Software
Bundesverband IT-Mittelstand
Made in Germany

100%
Service
Quality
Future

digivod®

Innovative
Video Surveillance Systems

Simple. Scalable. Flexible.

digivod®
digital video surveillance

Demands on a modern video surveillance

The video surveillance market today

Over the past years, IP video technology has significantly affected the market for video surveillance systems. The desire for high-resolution cameras with integrated additional functions results in newly set up and professionally planned video surveillance solutions, implemented mainly as IP video systems. IP video management solutions offer exceptional scalability and extensibility. They cause lower installation costs and, in addition, most products have grown mature over the years and have proven themselves in intensive operations. All this helps to protect new investments. Past investments are secured by the ability of IP solutions to integrate seamlessly into existing legacy video solutions.

The difficulty to choose - which software?

Apart from cameras and camera positions, it is the video management software (VMS) that determines the performance of the overall solution. The choice for the software also determines on the manufacturer and system architecture. Compatibility of competing software systems does not exist.

Pay attention to the details!

Standards should be valid for any video management software. But they are not because not all manufacturers implement them. Well-designed applications allow optimisation of parameters of each single camera for the monitored area. However, when it comes to synchronous replay of video by cameras with different compression and frame rates, most systems fail. Such and other details must be looked into closely when choosing a video management system.

There are three factors to be considered when making a decision:

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

Flexibility in practice

To cover as many as possible requirements of the customers with one single video management software – that is a wish of most distributors and installers of professional video surveillance solutions. Often, the first step is to replace an existing old recorder before the route toward IP video can be started. Now the word 'flexibility' gains new meaning. It means that a video management system can equally be used in single-family homes, as well as in large shopping centres with several hundred and more cameras. It means that the system can be expanded during running operations while keeping the same architecture and user interface, and integrating seamlessly into existing infrastructure. Thus, only those software products that support IP as well as hybrid systems, with the ability to integrate analogue or HD-SDI cameras, fulfil maximal flexibility.

Functionality versus Simplicity – all in one

How to maintain a rich variety of features and, at the same time, an easy to use interface – that is a secret recipe. Only few software vendors have it and subscribe to this formula. Most vendors prioritise the number of features and neglect the significance of an intuitive user interface. As a result, a complex user interface requires more training effort and causes unnecessary, prolonged access time in case of alarms. Only those software products that know how to unite both – functionality and simplicity – truly understand the business needs.

100% is possible!

In many cases, standard of the shelf products cannot fulfil specific customer requirements. This is true especially for large scale installations or specific business solutions. Often, a project needs to be initiated and executed in order to implement individual requirements. 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, IO modules) fit into those examples. Last but not least, cutting edge video management software should support precise mapping and logging of established workflows. Software shall adapt to business needs, not the other way round. Here, the abilities of the software manufacturer make the difference. Project proven, experienced integration partners are difficult to find. But they exist.

Conclusion

Even for the realisation of a standard application, the performance of all components, especially those of the video management software, must be examined in detail. Tabular market overviews rarely help since the range of functions of all systems offered is constantly growing larger and the products "on paper" are becoming increasingly similar. Competent advice, based on practical experience, is irreplaceable in all phases of a video surveillance project!

Possible components of a digivod® system

digivod® advantages at a glance

digivod® - Innovatively simple – simply innovative

The digivod gmbh in Meerbusch develops and sells innovative video surveillance systems. With the four consecutive editions of the digivod® video management software and a complete product range of IP and Hybrid recorders (IP, HD-SDI and analogue) the company offers a truly flexible system – Made in Germany! The digivod® software has been consistently developed after the maxim "Simple must be simple and difficult must be possible". In the market digivod® is critically acclaimed and praised for its performance, its range of functions and especially for its simple user interface. digivod® is highly 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 image analysis, license plate recognition, failure protection through automatic failover and numerous interfaces to other systems. On request the digivod gmbh also provides complete customised solutions with hardware as well as software from one single source.

