



**BOSCH**

# **BVMS-BIS Connectivity**

BVMS - BIS Connectivity

**en**

Installation Manual



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## Table of contents

<b>1</b>	<b>Short Information</b>	<b>4</b>
<b>2</b>	<b>System Overview</b>	<b>5</b>
2.1	OPC Server events	6
2.2	OPC Server commands	9
2.3	Client-to-client proxy commands	10
<b>3</b>	<b>Installation</b>	<b>11</b>
<b>4</b>	<b>Configuration on the client workstation</b>	<b>14</b>
<b>5</b>	<b>Configuring BVMS</b>	<b>15</b>
<b>6</b>	<b>Configuring BIS</b>	<b>17</b>
6.1	Example configuration 1	19
6.2	Example configuration 2	19
<b>7</b>	<b>Starting and stopping the system</b>	<b>22</b>
<b>8</b>	<b>Troubleshooting</b>	<b>23</b>
8.1	Problems with starting the clients	23

# 1 Short Information

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

## 2 System Overview

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

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

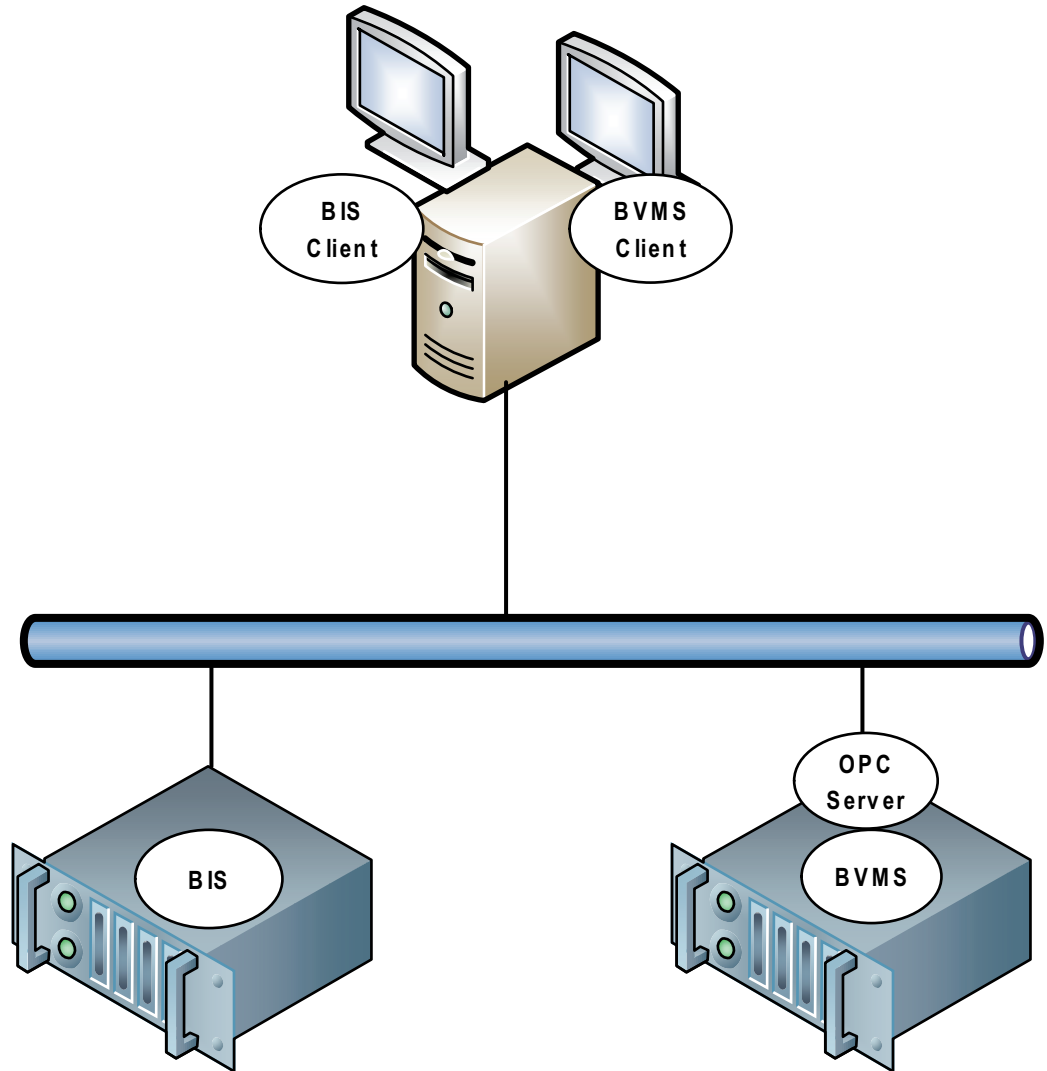


Figure 2.1: BVMS-BIS connection



**Notice!**

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

**General notes on topology of the connection**

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

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

### Notice!

Summary: notes on topologies

Install BIS Server and BVMS Management Server on separate computers.

Install BVMS 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 BVMS Operator Client version. Install this version manually.

When updating to a new version of BVMS 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 BVMS Setup again.



### Notice!

The BVMS - 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 BVMS 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.

Entity Type	Event Name	State Value	State Id
<b>Camera / Signal Presence</b>			
Camera	SignalPresenceState	Unknown	0
Camera	SignalPresenceState	Present	5
Camera	SignalPresenceState	NotPresent	353
<b>Camera / Brightness</b>			
Camera	SignalTooBrightState	SignalOK	5
Camera	SignalTooBrightState	Signal-NotOk	360
