Request for Purchase
Video Management and
Surveillance System

RFP # -

Prairie State College
202 South Halsted Street
Chicago Heights Illinois, 60411
708-709-3747
<table>
<thead>
<tr>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General Information</td>
<td>3</td>
</tr>
<tr>
<td>2. Current Configuration</td>
<td>4</td>
</tr>
<tr>
<td>3. Parameters</td>
<td>5</td>
</tr>
<tr>
<td>4. Evaluation Criteria</td>
<td>24</td>
</tr>
<tr>
<td>5. Bid Specifications</td>
<td>25</td>
</tr>
</tbody>
</table>
1. **General Information**

The Prairie State College (PSC) Information Technology Resources department (ITR), in joint effort with Campus Police Department, has identified the need for an IP video management system with IP cameras, encoders and a centralized video management server. The Prairie State College (PSC) Main Building, Children’s Learning Center (CLC), Adult Training and Outreach Center (ATOC), K Building, Transportation Warehousing and Logistics (TWL) and Matteson Area Center (MAC) all use different camera security systems that do not work well together.

PSC wants to have a centralized managed system for all the cameras and re-use the current Storage Area Network (SAN) in place. The College Police Department would like to move away from their current full server rack of Digital Video Recorders (DVR) used for the security camera system. This proposal addresses the procurement of a new video management system with IP cameras and encoders to connect the existing analog cameras.

The key goals of the project are to provide a safe and secure environment for students, faculty, staff, and visitors, as well as minimize damage to PSC equipment, vehicles, and facilities. A second goal is to provide the PSC with post incident data for forensic analysis. It is critical that the video images recorded and stored are of good quality to support on-going investigations.

The contractor as part of this Project will supply all the necessary hardware; encoders, blades, recording server software, and Ethernet POE/POE Plus network switches as described in specifications. Software installation, programming, and configuration shall be as follows: Main Server and Software housed in the ITR Server Room located in the Main Building. All building cameras will send their live feed to this server. All recorded data will be saved to the server and archived on the SAN. The College Police Department requires the ability to see live and recorded data from any secure location on Prairie State Campus.
2. **Current Configuration**

a) Prairie State currently has 96 analog cameras in the Main building, 12 of which do not function. The 5 other buildings have 8-10 cameras each.

b) Use of DVR’s is insufficient for space, burning copies, management.

c) Extra heat generated by the current DVR’s requires portable AC unit.

d) Space in the security office is not used efficiently.

e) PSC now can utilize IP backbone for cameras and encoders.

f) PSC has an HP 4000 Left-hand SAN available for use by the new VMS for archiving.

g) Utilizing DVRs, our current storage capacity is 36 TB, of which 60 % is being utilized.

**Prairie State Current Server Configuration**

<table>
<thead>
<tr>
<th>Total Servers</th>
<th>Approximately 45 servers: 90% running Microsoft Server 2008, 10% running “Other” OS (Linux)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Servers</td>
<td>13 (Datatel, VOIP Phone, SQL, other Apps)</td>
</tr>
<tr>
<td>Email Server</td>
<td>3</td>
</tr>
<tr>
<td>Web Servers</td>
<td>3</td>
</tr>
<tr>
<td>Virtual Servers</td>
<td>27</td>
</tr>
<tr>
<td>PC’s &amp; MAC</td>
<td>1200 (estimate)</td>
</tr>
<tr>
<td>Internet Browsers</td>
<td>Internet and Firefox</td>
</tr>
<tr>
<td>Office Apps</td>
<td>Microsoft Office 2007/2010</td>
</tr>
<tr>
<td>E-mail Client</td>
<td>Microsoft Outlook 2007/2010</td>
</tr>
<tr>
<td>E-mail Server</td>
<td>Exchange 2010</td>
</tr>
<tr>
<td>Antivirus/Anti-spam</td>
<td>Sophos</td>
</tr>
</tbody>
</table>
3. **Parameters**