"Genuine" flexibility with digivod® Software and Hybrid recorders

Well conceived IT networks are scalable and the hardware components of an IP video system can be integrated easily via standardised interfaces. Adjustments and extensions can be carried out flexibly, mostly even whilst the system is in operation. For pure IP video surveillance systems the digivod® software, designed as a client / server application, can be precisely dimensioned for the application in such an environment. In practice, the entry into the video world of IP often requires the replacement of an existing old recorder in a first step and the continued use of existing analogue cameras. The digivod® Hybrid recorders offer an ideal entry into the world of digivod®. With 16 to 96(!) analogue channels or up to 24 HD-SDI channels and further IP-channels in one recorder they combine all three established camera systems in the world of video surveillance - with full digivod® functionality! Any number of digivod® recorders can be combined into a single system, even across different locations. Old cameras can be replaced with new high resolution IP cameras as required in operation and at no additional license cost.

Integration capability

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

Megapixel / HD

A current full HD camera delivers five times as many pixels as the highest resolution analogue camera. Additional detailed information can be used to monitor larger image areas. Often, the number of necessary cameras can then be reduced. Especially when zooming digitally, the benefits of higher resolutions are visible - instead of squared pixels more details appear. The digivod® software supports all current camera resolutions and video encoding with H.264, MPEG4, MJPEG and MxPEG - frame accurately forwards and backwards!

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 digivod® software supports IP cameras and video servers of 3S, ACTI, Arecont Vision, Axis, Balter, Basler, Bosch, Brickcom, Canon, COE, Cohu, EverFocus, Grundig, Hikvision, IQeye, IQLE, JVC, LG, LTV, Mobotix, Panasonic, Pegasus, Pelco (Sarix-models), Riva, Samsung, Santec, Sanyo, Sony, VideoTec, Visicom and Vivotek, and is cross-manufacturer compatible to the ONVIF standard.

- **Made in Germany**
- **Intuitive user interface**
- **Manufacturer independent**
- **ONVIF compatible**
- **IP, HD-SDI, analogue in one system**
- **H.264, MPEG4, MJPEG, MxPEG**
- **Powerful video analysis**
- **Failure protection through failover**
- **Optimised Internet access**
- **Complete systems from one source**

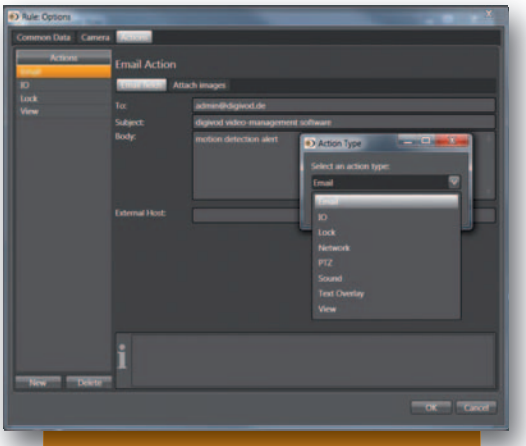
The range of supported manufacturers and camera models is extended continuously.
For digivod gmbh manufacturer-independence also applies to IT hardware. The digivod® software runs on all current Windows operating systems, either as 32-bit or 64-bit application.

Optimised archive access

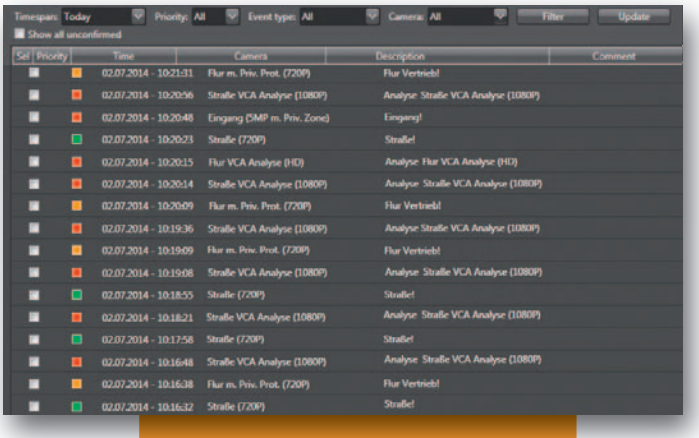
Fast and accurate access to the archive material is decisive for the analysis of video data, especially in case of alarm. digivod® offers the ideal solution for each application. In case of alarm the easiest way leads from the digivod® observer interface via the alarm list. When hovering over a line of the alarm list, a preview of the alarm-triggering event is displayed automatically and a double-click 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 shows all camera specific displays of all alarms received to the second. In archive playback and live view the playback can be directly controlled frame-accurately via the buttons of the digivod® player. Even stopping the live image is possible at any time. Additional buttons allow fast forward and backward jumps from 5 to 60 seconds or to the next / previous alarm. For quick search of events just received the digivod® Fastback function is provided. During an archive search the live image of the search cameras can be displayed further, if desired - so the operator always keeps an updated overview

