

BIS 2.4 - Video Engine

Installation manual



BOSCH

en English

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1 Installation Manual notes

The Basic Operating Manual is the BIS Installation Manual (F.01U.028.709) in the appropriate current version and language version.

Please refer to the following Operating Manuals for additional, specific installation information for the respective BIS engines and subsystems:

BIS Engine	German Installation Manual	English Installation Manual
BIS Platform	F.01U.028.712	F.01U.028.709
Security Engine (SEE)		F.01U.028.295
Automation Engine (AUE)	F.01U.028.294	F.01U.028.293
Access Engine (ACE)	F.01U.028.714	F.01U.028.713
Video Engine (VIE)	<i>F.01U.028.326</i>	<i>F.01U.028.325</i>
Subsystems	German IM	English IM
DiBos Micro	F.01U.512.552	F.01U.512.553
DiBos	F.01U.512.545	F.01U.512.546
Divar		
VCS VideoJet		

Table 1.1 BIS Installation Manual systems for BIS engines and subsystems

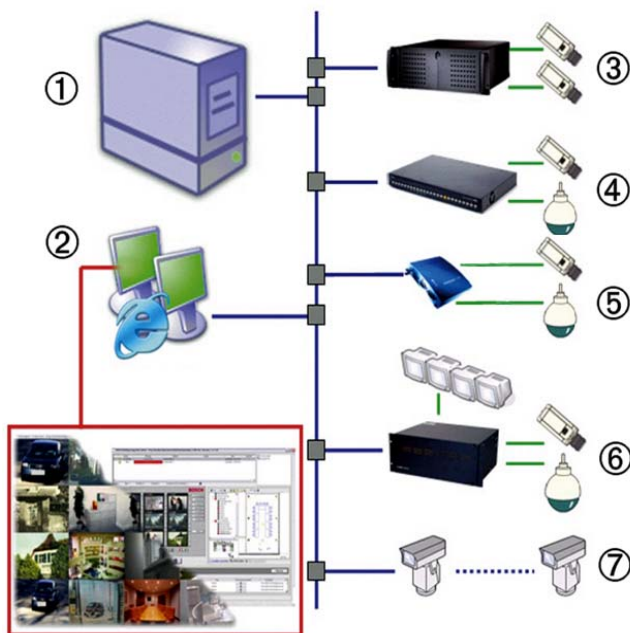


NOTE! To install the Video Engine, you need the Basic BIS Installation Manual and the additional information contained in the VIE Installation Manual!

2 Introduction

The Video Engine (VIE) is one of the three main modules in the BIS family (Building Integration System). It can be operated separately or with the other engines (Automation or Access Engine). Its main task is to provide the BIS system with video functionality, e.g. alarm display screen in the event of intrusion or the continual display of images of secured areas in a building. The Video Engine provides special display functions for this that are easily integrated into the BIS user interface.

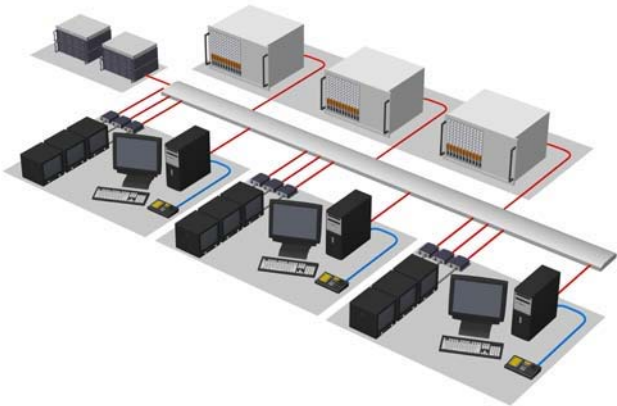
2.1 VIE System Overview - Typical installation



1	Zentraler BIS Server	Central BIS server
2	Bedienplätze	Workstations
3	DiBos 1-n	DiBos 1-n
4	Divar 1-n	Divar 1-n
5	VCS-Video-Webserver, wie Videojet, VIP, ...	VCS Video Web server, like Videojet, VIP, etc.
6	LTC/Allegiant Kreuzschienen	LTC/Allegiant matrix switches
7	IP-Kamera 1-n	IP Camera 1-n

Table 2.1 Explanations of the VIE system example

Typical installation



Example : Typical Video Engine installation of 3 VIE clients, each with 1 CCTV USB keyboard and 3 analog monitors as a digital video matrix to DiBos servers and Videojet coders

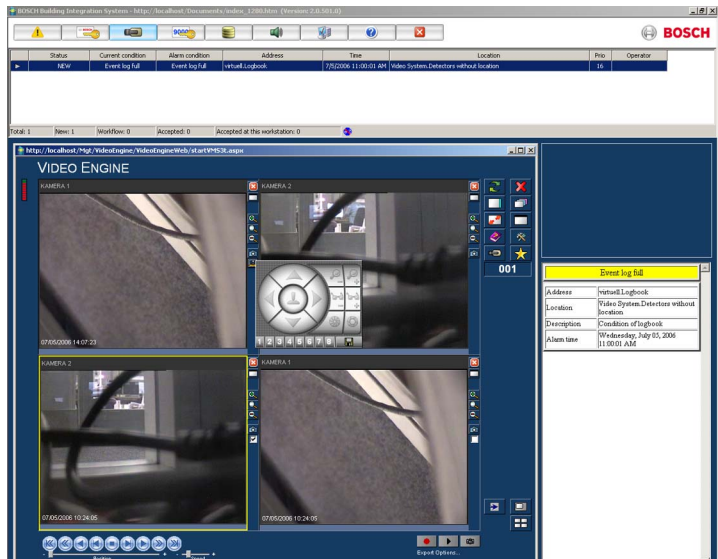
2.2 VIE user interfaces

Users can select from different user interfaces to get the setup most appropriate to their application.

2.2.1 Multiview operation with Video Alarm Workflow

Integrating the VIE Multiview into the BIS interface enables the system to be operated and monitored from a general overview and the following functionalities:

- VIE Multiview for the operation/display of live, archive and alarm images
- Display of incoming alarms and their processing status
- Navigatable location and device overview for all connected systems



2.2.2 Digital Video Matrix

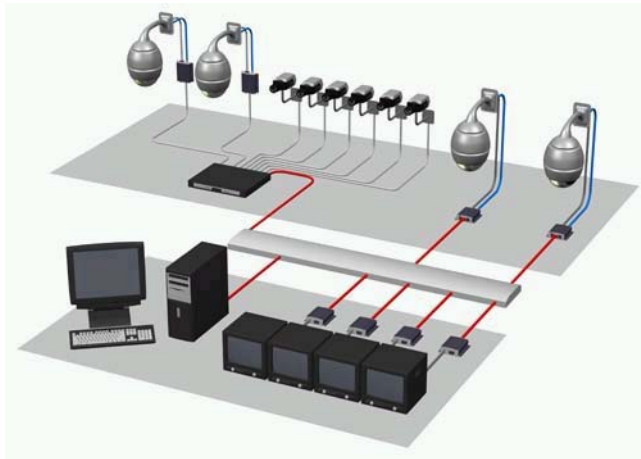
The VIE digital Matrix displayed e.g. in a Monitor Wall is a part of the BIS VIE Software and is the easiest way to view many BVIP cameras on monitor walls. Flat panel plasma displays are becoming more and more popular in Security Control Centers. Only video by the VIP and VideoJet MPEG-2 and MPEG-4 Encoders may be transmitted and displayed.

The VIE Digital Matrix can be used in combination with the BIS VIE sitemaps, device lists and the state-machine.

The Config Browser allows centralized management and an

administrator is able to define users and user permissions as basis for VIE workstation access to live viewing and PTZ control on the digital Matrix Monitor Wall.

With the BIS state-machine any building automation event can change the displayed cameras.

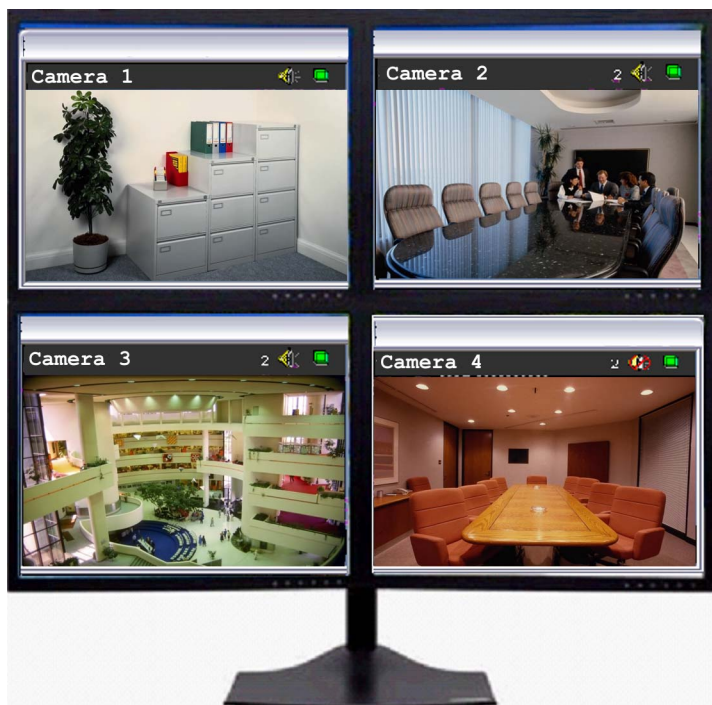


Example 2: Video workstation with digital matrix (with video-stream decoders) and VIE client

2.2.3

Multimonitor Stand in Control Center

The Multimonitor User Interface of the Video Engine may be displayed as well as part of a Security Control Center Video Wall. Either a single Video Engine workstation monitor may be split into several screens of the monitor wall e.g. as virtual matrix or 1 Monitor Multiview or the monitors displaying the Multimonitor Video Engine User Interface may be simply located as part of the video wall.



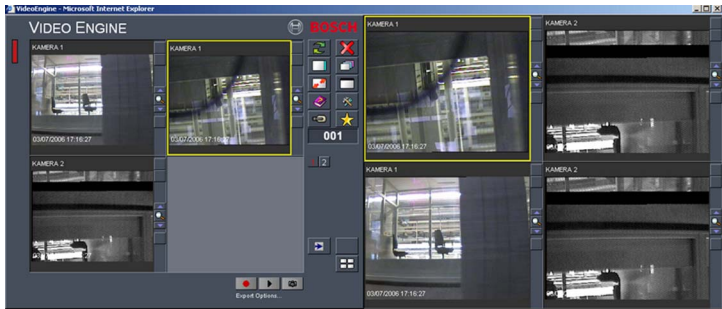
Simultaneous display/playback of the video sources can be distributed to up to 4 monitors, i.e. up to 4 Multiview windows.

Multimonitor operation lets you:

- combine operation and monitoring
- expand the simultaneous monitoring scope (without switching over)
- display larger images with more details

You can allocate a Singleview or Multiview display to each monitor.