An integrated surveillance system comprised of day/night cameras, encoders and video management system having capability to record, store and archive the video for 30 days is needed for the project. In an effort to provide efficient performance of a centralized management system, growth, and a step toward fully functional surveillance system, the PSC Security department has identified the following needs:

- The centralized video management system, video management server, workstations and storage area networks are an integral point of a video surveillance system. Each component must be designed and configured correctly. The system should be capable of managing large bandwidth requirements from live video and the storage to retrieve the video files for playback and management of stored video.
- The video management system must have the capability to support master-slave relationship to support future expansion of the system with additional servers.
- The video management system must be able to support multiple clients logged into the system **concurrently** to view live video.
- The video management system must be able to support dual streaming of video for live view and recorded video. It must be able to support compression of individual streams for optimized resolution and frame rate.
- The video management system must be able to support the existing analog cameras by incorporating encoders.
- The VMS must be OVIF and PSIA compliant.
- The VMS must be able to support compression technology MPEG4 ASP, MxPEG, H.264, MJPEG and MPEG4.
- The VMS should have configuration wizards
- The VMS must support built-in video motion detection, and privacy masking.
- The VMS client application should have the following features:
  - Dedicated task-oriented mode for the Sequence Explorer, in addition to the traditional Live and Playback modes;
  - Application theme support with choice of dark or light theme;
  - Be installed by default on Recording Server for local viewing and playback of video and audio;
  - Start recording on cameras for a predefined time (default five minutes),
subject to privileges set by administrator;

- Provide support for native 64-bit operating systems;
- Allow for independent playback and for instant playback of recorded video for one or more cameras, while in live and playback mode;
- Live view digital zoom allows zoomed-out recordings while the operator can digitally zoom in to see details;
- “Update on Motion Only” to optimize CPU storage by letting motion detection control whether or not the image should be decoded and displayed (The visual effect should be a still image in the view until motion is detected.);
- Shared and private camera views to offer 1x1 up to 10x10 layouts in addition to asymmetric views;
- Views optimized for both 4:3 and 16:9 screen ratios;
- Computer monitor support with a main window and any number of either windowed or full screen views;
- Hotspot function for working in detail with a camera selected from a view containing multiple cameras;
- A carousel function to allow a specified view to rotate between predefined cameras with individual timing and order with multiple appearances. A carousel function that can be controlled allowing the operator to pause predefined rotation and manually switch to previous or next camera;
- Overlay buttons to provide intuitive control of cameras, camera-integrated devices and other integrated systems directly from the camera view;
- A matrix function to view live video from multiple cameras simultaneously;
- Ability to send matrix remote commands to display live video remotely on computers via a “client” plug-in;
- Support cameras' built-in audio sources in live and in playback modes. A separate pop-up window to display sequences and time intervals in thumbnail previews;
- A sequence explorer to provide an easy to use visual overview of recorded video;
- Presentation of recorded sequences for individual cameras, or all cameras in a view available in both live and playback modes with sliding preview and “drag-and-throw” function for video thumbnails;
- Instant playback of video sequences;
- Application options allow users to adapt the layout and personalize the application according to their preferences;
- Control Pan Tilt Zoom (PTZ) cameras by using; preset positions, point-and-click control, overlay buttons, zoom to a defined rectangle, Video overlaid PTZ control, Virtual joystick function, and joystick function;
- Playback of recorded or received video and audio evidence;
- Instant one-click playback for easy viewing of exported video evidence;
- Advanced second-level investigation tools to make it easy to refine exported video and re-export the most essential evidence;
- A project tool to allow users to merge video exports or archives from two different locations or systems together into one new export;
- Ability to view up to 100 cameras time-synched during playback;
- A scrollable activity timeline with magnifying feature;
- Instant search on recordings based on date/time and activity/alarm;
- A “smart” search to allow for a quick search of selected areas of camera images for motion;
- Ability use evidence to generate a printed report, a JPEG image, an AVI film or in exported format with built in player feature;
- Ability to export audio recordings in WAV or AVI format;
- Ability to export video digitally zoomed to view area of interest only and to minimize export footprint size;
- Provide encryption and password protection options for exported recordings and files;
- Ability to add encrypted comments to exported evidence; and
- De-interlacing of video from analog cameras.

