Exacq Technologies, headquartered in Indianapolis, Indiana, is a leading developer of open architecture, Video Management System (VMS) solutions for security and surveillance applications. Our exacqVision VMS client-server solutions are scalable from a small single camera solution to large scale corporate or campus systems with thousands of cameras. Real-time and recorded video can be viewed, managed and configured from any location on the network.

For additional information, contact:

Exacq Technologies, Inc.
11955 Exit Five Parkway
Fishers, IN 46037 USA
Phone: +1 317 845-5710
Web: https://www.exacq.com
E-mail: exacqinfo@tycoint.com

LIVE VIDEO MONITORING STATION

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 00 00 Electronic Safety and Security

28 20 00 Electronic Surveillance

28 23 00 Video Surveillance

28 23 16 Video Surveillance Monitoring and Supervisory Interfaces

Notes to Specifier:

1. Where several alternative parameters or specifications exist, or where, the specifier has the option of inserting text, such choices are presented in **<bold text>.**

2. Explanatory notes and comments are presented in **colored** text.

Important Note to Security Systems Specifiers

CSI MasterFormat 2016 incorporates numerous significant changes affecting electronic safety and security. This document is written to provide flexibility in using either format, although adoption of MasterFormat 2016 is encouraged. The following is a guide to the MasterFormat numbers relevant and related to the product referenced in this specification.

MasterFormat 2014:

27 20 00 Data Communications
28 05 00 Common Work Results for Electronic Safety and Security
28 13 00 Access Control
28 13 16 Access Control Systems and Database Management
28 16 00 Intrusion Detection
28 16 33 Intrusion Detection Control, GUI, and Logic Systems
28 23 00 Video Surveillance
28 23 13 Video Surveillance Control and Management Systems
28 23 16 Video Surveillance Monitoring and Supervisory Interfaces
28 23 19 Digital Video Recorders and Analog Recording Devices
28 23 23 Video Surveillance Systems Infrastructure
28 23 29 Video Surveillance Remote Devices and Sensors

MasterFormat 2016:

27 15 01.xx Video Surveillance Communications Conductors and Cables
27 20 00 Data Communications
28 05 00 Common Work Results for Electronic Safety and Security
28 05 xx Power Sources for Electronic Safety and Security
28 05 xx Servers, Workstations and Storage for Electronic Safety and Security
28 05 xx Storage Appliances for Electronic Safety and Security
28 05 xx.xx Network Video Recorders
28 05 xx Cyber Requirements for Electronic Safety and Security
28 05 xx Communications Equipment for Electronic Safety and Security
28 05 xx Systems Integration and Interconnection Requirements
28 05 xx.xx Electrical
28 05 xx.xx Information
28 10 00 Access Control
28 10 xx Access Control Software
28 20 00 Video Surveillance
28 2x 00 Video Management System
28 30 00 Security Detection, Alarm, and Monitoring
28 3x 00 Intrusion Detection
28 3x xx.xx Intrusion Detection Interfaces to Security Monitoring and Control