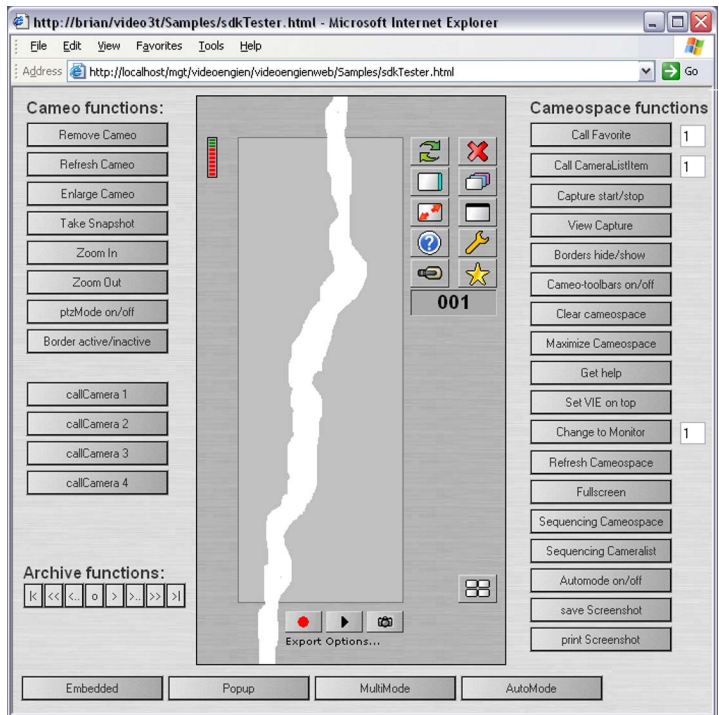
Depending on the number of monitors connected, up to 4 buttons are shown to navigate to the different Multiview windows.



2.2.4 Customized User Interface, e.g. Touchscreen Control

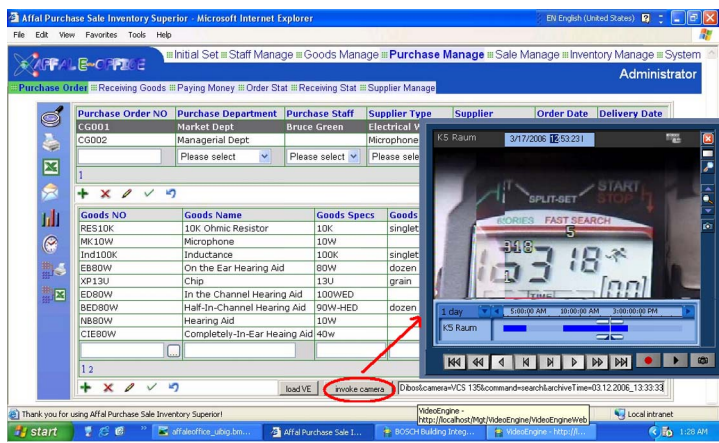
The Video Engine offers the most important functions to control the video display and the Multiview layout programmatically in the HTML-User Interface. Via HTML- Buttons or Action Buttons you may select cameras and execute all available functions. You may design the Layout acc. to your needs:



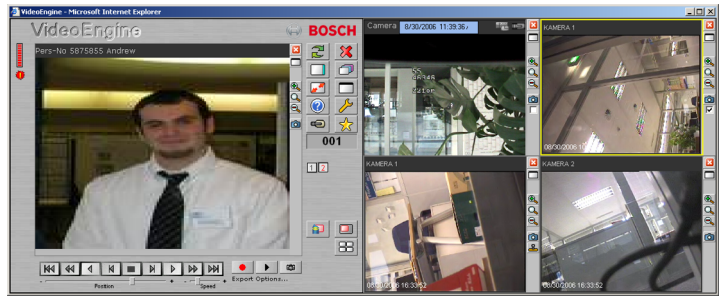


2.2.5 Integrated Video User Interface, e. g. Transaction Data Search

The advantage of the Video Engine Webapplication is to have a Quick Web Integration of the Bosch Video Sources into any other Application. You may for example call up video recordings to POS-Transactiondata right out of your ERP Software:



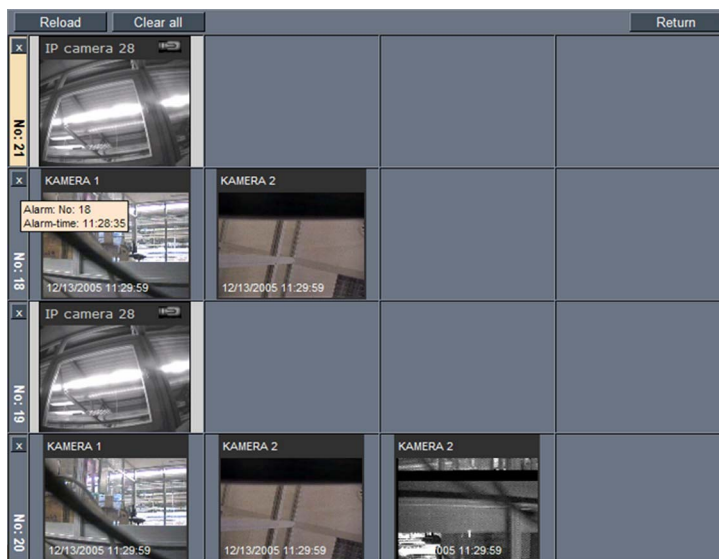
- ### 2.2.6 Cardholder Image Database Display and Query
- In Video Engine Systems combined with Access Management Systems, Images of all Cardholders are available in Person Database. Theses images may be displayed via the URL of a virtual detector within
- a Cameo of the Video Engine Multiview for an easy evaluation of recorded videos displaying the camera archives next to the Still Image Cameo .
 - The Misc. Document of the Video Alarm workflow, eg. Next to the Live image of the card holder passing or standing in front of the door camera.



2.2.7 Virtual Digital Matrix (VDM)

The Virtual Digital Matrix (VDM) is an additional display function within the Video Engine. In contrast to the Multiview display, the VAM permits the display of alarm-dependent live images; by default up to four images for each alarm and four alarms simultaneously. Any safety-relevant message from the BIS management system can be configured to trigger an alarm, such as intrusion, tampering, door open time exceeded etc. All you have to do is link the corresponding cameras once.

Just like the Multiview, the VDM can be integrated as desired into the BIS Video Engine user interface, e. g. as an overlay, fullscreen during multimonitor operation, fullscreen on a big screen etc.



3 System requirements



NOTE! In principle, procedures should be carried out in accordance with the [Basic BIS Installation Manual](#).

When using the Video Engine, you should also bear in mind the VIE release notes, readmes on the installation CD and the instructions below:

3.1 Supported operating system

The VIE server and client work with the following operating systems:

- Windows XP Professional SP2 or SP3

Der VIE client also works with

- Windos Vista SP1 only for BIS clients (Enterprise, Business or Ultimate) - Vista 64 Bit is not supported

The Video Engine server also works with

- Windows Server 2003 SP2

The VIE software can be installed and run on systems with a higher SP (Service Pack). However, it cannot be guaranteed that the system will work in this environment trouble-free.

As there are no existing test results, there is no support for the time being.

Please also check the XP FirewallSettings.doc options on the installation CD.



NOTE! On Windows 2003 Server please deactivate the "advanced security options" before the first VIE operation. (*start/settings/Control Panel/Add or Remove Programs/Add-Remove Windows Components*)

3.2 Supported browser

- MS Internet Explorer 6
- MS-Internet Explorer 7 (Not all Video Devices incl. their display controls support IE7 - DiBos 7 does not support)

MS Internet Explorer version 6 is supported. (MS support for version 5.5 of MS Internet Explorer is set.)

3.3 Additional software packages for BIS

- MS - Internet Information Server (IIS) (wird nicht automatisch installiert)
- Microsoft .NET Framework 1.1 SP1
- Microsoft .NET Framework 2.0 SP1
- Microsoft .NET Framework 3.5 SP1
- Microsoft Visual J# 2.0 Redistributable Package
- Microsoft SQL Server 2005 Backward compatibility
- Microsoft SQL Server Management Objects Collection
- Microsoft SQL Server Native Client
- MDAC
- SAX (MSXML)
- Remote desktop Web Client (for VIE / DiBos)
- MS SQL-Server
- Autodesk Whip!
- Hardlock Device Driver
- Leadtools

BIS PlatformThe setup process installs and updates those packages automatically (not ISS).



NOTE! For setting up the Internet Information Server the Microsoft operating system installation CD is required.

Please ensure that the ISS is installed before starting the BIS installation!

Software components, which is not installed from the installation process automatically is now located on the Documents CD in folder "{Documents_CD}\AddOn\Driver\3rd_Party\"

3.4 Minimum requirements Video Engine

- DirectX9.0c
- MS Media Player
- Microsoft .NET Framework 2.0

3.5 Additional software packages for VIE

The BIS VIE also requires the following third-party software. These components are temporarily installed on the server and/or client

- Divar SDK 3.06
- Video Engine OCX 2.3
- VCS MPEG-ActiveX 3.0.2
- Video SDK 4.43.03.03 and Bosch Video SDK Runtime Library 4.42.03.03
- Techsmith Codec 2.0.4
- Techsmith Screen Recorder Control 3.0
- MS-Remote Desktop RDP Client Control 5.2
- PI HID Device Communication 1.4.1
- PI Engineering X-Keys Control 1.0 for support of the X-keys SE joystick keyboard
- VCS RCP Plus Lib 2.16
- Microsoft .Net Framework 2.0 (for Video SDK BVIP and Divar XF display)
- Microsoft .Net Framework 3.0 (for Video SDK Dibos 8 and BVMS 2.0.1 NVR display)
(The software package "Microsoft .NET Framework 2.0 and 3.0" is required on the BIS client, if you want to view VCS, DiBos or BVMS NVRcontrols with the Video SDK 4.43. The installation package can be found on the BIS installation CD under "{BIS installation CD}\BIS\3rd_Party\dot-NET\2.0\dotnetfx.exe.")



NOTE! Make sure that these are available in identical software versions when you install external applications on a server or client that are using the same components!

The following software packages are also on the VIE installation CD (third-party software folder).

They can be temporarily installed on the server to simplify configuration of the video subsystems used:

- MS Java Runtime (for the VCS Videojets web interface settings)
- Sun Java Virtual Machine (for the VCS Videojets web interface settings)
- Allegiant MCS Software LTC 8850 Ver. 2.0
- VCS Vidos Lite Config Manager 1.6
- Divar Config Tool and Control Center 2.23
- Divar XF Config Tool
- VSDK 4.43.03.03 including Video SDK OPC-Server

3.6 Increments in BIS 2.3 setup

The BIS 2.3 setup installs the following tool automatically in case the VIE ist selected:

- VCS Configuration Tool
- Divar CT
- Divar XF CT
- VRM Config Tool
- Java VM
- Archive Player

3.7 Additional Minimum Requirements Hardware VIE Client PC

- 3 GHz Pentium 4 or Intel Core 2 Duo 2.66 GHz or greater



NOTE!

