Correctional Service Canada
Technical Services Branch
Electronics Systems

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STATEMENT OF TECHNICAL REQUIREMENTS

FOR THE EXPANSION

Of The

Building Security/CCTV System

at

Regional Headquarters
(Ontario)

AUTHORITY

This Statement of Technical Requirements is approved by the Correctional Service of Canada for the expansion of the existing Building Security/Access Control/CCTV System at Regional Headquarters, Ontario.

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Director, Electronic Security Systems

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ABBREVIATIONS

The following abbreviations are used in this specification:

CSC	Correctional Service Canada
CSA	Canadian Standards Association
CCTV	Closed Circuit Television
DA	Design Authority
FOV	Field Of View
GB	Gigabit
IP	Internet Protocol
LOF	Laser Optimized Fibre
PoE	Power over Ethernet
REM	Regional Engineering Manager
REPO	Regional Electronics Project Officer
REX	Request For Exit Module
RHQ	Regional Headquarters
RSC	Regional Staff College
SAT	Site Acceptance Test
SOW	Statement of Work
STR	Statement of Technical Requirements
TtT	Train the Trainer
UPS	Uninterruptible Power Supply
UTP	Unshielded Twisted Pair
VMS	Video Management Software

DEFINITIONS

The following definitions are used throughout this specification:

Design Authority:	Director, Engineering Services, Correctional Service Canada (CSC)
Contract Authority:	Correctional Service Canada (CSC)
Contractor:	The Company selected as the successful bidder on the contract.

1.0 INTRODUCTION

1.1 General

The Correctional Service of Canada (CSC) has a requirement to expand the coverage of the existing Genetec Security Centre 5.1 system to include two (2) additional buildings on the Regional Headquarters property. This Statement of Technical Requirements (STR) will cover the technical requirements for the required work.

The Regional Headquarters property is an office complex/training facility located in Kingston, Ontario. Work will have to be accomplished with minimum disruption to the daily operation and security of the complex. To satisfy this requirement, the existing system must remain operational at all times unless permission and planning have been approved by the project authority and it has been coordinated with management.

1.2 Scope

The contractor must supply, install, test, and provide operational and maintenance training on the additions to the systems, as described in this STR. The contractor must provide acceptable documentation for the operation and the maintenance of this system. All new CCTV and Access Control equipment provided under this contract must be 100% integrated into the existing Genetec Security Centre 5.1 software.

1.3 Requirements

The purpose of this STR is to define the technical aspects and describe specific work requirements for the expansion of the aforementioned systems at the Regional Headquarters complex. This STR will indicate the extent to which both general and particular CSC specifications are applicable to the implementation of this requirement.

1.4 Technical Acceptability

The CSC operational environment is unique for its diversity of locations, climate exposures and the physical restrictive construction techniques of penal institutions and administrative buildings. Maintaining national security, the safety of information, staff and offenders alike is CSC's commitment to the government and public. Electronic security systems operating in this unique environment must maintain very high standards of dependability and reliability.

The CSC Engineering Services Division has established Statements of Work (SOW), technical specifications and standards for security electronic systems, which are based on very specific, and restrictive operational performance criteria. Technical acceptability of these systems means that the systems equipment and components comply with the pertinent CSC SOWs, specifications and standards.

2.0 APPLICABLE DOCUMENTS

2.1 Applicability

The provisions contained in the documents listed in the following paragraphs will apply to all aspects of this requirement, unless these provisions have been exempted or modified by this STR.

2.2 Applicable Statements of Work, Specifications and Standards

A. ES/SOW-0101 Electronics Engineering Statement of Work – Procurement and Installation of Electronic Security Systems

B. ES/SOW-0102 Electronics Engineering Statement of Work – Quality Control for Procurement and Installation of Electronic Security Systems

C. ES/SOW-0110 Electronics Engineering Statement of Work – Structured Cable Systems for Electronic Security Systems

D. ES/SPEC-0006 Electronics Engineering Specification – Conduit, Space and Power Requirements for Security Systems for use in Federal Correctional Institutions

2.3 Language

The language at the Ontario Regional Headquarters is English. All system display and control indicators and information will be in English only. The operator manuals, maintenance manuals and as-built documents will be provided in English only. Documentation will be provided as per Paragraphs 5.1 through 5.4.

3. OPERATIONAL CRITERIA

3.1. General

The contractor must supply and install new CCTV/Access Control equipment and licenses to expand an existing system. Work will include the addition of equipment, installation of equipment, and programming of the Genetec Security Centre software to accommodate all new equipment, as well as reprogramming of existing equipment as identified in this STR. Work will also include installation of any conduit and cable to interconnect equipment identified in this STR.

3.1.1. The system expansion will consist of the provision and installation of keypad units, multiple card reader stations, door contacts, cameras and control equipment, as indicated in this STR, which will located throughout both RHQ and RSC.

3.1.2. The operational parameters of the installed equipment shall meet the performance and operational requirements in accordance with the SOW's, Specifications and Standards listed in paragraph 2.2 except where this document specifically identifies a specification or standard that exceeds of differs from the specifications and standards listed in section 2.2. of this document.

3.1.3. The system upgrade will require additional licensing of the existing Genetec Security Centre software to support the additional cameras and access control hardware as outlined in this STR. The contractor must provide all necessary additional software licensing to complete the expansion described in this STR. All Work on the VMS/Access Control software and network support equipment must be integrated by a certified Genetec reseller employing trained and certified Genetec installation/integration technicians. Technicians Genetec certifications qualifications will be confirmed with Genetec. The contractor must provide a copy of Genetec Security Centre certification certificate for all installation technicians involved in programming or setup within the Genetec software.

3.2. System Specifics

3.2.1. This project will see a turn-key expansion of the existing Genetec Security Centre system installed at Regional Headquarters, located at Kingston, Ontario. This system will be complete with all necessary mounts, cable dressing brackets and straps. All conduit and cable provided will meet CSC – Electronics standards and specifications. All new equipment provided must seamlessly integrate into existing equipment and the project will result in an expansion of the existing Genetec Security Centre 5.1 System.

