, Patrols

Command	Meaning	Telecontrol and MBeg/GCT translation
91	Preset position call	Already available in previous version
92	Home position call	Already available in previous version
93	Preset seq off	Preset 80
94	Preset mode seq on	Preset 81
95	Preset mode sort on	Preset 82
96	Patrol play	Preset 83
97	Patrol stop	Preset 84
98	Patrol learn	Preset 85

Special Functions

Command	Meaning	Telecontrol and MBeg/GCT translation
115	One shot autofocus on	Preset 99
8	BW On	Preset 96 toggles BW On/Off
9	BW Off	Preset 96 toggles BW On/Off
10	BW Auto	Preset 97
64	Privacy Zone on	Preset 98 toggles Privacy zone on/off
65	Privacy Zone off	Preset 98 toggles Privacy zone on/off

Command 80 signification ambiguous, up to now no implantation.

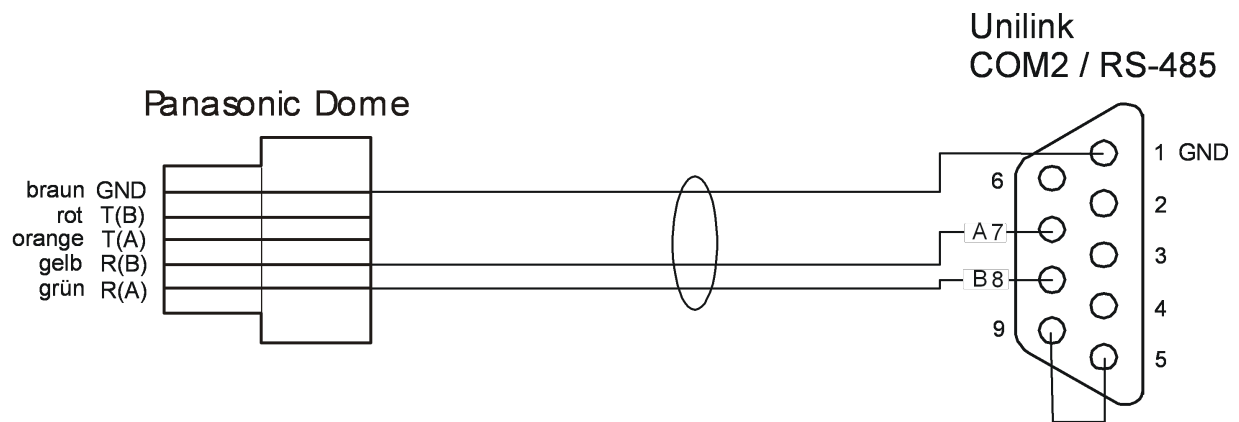
Command 85/86 signification ambiguous, in contrast to command 72/73 (Setup Menu On/Off).

Panasonic Domes WV- CS850/854E/CS600/CS650

The commands of the Panasonic dome system are not compatible with the commands of the KDec system.

Complete conversion is necessary. This procedure is described in the following table.

Pin assignments of connecting cable:


















Number of preset positions: 40

Number of possible camera numbers: 1..96 (32 users are physically possible on the RS485 bus)

- i** **Meaning of variables:**
- **kkk** = Enter number of dome camera, with leading zeroes if necessary
 - **pp** = Enter preset position of selected dome camera, with leading zeroes if necessary
 - **vvv** = Additional variable speed parameters

TELECONTROL

Panasonic functions	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With keys   (stop = release)	With joystick
Pan left	SNkkkS+		
Tilt down	SNkkkN-	With keys  	
Tilt up	SNkkkN+		
Pan and tilt at fast speed	SNkkk++	Press and hold  key	Automatic with joystick
Pan and tilt at normal speed	SNkkk--	Release key 	Automatic with joystick
Focus near	SNkkkF-	With key 	Focus rocker switch
Focus far	SNkkkF+	With key 	
Focus stop	SNkkkFO	Release key  	Release focus
Zoom wide	SNkkkZ-	With key 	Zoom rocker switch
Zoom tele	SNkkkZ+	With key 	
Zoom stop	SNkkkZO	Release key  	Release zoom
Store preset	PPkkk.pp	Program preset (1 - 40)	
Go to preset	SNkkk.pp	Go to preset (1 - 40)	
Automatic pan between two positions	SNkkkSA	Automatic pan 	

Panasonic Dome WV-CSR/BSR Series





The commands of Panasonic dome systems are not compatible with the commands of the KDec system. A complete conversion must take place. This is described in the following table of figures. Conversion is performed on the basis of protocol documentation version 5.3 from 27 November 1997 for WV-CSR-600, WV-CSR400 and WV-BSR300.

See also **Panasonic Domes WV-CS850/854E/CS600/CS650**









Number of fixed positions: 40 incl. home position (home position is fixed position 1)

Available camera numbers: 1...92 (32 participants physically possible on the RS485 bus)

- i** **Meaning of variables:**
- **kkk = number of the dome camera to use, when appropriate, with leading zeros**
 - **pp = fixed position of the selected dome camera, possibly with leading zeros**
 - **vvv = additional variable speed parameters**

Panasonic function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With buttons  (stop = release)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Tilt up/down, Pan right/left with variable speed	SNkkk++	Hold  button	Automatically via joystick
Tilt up/down, Pan right/left with normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch

TELECONTROL

Panasonic function	KDec command	MBeg	MBeg/VS
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the  button	
Zoom stop	SNkkkZO	Release  / 	Release zoom
Save fixed position or home position	PPkkk.pp	Program fixed position (1 - 40), home position = 1	
Move to a fixed position	SNkkk.pp	Move to fixed position (1-40).	
Move to home position	SNkkkGP	Press  button	

Panasonic Dome WV-CW964

Until now, iris control was lacking for this dome. This has been fixed in build version 880.272.

