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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)
 - 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 RED3 24 as supplied by:

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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 an appliance which provides the video recording server and embedded 24-port network switch in a single enclosure (appliance). The appliance shall be available in a rack-mount chassis and shall fit in an EIA-standard 19" equipment rack utilizing no more than one unit (1U) of rack space.
2. The server Operating System shall be Microsoft Windows 7 Embedded
3. The NVR shall be factory assembled, designed for continuous duty allowing for commercial/industrial 24/7/365 use.
4. Server shall have front accessible hard-disk trays.
5. The appliance shall be mountable in a rack with the network connections facing the front or facing the rear of the rack.
6. All video storage drives shall be shock and vibration isolated using multiple elastomer mounts.

D. Video Server System Components:

1. The server shall meet or exceed the following system component specifications:
 - a. Server shall utilize an Intel Core i5-4590
 - b. Server shall have at least 8GB of DDR3 system memory
 - c. All hard disk components used by the system shall be designed specifically for enterprise storage applications in disk dense environments.
 - d. Server shall provide between 2TB and 24TB of internal storage for video event data
 - e. Server shall utilize a separate solid-state mSATA drive for operating system and application storage.
 - f. Server shall have an eSATA port to support a external direct attached storage.
 - g. Server shall be designed to run the video recording and video client simultaneously.
 - h. Server shall provide a web-based hardware monitor tool to provide visibility to network port status.
 - i. Server shall provide a web-based hardware monitor tool that toggles PoE on/off for each LAN port.
 - j. Server shall include LED displays to indicate the disposition of power, PoE, network activity and disk drive activity.
 - k. Server shall include one HDMI port.
 - l. Server shall have (2) USB 3.0 ports and (2) USB 2.0 ports for the attachment of external storage, digital I/O and archive devices..

Salient Systems RED3 24port Video Server

- m. Server shall include the following network uplink ports separate from those on the switch:
 1. At least (1) Gigabit (1000 Mbps) uplink port operating at full duplex mode.
 2. At least (1) Gigabit SFP (Small Form-factor Pluggable) port that can support either copper or fiber media (1000BASE-X).
2. The server shall provide the following optional components:
 - a. Using digital video capture technology, the DVMS shall be capable of supporting IP-based video sources, in increments of one (1) video source.
 - b. The DVMS server shall support the following “Compression Formats” for analog video sources (NTSC or PAL):
 1. MJPEG
 2. MPEG4
 3. H.264
 - c. The server shall optionally provide support for between eight (8) and sixty four (64) 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 NVR shall support 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.
3. The server shall support capture of video from cameras:
 - a. 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. AMAG
 3. American Dynamics
 4. Appro
 5. Arecont Vision
 6. Advanced Technology Video
 7. Aver
 8. Aviglion
 9. AVTech
 10. Axis
 11. Aventura
 12. Basler
 13. Bosch
 14. Brickcom
 15. Canon
 16. Cisco
 17. Digital WatchDog
 18. D-Link

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19. DRS
20. Fine CCTV
21. Ganz
22. Genesis CCTV
23. Geovision
24. Global
25. Hikvision
26. Honeywell
27. IDView
28. Interlogix TruVision
29. Iteris
30. Immervision
31. IQinVision
32. JVC
33. Lilin
34. Lumenera
35. March
36. Mango
37. Mobotix
38. OpenEye
39. Optiview
40. Panasonic
41. Pelco
42. Probe
43. Q-See
44. Samsung
45. Scallop
46. Sentry 360
47. SightLogix
48. SmarterCam
49. Sony
50. Speco
51. Stardot
52. Stentofon
53. Toshiba
54. Verint
55. Video IQ
56. Vitek
57. VivoTek
58. Weldex

- b. Server shall support control of PTZ camera from leading camera manufacturers:
 1. American Dynamics ASCII Continuous
 2. American Dynamics ASCII Make-Break
 3. ACTi
 4. Axis
 5. Bosch
 6. Canon VCC-4
 7. Kalatel

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8. Panasonic IP
9. Panasonic WV-CS850 Conventional
10. Panasonic WV-CS850 New
11. Pelco IP
12. Pelco ASCII
13. Pelco D
14. Pelco P
15. Philips Biphase
16. RVision
17. SAE
18. Samsung
19. Sensormatic
20. Sony EVI –D30/D31
21. Sony P5 IP
22. Sony Visca IP
23. Sony Visca EVI D30-D31
24. Toshiba IK-WB IP
25. Toshiba IK-WB21A IP
26. Ultrak KD6 (Diamond)
27. VCL
28. Vicon

E. Embedded Managed Switch:

1. The appliance shall include an embedded layer 2+ PoE Managed Switch.
2. The embedded managed switch shall include:
 - a. (24) 10/100 Mbps LAN ports operating at full or half-duplex mode, and support IEEE 802.3af/at PoE
 - b. At least (1) Gigabit (1000 Mbps) uplink port operating at full duplex mode.
 - c. At least (1) Gigabit SFP (Small Form-factor Pluggable) combo port that can support either copper or fiber media (1000BASE-X).
3. The embedded managed switch shall be provided with a power supply supporting a total PoE output of at least 480W.
4. The embedded managed switch shall support Virtual LAN (VLAN) configuration.
5. The embedded managed switch shall provide port security using MAC address binding, including the ability to automatically sense camera MAC addresses.
6. The embedded managed switch shall include an embedded DHCP server.
7. The embedded managed switch shall make available an Ethernet port lock utility.
 - a. The Ethernet port lock utility shall scan all PoE ports to identify attached devices and enable selection of specific devices to communicate on each PoE port as an authorized device.
 - b. The Ethernet port lock shall prevent unselected or unauthorized devices from communicating through the PoE ports.

F. Chassis Features:

1. The form Factor shall be 1U.

- Salient Systems RED3 24port Video Server
2. The dimensions shall be 17.25" x 21.2" x 1.75"
 3. USB posts shall include 2x USB 3.0 front and 2x USB 3.0. rear
 4. Drive Bays shall be 4x 3.5" SATA

G. Electrical:

1. Input Voltage: AC 95-265V 50-60Hz.
2. Power Supply: 750W AC-DC

H. Environmental:

1. Temperature Range:
 - a. Operating: 32 to 104 degrees F (0 to 40 degrees C)
2. Relative Humidity Range:
 - a. Operating 10 – 90% (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