3.2.2. As the current Genetec Security Centre 5.1 installation employs Vertx models 1000, 200 and 100 control equipment, all equipment used in the expansion must be only Vertx or Genetec branded equipment and must be fully compatible with the existing system.

3.2.3. Installation of this upgrade will not interfere with the operation of existing equipment without the explicit written permission of the contract authority.

3.2.4. Provision, installation and programming of all equipment as detailed within this document into the existing Genetec Security Centre 5.1 based system at Regional Headquarters, Ontario.

3.2.5. Updates to maintenance manuals, IP assignment tables, as-built drawings to reflect all modifications to the existing system that result from this project.

4. TECHNICAL REQUIREMENTS

4.1. Concept of Operation

4.1.1. Improved facility security and access control is an important issue and the ability to integrate the older buildings located on the property into the existing RHQ system is one of the key requirements of this STR.

4.1.2. Improved after-hours access to the buildings will require the implementation of a combination of outdoor keypads and card readers at specific entry points to the complex. .

4.2. Existing System Verification

4.2.1. Prior to commencing any new work the contractor must test the operational characteristics of all existing equipment and systems, whose equipment is in proximity to where work will be carried out or which will be reused, prior to removal or installation of any equipment and provide a written record of these tests to the Crown.

4.2.2. The contractor must identify any operational deficiency of equipment or be held accountable for any systems deficiencies during the commissioning period.

4.3. Removal of Equipment and Cables

4.3.1. The contractor must remove all redundant cables, conduit and equipment located in and on various buildings. Care must be taken to ensure that any cables and conduits of other systems are not damaged. All electronic equipment must be handed over to CSC in good condition. The contractor must dispose of all of the removed cables and conduit off site in an environmentally friendly way.

4.3.2. The contractor must provide to the Design Authority, a list of all equipment to be removed 2 weeks prior to any equipment removal. This list will contain the following information as a minimum; location, make, model and serial number. The contractor must return all removed equipment to the local ADGA electronic maintenance workshop, where it will be inventoried and tagged for disposal. This information will be used to ensure the removal of the equipment from the maintenance contract, and its proper disposal.

4.4. System Installation

4.4.1. The contractor must provide, install and test a complete and fully functional expansion of the existing systems. The resulting expanded system must meet or exceed all of the performance and operational requirements contained in the SOW's, specifications and standards listed in Section 2.2. Where there is a conflict between a published specification and this STR; this STR will be the document of reference.

4.4.2. The contractor must utilize existing pipe chases, existing conduit in the walls, etc., where possible. New lengths of conduit must be of the minimum necessary length. All newly installed conduits carrying video for this project must be identified by prominent labels with **BRIGHT GREEN** wording. These labels must be located at each end of the conduit run, on both sides of any penetration of a wall, and at 3.5 metre points along its length. All junction box covers and conduit joints will be painted bright green.

4.4.3. The contractor must test all new structured cabling to be installed as part of this project with a certified CAT6 LAN Analyzer and provide detailed analysis and LANCAT readings for all network cables.

4.4.3.1. Wire map - pass/fail
4.4.3.2. Propagation Delay – pass/fail
4.4.3.3. Cable Length – pass/fail – length
4.4.3.4. Insertion Loss – pass/fail – dB
4.4.3.5. Return Loss – pass/fail
4.4.3.6. NEXT – pass/fail
4.4.3.7. ELFEXT – pass/fail

4.4.4. The use of flex conduit will only be permitted by written authorisation from the project authority on a case by case basis.

4.4.5. In secure office areas where drywall construction is used the contractor must fish a flexible conduit and associated cabling to devices inside the walls. When fishing cable into a wall the contractor will use flexible conduit. Where it is not possible to fish the cable into a hollow wall or the wall is solid (e.g. concrete filled cinderblock or poured concrete slab) the contractor may use a decorative wire mold to run the necessary cables to the defined location of the equipment. Wire mold will meet the Ontario Electrical Code when supporting power.

4.4.6. All data cables and data jumper cables (minimum 23 gauge), jacks and connector boots installed as part of this project, whether CAT6 or fibre optic, must be **BRIGHT GREEN** in colour. All cables must be FT4 rated except where cable in not protected in a conduit or in a plenum ceiling, such cable must meet a FT6 fire rating

4.4.7. All cabling in equipment cabinets, termination trays, cable trays, junction boxes, and at edge devices will be neatly dressed using Velcro style “hook and loop” re-useable straps. Cable straps must encircle all the cables in a given bundle. Any cable found to be secured with a nylon tie-wrap as a result of this project, will require replacement of the entire cable.

4.4.8. All cabling in equipment cabinets will be dressed throughout the cabinet. Cables entering a cabinet from the top will be routed to the base of the cabinet and then return to the designated equipment height, the reverse for cables entering the bottom. Vertical cable runs in the cabinet will be in the side panel areas of the cabinet. Vertical cable runs will be strapped every 12 inches. Cable straps must encircle all the cables in a given bundle.

An installed cable is any cable that is run through a conduit, run from one area in a building to another area, any cable that travels farther than the adjacent equipment cabinet in a series of cabinets.

4.5. Network Architecture

The network infrastructure must provide an open system, multi-vendor capable, communication environment utilizing IEEE 802,1aq Shortest Path Bridging (SPB) to forward and control traffic between switches.

The new network switch to be provided will be 100% compatible with the existing network switches in support of the Regional Headquarters, Ontario Security Centre 5.1 System.

All switches must include QoS (Quality of Service) and security management capabilities. Each switch must have the ability to classify, mark and prioritize traffic into priority queues, and/or weighted round robin queues on every port, and maintain QoS across the virtual / stack backplane. Classification controls and ACL (Access Control List) strategies must include the ability to sort traffic based on: MAC Address, 802.1Q VLAN Identification (VID), IP Address, TCP/UDP Ports, CoS (Class of Service), ToS (Type of Service), and DSCP (Differentiated Services Code Point).

The network infrastructure must be capable of supporting flexible topology configurations e.g. star, full or partial mesh or ring topology to allow for optimal use of additional data paths as these become available and thus provide extra resiliency and readiness for redundancy in network connectivity connections.