Camera	SignalTooDarkState	SignalOK	5

Entity Type	Event Name	State Value	State Id
Camera	SignalTooDarkState	Signal-NotOk	361
<b>Camera / Noise</b>			
Camera	SignalTooNoisyState	SignalOK	5
Camera	SignalTooNoisyState	Signal-NotOK	362
<b>Camera / Too blurry</b>			
Camera	SignalTooBlurryState	SignalOK	5
Camera	SignalTooBlurryState	Signal-NotOK	377
<b>Camera / Motion</b>			
Camera	MotionDetection	Motion Detected	367
Camera	MotionDetection	Motion Stopped	363
<b>Camera / Recording Mode</b>			
Camera	RecordingMode	Alarm	365
Camera	RecordingMode	None	364
Camera	RecordingMode	Manual	365
Camera	RecordingMode	Continuous	368
Camera	RecordingMode	Motion	367
<b>Camera / Visibility</b>			
Camera	VisibilityState	On	790
Camera	VisibilityState	Off	791
<b>Camera / Protected Recording</b>			
Camera	ExternalData		792
<b>Camera / Global Change</b>			
Camera	GlobalChangeState	Global Change not detected	378
Camera	GlobalChangeState	Global Change detected	379
<b>Relay</b>			

Entity Type	Event Name	State Value	State Id
Relay	RelayState	Relay Error	27
Relay	RelayState	Relay Closed	301
Relay	RelayState	Relay Opened	300
<b>Input</b>			
Input	InputState	Input Error	27
Input	InputState	Input Closed	24
Input	InputState	Input Opened	25
<b>Encoder</b>			
Encoder	ConnectionState	NotAuthorized	0
Encoder	ConnectionState	Connected	25
Encoder	ConnectionState	Disconnected	24
<b>Decoder</b>			
Decoder	ConnectionState	NotAuthorized	0
Decoder	ConnectionState	Connected	25
Decoder	ConnectionState	Disconnected	24
<b>IntrusionPanel / Area</b>			
IntrusionPanelArea	AreaState	Armed	304
IntrusionPanelArea	AreaState	Disarmed	307
<b>IntrusionPanel / Door</b>			
IntrusionPanelDoor	IntrusionPanelDoorState	Locked	314
IntrusionPanelDoor	IntrusionPanelDoorState	Unlocked	313
IntrusionPanelDoor	IntrusionPanelDoorState	Secured	315
<b>IntrusionPanel / Point</b>			
IntrusionPanelPoint	IntrusionPanelAlarmState	Normal	5
IntrusionPanelPoint	IntrusionPanelAlarmState	Alarm	1000
IntrusionPanelPoint	IntrusionPanelAlarmState	Bypassed	2818
IntrusionPanelPoint	KeypadPanicAlarmState	Normal	5



