Madera Unified School District
IP Camera System Project

Scope of Work and Installation requirements
(This is to be applied to Bid Section No.1 & Bid Section No.2)

SECTION I

Introduction:

. The contractor will be responsible for procurement and installation of all required network infrastructure. The contractor will also be responsible for the installation and configuration of recording systems, cameras, and applicable software to be provided by MUSD. Network cabling and necessary infrastructure will be installed and cameras will be added to a system that consists of IP cameras, digital storage media, system control software, communications equipment, power supplies and all ancillary materials necessary to provide a complete and functioning system. All bids are to be submitted in accordance with the contract documents and the following specifications.

Intent:

The intent of this specification is to provide a basis from which prospective bidders can submit competitive bids that arc similar in scope and equipment. It is incumbent upon the prospective bidders to provide and install the additional equipment needed so that a complete and working system that meets the stated purpose and views of the individual cameras and the functionality necessary for the system users. Where applicable, the bidder shall bring to the attention of the District any errors, omissions or conflicting points within the technical specification that is discovered. In summary, the specification is a guide from which to determine the scope of the project and the District's intent with respect to video surveillance coverage and system user capabilities.

In conclusion, the successful bidder will be required to provide a complete and functional system. Change orders will not be permitted to cover equipment that was omitted by the bidder. It should be noted that the bidders will have complete site tours as well as this specification to use as a resource for generating their bid. Questions and requests for information shall be submitted prior to bid submission in accordance with these specifications. Again, all bids should provide for a complete and functional system that meets the performance and functionality requirements of the District.

Contractor Qualifications:

At the time of submission of the bid the contractor shall have the following qualifications:

a) Minimum 5 years' experience in the design, installation, testing and maintenance of data communications systems and associated inside and outside network cabling and systems.
b) Possess a complete and full working knowledge of data/networking systems, cabling and infrastructure planning in accordance with ANSI/TIA/EIA 568 and 569 specifications.
c) Has performed successful installation and maintenance on at least three (3) projects similar in scope and size, with portfolio submissions available.
d) Can provide job reference for at least three (3) similar projects, including scope of work, project type, owner/user contact name and telephone number.

e) Holds and maintains a valid California C-7 or C-10 Contractors license and can exhibit validity upon request.
f) Possesses the ability to create “as built” documentation including hardcopy and digital media.
g) Possess calibrated acceptance testing equipment (No Pass/Fail test results accepted, full test reports only) as delineated within ANSI/TIA/EIA 568 Building Wiring Standards for Ethernet network topology and can perform acceptance testing through 10000Mbps (10Gig).
h) Contractor must be Panduit or Leviton Certified and provide proof of certification.

END OF SECTION

Project Overview:

The system will consist of individual IPC subsystems located at two campuses within the district managed by a central virtualized server at the District Office. The sub-systems will consist of fixed, high resolution IP cameras strategically located to provide the views and images designated by the District. These cameras will be recorded locally on NVR storage appliances. These individual NVR storage appliances will be managed via a single point of control at the District Office. The system will be controlled by a user friendly and intuitive graphical software suite consisting of a centralized server that is accessible via a web browser with granular permissions. Additionally, client software will be deployed to designated workstations.

Identification of Sites:

Madera High School 200 South L St. Madera, CA 93637 (559) 675-4444	Madera South High School 705 W Pecan Ave. Madera, CA 93637 (559) 675-4450

END OF SECTION

SECTION II

System General Requirements:

Manufacturer & Warranty Requirements:

Main system components, including software, may be manufactured by the same manufacturer or multiple manufacturers. All main system components, including software, NVRs, and cameras, must be able to function with system components from other manufacturers. All system components, including hard disk drives shall be supported by a three year factory warranty.

System Software:

System software shall be OnSSI Ocularis Enterprise Software Suite installed on virtual servers provided by MUSD centrally managing Milestone Husky 550A NVR's provided by MUSD at each site in accordance with the plans and specifications.