Each switch must support end-to-end (system-wide) network infrastructure support for a flexible and robust, optimally high availability and reliable (Best in class mean time between failure) network (that is always on), with high throughput (1Gbp) and providing a lossless environment with lowest latency (<4ms) for an evolving, high performance CSC Security Network Infrastructure.

Technical requirements:

4.5.1.1. 350 W, 120 V power supply; POE switches must be able to concurrently deliver up to POE+ per port.
4.5.1.2. Must support up to 50 Ethernet ports (48 port version)
4.5.1.3. Must provide software support for Ipv4 and Ipv6

Temperature range of operation: $O^{o}C$ to $40^{o}C$
Operating humidity range: 0 to 95% relative humidity

4.5.2. **Cabling:**

Contractor to provide all cabling to end-of-line devices in accordance with ES/SOW-0110 and Section 4.4 of this STR.
The CCTV switching infrastructure will utilize existing on-site Fibre cabling connections between all buildings, except as noted in Appedicx C, Item 1.2.2.

4.6 Cameras and Lens

The environmental, power, mechanical and technical requirements for the fixed cameras are specified in ES/STD-0221. The environmental, mechanical and technical requirements for the fixed/zoom lenses are specified in ES/STD-0204. **The lenses must be of the same manufacturer as the cameras, or approved by the camera manufacturer. Unproven third party lenses are not acceptable.**

All new CCTV cameras will be powered via POE over the interconnecting Ethernet cable.

4.7 **Power Supplies**

The contractor shall supply and install power supplies that will provide the required voltage and amperage to access control equipment and door strikes,a as needed. The power supplies shall be installed in the electronic equipment rooms or in a secure location identified by the REPO.

For compatibility with existing units and spare, the power supplies shall be Altronix AL300-ULX or approved equivalent units with wall enclosures securely mounted to a plywood backboard..

4.8 Expandability

It must be possible to expand the system beyond the originally installed capacity through the installation of additional hardware. The system expandability must not be limited in this regard.

4.9 Finishing

4.9.1 Where walls are cut, opened or damaged the contractor must repair the wall to its original appearance, including taping, sanding and colour matching existing paint.

4.9.2 Where the contractor must use wire mold or expose conduit in office areas or other work areas the contractor must paint the exposed conduit to colour match the office where it is installed.

ADDITIONAL REQUIREMENTS

5.1 Operator Training

The contractor shall prepare and present a training course to individuals responsible to train staff for the operation of the system in accordance with the specification ES/SOW-0101 Statement of Work. The course shall concentrate on the features and proper operation of the installed system. The course shall be presented on the site within two weeks of the successful acceptance testing of the system. The course shall consist of one, three-hour session for advanced users. This session shall be presented in English to a group of up to six persons. Training sign-in sheets must be included in the final documentation package and they must clearly identify; name of training, date of training, location of training (institution), printed name of attendee, signature of attendee, and attendees comments on training. If there is a requirement for the training to be provided using an ASL interpreter, the site will provide this service.

5.2 Maintenance Training and Certification

The contractor must prepare and present a minimum two-day training course to individuals responsible for the maintenance of the system. The course must concentrate heavily on the material contained in the technical manual and as-built drawings. The course must be presented on the site within two weeks of the successful acceptance testing of the system. The course must be presented in English to one group of six persons. The course syllabus will be presented to the project authority for approval no later than 30 days after approval of the FDR. Training sign-in sheets must be included in the final documentation package and they must clearly identify; name of training, date of training, location of training (institution), printed name of attendee, signature of attendee, and attendees comments on training.

The contractor is responsible to ensure that CSC maintenance technicians receive training to be able to provide 1st level support for all new switching infra-structure.

In the event of any failure of equipment under this STR, including the network switching infrastructure, the contractor is responsible for immediate resolution for resumption of full system operation. This will include provision of a three year warranty.

5.3 Manuals

The contractor must provide the operator and technical manuals in accordance with the specification ES/SOW-0101 Statement of Work. The contractor must provide two printed copies of the operator manual in English, and two printed copies of the maintenance manual in English to the site. The contractor must provide one copy of the operator manual in English and one copy of the maintenance manual in English in an electronic format to each of following: the Design Authority, the Regional Electronics Project Officer (REPO), the local CSC Authorized Service Contractor workshop, and the CSC Authorized Service Contractor Headquarters. Maintenance manuals must all include completed Acceptance Test Program (ATP) forms and completed training sign-in sheets. All manuals are to be delivered in electronic format CD, DVD or USB flash drive. All manuals are to have an interactive index that will link the table of contents to documents within the manual. All documents within the manual are to be presented in Adobe Acrobat PDF format.

5.4 As-Built Drawings

The contractor must provide as-built drawings of the site installation in AutoCAD 2000 format and in accordance with specification ES/SOW-0101 Statement of Work. The contractor must provide two copies of the as-built drawings to the site, one to the Design Authority, one to the REPO, one to the local CSC Authorized Service Contractor workshop, and one to the CSC Authorized Service Contractor Headquarters.

As-Built drawings will include as a minimum.

5.4.1 A Logical diagram of the upgraded CCTV/Access Control system differentiating between existing equipment and new equipment provided in this project.

5.4.2 A Physical diagram of the installation based on CSC provided Auto-CAD floor plans of buildings. Showing locations of equipment cabinets, devices, conduit, cable trays and junction boxes.

5.4.3 Installation Tables Including:

- **5.4.3.1** Network Switch Port Assignment
  - **5.4.3.1.1** Switch, Model, Location, Port, Assignment
- **5.4.3.2** Camera details
  - **5.4.3.2.1** Camera, Designation, Model, Lens, IP Address, Switch
- **5.4.3.3** PoE Power Assignment
- **5.4.3.4** CAT6 Patch Panel Assignment
  - **5.4.3.4.1** Location, Port , Assignment

5.4 Software

The contractor must provide CD copies of any system software in accordance with specification ES/SOW-0101 Statement of Work. The contractor must provide two copies of the software to the site, one to the Design Authority, one to the REPO, one to the local CSC Authorized Service Contractor workshop, and one to the CSC Authorized Service Contractor Headquarters.

