

Bosch VMS-BIS Connectivity



BOSCH

en Technical Service Note

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1 Short Information

This document describes the settings you must perform after having installed BIS and Bosch VMS on the different computers. Ensure that the installations of BIS Server and Bosch VMS Management Server were performed successfully on separate computers. Additionally you must have purchased and activated an OPC Server License for Bosch VMS.

2 System Overview

A Bosch VMS-BIS connection consists of at least 3 computers on the same network:

- A client computer that runs both a Bosch VMS Operator client and a BIS client (further clients running this software combination can be added to the Bosch VMS-BIS connection).
- A BIS login server
- A Bosch VMS Management Server

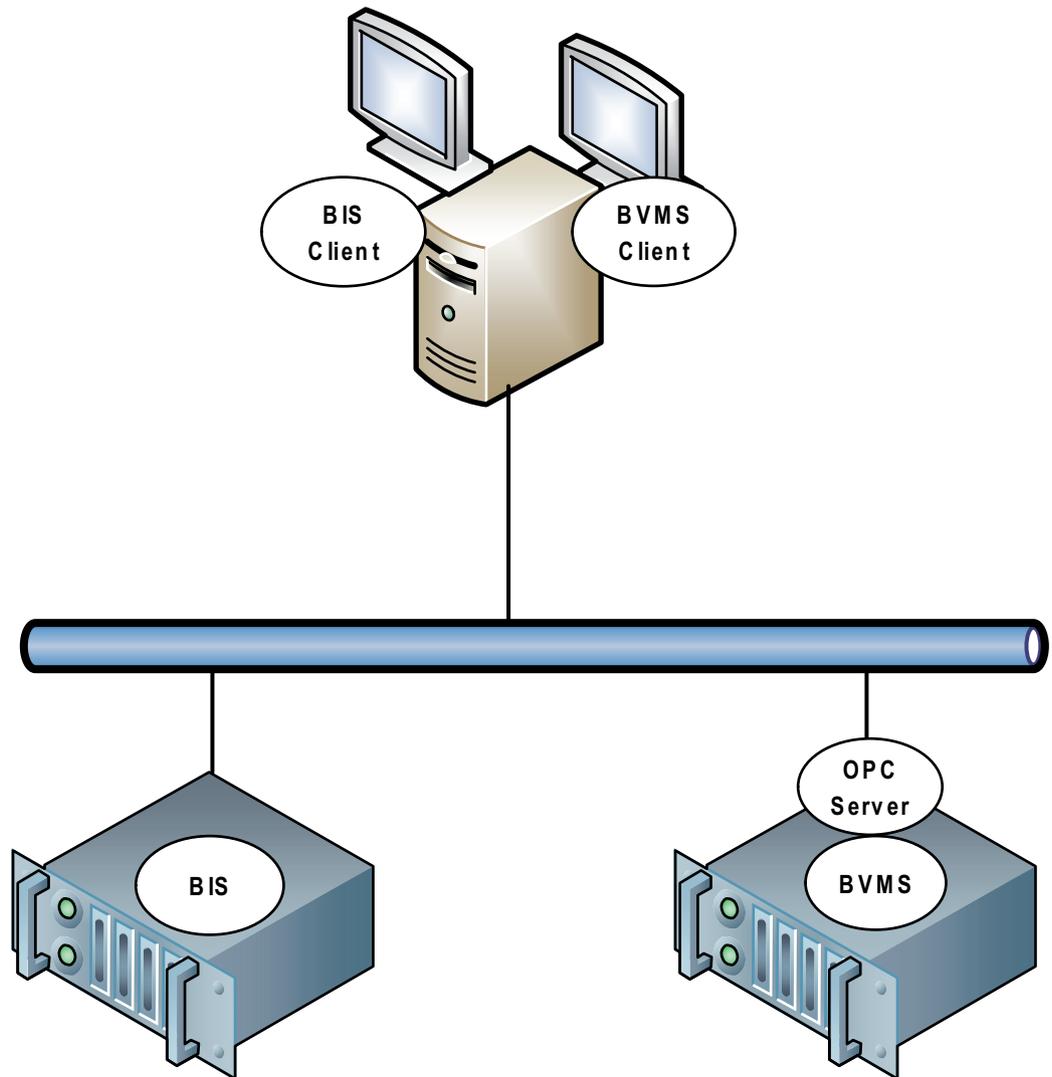


Figure 2.1: Bosch VMS-BIS connection



Notice!

You cannot connect BIS with a Bosch VMS Enterprise System. This means that you can only connect BIS with one specific Bosch VMS Management Server. This Management Server can nevertheless be **part** of an Enterprise System.

General notes on topology of the connection

Only one Bosch VMS - BIS connection can be established per Bosch VMS Management Server.

The Bosch VMS - BIS connection establishes a link between one BIS Server and one Management Server. In a Bosch VMS Enterprise system, several of these 1-to-1 connections can be available.

Bosch VMS OPC Server runs on the Bosch VMS Management Server. It is part of the Bosch VMS Installation.

Notice!

Summary: notes on topologies

Install BIS Server and Bosch VMS Management Server on separate computers.

