Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, based on *MasterFormat 2016* and *The Project Resource Manual—CSI Manual of Practice. The Manufacturer is responsible for technical accuracy.*

The section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. 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. Delete all "Specifier Notes" after editing this section.

Section 28 00 00: Electronic Safety and Security
Section 28 05 00: Common Work Results For Electronic Safety and Security
Section 28 05 19.15: Network Video Recorders

32-CHANNEL 2U 4K&H.265 NETWORK VIDEO RECORDER

PART 1 – GENERAL

1.1   SUMMARY

       A.   Section Includes
          1.   Section 28 05 23: Storage Area Network Electronic Safety and Security
          2.   Section 28 05 25: Cloud Based Storage for Electronic Safety and Security
          3.   Section 28 05 29: Storage Management Software for Electronic Safety and Security
          4.   Section 28 05 31: Communications Equipment for Electronic Safety and Security

       B.   Related Sections
          1.   [Section 28 33 15: Security Detection, Alarm and Monitoring – Security Monitoring and Control – Security Monitoring and Control Software].

**********Specifier's note: Include those standards referenced elsewhere in this SECTION.

1.2   REFERENCES

       A.   Federal Communications Commission (FCC) (www.fcc.gov)
          1.   Part15 subpartB,ANSI C63.4-2009
       B.   Underwriters Laboratories, Inc. (UL) (www.ul.com)
          1.   UL60950-1+CAN/CSA C22.2 No.60950-1
       C.   Conformite Europeenne(CE)
      1.   EN55022,
      2.   EN55024

3. EN50130-4
4. EN60950-1

1.3   SYSTEM DESCRIPTION

A. Section Includes
    1. Network Video Recorders

B. Performance Requirements
    1. The NVR shall be an Intel processer with Embedded Linux operating system to record video from IP cameras.
    2. The NVR shall be capable of storing up to 64 TB of data from [32 IP camera video inputs] with up to 12 MP resolution for each IP input.
    3. The NVR shall use the H.265 and H.264 Video compression protocols.
    4. The NVR shall have a maximum bandwidth of [384] Mbps.
    5. The NVR shall offer Automatic Network Replenishment (ANR) technology to ensure that data is not lost during a network outage.
    6. The NVR shall support IVS, Fisheye Dewarp, POS and ANPR.
    7. The NVR shall support RAID 0/1/5/6/10.
    8. The NVR shall support N+M cluster service.
    9. The NVR shall support iSCSI protocol for storage expansion.

1.4 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 complete video management system.

C. Dimensional Drawings; include
   1. Overall device dimensions.
   2. Dimensions specific for installation.

D. Closeout Submittals
   1. User manual.
   2. Parts list.
   3. Maintenance requirements.

1.5 QUALITY ASSURANCE

A. Manufacturer:
   1. Minimum of [10] years of experience in manufacture and design Video Surveillance Devices.

B. Video Surveillance System:
   1. List certifying bodies (UL,FCC,CE, etc.)
   2. Provide evidence of compliance upon request.

C. Installer:
   1. Minimum of [5] years of experience installing Video Surveillance System.

1.6 DELIVERY, STORAGE AND HANDLING

A. Comply with requirements of Section 01 60 00.

B. Deliver materials in manufacture's original, unopened, undamaged containers; and unharmed original identification labels.

C. Protect store materials from environmental and temperature conditions following manufacturer's instructions.

D. Handle and operate products and systems according to manufacturer's instructions.

1.7 WARRANTY

A. Provide manufacturer's warranty covering [3] years for replacement and repair of defective equipment. Warranty varies country to country.

1.8   MAINTENANCE

   A.   Make ordering of new equipment for expansions, replacements, and spare parts
         available to dealers and end users.

   B.   Provide factory direct technical support via phone and e-mail.

PART 2 – PRODUCTS

2.1   MANUFACTURERS

   A.   [Acceptable Manufacturer:
         Zhejiang Dahua Vision Technology Co., Ltd.
         Address：No.1199 Bin'an Road, Binjiang District, Hangzhou, China.
         Tel: +86-571-87688883
         Fax: +86-571-87688815
         Email:overseas@dahuasecurity.com
   B.   Substitutions: [Not permitted.] [Under provisions of Division 1.]
         1.   [All proposed substitutions must be approved by the Architect or Engineer
               professional.]
         2.   [Proposed substitutions must provide a line-by-line compliance documentation.]