5.5 Testing

5.5.1 The contractor must provide a detailed ATP to the DA, or his designated representative, by fax or email, for approval at least two weeks prior to the start of installation of the CCTV equipment and system.

5.5.2 The contractor must complete one hundred percent of the tests outlined in the ATP prior to the ATP testing being carried out by the DA.

5.5.3 The contractor must provide a fully completed and signed copy of the ATP to the DA, or his designated representative, by fax or email, at least two working days prior to the start of the final ATP testing. This copy of the ATP must include all of the results of the tests carried out in Section 5.6.2.

5.5.4 In the case where subcontractors have been used, the contractor must provide written confirmation that the work of their subcontractor has been inspected and verified. This verification must be sent to the DA or his designated representative, by fax or email, at least two days prior to the start of the ATP.

5.5.5 Testing may be carried out by the DA, a designated representative or a third party contractor.

5.5.6 The DA may repeat all of the ATP tests done by the contractor or a percentage of them. If the project authority determines that an unacceptable level of tests have failed during the ATP, the project authority may halt the testing procedures for a minimum of 2 weeks. The Project Authority and the contractor will re-convene in a minimum of 2 weeks to continue testing. The 2 week minimum window may be decreased solely at the projects authority's discretion and with the agreement of the contractor.

5.5.7 If the DA during the ATP testing finds a minor deficiency that does not affect the operational effectiveness of the security equipment or system, the ATP testing may continue. If a major deficiency is found during the ATP testing that does affect the operational effectiveness of the CCTV equipment or system; the testing must cease until the deficiency has been corrected.

5.5.8 ATP testing must be done during normal working hours, 08:00 to 16:00, Monday to Friday. ATP testing at other times will only be done in an emergency situation.

5.5.9 The DA or designated representative will sign-off on the ATP, upon the successful conclusion of the testing. Any minor deficiencies noted during the testing will be indicated on the ATP form. This signature indicates the Conditional Acceptance of the system.

5.5.10 The system will be subjected to operational testing for a period of two (2) weeks following the Conditional Acceptance of the system. CSC will formally accept the system from the Contractor at the end of this two (2) week period, but only if ALL deficiencies have been corrected.

5.5.11 Any deficiencies noted by CSC during this two (2) week operational testing period will be communicated to the Contractor, who will then be required to correct the deficiencies. The two (2) week operational testing period will begin again after all deficiencies have been cleared.

5.5.12 The equipment warranty period will start on the date the system is formally accepted.

5.6 Operational Down-Time

Equipment and systems operational down time must be kept to a minimum. All approved down time will be coordinated with the Regional Engineering Manager (REM) on site.

5.7 Facility Operations

The contractor must take every precaution to minimize any disturbance to facility operations. The contractor and his staff on site must cooperate fully with operational staff and conform to all security requirements.

5.8 Facility Addresses

CSC Ontario Regional Headquarters
443 Union Street / PO Box 1174
Kingston, ON. K7L 4Y8

Design and Technical Authority:

Tom Fisher
Regional Electronic Project Officer
443 Union Street / PO Box 1174
Kingston, ON. K7L 4Y8

Tel. (613) 536-4742
Fax (613) 545-8861
thomas.fisher@csc-scc.gc.ca

Facility Contact:

Chris Barkley, P.Eng BDS
Regional Chief of Facilities
443 Union Street West
Kingston, Canada K7L 4Y8

Tel. (613) 536-4743
Chris.Barkley@CSC-SCC.gc.ca

Institutional Electronics Maintenance Contractor:

ADGA Group
Neal George/Scott Williams
Collins Bay Institution
1455 Bath Rd., P.O. Box 190
Kingston, Ontario, K7L 4V9

Tel. (613) 536-6163
Email 440@csc.adga.ca

5.9 **Security**

The Contractor must submit completed CPIC forms for all staff who will be working at the Institution. The CPIC forms must be submitted to the Regional Electronic Project Officer (REPO), ten (10) working days prior to the start-up date.

5.10 **Safety**

The Contractor must comply with the document titled" Safety Regulations for Security Electronics Contractors Working at CSC Institutions" attached as Appendix B.

5.11 **Spares**

The bidder's proposal shall include a recommended spares list and a cost estimate for the same. The cost of the recommended spares will not be included in the bidder's initial financial proposal, since the cost of the approved spares will be administered as an amendment to the contract.

5.12 Communication Responsibility

The contractor is responsible for briefing facility staff prior to leaving the work site for the day. The briefing must be given to REM, or designate and must include, as a minimum:

a) Work performed that day
b) Operation status of the system, including any limitations in functionality or peculiarities
c) Contact name and number in the event of a system failure
d) Emergency contact numbers of installation technicians

5.13 Design Change Procedure

The contractor must address all requests for change or deviation from this STR with the Project Authority before any on site discussions, to ensure all changes are consistent with National Policy and Technical Standards, and to ensure the Crown maintains a complete awareness of the project expectations and time-line.

Appendix A

CORRECTIONAL SERVICE OF CANADA
TECHNICAL SERVICES BRANCH
ELECTRONICS SYSTEMS
MAINTENANCE HANDOVER REPORT FORM

INSTITUTION: **DATE:**

SYSTEM/EQUIPMENT:

APPLICABLE CONTRACT NO:
DSS FILE NO:
SPECIFICATIONS:

EQUIPMENT SUPPLIER (NAME AND ADDRESS):

SUPPLIER CONTACT (NAME AND TELEPHONE):

WARRANTY DETAILS:

Expiry date on materials/parts:
Expiry date on installation:
Expiry date on factory labour:

Travel & living expenses during the warranty period:

chargeable to CSC ☐

not chargeable to CSC ☐

Equipment transportation costs are paid by CSC for:

sending to the supplier ☐

returning from the supplier ☐

Negotiated rates for emergency repairs at site due to misuse/abuse during warranty period are as follows:

Not applicable.

Negotiated rates for labour at site after warranty period are as follows:

Not applicable.