Install Bosch VMS Management Server and the BIS/ Operator Client on separate computers. If not, the connection does not work.

Do not use 'No Touch Deployment' to install a new Bosch VMS Operator Client version. Install this version manually.

When updating to a new version of Bosch VMS it can happen that Setup stops with the message that the OPC Server cannot be installed. If such a message occurs, remove OPC Core Components Redistributable and start Bosch VMS Setup again.



Notice!

The Bosch VMS - BIS OPC server cannot process duplicate camera names

Ensure that the BVMS configuration file that you export contains no duplicate camera names. Rename any such cameras before exporting the configuration for BIS.

As a precaution Bosch recommends that you use the device tree in BVMS to give unique numerical suffices to encoder node names, for example when adding multiple ONVIF cameras of the same type and name.



See also

– *Installation, page 11*

2.1 OPC Server events

OPC server notifies state changes on the Bosch VMS side with an AE event to the 3rd party Server. *OPC Server events, page 6* describes the notified values.

The following table lists all error events which Bosch OPC Server can generate.

Interface Type	Event Name	State Value	State Id
Camera / Signal Presence			
Bosch.Vms.Server.VideoDevice	SignalPresence	Unknown	0
Bosch.Vms.Server.VideoDevice	SignalPresence	Present	5
Bosch.Vms.Server.VideoDevice	SignalPresence	NotPresent	353
Camera / Brightness			
Bosch.Vms.Server.VideoDevice	SignalTooBright	SignalOK	5
Bosch.Vms.Server.VideoDevice	SignalTooBright	Signal-NotOk	360

Interface Type	Event Name	State Value	State Id
Bosch.Vms.Server.VideoDevice	SignalTooDark	SignalOK	5
Bosch.Vms.Server.VideoDevice	SignalTooDark	Signal-NotOk	361
Camera / Noise			
Bosch.Vms.Server.VideoDevice	SignalTooNoisy	SignalOK	5
Bosch.Vms.Server.VideoDevice	SignalTooNoisy	Signal-NotOk	362
Camera / Motion			
Bosch.Vms.Server.VideoDevice	MotionDetect	Motion Detected	367
Bosch.Vms.Server.VideoDevice	MotionDetect	Motion Stopped	363
Camera / Recording Mode			
Bosch.Vms.Server.VideoDevice	RecordingMode	Alarm	365
Bosch.Vms.Server.VideoDevice	RecordingMode	None	364
Bosch.Vms.Server.VideoDevice	RecordingMode	Manual	365
Bosch.Vms.Server.VideoDevice	RecordingMode	Continuous	368
Bosch.Vms.Server.VideoDevice	RecordingMode	Motion	367
Camera / Visibility			
Bosch.Vms.Server.VideoDevice	Visibility	Visible	790
Bosch.Vms.Server.VideoDevice	Visibility	NotVisible	791
Camera / Protected Recording			
Bosch.Vms.Server.VideoDevice	ExternalData		792
Relay			
Bosch.Vms.Server.RelayDevice	RelayState	Relay Error	27
Bosch.Vms.Server.RelayDevice	RelayState	Relay Closed	301
Bosch.Vms.Server.RelayDevice	RelayState	Relay Opened	300
Input			
Bosch.Vms.Server.InputDevice	InputState	Input Error	27

Interface Type	Event Name	State Value	State Id
Bosch.Vms.Server.InputDevice	InputState	Input Closed	24
Bosch.Vms.Server.InputDevice	InputState	Input Opened	25
Virtual Input			
Bosch.Vms.Server.VirtualInput	InputState	Input Closed	24
Bosch.Vms.Server.VirtualInput	InputState	Input Opened	25
Encoder			
Bosch.Vms.Server.EncoderDevice	EncoderState	On	25
Bosch.Vms.Server.EncoderDevice	EncoderState	Off	24
Decoder			
Bosch.Vms.Server.EncoderDevice	ConnectionState	NotAuthorized	0
Bosch.Vms.Server.EncoderDevice	ConnectionState	Connected	25
Bosch.Vms.Server.EncoderDevice	ConnectionState	Disconnected	24
Decoder			
Bosch.Vms.Server.Decoder	DecoderState	On	25
Bosch.Vms.Server.Decoder	DecoderState	Off	24
Decoder			
Bosch.Vms.Server.Decoder	ConnectionState	NotAuthorized	0
Bosch.Vms.Server.Decoder	ConnectionState	Connected	25
Bosch.Vms.Server.Decoder	ConnectionState	Disconnected	24

Table 2.1: Bosch VMS OPC Server Event Details

Bosch VMS Proxy Error	GUID	State Identifier
Command forwarding failures		
Command forwarding failed	Target device GUID	27
Bosch VMS connection failures		
Connection to BVMS server down	Empty GUID	-1
Connection to BVMS reestablished	Empty GUID	-1

Table 2.2: Bosch VMS OPC Server / Bosch VMS Proxy Error Events

2.2 OPC Server commands

The following table lists the commands that you can send with OPC Server:

