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## Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, based on *MasterFormat 2004* and *The Project Resource Manual—CSI Manual of Practice*. *The Manufacturer is responsible for technical accuracy. By removing the references to specific Salient Systems product names or part numbers, the text may also be used also in performance-based specifications.*

The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. *Italicized Words and sentences within brackets [ ] are choices to include or exclude a particular item or statement.* Coordinate this section with other specification sections and the Drawings.

## Section 28 23 23 Video Surveillance Systems Infrastructure

### PART 1 – GENERAL

#### 1.1 SUMMARY

- A. Section Includes
  - 1. Video surveillance servers.
- B. Related Sections
  - 1. Section 28 23 13 – Video Surveillance Control and Management Systems.
  - 2. Section 28 23 16 – Video Surveillance Monitoring and Supervisory Interfaces.
  - 3. Section 28 23 19 – Digital Video Recorders and Analog Recording Devices.
  - 4. Section 28 23 29 – Video Surveillance Remote Devices and Sensors

## 1.2 REFERENCES

- A. Underwriters Laboratories, Inc. (UL) ([www.ul.com](http://www.ul.com))
  - 1. UL 50 Enclosures for Electrical Equipment.
  - 2. UL 60950-1 Information Technology Equipment - Safety.

## 1.3 SUBMITTALS

- A. Submit under provisions of Section [01 33 00].
- B. Product Data:
  - 1. Manufacturer's data, user and installation manuals for all equipment and software programs including computer equipment and other equipment required for a complete VMS.
- C. Shop Drawings
  - 1. System device locations on architectural floor plans.
  - 2. Full Schematic of system including wiring information for all devices.
- D. Closeout Submittals
  - 1. User Manuals
  - 2. Parts list.
  - 3. System device locations on architectural floor plans.
  - 4. Wiring and connection diagrams.
  - 5. Maintenance requirements.

## 1.4 QUALITY ASSURANCE

- A. Manufacturer shall have a minimum of 10 years experience in the manufacture and design of VMS products.
- B. Installer:
  - 1. Minimum of 5 years experience installing VMS products.
  - 2. All installation, configuration, setup, program and related work shall be performed by technicians thoroughly trained by the manufacturer in the installation and service of the equipment provided.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Comply with requirements of Section [01 60 00].
- B. Deliver materials in manufacture's original, unopened, undamaged containers with original identification labels.
- C. Protect stored materials from environmental and temperature conditions following the manufacturer's instructions.
- D. Handle and operate products and systems according to manufacturer's instructions.

1.6 WARRANTY

- A. Provide manufacturer's warranty covering three (3) years for replacement and repair of defective equipment.

1.7 MAINTENANCE

- A. Make ordering of new equipment for expansions, replacements and spare parts available.
- B. Provide factory direct technical support to the installing firm.

**PART 2 – PRODUCTS**

2.1 VIDEO SERVER

A. Manufacturer:

The Video Server shall be the RM2800 as supplied by:

Salient Systems Corporation  
10801 N. MoPac Expy.  
Building 3, Suite 700  
Austin, TX 78759  
512-617-4800  
512-617-4801 FAX  
[www.salientsys.com](http://www.salientsys.com)

B. Substitutions:

Under the provisions of Division 1:

1. All proposed substitutions must be approved by the Consultant or Architect/Engineer professional.

2. Proposed substitutions must provide a line-by-line compliance document.

C. General Server Features:

1. The video server shall be integrated into a server-class computing platform ('PC'). The PC shall be available in a rack-mount chassis and shall fit in an EIA-standard 19" equipment rack utilizing no more than three units (3U) of rack space.
2. The server Operating System shall be Microsoft Windows Web Server 2008 R2 (or Windows 7 Professional for support of video capture cards).
3. Server shall have front accessible, hot-swap hard-disk trays.

D. Server System Components:

1. The server shall meet or exceed the following system component specifications:
  - a. Server shall utilize Intel Xeon Quad Core CPU, 2.4GHz
  - b. Server shall utilize dual Intel® 5520 (Tylersburg) Chipsets
  - c. Server shall have at least 3GB of ECC DDR3 system memory
  - d. Server Storage Controller shall be two 3Ware 9750-8i SATA/SAS 6Gb/s PCI express w/512MB Onboard Memory.
  - e. All hard disk components used by the system shall be designed specifically for enterprise storage applications in disk dense environments.
    - f. Server hard drives shall be Seagate Constellation ES SATA
  - g. Server shall provide between 4TB and 24TB RAID5 of internal storage for video event data
  - h. Server shall have DVD-ROM drive
  - i. Server shall have two Gigabit network controller ports.
  - j. Server shall have RS-232C serial port, for communications with pan-tilt-zoom cameras and other auxiliary devices.
  - k. Server shall have High-Speed USB 2.0 serial ports, for the attachment of external storage, digital I/O and archive devices.
    - l. Server shall have Line-level audio input, 1/8" stereo jack for digital capture of audio.
2. The server shall provide the following optional components:
  - a. Using analog frame grabber technology, the DVMS shall be capable of supporting between zero (0) and sixteen (16) NTSC, PAL, or SECAM video sources, in increments of four (4) video sources.
    1. Microsoft Windows 7 Professional operating system shall be used in place of Microsoft Windows Server 2008 Web Server for systems utilizing frame grabber technology.

