

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving - PWGSC / Réception des
soumissions - TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage, Phase III
Core 0B2 / Noyau 0B2
Gatineau, Québec K1A 0S5
Bid Fax: (819) 997-9776

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet Door Control System Procure & Insta	
Solicitation No. - N° de l'invitation 21120-132626/A	Date 2015-04-23
Client Reference No. - N° de référence du client 21120-13-1902626	
GETS Reference No. - N° de référence de SEAG PW-\$\$HN-334-67177	
File No. - N° de dossier hn334.21120-132626	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-06-05	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: McLaughlin, Michael	Buyer Id - Id de l'acheteur hn334
Telephone No. - N° de téléphone (819) 956-3622 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Specified Herein Précisé dans les présentes	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution
Electrical & Electronics Products Division
11 Laurier St./11, rue Laurier
7B3, Place du Portage, Phase III
Gatineau, Québec K1A 0S5

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation

21120-132626/A

Amd. No. - N° de la modif.

File No. - N° du dossier

hn33421120-132626

Buyer ID - Id de l'acheteur

hn334

CCC No./N° CCC - FMS No/ N° VME

21120-13-1902626

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The following annex forms part of this requirement:

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FORM

The following form is attached to the solicitation document:

- 1) Institutional Access - CPIC Clearance Request, CSC/SCC 1279
- 2) Design Change/Deviation, PWGSC-TPSGC 9038

SUPPLIED UNDER SEPARATE COVER (ATTACHMENT 1):

- 1) Statement of Technical Requirements (STR), Statements of Work and applicable Electronic Engineering Specifications and Standards

PART 1 - GENERAL INFORMATION

1. Introduction

The bid solicitation and resulting contract document is divided into seven parts plus annexes as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation and states that the Bidder agrees to be bound by the clauses and conditions contained in all parts of the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, if applicable, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Security, Financial and Other Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Pricing Sheet (ANNEX A) and an electronic attachment (Attachment #1) which includes, the Requirement and various forms. Refer to the Table of Contents.

2. Requirement

2.1 Summary

CSC has a requirement to replace and upgrade the Door control Systems in 4 Living Units, the Segregation Control Unit (SCU), which is also a Living Unit and one door in the Hospital Control Post (which is contained within the SCU building) at Mountain Institution, British Columbia.

The contractor must design, supply, install, integrate, test, and train operators/maintenance personnel on the installed equipment, as described in this STR. The contractor must provide acceptable documentation and AS Built drawings for the operation and the maintenance of this equipment.

2.2 Delivery Requirement

Delivery is requested to be completed within 30 weeks after contract award.

2.2.1 Delivery Offered

While delivery is requested as indicated above, the best delivery that could be offered is _____

2.3 Contractor Contacts

Name and telephone number of the person responsible for :

General enquiries

Name: _____
Telephone No.: _____
Facsimile No.: _____
E-mail address: _____

Delivery follow-up

Name: _____
Telephone No.: _____
Facsimile No.: _____
E-mail address: _____

2.4 Warranty Repairs

It may be necessary for warranty repairs to be performed on site. You are requested to provide response time and location of nearest office/depot providing staff for this work. Response time shall not exceed forty-eight (48) hours. The contact person is as follows:

Response Time: _____
Name: _____
Telephone No.: _____
Facsimile No.: _____
Email/Internet Address: _____

2.5 Emergency Services/Repairs

If requested by Correctional Service Canada, the Contractor shall be required to provide on-site emergency service/repairs not covered under the warranty provision of the General Conditions 2030 during the contract period. The emergency crew shall be paid as indicated herein. The response time shall not exceed four (4) hours. The contact person is as follows:

Name: _____
Telephone No.: _____
Facsimile No.: _____
Email/Internet Address: _____

2.6 Lifetime Spares

It shall be a condition of any contract resulting here from that the Contractor undertakes to supply spare parts for the equipment proposed during the life expectancy of the equipment.

The Bidder must indicate the number of years for the life of the equipment. _____ years.

3. Debriefings

After contract award, bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *Standard Acquisition Clauses and Conditions* (<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) Manual issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of this bid solicitation and accept the terms and conditions of the resulting contract.

The 2003 (25/09/2014) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days
Insert: ninety (90) days

2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) **BID RECEIVING UNIT** by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a "proprietary" nature must be clearly marked "proprietary" at each relevant item. Items identified as proprietary will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

5. Mandatory Site Visit

It is mandatory that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for site visits to be held on **May 14th, 2015 at 9:00 a.m At the Mountain Institution. Interested Bidders shall meet at the Principal Entrance of the Mountain Institution, Mountain Institution 4732 Cemetery Road PO Box 1600 Agassiz, British Columbia V0M 1A0.** Bidders will be required to sign an attendance form at each site visit. Bidders should confirm in their bids that they have attended the site visit. Bidders who do not attend or send a representative to the site visit will not be given an alternative appointment and their bids will be rejected as non-compliant.

The onus is on the bidders to arrive at the site visit in a timely manner. **Bidders arriving late may not be permitted to attend the site visit.**

The Bidder must have at least one attendee at the site visit.

It is also a **mandatory** condition of this requirement that all attendees have a site clearance prior to the site visits. To apply for the site clearance, the bidders shall complete a CPIC Clearance Request form (preferably in **typed format**) and submit the duly completed and signed form by each participant, by e-mail michael.mclaughlin@pwgsc-tpsgc.gc.ca. It is a mandatory condition that the CPIC Clearance Request be submitted for the site visits. It is requested that the CPIC Clearance Requests be received by this office no later than May 8th, 2015. Site Clearance Request Forms received after May 8th, 2015 will not be accepted. A site clearance obtained for work performed under similar requirements is not acceptable. Bidders are requested to clearly identify the name of the participant, the name of the company they represent, telephone number, facsimile number and e-mail address.

Bidders should submit in writing to the Contracting Authority, a list of issues that they wish to table and the language they would like to address questions and answers, no later than five (5) calendar days prior to the scheduled site visit.

Bidders are advised that any clarifications or changes resulting from the site visit shall be included as an amendment to the bid solicitation document through buyandsell.gc.ca

As proof of attendance, the Bidder must sign the attendance form provided by the CSC representative at the site visit.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I:	Technical Bid (3 hard copies and 2 electronic copies)
Section II:	Management Bid (3 hard copies and 2 electronic copies)
Section III:	Support Bid (3 hard copies and 2 electronic copies)
Section IV:	Financial Bid (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, bidders are encouraged to :

- 1) use paper containing fibre certified as originating from a sustainably-managed forest and/or containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

The Technical, Management and Support Bids should be concise and address, but not necessarily be limited to, the points that are subject to the evaluation criteria against which the bid will be evaluated. Bidders should address these evaluation criteria in sufficient depth in their bid. Simply repeating the statement contained in the solicitation document is not sufficient. Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

In order to facilitate the evaluation of the bid, Canada requests bidders to address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bid by identifying the specific paragraph and page number where the subject topic has already been addressed.

THE BIDDER MUST ADDRESS ON A PARAGRAPH BY PARAGRAPH BASIS THE STATEMENT OF TECHNICAL REQUIREMENTS, THE STATEMENT OF WORK AND THE ELECTRONIC ENGINEERING SPECIFICATIONS AND STANDARDS, BY INDICATING WHERE APPLICABLE “COMPLY, UNDERSTOOD, NOTED, OR NOT APPLICABLE” AND MUST PROVIDE SUPPORTING INFORMATION TO AFFIRM EACH CLAIM. SIMPLY STATING ‘COMPLIANCE’ WILL NOT GUARANTEE TECHNICAL COMPLIANCE.

Section I: Technical Bid

In their technical bid, bidders must demonstrate their understanding of the requirement and describe how they intend to meet the technical requirements.

THE TECHNICAL PROPOSAL MUST MEET ALL OF THE TECHNICAL REQUIREMENTS OF THE STATEMENT OF REQUIREMENT (STR) AND APPLICABLE STATEMENTS OF WORK AND ELECTRONIC ENGINEERING SPECIFICATIONS AND STANDARDS. FAILURE TO MEET THE TECHNICAL REQUIREMENTS WILL RENDER YOUR BID NON- RESPONSIVE AND NO FURTHER CONSIDERATION WILL BE GIVEN.

Section II: Management Bid

In their management bid, bidders must describe their capability and experience, the project management team and provide client contact(s).

Section III: Support Bid

In their support bid, bidders must demonstrate their understanding of the requirement and describe how they intend to meet the support requirements (operator / maintenance training, manuals, spare parts list and plan).

Section IV: Financial Bid

1.1 Bidders must submit their financial bid on **Annex "A" - Pricing Sheet** in accordance with the following Basis of Pricing:

1.2 Basis of Pricing

All prices must be firm in Canadian dollars, Delivery Duty Paid (Destination), Goods and Services Tax or the Harmonized Sales Tax extra, transportation costs to destination and all applicable Custom Duties and Excise Taxes included.

1.2.1 Design and Equipment

The bidder must submit a firm lot price for the design and related equipment for the upgrade of Door Control Systems at Mountain Institution, excluding spare parts and test equipment.

1.2.2 Installation and Testing Costs

1 The bidder must submit a firm lot price. The price must include all costs, excluding travel and living, related to the installation and testing of the equipment.

2 Installation and Testing of Equipment for Emergency Repairs, Delays and Design Changes.

The bidder must submit a firm hourly rate for installation and testing during and outside normal working hours for each labour category required.

These hourly rates will apply for emergency repairs, delays and design changes and will be in effect for the entire length of any resulting contract.

Normal working hours are Monday to Friday, 7:30 to 16:30 with exception of statutory holidays.

1.2.3 Travel and living expenses associated with the installation of the equipment

The Contractor will be paid its authorized travel and living expenses, reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance with the meal, private vehicle and incidental allowances specified in Appendices B, C and D of the Treasury Board Travel Directive http://www.tbs-sct.gc.ca/hr-rh-/gfla-vgcl/index_e.asp, and with the other provisions of the directive referring to “travelers”, rather than those referring to “employees”.

All travel must have the prior authorization of the Technical Authority. All payments are subject to government audit.

1.2.4 On-site training as detailed in the STR, paragraphs 5.1 and 5.2.

The bidder must submit a firm lot price for on-site training session including any associated travel expenses.

1.2.5 Documentation

The bidder must submit a firm lot price for the following:

As-built drawings as detailed in STR, paragraph 5.4.

Operator and Maintenance Manuals as detailed in STR, paragraph 5.3.

1.2.6 Software/Integration

The bidder must submit a firm lot price for the software/integration.

1.2.7 Spare parts/Test Equipment List (s)

Spare Parts and/or Test Equipment List(s) as detailed in STR, paragraph 5.12. The bidder must submit a Spare Parts and/or Test Equipment List identifying each recommended spare parts and/or test equipment required. The bidder must also submit a firm unit price for each recommended spare part required.

1.3 SACC Manual Clauses

C3011T (11/06/2013), Exchange Rate Fluctuation

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical, management, support and financial evaluation criteria specified below.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

1.1 Technical Evaluation

1.1.1 Mandatory Technical Criteria

To be declared responsive, a bid must:

- a) address on a paragraph by paragraph basis the Statement of Technical Requirements, the Statement of Work and the technical specifications, by indicating where applicable "comply, understood, noted, or not applicable". Where required, the bidder should provide additional information;
- b) comply with all of the technical requirements of the statement of requirement (STR); applicable statements of work and electronic engineering specifications and standards as well as all amendments to the bid solicitation issued prior to bid closing date;
- c) obtain the required minimum points (70%) for the technical, management and support evaluation criteria which are subject to point rating;

1.1.2 Point Rated Technical Criteria

The Technical Bid will be evaluated and rated as per Annex "B" attached.

1.2 Financial Evaluation

1.2.1 Mandatory Financial Criteria

The following **Mandatory** factors will be taken into consideration in the evaluation of each bid;
Compliance with Basis of Pricing;
Prices must be submitted for all items listed in the **Annex "A" - Pricing Sheet**.

The Aggregate Bid Price will be determined by adding the firm lot prices for items 1, 2.1, 4, 5.1, 5.2, and 6 in ANNEX "A".

2. Basis of Selection

The responsive bidder with the lowest evaluated aggregate bid price will be recommended for award of a contract.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and documentation to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue whether during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with this request will also render the bid non-responsive or will constitute a default under the Contract.

1. Mandatory Certifications Required Precedent to Contract Award

1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Human Resources and Skills Development Canada \(HRSDC\) - Labour's](http://www.hrsdc.gc.ca) website

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list at the time of contract award.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex [Federal Contractors Program for Employment Equity - Certification](#), before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

2. Additional Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

2.1 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability. Failure to comply with the request may result in the bid being declared non-responsive.

Signature

Date

2.2.2 Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

Signature

Date

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

1. Security Requirement

A site clearance is required prior to the site visit and prior to admittance to the institution. For additional information, see Part 2, Article 5 - Mandatory Site visit and Part 7, article 3, Security Requirement.

2. Financial Capability

1. Financial Capability Requirement: The Bidder must have the financial capability to fulfill this requirement. To determine the Bidder's financial capability, the Contracting Authority may, by written notice to the Bidder, require the submission of some or all of the financial information detailed below during the evaluation of bids. The Bidder must provide the following information to the Contracting Authority within fifteen (15) working days of the request or as specified by the Contracting Authority in the notice:
 - (a) Audited financial statements, if available, or the unaudited financial statements (prepared by the Bidder's outside accounting firm, if available, or prepared in-house if no external statements have been prepared) for the Bidder's last three fiscal years, or for the years that the Bidder has been in business if this is less than three years (including, as a minimum, the Balance Sheet, the Statement of Retained Earnings, the Income Statement and any notes to the statements).
 - (b) If the date of the financial statements in (a) above is more than five months before the date of the request for information by the Contracting Authority, the Bidder must also provide, unless this is prohibited by legislation for public companies, the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement), as of two months before the date on which the Contracting Authority requests this information.
 - (c) If the Bidder has not been in business for at least one full fiscal year, the following must be provided:
 - (i) the opening Balance Sheet on commencement of business (in the case of a corporation, the date of incorporation); and
 - (ii) the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement) as of two months before the date on which the Contracting Authority requests this information.
 - (d) A certification from the Chief Financial Officer or an authorized signing officer of the Bidder that the financial information provided is complete and accurate.
 - (e) A confirmation letter from all of the financial institution(s) that have provided short-term financing to the Bidder outlining the total of lines of credit granted to the Bidder and the amount of credit that remains available and not drawn upon as of one month prior to the date on which the Contracting Authority requests this information.
 - (f) A detailed monthly Cash Flow Statement covering all the Bidder's activities (including the requirement) for the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures on a monthly basis, for all the Bidder's activities. All assumptions made should be explained as well as details of how cash shortfalls will be financed.
 - (g) A detailed monthly Project Cash Flow Statement covering the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures, for the

requirement, on a monthly basis. All assumptions made should be explained as well as details of how cash shortfalls will be financed.

2. If the Bidder is a joint venture, the financial information required by the Contracting Authority must be provided by each member of the joint venture.
3. If the Bidder is a subsidiary of another company, then any financial information in 1. (a) to (f) above required by the Contracting Authority must be provided by the ultimate parent company. Provision of parent company financial information does not satisfy the requirement for the provision of the financial information of the Bidder, and the financial capability of a parent cannot be substituted for the financial capability of the Bidder itself unless an agreement by the parent company to sign a Parental Guarantee, as drawn up by Public Works and Government Services Canada (PWGSC), is provided with the required information.
4. Financial Information Already Provided to PWGSC: The Bidder is not required to resubmit any financial information requested by the Contracting Authority that is already on file at PWGSC with the Cost and Price Analysis Group of the Policy, Risk, Integrity and Strategic Management Sector, provided that within the above-noted time frame:
 - a) the Bidder identifies to the Contracting Authority in writing the specific information that is on file and the requirement for which this information was provided; and
 - b) the Bidder authorizes the use of the information for this requirement.

It is the Bidder's responsibility to confirm with the Contracting Authority that this information is still on file with PWGSC.

5. Other Information: Canada reserves the right to request from the Bidder any other information that Canada requires to conduct a complete financial capability assessment of the Bidder.
6. Confidentiality: If the Bidder provides the information required above to Canada in confidence while indicating that the disclosed information is confidential, then Canada will treat the information in a confidential manner as permitted by the Access to Information Act, R.S., 1985, c. A-1, Section 20(1) (b) and (c).
7. Security: In determining the Bidder's financial capability to fulfill this requirement, Canada may consider any security the Bidder is capable of providing, at the Bidder's sole expense (for example, an irrevocable letter of credit from a registered financial institution drawn in favour of Canada, a performance guarantee from a third party or some other form of security, as determined by Canada).

3. Condition of Materiel

SACC Manual clause B1000T (26/06/2014) Condition of Materiel

PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

1. Requirement

The Contractor shall design, supply, install, test and provide operational and technical training on the upgrade of the Door control system as described in the Statement of Technical Requirement (STR). The contractor shall provide acceptable documentation for the maintenance of this system.

Refer to Attachment #1 for Statement of Technical Requirements (STR), Statements of Work and applicable Electronic Engineering Specifications and Standards. The purpose of the STR document is to define the technical aspects for the upgrade of the Door Control system at the Mountain Institution. The STR will indicate the extent to which both general and particular CSC specifications are applicable to the implementation of this requirement.

1.1 Additional Work

The Design Authority may, at any time before issuing the final acceptance notice, order work or material in addition to that provided for in the Statement of Work. The contractor shall perform the work in accordance with such orders, deletions and changes pursuant to Part 7, Article 13 - Design Change, Additional Work of New Work and on the same terms and conditions contained or referenced herein.

1.2 Option to Purchase Spare Parts/Test Equipment

- a) The Contractor hereby grants to Canada and Canada shall retain an irrevocable option exercisable at any time during the Contract to procure any or all of the spare parts and/or test equipment described in the supplier's proposal.
- b) The Contractor shall be given a minimum of "30" working days notice in writing by the Contracting Authority indicating that Canada intends to exercise the option.
- c) The option may only be exercised by the Contracting Authority, and the exercise of the option will be evidenced through a formal Contract Amendment.
- d) Price support may be requested.

2. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions](http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp) (http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp) Manual issued by Public Works and Government Services Canada.

2.1 General Conditions

2030 (25/09/2014) General Conditions - Higher Complexity - Goods

2.2 Supplemental General Conditions

4003 (16/08/2010) Licensed Software

4006 (16/08/2010) Contractor to Own Intellectual Property Rights in Foreground Information

2.3 SACC Manual Clauses

SACC Reference	Section	Date
B1501C	Electrical Equipment	16/06/2006
A9068C	Site Regulations	11/01/2010
A2000C	Foreign Nationals (Canadian Contractor)	16/06/2006
A2001C	Foreign Nationals (Foreign Contractor)	16/06/2006

3. Security Requirement

3.1 Site clearance

A site clearance is required prior to admittance to the institution. The contractor must submit completed CPIC forms for all staff who will be working at the institution(s). The duly completed and signed CPIC forms must be submitted ten (10) working days prior to start-up date as stipulated in the Statement of Technical Requirement.

3.2 Classification of this document is "Not Classified".

1. NIL security screening required, no access to sensitive information or assets. Contractor personnel will be escorted in specific areas of the institution as /where required, by authorized Correctional Service Canada personnel.
2. Contractor personnel shall submit to a local verification of identity/information, by Correctional Service Canada, prior to admittance to the institution. Correctional Service Canada reserves the right to deny access to the institution, of any Contractor personnel, at any time.

4. Term of Contract

4.1 Period of Contract

The system design, the delivery of all related equipment, the completion of all installation, testing and contract related work is to be completed at the Institution on or before (*Delivery as offered and as accepted will be inserted at contract award*)

NOTE : Date of delivery will be of the essence of any resulting contract. Your attention is drawn to article 10 of General Conditions, 2030.

The Contractor must submit a final delivery and installation schedule within 10 calendar days after the contract award date.

4.2 Shipping Instructions - Delivery at Destination

1. Shipment shall be consigned to the destination specified in and delivered:

DDP Delivered Duty Paid (Mountain Institution, British Columbia) Incoterms 2000 for shipments from a commercial supplier.

4.3 Inspection and Acceptance

- 1) Inspection

Inspection shall be carried out by the Design Authority or the authorized representative at destination.

2) Final Acceptance

a) The Contractor shall be required to present the work, for final acceptance, when such work has been designed, manufactured, delivered to site and installed and has successfully passed all tests in strict accordance with the specification and terms and conditions, and the Contractor has performed all other work and complied with all the terms and conditions of the contract.

b) Upon verification of the above, the Design Authority will by written notice to the Contractor so acknowledge, and such notice shall constitute final acceptance.

Final Inspection and acceptance will take place at destination when all goods are delivered/ services rendered, and after all deficiencies identified by the Design Authority or the authorized representative are rectified and accepted.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Mike McLaughlin
Public Works and Government Services Canada
Acquisitions Branch
Logistics, Electrical, Fuel and Transportation Directorate
"HN" Division
7B3, Place du Portage, Phase III
11 Laurier Street
Gatineau, QC, K1A 0S5

Telephone: (819) 956-3622
Facsimile: (819) 953-4944
E-mail address: michael.mclaughlin@tpsgc-pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Technical Authority (or Design Authority)

The Technical Authority for the Contract is:

will be inserted at contract
_____ (Name of Technical Authority)
_____ (Title)
_____ (Fill in Organization)
_____ (Fill in address)

Telephone: _____
Facsimile: _____
E-mail address: _____

The Technical Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority; however, the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Contractor Contacts

Name and telephone number of the person responsible for :

General enquiries

Name: will be inserted at contract
Telephone No. will be inserted at contract
Facsimile No. will be inserted at contract
E-mail address: will be inserted at contract

Delivery follow-up

Name: will be inserted at contract
Telephone No. will be inserted at contract
Facsimile No. will be inserted at contract
E-mail address: will be inserted at contract

5.4 Warranty Repairs

The contact person for warranty repairs to be performed on site as it may be necessary is as follows:

Response Time: will be inserted at contract
Name: will be inserted at contract
Telephone No.: will be inserted at contract
Facsimile No.: will be inserted at contract
Email/Internet Address: will be inserted at contract

5.5 Emergency Services/Repairs

If requested by Correctional Service Canada, the Contractor shall be required to provide on-site emergency service/repairs not covered under the warranty provision of the General Conditions 2030 during the contract period. The emergency crew shall be paid as indicated herein. The response time shall not exceed four (4) hours. The contact person is as follows:

Name: will be inserted at contract
Telephone No.: will be inserted at contract
Facsimile No.: will be inserted at contract
Email/Internet Address: will be inserted at contract

6. Payment

6.1 Basis of Payment

The Contractor will be paid the firm lot prices for the equipment, installation and testing, travel expenses, on-site training, as-built drawings and manuals for the Door Control Systems as specified in the Contract. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

The Contractor will be paid a firm hourly rate for each labor category specified for the installation and testing for normal and outside working hours associated with emergency repairs, delays, design changes and unscheduled work arisings.

Travel and living expenses for emergency repairs, delays and design changes during the performance of the contract will be paid without any allowance for overhead or profit. These costs will be reimbursed in accordance with Treasury Board directives in effect at time of travel. The payments are subject to Government Audit. All travel must receive prior authorization from the Project Authority.

6.2 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.3 Insurance

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

6.4 Method of payment - (including design changes payments)

6.4.1 Milestone Payments

1. Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract, up to 90 percent of the amount claimed and approved by Canada if:

- (a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111 (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf>) and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- (b) the total amount for all milestone payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;
- (c) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
- (d) all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.

2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all Work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.

6.4.2 Schedule of Milestones

The schedule of milestones for which payments will be made in accordance with the Contract is as follows:

- 1st milestone: design of the system (less 10% holdback);
- Mountain Institution
100% Design (as per Annex A-1, Item 1)
- 2nd milestone: delivery of equipment (less 10% holdback);
- Mountain Institution
100% Equipment (as per Annex A-1, Item 1)
- 3rd milestone: completion of 50% of installation, including travel and living expenses (less 10% holdback);
- Mountain Institution
50% Installation (as per Annex A-1, Item 2)
Applicable Travel and Living (as per Annex A-1, Item 3)

4th milestone: installation completion, software I integration and testing, including travel and living expenses (less 10% holdback);
- Mountain Institution
Installation Completion (as per Annex A-1, Item 2)
100% Software I integration and Testing (as per Annex A-1, Item 2 (2.1) and Item 6.)
Applicable Travel and Living (as per Annex A-1, Item 3)

5th milestone: on-site training and documentation (less 10% holdback);
- Mountain Institution
100% On-site training (as per Annex A-1, Item 4)
100% Documentation (as per Annex A-1, Item 5 (5.1 and 5.2))
Applicable Travel and Living (as per Annex A-1, Item 3)

6th milestone: holdbacks.