Decoding of H.264 requires quite some CPU performance. You may decode only 8 streams on a 2.66 GHz Dual Core CPU Client

-
- 4 GB RAM (especially for Camera Sequencing in virtual Matrix or Multiview)
 - VGA graphical adapter acc. to the Video requirements below

3.8 Supported video devices (DVRs)

The Video Engine supports the following digital video recorders (DVRs)

- DiBos 7.4 (excluded are IE7 and Vista Clients)(add 1 'VIE Camera' License per Camera)
- DiBos 8.7 (Englisch, German)(add 1 'VIE Camera' License per Camera)
 - Multiple Client connections
 - Archiv display
- DiBos 8.2 an 8.3 for
 - Metadata Search
 - Actionplan Snapshots
 - Alarm Freeze Frame
 - Reference Image Check
- DiBos 8.3 incl. patch for PTZ Control
- Divar 1.2 & 2.0 (add 1 'VIE Camera' License per Camera)
- Divar XF
- Videojet 10 S&E (add 1 'VIE Camera' License per Camera)
- Videojet 800x including Archive Recordings on internal hard disc (add 8 'VIE Camera' Licenses)
- VIP 10 S&E
- VIP-X 1, 2, D
- VIP-X 1600 module (add 1 'VIE Camera' License per Camera)
- Dinion IP, Gen4 IP Dome (add 1 'VIE Camera' License)
- Video Recording Manager VRM 2.0
- VIP-X USB Harddrives for Video archives
- VIP-X iSCSI Recording
- VIP-X 10,-20,-40
- PI Engineering X-keys SE joystick keyboard
- Divar XF (add 1 'VIE IP Camera' License per Camera)
- 3rd party 'active' IP Cams, Encoder, DVR or NVR (add 1 'VIE IP Camera' License per Cam)
- JPEG IP Camera, virtual Camera with PTZ Preposition or Privacy Zone (free of charge)

Please take care of the individual requirements and restrictions of the Video Display Controls of the different device types.

Please provide a VIE Client Environment designed according to those needs.



NOTE! The use of the functional range is restricted. Not all subsystems offer the same functions as the VIE, or conversely, some subsystem functions are not supported by the VIE. Please check carefully the feature list on device types and versions!.

3.9 Video SDK Display Control Version History

Following Video SDK versions had been included in Video Engine Releases:

1. Divar SDK 3.00 - For BIS Video Engine
2. Divar SDK 3.01 - Update for BIS Video Engine and commercial release
3. Divar SDK 3.05 - Update for Divar 2.20 changes and BIS
4. Video SDK 4.32 - Additional support for the BVIP 2.50 firmware release and Searching and replay enhancements
5. Video SDK 4.41 - Support of legacy BVIP and new Firmware, Divar XF, Dibos, VRM2.0

The SDK reuses the following off-the-shelf components:

- Aware wavelet decoder - for decompressing Divar 2 video images
- Independent JPEG Group library - for creating JPEG images
- Elecard MPEG-2 decoder - for decompressing BVIP MPEG-2 video streams
- Ateme MPEG-4 decoder - for decompressing DiBos8 video images
- Microsoft DirectShow filters

3.10 Compatibility

The Video Engine Application includes the most recent versions of software components and tested together with video devices in a variety of, but not all firmware versions.

Not every video device series and firmware is covered but may be supported due to SDK compatibility reasons. This may cover

the older VCS Videojet series, former DiBos versions or upcoming new devices and SW-versions.

Please take care of the individual requirements and restrictions for the Video Display Controls of the different video devices.

Provide a VIE Client Environment, e. g. graphics adapter, designed according to those needs.

The Video Engine Application is delivered with the most recent versions of controls and tested with a set of different firmware versions.

Not every product firmware and series is covered but may be supported due to SDK compatibility reasons even if not mentioned here explicitly. This may cover the older VCS VideoJet series, former DiBos versions as well as upcoming devices and SW-versions, but is not granted.

Please take care that you'll receive a PI engineering x-keys Joy-stick keyboard with SE firmware.

PI Engineering does not guarantee a backward compatibility of the new MWII firmware devices.

NOTE!

BVMS, Access PE and Access Vision are incompatible to VIE!

If any Bosch Video Application is installed and operated on the same platform like the Video Engine, please double check, that the Revision No. of the VSDK display is exactly the same:

VIE 2.4 requires VSDK 4.43.03.03 and is incompatible to 4.32.10!



3.11 License

BIS uses the license information to prevent you from configuring system features that are not enabled on your system. The following VIE license information will be checked:

Category	Features	Value	Curr. Value
Products	Video Engine		
Video Engine	DiBos sender		
	Divar sender		
	VCS sender		
	VIE Video Cameras		
	X-Keyboard Licence		

NOTE!



Exceeding the license limits will have negative effects for the operation. - The values can be found in BIS Configuration Browser under *Administration > License*.

For more information see also online help for the BIS Configuration browser!

3.12 VIE functional behavior - Subsystems

3.12.1 Video Engine Multiview

BIS Video Engine features for video subsystems															Image-Archive Performance														
Video Engine 2.2															Performance														
Matrix															VCS Videopoint & VIP Series														
= not supported by BIS = not supported = fully supported															= no guaranteed & tested support of legacy system, may work for SDK compatibility reasons = not evaluated yet = not guaranteed & tested, may work for SDK compatibility reasons														
Matrix															VCS Videopoint & VIP Series														
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3.12.2 Service Interface - Restrictions - Videoalarm

BIS Video Engine features for video subsystems Video Engine 2.2														no quarantied & tested support of legacy system, may work for SDK compatibility reasons no evaluated yet not quarantied & tested, may work for SDK compatibility reasons				Image-Archive Performance											
														= not supported by BIS = not supported = fully supported															
Matrix														DIBOS				JPEG / Wavelet				VCS Videogate & VIP Series				NVR			
														DIBOS				DIBos				Decoder				VIP-X Series			
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3.12.3 Alarm Workflow - Control via Multiview

BIS Video Engine features for video subsystems Video Engine 2.2	Matrix	⊙ = not supported by BIS ⊙ = not supported ⊙ = fully supported		⊙ = no quantified & tested support of legacy system, may work for SDK compatibility reasons ⊙ = not evaluated yet ⊙ = not quantified & tested, may work for SDK compatibility reasons		Image-Archive Performance	
		Matrix		VCS Videogot & VIP Series		NVR	
		MPEG4 DiBos 8.4		Decoder		VRM 1.1	
		JPG DiBos 7.4		VIP Series X1.2,10,20,40,1600, 8004&8(A) 2.5		BIS VIE	
Features: Device-Specific Behaviour Video Alarm Workflow (via HTML-Frame Control)	LTC 8x800	DVR 1,2/2		VIP-10E 100E			
		DiBos 8.4		VIP-10S V.10S			
		DiBos 7.4		VIP-10E 100E			
		DiBos 8.4		VIP-10E 100E			
Display live images in misc documents Display archive images in actionplans incl. still image in Logbook Display archive images in misc documents Display images with Archive Toolbar in misc documents Change prealarm time for archive image display in misc documents Logbook: Display Stored Image from Misc. Docs via HTML-Link Display live/archive images in Fly-Out Window(Frame Ctrl) next to MV	LTC 8x800	DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			
		DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			
Control via Video Engine Multiview Cameo Toolbar	LTC 8x800	DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			
		DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			
Dual Encoding for best use of bandwidth: Select 2nd Video Stream, Mult Switch DVR/Cameo related Output Relay On/Off and display Status Switch DVR/Cameo related Virtual Inputs On/Off and display Status Switch VMD Motion Information Display in Image On/Off Control Auxiliaries(Aux) like Relais (Light,Gate,...)&Virtual Inputs via Came Display & Switch to other Archive Selection / Recording Track	LTC 8x800	DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			
		DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			
PTZ / Autodome Camera Call Autodome Preset Positions & change PTZ Speed from 1..15 Call Virtual Camera from sitemap with Autodome Preset Position Set Autodome Preset Positions iWin PTZ iWin Panel Video Engine with Preset Positions CCTV-USB Keyboard & Joystick Control 3rd party PTZ support Max. Number of Autodome Preset Positions	LTC 8x800	DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			
		DiBos 8.4		VIP-10E 100E			
		DiBos 7.4		VIP-10E 100E			

3.12.4 Monitoring and Control via OPC-Interface

Video Engine 2.2	Matrix										Performance	
	MPEG4		DiBos		JPEG /Wavelet		DiBos		DiBos		DiBos	
	LTC 8x100	DiBos 8.4	DiBos 7.4	DiBos 7.4	DiBos 1.2/2	DiBos 1.2/2	DiBos 1.2/2	DiBos 1.2/2	DiBos 1.2/2	DiBos 1.2/2	DiBos 1.2/2	DiBos 1.2/2
Features: Device Specific Behaviour Monitoring & Control via OPC-Interface Limitation: Maximum Number of	1	1	1	1	10	1	1	1	1	1	1	1
	10	1	1	1	1	1	1	1	1	1	1	1
devices / DVRs to be monitored & controlled via single OPC-Server												
OPC-Server instances to be operated on single Remote-Server												
OPC-Clients (Management Systems) connecting to the OPC-Server												
Switch Digital Output Relay On/Off & Display Status												
Virtual Input												
Display Status of Virtual Inputs												
Trigger alarm recording / Switch Virtual Input												
Trigger alarm recording with Alarm ID												
Bookmark Recording with Metadata (ATMPOS support)												
Video Image Archive												
Delete video clip / archive												
Protect video clip from being deleted												
Unprotect video clip for being later deleted												
Change Video Recording Rate												
Start & Stop of Video Recording												
Start remote Image Backup on device												
Video Motion Detector (VMD): Activate/ Deactivate Motion Detection												
Signal Video Motion Alarm of VMD												
PTZ, Autodome Camera												
Send Auxiliary (Aux) Commands to Autodome Camera												
Set Autodome Preset Positions												
Call Autodome Preset Positions												
Control of connected auto domes												
More Autodome Camera												
Digital Video Monitor Wall (DVM) (with analog Video Out)												
Switch selected Camera to Monitor												
Switch Decoder Output Monitor to Camera												
Selected Video Stream for Decoder/Video Output (e.g. analog Monitor or												
VIP-X D w/o Quad display												
VIP-X 1600XFD MD w/o Quad display												
Videoljet 10 D												
VIP 10 D												
Videoljet 1000 E												

4 Technical Specifications and Restrictions

4.1 Default settings and limitations

For the Video Engine Web application, there are factory-set restrictions as well as minimum requirements for environmental conditions.

The following restrictions are defined in the Web.config (\\IISRoot\\VideoEngineWeb\\Web.config) of the Video Engine Web application:

4.1.1 General

- The maximum cameo number is limited in default to 16 video display windows in the Video Engine multiview, on up to VGA monitors per client.
- The CPU Usage Limit is set to 95% in default. All user requests for new Cameos over a client processor load of 95% will be denied. Values over 100% will disable the limitation by CPU load. In certain installations the customer may lower the allowed level , in order to offer more CPU performance for the start of other applications on the workstation.

4.1.2 Export

- Minimum required disk memory for video export: 200 MByte and a maximum time of 240 seconds
- The factory-set directory path for video export is the workstation desktop at the \\VE-Capture\\ path.
- The screenshot naming follows in default the template 'snapshot-#Timestamp#.jpg'
- On a Client you may allow custom encoder to be used for Exporting Video. may be supported. The Codec has to be installed by yourself onto every Client. If you enable the setting, e.g. a XviD Codec may be selected as 'Custom Encoder' within the Options Dialog.
The properties of the coding may be set in the Codec dia-

log opened via '...' -button from the settings page. This selected Codec will be used by the Multiview to encode and replay any video. If you would like to use a different Codec than Techsmith or JPEG, we recommend <http://www.xvid.org> .

