Correctional Service Canada
Technical Services Branch
Electronics Systems

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ELECTRONICS ENGINEERING SPECIFICATION

FACILITY ALARM ANNUNCIATION SYSTEM INTEGRATION UNIT FOR USE IN FEDERAL CORRECTIONAL INSTITUTIONS

AUTHORITY

This Specification is approved by the Correctional Service of Canada for the procurement and installation of a stand-alone Facility Alarm Annunciation System (FAAS) Integration Unit in Canadian federal correctional institutions.

Recommended corrections, additions or deletions should be addressed to the Design Authority at the following address: Director, Engineering Services, Correctional Service of Canada, 340 Laurier Avenue West, Ottawa, Ontario, K1A 0P9

Prepared by:

Manager,
Electronics Systems Research

Approved by:

Director,
Engineering Services

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ABBREVIATIONS

The following abbreviations are used in this specification:

CCTV	Closed Circuit Television
CER	Communications Equipment Room
COTS	Commercial-Off-The- Shelf
CSA	Canadian Standards Association
CSC	Correctional Service Canada
DES	Director Engineering Services
EIA	Electronic Industries Association
FAAS	Facility Alarm Annunciation System
FDS	Fence Disturbance Detection System
FIU	FAAS Integration Unit
GFE	Government Furnished Equipment
MCCP	Main Communications and Control Post
MDS	Motion Detection System
PA	Public Address
PIDS	Perimeter Intrusion Detection System
RFP	Request for Proposal
SOW	Statement of Work
STR	Statement of Technical Requirements
UPS	Uninterruptable Power Supply
VDU	Video Display Unit

DEFINITIONS

The following definitions are used in this specification:

Design Authority	Director, Engineering Services (DES) - Correctional Service Canada (CSC) is responsible for all technical aspects of the system design and implementation.
Contract Authority	Public Works and Government Services Canada (PW&GSC) is responsible for all contractual matters associated with the system design and implementation.
Contractor	The company selected as the successful bidder.
Project Officer	A CSC employee or a contracted person designated by DES to be responsible for the implementation of the project.
Off-the-shelf	Equipment currently on the market with available field reliability data, manuals, engineering drawings and parts price list.
Custom Equipment	Equipment designed and/or manufactured specifically for a specific contract.

1.0 INTRODUCTION

This specification defines the design, technical and performance requirements for a stand-alone Facility Alarm Annunciation System (FAAS) Integration Unit (FIU). It will normally be specified when only the FIU portion of the MCCP Integration Console requires upgrading or replacement.

The FIU is used to integrate all facility alarms and sundry security information systems into a common display and control. The integration capability of the FAAS shall also be used as a port in a transparent feed through format to present all event recording from the various institutional security systems onto a common data logging system as outlined later on in this specification.

These alarms may include but are not restricted to the following:

- Personal Portable Alarm (PPA);
- PPA Location System (PALS);
- Fixed Point Security Alarm (FPSA);
- Facility/Mechanical Alarms;
- Fire Alarm Systems;
- Inmate Cell Call Systems (ICCS); and
- All interior facility alarm systems.

The contractor shall be responsible for integrating all subsystems and shall provide all material and labour required for the design, supply, delivery, installation, testing and commissioning of the FIU. The contractor shall provide documentation and training to the extent described in this and other identified specifications.

1.1 Commercial-Off-The-Self Equipment

The system shall use commercial off-the-shelf (COTS) equipment and proven designs to the maximum extent possible. All new equipment shall meet the specified lifespan requirements. New equipment designs shall be restricted to unique interfaces and common control console.

1.2 Technical Acceptability

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

The CSC Engineering Services Division has established technical specifications and equipment standards for specific electronic security systems which are based on very specific and restrictive operational performance criteria as detailed in its Electronic Engineering Standard. Technical acceptability of these systems means that the equipment complies with the pertinent CSC specifications and standards.

The technical acceptance process shall involve system and subsystem evaluation in accordance with the applicable CSC specifications in one of CSC facilities or may be tested in a CSC facility to verify the effectiveness of the proposed technologies when subjected to the restrictive operational environment.

CSC shall also verify in depth any of the system technical specifications called up. CSC may when it deems necessary, request the supplier to arrange for a full site demonstration. CSC may rely on manufacturer's test results for specific areas of the specification where an independent test facility has conducted the test, and the facility is deemed acceptable to CSC.

