

Made in Germany

**Innovatively
simple –
simply
innovative!**



digivod gmbh develops and distributes high performance solutions for numerous applications within IP-based digital video surveillance systems. The digivod® video management software offers an innovative, scalable system - made in Germany! The digivod® software with its modular design can be adapted to individual and industry specific requirements. The software is particularly effective for the processing and transmission of high-definition video data (HD) via the Internet. The digivod® software fulfils even the most demanding monitoring tasks with its integrated real-time image analysis, the Privacy Protection, IO control and event indexing database. The user interface and administration of the software is recognised in the market for its clarity and easy intuitive operation. digivod gmbh also offers complete solutions for cameras, computers and network hardware and software, and necessary software adjustments.

www.digivod.de

**digivod® - the network-based
video management software**



www.digivod.de
info@digivod.de

digivod gmbh
Breite Straße 10
D-40670 Meerbusch

Tel: +49 2159 52000
Fax: +49 2159 520052

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IP based video surveillance today

A market in digital conversion

The advantages of IP video technology compared to analogue and hybrid CCTV technology have changed the market for video surveillance systems decisively. Strong points include the good scalability and high flexibility of IP solutions. Low installation costs, sophisticated products and a sound price/performance ratio of the components provide high investment protection. Especially the recent development of high definition cameras with more efficient features leads to the fact that newly set up, professionally designed video surveillance solutions are being primarily implemented as IP video systems.

Which choice - which software?

Selecting the video management software for a video surveillance solution is critical to the efficiency of the overall system. The decision for one software is also a decision for one supplier and one system. A compatibility of competing systems does not exist.

The pitfalls lie in the details! or Only at first glance do all seem to be alike!

Standards that should be valid for any video management software today are not available in all products. With well-designed applications, the parameters of the video compression are optimised for each camera application. If then as a result, single frames of several cameras with different compression and frame rates were to be replayed synchronously, almost all systems offered would fail.

Based on the architecture of the 'old' CCTV world digitalisation and compression of video signals always occurred on the recorder. In an IP video system however, the decentralised computing power of the IP cameras is used for encoding and compressing the video signals right at the source, e.g. in H.264. Some video management systems decode these video data signals and encode them again before archiving. This so-called transcoding requires a lot of computing power

on the server, especially with high resolution video data and high frame rates, reduces the scalability of the system considerably and impairs the quality of video data.

Function variety and simple operation - A contradiction?

There are significant differences regarding the clarity of the user interfaces. With many products a generally intuitive interface philosophy is pushed into the background by a 'developed' range of functions. The result is a higher training demand and prolonged access time in case of alarm.

Solutions, which do not always solve problems

Additional modules and trade solutions suggest a flexibility that is rarely guaranteed in practice, because these modules are often developed from individual projects, and can therefore not cover all demands of a trade or an application.

100% is possible!

Special customer requirements for an IP video system can often not be realised satisfactorily with standard products. Therefore, the demand for customised software solutions becomes increasingly higher. They must be designed and developed as part of a project. Examples are interfaces to other systems (burglar and fire alarm systems, POS systems, building management systems, location tracing systems) or the integration of

specific hardware components (RFID systems, 12/24V-systems for railways and public transport). The main decision factor for such projects is the selection of the provider. It can be difficult to find project experienced integration partners who can offer the solutions, possibly even as a