Other encoders may work as well: you will find many of them: E.g. for mobile messaging to cellular smart phones the 3GP Codec <http://www.hdx4.com>.

<http://www.divx.com> may offer useful Codec as well.

Please check yourself and verify the correct operation within your environment on your own risk.

4.1.3 Virtual matrix

- Fixed delay time for displaying events in the virtual matrix:
 - Delay for displaying the subsequent alarm row: 3000 Milliseconds.
 - The Delay for displaying the next camera within a single alarm row: 300 Milliseconds.

These are the so called Automode Parameter

- The number of alarm rows (or alarm lines) and alarm columns is factory-set to a 4x4 matrix
- Some limitations apply to particular server types within the Video Engine because certain types of camera server do not fulfill the requirements of specific display modes, such as the virtual matrix.
- In some environments covering the high performance needs on CPU and Graphic processor those videostreams may be displayed as well.
- All VCS Videojet types are not anymore excluded from automode / the virtual matrix and may be displayed on clients with sufficient performance like Dual Core high performance graphic adapters.

4.1.4 Multiview display

- Video Alarm Events are in default not presented to the user within the Multiview. The workstation user has to switch to the virtual matrix view to see the alarms being displayed.

- The Video Engine won't open Automode Commands in multiview in default. You may enable the mixed display of video alarm Events in the Multiview instead of the separate virtual Matrix View in the VIE Client Options Dialog.
- The Video Engine maintains an aspect of 4:3 for every cameo in default mode
- The maximum number of open camera displays on all monitors is set to 16 video images in default mode
- All users can change settings in the Multiview display using the options dialog box when in factory-set default mode. The video export and the export path can be changed.

4.1.5 Customize Multiview User Interface

- The user of the Video Engine Multiview display can always switch to the alarm matrix mode and back via in default mode the 'Matrix' button.
- The CPU load is displayed within the Multiview display with the help of the Performance Meter.
- The Video Engine has a general Bosch layout in the form of a Bosch Cascading Style Sheet (CSS)
- The Multiview shows Favorites button and/or shows Camera List button in default mode.
- DiBos 8 show Relays and Inputs in header does in default not show links for the relays- and virtual inputs control page in the cameo headerbar.

4.1.6 User Access Rights and Permissions

- Some of the Video Engine Multiview features may be restricted to some or no users. This may be done by assigning those users in form of a comma-separated list to single permissions: E.g. for permission of
 - user1 and user2 assign the values: "<user1>,<user2>"
 - all users use "*"
 - for no user place ""
 - for all users, but not for user1 and user2 use "*,!<user1>,!<user2>"
 - user "default" is used when running outside of BIS, e.g. if the Video Engine is started in service mode

- use entry “Administrator” or “BIS” to restrict the permission to an Administrator

Following single permissions are enabled in default settings for all users in the Video Engine Multiview:

- Options to be accessed to change client sided settings
- Export to be executed in Multiview
- Changing export path in options dialog
- Matrix Mode to be entered from Multiview
- Editing Camera List
- Editing Favorites
- Editing Other Camera Lists is activeated in default for "Administrator, BIS, default"
- Setting Autodome Positions
- Call PTZ preset position
- Using Audio for the user activation of a VIP-X Loudspeaker, microphone and both via Intercom button for receiving and sending audio
- SettingReferenceImages
- ShowingReferenceImages
- Alarmlist
- Pausing Live Image in Cameo
- DiBos Metadata
- Prio for PTZ Control
- Configuration of Alarm Layouts

4.1.7 User Accounts in Service Interface (VIE Viewer)

To activate the VIE Viewer please

1. Start install vie-viewer.vbs from \\VideoEngineWeb\
2. Enter 'http://localhost/VieViewer/startWithConfig.aspx' in your Internet explorer.
3. Register the installation via the Product Support
4. Log into the VIE Viewer Interface of the Video Engine with one of the following user accounts:

There are different ways to log into the service interface of the Video Engine: In the web.config application you will find default

'Settings for VE-viewer' for the various users assigned to following levels:

- Super- or Poweruser: Login with one of the default accounts 'a' 'a' as superuser. You will have access to all Video Devices matching the user account's settings in the VIE Config Manager
- User : Login with one of the default accounts, e.g. 'b' 'b' as a regular user. This access account has to be available in the DVR you would like to access. If the requested video camera does not fit the login you will get an 'access denied' message.
- Any Video Device User : Login with one account of any of the video devices, which has not to be configured in the Video Engine at all and represented by '*'/*' in the User Rights Settings of the VE-Viewer in the web.config. For example, login as USER 2, 'user2' to have access to all Divar systems.
- Another example is a login with 'a' ' ' to obtain a list of all of your devices. However, you will only get access e.g. to Dibos systems matching that account. If any other device is requested which does not fit the login you will get an 'access denied' message.
- For Divar a login with any of the default user Accounts ADMINISTRATOR, USER 2, ..., USER 6 or
- For the Videojets the accounts 'live', 'user' and 'service' may be used.
- Administrator: This account is not specified in the web.config application. To change the video sources of the Service Interface (VE-viewer) you have to login using an administrator account 'x', where 'x' is the default VE Account as set up in the VIE Config Manager application. You may change this account in the ConfigManager.

Please specify the User and Superuser accounts within the web.config settings for VE-Viewer in the format: 'user/password;user/password' . A general activation of device user accounts is achieved by a user account '*'/*'. With the setting

"/" no user account is necessary to log on at all and everybody has free access.

4.1.8 Video server

- The VCS Videojet server is displayed within the Video Engine with the current archive date stamp in the Multiview cameo title bar.
- To access the image display of the Divar systems, the Video Engine will, in default mode, make dynamic use of one of the 4 (or 5, if no OPC server is being used) available Divar user accounts that are not currently being used and release it after use. Factory settings are such that the Video Engine will not revert back to static accounts. These Divar user accounts - which are statically allocated to individual Video Engine clients - could be required if a Divar video system is simultaneously displayed in more than one virtual matrix (in 2 clients, for example). However, this mode is not supported by factory settings.
- If static accounts are used for a maximum of 4-6 VIE user clients, please enter the divar User mapping in following way: BIS-User/Divar-User-No starting with 1 for the ADMINISTRATOR account of divar like "vie-user1/6; vie-user 2/5; vie-user3/4; vie-user4/3; vie-user5/2".

The BIS VIE Users are mapped to following Divar Accounts:

- vie-user1 -- USER6
 - vie-user2 -- USER5
 - vie-user3 -- USER4
 - vie-user4 -- USER3
 - vie-user5 -- USER2
- If only one Divar is in use the initialisation may be accelerated by using a preloaded control. Please specify the preloaded IP Address of the divar system.
 - The Video Engine may offer for DiBos a capture Button for original pictures in the authentic JPEG format within the Cameo titelbar labeled 'Export'. This allows to backup

every DiBos search results for metadata queries like credit card number searches.

- DiBos7 may show additional information for archives in multiple lines at the bottom of every cameo:
DiBos7 showArchiveInfoInMultipleLines.
- DiBos8 Date Time In Header is deactivated in default: DiBos8 cameos do not show the current timestamp in header of archive views.
- DiBos8 Relays and Inputs in Header does in default not show links for the relays- and virtual inputs control page in the cameo headerbar.
- DiBos 8.4 shows the toggle button 'M' in the Cameo header by default. The Motion Information Overlay in the image display may be switched on or off by pressing this button in the cameo header.
- The BVMS OPC-Server Cameras Items are disabled by default from being displayed in the Video Engine. If the setting is enabled, the VIE Multiview can display live and locally recorded video from the associated IP cameras.
- The BVMS NVR recordings of the Videojet cameras can't be replayed in the Multiview, because BVMS does not offer a web interface. Please use a 2 monitor BIS-BVMS Workstation to display BVMS NVR recordings via the Combined BVMS-BIS User Interface. Calling BVMS Cameras via their Camera ID URL is not supported by the Video Engine for BVMS Camera IDs are unknown to the Video Engine.
Note: In order to make the BVMS Camera ID known to the Video Engine, map the Camera IDs to their Videojet URL addresses by copying the BVMSOPCConfig.xml file to the folder \VideoEngine\Data folder. *The camera has to have the associated IP-Adr. in it's name, since the BVMS XML file does not offer an attribute 'IP-Adress', e. g.*
"Camera143(140.10.1.13)"

4.1.9 Favorites

- Favorites and the Camera List in the Multiview display are saved in default mode by the server.

- Every Video Engine user has his own Favorites or Camera List in default mode.
- Every Video Engine user has the right to edit his camera list and Favorites in default mode according to his requirements.
- Video Engine users are not permitted to edit the camera list or Favorites of another user in default mode. Exception: only Administrators and BIS users have this editing option.
- "The Multiview shows Favorites button and/or shows Camera List button in default mode.
- "The user is in default not able to open archive on right-clicking a camera in the cameralist. This may only be activated if every user has the access right to see live and archive images of his favorite camera selection.

Alarm Cameos and 16:9 Layouts:

- Possible modes: Wide (for 16:10 and 16:9), Regular (for 4:3), 'both' (wide and regular) and Automatic
- Start Alarm Layout with the possible Layout 1-7 or 'last' to open the last alarmLayout the VIE was closed with
- Display of an on-screen message on setting the lease time for PTZ cameras

Video SDK:

- Enable/disable the on-screen overlay (camera name and playback time)
- VRM replay method for iSCSI drives either Direct [= direct iSCSI] or VRM [= over VRM])

Analog Monitor Group Decoder

- Switch from Hires Stream 1 to LowRes Stream 2 On Quad View Display for decoder performance purposes

User Permission and Priorities to Control PTZ cameras

- A list of users and PTZ priorities is specified:
<user>:<prio>,<user>:<prio>..... e.g. user1:0,user2:2. The Prios start from 0 (low prio) to 5 (highest prio except of Administrator).

- A user with the Prio Level A (for Administrator) means he sets the PTZ lease time with highest priority and blocks all other out

4.2 Video SDK Network Ports

You may specify following ports to be used by the Video Engine Multiview display as URL in the VCS OPC Config Tool.

