



HeiTel system integration

SDK - **S**oftware **D**evelopment **K**it

(HeiTel Part No. 4210)

API - **A**pplication **P**rogramming **I**nterface

(HeiTel Part No. 4211)

Product Management, February 2012



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HeiTel-VideoGateways are the central and integrating elements of a video monitoring system. Detect, Alarm, Record, Transmit and Log these are some of the central features of the HeiTel-VideoGateway product families CamTel SVR, CamServer, CamDisc SVR, CamDisc HNVR and Cam4mobile.

Their system interfaces allow complete integration in a comprehensive security system, full integration with intrusion detection systems and signalling to central monitoring stations with video intervention capability.

For decades, HeiTel-VideoGateways have distinguished themselves, particularly with extremely reliable hardware components; compatible since 2005 with embedded Linux-based technology. The backwards compatibility of the HeiTel software family with hardware as far back as 1995 is an important investment protection for all HeiTel customers and is normally the focal point of all system decisions.



Why integration?

CCTV has become an important topic for many monitoring centres, because new avenues of business are opened up with video-based services.

In addition to visual alarm verification and alarm preliminary tests (e. g. automatic security guard tours, remote control, analysis of video recordings etc), active video intervention is possible with the help of audio transmission.



Why integration?

The integration of video technology into existing alarm management systems enables operation via a single software interface and the cross-system management of system data and object information in a central database.

The options available for software integration range from standardised system interfaces using our web API (Application Programming Interface) which is standard in every HeiTel-VideoGateway, through to the integration of HeiTel video servers with full-blown alarm management systems using the HeiTel SDK (Software Development Kit).



SDK

or

API





HeiTel SDK Software Development Kit (HeiTel Part No. 4210)

- HeiTel SDK is made up of CamControl SERVER and CamControl CLIENT software and enables receiver integration of HeiTel-VideoGateways into the 3rd party control centre software. In addition the CamControl PLAYER can be used to review recorded clips from the video archive of the CamControl SERVER.
- The CamControl SERVER is a powerful piece of video receiver equipment that is integrated into control centre software via a TCP/IP-based interface.
- The CamControl SERVER can be used with analogue, ISDN- or IP-connections to HeiTel VideoGateways.



HeiTel SDK Software Development Kit (HeiTel Part No. 4210)

- Integration can be done with minimum development effort using our CamControl CLIENT software, since the user interface for video functionality and all other control functions is already provided.
- Furthermore, free software updates for the CamControl CLIENT provide constant enhancements to HeiTel system performance features, without having to adjust higher-level management software.
- As an alternative to using CamControl CLIENT to handle the video, the video can be displayed in a user interface provided by the manufacturer.



HeiTel API Application Programming Interface (HeiTel part no. 4211)

- The HeiTel web API, which all HeiTel Video-Gateways are equipped with, is a programming interface based on hypertext transfer protocol (http). The interface enables the display of live images and also the playback of recorded images.
- In addition, system status can be retrieved via the web API and functions – such as PTZ control of dome cameras or switching of internal relays for external equipment control.



HeiTel API Application Programming Interface (HeiTel part no. 4211)

- An IP connection between the third-party application and the HeiTel video system is required to be able to use the web API. The HeiTel web API enables free programming of custom application based on http.
- Even HeiTel applications are using the web API interface (e. g. the HeiTel video wall MultiView software and the control and alarm verification software solutions for CamControl iPhone and CamControl WM).



Comparison SDK / API

	HeiTel SDK	HeiTel API
HTconnect	√ (only for TCP/IP connections)	-
Dial up connections	√	-
Live images	√	√
On site archive images	√	√
Pre alarm images	√	-
Alarm	√	Planning
Arming / Disarming function	√	√
Audio function	√	√
PTZ / relays control	√	√

A complete feature overview for the SDK / API is given on the following pages!