System software shall have the ability to granularly control access to cameras by Active Directory domain credentials.

System software will provide video feeds to end users via a web browser and/or client software.

Contractor is responsible for configuration of OnSSI Software and NVR's provided by MUSD to meet the viewing and surveillance requirements in accordance with the plans and specifications. This includes installation/configuration of server components and of client components.

Server and PC:

Server and client workstations shall be provided by the District. These PC shall meet or exceed the minimum PC requirements set forth by the manufacturer.

Video Recording:

A video data stream will be recorded at a high resolution and frame rate locally at each site on a Milestone Husky 550A NVR for a period of at least 30 days. A video archive server or PC workstation shall not be required to write the video data from the cameras to the appliance. IP cameras shall be equipped to facilitate recording directly from the cameras to the NVR appliance over IP.

MUSD shall furnish Husky 550A NVR Storage devices and contractor will install/configure Husky 550A NVR storage devices as part of this project.

Cameras:

The completed system shall consist of 75 IP cameras as specified and distributed in accordance with the plans and specifications.

Cameras will connect to the local area network at each site via the closest IDF to the camera. Cameras will be powered via POE switches to be located at each intermediate distribution facility. Rack space will be provided for in the existing IDF racks. Equipment can be wall mounted if necessary. Contractor shall provide and install all

CAT6 cabling & equipment (patch panels, etc.) to connect new cameras to existing network infrastructure. District to provide network switches and cameras.

Contractor shall be responsible for mounting and focusing cameras at the general locations noted in the Bid documents. Final camera locations shall be coordinated between IPC system provider and the District.

Incidental Materials, Equipment and Work:

It's the intent of this project to provide a complete and functional system that meets the requirements and expectations of the District. The contractor shall include in their proposal all equipment, components, materials, labor, and services to provide, install and make completely functional IPC system.

It is the responsibility of the contractor to furnish a complete system. It is, therefore, incumbent upon the contractor to leverage their experience and expertise and to include all incidentals necessary to complete the work. Incidental materials equipment and work includes all mounting poles bollards, brackets, camera mounts, ancillary and specialized equipment necessary to complete the work.

MUSD will provide a detailed specification of cameras and equipment to be purchased by MUSD and provided to the contractor as part of this project.

END OF SECTION

SECTION III:

Technical Specifications:

Software:

ONSSI Ocularis Enterprise

ARCHITECTURAL AND ENGINEERING SPECIFICATION

Section 282313 -Video Surveillance Systems

PART 1 - General

A. All equipment and materials shall be standard components that are regularly manufactured and utilized in the manufacturer's system.
B. All equipment and components shall have been thoroughly tested and proven in actual use.
C. All equipment and components shall be CE-marked, FCC, and TUV marked.
D. Installation CDs or DVDs supplied with the system shall contain system documentation available in PDF format, and shall include the Acrobat Reader program.

PART 2-Products

2.01 Manufacturer

A. On-Net Surveillance Systems, Inc.
One Blue Hill Plaza, 7th Floor, PO Box 1555
Pearl River, NY 10965
Tel: 845-732-7900
B. Arecont Vision, LLC. Headquarters
425 E. Colorado St, 7th Floor
Glendale, CA 91205
Tel: 818-937-0700
C. Hikvision USA
908 Canada Court
City of Industry, CA 91748
Telephone: +1 909 895 0400
D. Milestone Systems Inc**.**
8905 SW Nimbus Avenue
Suite 400
Beaverton, OR 97008, USA
Telephone: +1 503 350 1100
E. The product specified shall be manufactured by a firm whose quality system is in compliance with the I.S. /ISO 9001/EN 29001, QUALITY SYSTEM.

2.02 OnSSI Ocularis 5.5 Enterprise (or higher if released during project)

A. The product specified shall be the OnSSI Ocularis 5 Enterprise software package that runs on a non-proprietary virtual server to provide the installation, administration, and operation of video surveillance systems using H.264 and MPEG video compression technology via local networks.