Entity Type	Event Name	State Value	State Id
IntrusionPanelPoint	KeypadPanicAlarmState	Alarm	1191
IntrusionPanelPoint	KeypadPanicAlarmState	Bypassed	2818
IntrusionPanelPoint	DoorLeftOpenedState	Normal	5
IntrusionPanelPoint	DoorLeftOpenedState	Alarm	1059
IntrusionPanelPoint	DoorLeftOpenedState	Bypassed	2818
IntrusionPanelPoint	FireAlarmState	Normal	5
IntrusionPanelPoint	FireAlarmState	Alarm	1086
IntrusionPanelPoint	FireAlarmState	Bypassed	2818
IntrusionPanelPoint	GasAlarmState	Normal	5
IntrusionPanelPoint	GasAlarmState	Alarm	1106
IntrusionPanelPoint	GasAlarmState	Bypassed	2818
IntrusionPanelPoint	MedicalAlarmState	Normal	5
IntrusionPanelPoint	MedicalAlarmState	Alarm	1156
IntrusionPanelPoint	MedicalAlarmState	Bypassed	2818

**Table 2.1: BVMS OPC Server Event Details**

BVMS Proxy Error	GUID	State Identifier
<b>Command forwarding failures</b>		
Command forwarding failed	Target device GUID	27
<b>BVMS connection failures</b>		
Connection to BVMS server down	Empty GUID	-1
Connection to BVMS reestablished	Empty GUID	-1

**Table 2.2: BVMS OPC Server / BVMS 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

Target	Command	GUID	Description
	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
	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
Sequence	Start Sequence	Sequence as GUID	Loads a camera sequence that was defined in BVMS. Display starts immediately
	Stop Sequence	Sequence as GUID	Unloads the current sequence

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 BVMS Client via BVMS 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 BVMS via BVMS 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 BVMS Operator Client, Login: BVMS user
	TerminateOperatorClient			Exits the BVMS 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 (BVMS Proxy)

Use the GUIDs from BVMSConfig.xml.

## 3 Installation

### On the BVMS management server

1. On the BVMS Management Server computer, as administrator
  - install BVMS 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 BVMS Configuration Client and do the following:
  - Ensure that the OPC server is licensed
  - Register the BVMS 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 BVMS, 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 BVMS configuration data to BVMS 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 BVMS update

Only for BVMS version 7.0 and older!

After an update of the BVMS software export the OPC configuration.

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

If you fail to do this, the new BVMS 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 BVMS - 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 *BVMS - BIS compatibility matrix*, page 13
2. Ensure that the feature **BIS-BVMS 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 BVMS 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 / BVMS joint client

On the BIS/BVMS **joint client** computer proceed as follows:

1. Configure the BIS client and its Internet Explorer settings as per the BIS installation Manual, (client configuration section).
2. Install BVMS software. Select a version of the Operator Client based on the compatibility matrix below: *BVMS - BIS compatibility matrix*, page 13.



#### Notice!

Before starting the BIS client for the first time, start the BVMS 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 BVMS the Central Server should connect, and this in turn will cause the invocation of BVMS commands from the BIS client to fail.

**BVMS - 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 Video Management System													
	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	8.0	9.0	10.0
<b>BIS 3.0</b>	X	X	X	X	X	X								
<b>BIS 4.0</b>				X	X	X	X							
<b>BIS 4.1</b>						X	X	X	X					
<b>BIS 4.2</b>										X				
<b>BIS 4.3</b>										X	X			
<b>BIS 4.4</b>											X	X		
<b>BIS 4.5</b>												X	X	X
<b>BIS 4.6</b>												X	X	X

**See also**

- *Installation, page 11*

## 4 Configuration on the client workstation

### On the joint client workstation (BVMS Operator Client and BIS Client)

- The client workstation requires two video ports for its two monitors: one for BVMS, 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\AppData\Bosch.VMS.BISProxy.settings.cxml  
Since this file contains credentials for BVMS, it is encrypted. To be able to change any value, run the <Installation directory>\Bosch\VMS\bin\XMLConfigurationEncryption.exe file and open the BVMS Proxy configuration file. After changing the values, you can encrypt and save the settings. When first changing the settings, you have to provide a password.
- **Example:** (Note: for simplicity we take BVMS user account **Admin**, because it is always available. Other administrator accounts may also be used.)

```
<?xml version="1.0" encoding="utf-8"?>
<Configuration>
    <IsServerMode>0</IsServerMode>
    <Login>Admin</Login>
    <Password ></Password>
    <Host>localhost</Host>
    <BvmsLogin>Admin</BvmsLogin>
    <BvmsPassword ></BvmsPassword>
</Configuration>
```

- Insert the password for the administrator account (user **Admin** in this example) between the xml tags in the line <Password></Password>
- Insert this user name and password in the same file on the BVMS Management Server where the OPC Server is installed. It is located in a directory with the same name.