For iris control you need either the current build version (880.272) or an approved older build version 8.xx, for which Telecontrol.exe must then be replaced.

The iris control is now possible as follows:

- **Iris Open 0021002:** Normal Iris Open function or action
- **Iris Close 0021003:** Normal Iris Close function or action
- **Iris Stop 0021004:** Normal Iris Stop function or action

The function **Reset Iris** is implemented over a preset call because there are no actions for this special function:

- Reset Iris 0021005: Preset call 100

Pelco P Protocol

GSCTelecontrol supports the following functions of the Pelco P protocol:

Pan, Tilt, Zoom, Focus, Iris Commands

Pelco P command	Details
Pan right	The head pans right with variable speed. Pelco P supports 64 speed steps which are mapped to the available 256 speed steps of the KDec command set. Speed step 0x40 for turbo mode is supported as well.
Pan left	The head pans right with variable speed. Pelco P supports 64 speed steps which are mapped to the available 256 speed steps of the KDec command set. Speed step 0x40 for turbo mode is supported as well.
Pan stop	Stops panning. Other motions (tilt, zoom, focus) are not influenced.
Tilt down	The head tilts down with variable speed. Pelco P supports 64 speed steps which are mapped to the available 256 speed steps of the KDec command set.
Tilt up	The head tilts up with variable speed. Pelco P supports 64 speed steps Which are mapped to the available 256 speed steps of the KDec command set.
Tilt stop	Stops tilting. Other motions (pan, zoom, focus) are not influenced.
Focus near	Focus near with constant speed.
Focus far	Focus far with constant speed
Focus stop	Stops focusing. Other motions (pan, tilt, zoom) are not influenced.
Zoom wide	Zoom wide with constant speed

TELECONTROL

Pelco P command	Details
Zoom tele	Zoom tele with constant speed
Zoom stop	Stops zooming. Other motions (pan, tilt, focus) are not influenced.
Iris open	Open the iris.
Iris close	Close the iris.
Iris stop	Stops the iris. Other motions (pan, tilt, focus) are not influenced.
Auto Focus/Iris	<p>Mode 0: The dome decides automatically whether to run auto or manual mode. If it receives focus commands it switches to manual control and remains there until it receives a new Pan/Tilt/Zoom command. If a new PTZ command comes in it switches to Auto Focus (or Iris) without an explicit external command.</p> <p>Mode 1: Auto focus (or Iris) are always on. (Mode 1 is NOT implemented!)</p> <p>Mode 2: Auto focus (or Iris) are always off.</p>

Extended Command Set

Pelco P command	Details
Goto preset	<p>Recalls a preset position. Pelco P supports 255 presets. The call of the following preset positions triggers special functions:</p> <ul style="list-style-type: none">• 35: Run Pattern• 36: Start Auto Scan• 37: Stop Auto Scan• 38: Remote Reset

Pelco P command	Details
	<ul style="list-style-type: none"> • 39: Clear Screen • 40: Zone Scan On • 41: Zone Scan Off <p>These functions are mapped by the GscTelecontrol software. The Pelco P protocol itself implements some other mappings which reside in the firmware of the Pelco P cameras and which cannot be influenced by GscTelecontrol. You get the following functions by calling the below listed presets (see Pelco P protocol description):</p> <ul style="list-style-type: none"> • 33: Flip • 34: Home (return to 0 pan position) • 92: Set left limit stop • 93: Set right limit stop • 94: Remote reset (redundantly to preset 38) • 95: Enter menu mode • 96: Stop scan • 97: Begin random scan • 98: Begin frame scan • 99: Begin auto scan
Set preset	<p>Sets the current position as preset position. Pelco P supports 255 presets. The following presets are used for special commands:</p> <ul style="list-style-type: none"> • 35: Pattern Start • 36: Pattern Stop

Pelco P command	Details
Goto Default Pos	Recalls preset position 1.
PTZ command set	<ul style="list-style-type: none"> • Camera On • Autoscan On • Camera On/Off <p>i These functions are not supported because there are no direct corresponding command in the KDec 300 command set or because their meaning is unclear.</p>
Extended command set	<ul style="list-style-type: none"> • Flip (rotate 180°) • Zero Pan Position • Zone Start • Zone End • Write Char to Screen • Alarm Ack • Zoom Lens Speed • Focus Lens Speed <p>i These functions are not supported because there are no direct corresponding command in the KDec 300 command set or because their meaning is unclear.</p>

Pelco Pan/Tilt Heads

The commands of the Pelco system are not compatible with the commands of the KDec system. A complete conversion must take place.

TELECONTROL

Conversion is performed on the basis of the "D" protocol from Pelco. This is described in the following table of figures.

Speed-dependent pan/tilt commands can be used. The Pelco system understands up to 64 speed levels for both movements. The 255 levels of the KDec system will be converted accordingly.






Number of fixed positions: 32, for use of expanded functions of the dome only 22 incl. home position (home position = 1)

Available camera numbers: 1...32











Meaning of variables:

- **kkk** = Insert number of the dome camera, possibly with leading zeros.
- **pp** = Insert fixed position of the dome camera, possibly with leading zeros.
- **vvv** = Additional variable speed parameters.

