

Product Information Note

Digital Video Manager Improving Safety and Security with Integrated Video



Digital Video Manager is the industry's only enterprise-grade digital video solution that sets new standards in operational efficiencies, cost-effectiveness and performance for industrial plants. With a Smart Surveillance platform and Honeywell's integrated approach to security management, Digital Video Manager increases intuitive intelligence, empowering operators to do more with less.

Shaped by Honeywell's technology and integration expertise, Digital Video Manager (DVM) is a scalable, digital closed-circuit television (CCTV) surveillance solution that delivers increased operational efficiencies, reduced lifecycle costs and improved decision-making functionality.

Digital Video Manager addresses the challenges of today's video surveillance, security and enterprise operations. Its architecture takes advantage of your enterprise's network communications structure – eliminating the need for extensive dedicated video cables and providing unmatched camera portability and flexibility. DVM's flexible architecture also allows you to re-use much of your existing analog system CCTV infrastructure, while extending functionality through integration to the enterprise network. This protects your existing CCTV investment while taking advantage of the latest digital video technologies.

DVM is tightly integrated with Honeywell Experion Industrial Security and Honeywell's Experion Process Knowledge System, providing video information to Process and Security operators in their operator stations. Alarm and event-activated recording ensures that you only capture the video you need, when you need it most.

Experion Industrial Security provides an integrated security management platform for managing plant security needs. Experion Industrial Security integrates information from the access control system, video surveillance system, perimeter security systems and enterprise systems providing integrated information to the operators increasing their situational awareness and decision making capabilities.

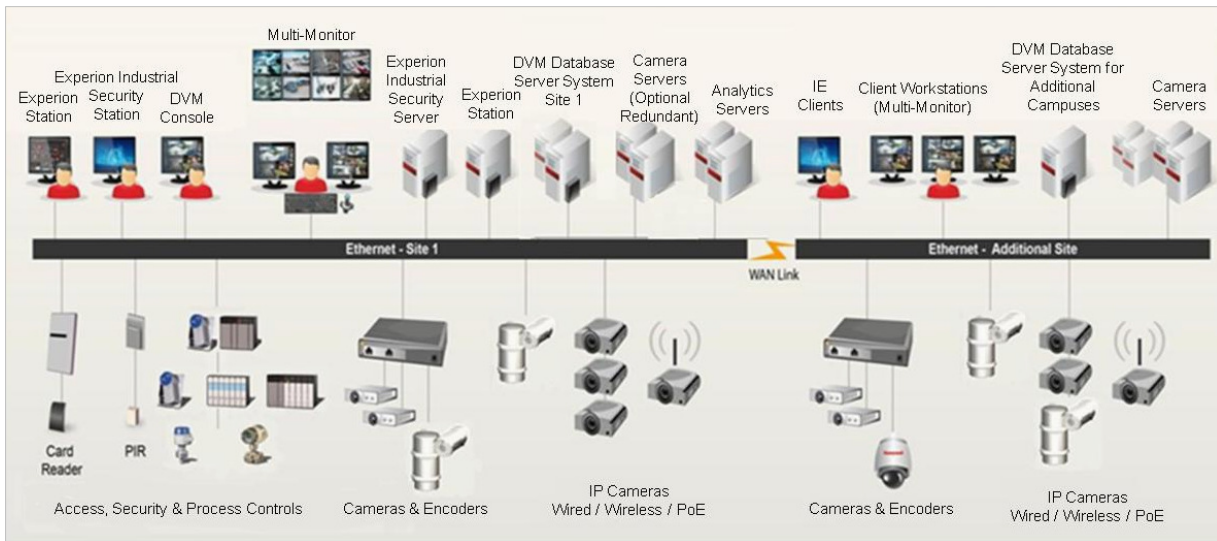
Honeywell's Digital Video Manager and Experion Industrial Security deliver more than the simple benefits of digital CCTV. In an environment where you are continuously seeking ways to optimize your resources, our powerful solutions can help enhance the productivity and effectiveness of your security and surveillance operations, reduce equipment and space needs, provide flexibility, and drive down installation and lifecycle costs.

Honeywell Digital Video Manager is deployed in over thousands of facilities across the globe in different verticals. Digital Video Manager is helping some of the largest industrial facilities in the world enhance their productivity and security.