- The VMS’s web based client should have the following features:
  - Ability to view live video from up to 100 cameras simultaneously;
  - Access to Client views through the browser without advanced setup;
  - Manage shared views centrally via the server with administrator/user rights and user groups;
  - Easy video playback including fast/slow playback, single frame step, and jump to date/time with frame preview while adjusting time;
  - Control PTZ cameras remotely and by using preset positions;
  - Dynamic bandwidth optimization when streaming from server to client to give better use of bandwidth;
  - Create AVI files or save JPEG images;
  - Export on the server to avoid moving large video files back and forth to download only needed files or save them for downloading when on a faster connection;
  - System login using client user name and password;
  - System login using Microsoft Active Directory user;
  - Secure connection through HTTPS; and
  - No installation required on client computer.
The Contractor shall be responsible for coordinating work with the PSC ITR staff.

Specifically, the contractor shall be responsible for
   a. Programming all PSC camera and encoder parameters
   b. Programming and configuration of Ethernet switches
   c. The VMS software application installation and configuration
   d. Recording servers programming and configuration
   e. Workstation client software installation and configuration

The Project work shall include but is not limited to the following:

Furnish and install all conduits, junction and pull boxes, fiber and copper cabling to support the new IP based video surveillance system. The contractor shall be responsible for properly sizing all conduits and boxes per the TIA/EIA standards and National Electrical Code. 40% fill maximum.

Contractor has to follow manufacturer’s recommendations. All cameras shall have day/night capabilities, wide dynamic range, and vandal resistant housing or dome along with environmental housings to be used for all the necessary locations. Provide infrared illuminators, as needed at all the locations.

Furnish and install video management servers and recording equipment sufficient to support the quantity of cameras, quality, and resolution. Retention time shall be 30 days. Coordinate all fields of view with the PSC for final acceptance.

Provide surge suppression for all exterior cameras. This includes protection for data cabling and power. Each IP camera will be connected via Category 6 cabling or multimode fiber (depending on distance requirements). IP cameras connected via Category 6 cabling will utilize POE network switches for power. The POE network switch will provide the power and communication for the IP camera as well as connectivity for the fiber optic backbone.

Contractor is responsible for providing all programming and configuration of the Ethernet switches. The Contractor shall furnish and install new rack enclosures at each site as needed.

The servers and storage devices for the video surveillance system shall be located at each facility’s rack enclosures. Display monitors shall be furnished at all the locations.

The contractor shall also provide all camera licenses, server, database, and client software applications necessary to operate the system.
The contractor shall include the fixed license fees include a 3-year Software Upgrade Path (SUP).

Contractor shall provide sufficient Ethernet switch ports, programming and configuration for the quantity of cameras proposed.

Contractor shall provide surge protection to all devices.

**PERFORMANCE REQUIREMENTS**
Performance: The IP Video surveillance system shall be designed to meet or exceed the requirements.

Contractor shall submit camera and storage calculations confirming the camera and storage configuration meets or exceeds the requirements.

**SUBMITTALS**

Product Data: For each type of product indicated. Include dimensions and data on features, performance, electrical characteristics, ratings, and finishes.

Shop Drawings: For video surveillance. Include plans, details, and attachments to other work.

Detail equipment assemblies and indicate dimensions, method of field assembly, components, and location and size of each field connection.

UPS: Sizing calculations.

Equipment List: Include every piece of equipment by model number, manufacturer, serial number, location, and date of original installation. Add pretesting record of each piece of equipment, listing name of person testing, date of test, set points of adjustments, name and description of the view.