The latest version of the CamControl Server and the Web API are available to download in the HeiTel partner forum www.heitel.com



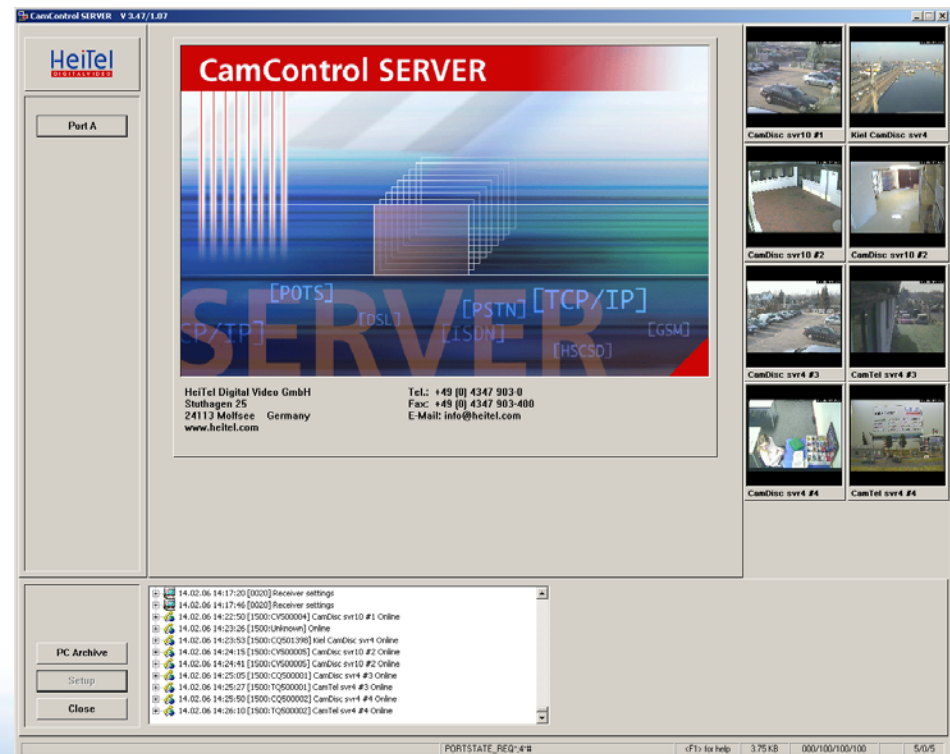
The HeiTel SDK





CamControl SERVER

- The CamControl SERVER provides the video / interface management to all HeiTel-VideoGateways and administration of the video archives. The CamControl Server is needed for both ways of integration (integration with / without CamControl CLIENT)





CamControl SERVER

- MultiSite functionality for simultaneous connection of up to 21 separately located video transmitters
- Automatic forwarding of relevant transmitter-specific messages to the monitoring station Alarm Management Software
- Recording of incoming video / audio sequences in the receiver archive of CamControl Server
- Automatic connection of CamControl SERVER with transmitter during alarm from site, freely definable virtual tours, call back function and arming / disarming feature of the HeiTel devices



CamControl SERVER

- Event logging of relevant functions (e. g. user activity, alarm triggered connections and technical alarms)
- Depending on the level of integration, several monitoring terminals can access the CamControl SERVER at once
- Depending on the server configuration the system functions are available via IP connections (LAN / WLAN, DSL, GPRS, HSDPA, CDMA, UMTS, EDGE) and dial-up connections (PSTN / POTS, ISDN, HSCSD)
- Our software is backwards compatible with all HeiTel VideoGateways ever shipped to date