Reduced Cost with Open System Architecture

Digital Video Manager is built upon industry standard open networking, PC hardware, and software applications that take advantage of cost-effective, powerful components, simplifying support needs and reducing the cost of ownership. Using commercial off-the-shelf hardware allows you to use the cameras, PC, storage, and networking hardware of your choice – no need to pay premiums for proprietary hardware.

DVM supports virtualization - virtualization of servers enables optimization of hardware and effective utilization of hardware resources, reducing hardware cost and improving system availability and disaster recovery. Over the lifecycle it reduces hardware upgrade cost for resources such as the CPU; RAM can be added to the VMware host and shared by the virtual machines reducing the cost of upgrades.



Scalability with Distributed Video Architecture

DVM's scalable architecture can scale from a small system with few cameras to 1000's of cameras spread across single or multiple sites. Larger enterprises that are separated either geographically or administratively can link together multiple DVM systems to create an integrated, enterprise-wide surveillance system using DVM's Distributed Video Architecture (DVA).

DVA helps to support a central command and control architecture, and provides the ability to share live and recorded video across different DVM systems while also allowing each system to be autonomous and independently managed. The process monitoring DVM system can be on DVA with the security DVM system allowing sharing of video information with restrictions, allowing systems to be independent yet sharing critical information.

Unprecedented Availability and Reliability

DVM's advanced High Availability architecture makes it one of the most reliable digital surveillance systems on the market today. For most systems, the failure of a Digital Video Recorder (DVR) or Network Video Recorder (NVR) requires physical replacement with another unit, which adds hardware and labour lifecycle costs, and also increases risk as the cameras attached to the failed device are no longer available for viewing and recording. With Honeywell DVM, Database and Camera Servers are available in redundant configurations; hence a failure in the Preferred Server can be immediately addressed with the system

reverting to the Backup Server. Disruption is thus minimized and recordings and live view can be maintained without the need for manual cable swapping or hardware replacement.

In addition, DVM server hardware supports RAID -1 and RAID- 5 configurations to ensure high system availability and reduced data loss due to hard drive failures. DVM's support of server virtualization also enables higher system availability with faster recovery from failures.

Integration with Security Platform

Digital Video Manager seamlessly integrates with Experion Industrial Security, allowing security operators to now view and control virtually all systems from a single station without the need for switching between systems for information.

The benefits of integration with Experion Industrial Security include:

- Full control, view and configuration of DVM systems from within Experion Industrial Security stations.
- Enhanced alarm management utilizing Experion Industrial Security's advanced alarm management tools, including multistage alarm handling which helps operators in managing DVM alarms and situations.
- All DVM system alarms/events appear within the Experion Industrial Security Alarm and Event summary displays., Recordings initiated by Experion Industrial Security alarm/event or motion detection can be directly accessed

from the alarm summary, dramatically reducing the amount of time operators need to spend searching for recordings related to events.

- Alarms and events occurring within Experion Industrial Security, such as alarms triggered by the perimeter intrusion detection system or access control system, can be configured to automatically move a pan/tilt/zoom (PTZ) camera to a preset location, initiate recordings, and automatically show the particular camera or related view on the defined stations as well as alarm monitors. Operators are now less susceptible to information overload caused by monitoring too many cameras for too long; rather they are only presented with information related to an abnormal event or threat situation.
- Rich Experion Industrial Security custom displays can combine security and video data. Standard camera objects can be added to graphics, which can pop up to show live video, camera and recording controls as well as enable quick access to the recordings.



- Integrated facility segregation, whereby cameras can be assigned to the same areas as points in Experion Industrial Security, allows operators to only view and control cameras in the areas assigned to them.

- Integrated operator-based and station-based security to access DVM makes it easy to manage access restrictions and system security.
- Drag and drop cameras from Experion Industrial Security station custom displays directly into the DVM Console client video workspace for rapid access to video footage.
- DVM provides a host of standard reports which are accessible from the Experion Industrial Security reporting server and cover system status, configuration and use.

The ability to view video, as well as monitoring the security systems, increases productivity, greatly improves situational awareness and abnormal event management providing your operators with an advanced operating environment.

Flexible User Interface Options

DVM also provides multiple client options to meet user requirements. DVM can be accessed using an Internet Explorer client from any PC on the network allowing managers, engineers, and safety officers to access DVM from their workstation. Security operators can access DVM directly from their Experion Industrial Security station. For more advanced operator needs, DVM offers an advanced client – the DVM Console.