LIVE VIDEO MONITORING STATION

1. GENERAL

1.1. SUMMARY

1.1.1. Section includes a device to acquire and display video signals from connected IP network video recorders.

1.1.2. Related Requirements

1.1.2.1 28 23 19 – Digital Video Recorders and Analog Recording Devices

1.1.2.2 28 23 23 – Video Surveillance Systems Infrastructure

1.1.2.3 28 23 29 – Video Surveillance Remote Devices and Sensors

1.2. REFERENCES

1.2.1. Abbreviations

1.2.1.1. HDD – Hard Disk Drive

1.2.1.2. IP - Internet Protocol

1.2.1.3. LDAP – Lightweight Directory Access Protocol

1.2.1.4. Mbps – Megabits per second

1.2.1.5. NVR – Network Video Recorder

1.2.1.6. POS – Point of Sale

1.2.1.7. PSIM – Physical Security Information Management

1.2.1.8. VMS - Video Management System

1.2.1.9. LVMS – Live Video Monitoring Station

1.2.1.10. SFF – Small Form Factor

1.2.2. Reference Standards

1.2.2.1. Institute of Electrical and Electronics Engineers (IEEE) 802.3 standards

1.2.2.2. FCC – Code of Federal Regulations, Title 47, Part 15

1.2.2.3. ISO / IEC 14496 – 10 – MPEG-4, Part 10 (H.264)

1.2.2.4. UL

1.2.2.5. CE

1.3. SUBMITTALS

1.3.1. Product Data

1.3.1.1. Manufacturer’s printed or electronic data sheets

1.3.1.2. Manufacturer’s installation and operation manuals

1.4. QUALIFICATIONS

1.4.1. Manufacturer shall be ISO 9001 certified with a minimum of three years’ experience in manufacturing digital storage equipment and associated interfaces.

1.5. WARRANTY AND SUPPORT

1.5.1. Manufacturer shall provide a limited three-year warranty and updates for device firmware and client software during the warranty period.

1.5.1.1. An upgraded support option shall be available.

END OF SECTION

2. PRODUCTS

2.1. EQUIPMENT

2.1.1. Manufacturer: Exacq Technologies, Inc.
11955 Exit Five Parkway
Fishers, IN 46037 USA
Phone: +1 317 845-5710
Web: https://www.exacq.com
E-mail: exacqinfo@tycoint.com

2.1.2. Model: C-Series Standard

2.1.3. Alternates: None

2.2. DESCRIPTION

2.2.1. The Live View Monitoring Station (“LVMS”) shall be an appliance to acquire and display video signals from an IP Network Video Recorder (“NVR”).

2.2.2. The MWS appliance hardware shall have the following characteristics:

2.2.2.1. Chassis: **SFF**

2.2.2.2. Audio Inputs: **N/A**

2.2.2.3. Storage capacity: <**N/A> <1 TB> on a single HDD**

Exacq part numbers differentiated by number of viewable streams and on-board storage capacity:

Model Number	Live Viewable Streams	Storage Drive Capacity (TB)
C-00T-16L	16	N/A

2.2.2.4. Video outputs: N/A

2.2.2.5. Microphone input: 1 RCA connector

2.2.2.6. Audio outputs: 1 stereo (RCA connectors)

2.2.2.7. Workstation characteristics:

2.2.2.7.1. Operating system: Ubuntu Linux 18.04

2.2.2.7.1.1. Linux: 128 GB SSD

2.2.2.7.2. Monitor outputs: 1 HDMI + 1 mini-DisplayPort (max 1 recommended)

2.2.2.7.3. Processor: Gen 8 Intel® Celeron

2.2.2.7.4. Memory: 4 GB

2.2.2.7.5. Network: 1 x 1000 BASE-T (Gigabit) + 1 x 802.11ac 5Ghz Wifi

2.2.2.7.6. USB 3.1 A-type ports: 2 (front)

2.2.2.7.7. USB 3.1 C-type ports: 2 (rear)

2.2.2.7.8. Optical Drive: **optional (external)**

2.2.2.8. Enclosure

2.2.2.8.1. Material: painted steel
2.2.2.8.2. Dimensions (l x w x h):
2.2.2.8.2.1. Pro and Pro Plus: 4.7 in x 4.43 in x 1.84 in (119 cm x 113 cm x 48 cm)
2.2.2.8.3. Weight:
2.2.2.8.3.1. Pounds (lbs): **3 – 4** maximum
2.2.2.8.3.2. Kilograms (kg): **1.36 – 1.81** maximum
2.2.2.9. Electrical
2.2.2.9.1. Input voltage: 100/240 VAC auto-sensing
2.2.2.9.2. Output Voltage: 19V 2.1A DC