Pelco function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	Key  (stop = release)	With joystick
Pan left	SNkkkS+		
Tilt down	SNkkkN-		
Tilt up	SNkkkN+		
Tilt up/down, pan right/left at variable speed	SNkkk++	Press and hold key 	Automatic with joystick
Tilt up/down, pan right/left at normal speed	SNkkk--	Release key 	
Focus near	SNkkkF-	Focus near 	Focus rocker switch
Focus far	SNkkkF+	Focus far 	Focus rocker switch

TELECONTROL

Pelco function	KDec command	MBeg	MBeg/VS
Focus stop	SNkkkFO	Release  / 	Release Focus
Zoom wide	SNkkkZ-	Zoom wide 	Zoom rocker switch
Zoom tele	SNkkkZ+	Zoom tele 	Zoom rocker switch
Zoom stop	SNkkkZO	Release  / 	Release Zoom
Iris open	SNkkkB-	Press and hold  key (stop = release)	
Iris close	SNkkkB+	Press and hold  key (stop = release)	
Store preset or home position	PPkkk.pp	Program preset (1 - 32), Home position = 1	

The Pelco system understands a number of special fixed positions with which you can access advanced dome functions. Some of them are in the range 90-99 and are therefore not accessible with MBeg. With a DIP switch, however, they can be shifted to the range 23-32. In this case, these positions are not available for other uses.

Fixed positions	Function
1	Park position (also BASE_POSITION). If this preset is set and the dome receives no command within the set time in the OSD, it automatically returns to this position. This function can be disabled by setting a time of "0" in the OSD (default). During the auto-pan process, this feature is also disabled.

TELECONTROL


Fixed positions	Function
1... 22	Fixed position.
35	By setting this preset position, the dome is put into a mode to record a sequence of pan/tilt/focus/zoom commands. The following commands sent to the dome are stored in the dome-internal buffer. As long as the buffer has enough space, the message "Programming pattern" appears in the camera image. If the buffer is full, the text display disappears. The end of the programming will be reported to the Dome by the fixed position 36. By retrieving the fixed position 35 the most recently recorded sequence of commands is performed.
36	By setting this fixed position, the end of programming ("Programming pattern"/fixed position 35) is initiated.

Pelco function	KDec command	
Move to a fixed position	SNkkk.pp	Move to fixed position (1-32).

Fixed position	Function
1... 22	Fixed position.
23/90	Left manual limit stop.
24/91	Right manual limit stop.
25/92	Left scan limit stop.
26/93	Right scan limit stop.
27/94	Undefined
28/95	OSD menu. By setting this preset you can access the OSD menu. Navigation is performed using the joystick (up/down), "Open Iris" (select) and "Close Iris" (cancel). The menu has the following structure: <ul style="list-style-type: none"> • Limits

Fixed position	Function
	<ul style="list-style-type: none"> • Limit Stops • Set Man Limits • Clear Man Limits • Set Scan Limit • Clear Scan Limit • Exit • Other • Park Time • Pan/Scan Speed • Power Up • Pattern Length • Speed Profile • Exit • "Pan/Scan Speed" is the "Autopan"-speed (3-40°/s). The tilt rate is half of the pan speed. • "Power Up" is the behavior after being turned on: (Date display, park position, auto-pan, etc ...) • "Speed Profile" takes into account the wind conditions at the site. This affects the speed when moving to the fixed positions and the flip procedure. The following values are possible: 100°/s (50 mph) and 60°/s (90 mph).
29/96	Stop scan. Stop autopan.
30/97	Random scanning. Random autopan.
31/98	Frame scanning. 3 s autopan, 3 s pause, etc.

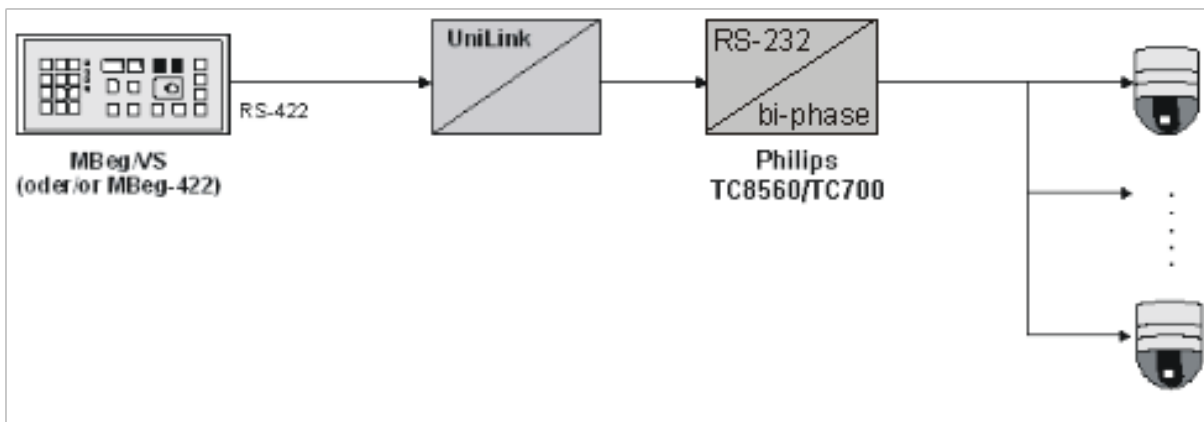
Fixed position	Function
32/99	Patrol Auto scanning. Continuous autopan.
33	Flip command. By selecting this position, the dome rotates 180°.
34	Camera home position Pan zero command. Move to the home position.
35	Run pattern.

Pelco function	KDec command	
Move to home position	SNkkkGP	Press  button

⚠ IMPORTANT: The left limit stop must always be set before the right limit stop. Setting the left and right limit stops to the same position deactivates the limit stops. All limit functions can also be performed using the OSD menu.

Philips Protocol

The Philips protocol can be used to control the two series TC8560 and TC700 from Philips of RS232 "bi-phase" converters. The Philips converter is connected to the UniLink converter via the COM2 serial port. On the output side, the Philips converter controls the dome cameras that are compatible with the "bi-phase" protocol (Philips internal).



TELECONTROL

For the connection UNILINK and the Philips converter, only the TxD and GND line of the UniLink are connected to the converter.