B. The VMS specified shall be an enterprise level software package that offers a complete IPC system solution scalable from one to hundreds of cameras where each camera may be added on a unit-by-unit basis.

C. The VMS shall support IP network connectivity, including LAN, WAN, VPN, Internet, and Wireless (Wi-Fi and Cellular) technologies.

D. The VMS specified shall provide, but not be limited to, the following functions:
    1. The VMS will provide servers that provide the functions of Ocularis Administrator & Recorder Manager, Ocularis Base Server, Ocularis Media Server, Ocularis Clients, and Ocularis clients with VideoWall.
    2. Treat the network as a digital matrix system by allowing cameras to be connected to monitors using a drag and drop function.
    3. Display several simultaneous live picture connections from cameras in the network.
    4. Provide a configuration tool that allows the creation of site maps with camera locations and monitor placement and also allows interactive operation including PTZ control.
    5. Programming of alarm-triggered events.
    6. Programming of automatic video recording to network connected video recorders.
    7. Retrieve and playback the archived video from remote hard drives or Compact Flash memory of compatible devices or from network video recorders.
    8. Provides a bidirectional audio function to allow communication between remote camera sites and main control location. Full and half duplex audio communication modes are selectable.

E. The product specified shall be a software program that provides the installation, administration, and operation of video surveillance systems using H.264 and MPEG video compression technology via local networks. Video from any of the installed devices may then be displayed by dragging the device symbol into a workspace software monitor window. Video may be displayed in full screen mode or 2x.2 and 3x.3 or more multiscreen formats.

F. The VMS shall support H.264 and MPEG products manufactured or recommended by Arecont or HikVision.

G. Each camera's bit rate, frame rate, and resolution shall be set independently from other cameras in the system, and altering these settings will not affect the recording or display settings of other cameras.

H. The VMS shall require a user name and password that determines the level of authorization as being a user or administrator of the video management system. The VMS will integrate with Active Directory so that AD domain security groups and AD authentication may be used for access authorization to the VMS software.

I. The VMS shall provide control of manufacturer recommended and properly configured pan/tilt/zoom cameras.

J. Remote video servers equipped with a relay output function shall be controllable from the workstation running the VMS software.

K. The VMS shall have an instant replay function that allows video recorded on network devices equipped with local disk storage to be reviewed, and, if desired, backed up to network video recorders (NVR). The instant replay function shall be controlled via a slider bar and "VCR like" buttons.

L. The VMS shall provide a function that automatically creates a logbook during every session in which all events and actions arc recorded. The logbook may be viewed, searched using various filters, and the results saved as a text file.

M. The VMS shall provide a camera overview function that shows at a glance thumbnail previews of available cameras in the system that may be dragged into a workspace software monitor.

N. The VMS shall allow programming of camera sequences where pictures will be displayed one after the other on the display monitor. Salvo sequences may also be programmed where cameras are switched on selected monitors as a synchronized group.

O. The VMS shall provide site map based operation, using a site map editor, that allows the user to create and view facility drawings on which camera icons and other system devices have been placed. Icons of all the devices, such as video servers, monitors, and functions such as alarm inputs or relay outputs that are available in the system may be placed within the site maps. Selection of an icon on a sitemap allows devices to be chosen, cameras to be displayed and controlled on monitors, and other site maps to be selected or linked from one site map to another. Existing drawings may also be imported into the software as bitmaps and then the icons added to the imported drawing. Graphic files with formats of .png, .bmp, .xbm, .xpm, .pnm, .jpeg, and .jpg may be imported into the system for use as site maps.

P. Snapshots may be saved as .JPG format images to the hard drive of a computer. These .JPG images may then be printed, converted to another format, or placed into a word processing document.

Access Control Capability

Q. The VMS specified shall integrate with and support access control systems from multiple manufacturers. The VMS must be able to integrate with ten or more access control systems from other manufacturers currently on the market. This integration must facilitate the ability to visually match access cardholders with live images to verify identity.