2.2   32-CHANNEL 2U 4K&H.265 NETWORK VIDEO RECORDER
       [DHI-NVR608-32-4KS2]
   A.   General Characteristics:
         1.   The NVR shall be an Intel processer with Embedded Linux operating system to
               record video from IP cameras.
         2.   The NVR shall be capable of storing up to 64 TB of data from [32 IP camera
               video inputs] with up to 12 MP resolution for each IP input.
         3.   The NVR shall use the H.265 and H.264 Video compression protocols.
         4.   The NVR shall have a maximum bandwidth of [384] Mbps.
         5.   The NVR shall offer Automatic Network Replenishment (ANR) technology to
               ensure that data is not lost during a network outage.
         6.   The NVR shall support IVS, Fisheye Dewarp, POS and ANPR.
         7.   The NVR shall support RAID 0/1/5/6/10.
         8.   The NVR shall support N+M cluster service.
         9.   The NVR shall support iSCSI protocol for storage expansion.
         10.   The NVR shall be powered by a built-in power supply and consume less than
               20 W of power (without HDD).

   B.   Display
         1.   The NVR shall offer two (2) HDMI and one (1) VGA display interfaces.
         2.   The NVR shall offer display resolutions of: 3840 x 2160, 1920 × 1080, 1280 ×
               1024, 1280 × 720, and 1024 × 768.
         3.   The NVR shall offer [1/4/8/9/16/25/36] multi-screen display.
         4.   The NVR shall offer an on-screen display that lists the camera title, time, video
               loss indication, camera lock indication, motion detection, and recording
               indicator.

   C.   Interface

1. The NVR shall have [32] IP video channels
2. The NVR shall offer two (2) USB 2.0 auxiliary port, two (2) USB 3.0 auxiliary port and one (1) eSATA auxiliary port.
3. The NVR shall offer one (1) Audio In port and one (1) Audio Out port, with a two-way talk capability.
4. The NVR shall offer sixteen (16) Alarm In port and eight (8) Alarm Out port

D. Storage
1. The NVR shall come with eight (8) SATA ports that can each support an 8 TB HDD.

E. Playback and Backup
1. The NVR shall allow recorded video searches by time/date, motion detection event, Exact Search, and Smart Search.
2. The NVR shall offer the following playback functions: Play, Pause, Stop, Rewind, Fast Play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, and Digital Zoom.
3. The NVR shall allow data backup via a USB device, eSATA device or another network.

F. Recording
1. The NVR shall employ the H.265 and H.264 video compression protocols.
2. The NVR shall offer video recording resolutions of 12Mp, 8Mp, 6Mp, 5Mp, 4Mp, 3Mp,1080p, 720p, D1, CIF.
3. The NVR shall offer a record rate (bandwidth) of 384 Mbps.
4. The NVR shall allow a bit rate between 16 Kbps to 20 Mbps per channel.
5. The NVR shall offer the following built-in recording modes:
   a. Manual
   b. Schedule, regular or continuous
   c. Motion Detection
   d. Camera Blank
   e. Video Loss
   f. Stop
6. The NVR shall offer a recording interval between 1 minute and 120 minutes. In addition, the NVR shall offer a pre-record interval of between 1 second to 30 seconds, and a post-record interval of between 10 seconds to 300 seconds.
7. The NVR shall be capable of recording from third-party devices, including: Dahua, Arecont Vision, AXIS, Bosch, Brickcom, Canon, CP Plus, Dynacolor, Honeywell, Panasonic, Pelco, Samsung, Sanyo, Sony, Videotec, and Vivotek.

G. IP Connectivity
1. The NVR shall allow full control and configuration capabilities via a TCP/IP network.
2. The NVR shall offer two (2) RJ-45 port (10/100/1000 M).
3. The NVR shall support network mode: single NIC, fault-tolerance, load balance.
4. The NVR shall support a maximum of 128 user access points.
5. The NVR shall conform to the ONVIF 2.4.1 and to the CGI standard.
6. The NVR shall support the IPv6 internet-layer protocol for packet switched internetworking across multiple IP networks.

7. The NVR shall support the IPv4/ IPv6, HTTP, HTTPS, SSL, TCP/IP, UDP, UPnP, SNMP, RTSP, RTP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter.
8. The NVR shall support the IOS and the Android mobile operating systems.

H. Installation Requirements
1. The NVR shall be capable of operating in temperatures between -10°C to +55°C (+14°F to +131°F), 86 to 106 kpa.
2. The NVR shall receive power from a AC100V-240V power source and consume less than 20 W of power (without HDD).

PART 3 – EXECUTION

3.1   EXAMINATION

    A.   Examine areas to receive devices and notify 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 drawings plans.

    B.   Perform installation with qualified service personnel.

    C.   Install devices in accordance with the National Electrical Code or applicable local codes.

    D.   Ensure selected location is secure and offers protection from accidental damage.

    E.   Location must provide reasonable temperature and humidity conditions, free from sources of electrical and electromagnetic interference.

3.4   FIELD QUALITY CONTROL

    A.   Test snugness of mounting screws of all installed equipment.

    B.   Test proper operation of all video system 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.

    B.   Make any adjustment of camera settings to comply with specific customer's need.

3.6   DEMOSTRATION

    A.   Demonstrate at final inspection that video management system and devices functions properly.

<div align="center">END OF SECTION</div>