6.5 Method of Payment - Emergency repairs and delays payments

6.5.1 Single Payment

Canada will pay the Contractor upon completion and delivery of the Work in accordance with the payment provisions of the Contract if:

- a) an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b) all such documents have been verified by Canada;
- c) the Work delivered has been accepted by Canada.

6.5.2 Travel and living Expenses - Emergency repairs, delays and design changes payments

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the Treasury Board Travel Directive (http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/TBM_113/td-dv_e.asp), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

All travel must have the prior authorization of the Technical Authority.

All payments are subject to government audit.

7. Invoicing Instructions

7.1.1 Invoicing Instructions - Progress Claim (including design changes payments)

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111 (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>).

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
- (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- (c) the description and value of the milestone claimed as detailed in the Contract.

2. Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no GST/HST payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Technical Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The Technical Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

4. The Contractor must not submit claims until all work identified in the claim is completed.

7.1.2 Invoicing Instructions - Emergency repairs and delays payments

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the claim is completed.

2. Claims must be distributed as follows:

(a) The original and two (2) copies must be forwarded to the following address for certification and payment:

Correctional Service Canada
340 Laurier Avenue West
Ottawa, Ontario
K1A 0P9

Attn: Rachel Crete

(b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

8. Certifications

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire contract period. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

10. Meetings

A meeting may be convened after contract award at a location to be determined by the Contracting Authority to review contractual and technical requirements. The Contractor will be responsible for the preparation and

distribution of the minutes of meeting. The meeting will be held with representatives of the Contractor, the Department of Public Works and Government Services and Correctional Service Canada.

11. Contractor's Facilities

The Contracting Authority and the Design Authority, or their delegated representative shall be afforded access to the Contractor's plant and all other premises where pertinent processes are being performed.

12. Delay by Canada

In the event that an installation crew proceeds to the site but is unable to perform the work due to an inmate disturbance or other delays caused by Canada at the site, the Contractor shall immediately notify the Design Authority. The cost of holding the installation crew on standby shall be paid as indicated herein. In no event shall a crew remain on standby for more than four (4) hours per day without prior authorization.

13. Procedures for Design Change or Additional Work

The Contractor must follow these procedures for any proposed design change/deviation to contract specifications.

The Contractor must complete Part 1 of form PWGSC-TPSGC 9038, Design Change/Deviation, and forward one (1) copy to the Technical Authority and one (1) copy to the Contracting Authority.

The Contractor will be authorized to proceed upon receipt of the design change/deviation form signed by the Contracting Authority. A contract amendment will be issued to incorporate the design change/deviation in the Contract.

14. Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) Supplemental General Conditions 4003 (16/08/2010) - Licensed Software;
- (c) Supplemental General Conditions 4006 (16/08/2010) - Contractor to Own Intellectual Property Rights in Foreground Information;
- (d) General Conditions 2030 (25/09/2014) General Conditions - Higher Complexity - Goods;
- (e) Statement of Technical Requirement
- (f) Annex "A", Pricing Sheet;
- (g) the Contractor's bid dated (*will be inserted at contract*), as amended _____ (*date(s) of amendment(s) if applicable will be inserted at contract*)

15. After Sales Services

The Contractor certifies that it is capable of providing after sales service, subsequent to the warranty period, including servicing personnel and facilities during the lifetime expectancy of the equipment.

16. Lifetime Spares

It shall be a condition of any contract resulting herefrom that the Contractor undertakes to supply spare parts for the equipment proposed during the life expectancy of the equipment.

Life of the equipment: (*will be inserted at contract*) years.

Should the Contractor discontinue the manufacture of the equipment being procured during the life expectancy of the equipment, it shall notify Canada sufficiently in advance to permit the purchase of spares for the remaining life of the equipment or, at the discretion of Canada, either make satisfactory arrangements with a third party to establish a continuing source of spares or provide to Canada, at no charge, a non-exclusive royalty free license to manufacture and have manufactured for its own use spare parts, and provide copies of all drawings, technical information, specifications, manufacturing instructions and patterns necessary to manufacture the spares.

17. Disclosure of Information

The Contractor shall keep confidential and shall not publish or otherwise reuse, release, disclose or make available to any third party any Background or Foreground Information concerning “**as built drawings**”, **site drawings and manuals**, except as may be necessary to carry out the work under the Contract in which case the Contractor shall impose the same obligation of confidentiality on any person to whom the information is disclosed.

18. T1204 - Information Reporting by Contractor

1. Pursuant to paragraph 221 (1)(d) of the Income Tax Act, R.S.C. 1985, c.1 (5th Supp.), payments made by departments and agencies to contractors under applicable services contracts (including contracts involving a mix of goods and services) must be reported on a T1204 Government Service Contract Payments slip.
2. To enable departments and agencies to comply with this requirement, the Contractor must provide the following information within 45 calendar days from date of contract award:
 - (a) the legal name of the Contractor, i.e. the legal name associated with its business number or Social Insurance Number (SIN), as well as its address and postal code;
 - (b) the status of the Contractor, i.e. an individual, a sole proprietorship, a corporation, or a partnership;
 - (c) the business number of the Contractor if the Contractor is a corporation or a partnership and the SIN if the Contractor is an individual or a sole proprietorship. In the case of a partnership, if the partnership does not have a business number, the partner who has signed the Contract must provide its SIN;
 - (d) in the case of a joint venture, the business number of all parties to the joint venture who have a business number or their SIN if they do not have a business number.
3. The information must be sent to the person and address specified below. If the information includes a SIN, the information should be provided in an envelope marked "PROTECTED".

Contact: [Anne Boisvenue](#)

Address: 340 Laurier Avenue West, Ottawa, Ontario, K1A 0P9

ANNEX "A"

PRICING SHEET

**UPGRADE OF DOOR CONTROL
SYSTEM
MOUNTAIN INSTITUTION**

All prices must be firm in Canadian dollars, Delivered Duty Paid (Mountain Institution, British Columbia), Goods and Services Tax or the Harmonized Sales Tax extra, transportation costs to destination and all applicable Custom Duties and Excise Taxes included.

1. DESIGN AND EQUIPMENT

Firm Lot Price for the design and all related equipment, excluding spare parts.

DESIGN - FIRM LOT PRICE \$ _____

EQUIPMENT - FIRM LOT PRICE \$ _____

2. INSTALLATION AND TESTING COSTS

2.1 The price must include all costs excluding travel and living expenses, related to the installation and testing of the equipment.

INSTALLATION - FIRM LOT PRICE \$ _____

TESTING COST - FIRM LOT PRICE \$ _____

2.2 INSTALLATION AND TESTING OF EQUIPMENT (FIRM HOURLY RATES)

The following outlined labour rates will apply for emergency repairs, delays and design changes.

Labour Categories	Hourly Rate During	Hourly Rate Outside
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____

The bidder must submit a firm hourly rate for installation and testing during and outside normal working hours for each labour category required.

3. TRAVEL AND LIVING EXPENSES ASSOCIATED WITH THE INSTALLATION AND TESTING OF THE EQUIPMENT

Institution	FIRM LOT PRICE
<p><i>MOUNTAIN INSTITUTION</i></p> <p>Travel required ___yes ___no Estimated Number of Individuals _____ Estimated Number of Days _____</p>	<p>\$ will be reimbursed at cost and is not part of Bid Price Calculation</p>

4. ON-SITE TRAINING

Firm Lot Price excluding travel and living expenses as per STR paragraphs 5.1 and 5.2.

FIRM LOT PRICE \$ _____

5. DOCUMENTATION

5.1 AS-BUILT DRAWINGS

Firm lot price for As-Built drawings as per STR, paragraph 5.4.

FIRM LOT PRICE \$ _____

5.2 OPERATOR AND MAINTENANCE MANUALS

Firm lot price for all operator and maintenance manual documentation packages as per STR, paragraph 5.3.

FIRM LOT PRICE \$ _____

6. SOFTWARE/INTEGRATION

Firm Lot Price the software/integration as indicated in the STR, 5.5 and 5.11.

FIRM LOT PRICE \$ _____

TOTAL BID PRICE \$ _____

OPTION

7. SPARE PARTS AND/OR TEST EQUIPMENT

The bidder must submit a spare parts and/or test equipment list identifying each recommended spare parts and/or test equipment required. The bidder must also submit a firm unit price for each recommended spare parts required as per STR, 5.15.

FIRM LOT PRICE \$ _____

ANNEX "B"

POINT RATED TECHNICAL EVALUATION CRITERIA

1. Point Rated Technical Proposal Criteria

The Bidder must obtain an overall pass score of 70 percent of the Technical Proposal. The rating is performed on a scale of 100 points. The Technical Proposal should include, but not be limited to:

Point Rated Technical Proposal Criteria	Maximum Points
<p>1. Understanding of the Technical Requirements An understanding of the technical requirements of the system which could include preliminary drawings, diagrams, photographs and sketches showing system architecture, equipment configuration, and technical information/literature/brochure on products offered.</p> <p>(0 Points) Has not demonstrated that the Bidder understands the requirements. The Bidder has misjudged the scope of the work required. We are left with many questions. The proposal is vague.</p> <p>(or 10 Points) The proposal indicates that the Bidder generally understands the main concept of what is required but there are some questions that arise.</p> <p>(or 20 Points) The proposal indicates that the Bidder understands the main concept of what is required. The Bidder's solution meets the operability requirements, environmental requirements, reliability and maintainability requirements, and the testing and validation requirements.</p> <p>(or 30 Points) It is very clear that the Bidder understands exactly what is required and the proposed solution exceeds the requirement in some areas.</p>	<p>30</p>
<p>2. Compliance with the Statement of Technical Requirements (STR) Paragraph by paragraph compliance the Statement of Technical Requirements (STR), Statements of Work (SOW), Specifications and Standards of how each requirement will be met.</p> <p>(0 Points) Has not demonstrated that the Bidder complies with the requirements. The Bidder has misjudged the scope of the work required. We are left with many questions. The proposal is vague.</p> <p>(or 15 Points) The proposal indicates that the Bidder generally complies with the requirements but there are some questions that arise.</p> <p>(or 30 Points) The proposal indicates that the Bidder complies with the requirements. The Bidder's solution meets the operability requirements, reliability and maintainability requirements, and the testing requirements.</p> <p>(or 40 Points) It is very clear that the Bidder complies exactly what is required and the proposed solution exceeds the requirement in some areas.</p>	<p>40</p>
<p>3. Quality Assurance and Acceptance Test Plan Description of the proposed quality assurance procedures/processes, and acceptance test plan(s) to ensure quality requirements are met and how the bidder intends to demonstrate</p>	<p>20</p>

<p>to the Crown that the system functions correctly, both in the plant (Factory Acceptance Testing) and after installation (Site Acceptance Testing), a detailed list of tests to be performed with pass/fail parameters. Maximum points are broken down as follows:</p>	
<p>3.1 Quality Assurance (10 Points) How the Bidder intends to ensure quality requirements are met, a description of inspection, testing, and documentation procedures as well as quality metrics.</p> <p>(0 Points) The scope does not address the applicable products, the quality objective, limitations and validity conditions.</p> <p>(or 7 Points) The proposal indicates when how and by whom the quality requirements are to be reviewed results recorded/analyzed and conflicts resolved. The proposal indicates how documents and data are to be controlled. The proposal indicates relevant quality control for important purchases. The proposal indicates how the production, assembly and on-site installation processes will be controlled to ensure quality requirements are met.</p> <p>(or 10 Points) On top of the criteria above the proposal indicates how measuring and test equipment is controlled and describes the format and test results to be provided. The proposal indicates how non-conforming products are identified and controlled to prevent misuse until proper disposal.</p>	
<p>3.2 Acceptance Test Plan (10 Points) How the bidder intends to demonstrate to the Crown that the system functions correctly, both in the plant (Factory Acceptance Testing) and after installation (Site Acceptance Testing), a detailed list of tests to be performed with pass/fail parameters.</p> <p>(0 Points) The Bidder has not addressed the requirements for testing the system.</p> <p>(or 7 Points) The Bidder has provided test sheets and only pass/fail parameters, but has not provided specific parameters for testing the elements of the system.</p> <p>(or 10 Points) The Bidder has provided test sheets, pass/fail parameters as well as specific parameters, and has demonstrated that the system will be fully tested, both in the factory and on site.</p>	
<p>4. Technical Risk Elements How the Bidder intends to meet the technical requirements, a description of the technical risks elements detailing how the bidder can mitigate them.</p> <p>(0 Points) The Bidder has not identified technical risk elements or technical risk mitigation.</p> <p>(or 4 Points) The Bidder has identified technical risk elements but the Bidder does not provide a technical risk mitigation plan. The Bidder has a risk management process.</p> <p>(or 7.5 Points) The Bidder has identified technical risk elements, provided a risk mitigation plan and has a risk management process.</p> <p>(or 10 Points) The Bidder has a technical risk management process and has addressed project risks. Management, schedule, scope changes, cost overruns, cash flow, and resources issues are addressed. The impact of the technical risks is identified. The identified technical risks are associated with the bidder, supplier, subcontractor, customer,</p>	<p>10</p>

integration, or equipment performance. Mitigation strategies are described for the identified technical risks. Decision points are identified for any project mitigation approaches. Mitigation approaches support the requirements of the project.	
Total Technical Proposal (maximum 100 Points)	

2. Point Rated Project Management Proposal Criteria

The bidder must obtain an overall pass score of 70 percent for the Project Management Proposal. The rating is performed on a scale of 100 points. The Project Management Proposal should include, but not be limited to:

Point Rated Project Management Proposal Criteria	Maximum Points
<p>1. Previous Project Management Experience Identification of the bidder, project manager, project supervisor and technicians. Detailed description of the qualification and previous experience pertaining to similar projects in terms of size, tasks, clients, responsibilities etc. Maximum points are broken down as follows:</p>	40
<p>1.1 Experience of the bidder within the last four (4) years. (10 Points) Similar project(s) must have been completed successfully; experience pertaining to the following:</p> <ul style="list-style-type: none"> a. similarity of project in terms of scope and/or clients; b. dollar value over \$ 100K; c. Installation; d. training; e. drawings; and f. manuals. <p>(0 Points) Bidder has experience with only three elements.</p> <p>(or 4 Points) Bidder has experience with only four of the elements.</p> <p>(or 7.5 Points) Bidder has experience with five of the elements.</p> <p>(or 10 points) Bidder has experience with six or more elements.</p>	
<p>1.2 Range of experience within the last four (4) years in the design, supply, installation and integration of systems similar to those described in the Statement of Technical Requirements (STR). (10 Points)</p> <p>(0 Points) Bidder has no experience in the design, supply, installation and integration of the systems similar to those described in the Statement of Technical Requirements (STR).</p> <p>(or 4 Points) Bidder has experience in the design, supply, installation and integration of the systems similar to those described in the Statement of Technical Requirements (STR) for private industry or provincial government.</p> <p>(or 7.5 points) Bidder has experience in the design, supply, installation and integration of the systems similar to those described in the Statement of Technical Requirements (STR) for correctional services or similar organizations.</p>	

<p>(or 10 Points) Bidder has experience in the design, supply, installation and integration of the systems similar to those described in the Statement of Technical Requirements (STR) for Correctional Service Canada (CSC).</p>	
<p>1.3 Project Manager's Overall Experience (years, size of project & complexity) and Qualifications. (10 Points)</p> <p>(0 Points) The project manager has no experience in project management of similar projects.</p> <p>(or 4 Points) The project manager has less than four (4) years experience in project management of similar projects and does not hold any Project Management Institute (PMI) certification.</p> <p>(or 7.5 Points) The project manager has 4 to 10 years experience in the management of projects of equal size or complexity and the project manager holds a Project Management Institute (PMI) certification or the project manager has over 15 years of experience in the management of projects of equal size and complexity or similar scope.</p> <p>(or 10 Points) The project manager has more than 10 years experience in the management of projects of equal size and complexity or similar scope and the project manager holds a Project Management Institute (PMI) certification, MBA or comparable credentials.</p>	
<p>1.4 Supervisor's Overall Experience (years, size of project & complexity) and Qualifications. (5 Points)</p> <p>(0 Points) The supervisor has no experience as a project supervisor of similar projects.</p> <p>(or 2 Points) The supervisor has less than four (4) years experience as a project supervisor of similar projects and does not hold any Project Management Institute (PMI) certification.</p> <p>(or 3.5 points) The supervisor has 4 to 10 years experience in supervising projects of equal size or complexity. The supervisor holds a Project Management Institute (PMI) certification or comparable credentials.</p> <p>(or 5 Points) The supervisor has more than 10 years experience in supervising in projects of equal size or complexity. The supervisor holds Project Management Institute (PMI) certification or comparable credentials.</p>	
<p>1.5 Technicians' Overall Experience (years, size of project & complexity) and Qualifications. (5 Points)</p> <p>(0 points) The technicians have no experience with similar projects.</p> <p>(or 2 Points) The technicians have less than four (4) years experience with similar projects and do not hold any Technician Diploma in any of the electrical, electro-mechanical, electronics or mechanical field.</p> <p>(or 3.5 Points) The technicians have 4 to 10 years experience in engineering in projects of equal size or complexity. The technicians hold Technician Diploma in any of the electrical, electro-mechanical, electronics or mechanical field.</p> <p>(or 5 Points) The technicians have more than 10 years experience in engineering in projects of equal size or complexity. The technicians hold a Technical Diploma in any of</p>	

the electrical, electro-mechanical, electronics, mechanical or telecommunications field.	
2. Project Management Structure and Procedures Project management structure and procedures describing the implementation of this project. Maximum points are broken down as follows:	30
2.1 Project Management Organization and Responsibilities. (10 Points) This refers only to management personnel and the way that the bidder plans to organize the project team for this contract. (0 Points) No organization in place and no plans to designate a separate project management team. (or 4 Points) No project management organization in place but has a well-developed plan in place to set up a team of trained personnel. (or 7.5 Points) There is a project management organization/structure defined with 'matrix' personnel resources that can be made available to this project. Personnel are identified for the positions of Project Manager, the Project Supervisor, technicians and electricians. Their responsibilities are defined. (or 10 points) Project management team structure is well defined with a back-up team. Their responsibilities are defined. Personnel resources are identified and tied to specific tasks.	
2.2 Project Management Procedures. (20 Points) This factor will rate the Bidders on their systems used to implement project management. (0 points) The Project Management (PM) implementation is not addressed. (or 7.5 Points) The PM implementation is addressed but the bidder has not provided sufficient details to demonstrate that a PM system is in place. (or 15 Points) A PM system is in place that will allow the bidder to manage the project. Bidder has supplied a detailed plan of his PM implementation. (or 20 Points) A well working PM system is in place and being used successfully. The PM system closely tracks status and progress of tasks. Project management based on PERT/CM techniques. Work breakdown structure is linked to project management.	
3. Schedule, Milestones and Project Management Tools A project schedule of events for all deliverables with milestones and rationale of how realistic and achievable they are. Availability and usage of a Project Management specific tool and capability of supporting a secure customer facing portal that provides real time access to project specific information. Maximum points are broken down as follows:	20
3.1 Schedule/Milestones (10 Points) A project schedule/schedule of events for all deliverables with milestones and rationale of how realistic and achievable they are including tools for addressing project slippage. (0 Points) No schedule is proposed or the proposal is lacking in 3 of the following areas:	

<p>1) major milestones are identified; 2) logical sequence; 3) contingency time identified; 4) time estimates are realistic.</p> <p>(or 5 Points) The proposed schedule is lacking in no more than 2 of the following areas: 1) major milestones are identified; 2) logical sequence; 3) contingency time identified; 4) time estimates are not realistic.</p> <p>(or 7.5 Points) The proposed schedule meets all of the following: 1) major milestones are identified; 2) logical sequence; 3) contingency time identified; 4) time estimates are realistic. The proposed schedule contains milestones, significant contract events, projected delivery dates and production schedules. The schedule is realistic and achievable, may lack of contingency time.</p> <p>(or 10 points) The proposed schedule meets all of the following: 1) major milestones are identified; 2) logical sequence; 3) contingency time identified; 4) time estimates are realistic. The proposed schedule contains milestones, significant contract events, projected delivery dates and production schedules. The schedule is realistic and achievable, with contingency time is built in.</p>	
<p>3.2 Project Management Tools. (10 Points) This factor will rate the Bidder on their availability and usage of a Project Management specific tool and capability of supporting a secure customer facing portal that provides real time access to project specific information.</p> <p>(0 Points) The Bidder has not identified the Project Management specific software.</p> <p>(or 7.5 points) The Bidder has identified the specialized PM software but does not support a secure customer facing portal that provides real time access to project specific information.</p> <p>(or 10 points) The Bidder has identified the specialized PM software and supports a secure customer facing portal that provides real time access to project specific information including schedules, reports and meeting minutes.</p>	
<p>4. Project Risks A description of the project risks related to the proposed approach and processes for managing all project risk elements (such as resources, cost, schedule and all external elements) of the project detailing how well the Bidder understands the project risks and how they propose to mitigate them.</p> <p>(0 points) The Bidder has not identified project risks or risk mitigation.</p> <p>(or 4 Points) The Bidder has identified project risks but the Bidder does not provide a risk mitigation plan. The Bidder has a risk management process. Project risks are identified and there is a mitigation plan for any high risk items.</p> <p>(or 7.5 Points) The Bidder has identified project risks and the Bidder has proposed a risk mitigation plan. The Bidder has a risk management process. Project risks are identified and there is a mitigation plan for any high risk items.</p> <p>(or 10 points) The Bidder has a risk management process and has addressed project risks. Management, schedule, scope changes, cost overruns, cash flow, and resources issues are addressed. The impact of the risks is identified. The identified risks are associated with the bidder, subcontractor, customer, integration, or equipment</p>	<p>10</p>

performance. Mitigation strategies are described for the identified risks. Decision points are identified for any project mitigation approaches. Mitigation approaches support the requirements of the project.	
Total Project Management Proposal (maximum 100 Points)	

3. Point Rated Support Proposal Criteria

The bidder must obtain an overall pass score of 70 percent for the Support Proposal. The rating is performed on a scale of 100 points. The Support Proposal should include, but not be limited to:

Point Rated Support Proposal Criteria	Maximum Points
1. Operator Training Plan Outline, Training and Manuals An understanding of the Operator Training requirements. Description of the proposed training plan, approach, team and information to meet the Operator training requirements. Maximum points are broken down as follows:	45
1.1 Operator training plan outline. (15 Points) (0 Points) The operator training plan outline does not meet the requirements. (or 10 points) The operator training plan outline meets the requirements. (or 15 Points) The operator training plan outline meets and exceeds the requirements.	
1.2 Training approach, methodology and team. (15 Points) (0 Points) Has not demonstrated that the Bidder understands the objective and that the Bidder has misjudged the scope of the work required. The proposal does not meet the training requirements. (or 6 Points) The proposal meets the training requirements and the training team is identified. The training approach meets the requirements. (or 12 Points) The proposal meets and exceeds the training requirements and they have a well established training team with proven processes. (or 15 Points) The proposal meets and exceeds the training requirements and they have a well established training team with proven processes and the proposal identifies different training levels and different training outlines to meet the needs of different levels of operators.	
1.3 Manuals. (15 Points) (0 Points) The information does not meet the requirements. (or 10 Points) The information meets the requirements. (or 15 Points) The information meets and exceeds the requirements.	
2. Maintenance Personnel Training Outline, Training and Manuals	45

<p>An understanding of the Maintenance Training requirements. Description of the proposed training plan, approach, team and information to meet the Maintenance training requirements. Maximum points are broken down as follows:</p>	
<p>2.1 Maintenance Training Plan outline. (15 Points)</p> <p>(0 Points) The maintenance training plan outline does not meet the requirements.</p> <p>(or 10 Points) The maintenance training plan outline meets the requirements.</p> <p>(or 15 Points) The maintenance training plan outline meets and exceeds the requirements.</p>	
<p>2.2 Training Approach, Methodology and Team. (15 Points)</p> <p>(0 Points) Has not demonstrated that the Bidder understands the objective and that the Bidder has misjudged the scope of the work required. The proposal does not meet the training requirements.</p> <p>(or 10 Points) The proposal meets the training requirements and the training team is identified. The training approach meets the requirements.</p> <p>(or 15 Points) The proposal meets and exceeds the training requirements and they have a well established training team with proven processes.</p>	
<p>2.3 Manuals (15 Points)</p> <p>(0 Points) The information does not meet the requirements.</p> <p>(or 10 Points) The information meets the requirements.</p> <p>(or 15 points) The information meets and exceeds the requirements.</p>	
<p>3. Spare Plan and Spare Parts List</p> <p>An understanding of the Spare Plan and spare parts requirements. Description of the proposed Spare Plan and Spare Parts List approach, and information to meet the Spare Plan and Spare Parts List Requirement.</p> <p>(0 Points) The spare plan and spare parts list are not provided.</p> <p>(or 4 Points) The spare plan and spare parts list are incomplete.</p> <p>(or 7.5 Points) The spare plan and spare parts list meet the requirement.</p> <p>(or 10 Points) The spare plan and spare parts list exceeds the requirement.</p>	<p>10</p>
<p>Total Support Proposal (maximum 100 Points)</p>	

ANNEX C

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with such request by Canada will also render the bid non-responsive or will constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit [HRSDC-Labour's](#) website.