Event and alarm management

The digivod® event management system files all registered events chronologically and logs them securely. The digivod® alarm management system is based on a freely definable set of rules for processing incoming events.
When a rule is complied with, the defined rules in alarm management turn an event into an alarm with predetermined priority. Triggering events could include, for example, video sensor detected movement, fence crossings, recognition of a specific license plate, and failure/manipulation of a camera or operating of a door/alarm button.
The individual processing steps of alarms (e.g. acknowledgment or entering a comment) are logged, user-related and to the second. In addition, the digivod® alarm management can display predefined processing information to the operator and thus support uniform and fast alarm processing.
Possible responses to alarms are, for example, sending e-mails with attached alarm images and a link to the video archive, the transmission of alarm images or videos to a control centre, switching to an alarm view, switching of IO contacts or moving to certain PTZ positions. Rules may relate to individual cameras, camera groups or all cameras and can be activated/deactivated via time schedules and IO contacts.

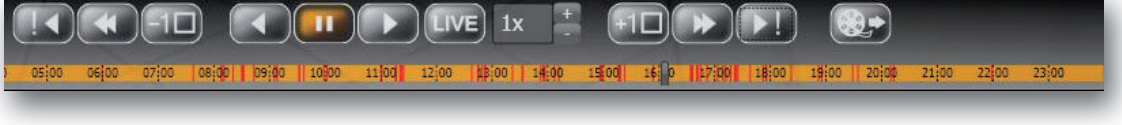


The alarm management allows for the flexible definition of rules and actions for each event

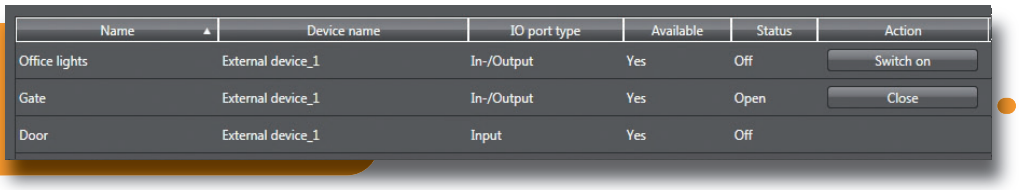


The event and alarm archive can be searched flexibly for any criteria

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



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 IO modules digivod® can respond directly to switching commands and also trigger switching operations. Door-openers, lights or gates turn into components that can be operated from digivod®. Video surveillance can react to signals, such as external motion detectors, light barriers or alarm buttons, which are connected to IO ports. IO ports and their current switching status are depicted in site plans as well as in general IO views and can be activated directly with a simple click. Virtual IO ports allow for incoming events to be linked logically before they trigger an alarm. If for instance camera 1 reports a movement, an alarm will only be triggered if camera 2 also reports a movement within the next five seconds.

Bi-directional audio support

The two-way audio support integrated in digivod® enables a high-quality and lip-synchronised recording of the audio signals from the cameras. Via a microphone at the workplace the digivod® operator can speak directly to persons observed via speakers connected to the camera.

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 standard templates supplied (e. g. 2x2, 3x3, 1+5 or 1+12).
For a quick overview, the layout of the icons is visible on the navigation tree.

Site plans

The navigation tree and multi-views enable the integration of site plans so that the user can directly access alarm-triggering camera images by clicking on camera icons on the map. Alarm-triggering cameras are recognisable immediately.