SUB-D9F (COM 2/ RS232 UniLink)	RJ11 (Philips converter)	Signal
3	3	TxD (UniLink)
5	2	GND

The specification of the bus on which the "bi-phase" protocol is used can be found in the description of the Philips converter.

The protocol supports 16 speeds for panning and tilting, which are converted to 256 levels possible in KDec-300.

The Philips cameras work with speed that is proportional to the zoom setting. The protocol offers the possibility of turning on and off three outputs of special Philips converters.

The functions wiping, washing and light on/off are mapped to the three outputs.













Number of fixed positions: 40 incl. home position (home position is fixed position 1)


Available camera numbers: 1..255 possible

- i** **Meaning of variables:**
- **kkk = Number of the dome camera to use, when appropriate, with leading zeros.**
 - **pp = Fixed position of the selected dome camera, possibly with leading zeros.**
 - **vvv = Additional variable speed parameters.**

Philips function	KDec command	MBeg	MBeg/VS
Identical commands			
Pan right	SNkkkS-	With buttons ← → ↑ ↓ (stop = release)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		

TELECONTROL

Philips function	KDec command	MBeg	MBeg/VS
Pan and tilt at high speed	SNkkkS++	Hold  button	Automatically via joystick
Pan and tilt at normal speed	SNkkkN--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the 	
Zoom stop	SNkkkZO	Release  / 	Release zoom
Open iris. The dome is then in manual iris mode	SNkkkB-	Hold  button (stop = release)	
Close iris. The dome is then in manual iris mode	SNkkkB+	Hold  button (stop = release)	
Save fixed position or home position	PPkkk.pp	Program fixed position (1 - 40, home position = 1)	
Move to a fixed position	SNkkk.pp	Move to fixed position (1-40)	

Philips function	KDec command	MBeg	MBeg/VS
Move to home position	SNkkkGP	Press  button	
Auxiliary #2 ON / Auxiliary #2 OFF	SNkkkW1/SNkkkW0	Press  button	
Auxiliary #3 ON / Auxiliary #3 OFF	SNkkkP1/SNkkkP0	Press  button	
Auxiliary #1 ON	SNkkkL1		
Auxiliary #1 OFF	SNkkkL0		

Roboscan Protocol Integration

Protocol base:

RS_Protocol description (Control code protocol for RobScan pan/tilt units Version 1.2 from 05/08/1998 by J. G.)

GSCTelecontrol supports the following functions of the Roboscan PTZ system:

Star command	Details
Pan right	The head pans right with variable speed. Roboscan supports 127 speed steps which are mapped to the available 256 speed steps of the KDec command set.
Pan left	The head pans right with variable speed. Roboscan supports 127 speed steps which are mapped to the available 256 speed steps of the KDec command set.
Pan stop	Stops panning. Other motions (tilt, zoom, focus) are not influenced.
Tilt down	The head tilts down with variable speed. Roboscan supports 127 speed steps. The available 256 speed steps of the KDec commands are mapped to these 127 steps.
Tilt up	The head tilts up with variable speed. Roboscan supports 127 speed steps. The available 256 speed steps of the KDec com-

Star command	Details
	mands are mapped to these 127 steps.
Tilt stop	Stops tilting. Other motions (pan, zoom, focus) are not influenced.
Focus near	Focus near with variable speed. Roboscan supports 2 speed steps (high/low). The available 256 speed steps of the KDec commands are mapped to these 2 steps.
Focus far	Focus far with variable speed. Roboscan supports 2 speed steps (high/low). The available 256 speed steps of the KDec commands are mapped to these 2 steps.
Focus stop	Stops focusing. Other motions (pan, tilt, zoom) are not influenced.
Zoom wide	Zooms wide with variable speed. Roboscan supports 2 speed steps (high/low). The available 256 speed steps of the KDec commands are mapped to these 2 steps.
Zoom tele	Zooms tele with variable speed. Roboscan supports 2 speed steps (high/low). The available 256 speed steps of the KDec commands are mapped to these 2 steps.
Zoom stop	Stops zooming. Other motions (pan, tilt, focus) are not influenced.
Set preset	Stores current position as preset. Roboscan supports 64 preset positions.
Goto preset	Recalls a preset position. Roboscan supports 64 preset positions.
Wash	Turns the washing and wiping function on.










Samsung Speed Dome SCC-641(P)

The commands of Samsung domes are not compatible with the commands of the KDec system. A complete conversion must take place. The protocol is described in the following figure table. Speed-dependent pan/tilt commands can be used. The Samsung dome camera understands up to 64 speed levels for both movements. The 255 levels of the KDec system will be converted accordingly.

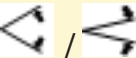





Number of fixed positions: 40 incl. home position (home position = 1)

Available camera numbers: 1...32

- i** **Meaning of variables:**
- **kkk** = Insert number of the dome camera, possibly with leading zeros.
 - **pp** = Insert fixed position of the dome camera, possibly with leading zeros.
 - **vvv** = Additional variable speed parameters.