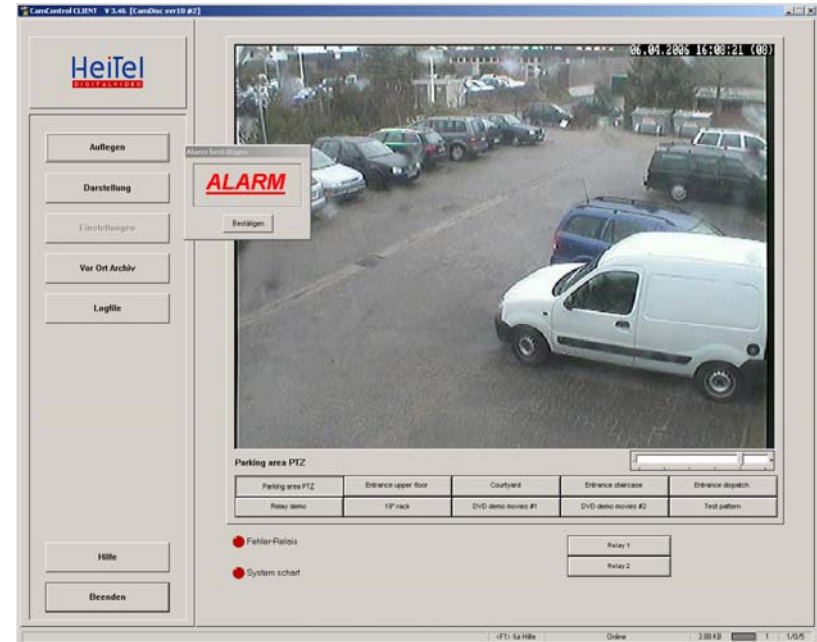
CamControl SERVER

- HTconnect connections (for all HeiTel VideoGateways) enables the use of dynamic IP addresses and can overcome some firewall problems
- Additional interface for configuration of all connected HeiTel VideoGateways
- Connection with alarm management software via TCP/IP protocol
- Implementation of CamControl SERVER in combination with CamControl CLIENT is particularly easy and obtains full video management functionality



CamControl CLIENT

- The CamControl CLIENT application is used for alarm verification, viewing Live images and archive (recording) analysis.
- The CamControl CLIENT is required if the 3rd party application wont be handling the display of video.





CamControl CLIENT

- Intuitive operation due to integrated reference picture functionality and free definable camera groups
- Online evaluation of pre-alarms sequences and hard disk archives with preview functionality
- Automatic connection of transmitter generated alarms
- Freely programmable observation tours
- Local storage of transmitter configuration profiles and upload for reconfiguration possible



CamControl CLIENT

- Multi-frame display with automatic transmitter identification
- Tailor-made remote camera control under consideration of manufacturer specific functionalities for all common PTZ systems
- Remote configuration of all HeiTel VideoGateways installed to date
- User-sensitive password administration with individually programmable user rights

SDK integration
with / without the
CamControl CLIENT





SDK: Overview integration options



Configure

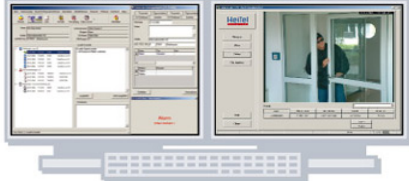
Monitor

Verify

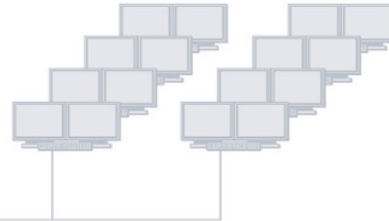
Document

Evaluate

Monitoring Software CamControl CLIENT



Multi-user solution with 3rd party monitoring centre software and CamControl CLIENT for configuration, monitoring, verification, documentation and evaluation of HeiTel transmitter



Monitoring Centre Application

3rd Party Alarm Server

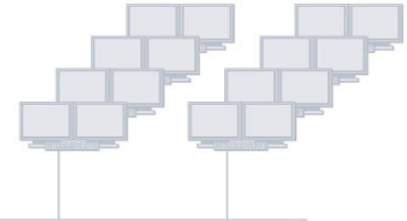
Video Application

CamControl Server

Monitoring Software Video Client



Multi-user solution with 3rd party monitoring centre software and video client for monitoring, verification, documentation and evaluation of HeiTel transmitter