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 oriented alarm list

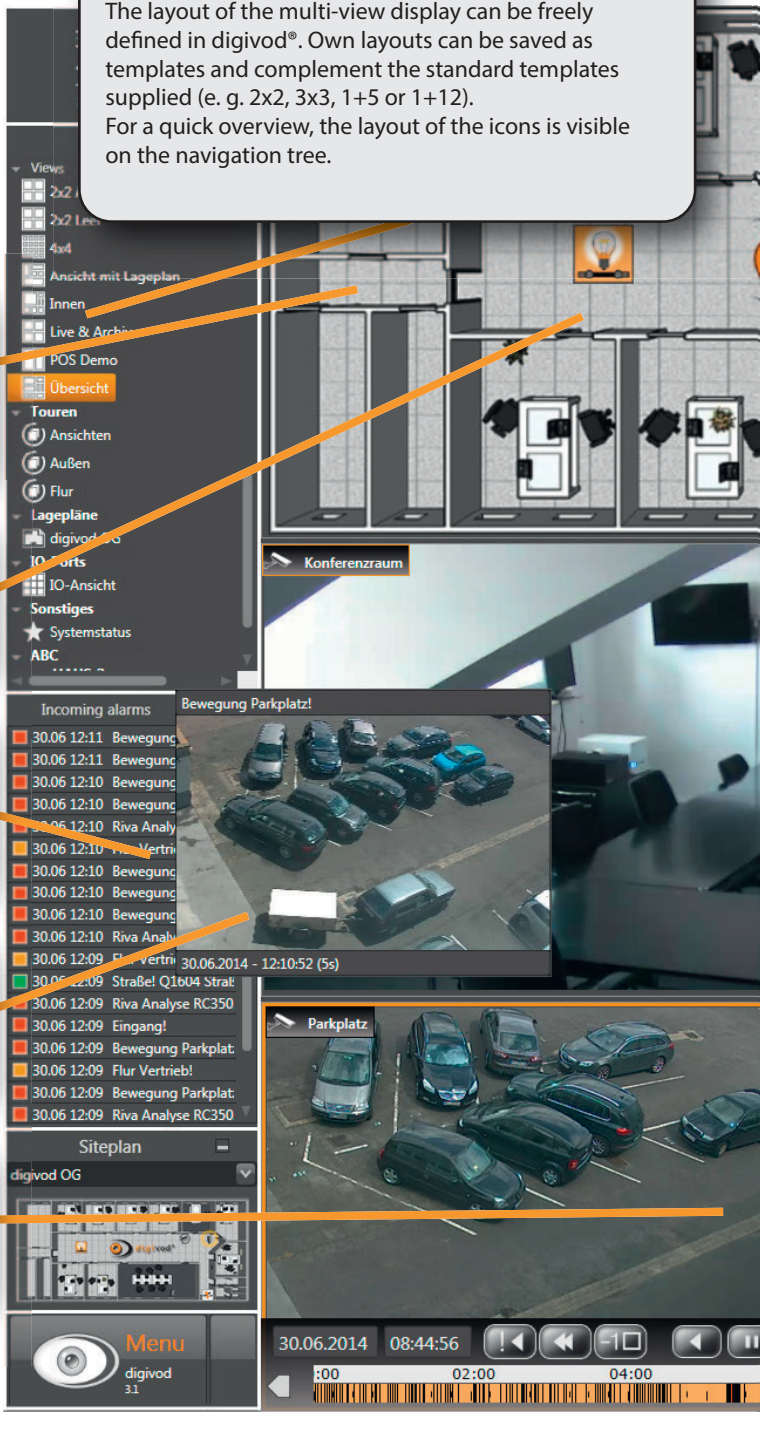
The list of recent relevant alerts on the digivod® observer, which is always visible to the user, provides a quick overview and allows direct access to the alarm-triggered camera images.

Fast event preview

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

Live and archive image simultaneously in view

Even during an archive search the live image of the camera can still be displayed - the user retains the current overview at all times!



Compression types

The digivod® software supports video data of IP cameras compressed with H.264, MPEG4, MxPEG or MJPEG. The digivod® Hybrid recorders compress video data of analogue cameras and HD-SDI cameras with H.264. The digivod® player can replay video data frame-accurately, independent of the compression method. The absolutely synchronous forward and reverse playback of single frames within multiple views with cameras, which are recorded with different compression methods and different frame rates, is unique.