- b. Using digital video capture technology, the DVMS shall be capable of supporting between one (1) and seventy five (75) IP-based video sources, in increments of one (1) video source.
- c. If both analog frame grabber and digital video capture technologies are combined in the same PC, the cumulative total of video sources shall not exceed seventy five (75), with no more than sixteen (16) of those sources being of the analog frame grabber type.
- d. For the capture of analog video sources, the DVMS shall utilize between one (1) and four (4) video frame grabber expansion boards that connect to the PC through either the Peripheral Connect Interface (PCI) bus or the Peripheral Connect Interface Express (PCIe) bus. The video frame grabber expansion board shall be available in two models, supporting the following standards:
  - 1. PCI revision 2.3
  - 2. PCIe x1
  - 3. The video frame grabber expansion board shall provide four (4) 75-ohms, auto-terminated BNC terminals for the connection of four (4) analog video sources.
- e. The DVMS server shall support the following “Compression Formats” for analog video sources (NTSC, PAL, or SECAM):
  - 1. MJPEG
  - 2. MPEG4
  - 3. H.264
- f. The video frame grabber expansion board shall utilize a separate video decoder for each video source, allowing for fully independent control of the following for each source:
  - 1. Brightness;
  - 2. Contrast;
  - 3. Hue;
  - 4. Saturation;
  - 5. Chroma.
- g. Controlling software for the video frame grabber expansion boards shall utilize the Microsoft Windows Driver Model (WDM) architecture.
- h. The server shall optionally provide support for between sixteen (16) and one-hundred (100) digital input and output points for wired integration with access control, building automation equipment, sensors, monitors, or other application requirements that may be determined at a later time. The server shall support any combination of the

following digital input and output devices that are physically connected to the server via the PC's USB bus:

1. 8in + 8 out – 8 optically isolated digital inputs and 8 reed-relay outputs.
  2. 16 in – 16 optically isolated digital inputs.
  3. 16 out – 16 reed-relay outputs.
  4. 48 TTL – 48 TTL points defined as inputs or outputs in blocks of 8.
  5. 96 TTL – 96 TTL points defined as inputs or outputs in blocks of 8.
3. The server shall support capture of video from cameras:
- a. Server shall support any analog camera, NTSC, PAL, or SECAM, directly connected to optional analog frame grabber expansion board.
  - b. Server shall support IP cameras from leading camera manufacturers, with these video feeds connected through the server network controller without the need for encoders or other devices:
    1. ACTi
    2. American Dynamics
    3. Appro
    4. Arecont Vision
    5. Axis
    6. Basler
    7. Bosch
    8. Canon
    9. IQinVision
    10. Lumenera
    11. Panasonic
    12. Pelco
    13. Samsung
    14. SmarterCam
    15. Sony
    16. Toshiba
  - c. Server shall support control of PTZ camera (analog or IP) from leading camera manufacturers:
    1. ACTi
    2. American Dynamics ASCII
    3. Axis
    4. Bosch
    5. Canon VCC-4
    6. Kalatel
    7. Panasonic: conventional and new (analog)
    8. Panasonic IP
    9. Pelco: ASCII, D, P (analog)
    10. Pelco IP

11. Philips BiPhase
12. RVision
13. SAE
14. Samsung
15. Sensormatic
16. Sony EVI –D30/D31
17. Sony P5 IP
18. Sony Visca IP
19. Toshiba IK-WB IP
20. Toshiba IK-WB21A IP
21. Ultrak
22. VCL
23. Vicon

E. Chassis Features:

1. The Form Factor shall be 3U.
2. The dimensions shall be 17.7" x 25.6" x 5.2"
3. Front ports shall be 2x USB.
4. Cooling shall be 5x 80mm Internal Fans
5. Drive Bays shall be 16x 3.5" SATA hot-swap

F. Electrical:

1. Input Voltage: AC 100-240V 50-60Hz.
2. Power Supply: 800W AC-DC, redundant (1+1), hot-swap

G. Environmental:

1. Temperature Range:
  - a. Operating: 50 to 95 degrees F (10 to 35 degrees C)
  - b. Non-Operating: 22 to 140 degrees F (-5 to 60 C)
2. Relative Humidity Range:
  - a. Operating 10 – 90% (non condensing at ambient)
  - b. Non-operating 5-95% (non-condensing at ambient)

## **PART 3 – EXECUTION**

### **3.1 EXAMINATION**

A. Examine area to receive devices and notify any adverse conditions affecting installation or subsequent operation.

B. Do not begin installation until unacceptable conditions are corrected.

### **3.2 PREPARATION**

- A. Protect devices from damage during construction.

### 3.3 INSTALLATION

- A. Install devices in accordance with manufacturer's instruction at locations indicated on the floor drawing plans.
- B. Perform installation with qualified service personnel.
- C. Install devices in accordance with the National Electrical Code or applicable local codes.
- C. Ensure selected location is secure and offers protection from accidental damage.

### 3.4 FIELD QUALITY CONTROL

- A. Test snugness of mounting screws of all installed equipment.
- B. Test proper operation of all VMS devices.
- C. Determine and report all problems to the manufacturer's customer service department.

### 3.5 ADJUSTING

- A. Make proper adjustment to video system devices for correct operation in accordance with manufacturer's instructions.

### 3.6 DEMONSTRATION

- A. Demonstrate at final inspection that the VMS is functioning properly.

END OF SECTION