## 5 Configuring BVMS



### Notice!

Avoid the following special characters in device names in BVMS:

“ \ ‘ #

- Ensure that the BVMS Management Server service on the BVMS server is activated. If not, start the service manually.
- Start the BVMS Configuration Client on the BVMS server (in the menu **Programs: BVMS -> 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 BVMS.
- 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 HTML files will be found below the folder for the current configuration, e.g.  
C:\MgtS\Customer\_Configuration\\Documents\
  - Open the HTML documents in a text editor, and uncomment the following commented line to enable JavaScript:

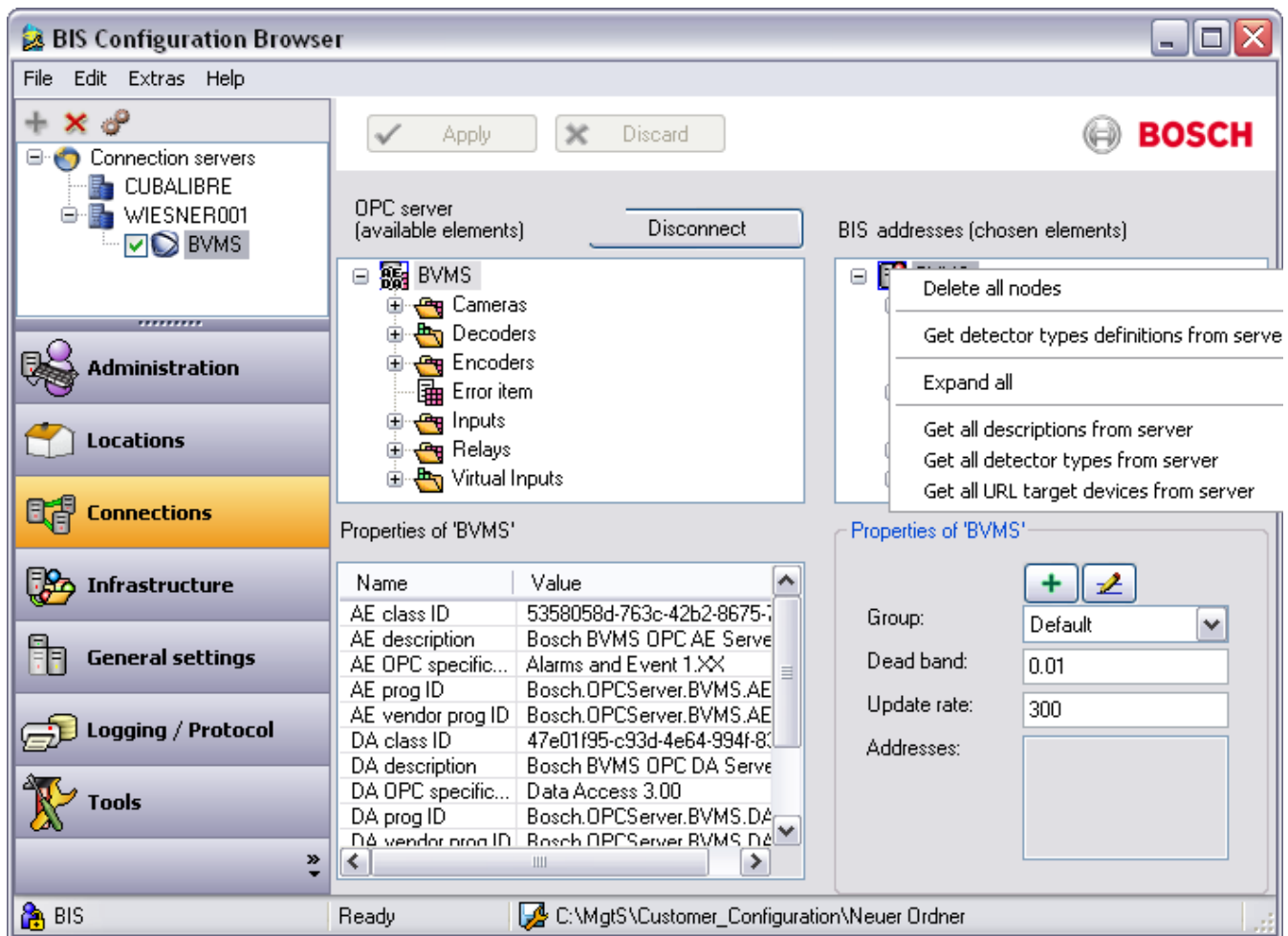
```
<!--<script language="" Jscript.Encode" src="../Mgt/Platform/  
Commands.js"></script>-->
```