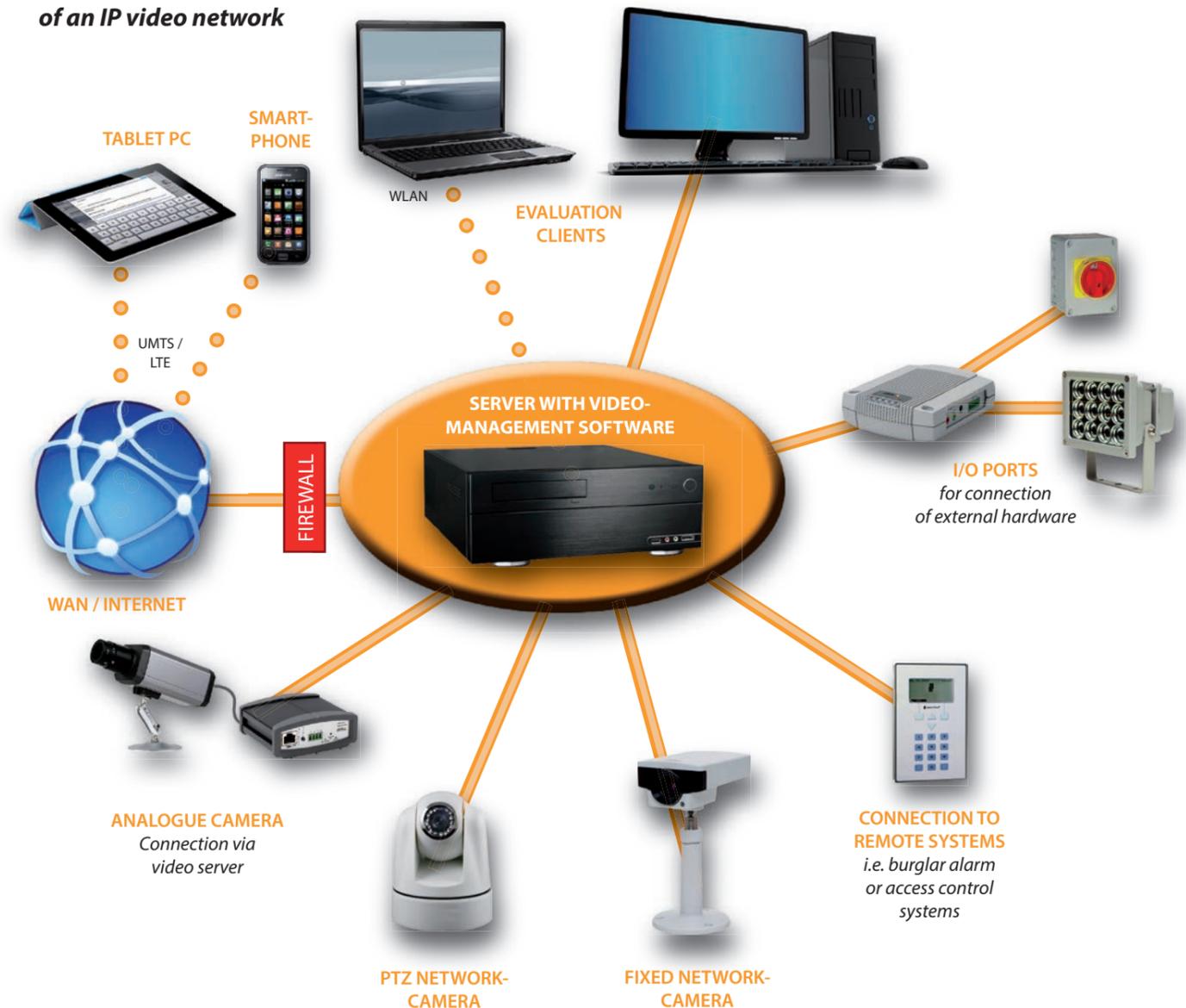
complete hardware and software package so that 100% of the customers' requirements can be implemented economically.

Conclusion

Even for the realisation of a standard application, the actual efficiency of the offered video

management software must be examined in detail. Published market surveys rarely help because the scope of functions of all systems offered is constantly being upgraded and as such the products are constantly adapting on paper.

Schematic structure of an IP video network



There are three factors to be considered before a decision:

- **Efficiency** of the video management software
- **Flexibility** and cooperation competence of the manufacturer
- Current and future demands on the system (**expandability**)

The advantages of IP-Video with digivod®

digivod - Innovatively simple – simply innovative!

The digivod gmbh in Meerbusch develops and sells efficient solutions for a multitude of IP based video surveillance applications. With the three consecutive editions of the digivod® software and a number of optional modules the company offers an innovative scalable system – made in Germany! The user interface of the digivod® software was developed after the maxim “simple things must be simple and complex things must be possible”. In the market digivod® is critically acclaimed, and praised for its clarity and simple intuitive operation. digivod® is specifically efficient when processing and transferring high resolution video data via the Internet. The digivod® software fulfils even the most demanding monitoring tasks with its integrated real-time image analysis, Privacy Protection, the IO-control and event indexing database. On request the digivod gmbh also provides complete solutions with cameras, computer and network hardware as well as software and required software modifications from one single source.