Video Application

CamControl Server

Monitoring Centre Application

3rd Party Alarm Server

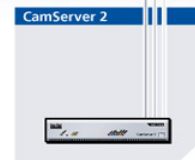
[GSM] [HSCSD] [PSTN] [POTS] [ISDN] [TCP/IP] [EDGE] [HSPA] [DSL] [CDMA] [LAN] [UMTS] [WLAN] [WAN]



Digital video transmission system for 4 or 10 cameras



Video Server with local long-term recording for 2 cameras



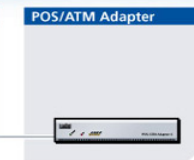
Video Server with local long-term recording for 2 cameras



External alarm expansion module with up to 50 additional alarm control inputs



Digital video transmission system with local long-term recording for 4 or 10 cameras



Adapter for image-synchronous data recording of up to 4 POS, ATM, Petrol stations, access control or scanner systems



Hybrid image transmission and image recording system for mixed operation of up to 10 analogue and IP cameras



Ruggedised digital video recording and transmission system for mobile applications with 4 or 10 video inputs



Detect



Alarm



Record



Transmit

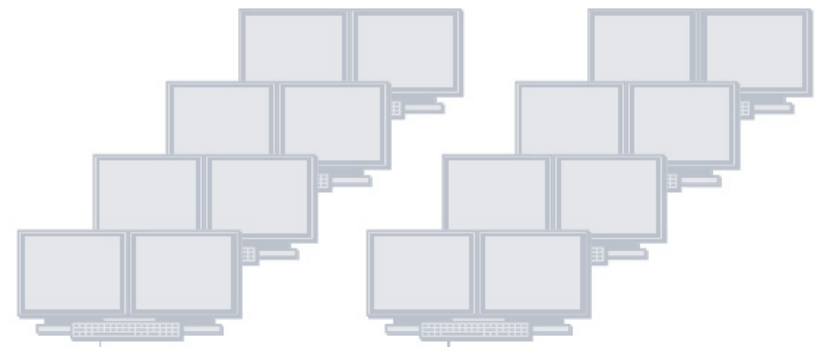
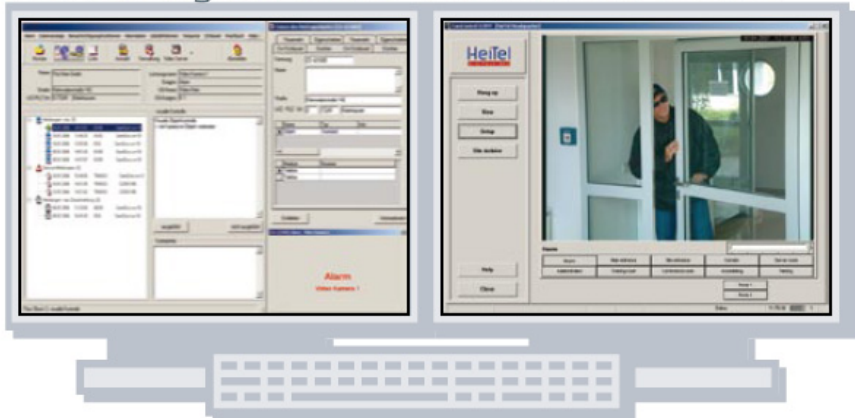


Log

IDS

System integration with HeiTel CamControl CLIENT software

Monitoring Software CamControl CLIENT

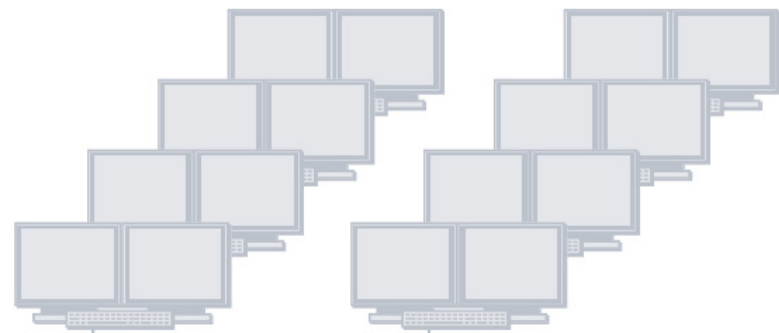


Multi-user solution with 3rd party monitoring centre software and CamControl CLIENT for configuration, monitoring, verification, documentation and evaluation of HeiTel transmitter