4.2.1 BVMS Connection

BVMS Connection of Video Engine VSDK via Central Server or Client Workstations to BVMS NVR Recordings to:

- Central Server: TCP ports (default) 5390 and 5391
- Operator Client Workstations: TCP port (default) 5394

4.3 Connection to DiBos DVRs via DCOM:

- TCP Port 135 plus four TCP ports and
- four UDP ports dynamically assigned in the range from 1025 to 65535

4.3.1 Connection to Bosch encoders and decoders:

- Control channel: TCP ports 80 and 1756
- Network scan: UDP ports 1757 and 1758
- Multicast detection: UDP port (default= 1900)
- Multicast video transmission: for each encoder audio or video stream, 1 selectable UDP port
- Unicast UDP transmission: UDP ports dynamically assigned in the range from 1024 to 65000

4.4 VRM Specification

- Max. data rate per iSCSI for Bosch DVA-12TK: 200 Mbps
- Max. IP cameras/encoders per iSCSI for Bosch DVA-12T: 63 concurrent iSCSI connections
- Max. number IP cameras/encoders channels per VRM: 500
- Max. number of Replay Sessions: 32
- Supported Devices MPEG-4 BVIP X series encoders: Dinion IP series cameras

4.5 Overview in table form

4.5.1 Video Engine

Default Settings & Limitations BIS Video Engine		60 Properties
Video Engine 2.1		
Key	Default Value	Feature Description
Video Engine, General		
logExceptions	TRUE	switch on/off exception-logging to <web-app>\Data\VideoEngineServer.log
customErrorPage	TRUE	show user-friendly error-message (true) or detailed error-message (false)
spaceOnHDForCapturing	200	demand of minimal drive-space for capturing in MB
autoModeParams	3000;600	delay-parameter for auto-mode: delayForRowNextRow;delayForRowNextAutoCameo
maintainRatio	TRUE	switch on/off of the side-ratio of 4:3 for images
maximumSaveTime	240	maximum time of recording for screen-captures in seconds
numberOfAlarmRows	4	number of rows and columns in automode
maxCameoNumber	16	max number of open cameos on all monitors
nameOfHelpFile	VIE_help.chm	name of *.chm oder *.htm-file for help
ShowCpuUsage	TRUE	Show CPU-usage
cpuUsageLimit	95%	No further Cameos will be opened, if this limit is exceeded. Values>100% will disable the limitation
restartDummy	0	flag for configManager to force reload of the web-app: do not change
stylesheetPath	Style\Vms_brushed.css	path of loaded stylesheet, default: Style\Vms_brushed.css , Greystyle: Style\Vms_grey.css , Bosch-Style: Style\Vms_bosch.css
excludeFromAutomode	-	camera-types, that should be excluded from automode (,-separated list)
excludeOPCServerTypes	BoschOPCServerBVMS	opc-server-types, that should be excluded from VIE (,-separated list)
openAutomodeCommandsInMultiview	TRUE	autoCommands are opened in multiview-mode
showMatrixButton	TRUE	show button to switch to matrix mode in VE
disableLoadCursorIE	TRUE	the LoadCursor (Hourglass) can be disabled to avoid annoying cursorchanges for Jpeg-Cameras
enableKeyboardSupport	TRUE	should VE support xkeys-keyboard
defaultCapturePath	DESKTOP\VE-Capture\	Default path for capturing snapshots and video, e.g. c:\Export\ or DESKTOP\Export\
allowCustomEncoder	TRUE	Show button in the settings-dialog to choose between all encoders on the client computer (e.g. Xvid)
enableAudioCapturing	ifSupported	enable/disable audio-recording in export videos on client side: This will enlarge the final file-size accordingly.Before recording be sure to set recording properties of the soundcard to Wave-Output Mix Possible values: always - every export-file will include audio from soundcard ifSupported - audio will be included only if the video-server supports an audio channel (e.g. videojets)never - no audio is included
screenshotNaming	snapshot-#Timestamp#.jpg	Naming for saved snapshots. Date and time can be added by #Timestamp# to make them unique
toggleLiveArchiveButton	false	xkeys-keyboard: if true then button next to ptz-mode toggles between live and archive in the selected cameo else it shows and hides yellow selection border
cabVersion	2,1,1000,0	When started on client-side the application tries to download the cab-files with this version or a higher version than this cab
disableScreensaver	true	a screensaver can cause trouble with some video-AXs, so it's better to disable it. If set to false, just a warning appears on VIE-startup.
replayMenuSettings	Default	you can define your own ReplayMenu for the archive-command of a camera A1 e.g. "Replay 30 sec;Replay 1 min;Replay 10 min;Replay 2h;Default[30;60;600;7200;default]" will create a menu with four entries; the numbers after "[]" are the corresponding seconds to replay - leaving the value empty will show the (localized) default menu
sizeAlarmQueue	10	set the number of events that are buffered and shown in the matrix view (value has to be between 1 and 30)

4.5.2 Subsystems

Default Settings & Limitations BIS Video Engine		60 Properties
Video Engine 2.1		
Key	Default Value	Feature Description
Dibos:		
delayBetweenPictures	-	Dibos7: delay between pictures of JPG-Cameras (dibos, certain ip-cameras) - standard is
maxPicturesPerSecond	-	Dibos7: pictures per second of all JPG-Cameras (dibos, certain ip-cameras) - standard is
supportDibos74Patch	FALSE	set to true if Dibos74Update was installed (it removes the refresh when maxPicturesPerSecond was set)
dibos7_captureButtonForOriginalPictures	FALSE	Dibos7: enables capturing of original pictures from server when in search-mode
dibos7_showArchiveInforInMultipleLines	FALSE	
dibos8_showDateTimeInHeader	TRUE	Dibos8: show current timestamp in header of archives
dibos8_showRelaysInHeader	FALSE	Dibos8: show links for relays and inputs in headerbar
VCS BVIP		
vcs_showTimestampInCaption	TRUE	Show Current archive-timestamp in caption-bar of VCS-cameo
vcs_showButtonSettingsInCaption	FALSE	Show Settings-Button in caption-bar of VCS-cameo
Divar		
divarUserMapping	-	User-mapping for DIVAR BIS-User/Divar-Account-No-in-ve config (default: 1=ADMINISTRATOR) e.g. divar1&divar2&divar3&divar4&divar5&divar6
preloadedIPAddress	-	If preloaded was selected then the following ip-address is used for preloading a divar-proxy if empty then the proxy-page but no special proxy is preloaded
numberOfDivarAccounts 0	0	If divar uses a firmware version higher than 2.1x you don't need an account to check logged-in users and therefore you can use this account for live-images. But then you have to set the total number Of DivarAccounts. If param set to 0 the old algorithm is used (one account will be used exclusively to check the logged-in users
Cameralist Favorites		
locationForCameraList server	SERVER	Location where to save the Cameralist. Possible values: server/client
locationForFavorites server	SERVER	Location where to save the Favorites-List. Possible values: server/client
cameraListPerUser	TRUE	Should every user get his own camera-list
favoritesPerUser	TRUE	Should every user get his own favorite-list
showCameraListButton	TRUE	show camera-list button in VE
showFavoritesButton	TRUE	show favorites button in VE
openArchiveOnRightClick	FALSE	Open archive when rightclicking a camera in the cameralist ? Possible values: true/false
User Permissions		
	<user1>,<user2><*>,<user1>,<user2>	Some of the features can be restricted by assigning them to a comma-separated list of users. Possible values: <user1>,<user2><*>,<user1>,<user2> for all users but not for user1 and user2
permissionForOptions	*	permission to open the options-dialog
permissionForExport	*	permission to use the export-functions
permissionForChangingExportPath	*	permission to change the export-path
permissionForMatrixMode	*	permission to switch into matrix-mode
permissionForEditingCameraList	*	permission to edit CameraLists
permissionForEditingFavorites	Administrator,BIS,default	permission to edit favorite-list
permissionForEditingOtherCameraLists	*	permission to edit CameraLists of other users, user default is used when running outside of BIS
permissionForSettingAutodomePositions	*	permission to setting positions of dome cameras
permissionForUsingPTZ	*	permission to using ptz-functions of ptz cameras
VIE Service Interface, stand alone		
RuntimeMode embedded	embedded	Runtime-Mode of VE. Possible values are: standalone, embedded (default)
PowerUserForStandaloneMode	a/a	User that can see the configured cameras by using the accounts of the config-manager. Format: user/password
UserForStandaloneMode	b/b;*/#	Semicolon-separated user-list that can see the configured cameras by using these values to login. Format: 'user/password;user/password;*/# = every user account is accepted, / = no user account is necessary

5 Requirements - Restrictions

The capacity of network connections and video web servers, e.g. DiBos, Divar and Videojets, must be taken into account and the complete system set up accordingly. Configuration of the virtual matrix should be adapted to the capacity of the peripherals. If these requirements are not met, informative messages are displayed to simplify the optimization of:

- Video servers
- Network architecture
- Client performance
- Configuration of the virtual matrix

5.1 Video Engine and subsystems generally

5.1.1 General

- The Screensaver of any Video Engine Client will be automatically disabled by the Video Engine Multiview, since the resource requests may collide with those of the video display
- The Videojet OPC server may only control a single view of the VIP-X D decoder video output. The Quad view is not supported by the VIE.
- The Configuration Tools for Allegiant and the Videojet OPC-Server incl. Online Help are only available in English. The Divar OPC-Server and Config Tool support English as only Language as well: In installations of a different language, never update the default detector types and commands while browsing the OPC-interface, in order to keep the language settings
- A maximum of 16 video display windows in the Video Engine multiview, up to a maximum of 4 VGA monitors per client.
- 8 clients can be simultaneously connected to the display of a DiBos 7. If a 9th client is connected, it will receive an error message.

- 3 clients can be simultaneously connected to the display of a DiBos 8. If a 4th client is connected, it will receive an error message.
- 3 cameras from one DiVar per client (current limit, subject to change).
- A maximum of 5 clients per DiVar (DiVar limit, same CC).
- Multiview from one camera for archive/live images and searches are possible (Pentaplex Mode).
- The Screensaver of any Video Engine Client will be automatically disabled by the Video Engine Multiview, since the resource requests may collide with those of the video display
- Most of the active components don't support the logging within the Management System BIS Action Plan (e.g. Active X Control of DiBos8, Videojet or Divar)
- For a status refresh of an OPC-Client (e.g. the BIS Server) connecting to a running OPC-Server, please restart the OPC-Server.
- After reconfiguration of a running OPC-Server please restart the OPC-Server for offering the new namespace
- For the display of archived images, please take care that the Video Engine server, client and video devices are time synchronized within the same time zone.
- The Configuration Tools for Allegiant and the Videojet OPC-Server incl. Online Help are only available in English. The Divar OPC-Server and Config Tool support English as only language as well: In installations of a different language, never update the default detector types and commands while browsing the OPC-interface, in order to keep the language settings
- Misc. Documents of DiBos support now like the ones for VCS and Divar a VIE redirect, so that an access protection via DiBos login may be configured. Please update your VIE xxx Configuration to the new HTML Documents of Vers. 2.2.
- The BIS Configuration Browser requires arguments for virtual Matrix commands to Divar (and Videojets) like URL,

camera and target operator. You only need to provide camera no. and target operator.

- BVMS NVR recordings from Videojet cameras can not be replayed in the Multiview. BVMS does not offer a Web Interface. Please use a dual monitor BIS-BVMS workstation to display BVMS NVR recordings. Please use the BIS-BVMS Client to display BVMS NVR recordings. Please use a dual monitor BIS-BVMS workstation to display BVMS NVR recordings.
- BVMS Cameras based on the 'BVMS OPC Server' are excluded from display in the Video Engine by a web.config setting. In order to resolve the BVMS Camera URLs in the Video Engine Multiview, copy the BVMSConfig.xml file into the VideoEngine\..\Data folder. After this the Video Engine will navigate to the associated Videojet camera source.
- A Video Engine Multiview may not be operated concurrently with a BVMS Workstation coupled to a BIS Client, since all Video requests will be answered by only one of the video management systems.

