**A&E SPECIFICATIONS**

**TeleEye RX Series Video Recording Server – Model RX3216**

**General Description**

The video recording server ('server') described shall be a TeleEye RX3216 or equivalent. It is designed for professional video, audio surveillance and alarm monitoring applications including recording and transmission of data via LAN, Internet and mobile networks. The server shall employ a revolutionary multi-rate video compression algorithm called Multi-Rate Scalable Motion Adaptive Video Coder (SMAC-M) that generates multiple data streams for video recording and transmission on networks with different data throughputs. As comparing with MPEG4 technology, SMAC-M achieves approximate 40% smaller in recording size at the same picture resolution, quality and frame rate and also approximate 50% higher frame rate on video transmission via ADSL connection at 640kbps uploading data rate. The server delivers truly no compromise on both efficient video transmission and excellent fidelity recording performance.

The server shall comply with the British Standard for detector-activated CCTV system BS 8418:2003. The server shall support sureLINK technology for Internet connection assigned with dynamic IP address. The server shall record video into its internal HDD and recorded footage can be extracted into a DVD-ROM via external DVD-writer or front panel/back panel USB port via a USB flash drive for evidential purpose.

**1. Standalone Operation**

1.1 The server shall have 16 composite video inputs, 1 main composite video output, 1 VGA video output, 2 audio inputs, 1 audio output for general surveillance, 1 audio output for remote public addressing or audio challenging, 16 alarm inputs and 4 relay switches.

1.2 The server shall support displaying of live video up to 400 and 480fps for PAL and NTSC videos respectively from connected cameras in full screen, 2x2, 3x3 and 4x4 multiplexed screen modes.

1.3 The server shall support searching of the recorded footage based on date, time and events, etc. and playing back the recorded footage in full screen, 2x2, 3x3 and 4x4 multiplexed screen modes.

1.4 The server shall be operating in quadplex manners with simultaneous local live viewing, recording, playback and connection via network with performance not affected by each other in any circumstance.

1.5 The server shall support local control through a keyboard with RS-422/485 interface

and joystick. Up to 4 keyboards can be used to control up to 255 servers.

1.6 The server shall come with an IR remote controller for local operations like camera switching, PTZ control and playback of video footage, etc.

**2. Remote Connectivity**

2.1 The server shall have a built-in RJ-45 interface for connection to a 10/100 base-T network.

2.2 The server shall employ multi-rate video compression algorithm called SMAC-M that generates independent data streams for video transmission via LAN, broadband Internet, narrowband Internet and mobile connections.

2.3 The server shall support 256-bit password protection level.

2.4 The server shall support transmission up to 100 and 120 fps for PAL and NTSC videos respectively on ADSL connection with uploading data speed of 640kbps.

2.5 The server shall support transmission of 2 audio channels at 7.2kbps in each channel.

2.6 The server shall support sureLINK technology for Internet connection assigned with dynamic IP address.

2.7 The server shall be able to control the data throughputs on LAN, broadband Internet, narrowband Internet independently.

2.8 The server shall support up to 6 concurrent network connections.

2.9 The server shall support connection from a Windows-based viewing application running on a networked PC. The Windows-based viewing applications shall support

2.9.1 connection to multiple servers simultaneously and displaying up to 64 live videos from these servers on one PC screen;

2.9.2 displaying videos in full, 2x2, 3x3, 4x4, 5x5, 6x6, 7x7 and 8x8 multiplexed screen modes;

2.9.3 displaying with TeleEye site map module, client's site will be shown on a geographical map;

2.9.4 stretching the displaying videos into full screen;

2.9.5 monitoring of up to 2 audio channels;

2.9.6 performing remote public addressing or audio challenging function;

2.9.7 searching of recorded footage in the server based on date, time and event and playing back the recorded footage via the network;

2.9.8 remote extraction of recorded footage in the server for evidential purpose;

2.9.9 displaying of various event and activities logs in the server;

2.9.10 telemetry control if any pan/tilt/zoom camera connecting to the server, and;

2.9.11 standing by for connection initiated by a server driven by an event, etc.

2.9.12 multiple language support including English, Traditional Chinese, Simplified Chinese, Japanese, Dutch, Italian and Spanish.

2.10 The server shall come with a built-in web server and Java applets for operation from a networked PC using any standard Internet browser. The built-in web server shall support

2.10.1 displaying of up to 16 live videos in full, 2x2, 3x3 and 4x4 multiplexed screen modes;

2.10.2 searching of recorded footage in the server based on date, time and event and playing back the recorded footage via the network;

2.10.3 displaying of various event and activities logs in the server; and

2.10.4 telemetry control if any pan/tilt/zoom camera connecting to the server, etc.

2.10.5 configure all the system setting of recording server.

2.11 The server shall support connection from a J2ME application running on a mobile phone via GPRS, EDGE, UMTS and HSDPA data networks. The mobile phone viewing applications shall support

2.11.1 connection to the server through IP or sureLINK address;

2.11.2 displaying of live video from camera connecting to any one video channel of the server;

2.11.3 displaying of various event logs in the server.

2.12 The server shall support connectivity failover if detects a breakdown in the primary connection medium, like ADSL, it can switch the communication over automatically through to a 3G USB modem in emergency situations.