Network Recording Capability

R. The VMS shall support multiple cameras and NVRs from multiple manufacturers and use non-proprietary methods of IP network communication.

S. The VMS shall allow playback of video recorded on the local drives of remote devices or video recorded on network video recorders.

T. **Husky 550A NVR Storage devices** will be used as local storage and recording devices at each site. Storage amount must be configured to support 30 days of motion activated 1080P HD video.

2.03 Required Camera models include:

A. Arecont ARE-AV12186DN – 12MP 180 Degree Dome Camera
B. Arecont AV6655DN-28 – 6MP Dome Camera
C. Arecont AV12176DN-NL – 12MP Omni-Directional Surface Mount Camera
D. HikVision DS-2CD2742FWD-IZS – 4MP Dome Camera
E. HikVision DS-2CD2642FWD-IZS – 4MP Bullet Camera
F. HikVision DS-2CD2722FWD-IZS – 2MP Dome Camera
G. HikVision DS-2CD63C2F-I – 12MP Fisheye Camera

MUSD reserves the right to make changes to camera model during the project due to recommendations from the contractor, advances in technology, and changes in campus security needs.

GENERAL CAMERA DESCRIPTION

A. The camera will be designed for surveillance and industrial applications requiring a rugged, high-performance, day/night, with IP network capability. The camera will provide high resolution HD1080P, fully automatic, day/night vision providing video over an IP LAN/WAN network. The camera will automatically switch from color to monochrome operation as the light levels vary for enhanced night viewing.

NETWORK CAMERA REQUIREMENTS

B. The camera will incorporate a network video server to encode high-quality streaming video at low bit rates for transmission over an IP network.

C. The camera video signals sent over the IP network can be received and displayed using any of the following methods:
   1. A computer web browser.
   2. The ONSSI Ocularis Enterprise client software.
   3. Via the ONSSI Mobile Application for Android and Iphone.

D. The camera will support power over Ethernet (PoE) using UTP Category 6 cable with RJ45 connectors and an IEEE802.3af compliant switch, to make installation easier and more cost effective. The camera can also be powered by a 24V AC or 12-48V DC Class 2 uninterruptible power supply (UPS) to allow continuous operation, even during a power failure. **If existing camera locations exceed the Category 6 cable limitations Contractor shall install a coaxial cable to Ethernet adapters as needed.**

E. The camera will support streaming video as follows:
   1. In a unicast function that allows communication between a single sender and a single receiver over a network.
   2. In a multi-unicast communication that supports multiple connected receivers over a network.
   3. In multicast video streaming that allows communication between a single sender and multiple receivers when used in a suitable configured network.

F. Access to the camera over the network will be restricted by password.

G. The camera will support a snapshot mode that saves individual images from the video sequence, currently being displayed on the live view page.

H. The camera will also support recording function to save video sequences to the computer's hard drive. These saved images can then be viewed from the computer hard drive using non-proprietary viewing software.

I. The camera will display separate system log entries that contain information about the operating status of the camera and its connection and an event log that displays the method of alarm triggering or when the end of alarms occurs. System and event messages can be saved automatically in a computer file.

J. To ensure that all of the specified cameras operating on the network have their internal clocks set for the same time and date, a camera function will be available that synchronizes the camera's time and date to the computer's time and date. The camera will also be capable of receiving a time signal from a time server using the time server protocol RFC 868 that can be called up automatically by the camera every ten minutes.

K. NETWORK SPECIFICATIONS
Protocols:……..RTSP, RTP/TCP, RTP/UDP, HTTP, DHCP, TFTP

Ethernet: .....10/100/1000 Base-T, auto-sensing, half/full duplex, RJ45

Overall unit delay.....120 ms (MPEG)

Power over Ethernet: .....IEEE 802.3af compliant

General day/night Camera Requirements

L. The manufacturer of the camera will provide optional hardware to allow the camera to be surface, wall, corner, or suspended ceiling mounted. The camera fits directly on a 4S or 2S electrical box.

