

January 2019

1. Project Scope

- a. The project consists of the following work:
 - i. Scope for Dix Building, High Security, Providence Parole and the Pawtucket Parole offices.
 - ii. Adding new IP cameras, access control doors, security workstations, video directories, video archivers, licenses, network switches, and wiring as shown in Appendix I and as required.
 - iii. Upgrading to Genetec version 5.7 at High Security.
 - iv. Re-use existing servers as provided by RIDOC. All existing servers at RIDOC shall be wiped clean and repurposed for 5.7.
 - v. Providing new Genetec Archive servers to accommodate new cameras as required, less High Security.
 - vi. Maintaining and adding to the existing Genetec Federation licensing so all new cameras can be managed by the existing Genetec system on Campus.
 - vii. Maintaining all video integration with the MTI PLC control system.
 - viii. Providing new active network switches and corresponding network infrastructure to support all new and existing cameras, workstations and servers. Existing security fiber can be reused throughout.
 - ix. All video for the Providence and Pawtucket locations shall be maintained and recorded locally.
- b. The new systems will communicate on a dedicated copper/fiber security network. Provide new fiber/copper patch panels, fiber/copper cabling, patch cords, power over Ethernet edge switches, and power over Ethernet core switches as required for a complete and operational system.
- c. The bidder shall connect all new video cameras/workstations to the existing Genetec Unified Security System. Provide Genetec software licenses as required.
- d. The bidder is responsible to verify and survey existing conditions.
- e. Provide new 120-volt circuits as required.
- f. Provide a 5-year Genetec SMA on all new systems.
- g. Provide dedicated UPS units with LCD display for each new switch, server, and workstation.
- h. Provide (24) hours of local operator training and (24) hours of administrator training.

2. Definitions.

- a. 'Provide' shall mean to both furnish and install.
- b. 'PoE' - Power over Ethernet.
- c. 'UPS' - Uninterruptable Power Supply.
- d. 'PLC' - Programmable Logic Controller.
- e. 'SMA' - Software Maintenance Agreement.

3. Bid Submittal Requirements

- a. In addition to what is required by the State of Rhode Island, the bidder shall provide the following information at the time of bid submission. Failure to provide the information will result in a bid disqualification.
 - i. The Project bid form filled out in its entirety.
 - ii. A certificate or letter from Genetec stating that the bidder is an authorized and certified dealer of Genetec products and systems. The bidder must be manufactured certified a minimum of five (5) years prior to the bid date. Failure to provide this information will result in bid rejection.

- iii.
 - iv. The bidder shall provide references from three (3) Genetec projects similar in size and scope. Reference material shall include:
 - 1. Project name.
 - 2. End user name.
 - 3. End user address.
 - 4. End user phone number.
 - 5. End user email address.
 - v. Due to the nature and complexity of this project, the bidder shall be a Unified Elite partner. Provide Unified Elite documentation with the bid response.
 - vi. A certificate or letter from MTI stating that the bidder is an authorized and certified dealer of MTI products and systems. The bidder must be manufactured certified a minimum of five (5) years prior to the bid date. Failure to provide this information will result in bid rejection.
 - vii. The bidder shall provide references from three (3) MTI projects similar in size and scope. Reference material shall include:
 - 1. Project name.
 - 2. End user name.
 - 3. End user address.
 - 4. End user phone number.
 - 5. End user email address.
 - viii. A current RCDD certificate from an active employee of the bidding company.
4. Post Bid Submittals
- a. Prior to award and after bid, the State of RI may require a detailed Project submittal inclusive of the following. At the discretion of the Owner, the contractor may be asked to provide all any equipment that
 - i. Bill of Material with manufacture, model number and quantities of each piece of equipment being provided.
 - ii. Point-to-point wiring diagrams showing wire type and locations of all new equipment.
 - iii. Product data sheets of each new piece of equipment.
 - iv. Theory of operation.
 - v. Overview of 5-year Service and Preventative Maintenance Plan.
5. As Built Documentation
- a. Provide as built diagrams showing locations of all new Security equipment as specified herein.
 - b. This shall be provided in .pdf format and in AutoCAD format.
6. Device Schedule
- a. See attached Appendix1 spreadsheet for quantities and locations of equipment.
 - b. This schedule does not alleviate any equipment, software or labor that is required as specified herein.
7. Qualifications
- a. The Systems, as described herein, must be provided, installed and serviced by a single Systems Integrator.
 - b. The System Integrator shall be manufactured certified by the Systems specified herein.
 - c. The Systems Integrator must have a minimum of five (5) trained technicians from their local office on each system as specified herein.
 - d. The bidder must have an established local office within ninety (90) miles of the site.