It is the supplier's responsibility to make new developments in products available to CSC for evaluation. Equipment qualification is an ongoing process and can be initiated at any time by a vendor. Any vendor can have access to the CSC specifications and standards. Any new development or products should be submitted to the CSC Engineering Services Division, Technical Authority in a suitable time frame prior to any tendering process to allow for an acceptable evaluation period. The evaluation period may take up to sixteen (16) months.

1.3 Equipment Procurement

Any ordering of equipment/material before the approval of the system design report will be undertaken at the contractor's own risk. The Design Authority may authorize the procurement of certain long lead items at, or shortly after a preliminary design review of the proposed system.

1.4 Quantity of Equipment

The quantity and location of the equipment required for CSC institutions will be contained in the Statement of Technical Requirements (STR).

2.0 APPLICABLE DOCUMENTS

The following documents of the issue in effect on the date of the Request for Proposal (RFP) shall form a part of this specification to the extent specified herein.

ES/SOW-0101	Statement of Work for Procurement and Installations of Electronic
ES/SOW-0102	Statement of Work for Quality Control of Electronic Systems
ES/SPEC-0103	Specification for Uninterruptable Power Supply
ES/SPEC-0600	Specification for Personal Portable Alarm Systems
ES/SPEC-0601	Specification for Fixed Point Security Alarm Systems
ES/SPEC-0602	Specification for Portable Alarm Location Systems
ES/SPEC-0800	Specification for Communications and Control Consoles
ES/STD-0803	Standard for Video Display Unit
EIA-310-C	Electronic Industry Association Standard for Racks, Panels and Associated Equipment

3.0 REQUIREMENTS

3.1 General

The FIU shall provide the operator with centralized monitoring and control capability over all facility alarm annunciation systems to the extent specified in the STR. The FIU shall incorporate industrial quality and commercially available controllers and Video Display Units (VDU). The VDU shall display the status of monitored subsystems and provide software control of system features, to the extent specified herein. The FIU shall include an operator console incorporating the VDU and operator controls.

3.1.1 Period of Operation

The FIU and all associated equipment shall be design for and capable of 24 hours per day, seven days per week operation.

3.1.2 Wires, Cables, Conduits, Ducts

The contractor shall supply all necessary terminations, cross connection cabinets, conduits, wire and cabling and any other items that may be required for the satisfactory completion of the specified system. All installation workmanship shall be performed in accordance with ES/SOW-0102, Statement of Work and all applicable national, provincial, and local electrical codes.

A wiring diagram shall be supplied in the Installation section of the Maintenance Manual to detail where module connections terminate and how wires are routed and terminated.

Conduits, cables, ducts, trays, etc. may be either Government Furnished Equipment (GFE) or supplied and installed by the contractor depending on the particular institution. The determination will be made by the Design Authority and will be identified in the STR.

Connectors provided on the ends of any cable must mate with the corresponding connector on the equipment. Adapters from one type of connector to another are not acceptable.

3.1.3 Wiring Supervision

Wiring shall be supervised in all system modes. An alarm shall occur if any system wiring is cut or shorted to other wires or if the system devices are tampered with by unauthorized people or environmental conditions.

3.1.4 Sabotage, Tampering and Survivability

Elements of the system shall have high resistance to damage, destruction. All interconnecting service must be secure against tampering

3.1.5 **Human Factors**

Elements of the system which are used directly by staff (i.e., control panels, annunciators, alarm originating devices, etc.) shall conform with accepted principles of good human factors design.

3.1.6 **Annunciation and Control Panels**

Mounting space within control posts is usually limited and the problem of determining a suitable equipment mounting location is minimized if the control panels are small. Therefore, the designer should make maximum possible use of annunciation and control devices which combine two or more functions into a single unit. The system shall use Electronic Industries Association (EIA) standard video display units. The design shall be in accordance with the ES/STD-0803, Standard.

3.2 **System Configuration**

3.2.1 **Hardware**

Industrial grade FAAS central controllers shall act as an interface between the operator peripherals and the digital control panels for remote devices and subsystems. Each controller shall incorporate the following physical attributes:

- designed to operate in industrial conditions on a continuous basis;
- built to withstand a harsh, rugged work environment;
- designed with a positive pressure cooling system which passes air through an external synthetic filter element which screens contaminants, then circulates flow through the controller chassis, drives, power supply and cards;
- equipped with a security lock which shuts off keyboard access preventing any tamper activity; and
- powered by a heavy duty power supply sized with 25% spare capacity when driving all expansion ports.