DEFICIENCIES:

None remain ☐

List attached ☐

DOCUMENTATION:

Maintenance manual:

Supplied ☐

Due by ;

As-built drawings, cabling and wiring diagrams:

Supplied ☐

Due by ;

Acceptance test results:

Supplied ☐
Due by ;

DISTRIBUTION OF DOCUMENTATION:

1 copy to CESM sent on:
1 copy to RATIS/RTEO sent on:
2 copies to institution sent on:

SPARES:

All delivered ☐
Delivery to be completed by ;

EQUIPMENT LIST:

See attached list. ☐

MAINTENANCE TRAINING:

Completed ☐
Scheduled for ;

SIGNATURE: Project Manager

DISTRIBUTION: CESM, NHQ
RATIS/REPO, RHQ
AWMS, Institution

Appendix B

SAFETY REGULATIONS FOR SECURITY ELECTRONICS CONTRACTORS WORKING AT CSC INSTITUTIONS

1. Acts and Regulations

a. The contractor must, at all times, be in full compliance with the latest issue of the following Acts and Regulations:

1. The Occupational Health and Safety Act of the province where the work is being carried out,
2. The Canada Labour Code Part II,
3. The National Building Code Part VIII,
4. The Workers' Compensation Board regulations of the province where the work is being carried out,
5. Safety regulations and procedures prepared by the Institution where the work is being carried out,
6. All other safety regulations in effect at the work site.

b. In the event of conflict between any provisions of the above authorities the most stringent shall apply.

2. Safety Plan

a. The contractor is responsible to ensure that a site specific Safety Plan has been completed and maintained on site. The contractor must provide the Safety Plan, when requested, to Institution Staff and the Safety Officers and Inspectors authorized by the Acts and Regulations listed in Paragraph 1.a. above. The Safety Plan shall include a hazard assessment, controls, an emergency plan and a communications strategy.

b. The contractor shall complete a hazard assessment. All critical tasks and the associated hazards shall be identified.

c. Once hazards are identified, controls shall be put in place to minimize the risks. The controls shall include but not be limited to Safe Work Practices, Standard Operating Procedures and safety inspections.

d. An emergency plan shall be prepared that takes into consideration all of the identified hazards and the potential problems that could arise during the project. The emergency plan shall outline the emergency procedures to be taken in the event of an accident and shall include the contact names and telephone numbers of emergency response persons and services. The list of emergency response persons and services should include but not be limited to the following:

Ambulance,
Fire Department,
Police Department,
Institutional Safety Officer.

SAFETY REGULATIONS FOR SECURITY ELECTRONICS CONTRACTORS WORKING AT CSC INSTITUTIONS CONT.

e. A communications strategy shall be put in place that will ensure that information concerning hazards, controls and the emergency plan is communicated to all of the contractor's staff, sub-contractors, equipment operators, material suppliers, testing and inspection companies and regulatory agencies working at the institution.

f. The Safety Plan shall address and conform to the Acts and Regulations identified in Paragraph 1.a. above.

g. The submission of the Safety Plan to Correctional Service Canada shall not relieve the Contractor of any legal obligations as specified by the Acts and Regulations listed in Paragraph 1.a. above.

3. Safety Training

All of the contractor's staff , sub-contractors, equipment operators, material suppliers, testing and inspection companies and regulatory agencies working at the institution shall have received the required safety training as mandated in the Acts and Regulations listed in Paragraph 1.a. above.

Appendix C

Site Specific Requirements

The expansion to the existing Access Control system shall include the following:

1. Cameras

1.1 Type 1 Camera - Outdoor

1.1.1. Surface Mount

1.1.1.1 The provided camera shall be Axis 3363-VE or approved equivalent. All IP addresses are to be coordinated with the Project Authority to minimise duplication and ensure uniformity.

1.1.1.2 Locations:

1.1.2.1.1 Exterior Staff College, Vestibule 101. This unit is to be mounted on the overhang outside of the vestibule directly in line with the outer doors approximately 2 (two) feet from the outer edge of the overhang. The FOV is to include the area from the south edge of the outer doors and to include a view of the vehicle key drop box located inside Vestibule Rm.101.

1.1.2. Environmental Enclosure

1.1.2.1 The provided camera shall be Axis P1354-E or approved equivalent. All IP addresses are to be coordinated with the Project Authority to minimise duplication and ensure uniformity.

1.1.2.2 Locations:

1.1.2.2.1. Exterior Grounds Shack. This unit is to be a wall mounted unit on the upper south side of the smaller shack. The FOV is to include the rear door in ST02 and the loading door of Rm. 119 of the Staff College. The contractor will be responsible for providing cable between buildings in order to connect this unit to the CCTV network. Exact positioning will be determined at contract award time.

1.1.2.2.2. Exterior Westlake Hall. This unit is to be wall mounted on the upper south east corner of the interior of the loading area. This is the wall outside Rm 219. The FOV is to include the area from the roof ladder outside Rm 229 and be centred on the rear door at ST04. Exact positioning will be determined at contract award time.

1.1.2.2.3 Exterior Regional Headquarters. This unit is to be wall mounted on the upper north west corner of the RHQ building. The FOV is to include the area from behind the limestone maintenance building to the hydro transformer at the north west corner of the building, angled such that it views the first row of parking spaces but does not view the public sidewalk or roadway. Exact positioning will be determined at contract award time.

1.2. Type 2 Camera - Interior

1.2.1 The provided camera shall be Axis M3014 or approved equivalent. All IP addresses are to be coordinated with the Project Authority to minimise duplication and ensure uniformity.

1.2.2 Locations:

1.2.2.1. Interior Staff College. This unit shall be ceiling mounted in the south-east corner of Vestibule 101. The FOV is to include the view along the interior doors immediately adjacent the camera to the southern edge of the exterior doors. Exact positioning will be determined at contract award time.

1.2.2.2. Interior Regional Headquarters. This unit shall be ceiling mounted on the west side of the corridor directly opposite the inner security doors. The FOV shall be set to the maximum range of the camera with the centre of the view to be set to average head height of a person entering passing through the security doors. Exact positioning will be determined at contract award time.