Samsung function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With  buttons (stop = release)	With joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Tilt up/down Pan right/left with fast speed	SNkkk++	Hold  button	Automatically via joystick
Tilt up/down Pan right/left with normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the  button	

TELECONTROL

Samsung function	KDec command	MBeg	MBeg/VS
Zoom stop	SNkkkZO	Release 	Release zoom
Open iris	SNkkkB-	Hold  button (stop = release)	
Close iris	SNkkkB+	Hold  button (stop = release)	
Save fixed position or home position	PPkkk.pp	Program fixed position (1 - 40), home position = 1	
Move to a fixed position	SNkkk.pp	Move to fixed position (1-40)	
Move to home position	SNkkk.Gp	Press  button	
Menu on/off	SNkkkX1	X auxiliary function	
Enter	SNkkkY1	Y auxiliary function	
Pattern 1 start/stop	SNkkkP1	Press  button	
Autopan	SNkkkL1	Lighting on 	

Additional functions

Pan right at variable speed	SNkkkS-vv
Panning left at variable speed	SNkkkS+vv
Tilt down at variable speed	SNkkkN-vv
Tilt up at variable speed	SNkkkN+vv
Pan stop	SNkkkSO
Tilt stop	SNkkkNO

Sensormatic Dome Series SpeedDome Ultra IV / AD DeltaDome

The Sensormatic Dome cameras can be connected via the RS485 bus of UniLink. A Sensormatic Dome operates with a pan/tilt speed that is proportional to the zoom.

This means: If distant objects are observed (zoom out), the camera moves more quickly when panning and tilting than for objects that are close up (zoom in). The protocol supports programming and control of 7 fixed positions.

In addition, up to 3 patterns (macros) can be programmed and executed. Programming a pattern is started with the programming of fixed positions 8, 9 or 10. Thereafter, any position can be moved to with the PTZ commands. Some displays in the video screen show the remaining amount of storage space in percent. The end of recording is reported to camera with the saving of fixed position 11. The patterns stored in this manner can be started by initiating fixed position 8, 9 or 10. The camera then performs the recorded PTZ commands.

The Sensormatic dome cameras have on-screen menus. Activation of the on-screen menu is possible by using the special function Y. On the on-screen menus you can navigate using pan/tilt commands. A selection is made using "Focus Near" button. A selection of a value is made with "Zoom tele". For more information on the scope of functions of the on-screen menus, see documentation of the dome camera.

Number of fixed positions: 7 incl. home position (home position is fixed position 1)

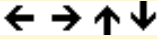











Available camera numbers: 1...99 (10 Sensormatic dome cameras physically possible on the RS485 bus)








Meaning of variables:

- **kkk = Number of the dome camera to use, when appropriate, with leading zeros.**
- **pp = Fixed position of the selected dome camera, possibly with leading zeros.**
- **vvv = Additional variable speed parameters.**

TELECONTROL

Sensormatic function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With buttons  (stop = release)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Pan and tilt at high speed	SNkkk++	Hold  button	Automatically via joystick
Pan and tilt at normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the  button	
Zoom stop	SNkkkZO	Release  / 	Release zoom
Open iris. The dome is then in manual iris mode	SNkkkB-	Hold  button (stop =	

TELECONTROL

Sensormatic function	KDec command	MBeg	MBeg/VS
			release)
Close iris. The dome is then in manual iris mode	SNkkkB+	Hold  button (stop = release)	
Save fixed position or pattern	PPkkk.pp		Program fixed position (1-7, home position = 1, pattern = 8-10)
Stop pattern programming	SNkkkKO		
Move to fixed position or start pattern Switch on auto-iris mode and auto-focus mode Start default "Apple Peel" Delete pattern and start default "Apple Peel"	SNkkk.pp		Move to fixed position (1-7) Perform pattern (8-10) Move to fixed position 11 Move to fixed position 12 Program fixed position 12
Move to home position	SNkkk.GP	Press  button	
Activate screen menu	SNkkkY1		
Activate screen menu	SNkkkY1		Special function Y
RESET for dome	SNkkkK1		
Pan 180° from the current position, "FLIP"	SnkkkSA		
Pan left at 24°/sec / pan stop	SNkkkX1 / SNkkkX0		Special function X
Pan right at 24°/sec / pan stop	SNkkkY1 / SNkkkY0		Special function Y
Tilt up at 24°/sec / pan stop	SNkkkW1/SNkkkW0	Press  button	
Tilt down at 24°/sec / pan stop	SNkkkP1	Press  button	

Sony Visca EVI-D 370/371









The command of the EVI-D 370/371 camera system are not compatible with the commands of the KDec system.

Complete conversion is necessary. This procedure is described in the following table.

Number of preset positions: 6

Number of possible camera numbers: 1...7

- i** **Meaning of variables:**
- **kkk** = Enter number of dome camera, with leading zeroes if necessary.
 - **pp** = Enter preset position of selected dome camera, with leading zeroes if necessary.
 - **vvv** = Additional variable speed parameters.

EVI-D 370/371	KDec-Command	MBeg - MBeg/VS
Focus near (manual mode)	SNkkkF-	Focus near 
Focus far (manual mode)	SNkkkF+	Focus far 
Zoom wide	SNkkkZ-	Zoom wide 
Zoom tele	SNkkkZ+	Zoom tele 
Set preset	PPkkk.pp	Position 1 - 6 
Recall preset	SNkkk.pp	Position 1 - 6 
Camera on	SNkkkK1	Camera on 
Camera off	SNkkkKO	Camera off 
Auto focus on/off	SNkkkX1/ SNkkkXO	Auxiliary function X

Star MD200 Protocol Integration

GscTelecontrol supports the following functions of the Star MD200 dome camera system:

Star command	Details
Pan right	The head pans right with variable speed. Star supports 64 speed steps. The available 256 speed steps of the KDec commands are mapped to these 64 steps (division by 4).
Pan left	The head pans left with variable speed. Star supports 64 speed steps. The available 256 speed steps of the KDec commands are mapped to these 64 steps (division by 4).
Pan stop	Stops panning. Other motions (tilt, zoom, focus) are not influenced.
Tilt down	The head tilts down with variable speed. Star supports 64 speed steps. The available 256 speed steps of the KDec commands are mapped to these 64 steps (division by 4).
Tilt up	The head tilts up with variable speed. Star supports 64 speed steps. The available 256 speed steps of the KDec commands are mapped to these 64 steps (division by 4).
Tilt stop	Stops tilting. Other motions (pan, zoom, focus) are not influenced.
Focus near	Focus near with variable speed. Star supports 8 speed steps. The available 256 speed steps of the KDec commands are mapped to these 8 steps.
Focus far	Focus far with variable speed. Star supports 8 speed steps. The available 256 speed steps of the KDec commands are mapped to these 8 steps.
Focus stop	Stops focusing.
Zoom wide	Zooms wide with variable speed. Star supports 8 speed steps. The available 256 speed steps of the KDec commands are mapped to these 8 steps.