Target	Command	GUID	Description
Camera	Start Recording	Camera as GUID	Triggers manual recording start for a specific camera
	Stop Recording	Camera as GUID	Triggers manual recording end for a specific camera
	Start Pan Left	Camera as GUID	Pans a PTZ camera to the left.
	Start Pan Right	Camera as GUID	Pans a PTZ camera to the right.
	Start Tilt Up	Camera as GUID	Tilts a PTZ camera up
	Start Tilt Down	Camera as GUID	Tilts a PTZ camera down
	Start Zoom In	Camera as GUID	Zooms a PTZ camera in
	Start Zoom Out	Camera as GUID	Zooms a PTZ camera out
	Stop PTZ	Camera as GUID	Stops the current PTZ action, whether it was panning, tilting or zooming
	Start Sequence	Sequence as GUID	Loads a camera sequence that was defined in Bosch VMS. Display starts immediately
	Stop Sequence	Sequence as GUID	Unloads the current sequence
	Go to Pre-position	Camera as GUID	Points a PTZ camera in a direction that was defined in BVMS
Relay	Open	Relay as GUID	Opens the relay
	Close	Relay as GUID	Closes the relay
Virtual Input	Open	Virtual Input as GUID	Opens the virtual input
	Close	Virtual Input as GUID	Closes the virtual input

Table 2.3: List of commands (OPC Server)

2.3 Client-to-client proxy commands

Some commands like Show Live Image or Playback are forwarded directly to the Bosch VMS Client via Bosch VMS Proxy without OPC Server due to performance reasons.

The following table lists the available commands that can be forwarded from the 3rd party client to Bosch VMS via Bosch VMS Proxy.

Target	Command	GUID	Parameter	Description
Camera	ShowLive	Camera as GUID		Triggers live display of a specific camera
	Playback	Camera as GUID	Duration as unsigned Integer	Triggers playback of a specific camera, Duration: Playback rewind time in seconds
Operator Client	LaunchOperatorClient			Starts the Bosch VMS Operator Client, Login: Bosch VMS user

Target	Command	GUID	Parameter	Description
	TerminateOperatorClient			Exits the Bosch VMS Operator Client
	CloseCameo		Selected<monitorId> All	Closes one or all Image panes
	SetCameo-Space-Granularity		<monitorId> <granularity>	Sets the Image pane pattern

Table 2.4: List of commands (Bosch VMS Proxy)

Use the GUIDs from BVMSConfig.xml.

3 Installation

On the BVMS management server

1. On the BVMS Management Server computer, as administrator
 - install Bosch VMS software (at least Management Server and Configuration Client).
Note: OPC Server and OPC Core Components are installed automatically (version 1.1 or greater).
 - Create a Windows user with the name `mgts-service` with a password compliant with the local password policy. Ensure that the password is the same as the `mgts-service` password on the BIS Server.
2. On the same computer, start the Bosch VMS Configuration Client and do the following:
 - Ensure that the OPC server is licensed
 - Register the Bosch VMS OPC Server (run the following tool as Administrator:
`<Program directory>\Bosch\VMS\bin\RegisterBvmsOpcServer.exe`).
Confirm the password for the `mgts-service` user configured above.
 - Configure your Bosch VMS, that is, add cameras, video recorders etc.)
 - Create a user group with the user BIS without specifying a new password (accept the default password).
 - Activate (load) the configuration
 - Export Bosch VMS configuration data to Bosch VMS server computer `\<Program directory>\Bosch\VMS\bin\BVMSConfig.xml` (Click **System** menu > **Export Device Information for OPC**).



Notice!

Repeat the steps for the Configuration Client every time you change the configuration.



Notice!

Manual export of OPC configuration data required after Bosch VMS update

After an update of the Bosch VMS software export the OPC configuration.

In the Bosch VMS Configuration Client click **System** menu > **Export Device Information for OPC**

If you fail to do this, the new Bosch VMS version will not find a `BVMSConfig.xml` file and the file's OPC items will not be visible to the OPC clients in the network



Notice!

The Bosch VMS - BIS OPC server cannot process duplicate camera names

Ensure that the BVMS configuration file that you export contains no duplicate camera names. Rename any such cameras before exporting the configuration for BIS.

As a precaution Bosch recommends that you use the device tree in BVMS to give unique numerical suffices to encoder node names, for example when adding multiple ONVIF cameras of the same type and name.

On the BIS login server

1. On the BIS server, install a suitable BIS version. See *Bosch VMS – BIS compatibility matrix, page 14*
2. Ensure that the feature **BIS-Bosch VMS Connectivity** is licensed.
3. Log on to BIS login server as MgtS-Service.
4. Start the BIS Configuration Browser and modify or create a configuration beneath the Customer_Configuration folder.
5. Still in the BIS Configuration Browser add the Bosch VMS node and OPC Server as a connection server . Proceed as follows:
 - Select **Administration > Server structure** and add the name of the BVMS server computer in the **Additional connection server** pane.
 - Select **Connections > Connection servers** pane.
 - In that pane select the BVMS server you have just added and select **Add subsystem** from its context menu, or the **+** button
 - Select **BVMS** from the subsystem menu. After selecting, make sure that the light-bulb icon next to it is lit, and labeled **OPC server detected**.
if not, see **Notice** panel below.
 - Click **OK**
6. Save and load the configuration



Notice!