1.3 Card Reader.

1.3.1. The contractor shall install all RFID card readers using flush-mount enclosures in the identified locations. No conduits or cabling shall be visible from the RFID card reader. The RFID card reader provided shall be compatible with the existing VertX control equipment, Genetec Security Centre software and shall be HID Corporate 1000 card compatible. The provided reader shall be a sealed weatherproof design, low profile. The reader shall emit a tone to indicate a positive card read. The reader shall have an LED indicator that shall change colour to indicate when access has been granted. In order to be fully compatible with the existing units and site spares, the readers shall be HID multiCLASS SE RP40 or equivalent.

1.3.2. Locations:

1.3.2.1. Staff College, Main Entrance, Vestibule 101.

1.3.2.1.1. This unit shall be surface mounted on the inside of the exterior door frame on the north side of the door frame. Exact positioning will be determined at contract award time.

1.3.2.1.2. This unit shall be programmed in conjunction with the REX described in Section 1.4.2.1 and the door contacts as described in Section 1.3.2.2 for entry/exit purposes. As these doors are to be manually locked after hours, this Reader/REX combination shall be programmed to be operational 24/7. Final programming changes shall be confirmed prior to commissioning.

1.3.2.2. Interior Regional Headquarters, North Service Doors.

1.3.2.2.1.Exterior

1.3.2.2.1.1. This unit is existing and requires changes to the operational programming only.

1.3.2.2.1.2. This existing unit is to be programmed to allow access to the building for authorised users during normal working hours. When the alarm system is active, the reader will not allow entry into the building.

1.3.2.2.2. Interior

1.3.2.2.2.1. This unit shall be surface mounted on the gyproc wall in the vestibule. Exact positioning will be determined at contract award time.

1.3.2.2.2.2. This unit shall be programmed in conjunction with the existing REX and existing door contacts for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.3.2.3. Westlake Hall, ST01.

1.3.2.3.1. This unit shall be affixed to the interior side surface of vertical door frame member on the east side of the existing door. Exact positioning will be determined at contract award time.

1.3.2.3.2. This unit shall be programmed in conjunction with the REX described in Section 1.4.2.2. and the door contacts as described in Section 1.6.2.4 for entry/exit purposes. As these doors are to be manually locked after hours, this Reader/REX combination shall be programmed to be operational 24/7. Final programming changes shall be confirmed prior to commissioning.

1.3.2.4 Westlake Hall, ST04.

1.3.2.4.1. Exterior.

1.3.2.4.1.1. This unit shall be surface mounted on the wall on the west side of the existing door frame. Exact positioning will be determined at contract award time.

1.3.2.4.1.2. This unit shall be programmed in conjunction with. As these doors are locked 24 hours, this Reader shall be programmed to be operational from 8am to 4pm Monday through Friday. Final programming changes shall be confirmed prior to commissioning.

1.3.2.4.2 Interior.

1.3.2.4.2.1. This unit shall be surface mounted on the wall on the west side of the existing door frame. Exact positioning will be determined at contract award time.

1.3.2.4.2.2. This unit shall be programmed in conjunction with the REX described in Section 1.4.2.3 and the door contacts as described in Section 1.6.2.25 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.3.2.5 Westlake Hall, Rm 141.

1.3.2.5.1. This unit shall be surface mounted on the gyproc wall on the south side of the existing door frame. Exact positioning will be determined at contract award time.

1.3.2.5.2. This unit shall be programmed to operate the existing electrical strike for the interior door. Providing suitable wiring, power and control to the existing strike shall be the responsibility of the contractor if the existing wiring is found to be inadequate. Operation of the existing electrical strike shall not take place until after the user swipes the card. This unit shall be used in conjunction with the REX, located on the secure side of the door, described in Section 1.4.2.4. and the door contacts as described in Section 1.6.2.27 for entry/exit purposes. As this door is always locked, this Reader shall be programmed to be

operational 24/7. Final programming changes shall be confirmed prior to commissioning.

1.3.2.6 Staff College, ST02

1.3.2.6.1. Exterior.

1.3.2.6.1.1. This unit shall be surface mounted on the wall on the west side of the existing door frame. Exact positioning will be determined at contract award time.

1.3.2.6.1.2. This unit shall be programmed in conjunction with. As these doors are locked 24 hours, this Reader shall be programmed to be operational from 8am to 4pm Monday through Friday. Final programming changes shall be confirmed prior to commissioning.

1.3.2.6.2 Interior.

1.3.2.6.2.1. This unit shall be surface mounted on the wall on the west side of the existing door frame. Exact positioning will be determined at contract award time.

1.3.2.6.2.2. This unit shall be programmed in conjunction with the REX described in Section 1.4.2.8 and the door contacts as described in Section 1.6.2.15 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.3.2.7 Staff College Vestibule 154

1.3.2.7.1. This existing unit shall be connected to operate the motorised latching mechanism on the door. There shall be no exposed wiring.

1.3.2.7.2. This existing card reader shall be programmed to function in conjunction with the the existing REX described and the existing door contacts for entry/exit purposes and hooked up to the provided motorised latching mechanism. Final programming changes shall be confirmed prior to commissioning.

1.4 Request for Exit

1.4.1. In order to be fully compatible with the existing units and site spares, the provided Request for Exit units shall be Bosch DS150i or approved equivalent.

1.4.2. Locations:

1.4.2.1. Staff College, Main Entrance - Interior.

1.4.2.1.1. This unit shall be surface mounted on the ceiling, centred on the exit doors. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.1.2. This unit shall be programmed to function in conjunction with the card reader described in Section 1.3.2.1 and the door contacts as described in Section 1.6.2.2 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.4.2.2. Westlake Hall, ST01 - Interior.

1.4.2.2.1. This unit shall be surface mounted on the ceiling, centred on

the exit doors. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.2.2. This unit shall be programmed to function in conjunction with the card reader described in Section 1.3.2.3.1 and the door contacts as described in Section 1.6.2.4 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.4.2.3. Westlake Hall, ST04 – Interior.