Each industrial grade FAAS controller shall incorporate the following electronic features:

- microprocessor based, modular in structure;
- featuring Pentium III, or equivalent, processor;
- running at a clock speed of 500 MHZ or higher, with zero wait states;
- configured with spare expansion port(s) capability;

- equipped with a CDR;
- equipped with dynamic expandable RAM, sized to suit software requirements;
- equipped with a 3.5 inch floppy drive system; and
- equipped with a fast access hard disk with an access speed of no longer than 28 ms, sized to suit all operating and system requirements, and suitable to hold the data storage/retrieval software and archival data for a period of one year with 25% spare disk capacity.

3.2.2 **Software**

The system software shall be designed specifically for security applications and shall provide for:

- polling and demand requests to monitor status;
- processing alarms according to predefined priorities;
- executing event-initiated software programs and related background software routines;
- controlling and processing communications with operator peripherals; and
- synchronizing all system activity including interfaces to peripherals, digital control panels and all field devices

For reasons of reliability and prevention of inadvertent changes, system software including operating systems and data files shall be maintained in non-volatile memory. The contractor shall also take all reasonable measures to ensure that no computer viruses are present in the delivered system. These measures shall include controls on the use of the software during the development and integration phases, and the tests for the presence of viruses. Similarly, steps must be in place through the careful selection of the operating system to prevent any introduction of software viruses without the constant need for extensive software security measures. The system shall incorporate security featured software for authorized access control by operators, supervisors and maintenance personnel.

The system software, especially for alarm processing, shall be written in a hardware compatible programming language, operating under a real time multitasking operating system to ensure that all priority activities are presented to the operator immediately as they occur. A capability shall be incorporated to ensure that all alarm data can be configured and exported in an appropriate format that can be processed by "DOS" family of operating system software.

3.2.3 **Redundancy**

The FIU shall be configured in a fully redundant hardware and software configuration and consist of two (2) controllers and two (2) interactive peripheral VDUs, capable of sustaining a complete controller failure without affecting the operation of either the PIDS, the FAAS, or any other integrated system. Master-Slave arrangements shall not be accepted. A failure in any integration system or any system which has the display and controls integrated shall not effect the proper operation of the remainder of the equipment.

Two (2) additional interactive peripheral VDUs are required. These units shall also be in a fully redundant configuration. One unit shall be dedicated for system maintenance requirements, while the second unit shall be dedicated for operational supervisory control purposes or training related duties and may be located away from the MCCP. Neither one of these units will be mounted in the main console, but will be available in a satellite configuration as outlined below. All VDU consoles must function in a simultaneous and independent manner.

All input and output data shall be available to both controllers with a continuous dynamic update occurring in both controllers in order to allow cross-checking of input and output information between the controllers. In case of a discrepancy in the information between the controllers:

- the faulty controller shall be automatically removed from service;
- all system/operating software and current data files shall be automatically driven from the functional controller;
- a system status alarm shall alert the operator that automatic switch-over has occurred; and
- no interruption in service or loss of system status shall be perceivable when switching between controllers

Under normal operating conditions, and where the PIDS and FAAS controls are required, one of the interactive peripheral VDUs shall be dedicated to PIDS operational duties with a second VDU dedicated to FAAS operations. In the event of a controller or VDU failure, it shall be possible to combine PIDS and FAAS operations on a single VDU.

3.2.4 **Operator VDUs**

The primary "operator to system" interface for the display of alarm annunciation and for the command of an operator controlled functions on the FAAS shall be via colour VDUs.

To eliminate confusion during an emergency situation, VDU screens shall have dedicated areas for alarms, operator prompts, operator commands, as well as time, day and date information.

To enhance operator understanding, full facility graphics, complete with language descriptions, shall be used throughout to display and describe all system activity and instruction. The FAAS VDU shall each be capable of generating a minimum of sixteen graphic maps. All descriptions, alarm messages and operator instruction prompts shall be user definable in order to accurately describe unique institution configurations as well as future changes to perimeter/facility areas and operational requirements. Language of preference (French or English) to be determined by location as specified in the STR.

A typical graphic map shall incorporate the following display features as applicable to the area of presentation:

- location of the alarms;
- identification of the alarms; and
- emergency instruction and operator prompts.