OPC server detected | OPC server missing

If the light-bulb icon is not lit, and labeled **OPC server missing**, it means that the OPC server has not been found on the network. Possible causes to investigate are

- Network hardware or software failure
- Firewall restrictions

On the BIS / Bosch VMS joint client

1. On the BIS/Bosch VMS **joint client** computer:
 - Configure the BIS client and its Internet Explorer settings as per the BIS installation Manual, (client configuration section).
 - Install Bosch VMS software. Select a version of the Operator Client based on the compatibility matrix below: *Bosch VMS – BIS compatibility matrix, page 14*.



Notice!

Before starting the BIS client for the first time, start the Bosch VMS Operator Client at least once (i.e. start, select the Central Server and log on).

Reason: if Operator Client is not started before starting BIS client, it will be unclear to which Bosch VMS the Central Server should connect, and this in turn will cause the invocation of Bosch VMS commands from the BIS client to fail.

2. As of Bosch VMS 5.0:

On the BIS/Bosch VMS **joint client** computer run

```
...\

```

The following files are copied into the Global Assembly Cache (GAC):

- Bosch.Vms.Core.FeatureSupportInterface.dll
- Bosch.Vms.Core.IUserAuthenticationService.dll

You can check the GAC in C:\Windows\Microsoft.NET\assembly\GAC_32

3. For Bosch VMS versions earlier than 5.0:

Add the following DLL files from the installation directory of Bosch VMS to the Global Assembly Cache (GAC) on each Bosch VMS client computer:

- `Bosch.Vms.Core.FeatureSupportInterface.dll`
- `Bosch.Vms.Core.IUserAuthenticationService.dll`



Notice!

An SDK application (Client SDK, Server SDK or Cameo SDK) may need slightly longer than before to connect to the Management Server after the DLLs are copied to the GAC.

Bosch VMS – BIS compatibility matrix

The combinations marked with X have been especially tested for compatibility. Other combinations may be compatible, but this is not guaranteed.

	Bosch VMS										
	4.5.0	4.5.1	4.5.5	5.0.0	5.0.5	5.5.1	5.5.5	6.0	6.5	7.0	7.5
BIS 3.0	X	X	X	X	X	X					
BIS 4.0				X	X	X	X				
BIS 4.1						X	X	X	X		
BIS 4.2										X	
BIS 4.3										X	X

See also

– *Installation, page 11*

4 Configuration on the client workstation

On the joint client workstation (Bosch VMS Operator Client and BIS Client)

- The client workstation requires two video ports for its two monitors: one for Bosch VMS, the other for BIS.
- Make the required settings for Internet Explorer.
See the BIS Installation Manual, section: **Configuring BIS clients and optional tools**
- If the client computer has multiple network adapters installed, enter the IP address of the LAN network adapter manually in \<Program directory>\Bosch\VMS\VrmClient\AppData\Bosch.VMS.BISProxy.dll.config
- **Example:** (Note: for simplicity we take Bosch VMS user account **Admin**, because it is always available. Other administrator accounts may also be used.)

```
<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <appSettings>
    <add IsServerMode="0" />
    <add Host="140.10.1.141" />
    <add Login="Admin" />
    <add Password="" />
  </appSettings>
</configuration>
```

- Insert the password for the administrator account (user **Admin** in this example) between the double quotes in the line `<add Password="" />`
- Insert this user name and password in the same file on the Bosch VMS Management Server where the OPC Server is installed. It is located in a directory with the same name.

5 Configuring Bosch VMS



Notice!

Avoid the following special characters in device names in Bosch VMS:

“ \ / #

- Ensure that the BVMS Management Server service on the Bosch VMS server is activated. If not, start the service manually.
 - Start the Bosch VMS Configuration Client on the Bosch VMS server (in the menu **Programs: BOSCH VMS -> Config Client**).
 - Configure one or more users for BIS:
 - In BVMS Config Client select the **User Groups** page.
 - Create a new user group and give it an appropriate name, for example **BIS Users**.
 - Add a new user to the group and give it the name **BIS**. Do not enter a password.
 - Add further BIS users as required.
 - Configure the user interface settings:
 - In BVMS Configuration Client, select the **User Groups** page.
 - Select the user group with the BIS users in the **User Groups** tree.
 - On the right pane, click **User Interface**.
 - Configure the second monitor as control and alarm monitor. Do not configure the other monitors.
 - Click  to save the settings in Configuration Client.
 - Click  to activate the saved settings.
 - After each configuration change export the configuration data again (**System** menu, **Export Device Information for OPC**).
- The configuration will be active after you restart the OPC Server

DCOM settings

Perform the following steps on the Bosch Video Management System Central Server: Check the security settings of the Bosch BVMS OPC AE Server and Bosch BVMS OPC DA Server component services. Both use the default settings for the COM security of the component services. To start the management application of the component services: Click **Start -> Run**. Type dcomcnfg and click **OK**.

