

## SECTION 282313

### VIDEO MANAGEMENT SYSTEM

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Provide a complete video surveillance and management system, including engineering, components, installation and commissioning.

##### 1.2 RELATED SECTIONS

NOTE TO SPECIFIER: Include related sections as appropriate if access control system is integrated to other systems

- A. Section 260500 – Common Work Results for Electrical, for interface and coordination with building electrical systems and distribution.
- B. Section 280513 – Conductors and Cables for Electronic Safety and Security, for cabling between system servers, panels and remote devices.
- C. Section 280528 – Pathways for Electronic Safety and Security, for conduit and raceway requirements.
- D. Section 281300 – Security Management System, for interface and coordination with electronic access control systems.

- E. Section 282319 – Digital Video Recorders and Analog Recording Devices, for interface to and administration of video recording devices.
  
- F. Section 282323 – Video Surveillance System Infrastructure

### 1.3 REFERENCES

- A. Reference Standards: Provide systems which meet or exceed the requirements of the following publications and organizations as applicable to the Work of this Section:
  - 1. Canadian ICES-003
  - 2. Consultative Committee for International Radio (CCIR)
  - 3. Conformity for Europe (CE)
  - 4. Electronic Industry Association (EIA)
  - 5. Federal Communications Commission (FCC)
  - 6. Joint Photographic Experts Group (JPEG)
  - 7. National Television Systems Committee (NTSC)
  - 8. Phase Alternating by Line (PAL)
  - 9. Underwriters Laboratories Inc. (UL)

### 1.4 SYSTEM DESCRIPTION

- A. The Video Management System (VMS) shall control multiple sources of video surveillance subsystems in a facility to collect, manage and present video in a clear and concise manner. VMS shall intelligently determine the capabilities of each subsystem across a single or multiple sites, allowing video management of any compatible analog or digital video device through a unified configuration and viewer.
  
- B. Basis-of-design is the Honeywell MAXPRO VMS.

## 1.5 SUBMITTALS

- A. Manufacturer's Product Data: Submit manufacturer's data sheets indicating systems and components proposed for use, including instruction manuals.
- B. Shop Drawings: Submit complete shop drawings including connection diagrams for interfacing equipment, list of connected equipment, and locations for major equipment components.
- C. Record Drawings: During construction maintain record drawings indicating location of equipment and wiring. Submit an electronic version of record drawings not later than Substantial Completion of the project.
- D. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data, customized to the system installed. Include system and operator manuals.
- E. Field Tests: Submit results of field testing of every device including date, testing personnel, retesting date if applicable, and confirmation that every device passed field testing.
- F. Maintenance Service Agreement: Submit a sample copy of the manufacturer's maintenance service agreement, including cost and services for a one year period for Owner's review. Maintenance shall include, but not be limited to, labor and materials to repair the system, provide test and adjustments, and regular inspections.

## 1.6 QUALITY ASSURANCE

- A. Manufacturer: Minimum ten years experience in manufacturing and maintaining video management systems. Manufacturer shall provide toll-free technical assistance and support available 24/7.

- B. Manufacturing Location: Provide equipment assembled in the United States.
- C. Installer: Minimum two years experience installing similar systems, and acceptable to the manufacturer of the video management system.
- D. Environmental Conditions: Video management system shall be designed to function in the following environmental conditions:
  - 1. Operating Temperature: 40-104 degrees F (5 40 degrees C) non-condensing.
  - 2. Emissions: CFR 47 Part 15 Subpart B EN55022, EN61000-3-2, EN61000-3-3, CISPR 22.
  - 3. Immunity: EN55024.
  - 4. Safety: UL60950, NWGQ(7), IEC60950, IEC 60825-1:2001.
- E. Power Requirements: Components shall have the following electrical specifications: 100-240 VAC (50 Hz/60 Hz).

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's labeled packages. Store and handle in accordance with manufacturer's requirements, in a facility with environmental conditions within recommended limits.

## 1.8 WARRANTY

- A. Manufacturer's Warranty: Submit manufacturer's standard one-year warranty for the video surveillance system.

## PART 2 PRODUCTS

## 2.1 MANUFACTURER

- A. Video Management System (VMS) Manufacturer: Honeywell MAXPRO™ VMS Video Management System, [www.honeywellvideo.com](http://www.honeywellvideo.com) or [www.honeywellintegrated.com](http://www.honeywellintegrated.com) .

## 2.2 SYSTEM COMPONENTS

- A. VMS server, controller containing a database of all network-connected cameras, integrated components and their configurations.
- B. Workstations that render video and act as a main human/machine interface.

