

DETAILED SCOPE OF WORKS – DTI MAIN CAMPUS ISMS AND CONTROL ROOM UPGRADE

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TABLE OF CONTENTS

1. PROJECT OVERVIEW	2
1.1. Campus layout and project implementation.....	2
1.1.1. Campus Layout	2
1.1.2. Project Implementation and current ISMS on campus	2
1.1.3. Site Establishment.....	2
2. EQUIPMENT	2
2.1. Hardware Removal	2
2.2. Hardware installation	3
2.2.1. General	3
2.3. Cabling.....	3
3. HEAD END INSTALLATION	3
3.1. Centralized control room.....	3
3.2. Software.....	3
3.3. Licensing.....	4
3.4. ISMS Integration	4
4. CONTROL ROOM UPGRADE	5
4.1. Control room entrance	5
4.2. Raised Floor.....	5
4.2.1. Scope.....	5
4.2.2. General	6
4.2.3. Specification	6
4.3. Video Walls	6
4.3.1. 55 Inch narrow bezel monitors.....	6
4.3.2. Push in pop out hydraulic brackets.....	7
4.3.3. Video Wall Controller	7
4.4. Operator workstations.....	7
4.5. Operator Chairs	7
5. TRAINING.....	8
5.1. General	8
5.2. Operator Training.....	8
6. HANDOVER	8
6.1. Close Out documentation	8
6.2. As-Built Drawings and schematic diagrams.....	9
7. MAINTENANCE	9
7.1. General Maintenance.....	9
7.2. Guarantee and Maintenance Period.....	10

1. PROJECT OVERVIEW

1.1. CAMPUS LAYOUT AND PROJECT IMPLEMENTATION

1.1.1. CAMPUS LAYOUT

The campus consists of the following Blocks:

- Block A
- Block B
- Block C
- Block D
- Block E
- Block F
- Block SSC
- Basement level 1
- Basement level 2

1.1.2. PROJECT IMPLEMENTATION AND CURRENT ISMS ON CAMPUS

The project scope will be implemented in all the blocks except for Block B. The project will be implemented in stages one block at a time. The current system utilized on site as the ISMS (Integrated Security Management System) is the Gallagher system.

An alternative to the Gallagher system shall be considered should it meet the requirements in the specification documentation as well as the scope of works as intended. The proposed alternative should also be able to integrate the existing Gallagher system.

1.1.3. SITE ESTABLISHMENT

Due to the phased approach of the security upgrade, the successful bidder would need to bring equipment onto site as and when it is required. Should a more permanent site camp/office be required, this could be negotiated with the client. It must be noted that the campus is still a functional campus with limited space available.

These conditions must be noted when consideration for pricing is completed in the preliminary and general section of the BOQ.

2. EQUIPMENT

2.1. HARDWARE REMOVAL

The following hardware needs to be removed from all the Blocks on the DTI campus:

- Babylon access controllers
- Wooden backing plates
- Intercom units
- Green Break glass units
- Babylon Proximity card readers
- Existing biometric readers
- Automated doors closers
- Manual door closers

An inventory of the removed equipment is to be documented per building per floor. The equipment needs to be stored in an area to be identified by the client.

2.2. HARDWARE INSTALLATION

2.2.1. GENERAL

The hardware installation is as follows:

- Gallagher controllers (or similar) replacing the Babylon controllers
- Stainless Steel backing plates replacing the wooden plates
- Removed intercom units to re-installed in original positions
- New green break glass units to replace the removed ones
- Gallagher T15 (or similar) units to replace the Babylon card readers
- Sagem Sigma biometric readers to replace the existing readers
- Geze automated door closers to replace the existing door closers
- T91 manual door closers to replace existing

Several items are a like for like replacement, whilst others are either an upgrade of the existing equipment on site

2.3. CABLING

The existing Mylar cable is to be retained as far as possible. The cables need to be tested by the contractor for any degradation and replaced where necessary. Should any additional cabling be required, this would need to be confirmed with the security consultant.

The existing CAT 5 cable will need to be replaced with the CAT 6 cable as per the bill of quantities. The CAT-6 Cabling shall be used for all Ethernet Connections within buildings or other approved short haul distances. The cable shall provide performance of up to 250 MHz and be suitable for 10BASE-T, 100BASE-TX (Fast Ethernet), 1000BASE-T/1000BASE-TX (Gigabit Ethernet) and 10GBASE-T (10-Gigabit Ethernet).

22 to 24 AWG copper is allowed if the ANSI/TIA-568-B.2-1 performance specifications are met. Cat 6 patch cables are normally terminated in 8P8C (RJ-45) modular connectors.