Required settings for the access permissions:

- User **SELF: Local Access** and **Remote Access** with **Allow**
- User **SYSTEM: Local Access** and **Remote Access** with **Allow**
- User **<Computer Name>\MgtS-Service: Local Access** and **Remote Access** with **Allow**
- User **<Computer Name>\Administrators: Local Access** and **Remote Access** with **Allow**

Required settings for the launch and activation permissions:

- User **INTERACTIVE: Local Launch, Remote Launch, Local Activation** and **Remote Activation** with **Allow**
- User **SYSTEM: Local Launch, Remote Launch, Local Activation** and **Remote Activation** with **Allow**

- User <Computer Name>\MgtS-Service: **Local Launch, Remote Launch, Local Activation** and **Remote Activation** with **Allow**
- User <Computer Name>\Administrators: **Local Launch, Remote Launch, Local Activation** and **Remote Activation** with **Allow**

6 Configuring BIS

Perform the following steps in the BIS Configuration Browser.

- Ensure that the same users (with the same-passwords) are configured in BIS and Bosch VMS.
- Find out which of the standard html files your BIS installation has set for the client's monitor. Proceed as follows:
 - Click **Administration > Operators > Pane: Operator Profile**
 - Click the **Manage...** button
 - Note the html file names of the **Default Page** for the various operators, e.g. `indexWide.htm`
- The `HTM` files will be found below the folder for the current configuration, e.g. `C:\MgtS\Customer_Configuration\<MYCONFIGURATION>\Documents\`
- Open the HTML documents in a text editor, and uncomment the following commented line to enable JavaScript:

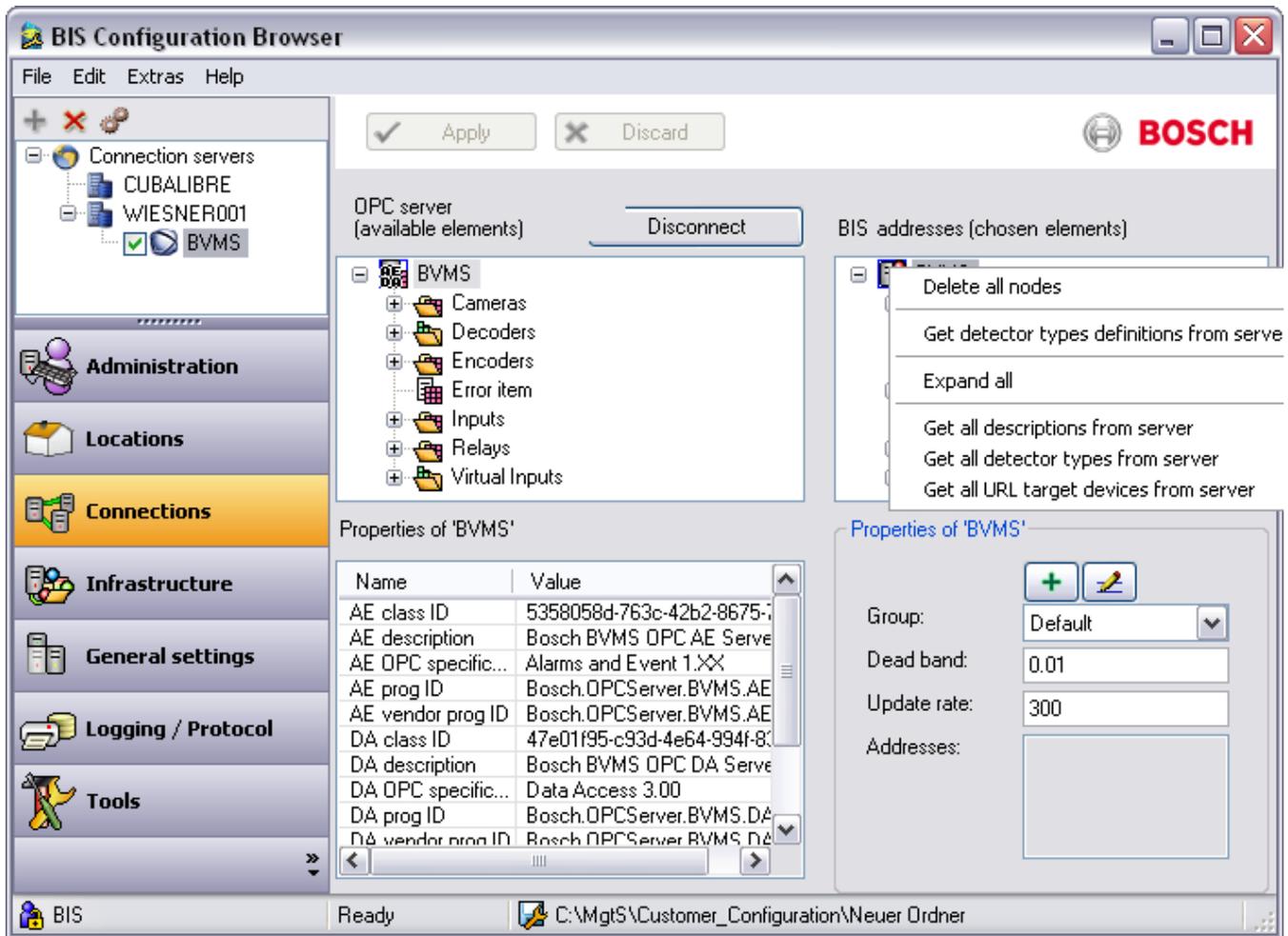
```
<!--<script language=""Jscript.Encode" src="../Mgt/Platform/Commands.js"></script>-->
```