The system graphics shall reduce information clutter to a minimum with the appropriate use of icons, especially to display alarm identification and location. The following colours shall be supported for alarm information:

- green/light blue normal,
- red alarm, and
- purple failed.

The operator displays for the FAAS system shall be based on a 14" high resolution colour CRT with a minimum matrix size of 640 x 350 individually addressable pixels. The VDU shall be capable of displaying, as a minimum, the colours white, black, red, green, blue and all combinations of the primary colours in order to provide flexibility in colour map displays.

All map displays shall be able to be configured and reconfigured from a user friendly graphic software package, accessed from the maintenance menu.

3.2.5 **Operator Controls**

The colour VDUs for the FAAS system shall use a "Touch Screen" employing resistive membrane or surface acoustic wave technology (or equivalent). Plain language descriptions shall be utilized to initiate all system functions, minimizing operator activity and decision making. Typing mnemonic abbreviations or using unlabelled or numerical function buttons is unacceptable. When a function key is touched on the screen, the VDU shall lead the operator through the predefined functions by asking for a choice of options or menus. At every step of alarm processing, a help screen shall be available to guide the operator through system operation. The help screen shall contain information about

functions currently available to the operator.

3.2.6 **Maintenance/Satellite VDUs**

The maintenance and the satellite VDUs shall be based on a l2" diagonal high resolution monochrome presentation. The maintenance VDU shall be located in the MCCP. The satellite VDU shall be remotable up to 500 feet. Specific location detail shall be stipulated in the STR. Further operational requirements and parameters for these VDUs are detailed in subsequent sections entitled FAAS System Menus and FAAS Maintenance Functions, sections respectively.

3.2.7 **Maintenance/Satellite Controls**

The maintenance and satellite VDUs shall have an associated keyboard with an integral key-lock switch for command and data input. Multi-level password protection shall be available in software to limit maintenance and satellite access, assignment and editing capability to authorized personnel only. All passwords shall be user definable.

3.2.8 **FAAS Menus**

The FAAS Menus shall permit display and control of various system functions, including for the operator:

- a user definable checklist and an emergency instruction set;
- the capability to acknowledge, reset alarms for all FAAS systems;
- the ability to clear fail and diagnostic alarms;
- scanning of all applicable FAAS maps; and
- the ability, if provided by the input device, to perform alarm system test(s).

The maintenance/satellite menus shall permit control of the following:

- system time and date;
- activation or deactivation of any alarm system device;
- generation of status, test and statistical reports for alarm systems and other field devices with available inputs;
- viewing of equipment configuration;
- assignment of menus and accessibility for operators;

- creation of checklists and emergency instruction prompts; and

- simulation of alarms for operator training.

3.3 FAAS Alarm Processing

3.3.1 Alarm Priorities

The FIU controller shall have multiple levels of priority for displaying alarms. Each possible alarm type shall be assigned a separate priority level as defined in the STR. All alarms shall be held in non-volatile memory. The FIU controller shall rank the alarms, displaying highest priority alarms at the top of the list and lowest priority alarms at the bottom. The total number and type of alarms to be processed shall also be displayed.

When multiple alarms occur, the first received, highest priority alarm shall be displayed on the VDU until processed by the operator. Then the next highest priority alarm shall be displayed until processed, etc. If a higher priority alarm is received before a lower priority alarm is processed, the high priority alarms shall replace the lower priority alarm on the VDU. The lower priority alarm shall then be retained in memory and be redisplayed after the higher priority alarm has been processed.

The operator shall have the capability of stepping through the list of alarms and dealing with the alarms in any order. If at any time the operator is viewing an alarm which is not the highest priority alarm present in the system, the operator shall have the option of returning directly to the highest priority alarm by activating a single control.

3.3.2 Alarm Simulation Priority

The FIU controller shall be capable of distinguishing between simulated and genuine alarm inputs. In the event that a genuine alarm is received while the alarm simulation is in use, the FIU computer shall:

- cancel all existing simulated alarms;

- ignore any additional simulated alarms; and

- display the genuine alarm.

The FIU controller shall only accept simulated alarms when there are not genuine alarms in the system.

3.3.3 **Alarm Processing**

Activation of any alarm from a FAAS subsystem, connected to the FIU controller shall cause the following action:

- full, plain language description and graphic display of the alarm condition, type and location
- audible signal, flashing alarm condition and emergency instruction set presentation
- acknowledgment of the alarm by the operator as his only course of action
- assignment of alarm causes by the operator by choosing from a predefined menu of causes.