1.4.2.3.1. This unit shall be surface mounted on the ceiling, centred on the exit doors. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.3.2. This unit shall be programmed to function in conjunction with the card reader described in Section 1.3.2.4.2 and the door contacts as described in Section 1.6.2.25 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.4.2.4. Westlake Hall, Rm 141 – Interior.

1.4.2.4.1. This unit shall be surface mounted on the ceiling, centred on the exit doors. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.4.2. This unit shall be programmed to function in conjunction with the card reader described in Section 1.3.2.5 and the door contacts as described in Section 1.6.2.27 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.4.2.5 Staff College, Rm 033 – Interior.

1.4.2.5.1. This unit shall be surface mounted on the ceiling, centred on the exit door. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.5.2. This unit shall be programmed to function in conjunction with the card reader/keypad described in Section 1.5.2.5 and the door contacts as described in Section 1.6.2.11 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.4.2.6 Staff College, ST04, Top of Stairs – Interior.

1.4.2.6.1. This unit shall be surface mounted on the ceiling, centred on the exit door. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.6.2. This unit shall be programmed to function in conjunction with the card reader/keypad described in Section 1.5.2.4 and the door contacts as described in Section 1.6.2.30 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.4.2.7 Staff College, Rm 030 – Interior.

1.4.2.7.1. This unit shall be surface mounted on the ceiling, centred on the exit door. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.7.2. This unit shall be programmed to function in conjunction with the card reader/keypad described in Section 1.5.2.6 and the door

contacts as described in Section 1.6.2.8 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.4.2.8 Staff College, ST02

1.4.2.8.1. This unit shall be surface mounted on the ceiling, centred on the exit door. There shall be no exposed wiring. Exact positioning will be determined at contract award time.

1.4.2.8.2. This unit shall be programmed to function in conjunction with the card reader described in Section 1.3.2.6 and the door contacts as described in Section 1.6.2.15 for entry/exit purposes. Final programming changes shall be confirmed prior to commissioning.

1.5. Combination Card Reader/Keypad.

1.5.1 At several locations there will be a requirement for a combination Card Reader/Keypad unit to verify the identity of after hours personell requesting entry to the facility through the use of a unique code for each user. The provided Card Reader/Keypad combination shall be HID multiCLASS SE RPK40 readers or approved equivalent.

1.5.2 Locations:

1.5.2.1 Exterior Regional Headquarters, Main Entrance.

1.5.2.1.1. This unit shall be surface mounted on the vertical window frame member west of the existing wheelchair access pushbutton. Exact positioning will be determined at contract award time.

1.5.2.1.2. This unit shall be programmed in conjunction with the existing door contacts and to operate the electrical strike in the exterior doors of the main entrance vestibule. Providing wiring, power and control to the existing strike shall be the responsibility of the contractor. Operation of the strike shall not take place until after the user swipes the card and successfully enters their valid PIN on the associated PIN Reader. As these doors are manually locked after hours, this Reader/Pin combination shall be programmed to be operational 24/7. Final programming changes shall be confirmed prior to commissioning.

1.5.2.2. Exterior Staff College, Main Entrance.

1.5.2.2.1. This unit shall be surface mounted using a supplied weatherproof enclosure to the ramp/stair railing. Exact positioning will be determined at contract award time.

1.5.2.2.2. This unit shall be programmed in conjunction with the door contacts described in Section 1.6.2.2 and to operate the electrical strike in the exterior doors of the main entrance vestibule. Wiring to the existing strike shall be the responsibility of the contractor. Operation of the strike shall not take place until after the user swipes the card and successfully enters their valid PIN on the associated PIN Reader. As these doors are to be manually locked after hours, this Reader/PIN combination shall be programmed to be operational 24/7. Final programming changes shall be confirmed prior to commissioning.

1.5.2.3 Exterior Westlake Hall, ST01

1.5.2.3.1. This unit shall be surface mounted on the vertical frame member on

the east side of the existing door. Exact positioning will be determined at contract award time.
1.5.2.3.2. This unit shall be programmed in conjunction with the door contacts described in Section 1.6.2.4 and to operate the electrical strike in the exterior doors of the main entrance vestibule. Providing suitable wiring, power and control to the existing strike shall be the responsibility of the contractor if the existing wiring is found to be inadequate. Operation of the existing strike shall not take place until after the user swipes the card and successfully enters their valid PIN on the associated PIN Reader. As these doors are locked 24 hours, this Reader/Pin combination shall be programmed such that the card reader portion will be required 24 hours per day while the keypad will be required in conjunction with the card reader between 4 pm and 6:30 am, Monday through Friday. Final programming shall be confirmed prior to commissioning.

1.5.2.4. Interior Staff College, ST04, Door to Corridor 153
1.5.2.4.1. This unit shall be surface mounted on the north wall at the top of the stairs in the stairwell. Exact positioning will be determined at contract award time.
1.5.2.4.2. This unit shall be programmed in conjunction with the door contacts described in Section 1.6.2.30 and 1.6.2.8. As these doors are locked 24/7, this Reader/Keypad combination shall be programmed such that both will be required 24/7. Final programming shall be confirmed prior to commissioning.

1.5.2.5. Interior Staff College, Rm 033, Door to Rm 030
1.5.2.5.1. This unit shall be surface mounted in Rm 033 adjacent to the door to Rm 030. Exact positioning will be determined at contract award time.
1.5.2.5.2. This unit shall be programmed in conjunction with the door contacts described in Section 1.6.2.11. As these doors are locked 24/7, this Reader/Keypad combination shall be programmed such that both will be required 24/7. Final programming shall be confirmed prior to commissioning.

1.6 Door Contacts.

1.6.1 Because of the age of the existing infrastructure in the buildings, all identified door contacts are to be installed as a new system. Existing wiring and contacts are not to be re-used. Where a doorway consists of a double door assembly, both doors shall be equipped with contacts. All wiring is to be concealed using accepted industry standards and as detailed in ES/SOW-0101 and ES/SOW-0110. Contacts shall be equivalent or exceed the characteristics of the Sentrol 1086 or 1087 magnetic contacts. All contacts are to be terminated at the door using line supervision configuration. Zone programming will be determined at start-up meeting after contract has been awarded.