Star command	Details
Zoom tele	Zooms tele with variable speed. Star supports 8 speed steps. The available 256 speed steps of the KDec commands are mapped to these 8 steps.
Zoom stop	Stops zooming.
Iris open	Opens the iris. Star domes implement that stepwise. For each Iris Open step a new command must be sent.
Iris close	Closes the iris. Star domes implement that stepwise. For each Iris Close step a new command must be sent.
Iris stop	Not necessary. The Iris stops after each command. It is opened/closed stepwise.
Set preset	Stores current position as preset. Star supports 64 preset positions. The position is written to internal EEPROM and remains accessible even in case of power loss.
Goto preset	Recalls a preset position. Star supports 64 preset positions.
Set default preset	Preset position 1 is defined as default position which may be recalled by goto default position.
Goto default preset	Recalls preset position 1.
Special functions	
Clear preset	Clears a preset position.

Wiring of IC-4855 RS232/485 Adaptor

Star domes are working half duplex. Each command results in an answer from the dome. The sender must wait for that answer - otherwise the commands will collide with the answers what results in unpredictable dome behaviour. To receive the dome answers the interface adaptor must be wired as follows:

- R+ connected with T+
- R- connected with T-
- R+(T+) and R-(T-) are connected with the dome.

TELECONTROL

The dip switches of the IC-4855 must be set as following:

- Left dip switch: middle position (T-RTS, R-RTS)
- Right dip switch: upper position (DCE)

Thomson TS-RC11

The commands of the Thomson telemetry decoder are not compatible with the commands of the KDec system. Complete conversion is necessary. This procedure is described in the following table.








The conversion is based on Keyboard documentation „VIP-KB 21“ from December 1997. Protocol compatible Thomson decoder may driven as well.






Meaning of variables:

- **kkk = Enter number of dome camera, with leading zeroes if necessary.**
- **pp = Enter preset position of selected dome camera, with leading zeroes if necessary.**
- **vvv = Additional variable speed parameters.**

TELECONTROL

Thomson TS-RC1 1 function	KDec command	MBeg	MBeg/VS
Pan right (fixed speed)	SNkkkS-	With keys ← →	With joystick
Pan right (variable speed)	SNkkkS-vvv		
Pan left (fixed speed)	SNkkkS+		
Pan left (variable speed)	SNkkkS+vvv		
Pan stop	SNkkkSO	Release keys	
Tilt down (fixed speed)	SNkkkN-	With keys ↑ ↓	
Tilt down (variable speed)	SNkkkN-vvv		
Tilt up (fixed speed)	SNkkkN+		
Tilt up (variable speed)	SNkkkN+vvv		
Tilt stop	SNkkkNO	Release keys	
Focus near	SNkkkF-	With key 	With rocker switch focus
Focus far	SNkkkF+	With key 	
Focus stop	SNkkkFO	Release key  / 	Release focus
Zoom wide	SNkkkZ-	With key 	With rocker switch zoom
Zoom tele	SNkkkZ+	With key 	
Zoom stop	SNkkkZO	Release key  /	Release zoom

TELECONTROL

Thomson TS-RC1 1 function	KDec command	MBeg	MBeg/VS
			
Iris open	SNkkkB+	Hold key 	
Iris close	SNkkkB-	Hold key 	
Iris stop	SNkkkB0	Release key	
Switch contact 1 (flip flop function)	SNkkkX1	Special function X on	
Switch contact 2 (flip flop function)	SNkkkY1	Special function Y on	
Switch contact 3 (flip flop function)	SNkkkU1	Special function U on	
Switch contact 4 (flip flop function)	SNkkkV1	Special function V on	

Address Specifics

Thomson decoders are using the address range from 00h to 7Eh. Only even addresses are used. In the camera table from Unilink the decoders have an address range from 1 to 64.

In UniLink they will be converted to Thomson addresses with the formular $Address = (UniLink\ number - 1) * 2$ shown in the following table:

Global address	local UniLink number	internal Thomson address
x_	_	0
x2	2	2
x3	3	4
...
x64	64	_26

- i This must be respected by parametrization:
A decoder with a jumper on 16h has the number 12 in Unilink.**

VarioTherm Protocol Integration

VarioTherm, VarioCam or IR-TCM are brands of Jenoptik for thermal image cameras. These cameras may be controlled with GscTelecontrol.

Modes

There are 2 modes for control:

Mode	Description
Direct control	In that mode the camera may be directly connected to a serial port of GscTelecontrol. This mode is thought mainly for test purposes because the camera is normally to operate in the Argus PTZ environment. That mode of the protocol driver may be activated by a special value in the Windows registry: HKLM/Software/Geutebrueck/... GeViScope/Telecontrol/ClientData. The DWORD value DirectControl must be created with a value of 1.
KDEC (ARGUS) control	That is the default mode of the driver operation. In that mode the camera is controlled via the transparent data channel of the KDEC protocol. The camera commands camera are embedded into the according KDEC command wrapper and transmitted unchanged to the functions.