Fastback

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

Privacy Protection (masking of moving objects)

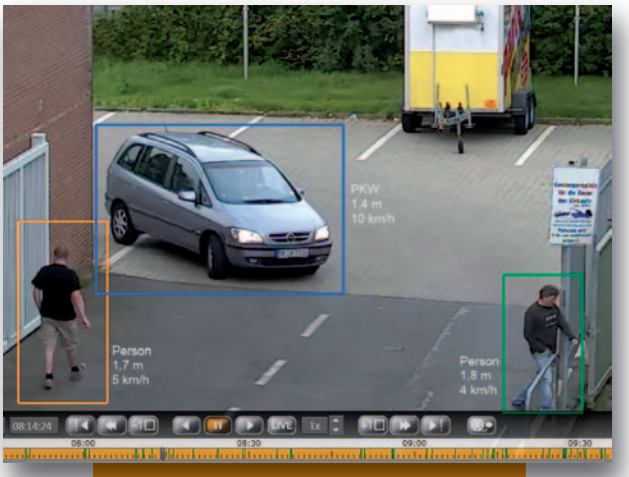
The optional module Privacy Protection pixelates moving objects in freely defined image areas so that they can no longer be identified. The protection of privacy is respected but the movement itself remains recognisable.

Scalable and movable timeline

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

SmartSearch/QuickSearch

With SmartSearch and QuickSearch digivod® provides two very effective methods to subsequently search archived video footage on movements or changes. For SmartSearch the camera's image area to be searched can be chosen freely. SmartSearch creates a list of motion events which can be analysed during the search. Optionally, the video data can already be analysed in the background during recording with Fast SmartSearch. The analysis results archived along with the video data enable a flexible and fast evaluation over long periods of time. QuickSearch generates a thumbnail grid with up to 36 windows over any archive period. With a few clicks the video area wanted can be limited and found by time-based zooming into the archive area.



Powerful analysis algorithms allow for the automatic identification and classification of moving objects

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 motion detection in almost all IP cameras provides a cheap solution. Movements detected by the cameras can be directly processed in the digivod® alarm management.
More complex video analysis, especially outdoors, requires more powerful VCA algorithms (Video Content Analysis), which can identify and classify different objects in the surveillance area in real time. The learning ability of VCA algorithms fades out cyclical disturbances (e.g. moving water surfaces, trees, shadows, clouds) independently. The rate of false alarms is reduced to a minimum. Through a 3D calibration, the VCA used in digivod® can classify size and speed of captured objects in relation to their distance.

The VCA can be carried out both locally in the cameras and centrally on the server, digivod® supports both variants. The local analysis does not put load on the digivod® server, but is only possible with certain cameras. The central analysis requires appropriate processing power of the server, but works with all cameras.

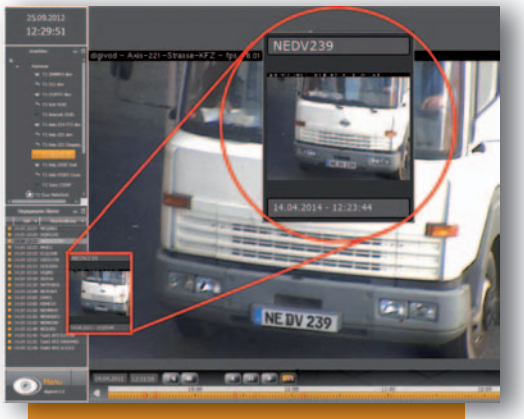
In both cases, the VCA provides classified metadata of the moving objects, which can be evaluated by further filters:

- The input / output filter triggers an alarm when an object enters or leaves a certain area.
- The stop filter responds to objects that linger longer than a predetermined maximum length of stay in a zone.
- The delay filter triggers an alarm when an object changes its speed within a defined zone.
- The filters for direction detection trigger an alarm when objects move in the configured direction through a zone or over a line.
- With the filter for the monitoring of access rules an alarm can be generated when a second person without permission oversteps a virtual line or a zone within a defined time frame. For clarity, several objects recognized simultaneously by the VCA are marked with different colours.

For a digivod® server to analyse as many camera channels as possible simultaneously, digivod® uses dual streaming - the ability of current cameras to provide two parallel data streams with different resolutions. Especially when using high resolution cameras the load on the server is reduced considerably. The VCA analyses a resolution-reduced second data stream and displays the analysis results in live and archive images of the high resolution image from the primary data stream.