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 BVMS. 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.



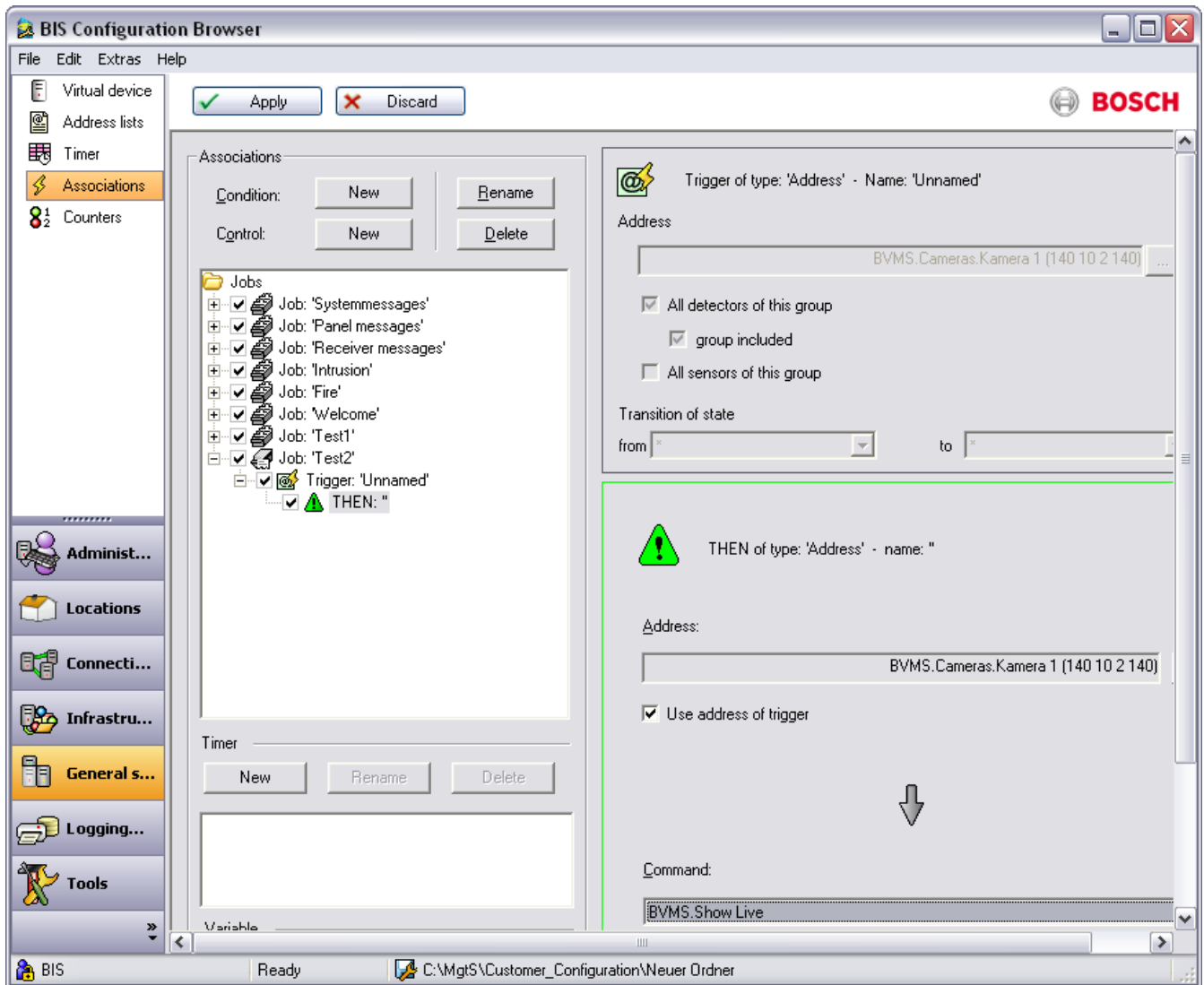
- Click the **Disconnect** button
- Save the configuration