## 2.3 OPERATIONAL REQUIREMENTS

- A. VMS shall provide a single graphical user interface (GUI) to monitor, control and administer digital video surveillance equipment from multiple systems and platforms.
- B. VMS shall include a fully scalable enterprise-class media management system to enable simultaneous live monitoring from multiple stations and be configurable for storage both on and off site.
- C. VMS software shall be configured to store and to view images captured by one camera or numerous cameras and monitor connections across an unlimited number of servers.
- D. The VMS application shall have following major capabilities:
  - 1. Capable of managing pentaplex user operations of attached recording devices simultaneously, including live viewing, recording, playback, archiving of video data to an external storage device, and handling the exchange of data between the server and a remote workstation

2. Live viewing of up to 64 cameras on a single workstation with up to four monitors set up at CIF resolution. For D1 resolution, the number of live streams shall be benchmarked based on client hardware configuration deployed.
3. Integration with multiple digital and network video recording devices.
4. Integration with multiple video matrix switchers and matrix keyboards.
5. The number of recorders and switchers shall be scalable within a network to handle any size installation.
6. Capable of managing the integration with multiple digital IP cameras through compatible recording devices.
7. Integration with electronic access control system.
8. Integration with video analytics and data management utility.
9. Capable of managing failover and redundant capabilities of the recording device(s).
10. Capable of managing investigation and video archive search tools of the recording devices.
11. Capable of managing post-recording motion detection and advanced search capabilities of the recording devices.
12. Capable of managing motion detection-based recording and advanced search capabilities of the recording devices.
13. Multi-level user access rights for viewing and manages access to the recorder functions.
14. Capable of managing continuous, scheduled, manual, event-based and alarm-based recording features of the recording devices.
15. Support for both multicast and Unicast network topologies and communication protocols.
16. Macro capability to allow for custom scripts and to provide both customization and third party integration.
17. Support for both centralized and distributed architectures.
18. Simultaneous use of multiple video compression including H.264, MPEG-4 and M-JPEG.
19. Utilization of off-the-shelf computer workstations, servers, networking and storage equipment.

- E. Mode for User Login: VMS Server and Workstation shall have the option of two modes of user logins:
1. Windows Authentication: Uses Windows logged-in user name.
  2. User DB Authentication: Uses preconfigured user name and password.
- F. VMS Workstation shall provide the following operator functions:
1. Configuration: The operator (with Administrator privileges) shall have the option to configure VMS. VMS shall support live updates of all configurations. The following configurations shall be possible:
    - a. Recorders Configuration: Option to add/edit/delete recorders
    - b. Camera Configuration: Option to add/edit/delete cameras and associate to particular recorder or switcher and map to particular site, partition or event group.
    - c. Monitor Configuration: Option to add/edit/delete monitors and map to particular site, partition, event group or keyboard. It shall provide an option to add a digital monitor and associate with particular recorder and workstation. It shall provide an option to configure a digital monitor with default salvo and startup in full screen. It shall provide an option to add an analog monitor and associate with particular switcher. Option to save a digital correction in the video input page.
    - d. Switcher Configuration: Option add/edit/delete analog video switchers.
    - e. Keyboard Configuration: Option to add/edit/delete keyboard controllers.
    - f. User Management (Users and Roles): Option to add/edit/delete roles and associate to predefined privileges and then add/edit/delete users and associate users with roles. Option to associate permissions with salvo selection and tool bar buttons.
    - g. Site Configuration: Option to add/edit/delete a site.
    - h. Workstation Configuration: Option to add/edit/delete a workstation.
    - i. Event Group Configuration: Option to add/edit/delete event groups. Support of bulk event association to enable/disable and adjust events for recorders and inputs in bulk.

- j. Partition Configuration: Option to add/edit/delete partitions.
  - k. Sequence Configuration: Option to add/edit/delete scan sequence.
  - l. Intercept Key Configuration: Option to add/edit/delete intercept keys.
  - m. System Macro Configuration: Option to add/edit/delete macros. Option to restore macros. Execute button option to trigger selected macros provides mechanism for testing written macros.
  - n. Port Configuration: Option to add/edit/delete keyboard controllers and analog video switchers to the ports available on the controller.
2. Viewer
- a. Main video viewing screen capable of showing 1, 4, 9, 16 and other customized split salvos of live or recorded video. Standard presets may be customized to the user preferences.
  - b. Capable of saving current salvo as a View and allowing the user to drag this view at any later point in time.
  - c. Capable of dragging a particular or salvo onto main video viewing screen. User shall also have an undo/redo option for camera drag drop and salvo selection from the viewer and UltraKey controller.
  - d. Capable of choosing My Salvos or Shared Salvos while saving a salvo.
  - e. Capable of allowing duplicate salvo names to be set by different users and in different locations.
  - f. Capable of dragging a particular monitor onto a video panel and take control of that monitor.
  - g. Option to send command to the controller to switch particular analog camera onto the analog monitor through drag operation.
  - h. Capable of configuring and running scan sequences.
  - i. Capable of adjusting the contrast, brightness, and saturation settings for each camera independently.
  - j. Support both analog and digital PTZ through GUI or the keyboard.
  - k. Capable of exporting user selected image or video clips. A digital signature shall be attached to every exported clip.
  - l. Clip Creation: The Clip Creation facility shall permit multi-camera clip generation.

