**NVR7800 Series, Milestone VMS Pre-loaded NVR**

**Architectural and Engineering Specification**

**Part 1: General**

* 1. **General Information**

Such as summary, general product requirements, quality assurance, general system description, glossary of terms, references, submittals, delivery storage and handling, drawings, specifications, project background, site conditions, services, applicable codes and standards should be stated in here according to the tender requirements.

**Part 2: Products**

* 1. **General Description**

Surveon NVR7800 Series with pre-loaded Milestone XProtect VMS is an enterprise-grade security solution, which supports up to 150 CH 3MP cameras with continuous recording and 316 HDDs with high density 4U 60-bay expansion enclosure (maximum capacity of up to 2.5 PB with 8TB HDD). Its hybrid and cableless design ensures excellent system reliability and easy maintenance for medium to large applications.

The Surveon Video Management Software (VMS) is an enterprise-grade security management solution. Scalable and effective, the Surveon VMS is based on the client-server architecture and featured with intuitive monitoring, real-time detection, intelligent searches, video analytics, investigative tools, multi-access, easy scalability, and optimized megapixel recording to deliver highly integrated and reliable solutions.

* 1. **Network Video Recorder (NVR) Hardware Features**

1. The server hardware shall be capable of running the Windows 7 operating system.
2. Standard resolution and high resolution mega-pixel IP cameras shall be selectable. MPEG-4, H.264 or MJPEG video compression format shall be user selectable on any camera. Video recording shall be available at up to 30 frames per second per input channel depending on IP camera type and server model selected.
3. Each server shall have a 2 Gbit 1000 Base-T RJ-45 Ethernet connection for networking to remote PC clients. Multiple servers shall be accessible by multiple clients located anywhere on the network. Each server shall record video, audio, and text while displaying live video or playback video. In the event that there is no client actively attached to the server, the server shall continue to record video and audio, monitor events and all other server functions.
4. Recorded video shall be triggered by built in motion detection, an external input device, or in continuous record mode. A 24/7 scheduler shall allow individual cameras to be configured. Video shall be recorded to internal hard drives, SAS JBOD expansion drives or iSCSI storage.
5. The RAID 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare options shall be internal to the server and shall provide notification of a drive failure to the administrator.
6. Each server shall have a watchdog system that monitors the system and automatically reboots the system should it lock-up or fail to operate.
7. Each server shall be designed with hot-swappable hard disks, cableless and redundant components.
   1. **External Storage**
8. The Network Video Recorder software shall support connected external storage units including iSCSI and NAS.
9. The Network Video Recorder shall support SAS connected external storage units (SAS JBOD).
10. The latest list of supported external storage devices shall be available on the manufacturer's web site.

* 1. **Supported IP Cameras & Peripheral Devices**

1. The Network Video Recorder shall interoperate with cameras of a range of types from a variety of manufacturers.
2. The Network Video Recorder shall support dual-streaming from IP cameras or encoders that support this functionality.
3. The Network Video Recorder shall include driver support for IP fixed cameras.
4. The Network Video Recorder shall include driver support for IP pan-tilt-zoom cameras.
5. The Network Video Recorder shall include driver support for IP Megapixel cameras.
6. Supported cameras shall be easily interchangeable between different models without the need to register each individual MAC address.
7. The latest list of supported devices must be available on the manufacturer’s web site.
   1. **Maintenance / Software Upgrades**
8. Firmware updates (REFLASH) to the Network Video Recorder firmware shall be supported from any fast and reliable connection, whether it is executed over the LAN, WAN or internet.

* 1. **IT Requirements / Networking**

1. The Network Video Recorder shall operate as a read-only platform that prevents the installation of any third party software and restricts any file-level access to provide for a stronger level of virus protection and ensure a higher up-time operation in a commercial/industrial environment.
2. The Network Video Recorder system shall integrate into standard TCP/IP network environments.
3. The Network Video Recorder software shall support a static IP address setting from the local IT administrator for both of the client and camera network interface cards (NICs).
4. The Network Video Recorder software shall support receiving its IP address information from an existing dynamic host configuration protocol (DHCP) server for the user’s network (LAN1). In addition, it shall include the option of being the DHCP server for smaller environments where a DHCP server may not available.
   1. **Security**
5. The Network Video Recorder shall be designed to provide multiple levels of access and management.  
   1. **Application Programmer Interface (API)**
6. The system must have the ability to host multiple remote users, archive data, and search for data, all while recording multiple video streams.
   1. **Equipment**
7. **NVR7800 Series Specification**
8. Server Processor:

Default: Intel Core i3-4330, dual-core 3.5G

Upgradables: Intel Xeon E3-1225, quad-core 3.2G

Intel Xeon E3-1275, quad-core 3.5G

1. System Memory: DDR3 8GB (up to 32GB)
2. Operating System: 2.5” HDD with Windows 7 System
3. Storage: 16 x 3.5" SATAII/SATAIII hard disk drives
4. I/O Interface:   
   RJ-45: 4x Gigabit Ethernet  
   USB: 2x USB2.0, 2x USB3.0  
   VGA: x1, HDMI: x2 (Only support single monitor at the same time)

Mic. In port x1

Speaker out port x 1

Expansion port: 1x SAS 6G Expansion Port

1. RAID: 0, 1, 5, 6, 10, 50, 60, 1+Spare, 5+Spare, 6+Spare
2. Electrical:   
   Input voltage: 100-240VAC, 50~60Hz, 10~5A (max)  
   Power Supply: Dual redundant PSU (460W)
3. Operating Environment:   
   Humidity: 5% to 80% (non-condensing)  
   Temperature: 5º to 40ºC
4. LED Indicator: Yes
5. Dimensions:

NVR7812: 2U 19-inch rackmount with chassis ears:

(H)88.00mm x (W)447.40mm x (L)524.4mm

NVR7816: 3U 19-inch rackmount with chassis ears:

(H)130.00mm x (W)447.40mm x (L)524.4mm

1. Weight:

NVR7812: 13.60kg/ 29.98lbs (without HDDs)

NVR7816: 21.54kg/ 47.49lbs (without HDDs)

1. Certification: UL, CB, FCC / CE Class A
2. Warranty: 3 years

* 1. **The Software Overview**

1. The software shall be used to view live and recorded video from IP devices connected to local and wide area networks. The software shall have a client/server-based architecture that can be configured as a standalone software system with the client software running on the server hardware and/or the client running on any network-connected TCP/IP workstation. Multiple client workstations shall be capable of simultaneously viewing live and/or recorded video from one or more servers. Multiple servers shall also be able to simultaneously provide live and/or recorded video to one or more workstations. The server software shall also have the ability to be installed on an IP edge device—such as an IP camera or encoder that allows for 3rd party applications—allowing the device to serve as both a server and IP video recording device.
2. Recording of all video transmitted to the software shall be continuous, uninterrupted and unattended.
3. The software shall offer the capability of video motion detection recording, such that video is recorded when the software detects motion within a region of interest of the camera’s view. Video prior to the detection of the motion shall also be stored with recording using the pre-recorded feature.
4. The software shall manage the video it has been configured to monitor. Loss of video signal shall be configured to annunciate on software client by an on-screen visual indication alerting operators of video loss.
5. The software shall have an open architecture supporting IP cameras and encoders from multiple manufacturers providing best-of-breed solutions ranging from low-cost, entry-level features to high-resolution, megapixel features.
6. The software client shall be able to view live video and audio, recorded video and audio and be able to configure the complete system all from a single application.
7. The software shall continue to record video and audio at all times during the administration and configuration of any feature.
8. The software client shall have the same functionality when connected remotely as it does when it is run locally on the same computer as the server software.
9. The software client shall add and remove features based on the permissions of the user and the licensed functionality.
10. The software client shall operate on all of the following operating systems:  
    Windows7 Professional, Server 2012, Ultimate
11. The software shall also allow an authorized user to view video through a web client interface. The web client interface shall allow authorized users to view live video, view recorded video, and control pan-tilt zoom (PTZ) cameras. The web client interface shall allow connections to multiple software servers simultaneously.
12. The web client interface shall operate without requiring installation of any software.
13. The web client interface shall support the following browsers: Internet Explorer 6 and later.
14. The software server software shall record and retrieve video, audio and alarm data and provide it to the software clients upon request.
15. The software shall provide at no additional charge a purpose built mobile application capable of viewing multiple simultaneous live video streams and playing a recorded video stream. Application shall be provided for both iOS and Android operating systems.
16. The software shall license the total number of cameras on the system. This license shall be based on the MAC address of a single network card that is present on the system. The software shall only require that this network card be enabled and does not require that data is actually sent through it.
17. The software server software shall run as a service. The software shall not require any application to be running in order to operate.
18. The software shall allow the use of maps. The maps will be accessible to users with the appropriate permission levels and display video sources and their status.
19. The software shall allow maps to be embedded inside of maps (i.e. hierarchical or nested maps).
20. The software shall consist of a single client application.
21. The client software shall not be dependent on, nor require any connection to, a central management or configuration server.
22. The software shall be ONVIF compliant and provide support for ONVIF compliant cameras.

*Surveon reserves the right to change products or specifications without notice.*