High scalability

Well conceived IT networks are scalable and the hardware components of an IP video system can be integrated easily via standardised interfaces. Alterations and setting adjustments to the respective environmental conditions can be carried out flexibly, mostly even whilst the

system is in operation. The digivod® client/server application software with its specific modules and individual licenses can also be customised for any required application and expanded seamlessly.

Integration capability

Open standardised hardware and software interfaces of IP video systems provide a simple connection to other products or external systems. Some examples from the digivod® practice include interfaces to alarm centres, building management and access control systems.

Megapixel/HD

Even a simple megapixel camera provides three times as many pixels as the highest resolution analogue camera (4CIF). Higher resolutions provide more details and the latest generation of HD cameras offer increasingly higher picture quality. These advantages become especially visible in the truest sense of the word with the use of digital zoom. High resolution cameras capture a larger screen area at the same accuracy of detail and

can therefore reduce the number of cameras required for installation. The digivod® software currently supports cameras with a resolution of up to 8 megapixels.

Manufacturer independence

There is a host of manufacturers of IP cameras and a wide range of different camera models whose advantages and disadvantages should be carefully considered depending on their usage. digivod gmbh takes a manufacturer-independent approach. The software supports network cameras and video servers of renowned manufacturers (e.g. ACTI, Arecont Vision, Axis, Basler (BIP2-models), Brickcom, Cohu, EverFocus, Grundig, JVC, Panasonic, Pelco (Sarix-models), Samsung, Sony, Visicom, Vivotek) and is cross-manufacturer compatible to the ONVIF standard. The range of supported manufacturers and camera models is extended continuously. Manufacturer-independence also applies to IT hardware such as servers, clients and network components.

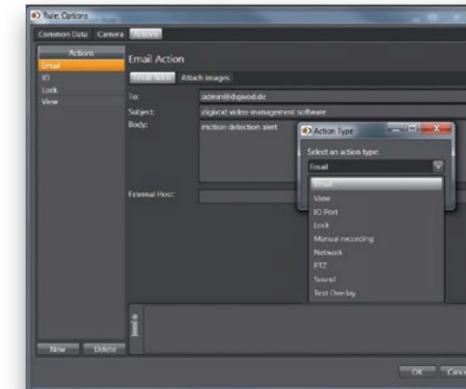
- Made in Germany
- H.264, MPEG4, MJPEG, MxPEG
- Megapixel / HD
- Centralised and decentralised video sensor technology
- Privacy Zones und Privacy Protection
- ONVIF compatibility
- Widely acclaimed simple user interface
- Modular client/server architecture

▶ OPTIMISED ARCHIVE ACCESS

Fast and accurate access to the archive material is decisive for the analysis of video data, especially in case of alarm. digivod® offers the ideal solution for each application. In case of alarm the easiest way from the digivod® observer interface to the archive is to double click on the entry in the alarm list. When hovering over a line of the alarm list, a preview of the alarm-triggering event is displayed automatically. A double-click on the alarm line starts the archive replay of the respective video data – it's as simple as that! Alarm images can also be directly accessed through the scalable timeline, which includes all camera specific displays of all alarms received to the second. The archive can also be accessed by inserting the exact time and date. Each video can be directly played back frame-accurately in reverse for each archive replay and during live viewing using the control buttons of the digivod® player. Stopping the live images at any time is also possible. Additional buttons allow for fast forward and rewind jumps from 5-60 seconds or to the next or last alarm. digivod® even offers the fastback feature for very fast ad hoc research of just recorded events.