3. HEAD END INSTALLATION

3.1. CENTRALIZED CONTROL ROOM

There is an existing centralized control room situated in the basement level 1. This control room will be the main control room for the entire campus. The main integration server will be installed in the equipment room adjacent to the control room.

The project is going to be implemented in a phased manner one block at a time. There will be no sub-servers installed per block as the centralized control room will accommodate the entire campus with each block being brought online as the project progresses.

3.2. SOFTWARE

The ISMS (Integrated Security Management System) will be the sole platform with various modules for all integrations on the campus. One of the modules is the access control system module that replace the existing Babylon access control system. The ISMS access control module must be installed with the following items being setup/programmed:

-
- Set up test environment
 - Outline system architecture
 - Data exchange using Rest API
 - Test and ensure that both card technologies are functional on the new and existing systems
 - New door Configuration
 - Set up access groups
 - Convert the SQL database
 - Migrate entire Babylon access database (Staff, contractors, etc.)
 - Ensure that the supplier is actively involved in the entire process

3.3. LICENSING

The contractor shall ensure that all door and workstation licenses are installed and tested. Proof of licensing is to be provided and handed over to the client in the hand over files.

The licenses provided should be a once off cost with access to the latest firmware updates and support for the first 12 months. The option to extend the license period to obtain the latest firmware updates may be done at the client's discretion. The decision to not extend the license should not impact the functionality of the system.

3.4. ISMS INTEGRATION

The purpose of the ISMS system is to integrate all electronic systems on campus onto a singular platform. GUI's (Graphical user interfaces) will be required per block as per the specification to process events and popups on the preconfigured operator dashboards.

The contractor shall ensure that the ISMS is integrated with the following sub-systems/modules:

- BMS (Building Management System)
- IP Surveillance system
- Fire Suppression system
- Fire detection systems
- Intruder detection systems
- IP Intercoms
- Vertical transportation systems
- PA System
- Electronic Key Management system

A BMS annexure document forms part of the tender documentation indicating the type and quantity of items to be integrated and made available on the GUI's to be monitored and interacted with.

The IP surveillance system on campus consists of 316 IP surveillance cameras which will be utilized to popup on events in all areas of the campus specific to that event.

The events that will require video popups are as follows but not limited to:

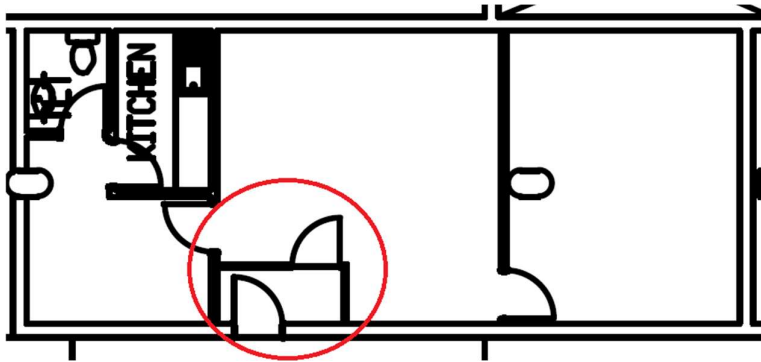
- Access control events e.g. Break glass broken, door forced, anti-pass back violation
- Fire alarms
- Intruder alarms

- BMS critical alarms e.g. Electrical events, Vertical transportation events, HVAC events

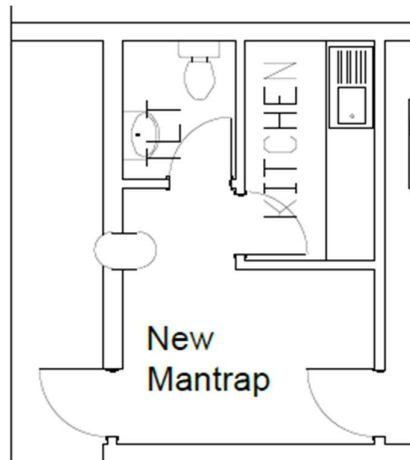
4. CONTROL ROOM UPGRADE

4.1. CONTROL ROOM ENTRANCE

The existing entrance (mantrap) to the control room needs to be removed with the outer door removed and bricked up.



A new entrance needs to be installed in the left side wall to be used in conjunction with the interleading door from the kitchen and ablution facilities to form the new mantrap entrance. The doors must operate as interlocking doors.



4.2. RAISED FLOOR

4.2.1. SCOPE

This section deals with raised access floor systems supported off the structural floor to form a void for the distribution of services. The construction normally consists of panels supported on a grid of pedestals which have a vertical height adjustment mechanism.

Access to the void is through removable panels.

Flooring System to Method of Build Performance Spec MOB PF2 PS/SPU (March 1992) unless specified otherwise.