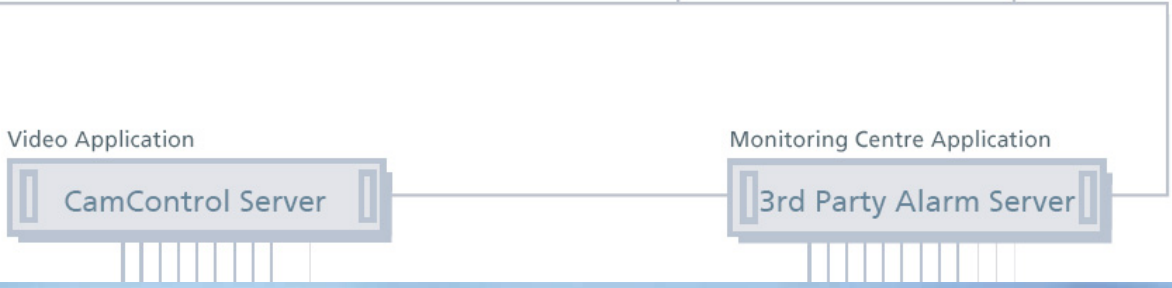


System integration without HeiTel CamControl CLIENT software (3rd party video client)

Monitoring Software Video Client



Multi-user solution with 3rd party monitoring centre software and video client for monitoring, verification, documentation and evaluation of HeiTel transmitter





Playback and evaluation software for CamServer-, CamDisc SVR-, CamDisc HNVR- and Cam4mobile-recordings and PC archives.

- Integral part of the SDK
- Online evaluation of site archive with full functionality during TCP/IP connection
- Multiple playback and search functionality with video sequence and single image, and integrated Smart Search function



Integration with / without CamControl CLIENT

Functionality	CamControl SERVER with CamControl CLIENT	CamControl SERVER with video integration by a 3 rd party manufacturer
Number of simultaneous video connections to separate transmitters	21	21
Operator-controlled camera switch and event-triggered video connection	✓	✓
Receiver-side recording of incoming video sequences	✓	✓
Remote camera control of all to date and future PTZ systems	✓	✓
Relays operation and relays function allocation	✓	✓
Picture quality query and adjusting	✓	✓
Status query of receiver, CamControl SERVER and video inputs	✓	✓
Online evaluation of hard disk archives with preview function	✓	—
Offline evaluation of CamControl SERVER archives	✓	✓
Remote configuration of HeiTel transmitter	✓	—
Receiver-side event logging of relevant functionalities	✓	✓
Compatibility of all to date installed and future HeiTel transmitter	✓	✓



SDK Functional range version 4.06 / 1.16

- Simultaneous connections of up to 21 separately located HeiTel VideoGateways:
 - Analogue, ISDN and/or IP connections depending on the infrastructure of the CamControl SERVER
 - HTconnect support (for IP connections)
- Automatic forwarding of the connection to Client-work stations (e. g. CamControl CLIENT)
- Forwarding of „Full Frame“ JPEG images or conditional refresh images
- Transmission of Live-Audio (SPEEX / True Speech)
- Central video archive (Audio if applicable) on the CamControl SERVER
- Manual connection to HeiTel VideoGateways