Advanced, Professional User Interface

DVM Console provides a powerful and flexible user interface based on extensive usability studies focused on increasing operator productivity. The advanced features and intuitive interface provide agile navigation and contribute to improved situational awareness, faster incident investigations, and ultimately, a reduction in security risks.

The DVM Console client includes the following key features:

Quick Access to Desired Cameras:

Cameras are logically grouped in a multi level tree based on the site layout or on the Experion Industrial Security Facility Model in case of an integrated system. This creates a familiar environment for Experion Industrial Security operators, enabling quick camera selection. The built-in search filter dynamically filters the tree contents based on the characters typed into the filter field. Operators are provided flexibility to build their own logical groups of cameras to suit their specific security workflows.

Recently used cameras list provides an easy recall of the recently removed cameras from the workspace

Flexible Video Workspace:

Configurable “on-the-fly” drag and drop functionality and standard layouts allow cameras – or groups of cameras - to be dragged into the workspace, displaying views from a single camera to 25 cameras to support operator and situational needs. Cameras can be logically arranged by moving camera tiles in the workspace to meet operator needs. The Multiple cameras view allows an operator to review a system area with a single drag-and-drop operation reducing the need for creation of multiple pre-configured views.

Reduce Investigation and Forensic Time:

The DVM console timeline provides operators with the ability to easily locate and play back recorded video from one or more cameras. Multiple cameras can be played back together to allow time-synchronous video replay, often termed synchronized playback – to allow operators more insight into the finer details of security events from more than one angle. The recording controls like fast forward, rewind, and frame by frame advance enable faster investigation.

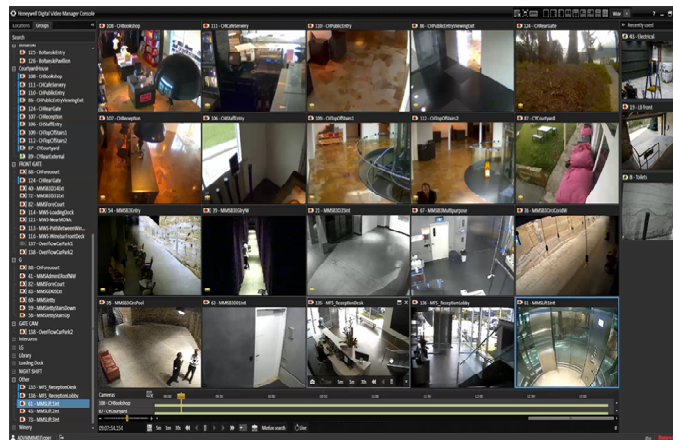
Allowing the same camera displayed in the workspace to play back at different time periods increases the ability to understand the incident and find the interested clip portions of a recording. Simultaneous viewing of live video and recorded video for a camera enables investigating recordings of the camera without losing its live view.

Unique with the DVM Console Client, motion search on past recordings enables operators to quickly search for events within recorded video streams based on the criteria of motion in the configurable area in the recorded video. Recordings meeting the motion search criteria are tagged on the timeline, allowing quick navigation to motion events and reducing the effort of watching hours of video recordings to find an incident. This is a functionality that can be of great value especially for sites that use continuous or background and scheduled recordings

Motion search on a recording can be performed on multiple cameras simultaneously. This further reduces investigation time and allows easy skipping through motion events across multiple cameras, providing unprecedented levels of forensic capability.

Advanced, Integrated Security

To access DVM, each user must have a user account in the DVM system. Each user account is assigned a security level, a control



level and accessible areas; this ensures that users can only view and control cameras they are authorized to access

With integration with Experion Industrial Security, Digital Video Manager delivers more advanced security features with integrated user accounts. The Experion Industrial Security access level defines the areas the operators can access and allows specifying which operators in Experion Industrial Security can view, control cameras and even specify which operators would have access to which recordings.

Intelligent Recording

Digital Video manager offers a choice of recording options to meet the security requirements and ensure effective utilization of available storage space. Recordings can be initiated on alarm or event activation, triggered by video analytics or by scheduled, background/ continuous recording and operator initiated recordings. The recording type combination of recordings is available for each camera on the system, allowing efficient and effective capture of video recordings while optimizing the storage requirement.