4.2.2. GENERAL

- It shall be an anti-static raised floor system that will ensure ease of reticulation within the room as well as accommodating the air conditioning / ventilation to the equipment inside the room.
- Floor void is to be a minimum of 300mm deep.
- Cable openings are to be provided with sufficient cable protection covers.
- Cable trays shall be provided under the raised floor. This will ensure that if a water leak occurs in the area the cables will not be lying in the water.

4.2.3. SPECIFICATION

- Subfloor: Fine to medium tamped finish. Power floated finish is NON-PREFERRED.
- Preparation: Floor to be thoroughly swept to remove all loose dust and debris and two coats of PVA floor sealer applied prior to laying pedestals.
- Access Type: Full
- Strength Grade: Heavy
- Point Load 25mm x 25mm 4.5kN
- Uniform Distributed Load 12kN/m²
- All values will withstand a safety factor of 3
- CEN References 6A Heavy
- CISCA References 2500LBS
- System Weight 46kg/m² inclusive of pedestals at 150mm FFH.
- Panels shall be 600mm square and shall be interchangeable with other panels except where cut for special purposes. Panels shall be easily removed and replaced without disturbing adjacent panels, by one person using a portable lifting device.
- Panels shall be protected from corrosion by the manufacturer's standard factory applied finishes.
- Under structure type shall be selected from the standard range with due regard to height and loading criteria and shall be protected from corrosion using galvanized or nonferrous materials in its construction.
- Pedestal Grid Centres 600mm
- Finished floor height above subfloor (nominal): 300 mm.

4.3. VIDEO WALLS

Two video walls are to be installed in the control room consisting of push-out monitor brackets housing 55-inch narrow bezel monitors. The configuration of the video walls are as follows:

- 3 x 2 video wall
- 2 x 2 video wall

A video wall controller will be installed with adequate functionality to enable video to be pushed between the video walls and operator workstations.

4.3.1. 55 INCH NARROW BEZEL MONITORS

The monitors must comply with the following specifications:

- Aspect Ratio – 16:9
- Display Color – 16.7M
- Brightness – 500cd/m²

- Contrast – 1100:1
- Response Time – 5ms
- Seam – 0.88mm
- Compatible HD/SD and HDMI Input - 400i/P, 576i/P, 720P, 1080i/1080P

4.3.2. PUSH IN POP OUT HYDRAULIC BRACKETS

The brackets must comply with the following specifications:

- Compatible Screen Size: 55 Inch
- Weight Capacity: 100kgs
- Pop-Out Extension Depth: Up to 200mm (8")
- VESA Mounting Patterns: 400x400mm to 600x400mm, with a maximum horizontal extension up to 700mm
- Hydraulics: heavy-duty hydraulic rods

4.3.3. VIDEO WALL CONTROLLER

The controller must comply with the following specifications:

- Signal Acquisition - •VGA, DVI, HDMI, CVBS, DP, Dual-Link DVI SDI, HDBaseT, IP-Video, Fiber
- Customized resolution - •800x600, 1366x768, 1400x900, 1920x1080, 4K
- Control – RS232, Network, Key Button, Remote control
- MTBF - > 50 000 hrs
- Input resolution - 3840x2160@60Hz
- Output resolution - 3840x2160@30Hz

4.4. OPERATOR WORKSTATIONS

Three operator workstations are to be installed in the control room. Each workstation must have four 24-inch monitors installed on it. Each monitor will display a different Gallagher command centre dashboard. The dashboards will be as follows:

- Alarm Viewer
- IP Surveillance event displays
- GUI event pop-ups
- Custom for operator (Playbacks, scrolling, etc.)

4.5. OPERATOR CHAIRS

The operator chairs must meet the following specification:

- 500 000 Martindale scoring
- Seat mechanism - torsional spring, easily adjustable for weights from 45 kg to 150 kg (99 lbs - 330 lbs), statically loadable up to 200 kg (440 lbs), can be tilted and locked at any angle: - 6° to +19°.
- Pneumatic lumbar support, Adjustable
- Cushioning - Ergonomically shaped cold foam
- Height adjustment: Gas Spring, adjustable to any height from 44 - 56 cm
- 6-legged base design

5. TRAINING

5.1. GENERAL

Prior to commissioning of the installation, the contractor shall provide comprehensive training of all security staff and nominated maintenance personnel, to the approval of the Engineer and the CLIENT.

Maintenance staff shall demonstrate a complete understanding of the location and connectivity of the various elements of the security services installation.

All training aids and course notes necessary to conduct effective operational and maintenance training shall be supplied by the contractor. The training venue will be made available on Site by the CLIENT.