SDK Functional range version 4.06 / 1.16

- Automatic connection in case of alarm from HeiTel VideoGateways with alarm management
- Enhanced alarm coverage using HeiTel VideoGateways with CI / CIO adapter (alarm module)
- Guard tours (controlled by the CamControl SERVER and/or the 3rd party application)
- Camera switching
- Disconnecting
- Request / Access of pre-alarm (only CamTel SVR)
- Request of PTZ functionality and PTZ control including preset positions
- Request of number of connected cameras and camera descriptions
- Request and configuration of Live image parameter (resolution and quality)
- Request and control of the on board relays
- Control of the R16 / CIO adapter (additional relays module)



SDK Functional range version 4.06 / 1.16

- Request and control of the audio function
- Notification of incoming alarms with specific / alphanumeric alarm identification numbers linked to the 3rd party application (alarm monitoring centre software)
- Access to on-site archive recordings (not for CamTel SVR) of the HeiTel VideoGateway (Open/Check/Close)
 - Image request for event / permanent recording
 - Request of event camera track list if needed
 - Event selection via time-stamp
 - Selection of the permanent recording if needed
- Transmission of GPS data (\$GPRMC) in Live- or archive if needed
- Status request of connection ports for video connections of the CamControl SERVER



SDK System requirements

CamControl

SERVER / CLIENT





System Requirements

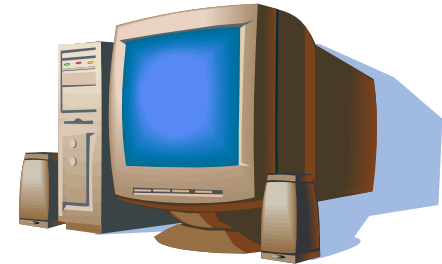
SERVER PC

Processor	Pentium4 Processor with 3 GHz or (recommended)
Hard Drive	512 MB (2-3 channels), 1 GB RAM (up to 4 channels), 2 GB RAM (more than 4 channels)
Operating System	Windows XP Professional, Windows Server 2003/2008 R2, Windows 7
Hard Disk	Hard disk size according to the intended recordings
Monitor	1 Monitor
Graphic Card	Min. 32.768 or 65.536 colours
Interfaces	Interface via COM Port (MOXA), Cfos or Network for connecting with transmitters (according to specifications), ISDN interfaces (as necessary), USB Interface for the dongle
Network	Network card with 100 MBit; recommended 1 GBit
Hard Drive	CD ROM/DVD hard drive for installation

CLIENT PC

Processor	Pentium4 Processor with 2 GHz or more
RAM	512 MB or more
Operating System	Windows® XP Professional with latest service pack, Windows 7
Hard Drive	1 GB hard disk capacity or more
Monitor	2 Monitors
Graphic Card	Dual monitor support, min. 1024 x 768 pixel; recommended: 1152 x 864 pixel for Event CLIENT monitor
Network	Network card with 100 MBit; recommended 1 GBit
Audio	oundblaster® compatible sound card for audio transmission (speakers, microphone, headset according to specifications)
Drive	CD ROM/DVD hard drive for installation

Errors and omissions excepted, technical specification and availability are subject to change without notice





Communication example

- The 3rd party application communicates with the CamControl SERVER via port 5500 .

- 3rd party application:

- send: *!CONNECT_REQ*;1*;N:192.168.31.95*#

- receive: *!VIDEOSERVER V 1.13*;4*;3.94/1.13*#

!CONNECT_CONF;1*#

!CONNECTACTIVE_IND;1*;5001*#

!CONNECT_IND;1*;*;05/00*;1*;WB005073*;CamServer 1/3G*;192.168.31.95*;5001*;1*;0*;2010-11-03 13:41:22*#