After editing, the line should look like the following:

```
<script language=""Jscript.Encode" src="../Mgt/Platform/Commands.js"></script>
```

Go to **Connections > Connection servers** and select the Connection server you have set up for Bosch VMS. See *On the BIS login server, page 12*.

- Click the **Connect** button above the **OPC server (available elements)** pane to browse the namespace of the OPC server.
- In **BIS addresses (chosen elements)** pane, right click the OPC server and select **Get detector types definitions from server** from its context menu.



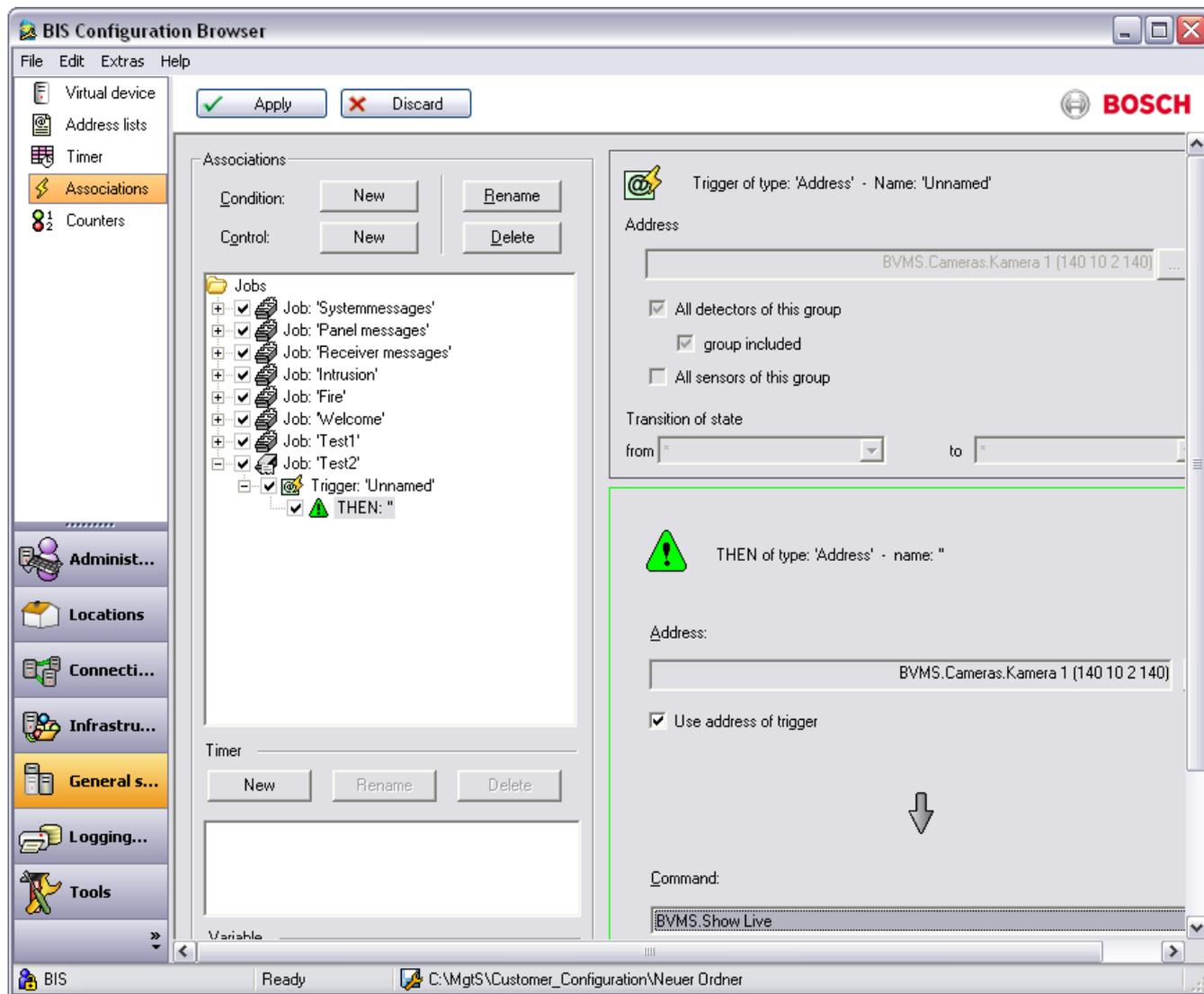
- Click the **Disconnect** button
- Save the configuration

6.1 Example configuration 1

How to trigger video display by a state-change at a camera's address

- For each address where a camera is to be displayed upon a state change at a particular address, create an **Association** (Job) with its Trigger.
- In the **THEN** part of the Association, select the **Address** of the camera to be displayed.
- Select the check box **Use address of trigger**
- In the **Command** text field, select the **BVMS.Show Live** command.