The training documentation must be submitted to the Engineer for evaluation and approval. No training will commence on site prior to the written approval of the Engineer. Should the Engineer not approve the drawings all documentation will be referred to the Contractor for re-evaluation and submission to the Engineer.

Documentation must be sent to the Engineer at least 12 working days prior commencement or scheduling of training programs of the operational staff on site.

5.2. OPERATOR TRAINING

Training shall be comprehensive, covering all aspects of systems installed as part of these works.

The contractor shall provide a detailed training program to the Engineer, for comment and review, no less than 12 days prior to the commencement of training.

Training shall be adequate to ensure that the groups trained are :

- competent in the operation of systems,
- adequately trained to carry out ongoing training,
- fully aware of the location of all equipment installed as part of this Contract within their area of responsibility.

Full training of the System Operators (All security staff) must be included in the tender.

6. HANDOVER

6.1. CLOSE OUT DOCUMENTATION

The tenderer shall note that after the completion of the contract three sets of all operating, maintenance and training manuals as well as a complete spares list for all the equipment and software installed (together with two local agency telephone numbers where the above can be obtained), shall be handed to CLIENT.

The tenderer shall at the end of the contract update all the drawings that were issued to him during the contract with a red pen and hand them over to the engineer for finalization and completion of his contractual obligation regarding drawings.

All the above shall form part of the as-built documentation.

The retention payable as per the agreement with the CLIENT after the completion of the as-built documentation shall only be payable once all the above has been handed over to CLIENT.

All the required documentation shall be to the satisfaction of the Engineer and of the CLIENT.

6.2. AS-BUILT DRAWINGS AND SCHEMATIC DIAGRAMS

- (a) The Engineer's drawings for the Contract shall be those issued at the times of tender together with any others issued to cover the variations to the Contract. These drawings must be processed by the contractor and any queries submitted within two (2) weeks.
- (b) As part of this Contract the Contractor shall provide the following Drawings:
 - Manufacturing and Installation Drawings:
 - The manufacturing and installation drawings ("shop drawings") shall provide all details of the components necessary for the manufacture and installation of the system in accordance with the specification.
 - Wiring Diagrams:
 - The wiring diagrams shall provide details of all the wiring associated with the installation.
 - The same drawing symbols and system shall be used, as used on the Engineer's Drawings.
 - Builder's Work Drawings:
 - All necessary builders' work drawings, as described elsewhere in this specification, shall be provided as part of this Contract.
 - AS BUILT Drawings:
 - On completion of the installation, but before the plant is handed over; the Contractor shall provide a complete set of drawings showing the completed installation including wiring.
 - In addition to the drawings listed above, the Contractor shall provide all drawings necessary for the execution of the Contract and shall submit such general and detailed drawings of the components and apparatus, as the Engineer may require approving construction of the system.
 - Details and drawings of all major items of equipment, made by the Contractor or his suppliers, shall be submitted for approval without specific request from the Engineer.
 - All required drawings shall be submitted to an agreed program to suit the construction of the system.
 - All drawings shall be clearly numbered or marked with the equipment item numbers, area references etc.

7. MAINTENANCE

7.1. GENERAL MAINTENANCE

Maintenance of the specified systems, services and/or parts of buildings and infrastructure shall all be referred to as "Maintenance of the Installation".

Maintenance of the completed installation shall ensure the reliable functioning and optimum service life thereof.

Maintenance of the installation shall commence upon the completion of the installation contract, and the successful handover to the client, and continue for a period of 12-months. (The appointment of the sub-contractor for the 12-month maintenance period shall be to the discretion of the client.

The price submitted herein shall remain an option for implementation to the full discretion of the Client, that may opt to go out on a public tender for this maintenance of the security installation should they wish to do so.

The monthly maintenance responsibilities of the installation include all units and components as specified herein.

The maintenance of the installation shall be performed in accordance with the Technical and Particular Specifications, the Operating and Maintenance Manuals and the Maintenance Control Plan.

Remuneration for maintaining the installation (systems, services and/or buildings and parts of the infrastructure) in perfect functional condition is provided for in the Schedules of Quantities by means of monthly payment items.

This Additional Specification covers maintenance requirements, development of a maintenance control plan, identification of equipment, site maintenance administration, maintenance performance measurement, as well as the items for measurement of the Contractor's service level and resulting payment.

7.2. GUARANTEE AND MAINTENANCE PERIOD

The tenderer shall note that a one-year full maintenance period shall be applicable on all aspects of the work done under this contract effective from the date of practical completion.

This shall include full a full back-up service for all the equipment and cabling rendered installed as well as all software installed by the successful tenderer under this contract.

The tenderer shall in his price fully state the monthly charge for the above inclusive of his additional rate for labour for any after hour work required.