!MESSAGEINPUT_IND;1*;WB005073*;1*;0*#

!MESSAGEINPUT_IND;1*;WB005073*;17*;0*#

!MESSAGEINPUT_IND;1*;WB005073*;18*;1*#

!MESSAGEINPUT_IND;1*;WB005073*;99*;0*#



The HeiTel Web API interface





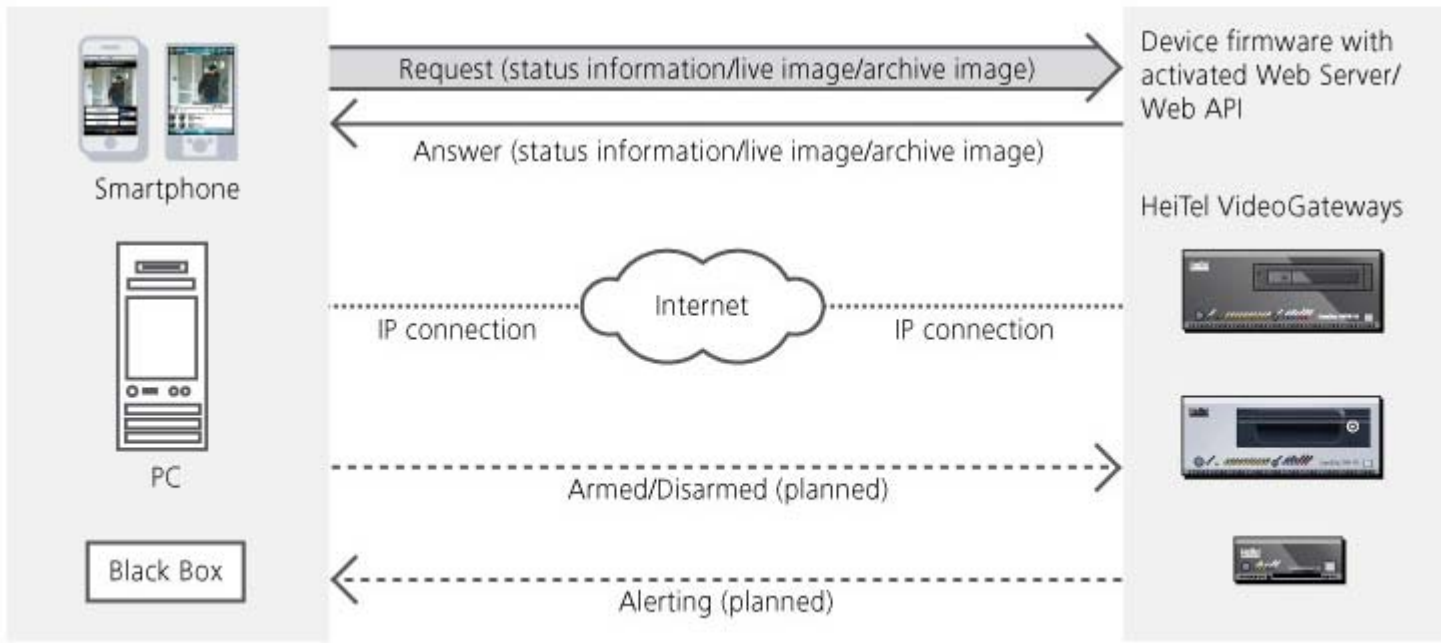
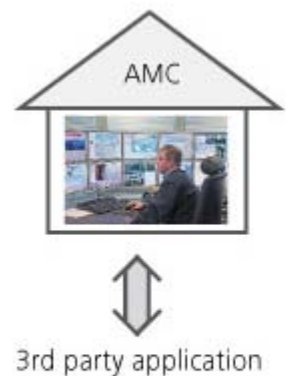
- The Web API is part of the device firmware of all HeiTel VideoGateways (SVR / SVRs / HNVR and Cam4mobile series).
- To support the conditional refresh compression HTcompress (www.heitel.com) HeiTel provide software libraries (iOS, Linux and Windows) for the receiver site.
- To use the web API, an IP connection between the 3rd party application and the HeiTel VideoGateway is mandatory. Also the web API feature must be activated in the device.
- The web API communicates via http-Port (80) with the http- method „GET“. The port can be changed in the device setup if needed.
- Latest Web API: version 1.7 (from firmware V1.80 on)