- Story clip allows for selecting multiple cameras at different times to create a single clip to play the cameras back in order. Also supports saving salvo information in a story clip.
  - Salvo clips provides an instant clip export button to create an instant clip with maintained salvo information. Supports pre-determined pre- and post-times that are user-configurable in preferences.
  - Clip preview window facility supports play back of the individual cameras prior to commencing clip creation.
  - Capable of manually setting the clip duration in the clip creation window for each camera.
- m. Capability to play back the video clips exported. Each video channel that is being recorded by the recording system shall be overlaid with text and a time stamp that is customizable by the user.
- n. Allow the user to initiate recording through GUI or controller.
- o. Capability of complete alarm management for the alarms coming from recorders or switchers.
- p. Application launch pad launches other applications from within Viewer.
- q. Control of operator messaging, allowing operators to communicate with each other. Operators can exchange text, images and annotated video sources. Operators can hand over a video source to another operator using messaging.
- r. Facility of surrounding camera view. Support setting presets in surrounding cameras.
- s. Option to perform various operations through context menu on a particular video (live/recorded/sequence). These operations include: Full screen, point and drag, enable square select, maintain aspect ratio, toggle text, digital PTZ, add bookmark, send message, start recording, stop recording, mark in, mark out, save image, save image as, show surrounding cameras.
- t. Ability to manage timeline control of the recording device, which provides camera recording statistics. Timeline control shall have following features: Mark in/output (with looping facility), bookmark (including for all playing cameras or all selected cameras or removing all bookmarks), snapshot, time slider, time search, time jump, play controls. Timeline control shall also include dedicated buttons for step reverse and step forward and keyboard shortcuts for playback operations.
- u. Support book mark search based on cameras, time duration, and comments.

- v. Controllable by a keyboard controller connected to the VMS server/controller and shall have following major features: Selecting salvos, ending monitor commands, switching operations, PTZ control operations.
  - w. Preference configuration including: fps of unselected panels, rendered type, preview pane, text display format.
3. Search: The Search facility shall include search based on date and time.
  4. Reports: The Report facility shall include event history report and audit log report.
  5. Remote Monitor: The Remote Monitor facility shall allow operators to control a remote monitor attached to another workstation and perform review capabilities so that both the local operator and the remote viewer can watch the same video.

## 2.4 VMS INTEGRATIONS

- A. Recorders: VMS shall support integration with digital and network video recorders (DVRs/NVRs). VMS shall have the ability to access and manage necessary functions of the recording devices through the VMS client interface, such as live video, recorded video, camera configuration, PTZ control and other associated functions. The system shall support the following recording devices:
  1. Honeywell IP Engine
  2. Honeywell Rapid Eye™ Series
  3. Honeywell Rapid Eye™ Hybrid HD (10.01.21)
  4. Honeywell Fusion Series
  5. Honeywell Enterprise Series
  6. Honeywell HRXD
  7. Honeywell HRSD
  8. Honeywell MAXPRO® NVR SE (requires MAXPRO NVR SE Build 11 or greater)
  9. Honeywell HRDP
  10. Milestone XProtect® Enterprise (7.0d)
  11. Pelco DX8100
  12. Pelco Digital Sentry (7.0.24.0)

- B. Analog Video Switchers: VMS shall support matrix switcher integration including camera call up, monitor switching, video command support and PTZ support. The video subsystem shall be the controller device for video cameras, monitors, and VCRs, and shall associate camera inputs with monitor outputs. The system shall allow users to program video monitors and video cameras to execute commands upon recognition of an alarm or any other condition within the system. The user shall be able to add, edit, delete, and partition video subsystems. The system shall support the following video switchers:
1. Honeywell VideoBloX Series
  2. Ultrak MAXPRO-1000
  3. Pelco 9600 Series
  4. American Dynamics
  5. Vicon
  6. Burle
- C. Video Analytics:
1. Honeywell Active Alert
- D. Data Management Utility:
1. Honeywell Integrated Data Manager
- E. IP Surveillance Control Keyboards:
1. Honeywell HJK7000 UltraKey Plus
  2. Honeywell HJC5000 UltraKey Lite
  3. HEGSA002 UltraKey
- F. Electronic Access Control Systems:
1. Honeywell Pro-Watch Release 3.8 or later