Date: _____ (YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

- A1. The Bidder certifies having no work force in Canada.
- A2. The Bidder certifies being a public sector employer.
- A3. The Bidder certifies being a [federally regulated employer](#) being subject to the *Employment Equity Act*.
- A4. The Bidder certifies having a combined work force in Canada of less than 100 employees (combined work force includes: permanent full-time, permanent part-time and temporary employees [temporary employees only includes those who have worked 12 weeks or more during a calendar year and who are not full-time students]).
- A5. The Bidder has a combined workforce in Canada of 100 or more employees; and
 - A5.1. The Bidder certifies already having a valid and current [Agreement to Implement Employment Equity](#) (AIEE) in place with HRSDC-Labour.

OR

- A5.2. The Bidder certifies having submitted the [Agreement to Implement Employment Equity \(LAB1168\)](#) to HRSDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to HRSDC-Labour.

B. Check only one of the following:

- B1. The Bidder is not a Joint Venture.

-208OR

- B2. The Bidder is a Joint venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)

FORM 1
Institutional Access - CPIC Clearance Request, CSC/SCC 1279



Corrections Service / Service correctionnel
 Canada / Canada

PROCESSED / TRAITÉ
 B
 ONE TIME ONLY / UNE FOIS SEULEMENT

**INSTITUTIONAL ACCESS
 CPIC CLEARANCE REQUEST**

**ACCÈS À UN ÉTABLISSEMENT
 DEMANDE DE VÉRIFICATION
 DU DOSSIER AU CPIC**

PUT AWAY ON FILE / CLASSER AU DOSSIER
 ATTENTION: DO NOT WRITE IN THESE SPACES
 ATTENTION: NE PAS ÉCRIRE DANS CES ESPACES
 Original - 3170-12

F. HOURS FOR USE - Hours for use by the public

Institution - Établissement	Request received / Demande reçue	Date (YYYYMMDD)	PUT AWAY ON FILE / CLASSER AU DOSSIER	3170-12
-----------------------------	----------------------------------	-----------------	---------------------------------------	---------

A. PERSONAL INFORMATION - RENSEIGNEMENTS PERSONNELS

Surname / Nom de famille: _____
 First name (if applicable) / Nom ou prénoms (s'il y a lieu): _____
 Maiden name (if applicable) / Nom de jeune fille (s'il y a lieu): _____

Date of birth / Date de naissance (YYYYMMDD): _____
 Place of birth - Lieu de naissance: _____
 City/Town - Ville ou municipalité: _____
 Province/State - Province ou État: _____
 Country - Pays: _____

D. PHYSICAL DESCRIPTION - DESCRIPTION PHYSIQUE

Male / Masculin Female / Féminin

Height - Hauteur: _____ Weight - Poids: _____

Hair color - Couleur des cheveux: _____ Hair style - Coiffure (s'il y a lieu): _____

C. ADDRESS - ADRESSE

Address - Rue: _____
 City/Town - Ville ou municipalité: _____
 Province: _____
 Postal Code - Code postal: _____
 Telephone number - Numéro de téléphone: _____
 Home - Résidence: _____
 Work - Bureau: _____

D. GENERAL INFORMATION - RENSEIGNEMENTS GÉNÉRAUX

1. Are you currently employed or do you have a job? / Êtes-vous actuellement employé(e) ou avez-vous un emploi? Yes / Oui No / Non

2. Do you have a criminal record? / Avez-vous un dossier criminel? Yes / Oui No / Non

3. Do you have a criminal record in the last 10 years? / Avez-vous un dossier criminel dans les 10 dernières années? Yes / Oui No / Non

4. Do you have a criminal record in the last 5 years? / Avez-vous un dossier criminel dans les 5 dernières années? Yes / Oui No / Non

E. SIGNATURE - SIGNATURE

Applicant's signature - Signature de demandeur: _____
 Date (YYYYMMDD): _____

F. FOR OFFICE USE ONLY - RÉSERVÉ AU SCC

Request for clearance - Demande de vérification:

Signature of Division Head / Signature du directeur de division: _____
 Date (YYYYMMDD): _____

Approved / Approuvé A possible criminal record / Un dossier criminel possible

Not approved / Non approuvé No possible criminal record / Aucun dossier criminel possible

SIGNATURES

Security Intelligence Officer / Agente de renseignements de sécurité: _____
 Date (YYYYMMDD): _____

Institutional Head / Directeur de l'établissement: _____
 Date (YYYYMMDD): _____

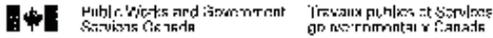
The individual has been sent / Le demandeur a été informé de la décision: Yes / Oui No / Non

Wall Review Board / Comité des visites: _____
 Date (YYYYMMDD): _____

CONTACT THE CONTRACTING AUTHORITY FOR A SOFT COPY

FORM 2

Design Change/Deviation, PWGSC-TPSGC 9038



**Design Change/Deviation
Modification/Écart par rapport au modèle**

Project No. - N° de projet	File No. - N° de dossier	Contract No. - N° de contrat
Customer/Department - Ministère client		Design Change Set/No. N° de série de la modification
Contractor - Entrepreneur		<input type="checkbox"/> Permanent Change Modification définitive <input type="checkbox"/> Deviation Écart
1. Description of change and Reasons - Description de la modification et motifs		

Total Estimated Cost - Prix de revient total prévu	Contractor's Signature - Signature de l'entrepreneur	Date
--	--	------

2. Customer/Department - Ministère client

3. Total Firm Price of Change - Prix Global de la modification	Approved - Approuvé	Date
--	---------------------	------

4. Change, if any, on Delivery Schedule - Modification éventuelle du calendrier de livraison	Procurement Officer - Agent d'approvisionnement	Date
--	---	------

5. Aggregate Value of Design Changes - Valeur totale des modifications



**Correctional Service Canada
Facilities Branch
Electronics Security Systems**



2015-01-14

**STATEMENT OF TECHNICAL REQUIREMENTS
FOR THE UPGRADE OF THE
DOOR CONTROL AND MONITORING SYSTEM
AT
MOUNTAIN INSTITUTION**

AUTHORITY

This Statement of Technical Requirements is approved by the Correctional Service of for the upgrade of the Door Control and Monitoring System at Mountain Institution.

Recommended corrections, additions or deletions should be addressed to the Design Authority at the following address:

Director, Electronic Security Systems
Correctional Service of Canada
340 Laurier Avenue West,
Ottawa, Ontario
K1A 0P9

Prepared by:


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Chief Electronics Systems Maintenance**

Reviewed by:


**Edwin Morton
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Electronic Security Systems**

Approved by:


**Marc St-Amand
Director,
Electronic Security Systems**

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Appendix A: List of Door Types

Appendix B: GUI Requirements

Appendix C: Floor Plans

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Appendix E: CSC security requirements

Appendix F: Maintenance Handover Report

Appendix G: O&M Manuals (Will be made available at the bidder's mandatory site visits.)

Appendix H: CSC CPIC Form

Appendix I: DCS System Drawings

Appendix J: LU Screenshots

Appendix K: Building Layouts

TABLE OF ABBREVIATIONS

Abbreviation	Expansion
ACL	Access Control List
API	Application Programming Interface
ATP	Acceptance Test Procedure
BIFMA	Business & Industrial Furniture Manufacturers Association
CA	Contract Authority
CCDA	Command Control and Data Acquisition
CCTV	Closed Circuit Television
CD	Commissioner's Directive
CER	Common Equipment Room
COS	Class of Service
COTS	Commercial-Off-The- Shelf
CSA	Canadian Standards Association
CSC	Correctional Service Canada
DCMS	Door Control and Monitoring System
DES	Director Engineering Services
DCS	Door Control System
DSCP	Differentiated Services Code Point
EIA	Electronic Industries Association
ESS	Electronic Security Systems
FAAS	Facility Alarm Annunciation System
FAR	False Alarm Rate
FDS	Fence Disturbance Detection System
FIU	FAAS Interface Unit
GFE	Government Furnished Equipment
GUI	Graphical User Interface
IP	Internet Protocol
IEEE	Institute of Electronic and Electrical Engineers
MCCP	Main Communications and Control Post
IVRMS	Inmate Voice Recording and Management System
MDS	Motion Detection System
MTBF	Mean Time Between Failure
MTTR	Mean Time to Repair
NAR	Nuisance Alarm Rate
NTP	Network Time Protocol
PA	Public Address
PC	Personal Computer
Pd	Probability of Detection
PIDS	Perimeter Intrusion Detection System
PIU	Perimeter Intrusion Detection System Integration Unit
PLC	Programmable Logic Controller
RFP	Request for Proposal

Abbreviation	Expansion
RTEO	Regional Technical and Engineering Officer
PPA	Portable Personal Alarm
PPAL	Portable Personal Alarm Locatable
QoS	Quality of Service
RTE	Request to Exit
SCC	Security Control Centre
SIO	Security Intelligence Officer
SOW	Statement of Work
SPB	Shortest Path Bridging
STR	Statement of Technical Requirements
TOS	Type of Service
TCP/IP	Transport Control Protocol/Internet Protocol
TCP-UDP	Transport Control Protocol – Small For-Factor
TER	Telecommunications Equipment Room
UPS	Uninterruptible Power Supply
V&C	Visits and Correspondence
VDU	Video Display Unit
VID	VLAN Identification
VIRS	Visits Intercept and Recording System
VMS	Video Management System

TABLE OF DEFINITIONS

#	Term	Example(s)	Description	Function
1	Administrative User Interface		Monitor and Software that supports task specific User Interaction for System Administrators, located in a secure area	Provides Administrative Personnel with the ability to map enrolled users to the functional domains that they are allowed to access and change
2	Application	Cell Call Management, PA Management	Software that is used to deliver Application Support functionality for a sub-system	Software that provides the Operator Interface and supporting logic that allows a sub-system (Control Domain) to be managed
3	CCTV Monitor	PIDS or Range CCTV Monitor	Computer Monitor Hardware	Displays CCTV images for Operator viewing
4	Client		Rack mounted computer located in a secure area away from a Control Post or Control Desk.	Runs software and supports one or more Application
5	Configuration Data	Site floor plans showing quantity of cameras, doors, cells etc. Camera locations. Number of User Interfaces required in a Post.	Site and System specific information typically supplied by CSC that defines how a sub-system Application is to be set-up for a site, location within a site, or post.	The configuration data provides the information that a sub-system application requires to tailor it to meet site, location within a site, or post user requirements.
6	Configuration User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows suppliers or qualified personnel to add, delete and modify Application Configuration
7	Contract Authority		Public Works and Government Services Canada (PW&GSC) is responsible for all contractual matters associated with the system design and implementation.	
8	Contractor		The company selected as the successful bidder.	
9	Control Console	MCCP Console, Living Unit Control Post Console	Console, typically located in a Control Post. Serves as the physical support infrastructure for Operator User Interfaces	Contains User Interfaces or Control Panels used by staff to execute their management responsibilities and interact with the Domains over which they have Control
10	Control Desk	Living Unit Control Desk	Desk, typically located in a Control Post or Office. Serves as the physical support infrastructure for Operator User Interfaces	Equipped with User interfaces used by staff to execute their management responsibilities and interact with the Domains

#	Term	Example(s)	Description	Function
				over which they have Control
11	Control Domain	Cell Call, Guard Tour, Public Address	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that performs a set of related functions	Collect information, or activate capabilities in their operational domain
12	Control Panel	PACP, Fire Alarm	Hardware and Software device that provides an Operator Interface (I/O device), located in a Control Post	Allows Operators to manage one or more Domain
13	Control Post	Living Unit Control Post/MCCP	Room or area, typically located in a secure area in an institution	Room used by staff to execute their management responsibilities and interact with the Domains over which they have Control
14	Custom Equipment		Equipment designed and/or manufactured specifically for a specific contract.	
15	Design Authority		Director, Electronic Security Systems (DES) Correctional Service of Canada (CSC) is responsible for all technical aspects of the system design and implementation.	
16	Device	CCTV Camera, Managed Door, Call Origination Device	A specialized device, typically consisting of hardware and software	Provides data collection or activate functions associated with a specific system or sub-system
17	Enrolment User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows Designated Personnel to enroll and delete Users from the Command, Control and Data Acquisition System.
18	Maintenance User Interface		Monitor and Software that supports task specific User Interaction, located in the CER or Maintenance Service Provider Office	Provides Maintenance Personnel with the ability to interact with one or more Systems to carry out their day to day tasks to troubleshoot and maintain Systems and Subsystems
19	Notification	Notification that a door is opened, or a door is closed, or a sensor is in alarm	A notification is a message that can be shown on a User Interface and/or logged in a database that represents a change in state or a command initiated by an operator.	

#	Term	Example(s)	Description	Function
20	Off-the Shelf		Equipment currently on the market with a available field reliability data, manuals, engineering drawings and parts price list.	
21	Operator User Interface	PIDS Display, Door Control and Monitoring System Display	Computer Monitor and Software that supports User Interaction (I/O device)	Provides an Operator with the ability to interact with one or more Systems to carry out their day to day tasks at a Control Console or Control Desk
22	Project Officer		A CSC employee or a contracted person designated by DES to be responsible for the implementation of the project.	
23	Reporting User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Provides Management Personnel with the ability to access pre configured reports and to create custom reports
24	Server	Network Video Recorder	Rack mounted computer that runs software and is located in an equipment room such as a CER or TER	Runs software that is used to deliver services that support Command and Control Applications to connect to sub-systems
25	State		The state of a device as reported to a sub-system or system	This is a logical representation of the state of a device that is being monitored or managed
26	Sub-system	Cell Call, Guard Tour	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that perform a specific set of related functions	Collects information, or activates capabilities in their operational domain
27	System	PIDS	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, including devices from sub-systems that perform a more general set of related functions	Collects information, or activates capabilities in their operational domain
28	Touch Screen User Interface	Door Control and Monitoring System User Interface	Typically an LCD Monitor with touch screen technology	Allows an Operator to view and interact with the Systems presented on the Monitor
29	Workstation		Rack mounted computer located in a secure area away from a Control Post or Control Desk	Runs software that is used to deliver Command and Control Capabilities

1.0 INTRODUCTION

1.1 General

CSC has a requirement to replace and upgrade the Door control Systems in 4 Living Units, the Segregation Control Unit (SCU), which is also a Living Unit and one door in the Hospital Control Post (which is contained within the SCU building) at Mountain Institution, British Columbia. This STR will cover the general and site specific technical requirements for the required work.

1.2 Scope

The contractor must design, supply, install, integrate, test, and train operators/maintenance personnel on the installed equipment, as described in this STR. The contractor must provide acceptable documentation and AS Built drawings for the operation and the maintenance of this equipment.

1.3 Requirement/Purpose

This Statement of Technical Requirements is being issued to support the procurement and installation of Electronic Security Systems and equipment to be installed in CSC Facilities. The STR provides prospective suppliers with sufficient information that they can define the scope of the system architecture, equipment, installation, testing, acceptance, training and handover steps required to deliver a fully functioning Door Control and Management System to replace the existing systems in Living Units 1, 2, 3, 4 and 5 (the segregation unit), as these systems are reaching the end of their service life

This STR defines the general and site specific technical requirements and the scope of the work required to replace existing Door Control Systems in several Living Units at Mountain Institution as the Systems in Living Units 1, 2, 3, 4 and the SCU, are reaching the end of their service life.

This work will have to be accomplished with minimum disruption to the daily operation and security of Mountain Institution.

This STR will also indicate the extent to which both general and particular CSC specifications are applicable to the implementation of this requirement. Bidders must comply with the STR and the listed specifications and standards unless identified in this STR. The STR takes precedence over the subordinate documents such as a Statement of Work, a Specification or a Standard.

1.4 Background

1.4.1 Location

This project is intended to replace the existing Door Control Systems and Systems infrastructure at Mountain Institution, a medium-security facility located in the Upper Fraser Valley at 4732 Cemetery Rd, Agassiz, BC, V0M 1A0, about 140 kilometers east of Vancouver. Mountain opened in 1962 and, in 1999 had significant renovations and additions.

1.4.2 System Function

Each of the Living Units is equipped with a “stand-alone” Door Control and Monitoring System that provides operators with the ability to activate the electric actuators to open and close cell doors and range barriers throughout these living units. The installed door hardware, including actuators, motors and door position switches are typically in good working condition and will not need to be replaced. In the event that a replacement is required, on receiving notification, the Design Authority will make arrangements to replace the appropriate door hardware. Refer to Appendix a for door types.

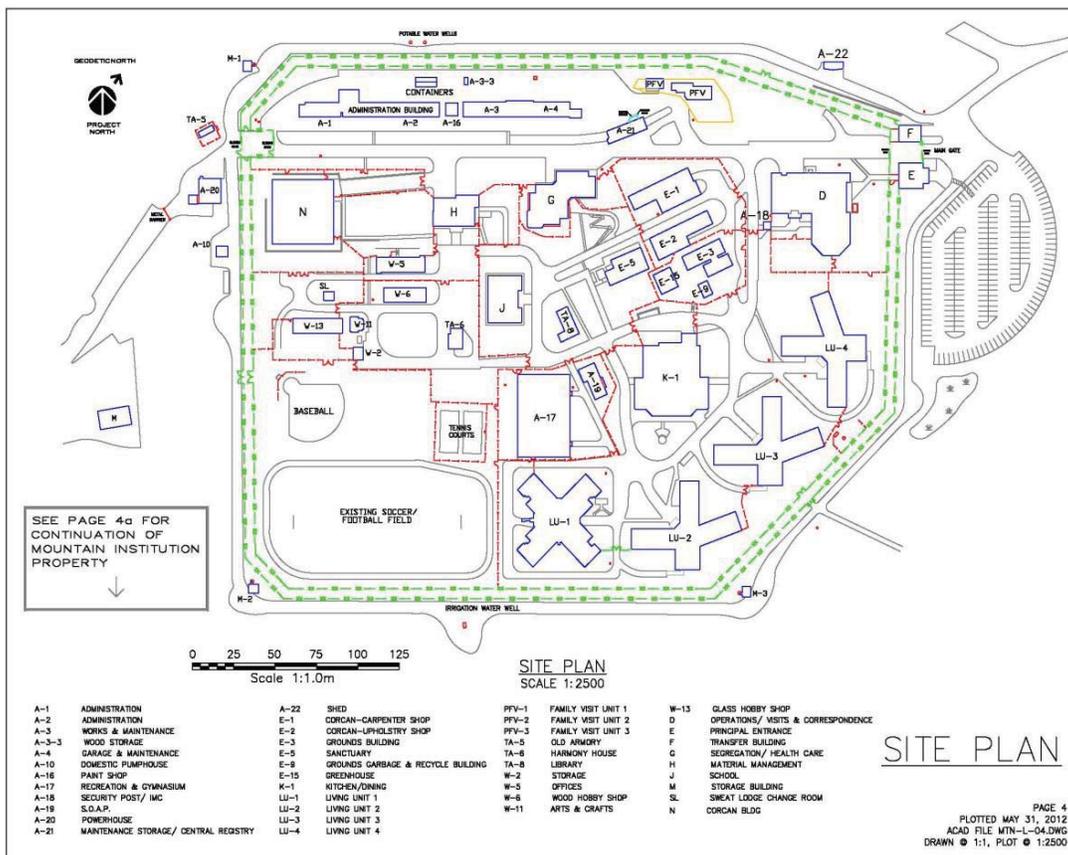
a) Existing System

i. Timeline Details

Inmate Living Unit 1 was built in 1990, Living Units 2, 3, 4, and the Segregation unit were built in 1999.

ii. Site Plans

Site Plan showing Living Unit Locations



1.5 Description of Existing Door Control System

A brief description of the elements of the existing Door Control Systems in living units 1, 2, 3, 4, and 5 follows:

- a) The current system was supplied and installed by Marcomm Fibre Optics.
- b) Each system is stand-alone with no connection to the other door control systems.
- c) In each building there are two Graphical User Interface (GUI) units at each control post.
- d) Living Unit 1 has two rack mounted computers located on the main floor behind the control post.
- e) Living Units 2, 3, 4, and 5 have three rack mount computers located in the T&E (Telecommunication and Electronic) rooms, two for the GUI CPUs and one maintenance CPU.
- f) Cabinets for control panels, I/O modules and power supplies are located on the upper floor T&E rooms.
- g) KVM (Keyboard-video-mouse) extenders are used to communicate between the GUI touch screen Monitors and the CPUs.
- h) Door Locks in Living Units 1, 2, 3, 4, and 5 are all 24VDC, The locks in Living Unit 1 are of a different type to those in the other Living Units (prospective bidders will have the opportunity to verify the lock types at the bidders conference)
- i) Refer to Appendix I for existing DCS system drawings.
- j) Refer to Appendix J for existing screenshots of Living Unit 1, 2, and 5. Living units 2, 3, and 4 are identical. (Will be made available at the bidder's mandatory site visits.)
- k) Refer to Appendix K for layouts of buildings, control posts, T&E rooms, and cells.

1.6 Site Visits/Survey

The Design Authority, or their authorized representative, will coordinate a site visit, and identify to the potential bidders the exact locations of the user interfaces, the system servers, any peripheral PLC or control interfaces, power supplies, interconnecting cable and any other associated electronic equipment. Wherever possible, drawings and documentation will be made available.

The visit may be useful to determine:

- a) The exact location and mounting of the user interfaces, as required,
- b) Mounting location of the electronic equipment or system servers,
- c) Existing Network equipment,
- d) Layout of existing LU Control Posts,
- e) Conduit and cabling requirements, and
- f) General layout and operating environment of the site.

1.7 Technical Acceptability

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 must maintain very high standards of dependability and reliability.

CSC Facilities Branch has established Statements of Work (SOW), technical specifications and standards for electronic 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 Standards and Specifications

ES/SOW-0101	Statement of Work for Electronic Systems for the Correctional Service of Canada Institutions
ES/SOW-0102	Statement of Work for Quality Control for the Installation of Electronic Security Systems in Federal Correctional Institutions
ES/SOW-0110	Statement of Work for Structured Cable Systems for Electronic Security Installations for the Correctional Service of Canada Institutions
EIA-310-C	Electronic Industry Association Standard for Racks, Panels and Associated Equipment
ES/SPEC-0006	Electronics Engineering Specification - Conduit, Space and Power Requirements for Security Systems for use in Federal Correctional Institutions
ES/SPEC-0950	Electronics Engineering Specification – Door Control and Monitoring System For use in Federal Correctional Institutions
CAN/CSA-E61131-2-06	Programmable Logic Controllers Part 2: Equipment Requirements, and Tests

3.0 REQUIREMENTS

3.1 System Architecture

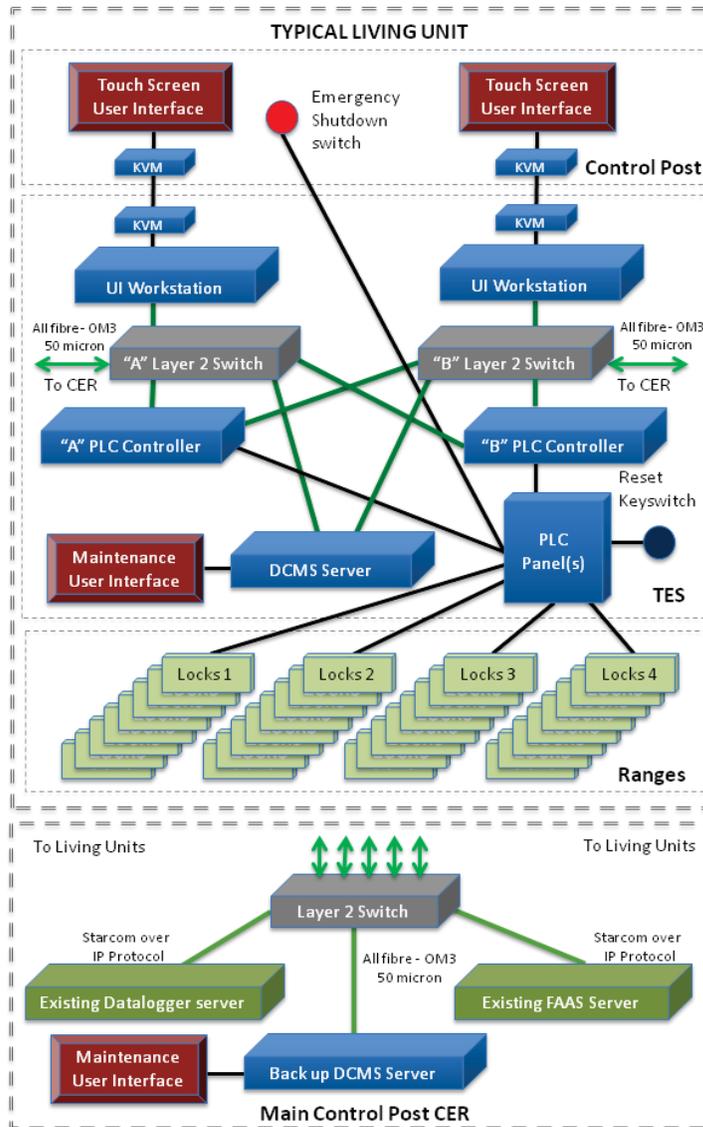


Figure 2: Typical Configuration of the DCMS deployed on servers on the CCDA Platform

3.2 Scope of Work

The Contractor must:

- a. Carry out a detailed investigation, including a review and analysis of the entire existing door control system, including all components not being replaced under this contract.
- b. Review the CSC standards and documents related to requirements for door control systems, and incorporation of them into the system and implementation.
- c. Design, supply, install Door Control and Monitoring Applications that run as individual instances in each Living Unit, providing a Touch Screen Operator Interface and containing all of the application logic to manage and monitor the doors and barriers through a PLC based control system with controllers located in equipment spaces convenient to the location of the electric or pneumatic drives associated with the doors and barriers
- d. Design, supply, install Door Control and Monitoring Applications that are compatible with and can be integrated seamlessly with CSC's Command, Control and Data Acquisition platform.
- e. Use existing copper cables wherever possible. Potential bidders must familiarise themselves with the existing connectivity as part of the site visit. If the cabling for the PLCs and Door Controllers is not adequate, additional hardware and copper cabling should be identified and supplied.
- f. Use existing Security Network fibre, where available. Potential bidders must familiarise themselves with the existing network connectivity as part of the site visit. (Note: Available Dark Fibres have been tested in the recent past, but verification may be required.)
- g. Identify and provide additional hardware and fibre if the network connectivity is not adequate for the solution proposed.
- h. Design, supply and install new, Layer 2, dedicated Network Switches in the Living Units and CER as part of the solution.
- i. Design, supply and install new, generic, non-proprietary Programmable Logic Controllers (PLC), with a published interface, based door control systems to replace the existing systems in Living Units 1, 2, 3, 4, and 5.
- j. Provide operational training to correctional staff and in-depth maintenance training for the Electronic Security Systems maintenance technicians (National Maintenance Service Provider).
- k. Provide one year of full warranty support of the DCS, once it has been accepted by CSC. This support must include all system upgrades as they become available, troubleshooting, the correction of any deficiencies and the resolution of operational or technical problems.