8. Warranty, Preventative Maintenance and SMA Program

- a. Provide a five (5) year extended warranty, preventative maintenance program and service agreement on all new Access Control, IP Video, and network electronic systems.
- b. Provide a 5-year Genetec software maintenance agreement on all new Genetec products and systems.
- c. The bidding contractor shall respond to warranty calls within eight (8) hours of when the call was placed.
- d. The bidding contractor shall provide Preventative maintenance measures.

9. Work by others:

- a. Removal of existing countertops and millwork.
- b. New countertops and millwork.
- c. Underground conduits/ductbank/pull boxes.

10. Manufactures

- a. This is an extension of the existing Genetec Enterprise IP Unified Security Platform. No other manufactures will be allowed.
- b. This is an extension of the existing MTI PLC touchscreen facility control and communication system. No other manufactures will be allowed.

11. Products

a. Genetec Primary Directory/Access Control Server

- i. Provide a rack mounted Directory server for each facility. Provide UPS for each server as specified herein. Each directory server shall have the following specifications.

1. Windows Server 2012 R2 OS with 5 calcs.
2. Intel® E3-1240 v5 processor
3. 16GB RAM.
4. (2) 1TB 7200RPM SAS mirrored hard drives in a RAID1 configuration
5. DVD-ROM drive
6. 10/100/1000 NIC card
7. Gold level support with 3-year warranty and support plan.
8. Redundant power supplies.
9. Provide Dell R230 or approved equal.

b. Genetec Archive Server

- i. Provide rack mounted IP Video Storage Archiver servers for each facility. Provide UPS for each server. Each server shall have the following specifications.

1. Windows Server 2012 R2 OS with 5 calcs.
2. Intel® Xeon® E5-2620 v3 2.4GHz, 15M Cache
3. 16GB RAM.
4. RAID 1+RAID 5 RAID Configuration with RAID controller
5. (2) 300GB mirrored hard drives in a RAID1 configuration
6. Storage drives as required per storage parameters.
7. DVD-ROM drive
8. 10/100/1000 NIC card
9. Redundant power supplies.
10. Gold level support with 3-year warranty and service plan.
11. Provide Dell R720 or equal.

- ii. Provide quantity of servers and storage as required to support the storage of all cameras at each of the facilities with the following storage parameters.
 - 1. 30 frames per camera.
 - 2. 24/7/365 full time recording
 - 3. Max resolution the camera can support (minimum of 2MP)
 - 4. 30 days of storage.
 - 5. 10% spare capacity.
 - 6. Provide calculation as part of the submittal package.
- c. Software
 - i. Provide (1) Genetec Failover Directory per system, Model GSC-1FOD.
 - ii. Provide (1) Genetec Active Directory Integration per system, Model GSC-1AD-USCH.
 - iii. Provide Genetec camera licenses for all new cameras, model GSC-OM-E-1C
 - iv. Provide Genetec failover licenses for each new and existing camera, GSC-OM-E-1FC.
 - v. Provide (1) Genetec client license for each new workstation, model GSC-1U.
 - vi. Provide (1) Genetec Federation license per system, model GSC-1Om4FED.
 - vii. Provide (1) Genetec Synergis software per Parole location with server.
 - viii. Provide (1) Genetec Omnicast software per Parole location with server.
 - ix. Provide (1) MTI Provision PLC Graphical map software to allow for camera call-up at High Security to existing PLC system.
 - x. Provide a 5-year Software Maintenance Agreement (SMA) for all IP video software.
- d. Security Network Equipment
 - i. Core Switch
 - 1. Layer 3, core network switch for all edge switches. The switch shall be configured to support twenty (20) PoE 10/100/1000 ports and twelve (12) fiber SFP ports. Each fiber port shall support 1000GB.
 - 2. The switch shall support redundant power supplies.
 - 3. Provide HP 5400 series or approved equal. Provide fiber GBIC cards as required to support each edge switch and each building and incoming switches at each remote facility.
 - ii. Edge switch
 - 1. Provide a 24-port PoE, rack mounted, network switch for each building and for each floor.
 - 2. Provide (2) fiber MM GBIC card for each edge switch.
 - 3. Provide HP 2900 series or approved equal.
- e. Interior Fixed Cameras
 - i. Vandal Resistant housing.
 - ii. Minimum of 4MP resolution.
 - iii. Varifocal lens.
 - iv. Day/Night capability.
 - v. Remote focus.
 - vi. Provide with mounting accessories for application
 - vii. Provide Hanwha QND-7080R or approved equal.