Jump to the next or previous alarm in the timeline with one mouse click

▶ EVENT AND ALARM MANAGEMENT



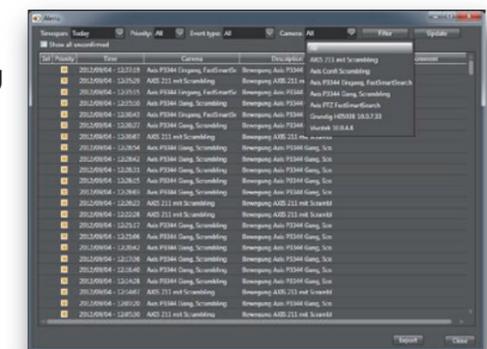
The alarm management allows the flexible definition of rules and actions for each event

The digivod® event management system files all registered events chronologically and logs them securely. Each event includes a record of the time, type, notifying or triggering camera and transmitted data. The digivod® alarm management system is based on a freely definable set of rules for processing incoming events.

An alarm event is given a predefined priority as a result of the rules set out in the alarm management system. Events could include, for example, video sensor detected movement, fence crossings, recognition of a specific car license plate, failure/manipulation of a camera or operating of a door/alarm button. The reactions of the digivod®

system on alarm triggering events are also defined in the rule management of the alarm management system. Possible reactions are, for example, sending e-mails with attached alarm images and a direct link to the video archive, transfer of alarm images or video to a control centre, toggling to an alarm view, switching of a contact or starting certain PTZ positions.

A confirmation from the user or comments on an alarm can be requested optionally. Rules can be defined for individual cameras, camera groups or all cameras and can be controlled via time schedules or IO contacts. Events and alarms are stored and indexed centrally in the digivod® database to facilitate a quick search. The most recent alarms are always viewable on the top level of the digivod® observer.



The event and alarm archive can be searched flexibly for any criteria



Name	Device name	IO port type	Available	Status	Action
Office lights	External device_1	In-/Output	Yes	Off	Switch on
Gate	External device_1	In-/Output	Yes	Open	Close
Door	External device_1	Input	Yes	Off	

The automatically created IO view provides a quick overview of the state of the IO ports

IO-CONTROL

With digital IO ports in cameras or in IP based modules digivod® can respond directly to switching commands or trigger switching operations. Door-openers, lights or gates turn into components that can be operated from digivod®. Video surveillance can react to signals of components such as external motion detectors, light barriers or alarm buttons which are con-

nected to IO ports. IO ports are depicted in site plans as well as in general IO views and can be activated, if authorised, with a simple click.

lip-synchronised recording and playback of the transferred audio data in the IP data stream for cameras with AAC audio compression.

AUDIO-SUPPORT

The integrated audio support of digivod® allows a high-quality

FREELY DEFINABLE VIEWS

The layout of the multi-view display can be freely defined in digivod®. Own layouts can be saved as templates and complement the supplied standard templates (e.g. 2x2, 3x3, 1+5 or 1+12). For a quick overview, the layout of the icons is visible on the navigation listing.

COMPRESSION TYPES

The digivod® software supports the very efficient video data compression standards MPEG4, H.264 and MxPEG as well as single image compression with MJPEG. The digivod® player can

also load and playback compressed MPEG4 and H.264 video data frame-accurately. Unique is the absolutely synchronous forward and reverse playback of single frames within multiple views with cameras which are recorded with different frame rates.

SMARTSEARCH and FAST SMARTSEARCH

The Smartsearch function allows the motion search in archived video data. The area to be searched can be positioned freely in the frame of the camera.

FASTBACK

There is an option in each camera view in live mode to immediately access the archive in sections of 5, 10, 20, 30 or 60 seconds via a separate button. After the expiry of the selected time period, the cameras will automatically return back to live mode.

PRIVACY PROTECTION (MASKING OF MOVING OBJECTS)

The optional module Privacy Protection pixelates moving objects in freely defined image areas so that they can not longer be identified. The protection of privacy is respected but the movement itself remains recognisable. In the event of an incident, with the appropriate permission, the pixelation of the archived video can be de-activated for every single camera.

SITE PLANS

The navigation listing and multi-view display enables the integration of site plans so that the user can directly access alarm-triggered camera images by clicking on camera icons on the map. Alarm-triggered cameras will be highlighted accordingly.