Field quality-control reports.

Operation and Maintenance Data: For cameras, power supplies, LCD display monitors, video management system, video encoders, servers, workstations, storage devices, to include in emergency, operation, and maintenance manuals. In addition to items specified include the following:

Lists of spare parts and replacement components recommended being stored at the site for ready access.

Warranty: Copies of warranty.
QUALITY ASSURANCE

Contractor or approved sub-contractor shall be a certified cable installer, with the capability of providing a manufacturer’s certification of not less than one (1) year for the voice and data cabling and associated termination equipment provided. The Contractor shall offer proof of certification by submitting a copy of its certification to the owner or owner’s representative as a submittal requirement prior to beginning any work.

Contractor or approved sub-contractor shall be a manufacturer’s trained authorized representative with three (3) years experience designing and installing IP video systems with the VMS vendor submitted with the bid. Contractor or sub-contractor shall also maintain a certified platinum partner level, with the capability of providing a manufacturer’s certification of not less than one (1) year for the VMS equipment provided. The Contractor shall offer proof of certification by submitting a copy of its certification to the owner or owner’s representative as a submittal requirement prior to beginning any work.

Contractor or approved sub-contractor shall be a manufacturer’s authorized representative certified in the networking equipment, servers, and storage solutions submitted for this project. The contractor or sub-contractor shall have a gold or platinum partner status submitted with the bid. Contractor or sub-contractor shall offer proof of certification by submitting a copy of its certification to the owner or owner’s representative as a submittal requirement prior to beginning any work.

Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

Comply with NECA 1.

Comply with NFPA 70.

PROJECT CONDITIONS

Environmental Conditions: Capable of withstanding the following environmental conditions without mechanical or electrical damage or degradation of operating capability:

Exterior Environment: System components installed in locations exposed to weather shall be rated for continuous operation in ambient temperatures of minus 30 to plus 122 deg F (minus 34 to plus 50 deg C) dry bulb and 20 to 90 percent relative humidity, condensing. Use NEMA Type 4X enclosures.
Security Environment: Camera and or housing for use in high-risk areas where surveillance equipment may be subject to physical violence shall be vandal-resistant.

WARRANTY

Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of cameras, equipment related to camera operation, and control-station equipment that fail in materials or workmanship within specified warranty period.

Warranty Period: Three years from date of Substantial Completion and the contractor should be able to process advanced RMA from the camera manufacturer, onsite support for the video management system along with the server and storage hardware.
**IP Cameras**

**GENERAL**

The fixed dome camera will be installed at all the facilities listed in the scope of project to cover hallways, corridors, and other interior locations as described on drawings.

The fixed dome or fixed camera with vari-focal lens and remote focus capability will also be used on outdoor locations along the building perimeter as described on drawings.

Contractor shall refer to drawings for locations. Fixed cameras in exterior locations at all PSC facilities and at interior locations must be configured to work with external IR Illuminators as needed.

**GENERAL REQUIREMENTS**

The camera shall be of manufacturer's official product line, designed for commercial/industrial 24/7/365 use. The camera shall be based upon standard components and proven technology using open and published protocols.

**QUALITY ASSURANCE**

All camera installation, configuration, setup, program and related work shall be performed by electronic technicians thoroughly trained and certified by the manufacturer in the installation and service of the equipment provided. The Contractor shall offer proof of certification by submitting a copy of its certification to the owner or owner's representative as a submittal requirement prior to beginning any work.

All equipment provided shall be backed by a minimum of three years manufacturer warranty.

The specified unit shall be manufactured in accordance with ISO 9001 / EN 29001.

**ENVIRONMENTAL SUSTAINABILITY**

A. The specified unit shall be manufactured in accordance with ISO 14000.
B. The specified unit shall be compliant with 2002/95/EG RoHS and 2002/96/EG WEEE.