The following screenshot shows an example configuration for an Association that displays video from a camera when a state-change occurs at the camera's address:



6.2 Example configuration 2

How to display video automatically when an operator accepts an alarm message

- The **Miscellaneous** document BVMSShowLive.htm is displayed after accepting an alarm message. Customize the content of this file if required, but do not use a different file. You find the file in <Current Configuration>\Documents\Misc.
- In the BIS Configuration Browser, add BVMSShowLive.htm to the location tree (**Locations** Outlook bar > **Documents** pane > **Modify** button).

- Select the check box **Inherit Documents**:

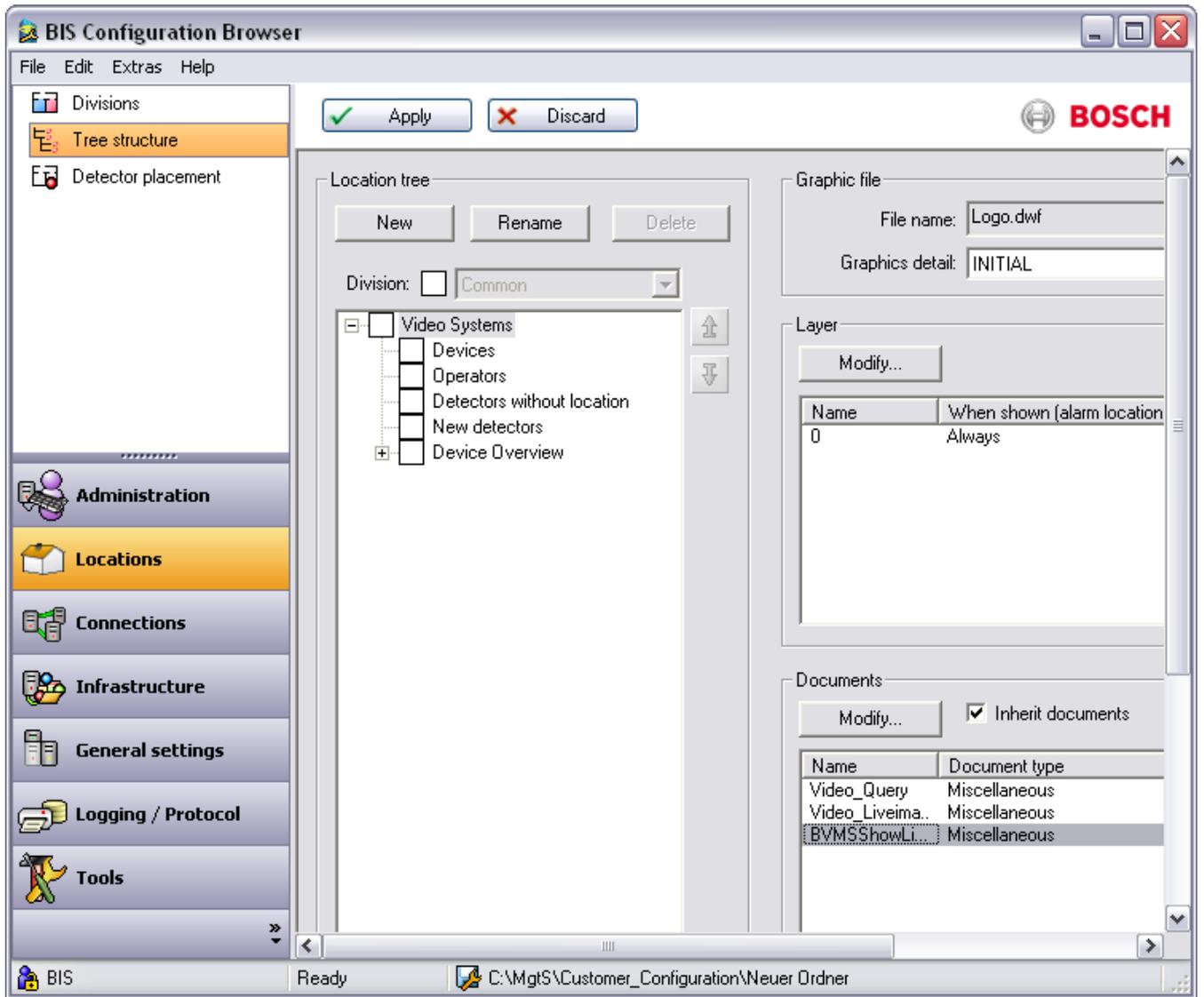
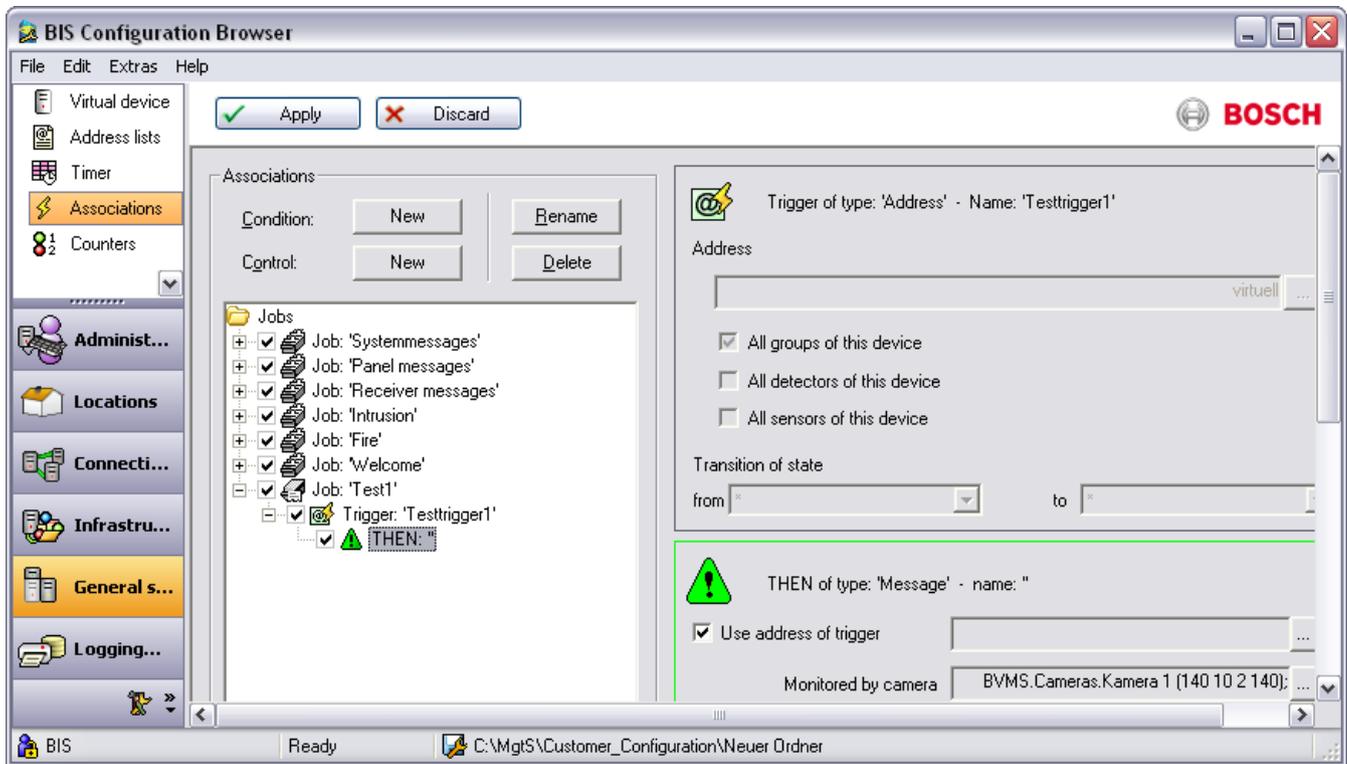