M. The camera will incorporate the following features:

1. Day/Night mode to enhance night viewing by increasing the IR sensitivity.

2. Auto Black to enhance contrast by compensating for reduced contrast due to fog, mist, or glare.

3. Default Shutter to eliminate motion blur caused by fast-moving objects by automatically adjusting the lens opening at fast shutter speeds.

DAY/NIGHT, INDOOR/OUTDOOR, VANDAL RESISTANT, FIXED DOME CAMERA

N. The product specified shall be a day/night, vandal and tamper resistant.

O. The camera setups and adjustments shall be accomplished remotely via the IP network.

P. The manufacturer of the specified day/night dome camera shall provide an adjustment cap for the lens to be used during setup to ensure that the image sharpness (focus) and the field of view remain the same when the setup is complete and the dome bubble is installed.

Q. The day/night camera shall provide a programmable camera ID. Position of the camera ID shall be selectable.

R. The day/night camera shall provide an on-board video motion detector.

S. The manufacturer of the specified day/night fixed dome camera shall provide optional hardware to allow the camera to be surface, 4S electrical box, wall, corner, or suspended ceiling mounted.

Mounting and Viewing Adjustment Requirements

T. The manufacturer of the specified day/night dome camera shall provide optional hardware to allow the camera to be surface mounted, wall mounted, interior corner mounted, pendant pipe mounted, and suspended ceiling mounted. The camera shall be designed to be mounted to a standard 4S electrical box.
U. The dome camera shall provide cable entry via a side conduit opening or through mounting surface cutouts.
V. The camera viewing position shall be adjustable.

2.04 Milestone Husky 550A NVR Storage device

MUSD shall furnish a Husky 550A NVR storage device at each school site for contractor installation and configuration as part of this project. See attached cut sheet.

EXECUTION

INSTALLATION

3.00 Network:

It is the desire of the District's IT department to place the IPC system on a VLAN. The contractor shall work with the District's IT staff by providing the MAC address of each camera to be installed on a campus. The District IT staff will develop the IP scheme that is to be used at each campus. The contractor shall utilize the network ports as specified by IT staff.

Contractor will provide all CAT6 indoor/outdoor network cabling, keystone jacks, patch panels, CAT 6 indoor/outdoor patch cables, surface mount boxes, surface raceway (flat/elbows/junction boxes, etc.), conduit, Velcro, cable mounting hardware, j hooks/j hook rods, and any other consumables or equipment necessary to complete the installation of network cabling required to complete the installation of the IP camera system as specified. No change orders will be allowed, contractor is required to perform due diligence during the bidding period including assessment of the ability of existing pathway to accommodate network cabling for camera installation.

3.01 Cameras:

MUSD will provide IP cameras in accordance with the plans and specifications for contractor installation and configuration. Please see attachments for detailed specification of cameras to be provided by MUSD. The contractor is responsible for installing, configuring, and focusing cameras as per the school site security requirements. Cameras will be positioned and correctly adjusted for both Day and Night recording at an acceptable quality, including correct motion sensitivity.

Contractor is also responsible for configuring cameras to interact with MUSD provided software per the specifications.

3.02 OnSSI Software and NVR Storage:

MUSD will provide the OnSSI Enterprise software packages, virtual servers, and Husky 550A NVR Storage devices necessary to complete this project. Contractor is responsible for physical installation of NVR storage devices, local configuration of NVR devices to meet the requirements of the specification, and configuration of centralized control server running OnSSI software. Contractor is responsible to configure a complete functioning turn-key system.

Contractor is required to install and configure local client software for security personnel on up to ten client computers.

3.03 Training:

Contractor is required to provide two in person training sessions for security personnel in the use of OnSSI software for the purpose of monitoring each campus. One training session for each school site.

Contractor is required to provide one in person training session in the administration and configuration of OnSSI software to the Districts IT department personnel.