3.3 System Technical Requirements

The following are requirements for the new Door Control and Management Systems in Living Units 1, 2, 3, 4, and 5.

3.3.1 General

The Contractor must:

- a. Provide a Door Control and Monitoring System to be deployed with the Door Control Application running a Command, Control and Data Acquisition platform, in each Living Unit, a standalone, robust, Industrial grade, off-the-shelf, PLC based industrial automation system as the means of managing and monitoring all edge devices including Doors, Barriers and Switches.

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- b. The DCMS must be designed, supplied, installed, tested and deployed with DCMS applications operating on a DCMS server located in the TES in each Living Unit that is compatible with and can be integrated seamlessly with CSC's Command, Control and Data Acquisition platform.
 - c. The DCMS must be designed, supplied, installed, tested and deployed with DCMS applications that provide all of the application logic to manage and monitor doors and barriers through a PLC based control system with controllers located in equipment spaces convenient to the location of the electric or pneumatic drives associated with the doors and barriers.
 - d. The DCMS must be designed, supplied, installed, tested and deployed in the Living Unit Control Post, two (2) DCMS workstations, each equipped with a User Interface consisting of a 22" Touch Screen Monitor that provides an Officer in the Living Unit Control Post with the means to manage all of the devices and capabilities defined in the System Specification referred to in section 2.0, as a client for the Application described in 3.3.1.a.
 - e. Provide a system that is developed and delivered in a non proprietary Application Development and Service Delivery environment in every respect from the PLC to software with the exception of the Door Control and Monitoring Application and the supporting Graphical User Interface which must meet CSC's standards as defined in section 2.0.
 - f. Supply and install in the CER a back-up Server compatible with CSC's Command, Control and Data Acquisition platform.
 - g. Supply and install an instance of the DCMS Application, that can back up any or all of the DCMS applications in the Living Units, on the back-up server connected to the DCMS servers located in the TESs in each of the Living Unit Control Posts. Provide a PLC-based system that is defined as an off-the-shelf industrial automation controller with generic logic software.
 - h. Provide a system that is designed for a industrial environment and be available to any contractor through nationwide distribution.
 - i. Provide a system that uses open and off-the-shelf door motor controllers, door position switches and their supporting communications protocol.
 - j. Provide a system with an open architecture must allow for a simple integration of other equipment as well as accommodating any future expansion.
 - k. Provide a system that is manufactured and tested to the requirements of CAN/CSA-E61131-2-06 – Programmable Logic Controllers Part 2: Equipment Requirements, and Tests, and must meet the highest standards for custom control systems to ensure reliability, maintainability, and safety.
 - l. Provide a Modular, generic PLC system that must be from a single manufacturer of general-purpose industrial control applications and is equipped with the complete complement of controllers, power supplies, input/output modules and communication links to meet this requirement.(Note: Examples of PLC manufactures include: Allen-Bradley, Omron Electronics, Square D-Modicon, GE, and Siemens.)
 - m. Provide Operator User Interfaces in the form of Touch Screen Graphical User Interfaces for the management and monitoring of the doors, barriers and door position switches.
 - n. Provide the capability for all events and logs to be collected and stored locally, but aggregated at the backup server.
 - o. Provide the capability to connect to the Data logger and export events and logs to it in real time using Starcom over IP Protocol. (Details of this protocol will be provided at the bidders meeting.)

3.3.2 Operational Requirements

The Contractor must:

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- a. Provide a Door Control System that allows an operator in the Living Unit Control Post to remotely control, through a pair of Touch Screen User Interfaces, electrically or pneumatically operated doors and barriers and to monitor the status of all doors, barriers and hatches in defined areas, including Living Units, of a correctional facilities.
 - b. Program the system such that for any system failures, power loss or reboot on any of the CPUs, all doors must revert to the secure (locked) state.
 - c. Provide software driven ability to shut down the User Interfaces in a Living Unit Control post using a soft key on the Operator User Interfaces and an Emergency Shutdown Switch or "Mushroom Button".
 - d. Provide a hardware driven ability to shut down the User Interfaces in a Living Unit Control post using a Mushroom Button located in or adjacent to each Control Post.
 - e. Ensure that the shutdown status is provided to the MCCP Operator by means of an alarm that is raised on the FAAS.
 - f. Provide the ability for the MCCP Operator to re-enable the Door Control System by means of a Command on the FAAS.
 - g. Provide the ability for an authorised individual to re-enable the Door Control System by means of a Key switch in the Living Unit Telecommunications Equipment Space (TES). (Re-enabling the system at the TES will cause a status change at the FAAS.)

3.3.3 Software Requirements

The Contractor must:

- a. Provide a Command, Control and Data Acquisition (CCDA) platform on which the Application software is developed and on which it runs when in service that is compatible with the HMI and Supervisory Control environment. The CCDA platform must meet the requirements identified in Appendix D.
- b. Provide a CCDA that is open, and uses an off-the-shelf development environment that has been available for at least ten years in North America.
- c. Guaranty that the manufacturer of the Command, Control and Data Acquisition platform will provide ongoing software updates and technical support.
- d. Provide CSC with all programming passwords, source codes, configuration files and programming schedules at the end of the project.
- e. Confirm that CSC will be able to modify and maintain the system with no restrictions, including all software and hardware which could be redeployed at other Living Units or Institutions within CSC's purview with no additional licenses or fees.
- f. Provide a structured configuration environment that will allow a qualified CCDA developer the ability to reconfigure the software to meet additional needs and to deploy at additional locations.
- g. Employ software design best practices and is required to submit a plan clearly defining how they will meet software design best practices as part of their response.

3.3.4 Testing Requirements

The Contractor must:

- a. Build, program and test the new Applications and PLC management and monitoring capability prior to delivery to site.

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- b. Provide an opportunity for the software and hardware associated with these Applications and the PLC management and monitoring to be tested and approved by CSC representatives prior to installation at the contractor's premises.

3.3.5 Hardware Requirements

The Contractor must:

- a. Provide industrial grade computers in industrial grade rack mount configurations.
- b. Provide all computers with adequate RAM and Enterprise Hard Drive space to meet the needs of the Application software and the CCDA Platform for 5 years.
- c. Provide one spare computer and touch screen monitor for each living unit.
- d. Provide two industrial, rugged or vandal resistant; 22" display Touch Screen Operator User Interfaces using capacitive touch screen technology in each Control Post.

3.3.6 Network Infrastructure

The contractor must:

- a. Supply new and replace all existing network switches. Initially, for this deployment, this network infrastructure will support the deployment of the DCMS servers and connectivity to the PIDS and Data logger.
- b. Provide a network infrastructure that is flexible enough to scale to support additions to this network infrastructure and/or addition of further ESS sub-systems within the institution as required in the future. This network infrastructure will provide an integrated, end-to-end "virtualized" architecture for the systems connected to it, using state of the art techniques for the network operation and configuration as described in sections below.
- c. Source the new network switching infrastructure from one switch vendor with the ability to interface in a multi-vendor manner to other vendor's equipment should future requirements deem this necessary.
- d. Provide a network infrastructure that supports an open system, multi-vendor capable, communication environment utilizing IEEE 802.1aq Shortest Path Bridging (SPB) to forward and control traffic between switches.
- e. Ensure that the new switching infrastructure is fully integrated into the FAAS and PIU alarm and display systems.
- f. Take all steps to minimize the number of network equipment devices required to minimize sparing requirements. Ensure that 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 a minimum of 2 strict priority queues, and 6 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 ID, IP Address, TCP/UDP Ports, CoS (Class of Service), ToS (Type of Service), and DSCP (Differentiated Services Code Point).
- g. Ensure that the network infrastructure will provide a layer 2 SPB VID (VLAN identification) environment in which each ESS subsystem has its own allocated VID to provide for secure traffic segregation for each sub system and thus ease of monitoring, troubleshooting and maintenance. Each VID will be logically separate from any other and thus allow multiple services and systems to operate independently on the same wired infrastructure. The Door Control System must be treated as an ESS "subsystem" as far as the network partitioning is concerned.

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- h. Ensure that the network infrastructure will 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.
- i. Ensure that all network switches within the network infrastructure are mountable in 19" mounting rail racks, and that the switches do not exceed the depth of communication racks and cabinets .
- j. Provide a design and implementation of a Core network that:
- i. Consists of a single core L2 switch deployed in the CER and providing management of the SPB network. Note: This core switch must be compatible with upgrade to a switch cluster, with a minimum of two switches acting as one logical switch, providing active-active switch operation and linkage capability once further fibre links are available at this institution. This switch cluster will provide high availability connectivity and links to the edge switching equipment.)
 - ii. Provides a switch cluster will be a 19" rack mountable 1RU switch providing the capability to be configured with Layer 2 switching features.
 - iii. Provides a core switch and network infrastructure that supports ease of provisioning via edge only device and service provisioning, providing ease of configuration at the edge devices automatically informing the network infrastructure of a move, add or change and not require core configuration when changes to the network are required. The edge only provisioning will be capable of adding a new device to the associated VID.
 - iv. Provides software for automatic edge device authentication to ensure edge devices are compatible devices for installation, manage device permissions and monitor the health of connected devices.
 - v. Provides a core switch that will support a minimum of 1 Gbps wire speed.
 - vi. Provides a core switch that offers 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 institution data center environment
 - vii. Provides a switch that ha shot-swappable power supplies with redundant fans.
- k. Must provide a design and implementation of an Edge network that:
- i. Provides stackable 248 port network edge switches utilizing 802.1aq SPB allowing for ease of future expansion of the network infrastructure and the capability for multiple connections into different switches in the stack utilizing load balanced network paths to provide an extra level of resiliency within the network in case of any switch failure.
 - ii. Provides Edge switches that deliver:
 - L2 switching
 - 10/100/1000 Mbps switching
 - 1GBps + uplinks (with migration option for 10Gb future uplinks) resilient, always on connectivity
 - Wire-speed performance and non-blocking throughput to support a variety of applications
 - Field replaceable redundant power supplies for increased resilience
 - Provide one-touch edge provisioning for edge devices with any move, add or change communicated automatically throughout the network infrastructure
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- capability (via stackable functionality) to add further network capacity as required without impacting current operational switching
 - Support IEEE 802.1aq SPB
 - Advanced QOS and prioritization
 - Network access control (NAC) via device authentication software and IEEE 802.1x Port-based NAC
 - Support for both IPv4 and IPv6 management addresses
- iii. Provides edge switches that support edge-provisioning, automatically informing the rest of the network of the change/ addition, eliminating the need for manual configuration of the core switches when changes are made.
 - iv. Provides network switches that are capable of device authentication, and include a management GUI interface for maintenance equipment.
 - v. Meets the following technical requirements:
 - support up to 50 Ethernet ports (24 port version)
 - software support for IPv4 and IPv6
 - vi. Meets the following environmental requirements:
 - Temperature range of operation: 0°C to 40°C
 - Operating humidity range: 0 to 95% relative humidity
- i. Supply network switches to meet the needs of all ESS network requirements.

3.3.7 Administration, Configuration, Reporting and Maintenance User Interfaces Requirements

The Contractor must:

- a. Provide and install the Maintenance, Configuration and Administration User Interfaces in the associated equipment room (T&E) in each Living Unit.
- b. Provide and install the computers mounted on rails for easy repair and maintenance
- c. Provide rack mounted servers or computers with flip up monitor, keyboard, and touchpad with a minimum of six inputs with cabling to support all of these User Interfaces. (Note: The capabilities of each of these interfaces are defined in ES/SPEC-0950.

3.3.8 Warranty Support – Hardware and Software Lifecycle Management Requirements

The Contractor must:

- a. Provide systems that are designed such that CSC can easily transfer the software to new computers or hard drives.
- b. Ensure that all software is transferable and provide a hard disk copy of all DCS hard drives via "Ghost" or similar back-up method.

3.3.9 Component, cable and connector replacement requirements

The Contractor must:

- a. Replace all the existing KVM extenders in the Living Units. (Note: Fibre or CAT6 KVM extenders are acceptable.)
- b. Ensure that KVM extender have at least one video, one audio, RS232 port, and two USB ports.
- c. Replace all components of the system with the exception of the field devices such as electric door

locks, request to exit switch, door position switch, kill switch (shutdown button). (Note: It is expected that the field wiring in Living Units 2, 3, 4, and 5 is fit for purpose good, Living Unit 1 will require new resistor packs and wiring from the equipment rack to the door relays.)

- d. Review the documents related to the existing systems to ensure compatibility with the proposed system components for the existing field service devices and wiring, clearly indicating compliance in response to this requirement.

3.3.10 System Configuration requirements

The Contractor must:

- a. Ensure that the Inmate Request to Exit (RTE) switch must have a 2 state function: Closed then open to activate, with a five second timeout.
- b. Ensure that existing door control types and protocols are copied to the new system unless exceptions are identified by CSC. Some improvements must be required and are to be coordinated with CS C.
- c. Ensure that for Living Units 2, 3 and 4, Doors D200 and F200, the door alarms can be configured on a schedule that masks alarms between 7:00 and 16:00 on weekdays. The dates and times must be configured through the Configuration Menu.
- d. Replace all the relays associated with the DCS in all living units. These relays are typically installed between the PLCs and the Door Locks.
- e. The types of Doors that must be controlled and or monitored by this Door Control System are listed in the drawings provided in Appendix A.

3.4 Touch Screen Operator User Interface

The Contractor must provide, for Living Units 1, 2, 3, 4, and 5:

- a. An Operator User Interface on a Touch Screen Display that presents the Operator with the information needed to manage the functionality to be provided by the DCMS, including the visual and audible parameters that the operator will respond to and use to interact with the system. The touch screen display must provide a Framework that will include any graphic images and interactive controls required to manage the target system. A typical graphic map must incorporate the following display features as applicable to the area of presentation:
 - building structures including the devices being managed, including gates, doors,
 - barriers, locks, lights, power etc.;
 - type, condition, priority and real time status of all devices being managed; and
 - emergency instruction and operator prompts, in graphic form wherever possible.
- b. The system graphics must reduce information clutter to a minimum with the appropriate use of icons, especially to display sensor location and state. Details of all icons, sizes, colours and actions will be provided in the Graphical User Interface Design Standards and Graphical User Interface Framework Standards. The design of this interface will be defined in more detail in “the Requirements for the Operator Graphical User Interface for a Security Management System” provided as Appendix B. As a general guideline, the existing GUI layout structure should be used, but CSC is providing scalable Vector Floor Plans in pdf form for the supplier to integrate into the Graphical User Interface. These are provided in Appendix C.
- c. Refer to Appendix B for detailed description of icons; CSC should have the ability to change the icons in the future as a plan is in place to standardize all DCS icons in the regions.

4.0 SITE SPECIFIC REQUIREMENTS

4.1 Installation

The Contractor must adhere to the following installation requirements:

4.1.1 Available Documentation

The Contractor must:

- a. Review the documents related to the existing systems to ensure compatibility with the proposed system components for the existing field service devices and wiring, clearly indicating compliance in response to this requirement. (Note: These documents will be provided by CSC following contract award.)
- b. Review carefully the O&M manuals, "As-Built" drawings, and other documents related to the existing systems. Refer to Appendix G. (Note: These documents will be provided by CSC following contract award.)

4.1.2 Design

The Contractor must:

- a. Document the protocols and prepare text and GUI screen layouts in keeping with the Requirements for the Operator Graphical User Interface for a Security Management System provided in Appendix B, submitting these to CSC for review.
- b. Prepare all screen layouts in colour. (Note: Adherence to the above standards will reduce the number of submittals that will be required before approval will be provided on GUI layouts and operating protocols. Existing Door Layouts have served well to date, and commonality between the two systems would be valuable.)

4.1.3 Installation Schedule

The Contractor must:

- a. Complete the installation of the equipment and ensure that the new system is operational no more than 180 days (including weekends) from the award of the contract.
- b. Hold, within 10 working days of contract award, an on-site meeting with a walkthrough of the facility and control systems.
- c. Provide bi-weekly updates at site meetings. (Note: Meetings must include status of work, current or updated completion dates, and other issues identified as work progresses. Date and time must be set as to when CSC may review functional checks of the equipment prior to installation.)
- d. Prepare a final implementation plan for review and approval by CSC prior to the commencement of installation addressing, as a minimum, the following topics and clearly explain the implementation process from start to finish.
 - i. An introductory overview of the implementation process.
 - ii. The degree of involvement required of Institutional staff.
- e. All employees of the Contractor working on-site must meet the security requirements of the Institution prior to attempting to gain access to the facility.

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- f. Plan and coordinate this work carefully as this project is in a correctional environment. (Note: The Work must be carefully planned and coordinated with CSC and the Institution to minimize the disruption of daily security operations and inmate movement. Refer to Appendix E for CSC security requirements.)

4.1.4 Existing Installation and Hardware

The Contractor must:

- a. Examine hardware, wiring, controllers, software, operating protocols, and all relevant details of the existing systems to develop a full understanding of the existing system prior to starting the project.
- b. Test the existing systems, especially the components that are not being replaced as part of the scope of this project. Provide a written report confirming whether the systems work properly and if there are any problems.

4.1.5 Project Review Meetings

The Contractor must:

- a. Meet with CSC to discuss the scope of work and develop a full understanding of the parameters of the project.
- b. Provide recommendations for improvements to the existing Door Control and Management System.
- c. Meet with CSC and its representatives to discuss security requirements, shut downs, staging sequencing of construction, temporary measures, and other similar requirements.
- d. Meet with CSC and PWGSC prior to programming of Applications, PLCs and GUIs to determine the operating protocols for the door controls systems.

4.1.6 Cut Over Planning

The Contractor must:

- a. Ensure that at no time any entire living unit is without an operating Door Control and Management System.
- b. Ensure that when there is a changeover from the existing system to the new system in any building, it is completed in manageable stages, e.g. one range at a time.
- c. Provide at least 48 hours advance notice of any disruptions in service.
- d. Make provisions for the possibility that, while all necessary preparations may be conducted during regular working hours, the final changeover for living unit ranges might need to be between 23:00 and 06:00.
- e. Ensure that the existing Door Control and Monitoring System, including the GUI's at the control posts in any of the living units, remain operational until the migration from the old system to the new system is completed for the entire living unit.
- f. Consider the CSC guidelines provided below as a suggested methodology. However, CSC is willing to consider other installation plans.
 - i. The entire PLC based control system components for each building, including the master controller, input/output modules, power supplies, field wiring terminations, and communication interface modules are pre-assembled and wired at the Contractor's facilities on metal back panel designed to fit within the existing Door Control and Monitoring System enclosures in the

T&E room located in the penthouse of each living unit. The assembly work is to be done noting the requirement indicated in item b above i.e. ease of breaking down the system components into sub-systems relative to each range. Once assembled, the entire system undergoes detailed tests and simulations designed to mimic the intended control operations. CSC representatives will witness these factory tests and request modifications to the control strategies if necessary.

- ii. Upon completion of tests deemed successful by the CSC representatives, the preassembled component panels are shipped to the Institution and temporarily installed beside the existing cabinets. Prior to the changeover, the Contractor must label all existing field wiring. At the appointed time, the Contractor must disconnect the field wiring related to the range designated for changeover, remove the wiring from the existing components and reconnect to the new system components. Only after testing of the system and components has confirmed correct and trouble free operation of the system, the changeover work for the next range will start. This process is repeated until the entire living unit is integrated into the new system at which time the existing component back panel must be replaced with the new component back panel.
 - iii. Concurrently, the Contractor must set-up and configure GUI monitors and associated computers and establish data links between them and the new control panels. As indicated before, the existing GUI monitors must remain functional until the new GUI system encompasses the entire living unit at which time the new GUI monitors will replace the existing GUI monitors.
- g. Perform a full functionality check, a Pre-ATP, on all components associated with the system through hands-on interaction with each door before system acceptance in each building.
 - h. Provide the Pre-ATP to the CSC representative for review prior to the completion of a Final ATP at which a CSC representative may ask the Contractor to perform a sample of the tests carried out in the Pre-ATP, or, depending on system performance, all of the tests may be repeated.
 - i. Provide a detailed commissioning plan.

4.2 On Site Communications

The Contractor must adhere to the following Communications Requirements:

- a. Communications between the contractor, the Institutional Representative and the Maintenance Technicians is of the utmost importance during interruptions to existing systems to ensure that additional and/or alternative security procedures can be taken by the Institution during the interruption of individual systems.
- b. The contractor must work closely with the Maintenance Technician during interruptions to existing systems. (Note: The on-site National Maintenance Service Provider responsible for the maintenance of all security systems with the Institution is currently "ADGA". If the service provider changes during the course of these projects, this information will be provided to the Contractor.)
- c. Prior to commencement of each work period contractor shall advise the Institutional Representative and Maintenance Technician of the work that will be performed during that period.
- d. During the work day, the Institutional Representative and Maintenance are to be kept regularly informed of the progress being made and will be notified prior to any required disruption in system availability.
- e. As a minimum the parties will meet at the beginning and end of the working day.

4.3 Institution Operations

The Contractor must adhere to the following on site Operational Requirements:

- a. The contractor must take every precaution to minimize any disturbance to institutional operations.
- b. Equipment and systems operational down time must be kept to a minimum.
- c. All down time must be coordinated with the Assistant Warden Operations on site or designate.
- d. The contractor's staff may be required to work during evenings, nights and/or weekends to reduce the amount of down time and to meet operational requirements.
- e. The contractor and his staff on site must cooperate fully with operational staff and conform to all security requirements.

4.4 Testing and Acceptance Procedures

The Contractor must adhere to the following on site Testing Requirements:

- a. The contractor shall 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.
- b. The test procedure will outline tests and procedures to be undertaken by the contractor and witnessed by Design authority, Institutional Representative and Maintenance Technician to demonstrate that each system is fully functional and operational as it was prior to relocation to new equipment cabinet.
- c. The Design Authority will review test procedures, and may request additional tests to ensure all required tests are performed prior to accepting as completed.
- d. Test procedures are to be provided by the contractor to the Design Authority in an itemized format indicating each test to be performed and the method in which it is to be performed.
- e. The contractor shall complete one hundred percent of the tests outlined in the ATP prior to the ATP testing being carried out by the DA.
- f. The contractor shall 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 shall include all of the results of the tests carried out in Section 5.6.2.
- g. In the case where subcontractors have been used, the contractor shall provide written confirmation that the work of their subcontractor has been inspected and verified. This verification shall be sent to the DA or his designated representative, by fax or email, at least two days prior to the start of the ATP.
- h. Testing may be carried out by the DA, a designated representative or a third party contractor.
- i. The DA may repeat all of the ATP tests done by the contractor or a percentage of them. During the ATP, if an unacceptable level of failed tests is encountered, the ATP testing will be halted until the contractor has corrected the failures.
- j. If the DA during the ATP testing finds a minor deficiency that does not affect the operational effectiveness of the CCTV 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.