Figure 6.1: BIS Configuration Browser - BVMSShowLive.htm

- The video display is triggered by a BIS **Association** (Job). Proceed as follows in the BIS Configuration Browser to create the Association:
 - Click the **General settings** Outlook bar > **Associations** menu.
 - Create an Association with a trigger of type **Address**
 - In the **THEN** part of the Association, select the **Message** object.
 - For the message, select the address of the camera to be displayed in the **Monitored by camera** field.
 - In the document selection dialog box, select the **Miscellaneous document** emptyDocument.htm.
 - The following screenshot shows an example Association that displays a video image after the operator has accepted the corresponding alarm message:



7 Starting and stopping the system

- Starting the client
 - Start the BIS Client on a workstation by starting Internet Explorer with the localhost URL and logging on to BIS. The Bosch VMS Operator Client will automatically be displayed on the second monitor of the workstation.
- Stopping Client
 - Stop the BIS Client with the BIS **Exit** button. When asked to confirm by the Bosch VMS Operator Client, click **Yes**.

8 Troubleshooting

8.1 Problems with starting the clients

When you start the BIS Client the Bosch VMS Operator Client is started automatically without displaying the logon dialog of the Bosch VMS Operator Client.

This automatic start can fail in some cases:

- Starting the BIS Client immediately after the installation of Bosch VMS (no BVMS Server is set) Symptom: The logon dialog of Bosch VMS Operator Client is displayed.
- Starting the BIS Client while Bosch VMS-Server is not available (network is disconnected or the server is not started).
Symptom: The logon dialog of Bosch VMS Operator Client is displayed.
- Starting the BIS Client with invalid credentials
The logon dialog of Bosch VMS Operator Client is displayed. Invalid Credentials means either:
 - The Bosch VMS User who was entered in the BIS Logon dialog does not exist.
 - There is a Bosch VMS User, but a password has been set for this user.
- The OPC Server license has not been activated.



Notice!

If the logon dialog of the Bosch VMS Operator Client is displayed during startup of the BIS Client, one of the above is the likely cause.

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