5.1.2 Video Display

- To display archive images and alarm videos, please time synchronize the Video Engine server, client and DVRs.
- Requesting frequently (e.g. automatically) cameras of a single video server from different VIE clients may overload the device. Please refer to the device manuals and optimize frame rate, recording and network settings.
- The virtual matrix must be shut-down every 24 hours for safety reasons.
- VIE may cause system overloads on video server: with frequent automatic requests for video images from individual video server cameras and/or with simultaneous requests for video images from several VIE workstations. Frame rates, recording parameters and networks should be optimized (instructions and help with settings can be found in the device manuals).

- Privacy Zones are not supported by the management system's alarm workflow in the Misc. Docs. Please take care of this restriction in terms of privacy issues.
- DiBos 7 and other JPEG-IP Camera displays will cause a flickering of the non-regular cursors like the In-Window PTZ Mouse Cursor. The Tooltip within the Sitemap will fail: Please install the Active JPEG support from the BIS Setup CD \tools onto the DiBos7 system. For IP-Cameras change the target page for live display from 'ipcam' to 'ActiveJpegAx'.
- After changing the configuration of DiBos 8, the DiBos Web Application has to be restarted. This may be done by restarting the VIE Client, in order to access any Video stream.
- On opening a new DiBos 8 Cameo the video of the already displayed DiBos 8 cameras will flicker.
- Custom Encoder Support: The Video Engine Multiview may be configured to use any available codec installed on the workstation, please check before hand if the necessary codec runs properly on your workstation environment, and supports the specified resolutions of the Multiview, i. e. 1 - 16 Cameos as $\frac{1}{2}$, $\frac{1}{4}$ image in a minimized to maximized cameo space. The installer himself is fully responsible for any custom encoder used. The video export with custom encoders like DivX or Xvid may fail due to restrictions and limitations of these 3rd party codecs. Please verify for every 3rd party encoder and decoder in the VIE environment if the cameo Multiview resolutions is supported by the codec.

5.1.3 DiBos 8

- For the DiBos 8 an update is available. Please notice the closed and known issues of the DiBos Release 8.2. Use this Version for the PTZ-Panel and CCTV-Keybord support.
- Even if Dibos8.2 supports the operation in different time zones. The Video Engine Archive display may not support

the operation in different time zones and may display wrong Archvie times.

- After changing the configuration of DiBos 8, the DiBos Web Application has to be restarted. This may be done by restarting the VIE Client, in order to access any Video stream.
- On opening a new DiBos 8 Cameo the video of the already displayed DiBos 8 cameras will flicker.
- DiBos 8 does not support PTZ Preposition setting
- The DiBos 8 display control does not support multiple 'Multiview Refreshes', e.g. via refresh button. Please close all DiBos8 cameos to terminate the DiBos connection and request the cameras from scratch.
- On low memory the DiBos 8 Display Control may fail to display images and shows a black cameo. Please provide a Client with sufficient memory
- The very first display of the DiBos 8 control on a single client may cause an upload problem: Please reload the cameo.
- The DiBos 8 Display control is pausing the image display of an Autodome Camera shortly before arriving to it's final position while being in control.
- The Bilinx connection to older Autodome Cameras may fail to signal a 'motion stop', although the VIE takes care of these cases, the PTZ camera may need an additional stop command.
- Dibos 8.2 offers image decoder control snapshots, but does not give feedback whether, for example, a live image is actually displayed after its first initialization. Please use sufficient delay times when capturing or saving snapshots.
- Dibos8.2 supports multiple timezones, and thus displays correct local times during live or archive replay when connecting a single receiver to different Dibos servers. BIS, however, does not support operation across multiple timezones.

- When hiding Dibos 8.7 and 8.8 cameos in the VIE Multiview, the image display is paused and does not resume after maximizing the cameo again.

5.1.4 Multimonitor Clients

- The Sequencing of cameras may only be enabled for a single monitor on every client
- Some multimonitor graphic adapters may not display Video of DiBos8 or Videojet devices. Some may cause further problems. Please follow the recommendations of the device vendors, e.g. their release notes.
- The export of Video displayed on the secondary monitors of a multimonitor client may not be supported due to display driver limitations. You may export blank image content. The video export rescaling is only supported by the first Video Engine monitor. Please export video from the primary monitor.
- For DiBos 8 displays on the secondary monitor the disabling of DirectX support of the Dibos Display Control on Client side may help:
[HKEY_LOCAL_MACHINE\SOFTWARE\Bosch Security Systems\DiBos\8.0\ImageDecoder] "DirectDraw"= dword:00000000
- The export of Video displayed on the secondary monitors of a multimonitor client may not be supported due to display driver limitations. You may export blank image content. Please export video from the primary monitor. The video export rescaling is only supported by the first Video Engine monitor.

5.1.5 Divar

- Divar-SDK, Control Center, Configuration Tool do not allow simultaneous logins under the same user account into the same device. The display of a camera on multiple clients based on a single trigger fails. There has to be a minimal delay between different clients.
- Divar does not allow to login from different Clients at the same point of time, please take care on event procedure

that a camera of a single device is displayed with a minimum delay between two clients.

- Divar2.1 allows the Video Engine login and display without the use of the ADMINISTARTOR account. Please configure 'predefined' divar accounts for each Video Engine Client
- The Video Engine Config Manager now allows the sorting and deletion of single Divar accounts.
- Divar does not allow to control the 4th relais remotely via Video Engine, Control Center or any other Divar Application. The 'Relais 4' Item will only indicate the current status, but any user or automatic control will be ignored.
- For a remote Configuration of a Divar OPC-Server, the Divar OPC Feature has to be installed on the Configuration Client - the login server. The Configuration File is not placed into the right remote server folder. Please transfer it manually.
- For further technical data, requirements and restrictions please refer to the device specifications and release notes of Allegiant, Dibos, Divar, Videojets and the BIS-Products.
- The Divar firmware does not allow the remote control of the Relay 4.
- For the Divar OPC-Server, there are factory-set restrictions and minimum requirements for the system environment. The following restrictions are defined in the Windows Registry [HKEY_LOCAL_MACHINE\SOFTWARE\BOSCH\OPC Servers\Divar\Server]
- The "MaximumNoOfDivars" is set to 10 Divar systems per OPC-Server.

5.1.6 Virtual Digital Matrix (VDM)

The VDM that runs in the Web browser is limited by the capacity of the connected video server and the control displays of individual device types.

For correct and reliable displays in the virtual matrix, you should ensure that the capacity of the video server, network and the clients that appear, incl. their graphics cards, is set up accordingly. The display is generally controlled in a way that:

- The user is in a position to recognize any alarm and the matrix displays each alarm for at least 2 seconds.
- It is monitored whether the devices (e.g. IP cameras) are also really in a position to display the desired video images within the current frames of the virtual matrix.
- Video server or network malfunctions are detected and displayed—as long as they are not automatically remedied by repeatedly carrying out the desired image requirement.
- A maximum of 16 video sources are displayed in the VDM 4x4 matrix (16 cameos in 4 series of alarms).
- A maximum of 10 video alarm events are buffered.
- If the alarm buffer is exceeded by the 11th alarm, a warning message is displayed and the event is discarded.
- There are 10 alarms/seconds in Burst Mode Performance.
- Temporal filter for display: 1 alarm every 3 seconds for nominal performance.
- 2 seconds maximum of reaction time for successful image requests by the video server.
- 500 ms latency time after successful video camera display before the next video camera can be connected.
- The video Web application is refreshed after:
 - Repeatedly unsuccessful requests for video images
 - Communication from more than 1 device: "Page cannot be loaded"
- No Videojet support due to the high performance requirements of a video display element that has been already displayed.
- Only live images from DiBos, Divar and JPEG IP cameras are displayed (set at the factory).
- The virtual matrix must be shut-down every 24 hours for safety reasons.

5.1.7 Further requirements and restrictions

VIE system overloads could occur:

- with frequent automatic requests for video images from individual video server cameras and/or

- with simultaneous requests for video images from several VIE terminals

After such overloads have occurred, frame rates, recording parameters and networks should be optimized (instructions and help with settings can be found in the device manuals).

- For further technical data, requirements and restrictions please refer to the device specifications and release notes of Allegiant, DiBos, Divar, Videojets and the BIS-Products
- The Videojet and DiBos8 video display elements do not support all multimonitor cards. VCS recommends using an NVidia graphics adapter.
- Divar, Divar SDK, Control Center and Configuration Tool do not allow users to log into the same user account for an individual device.
- Most active components (e.g. Active X by DiBos8, Videojet or Divar) do not support any logbook recording of video image contents.
- To display archive images and alarm videos, please synchronize the Video Engine server, client and DVRs
- VideoSDK 4.20.6 for the alternative display of Divar or Videojet livestreams has following restrictions acc. to the release letter:.



NOTE! For further information on specifications as well as the requirements and restrictions of devices connected, please refer to the manuals and version notes from Allegiant, DiBos, Divar, the Videojets and BIS products!

5.2 Requirements for VCS Videojet display

- The Videojet Display Control has been updated to Vers. 3.0.1
- The Videojet MPEGx only supports the combination of the digital VIE Cameo Zoom up to a 2 times zoom of the Display Control itself. The display will fail on a 3 times zoom

- The Videojet MPEGx Control displayed e.g. in the Multiview out of the borders of the visible monitor will require 100% of the CPU performance. Please open VCS cameos only within the visible range of the monitor. You may shift them later without problems via Multiview from the monitor display.
- The local display of Videojet MPEG4 video may fail on some Windows 2003 Server systems. This does not affect the Clients connected to the server.

Please notice the known and closed issues of the MPEGx Release Letter.

For the Videojet display following requirements and restrictions apply acc. to Release Letter 4.32.01.02 (original VCS text):

Video SDK Release Letter

This letter contains the latest information about the above mentioned release 4.32.01.02 of the Bosch Video SDK. This maintenance release is intended for all internal and external customers and replaces the last external available release 4.32.00.10 of the Bosch Video SDK. The problems fixed with this maintenance release are mainly Divar 2 related. Support for the Extreme CCTV IP 200B based cameras is added.

Important Note: This release does NOT support BVMS-NVR.

5.2.1

General

The Bosch Video SDK is a comprehensive library of reusable software components that can be used by other software applications to integrate a wide range of IP video devices under a single object API. It is primarily intended to be used within CCTV applications. The Video SDK consists of high level "objects" that can be manipulated by a client software application through a set of well-defined COM interfaces, abstracting various underlying control and streaming protocols with a common API.

5.2.2 Features

The Video SDK 4.32 includes support for Divar XF, DiBos and BVIP devices. Moreover, this Video SDK release provides support for Windows Vista.

It provides the following features:

- Network device detection.*
- Concurrent network connections to multiple devices.*
- Live video rendering from multiple devices including in-window pan / tilt / zoom (PTZ) control.*
- Playback video rendering from multiple devices including direction, speed, and stepping control.*
- Live and playback audio rendering.*
- Audio streaming to capable devices.*
- Direct audio and video streaming to client applications.*
- Recording of live video and rendering of recorded video.*
- Still image capture.*
- Control of device video and audio.*
- Control of relay outputs.*
- Event notification from device relays and alarms.*
- Device event searching including input alarms and motion alarms.*
- Integrated diagnostic logging.*

Note that not all features are supported by every device.

Miscellaneous Improvements and minor issues have been resolved mostly caused by the Video SDK upgrade from 4.41 to 4.43.