License plate recognition

The automatic feature for the recognition of license plates is optional. It enables the recognition of characters starting at a 16 pixel font size and can detect alphanumeric strings reliably in the four most common text types (Latin, Arabic, Cyrillic and Chinese). In the alarm management system respective black and white lists can be defined. They determine which strings trigger alarms.



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

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, 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.

Simultaneous display of overall image and image detail of the same camera

Digital and real PTZ (Pan/Tilt/Zoom)

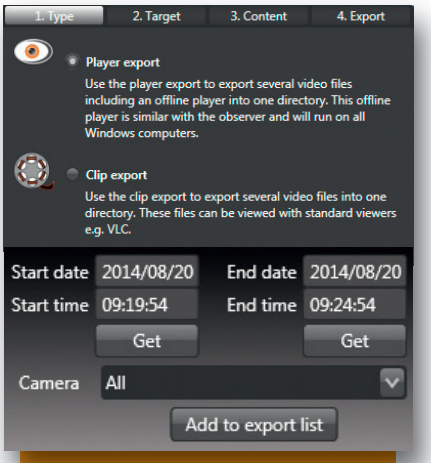
The options of digital image shifting (pan/tilt) and image magnification (zoom) are useful applications, especially when using high resolution cameras. Thus, image details captured with the camera, which cannot be identified in the total view, can be made visible. Digital PTZ is available for all cameras 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 or a joystick simulation in addition to the mouse. Automatic PTZ tours are available as well as the direct selection of pre-defined PTZ positions.

User management

The access rights to cameras and views, and each digivod® function, can be assigned to any user or user groups individually. The digivod® system supports the integration into a Microsoft active directory environment. This allows for a digivod® log-in to be linked directly to the Windows log-in of the user.
The digivod® observer can be set up to start automatically when the user logs in to Windows and the user has no access to the Windows interface. The digivod® Hybrid recorders and complete systems are delivered with Embedded OS. This makes digivod® safer and easier to use for end users and operators. The underlying Windows system no longer appears. Operating errors, tampering and sabotage are practically excluded. The familiar Windows environment is only available for administrators. Some applications require the 4-eyes principle when accessing sensitive archive data. A user account in digivod® can be protected in a way that two different and independent passwords have to be entered to log in.

Export of video data

With the Clip Export and the Player Export digivod® offers two flexible ways to export video data for external uses.
A Clip Export includes any video sequences of different cameras, which can be played back with any standard video player. The Player Export also includes a complete digivod® Offline Player. This allows for the playback of the exported



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

video data on any current Windows system in the usual digivod® environment without having to install a software there! Optionally, the exported data can be securely encrypted and burned to CD / DVD / BD.

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 from outside via the Internet. When accessing via an Internet connection, the digivod® observer uses the available bandwidth efficiently and dynamically adjusts playback parameters of video data to the target resolution. The one-click-installation method allows for the installation of the digivod® client software with a single mouse click. In large installations with many clients and when setting up store systems the administrative effort is reduced to a minimum. The one-click-installation requires no administrator rights of the client and is therefore also suitable for the digivod® access from a remote machine, e. g. from an Internet cafe.

The digivod® Web Access works with every current browser and requires no additional software

digivod® Web Access works with all current browsers and requires no additional software. The user interface is optimised for touch operation with Smartphone or Tablet computer, but can also be used to its full extent by a standard computer with keyboard and mouse. Access is protected by user name and password, and optionally the transmitted data can be encrypted using the HTTPS protocol (SSL). With digivod® Web Access live and archived data can be displayed in single and multiple views. PTZ cameras can be controlled and IO ports can be switched. The compact Web Access alarm list allows for direct jumps to an alarm triggered video with a touch or a click.

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 can be used like locally installed components. This also applies to accessing the external archive data. The MULTI-LOCATION Edition helps setting up branch sys- tems, which allow for the video data of all external branches to be viewed and evaluated in a company headquarter.

