

Date: December 18, 2019

To: Plan Holders

Subject: Addendum No. 1 to the Bidding Documents for: ITB No. 2020-002

Security Camera, Detention Monitoring and Control Systems Upgrade at:

Champaign County Courthouse
101 East Main Street
Urbana, Illinois 61801

Juvenile Detention Center
400 Art Bartell Road
Urbana, Illinois 61802

Addendum No. 1 becomes a part of the bidding and contract documents and modifies the original bidding documents, dated December 4, 2019. Acknowledge receipt of Addendum No. 1 in the space provided on Bid Form. **FAILURE TO DO SO MAY SUBJECT BIDDER TO DISQUALIFICATION.**

Specifications

1. Section 28 1300 - Access Control Software and Database Management
 - a. Page 28 1300-4, Paragraph 2.1-A.3. - Add as follows:
 3. OSSI-Intelli-Site.
 - b. Page 28 1300-9, Paragraph 2.5-F.2.b. - Delete in its entirety.
 - c. Page 28 1300-15, Paragraph 2.6-H.6. - Delete in its entirety.
2. Section 28 1500 - Access Control Hardware Devices
 - a. Page 28 1500-4, Paragraph 2.3-A.5. - Add as follows:
 5. OSSI.
3. Section 28 5200 - Detention Intercommunication System
 - a. Add the attached Section 28 5200 - Detention Intercommunication System.
4. Section 28 5211 - Detention Monitoring and Control System
 - a. Page 28 5211-5, Paragraph 1.8-B.2. and 3. - Add as follows:
 2. Johnson Controls.
 3. Convergent Technologies.
 - b. Page 28 5211-15, Paragraph 2.4-A.3. - Add as follows:
 3. Intelli-Site by OSSI.

- c. Page 28 5211-17, Paragraph 2.6-A.1.d. - Add as follows:
- d. OSSI MAC Series SPLC's.

Bids are due Friday, January 3, 2020 at 1:00 p.m. central time at the Lyle Shields Conference Room, Brookens Administrative Center, 1776 East Washington, Urbana, Illinois.

Respectfully submitted,

GHR Engineers and Associates, Inc.

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LEM/smh

Addendum No. 1 - Security Camera Detention Monitoring and Control Systems Upgrade.wpd

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the requirements for a Detention Intercommunication System. The detention intercommunication system shall be integrated with the overall Electronic Security System. The system shall be configured to support all intercom stations, speakers and touchscreen master modules in the system.
- B. The detention electronic system integrator shall provide an integrated detention intercommunication system as specified herein. The system shall include all equipment, installation materials, set up, and testing to form a complete operating system. Independent system functions and integrated system functions to be fully verified as part of system testing and commissioning.
- C. The Graphic User Interface (GUI) software shall be the primary interface for the control and monitoring of the detention intercommunication system.
- D. The detention electronic system integrator shall provide a digital interface between the PLC system and the Digital Communication Controllers for control by the PLC.
- E. The detention electronic system integrator shall remove and turn over to the Owner for their disposal all existing audio communications head-end equipment. In place of the existing equipment, the detention electronic system integrator shall provide Digital Communication Controllers (DCCs), Digital Communication Expanders (DCEs) and all other necessary ancillary equipment in enough quantities to support all existing remote intercom station locations, existing speakers and new touchscreen master modules to provide a fully functional system. detention electronic system integrator shall provide Quick Connect Boards and Interface Cables in sufficient quantities to terminate audio communications cabling.
- F. Digital Communication Controllers and Digital Communication Expanders shall be interconnected to form intercom exchanges. Each Digital Communication Controller (DCC) shall be capable of supporting up to four Digital Communication Expanders (DCEs). The detention electronic system integrator shall provide and install the required number of DCCs and DCEs to support the total number of intercom stations, ceiling speakers and touchscreen master modules in the system.
- G. The system shall include station audio level alarm detection capability for all intercoms within the system located in detention cells. This shall feature adjustable detection settings for each individual station. detention electronic system integrator shall include with their bid the head-end equipment required to support this feature. The detention electronic system integrator shall adjust the audio level alarm detection settings for each station, with input from the Owner.