## 2.5 SYSTEM HARDWARE

- A. VMS Server: Server shall operate with no performance degradation using the following minimum hardware and operating system configuration:
1. Processor: Dual Core Intel® Xeon® 5160 3.0 GHz
  2. System Memory (RAM): 4 GB
  3. Optical Drive: DVD-R
  4. Floppy Drive: 3.5 inch 1.44 MB
  5. Hard Disk Drives: Two separate hard drives or two sets of RAID arrays.
    - a. Disk/RAID set 1 utilizing 7200 SATA or 10K-15K RPM SCSI 146 GB
    - b. Disk/RAID set 2 utilizing 7200 SATA or 10K-15K RPM SCSI 146 GB
    - c. If fault tolerance is required, RAID set one is RAID 1 or 10 and RAID set two is RAID 10 or 0 + 1
  6. Network Interface Card (NIC): Dual or compatible pair of NICs, 1 Gbps
  7. Human Interface: 102-key keyboard and a mouse pointing device
  8. Graphics Adapter: 32 bit color or higher, video resolution 1024x768 pixels, 65K colors non-interlaced
  9. Operating System: Original software CDs and startup installation diskettes for:
    - a. Windows® Server 2008 R2 Standard 64-bit (WOW64mode) OR Windows Server 2003 SP2 (32 bit only)
    - b. Microsoft SQL Express 2008 R2
  10. Windows Media Player Version 9 or 10
  11. For installations where the system is integrated with Honeywell IP Engine recording software with more than 500 cameras, install a separate IP Engine database server. The specification of this server shall be determined based on end user deployment requirements.

NOTE TO SPECIFIER: Workstation configuration assumes four-monitor setup. Adjust as necessary if additional monitors are required.

- B. VMS Workstation: Workstation shall operate with no performance degradation using the following minimum hardware and operating system configuration:
1. Processor: Intel® Core™ 2 Duo Processor E6750 2.66 GHz or Quad Core Intel® Xeon® E5405 2.0 GHz
  2. System Memory (RAM): 4 GB
  3. Optical Drive: DVD-RW
  4. Floppy Drive: 3.5 inch 1.44 MB
  5. Hard Disk Drives: Single disk or RAID 7200 SATA 80 GB or 10K to 15K SCSI 73 GB; RAID 0 or 0+1.
  6. Network Interface Card (NIC): 1 Gbps
  7. Human Interface: 102 -key keyboard and a mouse pointing device
  8. Graphics Adapter: 2 x 256MB PCIe x16 NVIDIA Quadro NVS 285, Dual DVI or Dual VGA or DVI+VGA; Video resolution 1280x1024 pixels, 32 bit
  9. Operating System: Microsoft Windows XP Professional 32 bit or Windows 7 Pro 32 and 64 bit
  10. Windows Media Player Version 9 or 10

## 2.6 MANUFACTURER SUPPORT

- A. Manufacturer shall provide customer service, pre-sales applications assistance, after-sales technical assistance, access to technical online support, and online training using Web conferencing.
- B. Manufacturer shall provide 24/7 technical assistance and support via a toll-free telephone number at no extra charge

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine site conditions prior to installation. Notify Architect and Owner in writing if unsuitable conditions are encountered. Do not start installation until site conditions are acceptable.

### 3.2 INSTALLATION

- A. Test all components before shipping to the project location
  
- B. Video management system shall be installed, programmed and tested in accordance with manufacturer's installation instructions.
  - 1. Coordinate interfaces with Owner's representative where appropriate.
  - 2. Provide backboxes, racks, connectors, supports, conduit, cable, and wire for a complete and reliable installation. Obtain Owner's approval for exact location of all boxes, conduit, and wiring runs prior to installation.
  - 3. Install conduit, cable, and wire parallel and square with building lines, including raised floors areas. Do not exceed forty percent fill in conduits. Gather wires and tie to create an orderly installation.
  - 4. Coordinate with other trades to provide proper sequencing of installation.

### 3.3 FIELD COMMISSIONING AND CERTIFICATION

- A. Field Commissioning: Test video management system as recommended by manufacturer, including the following:
  - 1. Conduct complete inspection and testing of equipment, including verification of operation with connected equipment.
  - 2. Test devices and demonstrate operational features for Owner's representative and authorities having jurisdiction as applicable.

3. Correct deficiencies until satisfactory results are obtained.
4. Submit written copies of test results.

#### 3.4 TRAINING

- A. Conduct on-site system administrator and security/surveillance operator training, with the number of sessions and length of sessions as recommended by the video management system manufacturer. Training shall include administration, provisioning, configuration, operation and diagnostics.

END OF SECTION