- f. Exterior Fixed Cameras
 - i. Vandal Resistant housing.
 - ii. Minimum of 5MP resolution.
 - iii. Varifocal lens.
 - iv. Day/Night capability.
 - v. Remote focus.
 - vi. Provide with mounting accessories for application.
 - vii. Provide Axis P3367-VE or approved equal.
- g. Elevator Cameras
 - i. Vandal Resistant housing.
 - ii. Minimum of 3MP resolution.
 - iii. Anti-ligature housing.
 - iv. 130 degree field of view.
 - v. Provide with mounting accessories for application.
 - vi. Provide Axis P9106-V or approved equal.
- h. Multi-Sensor Cameras
 - i. 20MP resolution minimum, 5MP per sensor.
 - ii. Minimum of 4 vari-focal lens, one for each sensor.
 - iii. Provide Hanwha PNM-9081VQ or approved equal.
 - iv. Provide with wall/ceiling/pole/corner mounting hardware as required for each location. Provide weatherproof model for all outdoor applications.
- i. PLC HMI Software
 - i. The software shall consist of a human machine interface (HMI) system with support for supervisory and process control, real-time data acquisition, alarm and event management, historical data collection, report generation, local or remote telemetry communications to PLC's, and internet/intranet access. The software shall be easy-to-use, with an object-oriented graphics development environment and have an open architecture, which utilizes the latest in Windows 7 Professional client/server networking technology.
 - ii. This section describes the various user interface functions of the SCADA system in the runtime mode. The software shall be licensed to support any of the hardware levels of user interface in any combination as follows:
 - 1. Server, workstation or desktop PC running the latest version of Microsoft Windows.
 - iii. Runtime Security:
 - 1. The runtime software shall include a security system under Windows security to enable various operator tasks based on the user level and password. Access to all displays and to all command functions shall be based on the operator's security level to protect against unauthorized use. After initial creation, only an assigned user with proper authorization or the system administrator shall modify the password.
 - 2. The security system shall be capable of disabling access to all Microsoft Windows controls (file menu, close, minimize, etc.) and keyboard commands (Ctrl-ESC, Alt-Tab, and Ctrl-Alt-Del).

- iv. **Logging Operator Actions:**
 - 1. All operator actions shall be logged to an event logger. The event logger shall keep track of each new operator log-on, log-off or device control.
 - 2. Each event log shall record the date, time, operator logged in and the type of action taken.
- v. **Alarm Management Functions:**
 - 1. Alarms shall be detected and reported by an Alarm Manager Service. The Alarm Manager Service shall support no less than forty (40) simultaneous alarm client displays.
 - 2. It shall be possible for the operator to filter the alarm display based on priority level, groups or process area. In distributed network systems, alarms shall be viewed and acknowledged from any workstation and the information shall be distributed to all clients. The name of the operator and the node acknowledging the alarm shall be capable of being displayed in the Alarm Summary.
 - 3. The alarm display shall support up to eight different combinations of colors based on the priority of the alarm and whether it is acknowledged or unacknowledged.
 - 4. The system shall provide a method of notifying the user when a new alarm has occurred.
 - 5. The operator shall be able to select and acknowledge alarms individually, by group or area. The operator shall also be able to acknowledge only those alarms visible in the display, only those selected, only the most recent alarm or all alarms in the system. The alarm display shall allow alarms to be selected by clicking on them with the mouse at runtime.
 - 6. The operator shall be able to select an alarm from the alarm summary display and the system shall switch to the corresponding screen as to the particular section of the control system where the alarm originated.
 - 7. It shall be possible to inform the operator of an alarm condition via an audible tone, a pop-up display, or any combination of animation types on the screen.
 - 8. Alarms shall be logged to the Genetec access control server.
 - 9. Alarms may be printed to a locally connected or network printer from the SMS.
- vi. Provide MTI ProVision for all camera call up programming and integration with the Genetec IP Video Management system at each facility.
- vii. Provide new graphic map drawings of each facility depicting cameras placement on each touchscreen for each camera within the facility for DOC review and approval.
- j. **Network Based I/O Module**
 - i. The module shall be capable of providing 8 fully configurable digital I/O ports.
 - ii. The module shall be PoE powered.
 - iii. The module shall be capable of audio.
 - iv. Provide quantity of Axis P8221 per facility.

k. Security Workstations

- i. Provide new Genetec workstations for locations as described herein. The computer workstations will be used to view all alarm and video activity throughout the RIDOC campus. It will also be used to provide full administrative functionality. The workstation shall have the following specifications.