5.2.3 Restrictions; Known Issues

The following issues have been fixed for the Video SDK 4.27.01.01 that was only released along with the BVIP applications and are not incorporated in the Video SDK release 4.32.01.02:

- Smooth reverse replay not supported for BVIP devices*
- Divar2 media files not supported*
- Media-Replay for MPEG-2 not supported*
- DeviceConnector error handling incorrect for offline NVRs*
- VRM Playback: Go to last recording will show wrong video image for a few seconds*

- *Unhandled Exception when taking snapshots in ArchivePlayer*
- *Sporadic deadlocks on disconnecting devices*

5.2.4 **Enhancements**

The following enhancements have been added to this maintenance release:

- *Support for Extreme CCTV IP 200B based cameras*

5.2.5 **Bug Fixes**

The following bugs reported have been addressed with this maintenance release:

- *PAL Divar2 video is not sized correctly in the VideoSDK*
- *Divar2: Streaming fails if multiple streams are started quickly*
- *Divar2: Date/time overlay value is incorrect when displaying Divar2 video in the cameo*
- *Divar2: Sometimes the overlay is displayed correctly, but the video is totally black*
- *After DisconnectVideo() Leaving container open for 10 min. cases crash without any error message*

5.2.6 **Installation Notes**

When installing the Video SDK a user guide and the documentation of the interfaces are installed along with the application.

5.2.7 **System Requirements for VSDK VIE Clients**

For the new Video SDK display in VIE the requirements and restrictions apply according to Release Notes Video SDK 4.41. acc. to this the Video SDK shall be able to run on the following graphics cards:

- *Pentium 4, 2GHz CPU (3GHz for Vista and later)*
- *Microsoft Windows 2000 SP4 or later*
- *256 MB RAM (2GB for Vista and later)*
- *50 MB hard disk capacity*
- *100 Mbps Ethernet card*
- *DirectX 9.0c*
- *One of the following video cards that supports DirectX 9.0:*
- *NVIDIA GeForce 6600 (128 MB, driver version 93.71)*

- NVIDIA Quadro FX 4500 PCIe (512 MB, driver version 162.62)
- NVIDIA GeForce 7950 GT (512 MB, driver version 93.71)
- NVIDIA Quadro FX 3500 PCIe (256 MB, driver version 162.62)
- NVIDIA Quadro FX 1500 PCIe (256 MB, driver version 162.62)
- NVIDIA Quadro FX 4500 PCIe (512 MB, driver version 162.62)
- VER4.30: NVIDIA Quadro NVS 285 PCIe (128 MB, driver version 162.62)
- VER4.30: NVIDIA Quadro NVS 440 PCIe (256 MB, driver version 162.62)
- ATI FireGL V7200 PCIe (256 MB, driver version 8.323)
- ATI FireGL V3300 PCIe (128 MB, driver version 8.323)
- ATI Radeon X1300 (256 MB, driver version 6.12)

For High performance configurations use the following for Windows XP (SP2, SP3) and Windows Vista (SP1):

- Intel® Core™2 Duo Processor E6700 2.67 GHz 4 MB 1066 MHz FSB
- 4 MB L2 Cache
- 1066 MHz Front-Side-Bus (FSB)
- 2 GB DDR2 667 ECC Dual Channel Memory
- Intel 955x Express Chipset
- Integrated 10/100/1000 Mbps Gigabit-Ethernet
- Integrated Audiochip for full-duplex Audio (1x Mic, 1x LSP, 1x Lin-in)
- 160 GB SATA hard drive 7200 r.p.m.
- Graphics card: NVIDIA Quadro FX 4500 PCIe (512 MB, driver version 91.85)
- Dual Monitor

Additional system specifications (e.g. QuadCore CPUs) may be qualified and supported by the Video SDK

.

5.2.8 **Performance Chart MPEG-4 Decoding**

- *This table shows the performance to be expected on a typical PC with equivalent or exceeding performance and configuration as the respective VIDOS station.*
- *Maximum number of Web browser windows may vary depending on video resolution, video quality, data rate and frame rate settings, scene activity and - most important - other applications running.*

Amendments:

- The local display of Videojet MPEG4 video may fail on some Windows 2003 Server systems. This does not affect the Clients connected to the server.
- The Videojet OPC server may only control a single view of the VIP-X D decoder video output. The Quad view is not supported by the VIE
- The Videojet MPEGx only supports the combination of the digital VIE Cameo Zoom up to a 2 times zoom of the Display Control itself. The display will fail on a 3 times zoom.
- The Videojet MPEGx Control displayed e.g. in the Multiview out of the borders of the visible monitor will require 100% of the CPU performance. Please open VCS cameos only within the visible range of the monitor. You may shift them later without problems via Multiview from the monitor display.

VIDOS Station 3 Nvidia Quadro FX 4400 (512MB)		screen resolution 1920 x 1200 single display 16:9				screen resolution 3840 x 1200 horizontal span			
		4CIF	2/3 D1	2CIF	CIF	4CIF	2/3 D1	2CIF	CIF
Scene activity:	quiet	14	20	31	46	14	20	30	46
	medium	13	19	29	44	13	19	28	44
	busy	13	18	28	43	13	18	27	43

VIDOS Station 3 ATI Fire GL V 3100 (128MB)		screen resolution 1280 x 1024 single display				screen resolution 2560 x 1024 horizontal span			
		4CIF	2/3 D1	2CIF	CIF	4CIF	2/3 D1	2CIF	CIF
Scene activity:	quiet	15	19	18	17	14	19	17	17
	medium	14	18	17	17	13	18	17	17
	busy	14	18	17	17	13	18	17	17

VIDOS Station 2 Nvidia Quadro FX 1400 (128MB)		screen resolution 1280 x 1024 single display				screen resolution 3200 x 1200 horizontal span			
		4CIF	2/3 D1	2CIF	CIF	4CIF	2/3 D1	2CIF	CIF
Scene activity:	quiet	10	14	15	22	10	14	15	21
	medium	9	13	14	20	9	13	14	20
	busy	9	13	14	19	9	13	14	19

In VideoJet 8008 / A

- Network Autosensing may fail
- Video loss is not marked in recordings
- Mixture between video standards, e.g. PAL encoder connected to NTSC decoder, is not supported
- In QCIF resolution, stamping is not available
- No TCP mode is available
- Audio is only recorded when partition has been set up accordingly

Audio functions in VIP X and VideoJet 800x with firmware 1.5 are not supported.

The resetting and overwriting of an already set and used PTZ Position in a Gen4 Dome needs confirmation by using up/down and iris buttons of panel or CCTV keyboard.

5.3

Microphone and loudspeaker on the PC

Some video subsystems support the simultaneous transmission of video and audio signals e.g. in the following scenarios:

- Display of live images and reproduction of live sound track.

- Display of live images with reproduction of live sound track and simultaneous recording.
- Display of archived images with reproduction of archived sound tracks.
- Display of live images with reproduction of live sound track and simultaneous transmission of speech (e.g. announcements) to a loudspeaker at the same location as the recording camera.
- Display of live images with simultaneous audio communication between the operator and an intercom at the same location as the camera (e.g. entry phones).

Hence the equipment required for audio communication must be provided at both ends: PC and camera location.

The connection and settings on the camera side are described in the installation guide of the camera, encoder or subsystem concerned. See also section 8.5

Most PCs have at least an on-board sound card (or PCI option card) with the following 3.5 mm jack (TRS) sockets:

Color	Label	Function
pink	Mic-In	Input for (mono) microphone
green	Line-Out	Output for headphones or loudspeaker (stereo)
blue	Line-In	Optional input for recording

When connecting external audio hardware (headset, microphone or loud-speaker) to such ports, please consider the following:

- The compatibility of the technical specifications and limitations of hardware and sound card.
- The color-coding of the jack plugs and sockets.
- The correct adjustment of the audio parameters:
The loudspeaker icon in the notification area of the Windows task bar is not only for quick volume control. Right-

clicking and selecting **Adjust Audio Properties** from the context menu is a shortcut to the Windows dialog **Start > Settings > Control Panel > Sounds and Audio Devices > tab: Audio**.

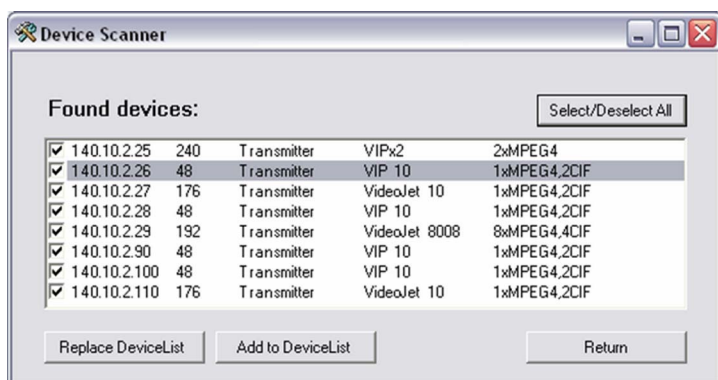
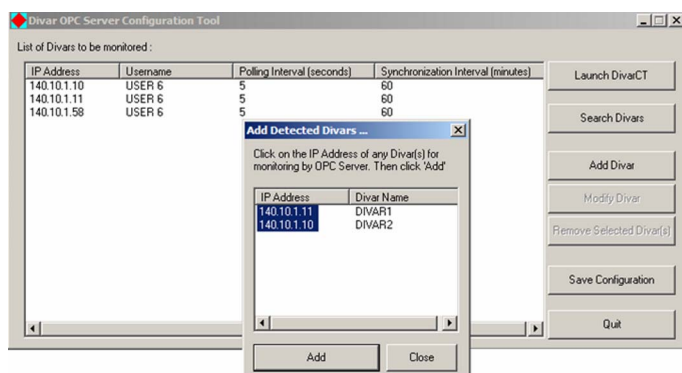
6 Installation software



NOTE! In principle, procedures should be carried out in accordance with the Basic BIS Installation Manual.

6.1 Fast setup

5. Select VIE default configuration
6. Add DiBos server to the server list
7. Create local DiBos, Divar, VCS and Allegiant connections
8. Perform automatic network scan for Divar and VCS Videojet



9. Connect Divar, Videojets and DiBos
10. Save configuration
11. Load configuration

6.2 Information when updating to version

Under certain circumstances, if an older version was installed and Internet Explorer is started, the older version can remain if Internet Explorer checks the version.

Solution:

- Empty the Internet Explorer Cache (Internet-Explorer: Menü *Extras* (extras menu) / *Internetoptionen* (Internet options)... / *Dateien löschen* (delete files) button... / *Alle Offlineinhalte löschen* (delete all offline contents) Option, Ja (yes) / OK). Then close Internet-Explorer and restart.
- Also activate Active X and Cookies in Internet Explorer!

7 Installation of optional components



NOTE! In principle, procedures should be carried out in accordance with the [Basic BIS Installation Manual](#).

With Video Engine, the following components can be installed:

7.1 Multimonitor graphics card

7.1.1 General information

If it is intended for VIE use of multimonitor operation (2–4 monitors), the PC graphics card must fulfill the necessary requirement and provide the appropriate number of monitor outputs. Therefore, a replacement is required for extensions:

- 2 monitors: Dual graphics card
- 3-4 monitors: Quadro graphics card

7.1.2 Requirements

- AGP (accelerated graphic port) card
- Min. 65,000 colors
- VCS recommendation: NVidia graphics adapter

The basis for this is formed by the requirements of the image currents of the particular subsystem that is connected e.g. DiBos, Divar and VCS Videojet etc.