3.3.4 **Alarm Interface**

Alarm inputs shall be accepted by the FIU and output signals provided to the output points in the form of form C dry contact closures, opto-isolated outputs or via an RS-232C or RS-485 interface as required by the alarm sensors. The type of interface required for each alarm sensor is detailed in the STR.

Any system which is not capable of a bi-directional communication link or which uses a data transfer protocol which is asynchronous or not compatible with the FAAS will not effect the functionality of the FAAS or any other integrated system.

3.4 **Facility Alarm Systems**

3.4.1 **Data input**

Bi-directional data links shall be provided in order to receive the following information from the Motion Detection System and the Fence Disturbance Detection System:

a. Alarm annunciation;
b. System test annunciation;
c. System fail annunciation;
d. System fail cancel;
e. Alarm information data (where applicable); and
f. Test alarm data and results (where applicable).

These messages shall be available using form C dry contact closures, opto-isolated outputs, or an EIA standard RS-232-C or RS-485 data link as required by the FAAS subsystems.

3.4.2 **Data Output**

The FIU controller shall provide output messages directed towards the FAAS subsystems as follows:

a. Alarm acknowledge;
b. Alarm cancel; and
c. System test (where applicable).

Output controls shall use the bi-directional data link as required in section 3.2.3.1, using form C dry contact closures, opto-isolated outputs or an EIA standard RS-232-C or RS-485 data link, as required by the FAAS subsystems.

3.4.3 **Miscellaneous Inputs**

Where applicable, secondary outputs from Inmate Cell Call Systems, Nurse Call System, etc. shall be FIU software controlled and switchable on a system by system basis. In general, only the information from those alarm systems being monitored will be relayed for use by the operator.

3.4.4 **Data Protocol**

All RS232 or RS485 signals provided to, and received from, the FIU should conform to either the Senstar-Stellar Sennet or StarCom protocols. Any driver required for another protocol will be the responsibility of the contractor.

3.4.5 **Fire Alarm System**

When required as stated in the STR, the contractor shall relocate the Fire Alarm annunciation panel to allocated space in the MCCP console, and provide an integrated alarm annunciation function in the FIU. The contractor shall provide all cables and mounting hardware including a new control panel if specified to complete this task. The functionality and the integrity of the Fire Alarm Panel must not be compromised, and must be able to function independently as a standalone system.

3.5 **Time/Date Information**

The FIU controller shall generate accurate time/date information, suitable to act as a central generating unit of this information for all systems forming part of the MCCP. Interface to the various systems shall be in either parallel or serial form, as required. The availability of both types of output ports shall be provided to allow for future expansion or interfacing.

3.6 **Data Logging**

3.6.1 **General**

The FIU controller shall provide data logging (ASCII coded text activity archive) storage of over 100,000 lines of subsystem events on hard disk storage. On demand, activity archive stored events shall be sorted by type and/or date and transferred to DOS formatted floppy disks or sent to a printer to provide a hard copy of FIU and integrated subsystems events. For each event, the activity file shall show the date, time and event description.

3.6.2 **Event Definition**

Data logged events will include all status changes of monitored subsystems including FAAS alarms, alarm acknowledgement, alarm clear/reset, UPS failure or bypass, FIU controller switch-over, etc

3.7 **Printer Status**

The printer status shall be monitored by the FIU controller. Failure of the printer or a "paper-out" condition shall generate an alarm.

3.8 **Status Panel**

3.8.1 **General**

The FIU shall contain a status panel containing indicators and controls for the major FIU units. The status panel shall also contain status lights for the UPS.

3.8.2 **FIU Status Functions**

The status panel shall provide the following indicators and controls:

a. FIU controller fail indicator; and

b. Active FIU computer selection control.

3.9 **UPS Integration**

The contractor shall connect UPS power into all FIU equipment racks. The UPS will be provided as GFE and will be in accordance with Specification ES/SPEC-0103. Power shall be taken from the VAC regulator output or from an equivalent point in a distribution panel if available. All FIU equipment shall be connected to the UPS power. UPS status shall be monitored as per section 3.8.1.