Digital Video Manager aids incident investigation by recording not only the video after an event trigger (post-event recording), but also what happened prior to the event (pre-event recording). This provides a complete picture of the entire event, significantly enhancing investigations, evidence and outcomes. This feature is provided without the need for the expensive continuous background recording provided by many other systems.

During the heat of the moment, the operator while controlling the PTZ camera may miss to initiate the recordings with DVM's PTZ activated recording option. The DVM system will automatically

start recording when a PTZ camera is controlled by the operator, ensuring these important recordings are not missed.

Advanced Video Analytics Solutions

As video surveillance technology has advanced, the requirements for intelligent video have moved beyond simple video motion detection.

Simple video motion detection is a standard feature of DVM. For challenging outdoor environments, DVM offers adaptive premium video motion detection. The adaptive algorithm can “learn” the scene and adapt to the environment, ignoring environmental changes such as rain, hail, wind, dust, trees swaying and gradual light changes. This algorithm is appropriate for both indoor and outdoor use.

DVM also offers an advanced suite of analytics solutions provided by the Honeywell’s Active Alert Intelligent Video Analytics product range. Unlike other algorithms available, Honeywell Active Alert uses patented technology to minimize false alarms and does not require excessive computer resources. Active Alert Algorithms detect:

- A person’s events such as entering restricted areas, climbing a fence, loitering or moving in the wrong direction or moving too fast
- Vehicle events such as a vehicle entering a restricted area, speeding or moving in the wrong direction, making an illegal U turn, or parking illegally
- Objects left unattended or removed.
- Active Alert algorithms even count persons and or cars entering or exiting an area.

Active Alert Analytics is available in five packages, each enabling different detectable behaviors.

Digital Video Manager’s video analytics features do not simply replicate the standard functionality available in many of today’s CCTV systems. They also include:

- Operating analytics in Continuous mode (24hrs a day, 7 days a week) or as scheduled (run only during certain times)
- Raising an alarm (of configurable priority) or activating a recording upon detection in Experion Industrial Security
- Automatically displaying the camera’s live video in a station or dedicated alarm monitor

Ensuring Integrity of surveillance systems is essential to reduce risk. Changes in camera view may arise as a result of natural causes such as dirt build up over time, or through malicious interference from people who would prefer that their actions are not recorded. Honeywell DVM includes optional camera tamper detection analytics. The algorithm analyzes the video stream (continuously or at set intervals) for a tamper condition. The algorithm can detect tamper states such as loss of video or change in the field of view, blurred image or camera blinded state. Camera tamper is also useful as a service aid, for letting personnel know when cameras may need cleaning. Camera tamper detection can be used to trigger a recording, and when used in combination with the DVM pre-record period, it can capture the action that caused the tamper alarm.

Efficient Video Collection, Storage and Retrieval

With Digital Video Manager’s intelligent recording options, only video you need is recorded. This helps to optimize video archiving and storage usage by reducing the collection of redundant and irrelevant video recordings. Additionally, users can specify the quality of the recorded video for each type of recordings per camera. An example is to have live viewing at 25 frames/sec (fps), background recording at every 1 frame, and all other recordings (alarm-activated, operator-activated and video motion detection) at 25fps (full motion video), to ensure that as much detail as possible is recorded for incidents.

Digital Video Manager supports virtually any Windows compatible storage device, from storing on the local camera server drives or DAS to central storages like SAN and NAS DVM, providing you with the flexibility needed to meet your storage requirements

DVM provides effective recording management, reducing the operator load on managing the recordings. Recordings that are not required by an operator on a regular basis, but are required to be stored for a defined period of time, are automatically archived at a pre-defined date/time after the recording has completed to a defined storage medium like tape drives or network storages. DVM maintains records of these recordings and the archived location for easy search and retrieval. Recordings can also be scheduled to be deleted after a pre-defined period of days from the date of recording, thus ensuring effective utilization of storage space. These archiving and deletion days can be configured on per-camera basis, allowing effective use of available storage and allowing important camera storage for a longer time compared to other ones.

Advanced Search Capabilities

DVM provides powerful search and retrieval capabilities, reducing the time spent searching for the required recordings. Operators can search for recorded incidents based on criteria such as date/time, camera, recording type, the activating Experion Industrial Security point, alarm/event type and operator notes. Even archived recordings can be included in the search, allowing them to be easily located and replayed.