-
- k. 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.
 - l. 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.
 - m. 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.
 - n. 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.
 - o. Equipment warranty period will start on the date the system is formally accepted.5.6

4.5 Labelling

The Contractor must adhere to the following on site Labelling Requirements:

- a. Bold face laser quality printed labels, black print on white background must be provided.
- b. The labels must be self adhesive, one piece, label and clear cover wrapped around cable.
- c. The wording on labels must be approved by design authority prior to manufacture.
- d. The Contractor will install labels on each end of cable.
- e. The Contractor must install labels not less than 150 mm from termination end of cable.
- f. All labels must be clearly visible and readable after final termination of cables without having to move or rotate cables.

4.6 Mounting

The Contractor must adhere to the following on site Mounting Requirements:

- a. Install all existing equipment in the new console or in security equipment cabinets in the CER as indicated.
- b. Route all cabling through cable chases and neatly fasten using Velcro type tie-wraps.

5.0 SUPPORT AND TRAINING

5.1 Support

The Contractor must meet the following support requirements:

- a. CSA/cUL Certification:
 - I. Given the sensitive nature of all electronic components and the need for high reliability and safety, it is a requirement that all material and equipment be CSA/cUL certified.
 - II. Evidence of compliance must include certified test reports and definitive shop drawings.
 - III. All processor units, input/output modules, and their assemblies must be CSA/cUL certified.
- b. National Distribution: Be able to provide National distribution and local parts and service outlets.
- c. Escalation Plan:
 - I. Upon contract award, the Contractor must provide the name and credentials of qualified service technician(s) or manager(s) who will be responsible for ensuring that all inquiries or service issues related to the system are addressed satisfactorily and in a timely fashion.
 - II. This/these individual(s) will have the authority, resources, and responsibility to address technical issues, dispatch a service representative to the site if required, escalate any issue that cannot be resolved within the expected time frame, and keep CSC informed at regular intervals until issues are resolved.
 - III. Provide your company's definitions for problem types with expected response resolution times, and company's procedures for escalating service issues that are not resolved within expected time frames.
- d. Local Technicians:
 - I. The Contractor is to provide one or more local technicians to handle on-site maintenance and repair of the equipment at the institution.
 - II. The local technician(s) must be trained, certified, and available for dispatch to the Institution any time a system problem cannot be diagnosed and rectified by CSC personnel.
 - III. If on-site service is to be provided by a subcontractor, identify the proposed subcontractor and describe the subcontractor's qualifications to provide this service.
- e. The Contractor is fully responsible for all work performed by a Contractor-provided subcontractor.
- f. System Support:
 - I. The Contractor must provide full support of the system through completion and acceptance by CSC and for one full year after acceptance (warranty period).
 - II. This support must include system upgrades (as they become available), troubleshooting, the correction of any system bugs or deficiencies, and the resolution of any operating problems.

5.2 Training

In addition to providing operator and technical training in accordance with CSC document ES/SOW-0101, the Contractor must also meet the following training requirements:

- a. Provide informal operator training as systems are being installed to ensure operational staff will not be surprised with a new operating environment.
- b. Log all operators' names who receive the informal training.
- c. Provide one session of formal operator's training for each living unit.
- d. Provide an interactive Power-Point Presentation as a training aid for the operator's training that is suitable for use during formal training and for later use by CSC for refresher training.
- e. Provide an in-depth maintenance course for the electronic maintenance technicians (ADGA). Course duration must be at least two days.
- f. The Contractor must provide details and course schedule to CSC prior to training for approval as part of the PDR and FDR packages.
- g. All manuals and as-built drawings must be available for the training sessions.

6.0 DOCUMENTATION

6.1 Manuals and Drawings

The contractor must provide at least four sets of complete documentation including 4 CD's or DVD's, which must include operation manuals, service manuals, and as-built documentation for the system in English; including drawings in AutoCAD 2013 and PDF format. This documentation must be provided be in accordance with CSC document ES/SOW-0101 unless superseded by this ST.

In addition to the requirements defined in the above documents, the documentation must also meet these requirements:

- a. Operator's manuals must include both a complete binder with all detailed information, and a single laminated sheet with Condensed instructions.
- b. Condensed Instructions shall be laminated for durability.
- c. Provide at least 10 operator's manuals including the Condensed Instructions.
- d. Maintenance Manual: Upon completion of the project submit to CSC three (3) electronic copies (DVD disk) containing PDF files and three (3) paper copies (in loose leaf binder) of operation and maintenance manual. Include all operational and maintenance documents. Manual must include but not limited to:
 - I. Contractor/Suppliers list
 - II. System Description and Operation Data clearly explaining all system features and functions.
 - III. Detailed System Parts Specifications and Information.
 - IV. All as-built drawings c/w detailed block and wiring diagrams, schematics and software documentation.
 - V. Details of a site specific hardware or software must be supplied as part of the documentation.
 - VI. Testing and Commissioning (T & C) Reports.
- e. All Manuals will be delivered to the CSEM at Regional Headquarters, Pacific, 33991 Gladys Avenue, Abbotsford, BC, V2E 2EH.
- f. Electronic manuals must be structured based on a database framework with direct links to the appropriate PDF files. Document retrieval and viewing must be executed through a menu driven approach. All PDF files must be enhanced with appropriate bookmarks to facilitate searching of information within the document or linked 10 other relevant documents for references.
- g. Provide a handover report which includes details of the equipment, dates of warranties, contractor contact information and other project information. A copy of this document is provided as Appendix F.

**CORRECTIONAL SERVICES CANADA
FACILITIES BRANCH
ELECTRONIC SECURITY SYSTEMS**

31 July 2014

**DESIGN REQUIREMENTS
FOR THE OPERATOR USER INTERFACE FOR THE
DOOR CONTROL AND MONITORING SYSTEM**

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TABLE OF ABBREVIATIONS

Abbreviation	Expansion
API	Application Programming Interface
ATP	Acceptance Test Procedure
BIFMA	Business & Industrial Furniture Manufacturers Association
CA	Contract Authority
CCDA	Command Control and Data Acquisition
CCTV	Closed Circuit Television
CD	Commissioner's Directive
CER	Common Equipment Room
COTS	Commercial-Off-The- Shelf
CSA	Canadian Standards Association
CSC	Correctional Service Canada
DCMS	Door Control and Monitoring System
DES	Director Engineering Services
EIA	Electronic Industries Association
FAAS	Facility Alarm Annunciation System
FAR	False Alarm Rate
FDS	Fence Disturbance Detection System
FIU	FAAS Interface Unit
GFE	Government Furnished Equipment
IVRMS	Inmate Voice Recording and Management System
IP	Internet Protocol
MCCP	Main Communications and Control Post
MDS	Motion Detection System
MTBF	Mean Time Between Failure
MTTR	Mean Time to Repair
NAR	Nuisance Alarm Rate
NTP	Network Time Protocol
PA	Public Address
PC	Personal Computer
Pd	Probability of Detection
PIDS	Perimeter Intrusion Detection System
PIU	Perimeter Intrusion Detection System Integration Unit
PLC	Programmable Logic Controller
RFP	Request for Proposal
RTEO	Regional Technical and Engineering Officer
PPA	Portable Personal Alarm
PPAL	Portable Personal Alarm Locatable
SCC	Security Control Centre

Abbreviation	Expansion
SIO	Security Intelligence Officer
SOR	Statement / Observation Report
SOW	Statement of Work
STR	Statement of Technical Requirements
TCP/IP	Transport Control Protocol/Internet Protocol
TER	Telecommunications Equipment Room
UPS	Uninterruptible Power Supply
V&C	Visits and Correspondence
VDU	Video Display Unit
VIRS	Visits Intercept and Recording System
VMS	Video Management System

TABLE OF DEFINITIONS

#	Term	Example	Description	Function
1	Administrative User Interface		Monitor and Software that supports task specific User Interaction for System Administrators, located in a secure area	Provides Administrative Personnel with the ability to map enrolled users to the functional domains that they are allowed to access and change
2	Application	Cell Call Management, PA Management	Software that is used to deliver Application Support functionality for a sub-system	Software that provides the Operator Interface and supporting logic that allows a sub-system (Control Domain) to be managed
3	CCTV Monitor	PIDS or Range CCTV Monitor	Computer Monitor Hardware	Displays CCTV images for Operator viewing
4	Client		Rack mounted computer located in a secure area away from a Control Post or Control Desk.	Runs software and supports one or more Application
5	Configuration Data	Site floor plans showing quantity of cameras, doors, cells etc. Camera locations. Number of User Interfaces required in a Post.	Site and System specific information typically supplied by CSC that defines how a sub-system Application is to be set-up for a site, location within a site, or post.	The configuration data provides the information that a sub-system application requires to tailor it to meet site, location within a site, or post user requirements.
6	Configuration User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows suppliers or qualified personnel to add, delete and modify Application Configuration
7	Contract Authority		Public Works and Government Services Canada (PW&GSC) is responsible for all contractual matters associated with the system design and implementation.	
8	Contractor		The company selected as the successful bidder.	
9	Control Console	MCCP Console, Living Unit Control Post Console	Console, typically located in a Control Post. Serves as the physical support infrastructure for Operator User Interfaces	Contains User Interfaces or Control Panels used by staff to execute their management responsibilities and interact with the Domains over which they have Control
10	Control Desk	Living Unit Control Desk	Desk, typically located in a Control Post or Office. Serves as the physical support infrastructure for Operator User Interfaces	Equipped with User interfaces used by staff to execute their management responsibilities and interact with the Domains over which they have Control
11	Control Domain	Cell Call, Guard Tour, Public Address	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that performs a set of related functions	Collect information, or activate capabilities in their operational domain
12	Control Panel	PACP, Fire Alarm	Hardware and Software device that provides an Operator Interface (I/O device), located in a Control Post	Allows Operators to manage one or more Domain

#	Term	Example	Description	Function
13	Control Post	Living Unit Control Post/MCCP	Room or area, typically located in a secure area in an institution	Room used by staff to execute their management responsibilities and interact with the Domains over which they have Control
14	Custom Equipment		Equipment designed and/or manufactured specifically for a specific contract.	
15	Design Authority		Director, Electronic Security Systems (DES) Correctional Service of Canada (CSC) is responsible for all technical aspects of the system design and implementation.	
16	Device	CCTV Camera, Managed Door, Call Origination Device	A specialized device, typically consisting of hardware and software	Provides data collection or activate functions associated with a specific system or sub-system
17	Enrolment User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows Designated Personnel to enroll and delete Users from the Command, Control and Data Acquisition System.
18	Maintenance User Interface		Monitor and Software that supports task specific User Interaction, located in the CER or Maintenance Service Provider Office	Provides Maintenance Personnel with the ability to interact with one or more Systems to carry out their day to day tasks to troubleshoot and maintain Systems and Subsystems
19	Notification	Notification that a door is opened, or a door is closed, or a sensor is in alarm	A notification is a message that can be shown on a User Interface and/or logged in a database that represents a change in state or a command initiated by an operator.	
20	Off-the Shelf		Equipment currently on the market with available field reliability data, manuals, engineering drawings and parts price list.	
21	Operator User Interface	PIDS Display, Door Control and Monitoring System Display	Computer Monitor and Software that supports User Interaction (I/O device)	Provides an Operator with the ability to interact with one or more Systems to carry out their day to day tasks at a Control Console or Control Desk
22	Project Officer		A CSC employee or a contracted person designated by DES to be responsible for the implementation of the project.	
23	Reporting User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Provides Management Personnel with the ability to access preconfigured reports and to create custom reports
24	Server	Network Video Recorder	Rack mounted computer that runs software and is located in an equipment room such as a CER or TER	Runs software that is used to deliver services that support Command and Control Applications to connect to sub-systems

#	Term	Example	Description	Function
25	State		The state of a device as reported to a sub-system or system	This is a logical representation of the state of a device that is being monitored or managed
26	Sub-system	Cell Call, Guard Tour	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that perform a specific set of related functions	Collects information, or activates capabilities in their operational domain
27	System	PIDS	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, including devices from sub-systems that perform a more general set of related functions	Collects information, or activates capabilities in their operational domain
28	Touch Screen User Interface	Door Control and Monitoring System User Interface	Typically an LCD Monitor with touch screen technology	Allows an Operator to view and interact with the Systems presented on the Monitor
29	Workstation		Rack mounted computer located in a secure area away from a Control Post or Control Desk	Runs software that is used to deliver Command and Control Capabilities

1 INTRODUCTION

- .1 The intent of the User Interface for the Security Management and Supervision System is to enable Operational Staff in any control post that controls access, as appropriate to their span of control, to control doors and access where required and to control emergency evacuation and lockdown.

2 SCOPE

- .1 This design requirement defines the functionality and operational processes intended to be provided through the User Interface for the system used in the management and control doors and access points used in Federal Correctional Institutions. The design requirement does not specify the actual data involved in the processes, but describes in detail the Human Machine Interface.

3 AUDIENCE

- .1 The intended audience includes potential developers, suppliers or those that configure the software application that will provide both the Human Machine Interface for the functionality described in the balance of the design requirement as well as the logic that will integrate and manage the other components of the system such as CCTV Cameras, Cell Call, power and light, PA, and other systems as may be described in future. . This design requirement must be read in conjunction with the design requirement for the Configuration of a Security Management and Supervision System as this document will define the scale of the system and provide ranges and parameters that will be needed in defining the logic that underlies the User Interface.

4 GENERAL

- .1 The purpose of the UI for a DCMS is to control and monitor doors from a control post. This would include doors monitored or controlled at all security management and supervision posts, which includes cell doors, movement control posts, access control in responsibility units, ingress and egress to staff administration areas and access to CSC regional and national facilities (entry control posts).
 - .2 The User Interface must be designed in such a way that it supports multiple management domains in a seamless and transparent manner as the system is expanded, supporting the representation of one domain through all domains that must be managed on the same User Interface. The domains that must be considered for future integration include:
 - .1 Cell Power, including power for TVs
 - .2 Cell and Range Lighting
 - .3 Cell Call
 - .4 Security Patrol/Guard Tour
 - .5 Limited Call Intercom
 - .6 CCTV management
 - .7 Public Address
 - .3 The DCMS system is comprised of two main components from a UI perspective:
 - .1 A status display which is part of a DCMS control post
 - .2 A monitoring display or displays for CCTV, if required
 - .4 This capability may be called upon to meet operational requirements or to meet situations in which a User Interface fails or for the aggregation of Control Post functionality as posts are reconfigured to accommodate staffing requirements. The definition of how User Interfaces in control posts provide redundancy within a control post and at another control post must be flexible and must be defined in configuration information.
-

- .5 Commands originating from Operator actions at the User Interface and events that represent a change of state at a device will typically result in a message that will be “logged” by the underlying data logging services of the Service Delivery Platform on which this application runs. This data can and will be accessed at a later date for evidentiary use, assessment, and follow-up.

5 DESIGN REQUIREMENTS

5.1 General

- .1 The DCMS system consists of a User Interface presented on individual Touch Screen Video Displays in each Control Post. Where required, a monitor for displaying CCTV is included and the control of the CCTV is from the User Interface.

5.1.1 *User Interface*

- .1 The User Interface must use iconography and guidelines provided or approved by CSC.
- .2 The preferred display layout will be based on a simplified floor plan of the whole or part of a unit based on screen space. Icons must be used instead of text where possible.

5.1.2 *Requirements from other systems not managed by this UI*

- .1 No requirements from other systems.

6 OPERATIONAL REQUIREMENTS

6.1 Operational functions

- .1 These are the operations sequences that the status display in the DCMS must cover.

6.1.1 *Slider doors found in Movement Control Posts and Entry Control Posts*

- .1 Open Slider Door (can close while door opening)
- .2 Close Slider Door (can open while door closing)
- .3 Stop Slider door
 - .1 Open and resume open
 - .2 Open and resume close
 - .3 Close and resume close
 - .4 Close and resume open
- .4 Open Partial Slider Door (can be used when door is open or closed)
 - .1 Can also stop or close while opening
 - .2 If open partial is selected when door is closed
- .5 Open Interlock Slider Door
- .6 Special commands
 - .1 Evacuation
 - .2 Emergency shut down
- .7 Alarm
- .8 Fault Alarm

6.1.2 *Swing doors found in Movement Control Posts and Entry Control Posts*

- .1 Unlock Swing Door
- .2 Open Interlock Swing Door
- .3 Special Commands
 - .1 Evacuation
 - .2 Emergency shutdown
- .4 Alarm
- .5 Fault Alarm

6.1.3 *Living Unit Control Post - Cells have motorized Slider Doors*

- .1 Open Slider Door (can close while door opening)
 - .2 Close slider Door (can open while door closing)
 - .3 Stop slider Door
 - .1 Open and resume open
 - .2 Open and resume close
 - .3 Close and resume close
 - .4 Close and resume open
 - .4 Open Partial Slider Door (can be used when door is open or closed)
 - .1 Can also stop or close while opening
 - .2 If open partial is selected when door is closed
-

- .5 Lockout cell door
- .6 Release lockout cell door
- .7 Cancel lockout cell door
- .8 Unlock Swing Door (into closed control post)
- .9 Open Interlocked Slider Door
- .10 Special commands
 - .1 Evacuation
 - .2 Emergency shutdown
 - .3 Lockdown
- .11 Alarm
- .12 Fault Alarm

6.1.4 Cells with Swing Doors – Cell block with inmate enabled

- .1 Unlock Swing Door
- .2 Lock Swing Door
- .3 Inmate Enabled
- .4 Lockout call door
- .5 Release lockout cell door
- .6 Override interlock
- .7 Special Commands
 - .1 Evacuation
 - .2 Emergency shutdown
 - .3 Lockdown
- .8 Alarm
- .9 Fault Alarm

6.1.5 Responsibility Unit where there is no lockdown of individual cells as cells not under DCMS

- .1 Unlock Swing Door
- .2 Lock Swing Door – assume that DCMS can lock door which is equivalent to lock down
- .3 Override interlock
- .4 Special Commands
 - .1 Evacuation
 - .2 Emergency shutdown
- .5 Alarm
- .6 Fault Alarm

6.1.6 Responsibility Unit (with RFID card entry)

- .1 Unlock Swing Door
 - .2 Lock Swing Door – will assume that DCMS can lock door which is equivalent to lockdown
 - .3 Display last user
 - .4 Override interlock
 - .5 Special commands
 - .1 Evacuation
 - .2 Lockdown
-

- .3 Emergency Shutdown
- .6 Alarm and window alarm
- .7 Fault alarm

6.2 List of commands that are to be confirmed

- .1 The following table shows how commands are to be confirmed at a DCMS control post:

Command	Confirmation Requirement
Open, close, partial open, unlock	No confirmation required
Interlock override	Confirm icon
Lockout (single cell or group of cells)	Confirm icon
Lockdown (range)	Confirm icon
Emergency shutdown	Special confirm pop-up

6.3 List of system alarms and alarm handling attributes

- .1 These are the alarms and alerts that are generated, displayed and managed at the DCMS UI:

Alarm or alert	Category	Audible alarm and displayed locally	Displayed and listed at MCCP	Audible alarm at MCCP
Door not locking within pre-specified time of being closed (usually 10 seconds)	Minor – Priority 7b	Yes, alarm sound tbd	Yes	No
Door open too long (swing door), usually for 60 seconds after being released	Minor – Priority 7b	Yes, alarm sound tbd	Yes	No
Fault alarm for door or window	Minor – Priority 8	Yes, alarm sound tbd	Yes	No
Tamper alarm for door or window	Minor – Priority 8	Yes, alarm sound tbd	Yes	No
Exit door is opened	Minor – Priority 7a	Yes, alarm sound tbd	Yes	Yes, alarm sound tbd
Override an interlocked door	Minor – Priority 7c	Yes, alert sound tbd	Yes	Yes, alert sound tbd
System failure	Minor – Priority 8	No, system failed	Yes	Yes, alarm sound 4c

- .2 The MCCP has an active alarm display and alarms are both represented on the Interior Security map view, and are listed in the active alarm display.

- .3 Once an alarm is generated, the alarm must be acknowledged. When the device returns to its pre-alarm state, the status of the device is also returned to its normal state. There are no actions, other than acknowledgement, that an operator using this UI would do to clear an alarm.
- .4 Acknowledging an alarm using the Alarm Acknowledge Icon, acknowledges all unacknowledged alarms listed at the UI.
- .5 Where there is an alarm from a device that is managed or monitored at the DCMS UI:
 - a. the device shows an alarm state,
 - b. the detailed status window pops up with the details of the alarm that are determined to be displayed for that device at that control post in that window (ie determined by configuration data), The alarm status icon flashes, with
 - c.
- .6 To acknowledge the alarm

6.4 List of devices and states for those devices

6.4.1 Door map icon states

- .1 See Section 9 for diagrams of the icons

Device	State	Visual indication of state
Door	Secure	Green circle
	Selected	Icon flashes alternatively with current state (and colour) and blue until command selected, or 10 seconds has passed, when icon reverts to previous state; has table number
	Moving (some slider doors)	Icon is yellow
	Unsecure (door open or partially open)	Icon is red
	Alarm in progress (tamper or fault alarm from device)	Icon is red with alarm indicator, icon flashes until alarm is acknowledged
	Alarm acknowledged (tamper or fault alarm from device)	Icon is red with alarm indicator which remains in this state if a tamper alarm; icon no longer flashes
	Fault	Icon is magenta
	Device taken out of service by maintenance	Icon is magenta with wrench
	Interlocked door	Door icon has interlock symbol which is added to all doors of an interlock group when one of the doors in an interlock group is chosen on the map view. If there are more than one interlock group on a map, the interlock group is displayed on the icon
	Door opened with emergency evacuation command	Icon is red with white exclamation mark

6.4.2 Cell door map icon states

.1 See Section 9 for diagrams of the icons

Device	State	Visual indication of state
Cell door	Secure	Green square
	Selected	Icon flashes alternatively with current state (and colour) and blue until command selected, or 10 seconds has passed, when icon reverts to previous state; has table number
	Moving (some slider doors)	Icon is yellow
	Unsecure (door open or partially open)	Icon is red
	Alarm in progress (tamper or fault alarm from microphone)	Icon is red with alarm indicator, icon flashes until alarm is acknowledged
	Alarm acknowledged (tamper or fault alarm from microphone)	Icon is red with alarm indicator which remains in this state if a tamper alarm; icon no longer flashes
	Fault	Icon is magenta
	Device taken out of service by maintenance	Icon is magenta with wrench
	Door opened with emergency evacuation command	Icon is red with white exclamation mark
	Cell locked out or locked down	Icon is green with chain across the icon
	Cell lock is inmate enabled – but is not enabled	Icon is green and has “inmate” with key.
	Cell lock is inmate enabled, and door is closed and locked by inmate	Icon is yellow and has “inmate” with key
	Cell door is inmate enabled, and door is not closed and locked	Icon is red and has “inmate” with key

6.5 Door types and their characteristics

.1 These are the door types that are managed by the DCMS and their characteristics:

Door Configuration	1	2	3	4	5	6	7	8	9	10	11
Portal Type	Door	Door	Door	Door	Door	Door	Door	Door	Barrier	Barrier	Barrier
Action	Sliding	Swing	Sliding	Sliding	Swing	Swing	Swing	Swing	Slide	Slide	Swing
Application	Various	Various	Cell	Cell	Cell	Cell	Apartment	Mvmnt Ctrl	Mvmnt Ctrl	Mvmnt Ctrl	Mvmnt Ctrl
Security Level	Various	Various	Max/Seg	Max/Seg	Seg	Medium	Minimum	Max/Med	Max/Med	Max/Med	Max/Med
Lock Hardware and Mechanism											
Drive/Lock	None	None	Electric Motr	Pneumatic	Electric	Electric	Electric Strike	Electric	Electric Moto	Pneumatic	Electric
Key	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Door Position Sensor	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lock Position Sensor	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Integration											
Monitored	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Managed	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Supported Commands											
Open	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No
Partial Open	No	No	??	??	No	No	No	No	Yes	Yes	No
Close	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No
Lock	No	No	No	No	Yes	Yes	No	Yes	No	No	Yes
Unlock	No	No	No	No	Yes	Yes	Yes	Yes	No	No	Yes
Unlock with Holdbac	No	No	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Monitored States											
Unlocked	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Locked	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Open	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Moving	No	No	Possible	Possible	No	No	No	No	Possible	Possible	No
Closed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tamper/Fail	No	No	Possible	Possible	Possible	Possible	Possible	Possible	Possible	Possible	Possible
Configurable Attributes											
Inmate Access	No	No	No	No	Yes	Yes	Yes	No	No	No	No
Lockdown	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Emergency Release	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Multi Select	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No
Mask (Locked Out)	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

7 OPERATIONAL SEQUENCES

- .1 These show the operational sequences to be implemented by the DCMS. The UI layouts that show visually how these actions are to be implemented are provided in Section 8.
- .2 Usually, the DCMS is the only system on the display UI, and therefore no system selection icon is presented in the Selection Tray.
- .3 If a control post manages doors from more than one interlock group, then whenever an interlocked door is chosen, the interlock group number is also displayed on the icon for the door. Where there is a control post that manages interlocked doors that are part of a single group, the number is not displayed.