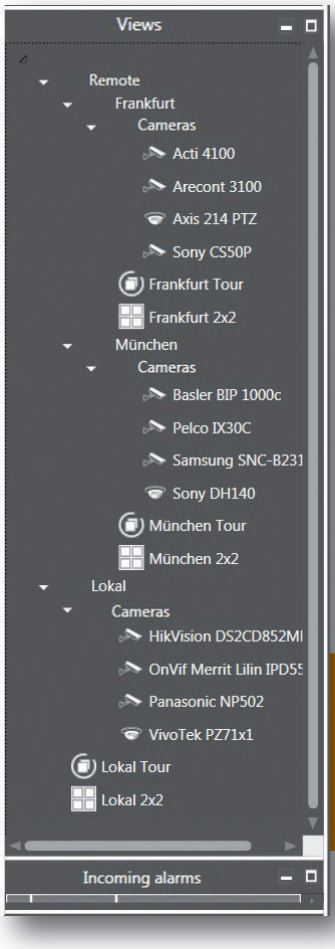
Connection to control centres

For the connection to a control centre digivod® provides several options. Automatically executed alarm actions allow for 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.

Multi-recording with automatic failover (ENTERPRISE Edition)

The Multi-recording, i. e. the distribution of the video recording on multiple recorders, with automatic failover, is the core function of the digivod® ENTERPRISE Edition. Any number of digivod® recorders can be combined into a complete system. This allows for an optimum of load

distribution and the set up of very large and, if needed, redundant systems with increased failure safety. For the storage locations of a digivod® ENTERPRISE system failover storage locations can be defined where the recording is continued in case of error. In case of failover you can optionally define a lower resolution and / or frame rate for each camera in order not to overload the appropriate digivod® recorders or further ensure the minimum recording duration despite a reduced number of storage locations. As soon as a failed recorder or storage location is available again, digivod® automatically returns to normal operation.



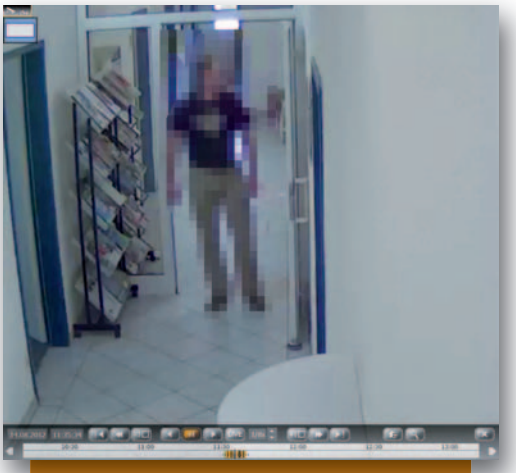
The external digivod® branches are summarised in the navigation view of the digivod® MULTI-LOCATION Edition

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. Regular time schedules can be complemented by irregular exceptions (i. e. holidays, closing dates)

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. One disadvantage of these camera-applied so-called Privacy Zones is that these areas are not available for evaluation at a later time, even if a legitimate interest exists, for example, after a break-in.



Privacy Zones and the optional module for Privacy Protection provide optimum data protection

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 pixelation 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 original 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 quickly be used productively. Even the basic administration of new cameras and the change of the factory password are carried out fully automatically at the request of digivod® - with a single click. Nothing could be easier!

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 digivod® Hybrid recorders, affordable digivod® bundles, servers and clients, we configure larger systems precisely to your needs. Also, customer and project specific adaptations of digivod® software and OEM versions are possible.
Just ask us!

The digivod gmbh in Meerbusch develops and sells innovative video surveillance systems. With the four consecutive editions of the digivod® video management software and a complete product range of IP and Hybrid recorders (IP, HD-SDI and analogue) the company offers a truly flexible system – Made in Germany!
The digivod® software has been consistently developed after the maxim "Simple must be simple and difficult must be possible". In the market digivod® is critically acclaimed and praised for its performance, its range of functions and especially for its simple user interface.
digivod® is highly 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 image analysis, license plate recognition, failure protection through automatic failover and numerous interfaces to other systems.
On request the digivod gmbh also provides complete customised solutions with hardware as well as software from one single source.

www.digivod.de

digivod®

www.digivod.de
info@digivod.de

digivod gmbh
Breite Straße 10
40670 Meerbusch

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

digivod_Brochure_Sep2014