1. Windows 7 Professional OS, 64-BIT.
2. Core i7-6700, 4.0 GHZ processor or better.
3. 8GB RAM.
4. 128 GB Primary drive with 500 GB secondary drive
5. nVidia Quadro K620 2GB video card
6. 10/100/1000 NIC card.
7. USB drive.
8. 16x DVD/RW drive.
9. Mouse and keyboard.
10. Gold level support with 3-year warranty.
11. Provide workstation configuration details to the owner upon request.
12. Provide Dell Precision T3620 XCTO series workstations or equal.

l. Security Workstation Monitors

- i. Provide (1) 32" desk mount for Parole offices.
- ii. Provide (2) 42" desk mount for Dix.

m. Access Control Panels

i. General

1. The control panels include but no limited to card reader modules, input modules, output modules, power supply, harnesses, and batteries. Provide quantities as required to support all access control doors, alarm points and output points as required for a complete working system. Each module card shall be neatly installed in a locked wall cabinet.
2. Provide a tamper alarm for each panel which shall report to the access control software.
3. Provide Hoffman enclosures or approved equal.

ii. Features

1. Stores a complete access control and configuration database for up to 32 Reader Interfaces (up to 64 doors) and 44,000 cardholders with expansion capability up to 250,000 cardholders.
2. The access control system interfaces with combinations of devices with a maximum of: 32 Door/Reader interfaces (up to 64 doors/readers) or 32 input monitor interfaces 9 (up to 512 monitor points) or 32 output control interfaces (up to 384 control relays)
3. Reports supervised inputs/alarms with 255 priorities.
4. Includes an HTTP API, Windows® DLL API, and direct communication API.
5. Allows local connection of a laptop computer for diagnostics and configuration.
6. Connects to the host and other devices on a TCP/IP network.
7. Receives and processes real time commands from the host software application.

8. Reports all activity to the host.
 9. Controls and communicates with all connected devices.
 10. Buffers offline transactions and uploads to the host when communication is restored.
 11. UL 294 and UL 1076 recognized component.
 12. Provide a minimum of 8 doors per panel.
 13. Provide a minimum of 8 spare input points per panel.
 14. Provide a minimum of 8 spare output points per panel.
 15. Provide battery back-up per panel.
 16. Provide with NEMA rated lockable cabinet equal to Hoffman.
 17. Provide Genetec Cloudlink per access control panel with V100, V200 and V300 modules to support all existing and new card readers, input points and output points.
- n. Card Readers
- i. Provide multiclass contactless combination proximity and smart card readers as required.
 - ii. Each reader shall operate on either 125kHz HID and 13.56MHz iClass frequencies.
 - iii. The reader shall have a Weigand output.
 - iv. The readers shall have both an audio and visual notification for access granted and access denied.
 - v. The reader shall be suitable for indoor and outdoor applications.
 - vi. The reader shall operate up to 500ft on 22AWG cable.
 - vii. Provide HID SE RP40 MultiClass readers or approved equal.
- o. Access Control Credentials
- i. Provide (100) proximity fobs to match existing.
- p. Request-to-exit sensors
- i. Furnish and install motion request-to-exit sensors for each access control door. Devices shall mount directly above each door.
 - ii. Provide power supply with batteries to support each new REX sensor.
 - iii. Provide DS 150i or approved equal with trim plate.
- q. Door Contacts
- i. Provide DPDT recessed door contacts for each door required.
 - ii. Provide GE 1076-D series or approved equal.
- r. Door hardware (Door Locks/Electric strikes/Locksets/Keying)
- i. By others.
- s. Door Lock Power supply
- i. Furnish and install power supplies for all electric locking devices as required.
 - ii. Power Supplies may power multiple doors. Contractor shall confirm Door Hardware power requirements, arrangement and operation, and account for distances, voltages drops, and inrush requirements.
 - iii. 8 or 16 outputs, individually programmable for: Fail safe, Fail secure, Form "C" relay contact, Constant voltage for auxiliary devices, Fire Alarm Interface (FAI), Negative or open collector trip, Positive trip, Isolated trip.
 - iv. Each output shall be fuse protected.
 - v. Provide coordination with door hardware contractor on proper current draws.
 - vi. Power supply shall be UL Listed.