**CERTIFICATIONS AND STANDARDS**

A. The camera shall carry the following EMC approvals:
   
   EN55022, EN55024
B. The camera shall meet relevant parts of the following video standards:
  SMPTE 296M (HDTV 720p)

C. The camera shall meet the following video compression standards:
  MPEG-4:
    ISO/IEC 14496-10 AVC (H.264)

D. The camera shall meet the following networking standards:
  IEEE 802.3af (Power over Ethernet)
  IEEE 802.1X (Authentication)
  IPv4 (RFC 791)
  IPv6 (RFC 2460)
  QoS – DiffServ (RFC 2475)

E. The camera shall meet the following environmental protection standards:
  IEC 60529 (IP66)
  NEMA 250 (Type 4X).

The camera shall:

  Be designed to provide video streams in HDTV 720p (1280x720) and HDTV
  1080p resolution at 30 frames per second using H.264 or Motion JPEG based on
  the location.

  Be equipped with Day/Night and Wide Dynamic Range functionality and remote
  zoom and focus capabilities.

  Operate on an open source; Linux-based platform, and including a built-in web
  server.

  Be equipped with a slot for SD/SDHC memory card expansion.

  Be manufactured to, support operation between -40 to +55°C (-40 to +131°F)
  and be both IP66 and NEMA 4X-rated.

**HARDWARE**

The camera shall:

Use a high quality IR-sensitive 1/4” progressive scan megapixel sensor.
Be equipped with an IR-cut filter, providing so-called day/night functionality.

Be equipped with a high quality vari-focal DC-iris lens providing remote zoom and focus functionality.

Provide pictures down to 0.4 lux while in day mode (with IR-filter in use) and down to 0.06 lux while in night mode (with IR-filter removed).

Support memory expansion by providing an available SD/SDHC card slot.

**VIDEO**

**Resolution**

The camera shall be able to deliver at least two individually configurable full frame rate video streams of resolutions up to HDTV 720p and HDTV 1080p over IP networks. Supported video resolutions shall include:

- a. 320x240
- b. 640x480
- c. 800x600
- d. 1024x768
- e. 1280x720 (HDTV 720p)
- f. 1280x800 (16x10)
- g. 1600x1200

**Encoding**

The camera shall:

Support Motion JPEG encoding in a selectable range from 1 up to 30 frames per second in all resolutions. Support H.264 encoding in a selectable range from 1 up to 30 frames per second in all resolutions. Be able to provide independently configured simultaneous H.264 and Motion JPEG streams. Support both Constant Bit Rate (CBR) and Variable Bit Rate (VBR) in H.264.

Provide configurable compression levels. Support motion estimation in H.264.

**Transmission**

The camera shall allow for video to be transported over:

- a. HTTP (Unicast)
- b. HTTPS (Unicast)
c. RTP (Unicast & Multicast)
  d. RTP over RTSP (Unicast)
  e. RTP over RTSP over HTTP (Unicast)

The camera shall support Quality of Service (QoS) to be able to prioritize traffic.

Image control

The camera shall incorporate Automatic and Manual White Balance and an electronic shutter operating in the range 1/6 and 1/25.000 second.

The camera shall provide Wide Dynamic Range and backlight compensation with automatic and definable exposure zones.

AUDIO

The camera shall support two-way full duplex audio:
  • Input sources
    o External microphone
    o External line device
  • Output sources
    o External line device
  • Encoding
The camera shall support:
  o AAC LC at 8/16 kHz
  o G.711 PCM at 8 kHz
  o G.726 ADPCM at 8 kHz

FUNCTIONALITY

Web Server

The camera shall contain a built-in web server making video and configuration available to multiple clients in a standard operating system and browser environment-using HTTP, without the need for additional software.

Optional components downloaded from the camera for specific tasks, e.g. Active X, shall be signed by an organization providing digital trust services, such as VeriSign, Inc.