4.0 MECHANICAL CONFIGURATION

4.1 General

The FIU equipment shall be installed in at least two distinct and separate units: an operator console and equipment racks. Displays and controls including GFE required by the operator shall be installed in a contractor provided operator console. Other equipments shall be installed in EIA standard 19-inch racks located in the CER or other location as required by the STR. All racks and console bays shall include side panels and rear doors. Requirements for raised flooring, cable entrances and/or rack cooling ducts shall be specified in the proposal.

4.2 Console Design

The operator console shall be ergonomically designed to provide the operator with a logical, easily understood display and control layout. All displays shall be clearly viewable and all controls shall be easily reachable from a seated position. The console shall contain a work surface at normal desk height not less than 18 inches in depth and extending the full width of the console. The work surface shall be covered with a scratch-resistant plastic covering. Detailed design requirements will be outlined in the STR.

The contractor shall provide a separate table or attachment to the console for mounting the MCCP operator telephones; if an attachment is provided, it shall not cause the telephones to block any display or control. The contractor shall provide a standard non-tip swivel-base chair with casters and arms for the FIU operator. Specification ES/SPEC-0800 shall apply to the console design.

4.3 Printer Rack

The FIU contractor shall provide a separate rack or stand to be located near the operator console for mounting the printer. The printer rack shall be readily movable.

4.4 Console/Rack Colour Schemes

The operator console, telephone table/attachment and printer rack shall be covered with a high quality paint using a standardized colour scheme. Racks for other equipment shall utilize a common-colour scheme for racks, end panels and doors.

4.5 Environmental Requirements

The FIU shall operate over the following indoor environmental conditions:

4.5.1 Temperature: 0° C to +50° C; and

4.5.2 Humidity: 0 to 90% relative, non-condensing.

4.6 **Power Requirements**

The system shall use VAC power within the following limits:

4.6.1 Voltage: 120 VAC ±10%;

4.6.2 Frequency: 60 Hz ±1.5%;

4.6.3 Transients: up to 5 times nominal voltage for up to 100 msec durations. Changes in the input power or any fluctuations within the above limits shall not cause damage to the unit; and

4.6.4 Power: power consumption shall not exceed 100 watts.

4.7 **FAAS Maintenance Functions**

Monitoring the FIU and the FAAS subsystems shall be made available through the FAAS controller and the maintenance and satellite VDUs. User-definable password protection shall be provided to limit access to authorized personnel.

The following information shall be available to the standby data logger via the EIA standard RS-232-C port, as well as displayed on the maintenance and satellite VDUs.

4.7.1 **FAAS Maintenance Functions**

The FAAS maintenance menus shall allow:

a. Automated FIU systems and equipment fault diagnostics;

b. Two-way data interface with FAAS subsystems to provide information such as test activation and results, status reports, etc . . . , where applicable;

c. FIU data base cross check information;

d. Processor unit error monitoring; and

e. Statistical FAAS activity summary for alarms on a system by system basis, since the previous request for this data.

4.8 **Installation Requirements**

The FAAS Integration Unit shall be installed at the site in accordance with the ES/SOW-0101, Statement of Work and the ES/SOW-0102, Statement of Work.

4.9 **Documentation Requirements**

All final FAAS Integration Unit documentation shall be provided in accordance with the ES/SOW-0101, Statement of Work.

4.10 **Support Requirements**

The FAAS Integration Unit maintenance and spares support shall be provided in accordance with the ES/SOW-0101, Statement of Work.

4.11 **Training Requirements**

Operator training and maintenance training on the FAAS Integration Unit shall be in accordance with the ES/SOW-0101, Statement of Work.

5.0 QUALITY ASSURANCE

5.1 **General**

The FAAS Integration Unit Quality Assurance programme shall be provided as detailed in the ES/SOW-0101, Statement of Work.

All on-site installation work, test plans and FIU acceptance testing shall be conducted in accordance with the ES/SOW-0101, Statement of Work.

6.0 DELIVERY

Delivery requirements for the FAAS Integration Unit documents, drawings, plans, manuals, etc. (where applicable) shall be in accordance with the ES/SOW-0101, Statement of Work.

Delivery requirements of the FAAS Integration Unit equipment shall be in accordance with the ES/SOW-0102, Statement of Work.

7.0 INTERFERENCE

Performance of the FIU shall not be affected by the use of standard electronic equipment used at the institution. Distance limits of standard electronic equipment shall be in accordance with the ES/SOW-0101, Statement of Work.

8.0 SAFETY

All FAAS Integration Unit electrically powered elements shall meet the applicable Canadian Standards Association (CSA) standards.