7.1.3 Installation

When installing the a graphics card, you should pay attention to the installation guide and any other specific instructions from the manufacturer!

7.2 Custom Encoder

7.2.1 General information

On a VIE-Client you can for the Viedeoexport, divergent from the default settings (Techsmith or JPEG) also the other known and in the application already familiar Encoder apply, assumed, the respective Codec is installed on the Client.

If you want to apply, e.g., the XviD Codec, you must install this Codec self-dependently.

After the installation this Codec can be selected in the Multiview to the coding and Viedowiedergabe.

7.2.2 **Installation**

For the installation of a Codec divergent from the default settings, please load the respective Codec-installation program, e.g., source: <http://www.xvid.org>.

7.3 **CCTV USB keyboard and joystick control**

The Bosch CCTV USB Joystick Keyboard represents a new approach to intelligent, user-friendly control of CCTV management systems.

The VIE Keyboard offers an ergonomically designed and easy-to-learn alternative to the current PC operation of the Video Engine with the mouse and the PC keyboard. The keyboard is suitable for both operation of routine surveillance tasks and urgent operation reactions in the case of an alarm, since the most important VIE operation functions, such as Camera Favorite selection, video archive navigation and control of the Multiview Monitors including Cameos may directly be accessed by the operator via 46 preprogrammed buttons. Additionally, the CCTV keyboard joystick can be used for the selection of cameos, the intuitive control of Autodome Cameras.

Designed to take full advantage of the powerful VIE video management features, the CCTV USB Keyboard incorporates a large back-lit keypad. 44 dedicated keys are provided for almost most possible controls and selections including: Layout management camera selection, PTZ, sequencing, guard tours, print, alarm acknowledge, archive replay with trickplay, export, panic recording. The Numeric Keypad allows the easy selection of any camera by it's Number.

This direct access to functions ensures quick and intuitive operation, with single or minimal keystrokes. The result is ease-of-use, reduced training time, and improved operator efficiency and response times. The control of any function within the VIE CCTV management system is available directly via USB Keyboard.

The 3-axis vector solving joystick allows the precise control of any variable speed pan/tilt/zoom mechanism. The joystick is centrally located on the keyboard, suiting right- or left-handed operators, and includes an integrated zoom control. One Keyboard can control all cameras through a single Client. Auto discovery of the keyboard by the product, Plug&Play and integrated Power over USB are other unique features.

The CCTV USB Joystick Keyboard is the controller for Bosch's complete IP network video products and the central point from which all functions can be accessed.

The Keyboard can be customized for operation of joystick only. Twisting the joystick zooms the lens in and out. The joystick is used for navigating the Multiview. Each key's color corresponds to the color of its icons displayed on the VIE Multiview user interface. This intuitive color matching design lets users intuitive use the keys.

The Video devices of other manufacturers are easily integrated. The dynamic help shows the current camera placement as another unique feature of the keyboard.

The correctly connected CCTV keyboard is indicated by the keyboard symbol in the VIE Multiview

Besides using the Video Engine with mouse and keyboard, there is the possibility to use the optional Video Engine keyboard. Every Video Engine CCTV keyboard has to be ordered with a valid license. It supports most of the Video Engine Multiview

functions and enables a Video operator to call up video images in an easy way without a need for the PC keyboard or mouse. It covers especially functions like camera selection via favorites, Autodome Camera control and Cameo selection via joystick.



The operational state of the CCTV keyboard is displayed to the client via the keyboard symbol in VIE Multiview.

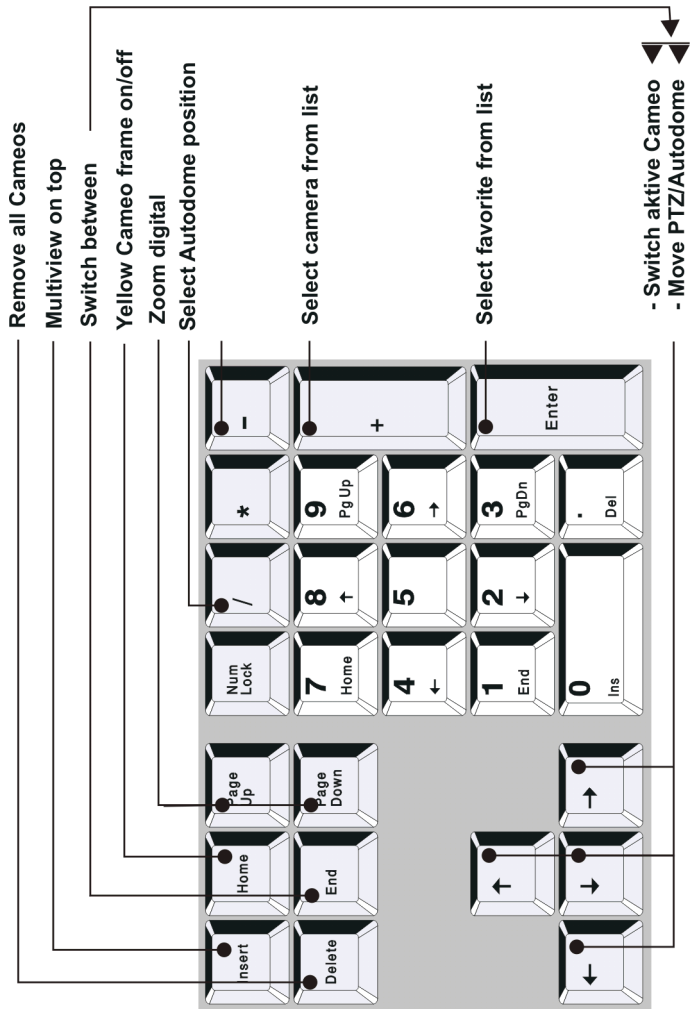


NOTE! The Virtual Digital Matrix (VDM) is not supported by the CCTV keyboard.

If the VDM is switched on, the system keyboard is deactivated.

7.4 Hotkey-Keyboard Operation

The most important hotkeys in a learn overview:



8 Connecting video subsystems



A stable and workable connection of the Video Engine to the video subsystems is the prerequisite for the VIE configuration (browsing and configuration).

NOTE! Therefore, pay attention to the following subsystem features:

8.1 Connection to DiBos

- Adhere to camera name conventions
- Deactivate firewall if necessary: see firewall document
- Install OPC server from DiBos CD
- Set up user authorization for DCOM access to the OPC server from the Cfg browser: see DCOM authorizations!
- Alternatively, you can use the "mgts-service" user account already set up in DiBos for OPC connections
- Set up central user accounts for access to the image data and verify against the Video Engine
- Activate remote desktop for remote configuration in DiBos

8.2 Connection to Divar

- Activate ATM/POS and multiuser network license
- Set up central user accounts for access to the image data and verify against the Video Engine
- Set up central user account for the OPC connection and verify against the Divar OPC server Cfg; assign authorizations for relay, Autodome camera and other controls
- Set and select Autodome positions
- Enable relay for user access and deactivate automatic operation
- In addition, the following features for OPC-based controls should be enabled, for example for **"USER 6"**:
 - Place relay control exclusively under user control and do not indicate automatic events, such as video loss and system malfunction with help from the relay
 - Video loss alarm

- Activate alarm inputs
- Lock/unlock individual cameras
- Delete video recordings
- Protect video recordings
- Setting and selecting Autodome positions

8.3 Connection to VCS Videojets

- Set up central **user** account for access to the image data and verify against the Video Engine
- Set up central **service** account for controls via OPC connection and verify against the Videojet OPC server Cfg; assign authorizations for relay, Autodome camera and other controls

8.4 Supported Panasonic Products

Type	Model	Firmware
Network Disk Recorder (Hereafter referred as NDR)	WJ-ND200	v.2.30
	WJ-ND300	v.4.70
	DG-ND300A	v.4.70
	WJ-ND300A	v.4.70
	DG-ND400 WJ-ND400	v.1.10 v.1.10
Digital Disk Rekorder (Hereafter referred as HD300)	WJ-HD316A	v.3.40
	WJ-HD350	v.3.40

8.5 VIP-X Audio connections (audio version only)

Micro and Loudspeaker for Intercom Solution

The audio version of the VIP X has two audio ports for audio line signals as well as a microphone input and a loudspeaker output.

The audio signals are transmitted both ways and in sync with the video signals. This means that you can operate, say, a loudspeaker or door interphone at the destination site.



NOTE! If possible you should use the line ports of the interphone for transmitting audio signals on interphone systems. The following specificaons should be complied with in all cases.

- Line In:** Impedance 9 kOhm typ., 5,5 V max. input voltage
- Line Out:** Impedance 16 Ohm typ., 3 V max. output voltage
- MIC** Impedance 2 kOhm typ., 2,8 V max. input voltage, (microph.): -20 dB in, supply 2,3 V typ.
- SPK** Impedance 4 Ohm typ., 6 V max. output voltage, (loudsp.): power output 1 W rms

The stereo jack plugs must be connected as follows:

Contact	VIP X1	VIP X2
Tip	Channel 1 (Camera 1)	Channel 1 (Camera 1)
Middle ring	Not used	Channel 2 (Camera 2)
Lower ring	GND	GND

- Connect an audio source with line level to the Line In jack socket of the VIP X with a 3.5 mm stereo jack plug.
- Connect a device with line-in connection to the Line Out jack socket of the VIP X with a 3.5 mm stereo jack plug.

If you wish to connect a microphone and a loudspeaker directly:

- Connect the microphone cords to the MIC and GND connections on the push-in terminal.
- Connect the loudspeaker cords to the SPK connections on the push-in terminal

8.6 Connection to 3rd Party Devices

The Video Engine is an open and vendor-independent Management System Plug-In easy to be integrated and easy to be customized, in order to offer a single user interface to a continuously growing number of different video server brands. Every integrator has open control over the SW program code of the Video Engine, in order to add or modify the functionality and appearance. It replaces proprietary Video Management Systems and device specific SDKs. The Video Engine offers not only common and device specific Functions of single DVRs, but also extends the limited functionality of the different types by unique features like the CCTV USB-joystick keyboard, Video Export, Virtual Alarm Matrix and privacy Zones.

The Idea for the Video Engine Web Application is to have an easily to modify Web Interface to all Bosch Video Devices and –even more- to every Video Devices - based on the common standard- the Webinterface- by simple scripting.

The Video Engine Web Application may easily be extended by implementing new functions into the adapter or target pages to single DVRs. These adapter pages enable a Multiview Cameo to control and display different video source types in a common way.

9 Order information

The Video Engine can be installed in the following versions:

- English (US)
- German
- Dutch
- Russian
- Chinese
- Hungarian

You find the current order information in the product catalogue.

10 Support

Please contact your respective service center:

- in the case of malfunctions
- if you have any questions and problems
- for information on Operating Manual contents
- if you find errors or have suggestions for extra contents

Bosch Sicherheitssysteme GmbH

Werner-von-Siemens-Ring 10

D-85630 Grasbrunn

Germany

Telefon +49 89 6290-0

Fax +49 89 6290-1020

www.bosch-securitysystems.com

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