- vii. Provide Altronix AL1024ULXB, 10 Amp 24 VDC Power Supply with two (2) 12VDC/12AH sealed gel type batteries and 3.6 Amp battery charger.
- viii. Provide quantities as required to support all locking devices.
- t. Duress Button and Duress Beacon
 - i. Provide SPST desk mounted latching duress buttons for the Providence Parole location.
 - ii. Provide ceiling mounted blue duress strobes for the Providence Parole location.
 - iii. Connect new devices to the Genetec security management system.
 - iv. Provide power supply with battery for the strobe as required.
 - v. Provide Ademco blue strobe or equal.
 - vi. Provide Sentrol duress button or equal.
- u. Rack Mount Power Strip
 - i. Provide for each Security rack/cabinet.
 - ii. Provide with 8-outlets.
 - iii. Provide 20-amp version.
 - iv. Provide Middle Atlantic PD series or approved equal.
- v. UPS Unit
 - i. Provide 1500 VA UPS units.
 - ii. UPS must have LCD display with battery status indication.
 - iii. Provide rack mount units for all new servers and floor mount units for each new workstation.
 - iv. Provide APC SMT1500 series or approved equal.
- w. Equipment Racks and Cabinets
 - i. Provide new 4-post equipment racks for each building as required.
 - ii. Racks are required to house all new network switches, patch panels, encoders, servers, UPS units, etc.
 - iii. Provide Hubbell model H2S8042 or approved equal.
- x. Network and Fiber Backbone Cabling, Connectors and Patch Panels/Cords
 - i. Provide fiber optic modular connectors/couplings for each network switch. The connectors shall be NRTL listed and TIA/EIA compliant, type "SC" terminations. Connectors and couplings shall be able to withstand at least a minimum of 2000 mating cycles without any transmission degradation. Maximum optical loss budget shall not exceed .75 dB per termination and 1.5 dB per mated pair. The connectors and couplings shall be compatible with the installed fiber optics and made by the same manufacturer.
 - ii. Fiber optic patch panels shall be capable of terminating 12 pair (24 strands) of a fiber optic cable.
 - iii. Provide fiber patch cords for each network switch as required. Provide NRTL certified EIA/TIA 492AAAA, EIA/TIA 568B Series standard performance tested patch cables as required for a complete operational system. Patch cables shall be factory pre-connectorized, two strand, "SC" type connectors, tight buffer. Patch cables connectors shall be provided by the same manufacturers as the fiber optic connectors and couplings. Patch cords shall match the fiber optic system installed, multimode 62.5/125 micron.

- y. UTP Cable and Patch panels/cords
 - i. Data cable shall meet or exceed the approved TIA/EIA-568-B.2-1 Category 6+ Unshielded Twisted Pair (UTP) cable standard for 24AWG four pair Category 6+ cable. Provide Superior Essex or equal.
 - ii. Provide Category 6+ data patch panels for each room. The patch panels shall be cable of terminating 24 ports.
 - iii. Provide Category 6 data patch cords for each workstation, camera, access control panel, programming workstation, server and network switch. Provide 15% spare.

12. Installation

- a. The systems shall be installed per the manufactures recommendations.
- b. Rhode Island prevailing wage rates are required.
- c. Fiber:
 - i. During installation of the optical fiber cable segments into the conduit system, special care shall be taken to avoid damage to the cable. While under pulling tension, the cable shall not be bent into a curve with a radius of less than twenty (20) times the cable diameter. Pulling tension shall not exceed manufacturer's recommended maximum tensile load. Contractor shall utilize a winch with tension control or a "break-away" link designed to break away at or below the recommended maximum tension.
- d. Provide plenum rated category 6+ cabling for all new workstations and interior cameras. Multi-mode fiber optic cable shall be used for all exterior pole mounted cameras.
- e. The contractor shall remove all unused intercom stations, paging speakers and existing unused paging system head end equipment.
- f. Provide 120-volt sources/receptacles as required for all new equipment.
- g. Provide appropriate licenses as required by the State of Rhode Island.
- h. Provide conduit, sleeves, and coring as required. Firestop all sleeves and penetrations.
- i. Provide a project schedule prior to installation for review and comment.
- j. Coordinate with owner on exact locations of all new equipment prior to installation. Failure to do so can result in the contractor moving the device to the correct location at no expense to the owner.

Appendix 1, RI DOC Security Upgrades Device Schedule, January 2019

Note: Refer to specification for additional material, software, and installation requirements.

	Dlx	Pawtucket Parole office	Providence Parole office	High Security
24 port edge switch	3	1	1	
Fiber GBIC	4			
Interior Fixed camera	16	7	6	
Interior Fixed camera for elevator	1			
Exterior Fixed camera	6			
Card Reader with door contact and REX sensor		2	2	
Duress Button and Duress Strobe			1	
New Genetec Workstation	2	1	1	
Genetec Directory	1	1	1	1
Genetec Archiver	1	1	1	5
Genetec Federation	1			
Update MTI PLC workstations				8