Functions

- i The control of the camera requires GeViSoft versions >= 90**

The following function are supported and may be controlled by MBeg or any other KDEC300 command source (for example Multimap):

Command	Meaning	Telecontrol and MBeg/GCT translation
:key 1,2E	increase temperature range	Iris Open command of the KDec protocol

TELECONTROL

Command	Meaning	Telecontrol and MBeg/GCT translation
:key 1,32	decrease temperature range	Iris Close command of the KDEC protocol
:key 1,8E	stop increasing/decreasing temperature range	Iris Stop command
:key 1,2D	increase temperature level	Zoom In command
:key 1,31	decrease temperature level	Zoom Out command
:key 1,8D	stop increasing/decreasing temperature level	Zoom Stop command
:focus 80	focus near	Focus Near command
:focus 00	focus far	Focus Far command
:stopfocus	stop focus	Focus Stop command
:autoimage 0	auto temperature level/range off	Manual Iris On
:autoimage 2	auto temperature level/range on	Manual Iris Off
:autofocus 1	auto focus on	Auto Focus On
:logo 1 u. 0	logo display on/off	Pump On/Off
:palette n	selection of color palette	Special function X. Repeated pressing scrolls through the available 6 color palettes of the camera.
OSD menu control		
:key 1,4F	Activate menu mode	Special function U on
:key 1,2F	Enter sub menu	Special function U on
:key 1,38	Deactivate menu mode	Special function U off

Command	Meaning	Telecontrol and MBeg/GCT translation
Navigation	Left, right, up, down	Pan right/left, Tilt up/down
Checking	Activate check boxes in the menu	Camera text on
Values	Increment/Decrement values	Pan right/left, Tilt up/down

VCL Dome

The commands of the VCL dome system are not compatible with the commands of the KDec system. A complete conversion must take place. This is described in the following table of figures.

Just as for KDec, BBV P/T h can be controlled with faster and slower speed levels (MBeg). When using MBeg/VS the 127 speed levels of the VCL dome can be used for speed-dependent control with a joystick.

Number of fixed positions: 40

Available camera numbers: 1..128 (32 participants physically possible on the RS485 bus)

Current VCL domes offer two new features that have been added to the protocol. It is now possible to define "paths" and "privacy zones".

Paths

For VCL, a "path" is a recording of dome movements (including zoom and iris adjustments), similar to a macro. Using fixed positions 26 to 29, up to four "paths" can be defined and executed. Recording (definition) of a "path" is started by saving a fixed position (26-29) and stopped after completion of all desired dome movements by moving to the same fixed position. The recorded dome movements are automatically saved and are now available as a "path". "Playback" of the "path" is possible by initiating the corresponding fixed position.

Privacy Zones

The "privacy zones" function provides the option of excluding certain areas of the image. Instead, the camera displays a gray area. The definition of "privacy zones" is performed by saving fixed positions 30 to 39. To define a specific area as a "privacy zone", the camera is set to exactly this view, which is then stored as one of the

TELECONTROL















fixed positions 30 to 39. All areas of the image defined in this manner are no longer shown by the camera. By saving fixed position 40, all previously defined "privacy zones" are deleted.

Use of fixed position 26 to 40 for realization of the new functions means that the "normal" fixed positions supported by Unilink are now limited to positions 1 to 25.












Meaning of variables:

- **kkk** = Number of the dome camera to use, when appropriate, with leading zeros.
- **pp** = Fixed position of the selected dome camera, possibly with leading zeros.
- **vvv** = Additional variable speed parameters.

VCL function	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With buttons     (stop = release) with the currently set speed (normal/fast mode)	With the joystick
Pan left	SNkkkS+		
Tilt downwards	SNkkkN-		
Tilt upwards	SNkkkN+		
Pan and tilt at high speed	SNkkk++	Hold  button	Automatically via joystick
Pan and tilt at normal speed	SNkkk--	Release  button	Automatically via joystick
Focus near	SNkkkF-	With the  button	With Focus rocker switch
Focus far	SNkkkF+	With the  button	
Focus stop	SNkkkFO	Release  / 	Release focus
Zoom wide	SNkkkZ-	With the  button	With Zoom rocker switch
Zoom tele	SNkkkZ+	With the  button	
Zoom stop	SNkkkZO	Release  / 	Release zoom

TELECONTROL

VCL function	KDec command	MBeg	MBeg/VS
Open iris	SNkkkB-	Hold  button (stop = release)	
Close iris	SNkkkB+	Hold  button (stop = release)	
Save fixed position or home position	PPkkk.pp	Program fixed position (1 - 40), home position = 1, Pos. 26-29 for "paths" Pos. 30-40 for "privacy zones"	
Move to a fixed position	SNkkk.pp	Move to fixed position (1-40) Pos. 26-29 for "paths" Pos. 30-40 for "privacy zones"	
Move to home position	SNkkkGP	Press  button	
Wiper on/off	SNkkkW1/SNkkkW0	Press  button	
Pump on/off	SNkkkP1/SNkkkP0	Press  button	
Lighting on	SNkkkLO		
Lighting off	SNkkkL1		
Aux on/off	SNkkkX1/SNkkkX0	Special function X	
Autofocus on/off	SNkkkY1/SNkkkY0	Special function Y	
Automatic iris on, Automatic focus on, Move to home position	SNkkkK1		
Set automatic panning between two positions	SNkkkSA		

Vicon Protocols (Standard/Extended)

Two protocols „VICON Standard“ and „VICON Extended“ are used to support VICON dome cameras.

The VICON dome cameras can be connected via the RS485 bus of UniLink. The cameras can assume the camera

numbers from 1 to 255. However, the RS485 bus is limited physically to 32 users.

The „VICON Standard“ protocol only supports four speed stages for pan and tilt. The 256 stages possible in KDec300 are converted to the four possible stages. The protocol also permits programming and actuation of 10 preset positions, however, not for all types of cameras. Please contact Vicon Industries for further information.