IP addresses

The camera shall support both fixed IP addresses and dynamically assigned IP addresses provided by a Dynamic Host Control Protocol (DHCP) server.
The camera shall allow for automatic detection of the Camera based on UPnP and Bonjour when using a PC with an operating system supporting this feature.

The camera shall provide support for both IPv4 and IPv6.

Event functionality
The camera shall be equipped with an integrated event functionality, which can be triggered by:
- External input
- Video Motion Detection
- Audio Detection
- Schedule
- Camera tampering
- Local storage full

Response to triggers shall include:
- Notification, using TCP, SMTP or HTTP
- Image upload, using FTP, SMTP or HTTP
- Activating external output
- Recording to local storage

The camera shall provide at least 48 MB memory for pre & post alarm recordings.

Event functions shall be configurable via the web interface.

Protocol support
1. The Camera shall:
   a. incorporate support for at least IP, HTTP, HTTPS, SSL/TLS, TCP, ICMP, SNMPv1/v2c/v3 (MIB-II), RTSP, RTP, UDP, IGMP, RTCP, SMTP, FTP, DHCP, UPnP, ARP, DNS, DynDNS, SOCKS, NTP and Bonjour.

   The SMTP implementation shall include support for SMTP authentication.

Text overlay
The camera shall:

Provide embedded on-screen text with support for date & time, and a customer-specific text, camera name, of at least 45 ASCII characters.

To ensure accuracy, the camera shall accept external time synchronization from an NTP (Network Time Protocol) server.

Provide the ability to apply a privacy mask to the image.

Allow for the overlay of a graphical image, such as a logotype, into the image.

Security
The camera shall:
Support the use of HTTPS and SSL/TLS, providing the ability to upload signed certificates to encrypt and secure authentication and communication of both administration data and video streams. Support IEEE 802.1X authentication. Provide support for restricting access to pre-defined IP addresses only, so-called IP address filtering. Restrict access to the built-in web server by usernames and passwords at three different levels.

API Support
The camera shall be fully supported by an open and published API (Application Programmers Interface), which shall provide necessary information for integration of functionality into third party applications.

Installation and Maintenance
The camera shall:
Be supplied with Windows-based management software which allows the assignment of IP addresses, upgrade of firmware and backup of the Cameras’ configuration.

Support the use of SNMP-based management tools according to SNMP v1, 2c & 3 / MIB-II.
Allow updates of the software (firmware) over the network, using FTP or HTTP.
All customer-specific settings shall be stored in a non-volatile memory and shall not be lost during power cuts or soft reset.

User Logs
The camera shall:
Provide a log file, containing information about the 250 latest connections and access attempts since the unit’s latest restart. The file shall include information about the connecting IP addresses and the time of connecting.
Provide a connection list of all currently connected viewers. The file shall include information about connecting IP address, time of connecting and the type of stream accessed.

CAMERA DIAGNOSTICS
The camera shall:
Be equipped with LEDs, capable of providing visible status information. LEDs shall indicate the camera’s operational status and provide information about power, communication with receiver, the network status and the camera status.
Be monitored by a Watchdog functionality, which shall automatically re-initiate processes or restart the unit if a malfunction is detected.

INTERFACES
Inputs/Outputs
The camera shall be equipped with one digital (alarm) input and one digital output, accessible via a removable terminal block. This input shall be configurable to respond to normally open (NO) or normally closed (NC) dry contacts.

Audio
The camera shall be equipped with one 3.5 mm jack for line/mic input and one 3.5 mm jack for line output.

Network interface
The camera shall be equipped with one 100BASE-TX Fast Ethernet-port, using a standard RJ-45 socket and shall support auto negotiation of network speed (100 MBit/s and 10 MBit/s) and transfer mode (full and half duplex).