IO PORTS IN THE SITE PLAN

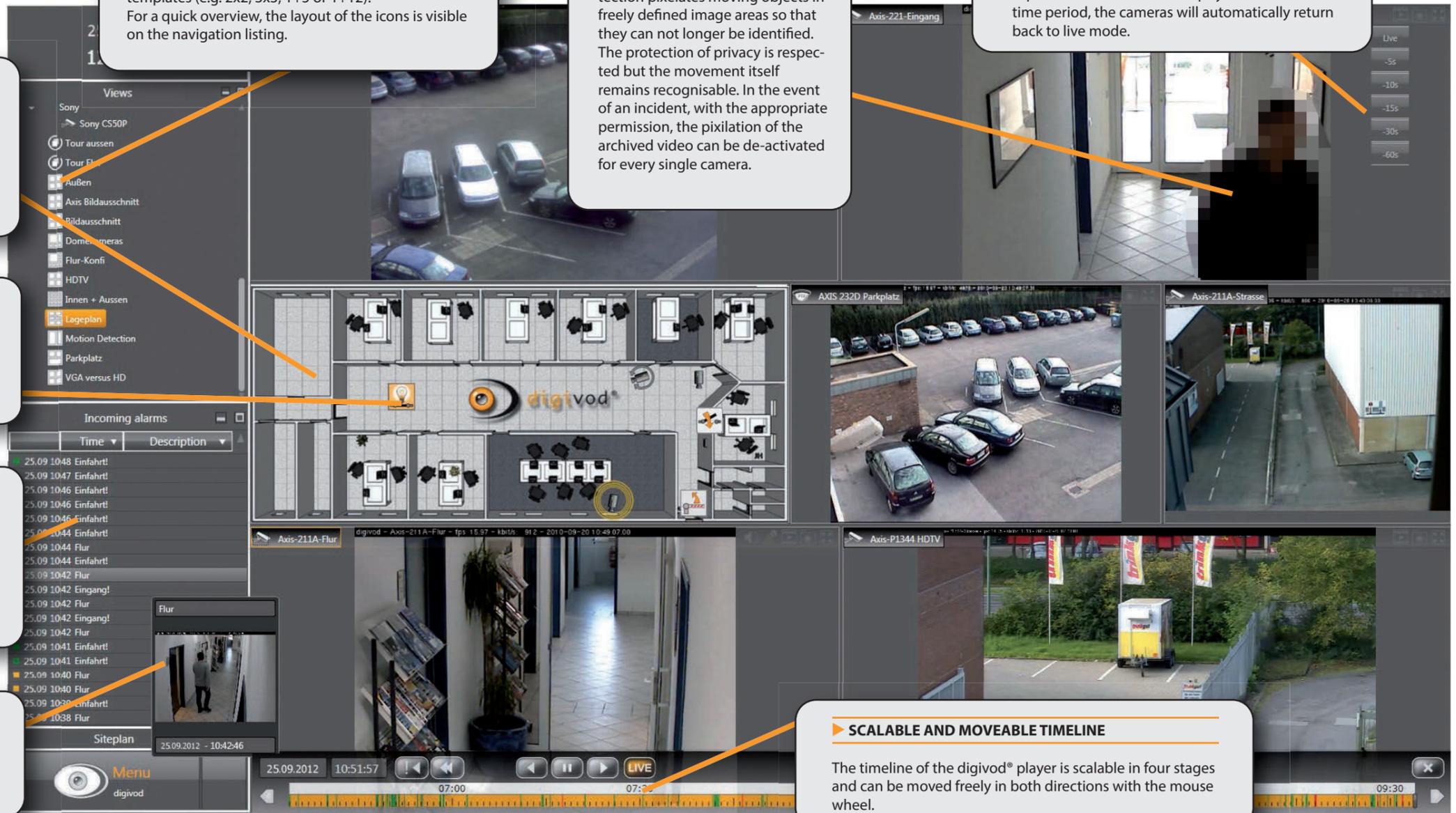
The state of the IO ports in cameras and IO modules can be visualised in site plans with freely definable icons and changed directly from within the site plans.

USER ORIENTATED ALARM LIST

The list of recent relevant alerts on the digivod® observer, which is always visible to the user, provides a quick overview and allows direct access to the alarm-triggered camera images. With one mouse click the list can either be displayed in a chronological order or according to a description text.

FAST EVENT PREVIEW

When hovering over an item in the alarm list, a preview of the alarm-triggering event will be displayed automatically.