API functional range version 1.7

- Request of general status information of the video system: Serial number, name, firmware version, web server version and a list of the supported web API versions
- Connection / keep established connection (Keep-alive) / Disconnection
- Request user rights
- Request number of cameras and camera names and PTZ capability (only IP cameras)
- Request general PTZ capability (analogue cameras)
- PTZ control
- Archive (recordings) - / Live image request (Full frame JPEG or HTcompress) including resolution, colour / monochrome
- Request Site archive of the VideoGateway including numbers of recording tracks and track names (not for CamTel SVR)
 - Additional information about recording tracks (permanent recording / Event recording)
 - Request of event list for event recording
- Number of available device relays
- Relays control
- Request of device-specific control inputs (alarm inputs, armed / disarmed, general alarm input)
- Live- and archive- audio



Communication diagram Web API





- Internet browser:

- **send:** `http://192.168.31.95/deviceinfo_req`

- **receive:** `serialnumber=WB005073
name=CamServer 1/3G
firmwareversion=01.92
webserverversion=1.24
supportedwebapiversions=1.3,1.4,1.5`

- 3rd party application:

- **send:** `GET /deviceinfo_req HTTP/1.1<CR><LF>Host: 192.168.31.95<CR><LF><CR><LF>`

- **receive:** `HTTP/1.1 200 OK<CR><LF>
Cache-Control: no-store<CR><LF>
Date: Wed, 03 Nov 2010 10:44:23 GMT<CR><LF>
Server: HeiTel GmbH Web Server [V1.24/V1.15/V1.5]<CR><LF>
Content-Length: 127<CR><LF>
Content-Type: text/plain; charset=iso-8859-1<CR><LF>
Last-Modified: Wed, 03 Nov 2010 10:44:23 GMT<CR><LF>
<CR><LF>
serialnumber=WB005073<CR><LF>
name=CamServer 1/3G<CR><LF>
firmwareversion=01.92<CR><LF>
webserverversion=1.24<CR><LF>
supportedwebapiversions=1.3,1.4,1.5<CR><LF>`



The HeiTel integration paper



Approach to integration

- The integration partner and HeiTel sign an NDA (Non-Disclosure Agreement)
- We will send you the detailed SDK / API protocol description and the HeiTel integration paper
- You complete the integration based on the SDK / API protocol description. If needed HeiTel will assist you with loan equipment or HeiTel devices for a special price (e. g. CamControl SERVER)
- You return the completed integration paper to HeiTel before completing the design phase
- HeiTel will add your company / product- information to their integration partner list and list you as a manufacturer of the solution
- Nomination of projects that include your solution



Information about the integration coverage

- We would like to know the coverage that you plan to do with the HeiTel SDK / API integration
- Please kindly fill out the attached integration paper and please return the document to HeiTel

The form is titled "Integrationspapier zur SDK / API Leitstellenintegration" and includes the HeiTel logo. It contains several input fields and checkboxes for providing integration details.

Integrationspartner:
Integration partner name:

Produkt des Integrationspartners:
Name of product from the integration partner:

Fertigstellung der Integration (Datum):
Date of integration:

Datum des NDA:
Date of NDA:

Integrierte Funktionen in Bezug auf die HeiTel Videofunktion:
Integrated features in relation to HeiTel video system:

Integrationsart (nur wenn SDK ausgewählt): HeiTel SDK HeiTel API
Form of integration (if SDK has been selected): mit CC Client ohne CC Client
with CC Client without CC Client

Softwareversion:
Software version: **Version CC Server:**
Version Web API:

Verbindungsarten TCP/IP HTconnect
Types of connections Wählverbindung / dial link (PSTN/ISDN)

Ankommende Verbindungen (Alarm + Video) ja / yes nein / no
Incoming connections (alarm + video)

[Please click to open](#)

1/3

Thank you very much for your attention