- H. The detention electronic system integrator shall provide all hardware and software required to provide digital audio recording of the audio between all GUI stations and intercom stations and speakers.
- I. The detention intercommunication system shall include the following main components:
 - 1. Digital Communication Controllers and Expanders
 - 2. Administrator Software
 - 3. Audio Master Stations
 - 4. Intercom Stations & Loudspeakers
 - 5. Accessories

1.3 DEFINITIONS

- A. DCC: Digital Communication Controller
- B. DCE: Digital Communication Expander

1.4 SUBMITTALS

- A. Product Data: Include rated capacities, operating characteristics, and accessories.
- B. Shop Drawings: Detail equipment enclosure assemblies and indicate dimensions, loads, required clearances, components, and location of each field connection.
 - 1. Wiring Diagrams: Power, signal, and control wiring.
- C. Operation and Maintenance Data: For detention intercommunication system to include in operation, and maintenance manuals. In addition, include the following:
 - 1. Schedules detailing locations, titles, and termination locations of all intercom stations, speakers and touchscreen master modules in the system.

1.5 QUALITY ASSURANCE

- A. All work shall conform to applicable National Electrical Codes (NEC). detention electronic system integrator shall adhere to applicable state and local ordinances and the requirements of the authority having jurisdiction.
- B. Intercom system equipment is to be designed and manufactured in accordance with ISO-9001 2000 Quality System Standard.
- C. Manufacturer's quality control program to be registered in accordance with the above noted standard.

1.6 WARRANTY

- A. Warranty Period: 12 months from date of Substantial Completion. The manufacturer shall repair or replace software and hardware that fails in materials or workmanship within specified warranty period.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Intercom Station: Furnish 2 spare intercom stations of each type provided.
 - 2. Touchscreen Master Module: Furnish 1 spare touchscreen master module.

PART 2 - PRODUCTS

2.1 DIGITAL COMMUNICATION CONTROLLERS

- A. Manufacturer:
 - 1. Harding Instrument Co. Ltd. - MicroComm DXL
- B. Description: Detention electronic system integrator shall provide required number of Digital Communication Controllers to form an intercom exchange capable of independent local operation. Each exchange capacity shall be increased as required by connecting additional Digital Communication Expanders (maximum of 4) to each DCC. The basis for the specification is Harding Instruments.
- C. Digital Communication Controller (DCC):
 - 1. Each DCC shall include the following:
 - a. Process Control Card (PCC)
 - b. Master Control Card (MCC)
 - c. Two Station Control Cards (SCC's)
 - d. Optional internal PCI card.
 - e. Front panel keypad/display for system setup and maintenance.
 - f. 110 VAC, 60 Hz power supply for internal functions.
- D. Process Control Card (PCC):
 - 1. Process Control Card shall contain system configuration and data, control exchange operations and switching, and provide exchange network ports.
 - 2. PCC shall include the following:
 - a. USB network ports for exchange expansion.
 - b. Ethernet network ports for system expansion and external control by touch screen computers and graphic control panels.
 - c. Fiber optic or copper digital audio trunk ports.
 - d. Two serial ports.
 - e. Internal modem for transmitting and receiving data over a telephone line.
- E. Master Control Card (MCC):
 - 1. MCC shall include the following:
 - a. Include ports for any combination of two intercom or telephone set master stations.
 - b. Include two line-level audio inputs with status and control.

- c. Include two line-level audio outputs with status and control.
- d. Convert incoming audio signals to digital format and outgoing signals to analog format.
- e. Intercom master station audio, press-to-talk and hook switch status transmitted over two single shielded pair cables with wiring supervision to detect open circuit and short circuit faults.
- f. Telephone set master station functions all transmitted over a single wiring pair.

F. Station Control Card (SCC's):

1. SCC's shall include the following:

- a. Each provides sixteen half-duplex intercom station ports which can be employed in adjacent pairs for full duplex devices.
- b. Provide an interface for intercom stations. Units to convert incoming audio signals to digital format and outgoing signals to analog format. Each channel to monitor the status of up to two (2) switches associated with each intercom station.
- c. Each card interfaces with 16 half-duplex channels. Each channel includes a separate audio power amplifier for non-blocking call operation and sixteen (16) independent software controlled volume settings.
- d. All station audio, switch, and power functions on 400 Series and 401 Series cards to be transmitted over a single shielded pair cable with supervision to detect open circuit and short circuit faults.
- e. Audio and switch functions on 300 Series (Generic Intercom) station control cards to be transmitted on separate wiring pairs.

2.2 ADMINISTRATOR SOFTWARE

A. Manufacturer:

- 1. Harding Instrument Co. Ltd. - MicroComm DXL

B. Description: Administrator software shall be included with the detention intercommunication system. Detention electronic system integrator shall provide one licensed copy of the administrator software to the Owner at final completion. The basis for the specification is Harding Instruments.