SCALABLE AND MOVEABLE TIMELINE

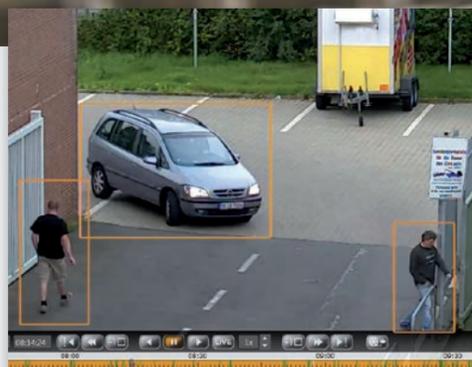
The timeline of the digivod® player is scalable in four stages and can be moved freely in both directions with the mouse wheel.

As a result Smartsearch creates a list of motion events which can already be analysed during the search. Optionally, the Fast Smartsearch function can speed up the subsequent search of the archive significantly. Fast Smartsearch analyses the video data on movements already during the recording. The analysis results archived along with the video data enable a flexible and fast evaluation over long time periods.

▶ VIDEO SENSOR

Video sensors play an important role in many video surveillance applications. As such, digivod® offers a range of integrated video sensors which can be used depending on application, environment and budget. In the event and alarm management motion events of different sensors can be evaluated.

For simple applications, preferably indoors, the built-in camera motion detection provides a good and cheap solution. Detected movements are directly transferred to the digivod® database as events and can become alarm events according to the set rules. A more complex image analysis can be carried out in Axis cameras through optional camera plugins. The digivod® software supports the plugin for detection of virtual fence crossing (cross line detection) and the via:sys plugin for motion analysis. This powerful outdoor and indoor image video



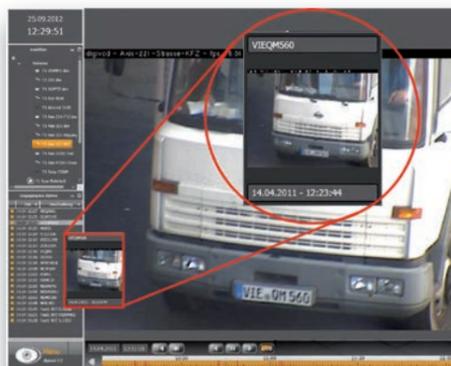
Powerful analysis algorithms allow the automatic identification of moving objects

sensor allows the analysis fields to be narrowed down to any polygons, the perspective to be corrected and for the direction of a movement to be detected. As these decentralised methods of video sensor are performed within the camera, it does not affect the performance of the digivod® server.

The optional server-based and fully integrated video analysis system for outdoor protection, which is integrated into the digivod® interface, can be applied for all cameras. In the live and archive images of the analysed cameras the detected moving objects are marked directly in colour. The "learning capability" of the analytical algorithms independently fades out cyclical disturbances (i.e. wind moving leaves, mirroring effects, reflections, shadows and light scattering, as well as brightness differences caused by lighting alterations). The false alarm rate is reduced to a minimum.

▶ LICENSE PLATE RECOGNITION

The automatic recognition of license plates feature is optional. It enables the recognition of characters starting at a 16 pixel font size and can detect alphanumeric characters in the four most common text types (Latin, Arabic, Cyrillic and Chinese). The alarm management system can define black and white lists. Using this, the system can be set-up to trigger an alarm upon detecting certain license plates.



The fully automated recognition of license plates (OCR) is one of the most sophisticated tasks of video surveillance

▶ DIGITALES AND REAL PTZ (PAN/TILT/ZOOM)

The options of digital image shifting (pan/tilt) and image magnification (zoom) are useful applications, especially when using high resolution cameras. Thus, image details captured with the camera, which cannot be identified in the total view, can be made visible. Digital PTZ is available for all cameras through digivod®, both for live

image and archive playback. The functions are easy to operate with the mouse. For real PTZ cameras digivod® offers the control through a joystick in addition to the mouse. Automatic tracking shots are available as well as the direct selection of pre-defined PTZ positions.

▶ FREE IMAGE DETAILS AS SEPARATE VIEWS OR PTZ POSITIONS

Image details of single cameras can be defined as individual view elements and optionally as PTZ positions. Thus, in particular, the features of high resolution cameras can be used optimally. The simultaneous presentation of a full and detailed view of the same camera requires only one video data stream. This reduces the network load significantly.