1.6.2. Locations:

1.6.2.1. Exterior Staff College, Basement, Head 1
1.6.2.2. Exterior Staff College, Vestibule 101
1.6.2.3. Staff College, Basement, Head 3
1.6.2.4. Exterior Westlake Hall, ST01
1.6.2.5. Interior Staff College, Basement, Rm 010
1.6.2.6. Interior Staff College, Basement, Rm 014

1.6.2.7. Exterior Staff College, Basement, Rm 021
1.6.2.8. Interior Staff College, Basement, Rm 030
1/6.2.9. Interior Staff College, Basement, Rm 031
1.6.2.10. Interior Staff College, Basement, Rm 032, West Door
1.6.2.11. Interior Staff College, Basement, Rm 033
1.6.2.12. Exterior Staff College, First Floor, Rm 105
1.6.2.13. Exterior Staff College, First Floor, Rm 107
1.6.2.14. Interior Staff College, First Floor, Rm 116
1.6.2.15. Exterior Staff College, First Floor, ST02
1.6.2.16. Exterior Staff College, First Floor, Rm 108
1.6.2.17. Exterior Staff College, First Floor, ST07
1.6.2.18.A. Exterior Staff College, First Floor, Rm 137
1.6.2.18.B. Exterior Staff College, First Floor, Rm 137
1.6.2.18.C. Exterior Staff College, First Floor, Rm 137
1.6.2.19. Exterior Staff College, First Floor, Rm 150 Corridor
1.6.2.20. Exterior Staff College, First Floor, Rm 154
1.6.2.21. Exterior Staff College, Second Floor, Swing Window, Rm 224 Corridor
1.6.2.22. Exterior Staff College, Second Floor, Rm 246 Roof Access
1.6.2.23. Exterior Westlake Hall, First Floor, ST02
1.6.2.24. Exterior Westlake Hall, First Floor, ST03
1.6.2.25. Exterior Westlake Hall, First Floor, ST04
1.6.2.26. Exterior Westlake Hall, First Floor, ST05
1.6.2.27. Interior Westlake Hall, First Floor, Rm 141
1.6.2.28 Exterior Westlake Hall, Second Floor, Rm 223C Corridor South
1.6.2.29 Exterior Westlake Hall, Second Floor, Rm 223A Corridor South
1.6.2.30 Interior Staff College, First Floor, ST04 Top of Stairs

1.7 Network Equipment

1.7.1. The provided network switches shall be equivalent to and compatible with the existing HP ProCurve 2910al-24G-POE+ system. All IP addresses are to be coordinated with the Project Authority to minimise duplication and ensure uniformity.

1.7.2. Locations

1.7.2.1. Staff College, Rm 006. This unit shall be vertically mounted on a new backboard which is to be located on the south wall of the room, beside the door, in the location of an abandoned Ericson Strowger Intercom. The contractor shall be responsible to remove all existing intercom equipment, remove wiring from the area and mount a new 4 by 8 foot backboard. This backboard shall be used for the mounting of the switch as well as for the associated Vertx cabinets. This new switch shall be connected to the existing switch located in RHQ, Communications Rm. 122 via the existing fibre backbone. A mini-GBIC transceiver will be required for the existing switch. The contractor will be responsible for providing the properly terminated fibre cable to connect the new switch to the existing patch panel. This switch is to provide network connection for the new cameras and Vertx equipment associated with this building as well as any existing security electronics located in Rm 006.

1.7.2.2. Westlake Hall, Rm 139. This unit shall be vertically mounted on a new backboard. Exact positioning will be determined at contract award time. This new switch

shall be connected to the existing switch located in RHQ, Communications Rm. 122 via the existing fibre backbone. A mini-GBIC transceiver will be required for the existing switch. The contractor will be responsible for providing the properly terminated fibre cable to connect the new switch to the existing patch panel. This switch is to provide network connection for the new cameras and Vertx equipment associated with this building as well as any existing security electronics located in Rm 006. This switch shall also be connected to a provided fibre connection to KP.

1.7.2.3. KP. B06, Rm . This unit shall be rack mounted in the existing server racks located in the CCTV server room. This unit is to be supplied with the required mini-GBIC module and one unused mini-GBIC module installed in the second port. Exact positioning will be determined at contract award time. This new switch shall be connected to the new switch located in Westlake Hall, Rm. 139 via the existing fibre backbone. The contractor will be responsible for providing the properly terminated fibre cable to connect the new switch to the existing patch panel which is located in the LAN room below. This switch is to provide network connection for the existing camera at KP and will allow for future expansion.

1.8 Access Control Equipment

1.8.1 As the existing Genetec Security Centre 5.1 installation employs Vertx models 1000, 200 and 100 control equipment, all equipment used in the expansion must be only Vertx or Genetec branded equipment and must be fully compatible with the existing system. Additional modules, including input only modules must be fully compatible with the existing system. All IP addresses are to be coordinated with the Project Authority to minimise duplication and ensure uniformity. All device programming will be determined at start-up meeting after contract has been awarded.

1.8.2. Locations

1.8.2.1. Regional Headquarters. Rm 116. Additional modules required for the expansion of the existing system for the RHQ building will be installed in Communications Rm 116. There is currently capacity for 2 additional VertX cards in the existing Genetec enclosures.

1.8.2.2. Staff College. Rm 006. All required enclosures shall be mounted on a new backboard which is to be located on the south wall of the room, beside the door, in the location of an abandoned Ericson Strowger Intercom. The contractor shall be responsible to remove all existing intercom equipment, remove wiring from the area, provide and mount a new 4 foot by 8 foot backboard. This backboard shall also be used for the mounting of the network switch described in Section 4.6.6.2.1.

1.8.2.3. Westlake Hall, Rm 139. All required enclosures shall be mounted on a new backboard. Exact positioning will be determined at contract award time. The contractor shall be responsible to provide and mount a new 4 foot by 8 foot backboard. This backboard shall also be used for the mounting of the network switch described in Section 1.7.2.2.