The DVM Console client provides even easier recording search capabilities via a timeline control covering all selected cameras in the video workspace with available recordings represented visually on the variable timeline. Using the play head and recording controls, users can search for recorder portions of the clips.

Integration with Legacy Analog CCTV Systems

Digital Video Manager can be installed alongside an existing analog CCTV system. The existing analog CCTV system is still used for dedicated viewing of cameras using the CCTV system monitors, keyboards and joysticks. The DVM system provides digital recording capabilities, including video motion detection and alarm/event activation, management of recordings, live and recorded view to Experion Industrial Security Stations and Internet Explorer clients, and integration of video into the Experion Industrial Security custom displays. The ability to use DVM with an existing CCTV system gives you access to DVM's many benefits, while retaining the familiar components of the analog CCTV system.

Video as Evidence

Digital Video Manager provides for the ability to export recordings (or segments of recordings) into standard Windows Media file format (MPEG4 format). Every exported recording is digitally signed to provide authentication of the origin of the recording and integrity, proving that the recording has not been tampered with. Digital Signatures do not alter the original files, thereby better preserving evidential weight as compared to other techniques like watermarking used by some video systems.

DVM also provides a complete audit trail (log) of all operator actions and system events. As with the exported recordings, the exported audit logs are also digitally signed.

When used in conjunction with site chain-of-custody processes and procedures, digital signatures and the audit trail can greatly enhance the evidentiary weight of a recording in a legal proceeding.

Privacy

Digital Video Manager provides the ability to protect the privacy of people whose actions are recorded by the system. Each camera can be set to allow playback and export of video only after authorization is received from a manager, thus preventing operators from reviewing or exporting recorded video without good reason or permission.

The DVM Image blocking option provides an advanced level of privacy control. Image Blocking prevents unauthorized operators from viewing live or recorded video when a specific class of operator takes control of a camera, thus helping to prevent potential collaboration between operators and suspects.

Other Powerful Features

Snapshot: On the click of a button by the operator, DVM captures the current frame of video and saves it as a bitmap image. This is available when viewing both live video and recorded video.

DVM Multi Monitor: DVM enables an operator to use a single keyboard to control the viewing of cameras on multiple monitors. DVM supports two types of multimonitor configurations - surveillance monitors and alarm monitors. A surveillance monitor allows a station or standalone DVM client to be set up to mimic a traditional CCTV workstation. The live video on a monitor will expand to fill the entire viewing area of the physical monitor. If there is an alarm in an integrated system, the associated video or a view is displayed on the alarm monitor attached to the Experion stations, reducing the time spent by the operator in searching for the right video. A multimonitor attached to a station can be configured as a combined surveillance and alarm monitor. Operators control the video that is displayed on the monitors, or the video can be cycled along different camera views in normal state. When the monitor receives an alarm video, it functions as an alarm monitor displaying the camera associated with the latest alarm. Once the operator acknowledges the alarm, the previously shown video on the monitors will be re-displayed.

Bi-directional Audio support: This provides a simple video based IP Intercom solution utilizing the existing audio enabled network camera or video encoder infrastructure. A call can be initiated from the camera location or the IE Client allowing bidirectional communication.

CCTV Keyboard: DVM supports the Honeywell UltraKey professional CCTV keyboard, ideal for operators more familiar with traditional CCTV keyboards.

Input and Output Devices: Using the digital video I/O ports of video cameras and streamers, DVM can directly monitor and control light switches, washer/wipers, buttons, infrared beam detectors and proximity sensors. This is useful where digital video/streamer I/O devices deliver hardware or installation cost savings.

About Honeywell

Honeywell is the leading provider of control, safety, security solutions and advanced applications with expertise and

experience both in process operations and business support domains. Honeywell delivers:

- Established capabilities in Process Control Network (PCN), IT infrastructure and security domains
- Impeccable lifecycle support track record
- Rich and tight integration with control, safety, security and advanced applications framework
- Globally consistent standards and practices for consulting services, project implementation, sourcing, deployment and support services.

For More Information

Learn more about how Honeywell's Experion E-Server can help better business outcomes, visit our website www.honeywellprocess.com or contact your Honeywell account manager.

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