**3. Recording and Playback**

3.1 The server shall compress and record videos from up to 16 cameras using the multi-rate video compression algorithm called SMAC-M that generates independent data streams for video recording and transmission.

3.2 The server shall support recording of 16 videos up to 720x576 and 720x480 pixels at total frame rate of 100 and 120 fps for PAL and NTSC videos respectively. The server shall support recording of videos up to 360x288 and 360x240 pixels at total frame rate of 400 and 480 fps for PAL and NTSC videos respectively.

3.3 The server shall support simultaneous recording of 2 audio channels at 7.2kbps for each channel.

3.4 The server shall support recording videos in continuous and time-lapse modes. The recording can be driven by manual, schedule and pre-defined event

3.5 The server shall have a data retention feature that would delete the recorded footage after a pre-defined period of time.

3.6 The server shall support video recording and playback simultaneously.

3.7 The server shall support searching of recorded footage in the server based on date, time and event.

3.8 The maximum recording size can be expanded up to 4TB.

**4. Event and Security Management**

4.1 The server shall comply with the British Standard BS8418:2003 for detector activated CCTV system.

4.2 The server shall provide professional management of events including triggering of external alarm detectors, video motion detection, tamper detection, video loss, power interruption, disk full, overheating and hardware failure, etc. The server can be programmed to carry out pre-defined actions including connection back to a remote PC, video recording, email, control of relay switches, driving of a 'pan/tilt/zoom' camera to a preset position, etc..

4.3 The server shall support pre-event video recording on all associated cameras for a period of not less than 1 minute.

4.4 The server shall come with 16 alarm inputs for connection to external alarm detectors. All alarm inputs shall support tamper detection using single end-of-line (SEOL) and dual end-of-line (DEOL) techniques. All alarm inputs shall be configured independently for working as 'normal', 'entry/exit' and 'fire' zones.

4.5 The server shall have an 'arm/disarm' input for interfacing to an 'arm/disarm' device such as a keypad or a proximity card reader.

4.6 The server shall have a 'security switch' input for overriding the 'entry/exit' delay of the 'entry/exit' zone.

4.7 The server shall have a 'power interruption' input for connection to the alarm output of an uninterrupted power supply.

4.8 The server shall have a 'system tamper' input for connection to a detector installed on the door of the secure cabinet.

4.9 The server shall provide 16x12 masking grid on each camera input for selection of area for video motion detection. Also the sensitivity level of the video motion detection shall be configurable by the user.

4.10 The server shall store up to 4 IP addresses for an event dial-back operation.

4.11 The server shall carry out an authentication process with the connecting PC in an event dial-back operation.

4.12 The server shall provide sufficient storage for event and activities log of not less than 6 months.

## 5. Miscellaneous

5.1 Authentication

5.1.1 The server shall support two login security modes.

5.1.2 If the server is configured to work in 'Basic' security mode, it shall have an 'administrator' password and a 'general user' password. Logging in as an administrator allows configuration of the server. Logging in as a general user only allows conducting normal operations.

5.1.3 If the server is configured to work in 'Advanced' security mode, it shall support up creating up to 20 login accounts with independent authorization settings. The authority settings shall include but not limited to selection and viewing of individual cameras, activation of recording, system setup, playback, telemetry control, etc..

5.1.4 The server shall come with a unique 10 alpha-numeric registration code. The server only allows connection from a PC with prior registration of the server.

5.1.5 The server shall support IP filtering for exclusively accessed or prohibited from certain PCs in the network with specific IP address ranges.

5.2 Pan/Tilt/Zoom (Telemetry) Control

5.2.1 The server shall support control of a pan/tilt/zoom camera directly from the buttons on the front panel or through a keyboard with joystick connected through the RS-422/485 interface.

5.2.2 The server shall have a RS-422/485 interface for connection to a pan/tilt/zoom keyboard.

5.2.3 The server shall have a RS-422/485 interface for connection to a number of pan/tilt/zoom cameras in daisy-chain topology.

5.2.4 The server shall support various telemetry protocols including but not limited to TeleEye DM2, TeleEye DM4 and Pelco-D, etc.

5.3 Footage Extraction

5.3.1 The server shall support extraction of recorded footage into a single layer 4.7GB DVD+/-R from the external DVD writer or a USB flash driver. The extracted video clip in the USB flash drive or DVD-ROM can be playing back directly on any PC without the need to pre-install any application program.

5.3.2 The server shall support extraction of recorded footage from a PC connecting via 10/100 base-T or dial-up network.

5.3.3 The server shall support extraction of recorded footage with password protection.

5.4 Date Time Setting

5.4.1 The server shall come with a built-in real-time clock.

5.4.2 The date and time of the server can be set up manually.

5.4.3 The server shall support synchronization with a time server on the Internet.

5.5 Electrical

5.5.1 The server shall be operating in DC 12V with maximum power rating 60W.

5.6 Operating environment

5.6.1 The server shall be operating in temperature range from 5°C ~ 40°C.

5.6.2 The server shall be operating in relative humidity less than 85% and no condensation.

5.7 Mechanical design

5.7.1 The server shall measure 400mm x 380mm x 65 mm.

5.7.2 The server shall weigh approximate 3.8kg.

5.8 The server shall be CE certified and RoHS compliance.