4.00 Project Schedule

Within 30 calendar days of awarding the contract, the contractor shall provide to the District a complete installation schedule. This schedule must be approved by the District prior to commencing any work.

4.01 Meeting:

The contractor shall provide weekly updates to the assigned District's project manager. The method of the weekly updates shall be at the discretion of the Districts project manager.

5.00 Project Sign off:

Prior to final acceptance each site will be inspected for quality of work, documentation, testing reports, and system performance. One pre-acceptance site walk will be performed by the engineer or his designee after whom any subsequent site inspections may be charged to the contractor. In order to receive site signoff the system is expected to be 100% operational. Sign off will be performed by the engineer of record or as designated.

Contractor to provide complete "as built" documentation for project in paper and digital form prior to system signoff.

6.00 Warranty

1. The completed work as specified herein including all materials and labor shall be warranted by the Contractor for a period of not less than (1) one year from the date of acceptance, to be free from defects in material, workmanship, and performance. Manufactures warranty shall extend beyond the (1) year period for an additional (2) two years.
2. The (1) one year warranty period shall begin upon final acceptance of the completed work.
    a) For purposes of warranty considerations, the date of final acceptance shall be defined as the date on which the system test has been completed, the punch list items have been corrected, and all of the required documentation has been received and approved by the Owner. A memo of record

from the Owner's representative shall formally acknowledge the acceptance of the completed work and the date of acceptance. The warranty shall not begin upon the beneficial use of the system.

b) In the event, corrective action on a reported defect has not been taken prior to the warranty expiration date, the warranty period shall be extended at no additional charge until all reported defects have been corrected.

c) The Contractor shall provide a statement indicating which items are covered by warranties in excess of the base contract requirements.

3. The camera will be provided with a three (3) year warranty.

6.01 Warranty Service

4. In the event that defects in the materials and /or workmanship are identified during the warranty period, the Contractor shall provide all labor and materials as may be required for prompt correction of the defect at no additional cost to the Owner. The Contractor shall perform the correction of defects such that interruption of the Owner's normal business operation is minimized.
5. During the warranty period, the Owner shall have the sole authority to determine if the system failures are defined as catastrophic or non-catastrophic. Catastrophic system failures are defined as any system failure that places Owners employees or facilities at an increased risk. The Contractor shall, upon receipt of a request for service from the Owner, have service personnel to the Owner's premises, repair and restore the device or equipment to service as follows:
    a) Catastrophic failures: Response shall be (4) four hours with a repair time not to exceed 8 hours. The response shall be in effect 24 hours per day 7 days a week.
    b) Non-catastrophic failure -response shall be (8) eight hours with a repair time not to exceed (24) twenty-four hours that are defined as 0730 top 1700 Monday through Friday
6. All warranty service and repair work shall be performed by personnel who have been manufacturer trained, certified and experienced in the operation and maintenance of the installed system(s)
    a) Warranty service shall include the replacement of any and all parts and/or components as required to restore normal system operation. In the event that the system parts or components must be removed for repair, the owner will release to the contractor system spares to be installed by the contractor. It is the responsibility of the Contractor to have the defective components repaired and returned over to the Owner.
    b) In the event that the Contractor determines and successfully demonstrates to the Owner that service or repair is required as a result of misuse, abuse or abnormal wear and tear, the Contractor shall be compensated for such service or repairs at the Contractor's hourly service rate
    c) Immediately following the completion of the warranty repair or service call, the Contractor's service personnel shall submit a written report to the Owner which details the service work performed, the cause of the trouble and any outstanding work which is required to restore complete and normal operation. Owner personnel must sign off on all repair or service calls to verify completion of work.
    d) Contractor is responsible for installing MUSD provided system components (cameras, software, NVR's) in a manner that meets the requirements of the manufacturer's warranty. Warranty claims denied by the manufacturer during the warranty period will be the responsibility of the contractor if the claim is denied due to faulty or ineffective installation.