C. Administrator Software:

- 1. Harding Instruments model DXL-SOF-ADM.
- 2. Administrator Software to function on a standard PC to support system configuration, diagnostics, maintenance, and logging but not be required for system operation.
- 3. Administrator Software to employ Windows features including views of system tree structure, tables of devices, screens for system settings and adjustments, and tables of operational data.
- 4. Configuration features to include:
 - a. Creation of overall system architecture.
 - b. Creation of multiple device templates.
 - c. Copy and paste functions with auto-numbering and auto-assignment to create device schedules.
 - d. Configuration error detection and alerts.
 - e. Device naming and call routing functions.

- f. Device setting and performance functions.
- 5. Diagnostic and Maintenance features to include:
 - a. Verification of system configuration and installation.
 - b. Verification of system networks.
 - c. Verification of device connections.
 - d. Verification of system operation.
 - e. Diagnostics via modem or Ethernet ports.
- 6. Logging features to include:
 - a. Display of system activity with filtering options.
 - b. Search by time and date.
 - c. Search by device.
 - d. Search by parameter.
- 7. Detention electronic system integrator shall install a licensed copy of the Administrator software on the Security Management Server.

2.3 AUDIO MASTER STATIONS

A. Manufacturer:

- 1. Harding Instrument Co. Ltd. - MicroComm DXL

B. Description: Touchscreen Master Modules shall be provided to interface with the detention intercommunication system. One touchscreen master module shall be provided at each GUI station location. The basis for the specification is Harding Instruments.

C. VoIP Touchscreen Master Module:

- 1. Harding Instruments model TMM-641-121-1.
- 2. The VoIP touchscreen master module shall include the following features:
 - a. Dimensions: 2.01" (H) x 5.35" (W) x 7.07" (D)
 - b. Operating Temperature: 32° to 122°F (0° to 50°C)
 - c. Humidity: 0 to 95% non-condensing
 - d. Field Connections: female RJ-45 connector
 - e. Power: 22.8Vdc – 37.8Vdc or EEE 802.3af compliant
 - f. Switch: 1 million operations
 - g. Speaker: 2.5" Mylar cone
 - h. Speaker level: 82 dB SPL max. @ 1 meter
 - i. Audio Output: 1V rms

2.4 INTERCOM STATIONS & LOUDSPEAKERS

A. Manufacturer:

- 1. Harding Instrument Co. Ltd. - MicroComm DXL

B. Description: New Intercom stations shall be provided and installed to replace the existing Jeron intercom stations. Intercom stations shall be the primary means of communication in the detention intercommunication system between the GUI operators and the facility staff and offenders. All intercom stations shall include a call pushbutton switch. The detention electronic system integrator shall replace the two existing paging horns in the Kitchen with one ceiling-mounted speaker. The basis for the specification is Harding Instruments.

C. Intercom Stations:

1. Harding Instruments model ICE-490-CUS-173 for interior locations.
2. Harding Instruments model ICE-490-CUS-176 for exterior locations.
3. The intercom stations shall include the following features:
 - a. Intercom stations shall be designed for mounting on standard 2-gang outlet boxes. Faceplates shall be constructed of 11-gauge brushed stainless. Internal steel offset grille to restrict inserting objects through speaker grille. Stations shall be ruggedly constructed and resistant to damage from soil and sprays.
 - b. Each intercom station shall incorporate an internal loudspeaker, microphone preamplifier and functioning multiplexing circuitry. One pushbutton shall be provided on each station. Pushbuttons shall be software assignable for placement of call requests or control of auxiliary functions.
 - c. Pushbuttons shall be single piece stainless steel construction and shall be backstopped to prevent excessive travel. Switch shall have positive tactile action with 1 million-operation lifetime.
 - d. Loudspeakers shall be waterproof Mylar cone type.
 - e. Stations shall be provided with MTA type insulation displacement connector that requires no wire stripping for installation.
 - f. Outdoor intercom stations shall be identical in all respects to standard intercom stations except that all metal plates and hardware shall be stainless steel, and internal circuitry and components shall be conformal coated.