HD camera as an overview camera, and in addition the selected view of the same camera

▶ USER MANAGEMENT

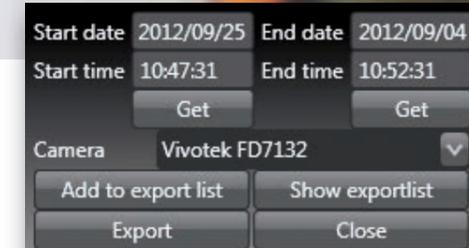
The access to cameras and views, and each digivod® function can be assigned to each user or user groups individually. The digivod® system supports the integration into a Microsoft active directory environment. This allows a digivod® login to be linked directly to the Windows login of the user.

The digivod® observer can be set up to start automatically when the user logs in to Windows and when exiting Windows the user is logged out of the observer again. This single application installation offers digivod® clients a maximum of user comfort and security.

Some applications require the 4-eyes principle when accessing sensitive archive data. A user account in digivod® can optionally be protected in a way that two different and independent passwords have to be entered to log in.

▶ EXPORT OF VIDEO DATA

The cameras, of which the video data is to be exported, and the export time window can be directly selected from the multi-view display, during an individual export of video data. The maximum size of the export files can be defined in such a way that they can be stored on standard media (e.g. CD or DVD). In addition, the export list enables the compilation of any archive



The various export options are selected directly from the digivod® player

data to an export package. Optionally this export package can be encrypted. The digivod® offline observer, which is automatically integrated into the package, allows the playback of the exported package in the usual digivod® environment on any Windows system. An export package can be burnt directly onto a CD/DVD from the digivod® software.

▶ ACCESS VIA THE INTERNET

The client/server architecture of the digivod® software allows not only for free movement of individual system components within a network, but it also offers several very simple ways to connect to a digivod® server through the internet. When connecting via the Internet the digivod® observer uses the available bandwidth efficiently and dynamically adjusts playback parameters of video data accordingly. Live and archive images are automatically encoded into H.264 and adapted to the target resolution. The one-click- installation method allows the launch of the digivod® client software with a single click, via the digivod® server in Internet Explorer.



The digivod® web access works with every HTML5 compliant browser and requires no additional software

In larger installations with many clients and the erection of branch systems, administration is reduced to a minimum when using this method. The one-click installation does not require administration rights on the client and is therefore suitable for access to digivod® from a remote computer, i.e. from an internet cafe.

The digivod® web access works efficiently, fast and without any installation of software or applet. Direct access to a digivod® server via the Internet is possible with any HTML5-compliant browser. The user interface is optimised for touch operation with smartphones or tablet computers. In addition, the digivod® web access can be fully used from any standard PC with keyboard and mouse. Access is protected by user name and password and, as an option, the transferred data can be encrypted with the HTTPS protocol (SSL). With the digivod® web access live and archive data can be displayed as single and multiple views. PTZ cameras can be controlled by a 'touch' of the live image or pre-defined PTZ positions and even jumping into the archive is possible by a simple 'touch' of the preview in the

compact alarm list. The web access displays the state of the IO ports and the ports can be switched directly .

► SD-CARD RECORDING

On some cameras it is possible to record video sequences onto an internal SD card. This type of recording reduces the network load and also allows for the connection of cameras with slower or instable network connections (i.e. via WLAN). Video data recorded on SD card is still available in case of network breakdown, a malfunction of the server or sabotage.

It is imported by digivod® automatically (cyclically or on request) and is then available in the archive like any regular recording. All functions of the archive evaluation (i.e. snapshots, Smartsearch, playback in different speeds, export) can also be used for video data imported from SD cards. SD card recording can occur as substitute or as an addition for regular recordings through the digivod® recorder.