The „VICON Extended“ protocol supports 1024 speed stages for pan and tilt. The 256 stages possible in KDec-300 are converted to the 1024 possible stages.

Number of preset positions: 40 including home position (home position is preset 40)





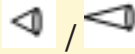


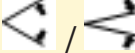




Number of possible camera numbers: 1..255 (32 users are physically possible on the RS485 bus)

Standard VICON Functions












- i** **Meaning of variables:**
- **kkk = Enter number of dome camera, with leading zeroes if necessary.**
 - **pp = Enter preset position of selected dome camera, with leading zeroes if necessary.**
 - **vvv = Additional variable speed parameters.**




VICON functions	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	with keys ← → (stop = release)	with joystick
Pan left	SNkkkS+		
Tilt down	SNkkkN-	with keys ↑ ↓	
Tilt up	SNkkkN+		

TELECONTROL

VICON functions	KDec command	MBeg	MBeg/VS
Start automatic pan	SNkkkX1	Special function X	
Pan and tilt at fast speed	SNkkk++	Press and hold key 	Automatic with joystick
Pan and tilt at normal speed	SNkkk--	Release key 	Automatic with joystick
Focus near	SNkkkF-	With key 	Focus rocker switch
Focus far	SNkkkF+	With key 	
Focus stop	SNkkkFO	Release key 	Release focus
Zoom wide	SNkkkZ-	With key 	Zoom rocker switch
Zoom tele	SNkkkZ+	With key 	
Zoom stop	SNkkkZO	Release key 	Release zoom
Iris close The dome is then in manual mode	SNkkkB+	Press and hold key  (stop = release)	
Iris open The dome is then in manual iris mode	SNkkkB-	Press and hold key  (stop = release)	
Activate automatic iris mode	SNkkkPI	Press  key	
Store preset or home position	PPkkk.pp	Program preset (1 - 10, Home position = 1)	
Go to preset	SNkkk.pp	Go to preset (1 - 10)	
Go to home position	SNkkkU1	Press key 	

Extended VICON Functions

VICON functions	KDec command	MBeg	MBeg/VS
Pan right	SNkkkS-	With keys ← → (stop = release) with keys ↑ ↓	With joystick
Pan left	SNkkkS+		
Tilt down	SNkkkN-		
Tilt up	SNkkkN+		
Start automatic pan	SNkkkX1	Special function X	
Pan and tilt at fast speed	SNkkk++	Press and hold key 	Automatic with joystick
Pan and tilt at normal speed	SNkkk--	Release key 	Automatic with joystick
Focus near	SNkkkF-	With key 	Focus rocker switch
Focus far	SNkkkF+	With key 	
Focus stop	SNkkkFO	Release key  / 	Release focus
Zoom wide	SNkkkZ-	With key 	Zoom rocker switch
Zoom tele	SNkkkZ+	With key 	
Zoom stop	SNkkkZO	Release key  / 	Release zoom
Iris close The dome is then in manual mode	SNkkkB+	Press and hold key  (stop = release)	

VICON functions	KDec command	MBeg	MBeg/VS
Iris open The dome is then in manual iris mode	SNkkkB-	Press and hold key  (stop = release)	
Activate automatic iris mode	SNkkkP1	Press  key	
Store preset or home position	PPkkk.pp	Program preset (1 - 40, Home position = 1)	
Go to preset	SNkkk.pp	Go to preset (1 - 40)	
Go to home position	SNkkkU1	Press key 	

VISCA Protocol Integration

- i** There are lots of products which claim to be VISCA compatible. Because of special implementations and deviations from the protocol specification there are quite often compatibility problems with special functions of that protocol.

GSCTelecontrol supports the following functions of the VISCA protocol:

Gsc/GeViSoft Action	Details
PanRight	Pans right with variable speed.
PanLeft	Pans left with variable Speed.
PanStop	Stops panning. Other motions (tilt, zoom, focus) are not influenced.
TiltDown	Tilts Down with variable speed.
TiltUp	Tilts Up with variable speed.
Tilt stop	Stops tilting. Other motions (pan, zoom, focus) are not influenced.

TELECONTROL

Gsc/GeViSoft Action	Details
FocusNear	Focusing near.
Focus far	Focusing far.
Focus stop	Stops focusing. Other motions (pan, tilt, zoom) are not influenced.
ZoomIn	Zooms in with variable speed.
ZoomOut	Zooms out with variable speed.
Zoom stop	Stops zooming. Other motions (pan, tilt, focus) are not influenced.
PrePosSave	Stores current position as preset.
IrisOpen	Opens the iris.
IrisClose	Closes the iris.
PrePosCallUp	<p>Recalls a preset position. Visca just supports 6 preset positions. The following preset positions have a special meaning:</p> <ul style="list-style-type: none"> • 7: Sony Save Setup to flash • 8: Sony Recall Setup from flash • 9: Sony Reset flash setup • 11: white balance, auto mode • 12: white balance, indoor mode • 13: white balance, outdoor mode • 14: white balance, one push mode • 15: white balance, one push trigger • 16: Auto exposure, auto mode • 17: Auto exposure, manual

TELECONTROL

Gsc/GeViSoft Action	Details
	<ul style="list-style-type: none"> • 18: Auto exposure, shutter priority • 19: Auto exposure, iris priority • 20: Auto exposure, bright mode • 21: Power on • 22: Data screen on • 23: IR-receive on • 24: Back light on • 25: Init bus • 26: Power off • 27: Datascreen off • 28: IR-receive off • 29: Back light off
IR cut filter on/off	Is controlled with the Light on/off function.
Camera on/off	Is controlled with the CameraOn/off function.
Focus auto/- manual	Is toggled with the special function X.
Focus manual	Is turned on with special function XOff.

Technical alterations reserved.

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