2.2.3. Video Management System (“VMS”)

2.2.3.1. The LVMS shall come pre-loaded with VMS server software.
2.2.3.2. The VMS server software shall provide the following features as a minimum:
2.2.3.2.1. System
2.2.3.2.1.1. One server connection per client
2.2.3.2.1.2. Browser-based viewing of live and stored video
2.2.3.2.1.3. Auto detection of supported cameras
2.2.3.2.1.4. Support for fish-eye and panoramic lens cameras
2.2.3.2.1.5. Client bandwidth throttling
2.2.3.2.1.6. Soft triggers
2.2.3.2.1.7. Pre and post alarm recording
2.2.3.2.1.8. Continuous motion, time or alarm-based recording, configurable per camera
2.2.3.2.2. Live video view
2.2.3.2.2.1. Multiple monitor view support
2.2.3.2.2.2. PTZ control and presets
2.2.3.2.2.3. Digital PTZ control and presets
2.2.3.2.2.4. Motion and alarm indication
2.2.3.2.2.5. Event linking on discrete inputs
2.2.3.2.3. Search, playback, export, archive
2.2.3.2.3.1. Instant replay
2.2.3.2.3.2. Event search
2.2.3.2.3.2.1. Thumbnail views
2.2.3.2.3.2.2. Timeline views
2.2.3.2.3.3. Multi-camera playback
2.2.3.2.3.4. Export options
2.2.3.2.3.4.1. USB storage device
2.2.3.2.3.4.2. .AVI, .MOV, .MP4 or.EXE file
2.2.3.2.4. The LVMS shall have the ability to support pre-loaded VMS software providing additional advanced functionality, including the following:
2.2.3.2.4.1. System

2.2.3.2.4.1.1. Server connections – up to 512 via a thick client interface or 16 via web client
2.2.3.2.4.1.2. Ability to specify minimum and maximum retention times on a per camera basis
2.2.3.2.4.1.3. Time-lapse recording
2.2.3.2.4.1.4. Extended storage
2.2.3.2.4.1.5. Archiving
2.2.3.2.4.1.6. Audit trail
2.2.3.2.4.1.7. Custom user groups
2.2.3.2.4.1.8. Intelligent search
2.2.3.2.4.1.9. E-mail notifications on system health
2.2.3.2.4.1.10. Enterprise level camera, server, and user management
2.2.3.2.4.1.11. LDAP and active directory support

2.2.3.2.4.2. Live view
2.2.3.2.4.2.1. Event linking on video, serial, and health events
2.2.3.2.4.2.2. Video wall support
2.2.3.2.4.2.3. Event-driven and time-based video switching
2.2.3.2.4.2.4. Camera groups
2.2.3.2.4.2.5. Multi-streaming
2.2.3.2.4.2.6. Event notifications
2.2.3.2.4.2.7. Map support, including hierarchical maps
2.2.3.2.4.2.8. Two-way audio

2.2.3.2.4.3. Search, playback, export, archive
2.2.3.2.4.3.1. Multiple camera export

The LVMS comes with the exacqVision Client software pre-loaded. Additional functionality is available through upgrade to exacqVision Professional or exacqVision Enterprise VMS software.

2.3. PERFORMANCE

2.3.1. Compatibility

2.3.1.1. Video – The LVMS shall be compatible with the following NVR manufacturers: exacqVision

2.3.2. Display

2.3.2.1. Local client display rate:

2.3.2.1.1. Windows HD resolution: 320 frames per second
2.3.2.1.2. Linux HD resolution: 480 frames per second

2.4. ENVIRONMENTAL

2.4.1.	Operating temperature:	40 – 95 degrees Fahrenheit (4.5 – 35 degrees C)
2.4.2.	Power/heat load:	120 Watts/160 BTU per hour maximum

2.5. OPTIONAL EQUIPMENT

2.5.1. The NVR shall have optional expansion capability for a Surveillance Keyboard.

Exacq's Surveillance Keyboard provides a Hall-effect three axis joystick and 27 pushbuttons (11 fixed and 16 user-programmable) through a USB interface.

END OF SECTION

3. EXECUTION

3.1. INSTALLATION

3.1.1. Contractor shall comply with all Manufacturer installation guidelines.

3.1.2. Contractor personnel shall comply with all applicable state and local licensing requirements.

3.2. STORAGE

3.2.1. Hardware shall be stored in an environment where temperature and humidity are in the range specified by the hardware manufacturer.

END OF SECTION