7.1.1 Open Cell Slider Door – non-motorized

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1 Choose secure door	No system icon, if DCS is the only system available at this post		-Unlock door -Lockout	-Remove lockout	Icon indicating door flashes blue alternately with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (secure)	
2 Select Unlock		Unlock door	-Lockout	-Remove lockout	Icon indicating door turns yellow (for 3 seconds)	Door label displayed with name of inmate, picture of inmate and icon of current door status (unsecure)	
3 Command completed			-Lockout	-Unlock door -Remove lockout	Icon indicating door turns red	Door label displayed with name of inmate, picture of inmate and icon of current door status (unsecure) Pops out after 10 seconds.	

7.1.2 Open Slider or Barrier Door (motorized)

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose secure door	No system icon, as DCS is the only system available at this post		-Open door	-Close door -Stop door	Icon indicating door flashes blue alternately with its current state	Door label displayed with icon of current door status (secure)	
2	Select Open		Open door	-Close door -Stop door		Icon indicating door turns yellow	Door label displayed with icon of current door status (door opening with yellow arrow flashing while door is moving)	
3	Command completed			-Close door	-Close door -Stop door	Icon indicating door turns red	Door label displayed with icon of current door status (door open) Pops out after 10 seconds.	

7.1.3 Close Slider Door or Barrier (Motorized)

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose unsecure door	No system icon, as DCS is the only system available at this post		-Close door	-Open door -Stop door	Icon indicating door flashes blue alternately with its current state	Door label displayed with icon of current door status (door open)	
2	Select Close		Close door	-Close door -Stop door		Icon indicating door turns yellow	Door label displayed with icon of current door status (door closing with green arrow flashing while the door is moving)	
3	Completed			-Open door	-Close door -Stop door	Icon indicating door turns green	Door label displayed with icon of current door status (door secure) Pops out after 10 seconds.	

7.1.4 Open Slider Door, Stop and Resume Open

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1 Choose secure door	No system icon, as DCS is the only system available at this post		-Open slider door	-Close door -Stop door	Icon indicating door flashes blue alternately with its current state	Door label displayed with icon of current door status (dosed)	
2 Select Open		Open door	-Close door -Stop door		Icon indicating door turns yellow	Door label displayed with icon of current door status (door opening with yellow arrow flashing while door is moving)	
3 Select Stop		Stop door	-Open door -Close door		Icon indicating door turns red	Door label displayed with icon of current door status (door stopped)	
4 Select Open		Open door	-Close door -Stop door		Icon indicating door turns yellow	Door label displayed with icon of current door status (door opening with yellow arrow flashing while door is moving)	Note: Could also select Close instead of open
5 Command completed			-Close door	-Open door -Stop door	Icon indicating door turns red	Door label displayed with icon of current door status (door open) Pops out after 10 seconds.	

7.1.5 Close Slider Door and then open without crossing the Stop command

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose unsecure door	No system icon, as DCS is the only system available at this post		-Close door	-Open door -Stop door	Icon indicating door flashes blue alternately with its current state red for unsecure	Door label displayed with icon of current door status (door open)	
2	Select Close		Close door	-Open door -Stop door		Icon indicating door turns yellow	Door label displayed with icon of current door status (door closing with yellow arrow flashing while door is moving)	
3	Select Open		Open door	-Close door -Stop door		Icon indicating door turn yellow	Door label displayed with icon of current door status (door opening with yellow arrow flashing while door is moving)	
4	Command completed			-Close door	-Open door -Stop door	Icon indicating door turns red	Door label displayed with icon of current door status (door unsecure) Pops out after 10 seconds.	

7.1.6 Open Interlock Slider Door and choose another Interlock Door to Open

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1 Choose secure door (Door 1)	No system icon, as DCS is the only system available at this post		-Open door -Interlock override	-Close door -Stop door	Icon changes to interlock door and flashes blue alternately current state, green for secure All other interlock doors in that interlock group change to the interlock door icon	Door label displayed with icon of current door status (door secure)	Note –if this control post manages doors from more than one interlock group ,then whenever an interlocked door is chosen, the interlock group number is also displayed on the icon.
2 Select Open (Door 1)		Open door	-Close door -Stop door -Interlock override		Icon indicating door turns yellow	Door label displayed with icon of current door status (door opening with yellow arrow flashing while door is moving)	
3 Choose other closed interlocked door (Door 2)			-Interlock override	-Open door -Close door -Stop door	Icon indicating door flashes blue alternately with its current state, green for secure	Door label displayed with icon of current door status (door secure)	
4 Command completed (Door 1)			-Interlock override	-Open door -Close door -Stop door	Icon indicating door turns red	Door label displayed with icon of current door status of last chosen door – Door 2 which is secure	
5 Choose Door 1 to close			-Close door -Interlock override	-Open door -Stop door	Icon indicating door flashes blue alternately with its current state, red for unsecure	Door label displayed with icon of current door status (door unsecure)	
6 Select Close (Door 1)		Close door	-Open door -Stop door -Interlock override		Icon indicating door turns yellow	Door label displayed with icon of current door status (door closing with green arrow flashing while door is moving)	

7a	Command completed (Door 1)			-Open door -Interlock override	-Close door -Stop door	Icon indicating Door 1 changes to green Icon indicating Door 2 continues to flash blue alternately with its current state (if within the timer)	At the instant the door is closed, the status icon shows current status of Door 1 (secure), for 1 second. If Door 2 still flashing the command tray and detailed status window change to reflect Door 2	If this command not completed within 10 seconds, the choice of Door 2 expires, and it needs to be selected again
7b	Command completed (Door 2)			-Open door -Interlock override	-Close door -Stop door	Icon indicating Door 2 continues to flash blue alternately with its current state (if within the timer)	Door label of Door 2 displayed with icon of current door status (door secure)	
8	Select Open (Door 2)		Open door	-Close door -Stop door -Interlock override		Icon indicating door turns yellow	Door label displayed with icon of current door status (door opening with yellow arrow flashing while door is moving)	
9	Command completed (Door 2)			-Close door -Interlock override	-Open door -Stop door	Icon indicating door turns red	Door label displayed with icon of current door status (door unsecure) Pops out after 10 seconds.	

7.1.7 Override Interlock slider Door

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Choose secure door (Door 1)	No system icon, as DCS is the only system available at this post		-Open door -Interlock override	-Close door -Stop door	Icon changes to interlock door and flashes blue alternately current state, green for secure All other interlock doors in that interlock group change to the interlock door icon	Door label displayed with icon of current door status (door secure)	Note –if this control post manages doors from more than one interlock group, then whenever an interlocked door is chosen, the interlock group number is also displayed on the icon.
2	Select Open (Door 1)		Open door	-Close door -Stop door -Interlock override		Icon indicating door turns yellow	Door label displayed with icon of current door status (door opening with yellow arrow flashing while door is moving)	
3	Choose other closed interlocked door (Door 2)			Interlock override	-Open door -Close door -Stop door	Icon indicating door flashes blue alternately with its current state, green for secure	Door label displayed with icon of current door status (door secure)	
4	Select Interlock Override		Interlock override		-Open door -Close door -Stop door	Icon continues to flash as above	Door label displayed with icon of current door status (door secure)	
5	Confirm required	Confirm button flashes	Interlock override		-Open door -Close door -Stop door	As above	As above	
6	Confirm selected	Confirm button selected	Open door	-Interlock override	-Close door -Stop door	Icon indicating Door 2 turns yellow	Door label displayed with icon of current door status (door opening with	Event is logged and displayed as an alarm in the MCCP

							yellow arrow flashing while door is moving)	
7	Command completed (Door 1)			-Close door	-Open door -Stop door	Icon indicating Door 1 turns red	Door label displayed with icon of current door status – Door 2 (door unsecure)	
8	Command completed (Door 2)			-Close door	-Open door -Stop door	Icon indicating Door 2 turns red	Door label displayed with icon of current door status – Door 2 (door unsecure) Pops out after 10 seconds.	

7.1.8 Open Partial Slider Cell door and then Stop and open

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1 Choose secure door	No system icon, as DCS is the only system available at this post		-Open door -Open partial -Lockout	-Close door -Stop door -Remove lockout	Icon indicating door flashes with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (dosed)	
2 Select Open Partial		Open door partial	-Open door -Close door -Stop door -Lockout	-Remove lockout	Icon indicating door turns yellow	Door label displayed with name of inmate, picture of inmate and icon of current door status (door open partial with yellow arrow flashing while door is moving)	
3 Select Stop Door		Stop door	-Open door -Close door -Open door partial -Lockout	-Remove lockout	Icon indicating door turns red	Door label displayed with name of inmate, picture of inmate and icon of current door status (door open partial with yellow arrow flashing while door is moving)	Open partial must complete before next command is sent
4 Select Open Partial		Open door partial	-Open door -Close door -Stop door -Lockout	-Remove lockout	Icon indicating door turns yellow	Door label displayed with name of inmate, picture of inmate and icon of current door status (door open partial with stop sign on partial door)	
5 Command completed			-Open door -Close door -Lockout	-Open door partial -Stop door -Remove lockout	Icon indicating door turns red	Door label displayed with name of inmate, picture of inmate and icon of current door status (door partially open)	10 seconds after command completed, detailed window pops-out and command tray shows all commands unavailable until next object chosen.
6 Choose partially open door			-Open door -Close door -Lockout	-Open door partial -Stop door -Remove lockout	Icon indicating door flashes with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (door open partial)	

7	Select Open Door		Open door	-Close door -Stop door	-Open door partial -Remove lockout	Icon indicating door turns yellow	Door label displayed with name of inmate, picture of inmate and icon of current door status (door open with yellow arrow flashing while door is moving)	Could also have selected Close Door
8	Command completed			-Close door -Open door partial -Lockout	-Open door -Stop door -Remove lockout	Icon indicating door turns red	Door label displayed with name of inmate, picture of inmate and icon of current door status (door open) Pops out after 10 seconds.	

7.1.9 Lockout, Remove Lockout and cancel for slider Cell Door

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose secure door	No system icon, as DCS is the only system available at this post		-Open door -Open partial -Lockout	-Close door -Stop door -Remove lockout	Icon indicating door flashes with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (secure)	Note: cell must be secure.
2	Select Lockout		Lockout		-Open -Close -Open partial -Stop door -Remove lockout	Icon indicating door flashes with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (secure)	
3	Confirm command	Confirm button flashes	Lockout		-Open -Close -Open partial -Stop door -Remove lockout	Icon indicating door flashes with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (secure)	
4	Select Confirm	Confirm shows selected		-Remove lockout	-Open -Close -Open partial -Stop door -Locked out	Icon indicating door shows locked out symbol	Door label displayed with name of inmate, picture of inmate and icon of current door status (locked out)	
5	Select Locked out door			-Remove lockout	-Open -Close -Open partial -Stop door	Icon indicating door flashes with its current state - locked out symbol	Door label displayed with name of inmate, picture of inmate and icon of current door status (locked out)	
6	Select Remove Lockout		Remove Lockout	-Lockout	-Open -Close -Open partial -Stop door	Icon indicating door flashes with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (locked out)	
7	Confirm command	Confirm button flashes	Lockout	-Remove lockout	-Open -Close -Open partial -Stop door	Icon indicating door flashes with its current state	Door label displayed with name of inmate, picture of inmate and icon of current door status (locked out)	
8	Select Cancel	Cancel button		-Remove lockout	-Open -Close -Open partial -Stop door	Icon indicating door shows locked out symbol	Door label displayed with name of inmate, picture of inmate and icon of current door status (locked out)	

8	Command completed /cancelled			-Remove lockout	-Open -Close -Open partial -Stop door -Lockout	Icon indicating door shows locked out symbol	Door label displayed with name of inmate, picture of inmate and icon of current door status (locked out) Pops out after 10 seconds.	
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7.1.10 Cell Window Alarm (Fenbrook Responsibility Unit)

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1 Alarm generated	No system icon, as DCS is the only system available at this post			-Open door -Close door -Show last user	Alarm icon displayed and flashes	Window label displayed. Alarm icon displayed, cycling between 1,2 and 3 bars on icon, and flashes	Audible alarm.
2 Select alarm in detailed status window	Acknowledge alarm icon flashes			-Open door -Close door -Show last user	As above	Window label displayed. Alarm icon displayed, cycling between 1,2 and 3 bars on icon	
3 Acknowledge alarm	Acknowledge alarm icon is selected			-Open door -Close door -Show last user	Alarm icon displayed, stops flashing	Window label displayed. Acknowledged alarm icon displayed.	Audible alarm turned off
4 Completed				-Open door -Close door -Show last user	As above	Pops out after 10 seconds.	.

7.1.11 Door alarm [CBI apt Unit] – also applies to any exit door that is opened when in “locked” state

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1 Alarm Generated	No system icon, as DCS is the only system available at this post		-	-Open door -Close door	Alarm icon displayed, and flashes	Door label displayed. Alarm icon displayed, cycling between 1,2 and 3 bars on icon, and flashes	Audible alarm.
2 Select alarm in detailed status window	Acknowledge alarm icon flashes			-Open door -Close door	As above	Door label displayed, alarm icon displayed, cycling between 1,2 and 3 bars on icon, stops flashing	
3 Acknowledge alarm	Acknowledge alarm icon is selected			-Open door -Close door	Acknowledged alarm icon displayed, stops flashing	Door label displayed, acknowledged alarm icon displayed.	Audible alarm turned off
4 Completed				-Open door -Close door		Pops out after 10 seconds.	

7.1.12 Cell Door Alarm – Swing door – fault Alarm

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Alarm Generated	No system icon, as DCS is the only system available at this post			-Lock -Unlock -Inmate enable -Lockout -Remove lockout	Alarm icon displayed, and flashes	Door label displayed with name of inmate, picture of inmate and alarm icon displayed, cycling amongst 1,2 and 3 bars on icon, and flashes Information about alarm displayed.	Audible alarm.
2	Select alarm in detailed status window	Acknowledge alarm icon flashes			-Lock -Unlock -Inmate enable -Lockout -Remove lockout	As above	Door label displayed with name of inmate, picture of inmate and alarm icon displayed, cycling amongst 1,2 and 3 bars on icon, Stops flashing Information about alarm displayed.	
3	Acknowledge alarm	Acknowledge alarm icon is selected			-Lock -Unlock -Inmate enable -Lockout -Remove lockout	Acknowledged alarm icon displayed, stops flashing	Door label displayed with name of inmate, picture of inmate and acknowledged alarm icon displayed. Information about alarm displayed.	Audible alarm turned off
4	Alarm is a fault alarm					Map icon changes to magenta	Door label displayed, door with fault icon displayed. Information about alarm displayed.	
5	Completed				-Lock -Unlock -Inmate enable -Lockout -Remove lockout		Pops out after 10 seconds.	
6	Door taken out of service by maintenance				-Lock -Unlock -Inmate enable -Lockout -Remove lockout	Map icon changes to out-of-service maintenance	When the door object is selected, door label displayed, door with fault icon displayed. In this case, inmate would be moved, so name and picture no longer displayed	Maintenance state would be deared by maintenance.

							with this cell.	
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7.1.13 Unlock Cell Door – Swing Door

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose secure door	No system icon, as DCS is the only system available at this post		-Unlock door -Inmate enable -Lockout -Remove lockout	-Lock door	Icon indicating door flashes blue alternately with its current state	Door label displayed with name and picture of inmate and with icon of current door status (secure)	
2	Select Unlock		Unlock door	-Lock door -Inmate enable -Lockout -Remove lockout		Icon indicating door turns	Door label displayed with name and picture of inmate and with icon of current door status (unsecure)	
3	Command completed			-Close door	-Close door -Stop door	Icon indicating door turns red	Door label displayed with name and picture of inmate and with icon of current door status (unsecure) Pops out after 10 seconds.	

7.1.14 Cell Swing Door – inmate enable and inmate opens door

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose door – in this case secure	No system icon, as DCS is the only system available at this post		-Unlock door -Inmate enable -Lockout	-Lock door -Remove lockout	Icon indicating door flashes blue alternately with its current state	Door label displayed with name and picture of inmate and with icon of current door status (secure)	Note: cell can be secure or unsecure when the command implemented
2	Select Inmate enable		Inmate enable	-Unlock door -Lock door -Lockout	-Remove lockout	Icon indicating door turns to yellow with inmate enable indicator	Door label displayed with name and picture of inmate and with icon of current door status (inmate enabled)	
3	Command completed			-Unlock door -Lock door -Lockout	-Inmate enable -Remove lockout	Icon indicating door stays yellow with inmate enable indicator	Door label displayed with name and picture of inmate and with icon of current door status (inmate enabled) Pops out after 10 seconds.	
4	Inmate releases door			-	-	Icon indicating door changes to red with inmate enable indicator		
5	Choose door inmate just released			-Lock door -Lockout	-Unlock door -Inmate enable -Remove lockout	Icon indicating door is red with inmate enable indicator	Door label displayed with name and picture of inmate and with icon of current door status (unsecure, inmate enabled) Pops out after 10 seconds.	

7.1.15 Swing door - remove inmate enable

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose door – that is inmate enabled	No system icon, as DCS is the only system available at this post		-Unlock door -Inmate enable -Lockout	-Lock door -Remove lockout	Icon indicating door flashes blue alternately with its current state – yellow with inmate enabled indicator	Door label displayed with name and picture of inmate and with icon of current door status (inmate enabled)	Note: cell must be closed.
2	Select Lock		Lock	-Unlock door -Lock door -Lockout	-Inmate enable -Remove lockout	Icon indicating door changes to secure.	Door label displayed with name and picture of inmate and with icon of current door status (secure)	
3	Command completed			-Unlock door -Inmate enable -Lockout	-Inmate enable - Remove lockout	Icon indicating door is green	Door label displayed with name and picture of inmate and with icon of current door status (secure) Pops out after 10 seconds.	.

7.1.16 Select a group of swing doors – open [Same thing applies to inmate enable]

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Choose a secure door	No system icon, as DCS is the only system available at this post		-Unlock door -Inmate enable -Lockout	-Lock door -Remove lockout	Icon indicating door flashes blue alternately with its current state, green for secure	Door label displayed with icon of current door status (door secure), and with name and picture of inmate	
2	Choose another secure door			-Unlock door -Inmate enable	-Lock door -Lockout -Remove lockout	Icon indicating door flashes with its current state, green for secure; other chosen objects still flashing with their current state	Door label of both doors displayed. Current door status, and name and picture of inmate no longer displayed.	When a second door is chosen, lockout is no longer available, as it can only be applied on a cell by cell basis, and not to a group of cells.
3	Choose an unsecure door			-Unlock door -Lock door -Inmate enable	-Lockout -Remove lockout	Icon indicating door flashes with its current state, red for unsecure; other chosen objects still flashing with their current state	Door label of all doors displayed.	
4	Select Unlock		Unlock door	-Lock door -Inmate enable	-Lockout Remove lockout	Icon indicating door turns red (if not red already) for unsecure	Door label of two doors that are open displayed with information that doors were unlocked. Door label of door that was already unlocked displayed with information that command did not apply	
5	Command completed			-Lock door -Inmate enable	-Unlock door -Lockout Remove lockout	The icons of the three doors that were chosen are all red for unsecure	Door label of two doors that are open displayed with information that doors were unlocked. Door label of door that was already unlocked displayed with information that command did not apply Pops out after 10 seconds.	

7.1.17 Special Commands Lockdown

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1	Select Special Commands	Special Commands Icons is Selected			-Unlock door -Lockout -Remove lockout	Three choices presented – Evacuation, Lockdown and Shutdown	
2	Select Lockdown	Special Commands Icons is Selected			-Unlock door -Lockout -Remove lockout	Lockdown icon remains on the map view All selected doors flash with current state	Door labels of all doors locked down are listed. Doors to be locked down at a control post are defined in configuration files
8	Confirm command	Special Commands Icons is Selected Confirm button flashes			-Unlock door -Lockout -Remove lockout		
9	Select Confirm	Special Commands Icons is Selected Confirm shows selected		-	-Unlock door -Lockout -Remove lockout	As command sent to door and completed, the status changes to locked down	Door labels of all doors chosen listed with the status of locked down. All doors selected have an unlock command sent to them. This may be in groups of cells. Full cycle exit doors are continuously cycled. Alarm sent to MCCP.
10	Command completed				-Unlock door -Lockout -Remove lockout	Door labels of all doors chosen listed with the status of evacuation. Pops out after 10 seconds.	

7.1.18 Special Commands – evacuations swing door cells that don't have inmate enable

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1	Select Special Commands	Special Commands Icons is Selected			-Unlock door -Lockout -Remove lockout	Three choices presented – Evacuation, Lockdown and Shutdown	
2	Select Evacuation	Special Commands Icons is Selected		-Unlock door	-Lockout -Remove lockout	Evacuation icon remains on the map view Map may change to a special evacuation map	If there is a special evacuation map, this is displayed.
3	Choose a range(s) of cells and/or exit doors	Special Commands Icons is Selected		-Unlock door	-Lockout -Remove lockout	All selected doors flash with current state	Lists all the doors to be unlocked.
4	Select Unlock	Special Commands Icons is Selected	-Unlock door	-	-Lockout -Remove lockout	All selected doors flash with current state	Door labels of all doors chosen listed.
5	Confirm command	Special Commands Icons is Selected Confirm button flashes	-Unlock door	-	-Lockout -Remove lockout	All selected doors flash with current state	Door labels of all doors chosen listed. Alarm sent to MCCP.
6	Select Confirm	Special Commands Icons is Selected Confirm shows selected	-Unlock door	-	-Lockout -Remove lockout	As command sent to door and completed, the status changes to unsecure	Door labels of all doors chosen listed with the status of evacuation. All doors selected have an unlock command sent to them. This may be in groups of cells. Full cycle exit doors are continuously cycled.
7	Command completed	Special Commands Icons is Selected Confirm shows selected			-Unlock door -Lockout -Remove lockout		Door labels of all doors chosen listed with the status of evacuation.
8	Select Cancel	Cancel shows selected			-Unlock door -Lockout -Remove lockout	Map view returns to regular view	Return to the regular map and doors should show current

								status – but not emergency status – and if interlocked doors left open, then alarm generated at MCCP
9	Command completed				-Unlock door -Lockout -Remove lockout	Map view returns to regular view	Pops out after 10 seconds.	