D. Loudspeakers – Flush Mount:

1. Quam model SOLUTION 1, or equivalent by Lowell
2. The speaker assembly shall include the following components:
 - a. Loudspeaker: Quam model 8C10PAX
 - b. Transformer: Integral to unit, 5W, 25 and 70.7V, 5 taps
 - c. Back Box: ERD8U
 - d. Baffle: BR8WS
 - e. Mounting Device SSB-3
3. The loudspeakers shall include the following audio features:
 - a. Average Sensitivity: 95 dB-SPL, 1W / 1M
 - b. Power rating: 20W-RMS, EIA 426A Standard
 - c. Calculated Output: 102dB-SPL, 5W/ 1M
 - d. Frequency Response: 60 Hz -17kHz EIA 426A Standard
 - e. Nominal Coverage Angle: 90° Included Angle, -6dB/2kHz, Half Space
 - f. Audio Connection: 7" Color Coded Leads

2.5 ACCESSORIES

A. Manufacturer:

1. Harding Instrument Co. Ltd.

B. Quick Connect Boards and Interface Cables:

1. Harding Instruments model QCB-120-1 with model CBL-STN-XX-RR interface cable for audio.
2. Harding Instruments model QCB-120-2 with model CBL-SWT-XX-RR interface cable for switches.
3. The quick connect board shall include the following features:
 - a. Dimensions: 3.25" x 4.28" x 1.5"
 - b. Intercom station field connections: Screw clamp terminals
 - c. Exchange field connections: double ended cable
4. The detention electronic system integrator shall provide the required number of quick connect boards and interface cables for all intercom stations and ceiling speakers in the system.

C. Page Zone Expander:

1. Harding Instruments model PZE-110-0
2. The page zone expander shall include the following features:
 - a. Dimensions: 1.75" x 19" x 16.13"
 - b. General Features: Three relay-controlled paging inputs with six relay-controlled page outputs for each input. Screw terminal connections for both page inputs and outputs. Sixteen supervised input lines. Three status LEDs for "run", "install" and "fault".
 - c. Operating Temperature: 32 to 122° F
 - d. Storage Temperature: -40 to 158° F
 - e. Humidity: 0 to 95% non-condensing
 - f. Power Requirements: 95-135 VAC, 47-63 Hz, 150mA MAX
 - g. Paging Inputs: Maximum power; 100W max @ 25 Vrms per bank
 - h. Paging Outputs: Maximum power; 50W max @ 25 Vrms per channel
 - i. Standards: FCC Part 15, UL, CSA
3. The detention electronic system integrator shall provide the required number of PZE-110-0 units to support all paging zones in the system. Existing speakers/zones shall be incorporated into the new system.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify the accuracy of all dimensions, allowances, and clearances on site prior to commencing with any work that may be affected by those dimensions, allowances, and clearances.

- B. Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.
- C. Precautions shall be taken to guard against electrostatic and electromagnetic susceptibility and interference.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Provide complete detention intercommunication system as specified herein.
- B. All material furnished shall be new and conform to the applicable requirements of the Underwriters Laboratories and the National Standards Institute.
- C. All system equipment to be contained within equipment racks or cabinets.
- D. Provide adequate ventilation for all heat radiating equipment. Detention electronic system integrator shall provide fan kits as required to maintain rated operating temperature of installed equipment.
- E. All system equipment and field devices to be held securely in place. Fastenings and supports shall be selected to provide a safety factor of three.
- F. All system equipment equipped with plug in power connectors to be connected to a dedicated receptacle. Do not use tap connectors for plugging in multiple plugs into a single receptacle.
- G. All cable within equipment racks, and cabinets, or on backboards, to be neatly bundled and secured.
- H. Wires shall not be nicked, have strands removed, or have frayed strands when removing insulation or terminating.
- I. Wiring shall be executed in strict adherence to standard broadcast practices.
- J. All field device cables terminating to quick connector boards shall be labeled for easy identification.

3.3 CONNECTIONS

- A. All detention intercommunication system equipment connections shall be completed per manufacturer's recommendations and per detention electronic system integrator shop drawings.
- B. Ground equipment according to manufacturer's recommendations.

3.4 FIELD QUALITY CONTROL

- A. **Manufacturer's Field Service:** Engage a factory-authorized service representative to inspect, test, and adjust detention intercommunication system components and equipment installation, including connections, and to assist in field testing. Report results in writing.

- B. Perform the following field tests and inspections and prepare pass/fail reports:
 - 1. Intercom station inspection: Detention electronic system integrator shall perform an inspection of each intercom station to ensure that each station pushbutton works correctly and that the volume of the speaker is adjusted to the optimum level.
 - 2. Audio master stations shall be tested for proper operation.
- C. Remove and replace malfunctioning units and retest as specified above.

3.5 ADJUSTING

- A. Detention electronic system integrator shall provide detention intercommunication system configuration and adjustments. All intercom stations, loudspeakers and audio master stations shall be adjusted for optimum performance.
- B. Occupancy Adjustments: Refer to specifications 28 05 00, 3.5B.

3.6 DEMONSTRATION

- A. Provide qualified personnel to train Owner's maintenance personnel to adjust, operate, and maintain the detention intercommunication system.

END OF SECTION 28 5200