► MULTI-RECORDING

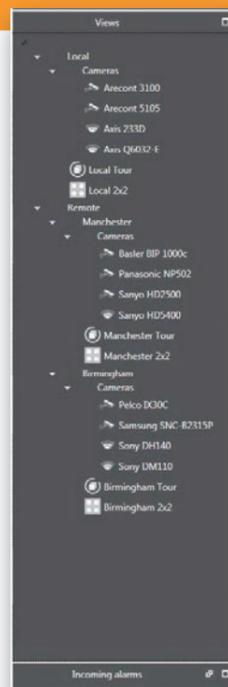
With the optional multi-recording virtually any scaling of the digivod® system is possible. Several digivod® recorders can be linked to several computers to create an overall system. Each recorder can manage any number of storage sets. Multi-recording enables a load distribution which, for example, may be required for a larger number of

video analyses or a very large number of cameras. In addition, multi-recording can increase the reliability of the overall system.

► INTEGRATION OF EXTERNAL LOCATIONS (MULTI LOCATION EDITION)

The multi location edition can integrate external digivod® systems via the Internet in such a way that all components of external systems (cameras, IO ports, views, site plans) can be used like locally installed components. This also applies to accessing the external archive data. The multi location edition helps setting up branch systems, which allow for the video data of all external branches to be viewed and evaluated in one central place.

The external digivod® installations are listed in the navigation view of the digivod® multi location edition



► CONNECTION TO CONTROL CENTRES

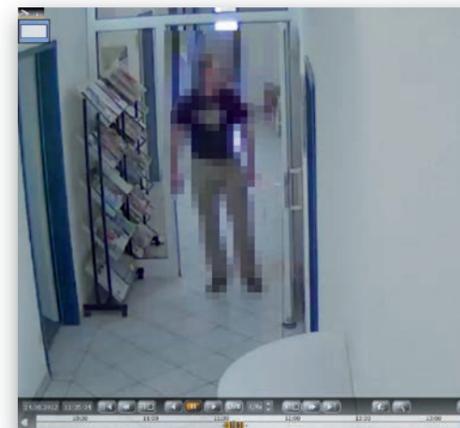
For the connection to a control centre digivod® provides several options. Automatically executed alarm actions allow the sending of alarm mails, dispatching of notes to a network address and the direct transfer of alarm images or videos to the server of a control centre. Moreover, digivod® is integrated into the EBÜS system, which is frequently used in control centres. EBÜS is a complete video management solution which connects and services video systems of different manufacturers under one uniform interface.

► TIME SCHEDULE CONTROL

In digivod® the recording time and parameters of individual cameras, the alarm management rules and the automatic tours of PTZ cameras can be controlled by time schedules. The set up of exception periods enables adjustments of irregular holidays within a regular weekday/week-end schedule concept.

► PRIVACY ZONES AND PRIVACY PROTECTION

Many IP cameras allow for the masking of certain image areas. For example, certain neighbouring properties or public areas can be excluded from video surveillance for data protection reasons.



Privacy Zones and the optional module Privacy Protection provides optimum data protection

The disadvantage of these camera-applied so-called Privacy Zones is that these areas are not available for evaluation at a later time, even if there exists a legitimate interest, for example, after a break-in. In digivod® server-based Privacy Zones can be set up for each camera. After an incident a user with the respective authorisation (secured by the 4-eyes principle, if applicable) can deactivate the Privacy Zones.

The optional Privacy Protection module extends this function by a dynamic scrambling of moving objects. The movement itself remains recognisable, but identification is not possible. Here, too, in an incident case, an authorised user can access the unscrambled image material. This way digivod® enables video surveillance in conformity with data protection.

► AUTOMATIC CAMERA SEARCH

During installation the most important settings of the digivod® software are placed in such a way that the system can be used productively very fast. Only the administration of the cameras is required for the production start-up and this can be executed fully automatically if desired. All connected cameras in the network of manufacturers supported by digivod® are displayed in a clear list of search results and can be applied with a single click - it's that simple! The recording of these cameras then starts immediately. For cameras still in the factory mode the master password selected for this kind of installation is set with the automatic camera import. This eliminates the need to change the factory password on the cameras manually.

► SOFTWARE + HARDWARE

The digivod® system can be easily installed on standard Windows PCs. In addition, digivod gmbh offers pre-configured systems with hardware optimised for digivod®. Beside affordable bundles for smaller installations, recorder servers and powerful evaluation clients we also configure larger systems precisely for your needs. Just ask us!