## 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**:

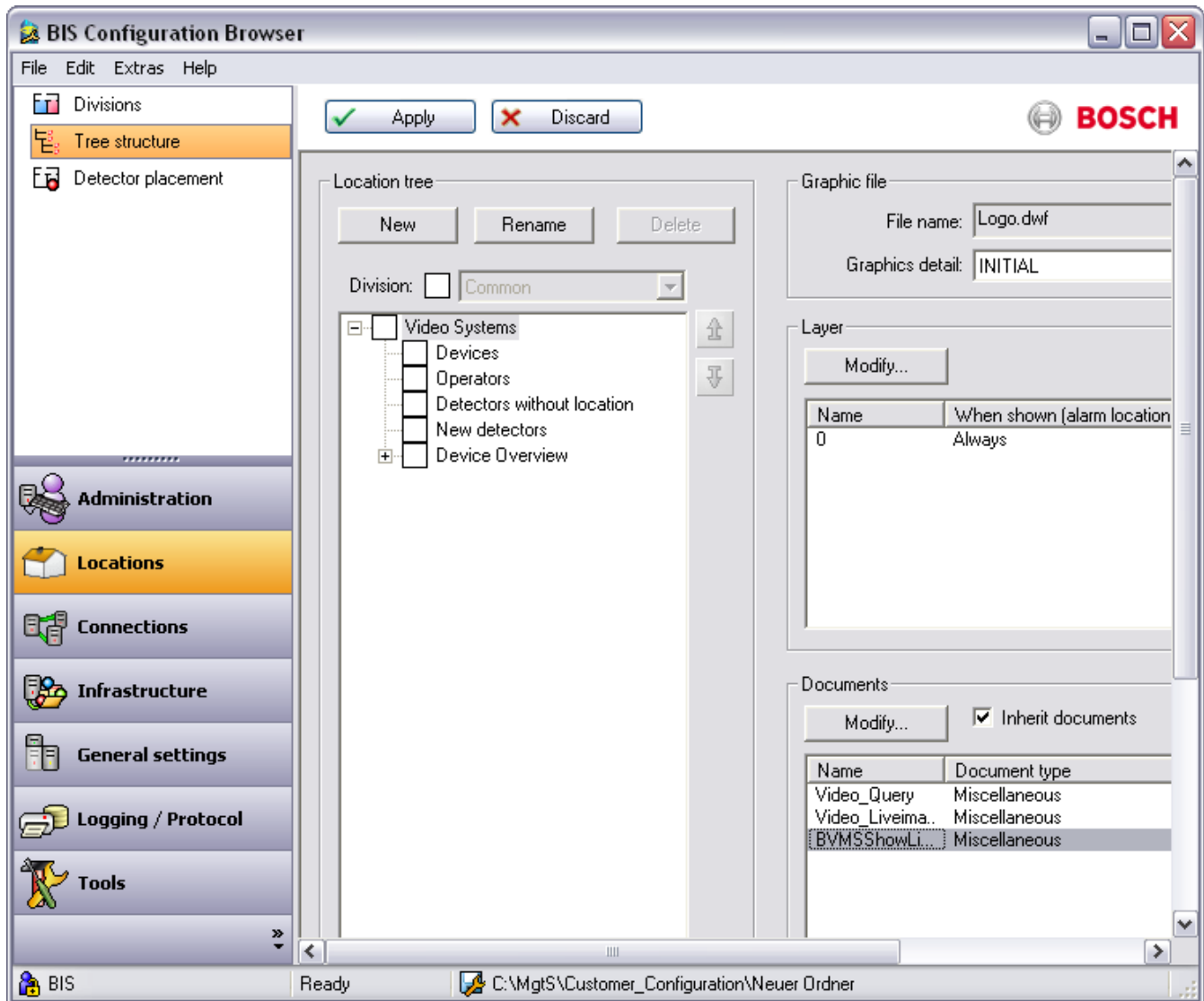
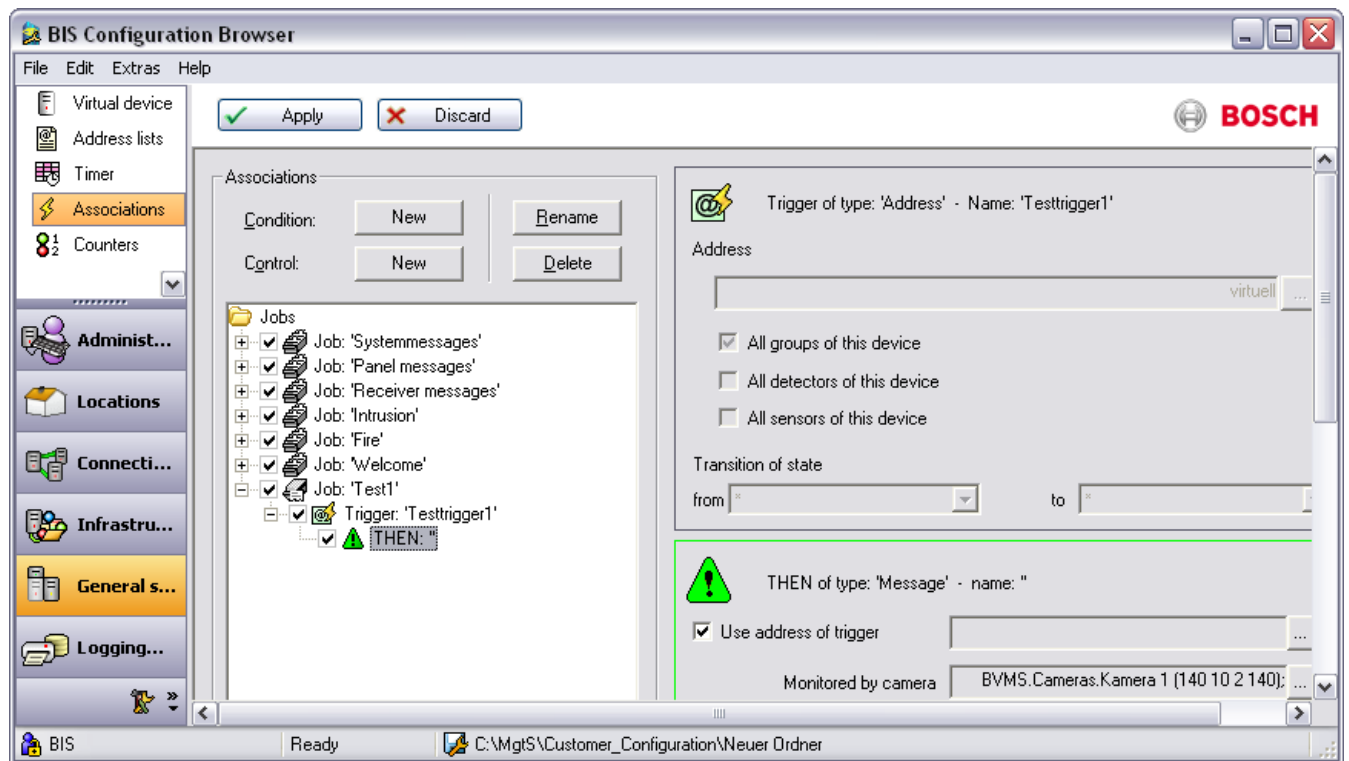


Figure 6.1: BIS Configuration Browser - BVMSShowLive.htm

- 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 BVMS 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 BVMS Operator Client, click **Yes**.

## 8 Troubleshooting

### 8.1 Problems with starting the clients

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

This automatic start can fail in some cases:

- Starting the BIS Client immediately after the installation of BVMS (no BVMS Server is set)  
Symptom: The logon dialog of BVMS Operator Client is displayed.
- Starting the BIS Client while BVMS-Server is not available (network is disconnected or the server is not started).  
Symptom: The logon dialog of BVMS Operator Client is displayed.
- Starting the BIS Client with invalid credentials  
The logon dialog of BVMS Operator Client is displayed. Invalid Credentials means either:
  - The BVMS User who was entered in the BIS Logon dialog does not exist.
  - There is a BVMS 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 BVMS Operator Client is displayed during startup of the BIS Client, one the above is the likely cause.









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