7.1.19 Special commands shutdown

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1	Select Special Commands	Special Commands Icons is Selected			-Unlock door -Lockout -Remove lockout	Three choices presented – Evacuation, Lockdown and Shutdown	
2	Select Shutdown	Special Commands Icons is Selected				Map view removed. Double confirmation of shutdown presented.	
3	Double confirmation					Shutdown confirmed	Control post shut down, screen becomes black. If there is a closed post that shuts down that has an associated open post, the open post is also shut down. (Fenbrook)
4	Command completed	Screen is black.					Must be restarted from MCCP

7.1.20 Selecting a Map

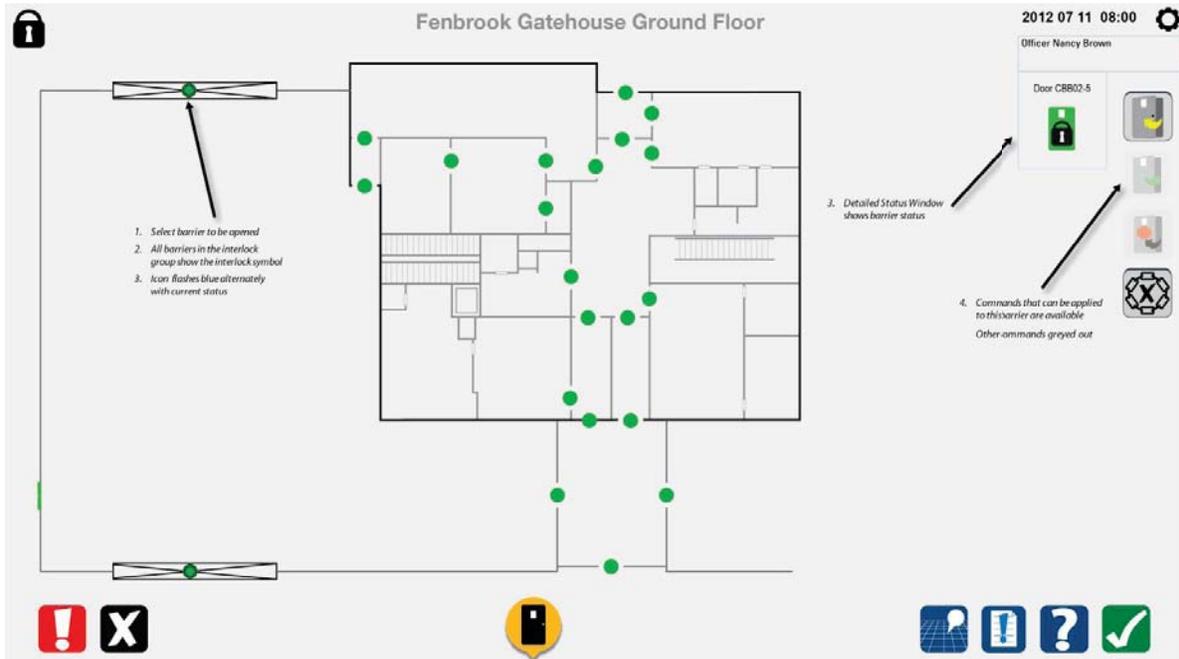
Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select Map Button	Map button	Maps selectable from that control post displayed as thumbnails in command tray			No change.		Configuration data determines the order in which the maps are presented
2	Select map	Map button is selected	Map is selected					
3	Confirm command	Confirm button flashes	Map is selected			Map view now changes to map selected		
4	Select Confirm	Confirm shows selected				Map changes to new map view with all current status displayed		
5	Command completed					New map view with all current status displayed		

8 VISUAL LAYOUTS OF UI FOR DCMS

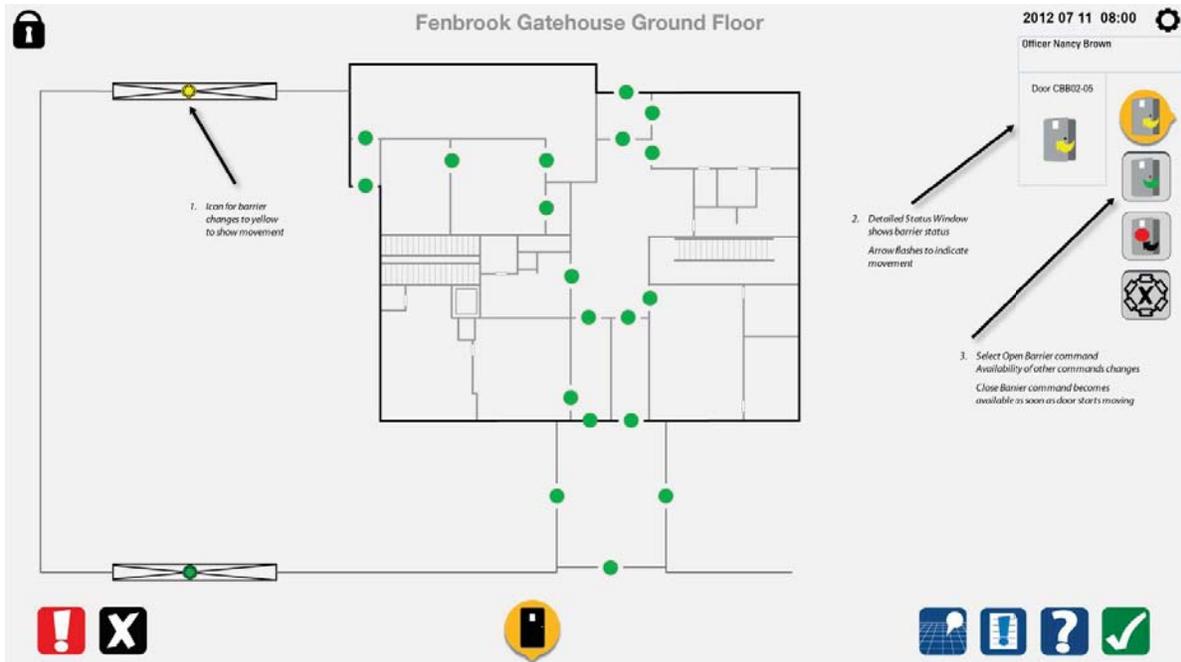
- 1 The following provide some samples of how the operational sequences would be displayed on the UI. NOTE: when an action causes the state to change in different locations simultaneously on the UI, actions that take place at the same time have the same number. Where actions are serial, the numbering of the steps increments. Where several items happen at the same time, the same number is given to those items.

8.1 Entry Control Post

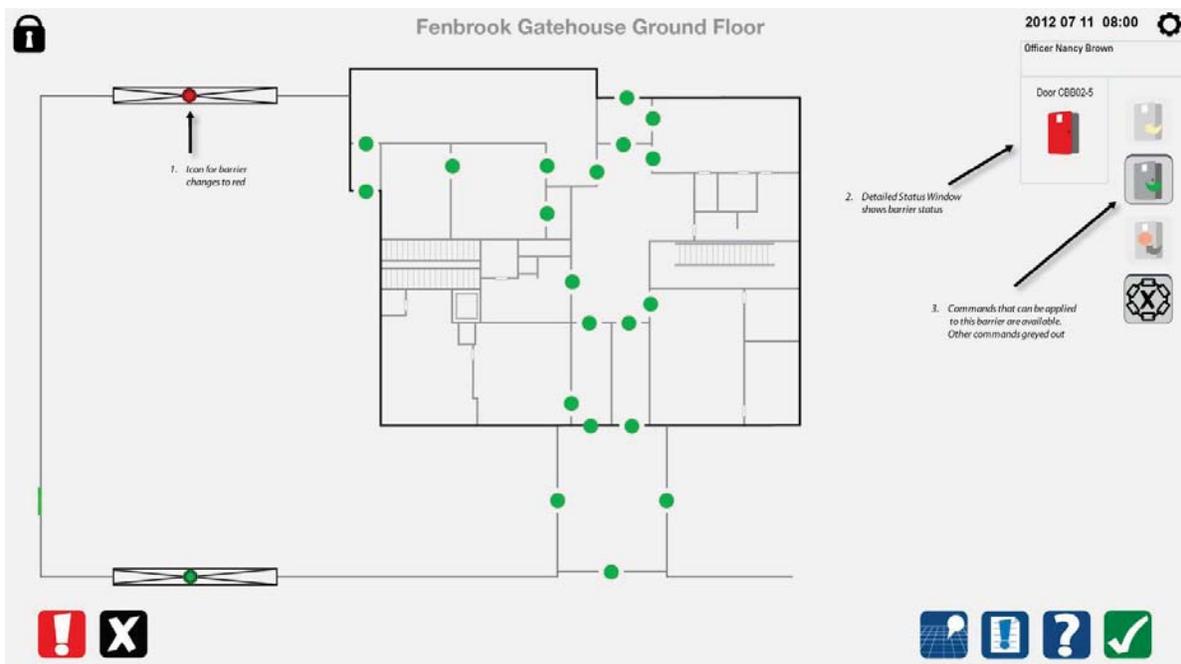
8.1.1 ECP - choose sally port gate to open