ENCLOSURE

The camera enclosure shall include the following:
1. Manufactured with an all-metal vandal resistant body providing encapsulated electronics
2. Clear and smoked transparent cover
3. IP66-rating
4. NEMA 4X-rating
5. Impact resistance of 2200lbs / 1000kg
6. Thermostat, heater and fan inside the enclosure
7. Fitted with a dehumidifying membrane
8. Removable weather shield
9. The camera enclosure shall provide the ability to adjust the camera modules angle with at least 180° horizontal image that is not interfered with by the camera housing.

Power requirements
Power over Ethernet according to IEEE 802.3af - Class 3.

Environmental
The camera shall:
1. Operate in a temperature range of -40°C to +55°C (-40°F to +131°F).

Approved Manufacturers
AXIS P3354, AXIS P3346, AXIS P1346-E or equivalent
INSTALLATION
The Contractor shall carefully follow instructions in documentation provided by the manufacturer to insure all steps have been taken to provide a reliable, easy-to-operate system.
All equipment shall be tested and configured in accordance with instructions provided by the manufacturer prior to installation.
All firmware found in products shall be the latest and most up-to-date provided by the manufacturer, or of a version compatible with the proposed VMS version, Milestone Systems Enterprise edition.
All equipment requiring users to log on using a password shall be configured with user/site-specific password/passwords. No system/product default passwords shall be allowed.

DEMONSTRATION
Contractor shall be required to demonstrate that camera is set to all required parameters and feature sets function properly.
Contractor will coordinate with the owner to review field of view and objectives.
Contractor shall adjust cameras as necessary to meet the owner’s viewing objectives.

DOCUMENTATION
Contractor shall be required to submit to owner written documentation in a spreadsheet format identifying camera by name, and acknowledging camera has passed all functional testing as required by owner.

SERVERS, WORKSTATIONS, & STORAGE AREA NETWORKS
SUMMARY
This section describes the requirements for the Recording Servers, Workstations, and Storage Area Networks (SAN) for PSC. The Recording Servers, Workstations, and Storage Area Networks (SAN) are critical components of the video system that must be properly designed and configured. The video system must efficiently manage the large throughput of live video, and the storage architecture, in conjunction with the live video, must support the retrieval, playback, and management of stored video.

Components:
Recording Servers. The recording servers are used for recording video feeds and communicating with the cameras.
The video system, specifically the recording servers and SAN(s), must be designed to have high availability, fault tolerance, and scalability. The contractor shall provide 10% additional capacity for the system proposed. The contractor shall be responsible for determining the quantity of recording servers and archive storage based on the number of the cameras per site. The contractor is to provide calculations and quantities of equipment to be utilized in the proposed solution with bid proposal.

VIDEO ENCODERS:

The system should provide encoder to support the 84 analog cameras. It should be ideal for large, professional installations with outstanding performance and reliability, as well as ease of installation and maintenance.

The encoder should have redundant power supply units; if one of the power supplies needs to be replaced, no disruption to the rack’s operation will occur.

The unit should also have hot-swappable fan cassettes that can be replaced without the need to cut off power.

The rack should supports PTZ and PTZ dome control through RS-485 connectors at the back of each slot. Each slot also has connections for external input and/or output devices, which allow for external alarm triggers and control of devices such as doors or lights in an event.

Technical specifications for the encoder:

- Expansion slots 14 slots for video encoder blades
- Casing 4U, 19-inch metal casing for rack mounting
- Power 100-240 V AC, max. 480 W units
- Connectors 4 Ethernet 10BASE-T/100BASE-TX/1000BASE-T, RJ-45 (Gigabit Ethernet); use 1, 2, 3 or 4 Ethernet ports depending on the bandwidth requirement
- Cooling 3 replaceable fan cassettes
- Operating Conditions:
  - 0°C-45°C(32°F-113°F)
  - 20%−80% RH (non-condensing)
- Approvals:
  - EN 55022 Class A*, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class A*, VCCI Class A*, AS/NZ CISPR 22, KCC Class A, ICES-003, UL, cUL, EN 60950-1
The work shall include but not be limited to the following:

Video Recording Server, rack mountable and install at each facility of defined in the scope of project.

The Storage Area Network requirements are as follows:

- The SAN solution must include all controllers, disk drives, and other pertinent control systems required to complete a fully functional and operational system.
- The SAN shall support fiber channel, SAS, and SATA disk drives.
- SAN hardware components shall be fully redundant and hot-swappable, i.e., disk drives, controllers, and power supplies.
- The SAN shall be configured to allow for a minimum of 10% growth in capacity above the requirements of calculated camera design parameters.
- SAN will have internal sensors to monitor the physical conditions within the array. Alerts will be sent via email.
- The SAN will support RAID 5
- SAN shall be capable of being managed remotely via LAN or WAN.
- Provide management software with performance analysis, reporting, and utilization.

The contractor as part of this Project will supply all the necessary hardware; servers, workstations, and recording servers as described in the drawings and specifications. Software installation, programming, and configuration shall be as follows:

The Contractor shall be responsible for coordinating work with the PSC staff. Specifically, the contractor shall be responsible for

- Programming all PSC camera parameters
- Programming and configuration of Ethernet switches
- Installation of SAN(s), Recording Servers, at each facility defined for the project.
- Configuration pertains to operating systems and database applications including any hardware manufacturer provided software utilities and applications.
- The contractor must verify that the video surveillance system is fully operational and meets the performance requirements in the specifications and drawings.
- Verify SAN(s) meets performance specifications by submitting a procedure describing how the SAN(s) performance will be verified with bid.
QUALITY ASSURANCE

Contractor or approved sub-contractor shall be a manufacturer’s trained authorized representative and have three (3) years experience designing and installing IP video systems with the VMS vendor submitted with the bid. Contractor or sub-contractor shall also maintain a certified platinum partner level, with the capability of providing a manufacturer’s certification of not less than one (1) year for the VMS equipment provided. The Contractor shall offer proof of certification by submitting a copy of its certification to the owner or owner’s representative as a submittal requirement prior to beginning any work.

Contractor or approved sub-contractor shall be a manufacturer’s authorized representative certified in the networking equipment, servers, and storage solutions submitted for this project. The contractor or sub-contractor shall have a gold or platinum partner status submitted with the bid. Contractor or sub-contractor shall offer proof of certification by submitting a copy of its certification to the owner or owner’s representative as a submittal requirement prior to beginning any work.
4. Evaluation Criteria

a) Vendor – The vendor has to be certified

b) Cost – Overall project costs to perform the work described in the contract documents; hardware, software, upgrade, and annual maintenance

c) Data Management – Proposed solution will provide an effective storage environment for Prairie State College.

d) Disaster Recovery – The configuration of the video management system should be able to be stored and should be able to restore the configuration in a disaster recovery situation.

e) Backup/Restoration – The VMS configuration should be able to be restored from the last saved configuration.

f) Growth The VMS should be able to reside on a Virtual Server and be scalable.

g) Data Archive - Availability / compatibility of options to archive data and should be capable of storing the data for a minimum of 30 days.
## Bid Specifications: PSC Security Cameras

<table>
<thead>
<tr>
<th>Item #</th>
<th>Specifications</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Encoding: Rack Mount Chassis for up to 14 blade encoders</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Blade Network Video Encoder 6-Channel, H.264</td>
<td>14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Hardware: Fixed Dome Cameras</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Software: Management software for recording, playback, archiving</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Software: Licenses</td>
<td>96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Services: Install cameras and setup/configure software</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>One Year Maintenance</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL BID:**

**Delivery:** *(Within 30 days of bid)*

**FOB:** Prairie State College, 202 S. Halsted St., Chicago Heights, IL 60411

Company Name: ________________________________________________________________

Signature: __________________________________________________________________

Phone Number: ________________________ Date: ________________________