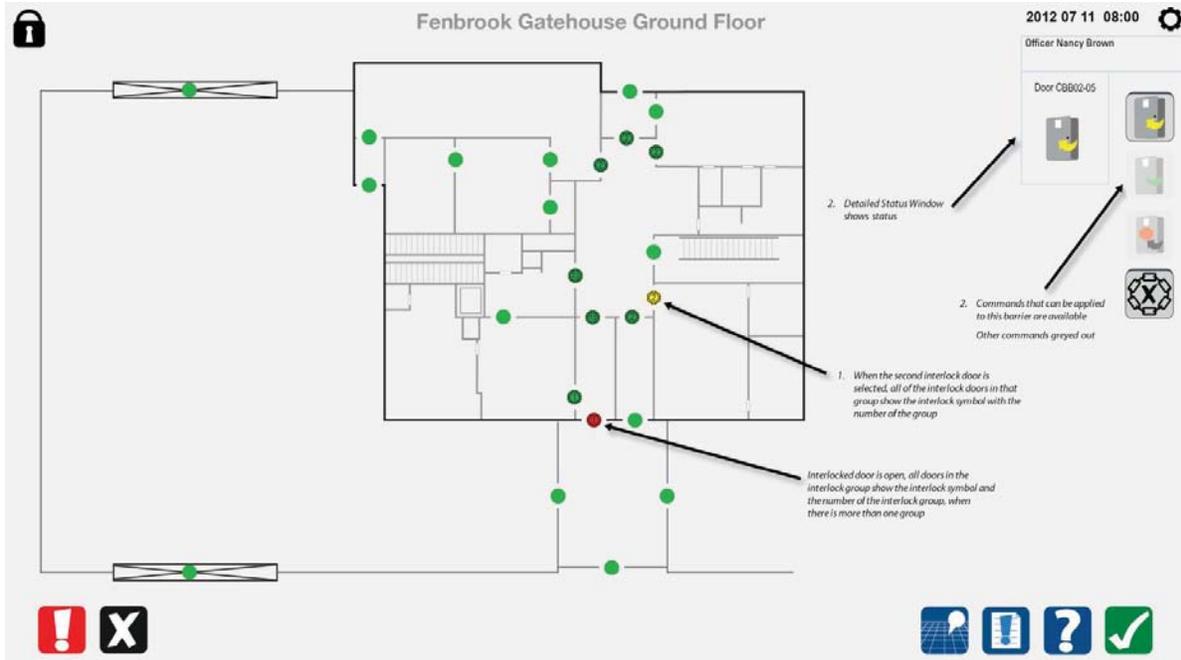
8.1.2 ECP – select command



8.1.3 ECP – command completed

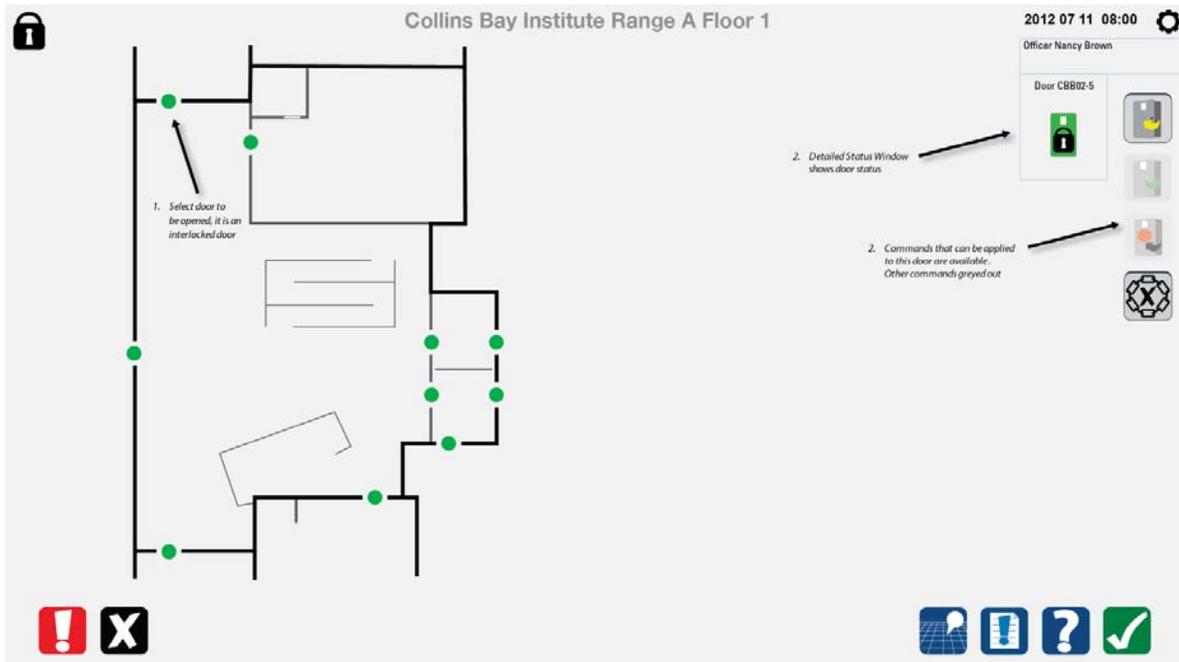


8.1.4 ECP – choose an interlocked door from a different interlock group

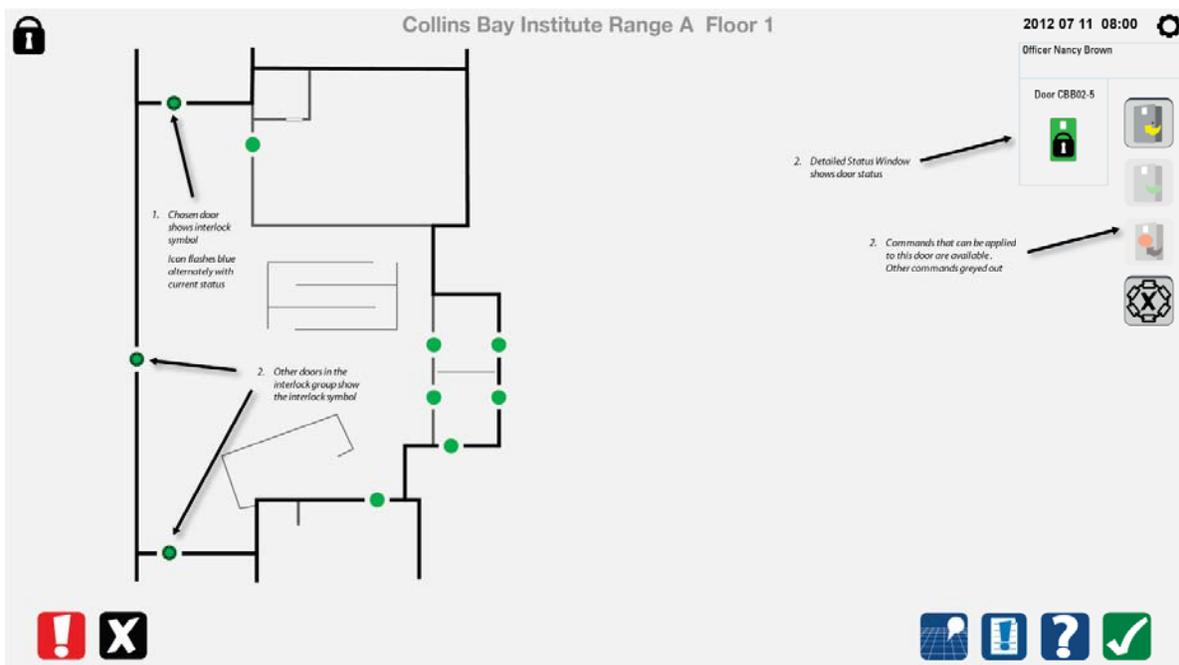


8.2 Movement Control Post

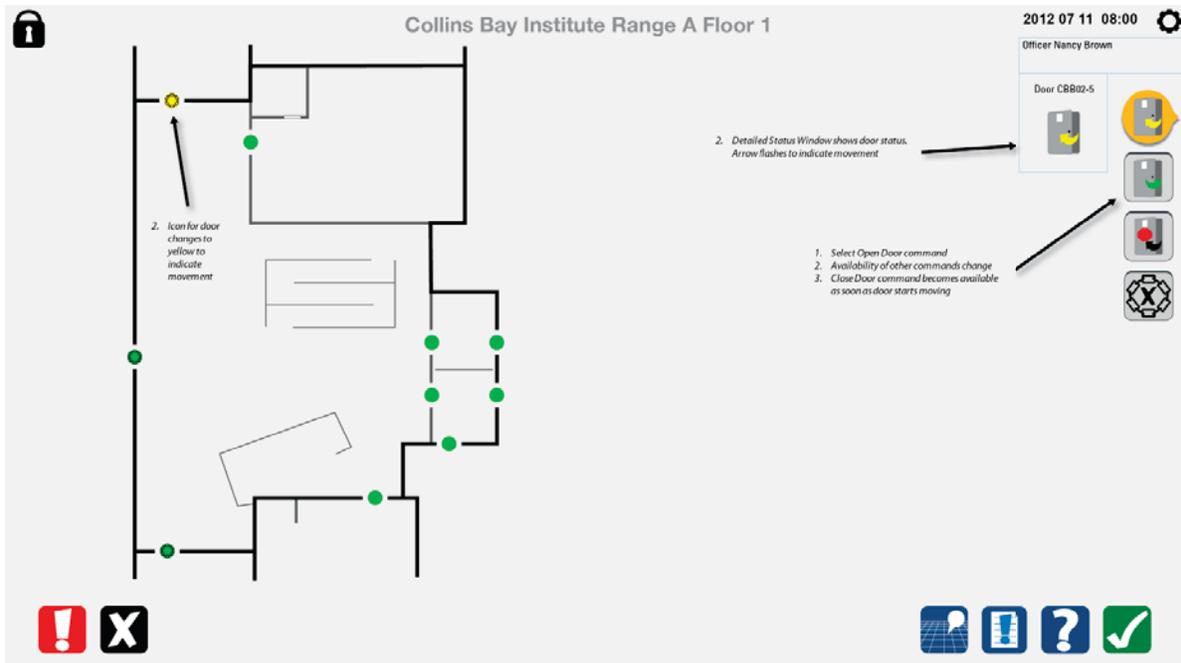
8.2.1 Choose first interlocked door



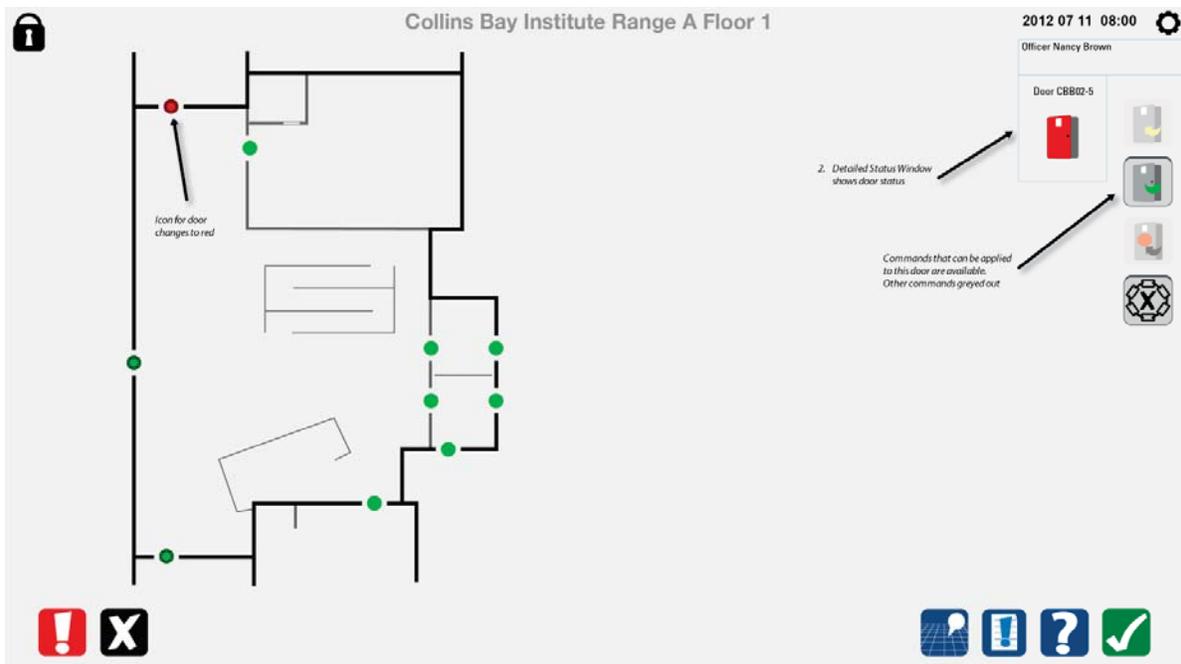
8.2.2 Open first door



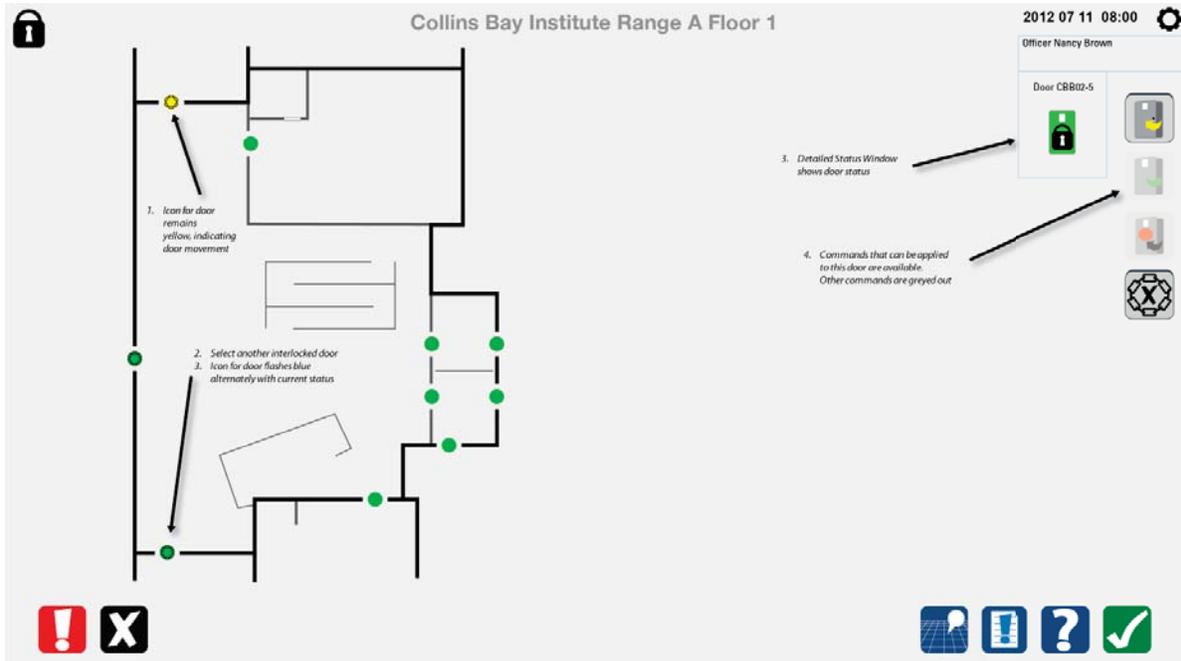
8.2.3 Opening first door



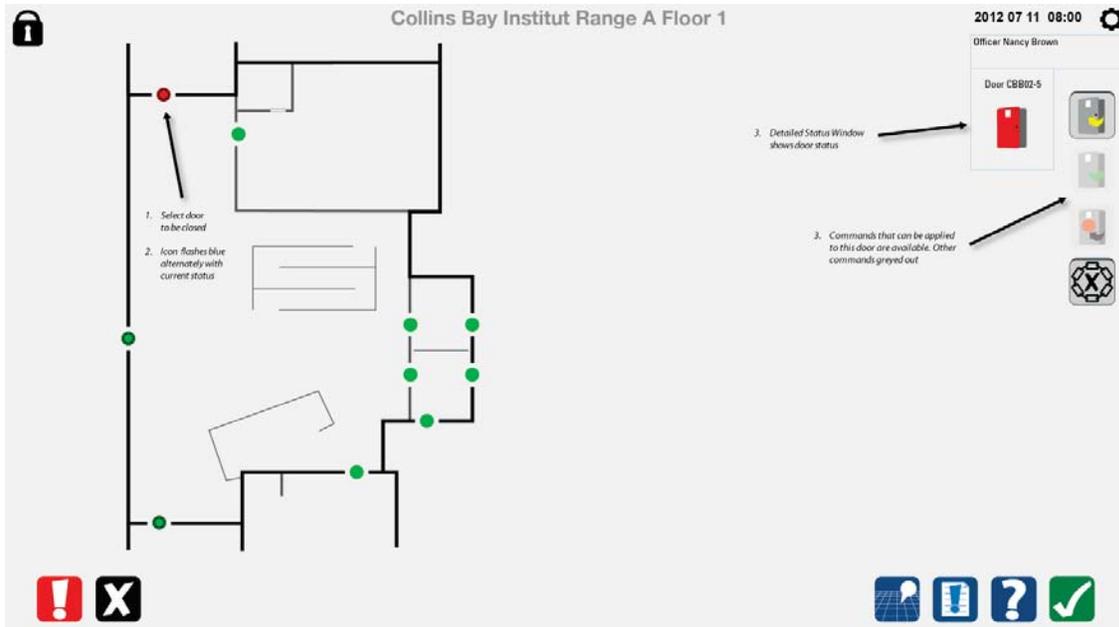
8.2.4 Open first door completed



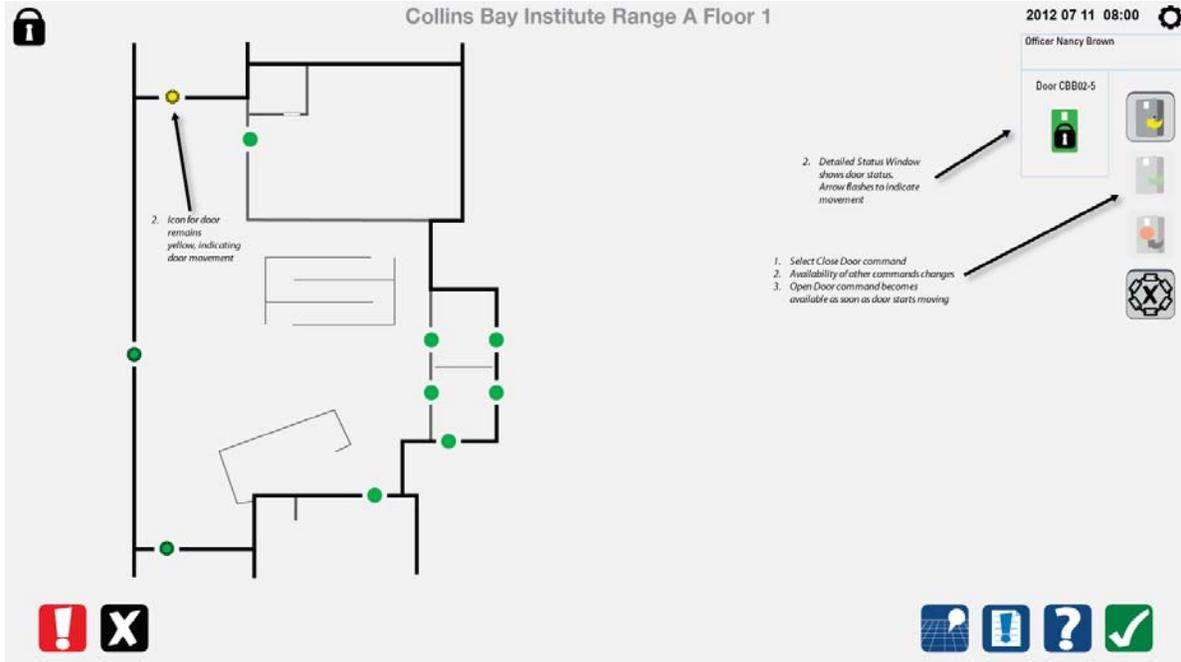
8.2.5 Choose second door



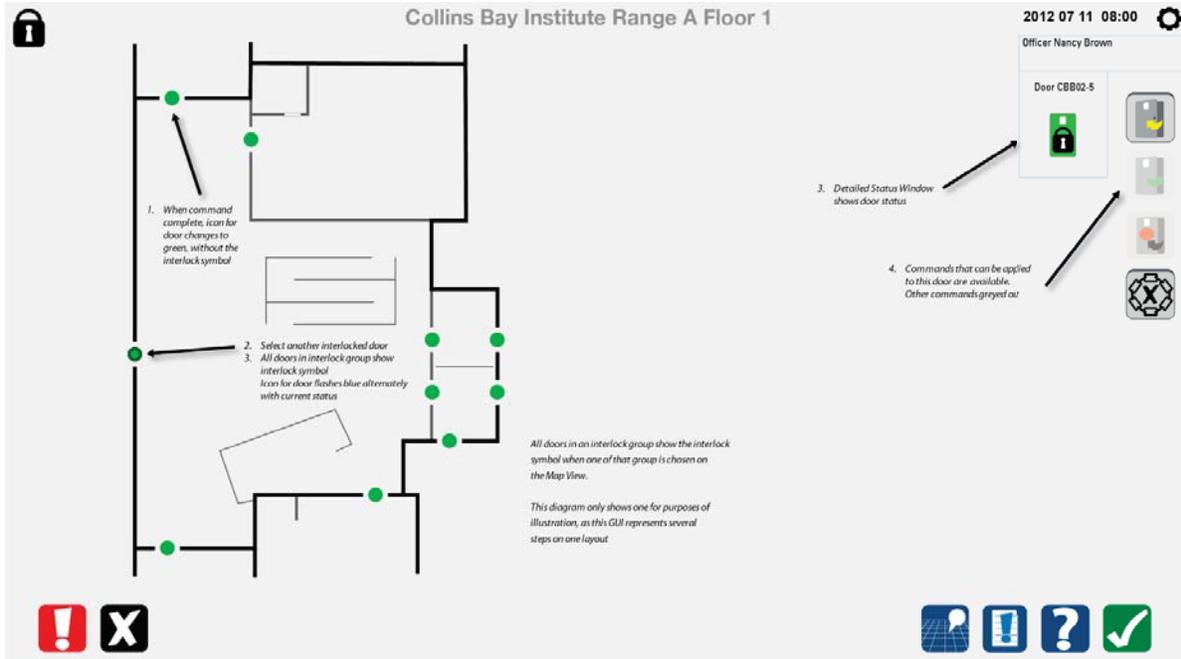
8.2.6 Close first door



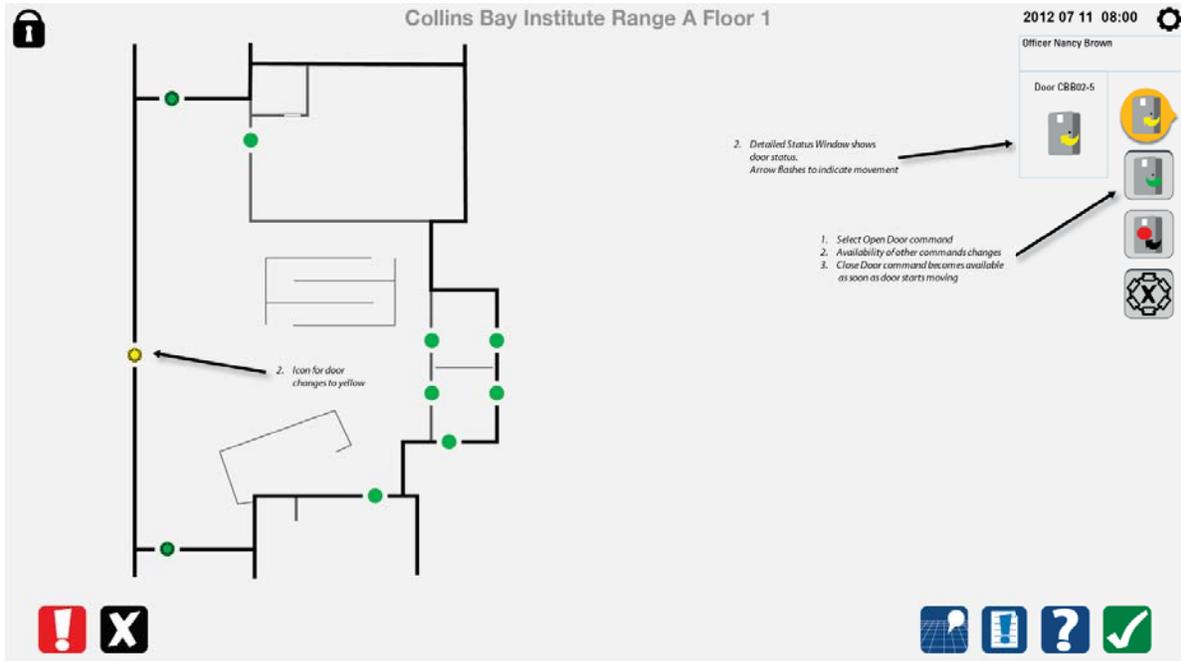
8.2.7 Close first door completed



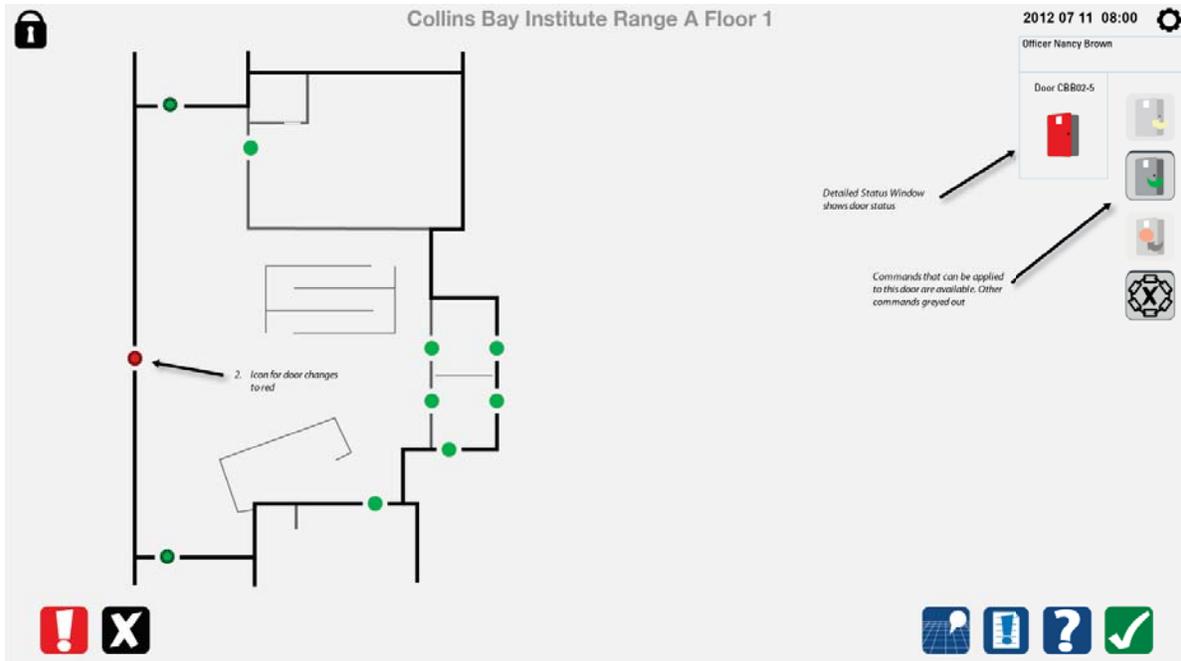
8.2.8 Choose second slider door



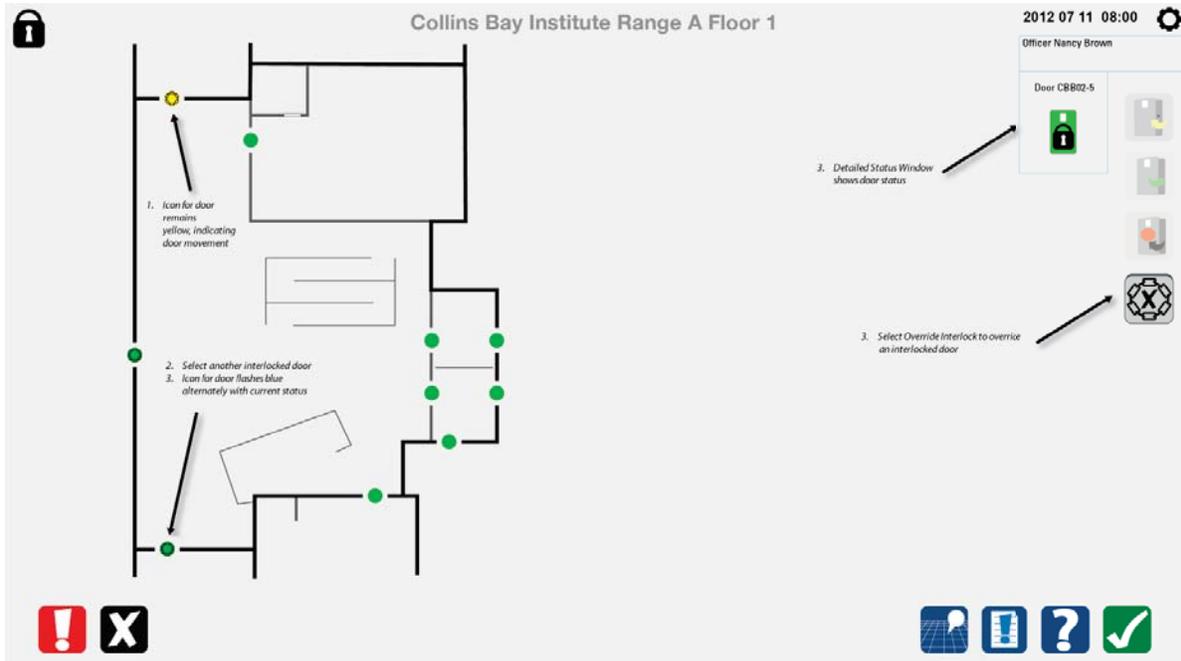
8.2.9 Second slider door opening



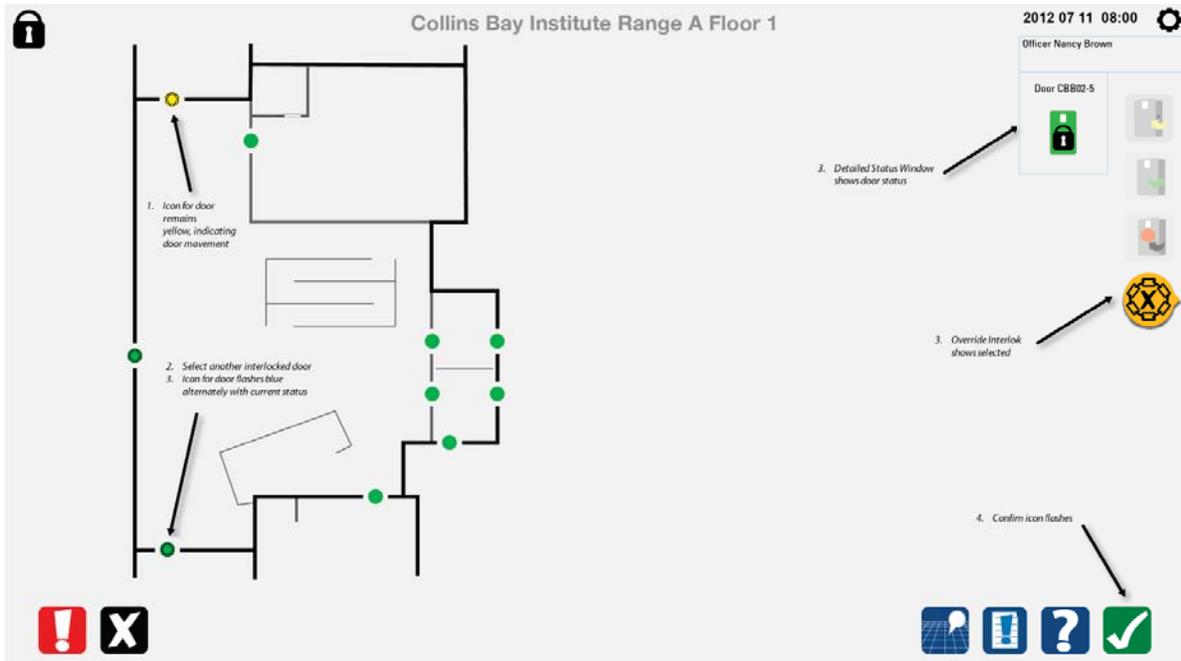
8.2.10 Second slider door open completed



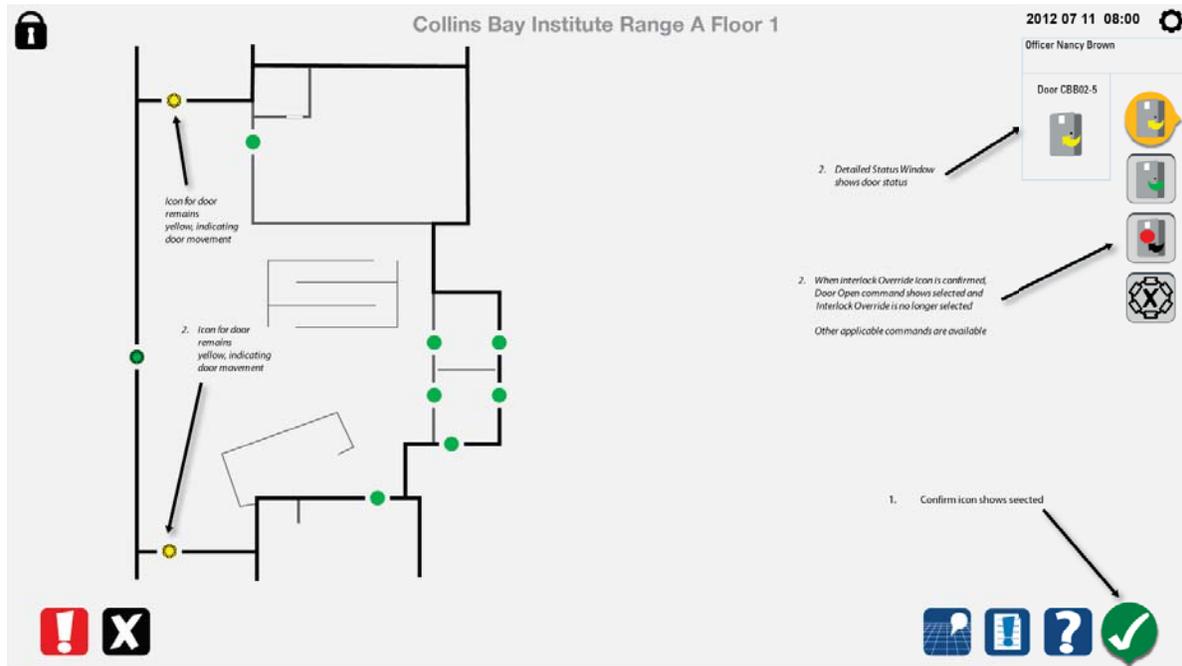
8.2.11 Override interlock select door



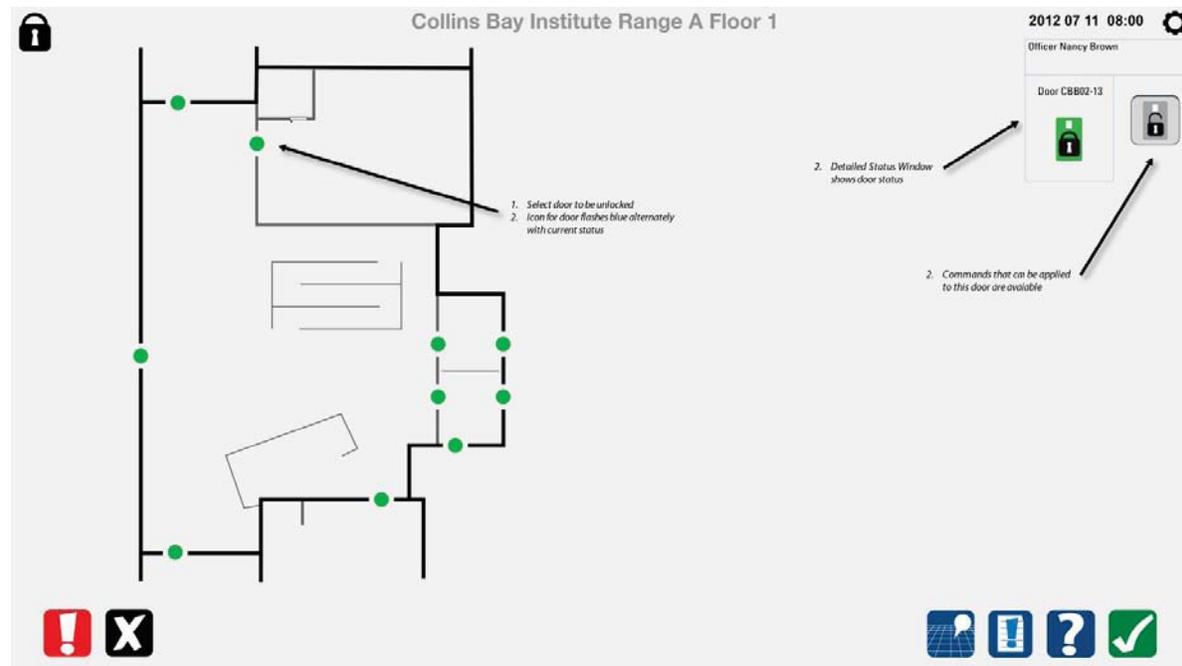
8.2.12 Override interlock door confirmed



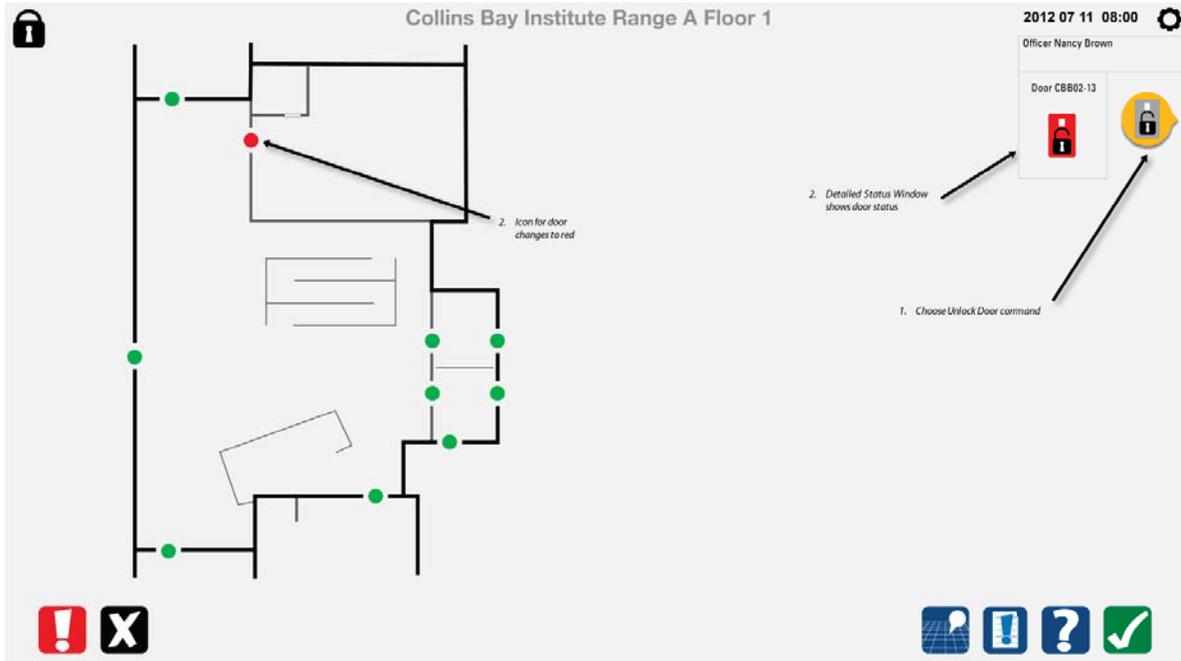
8.2.13 Override interlock door completed



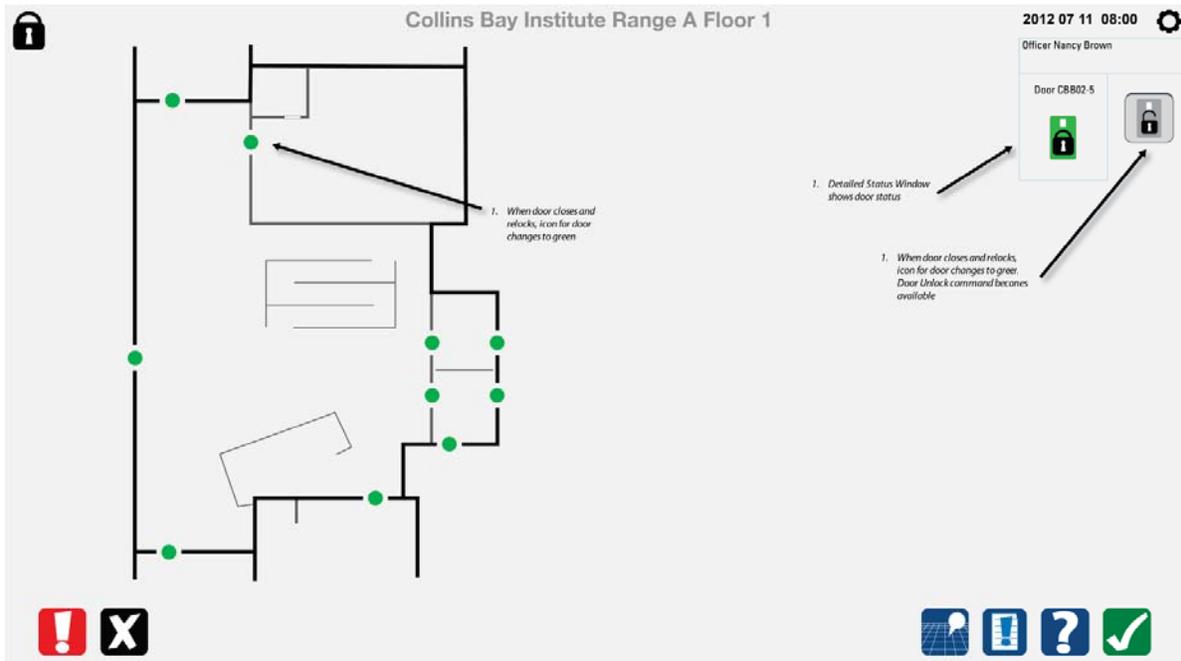
8.2.14 Choose swing door



8.2.15 Unlock swing door

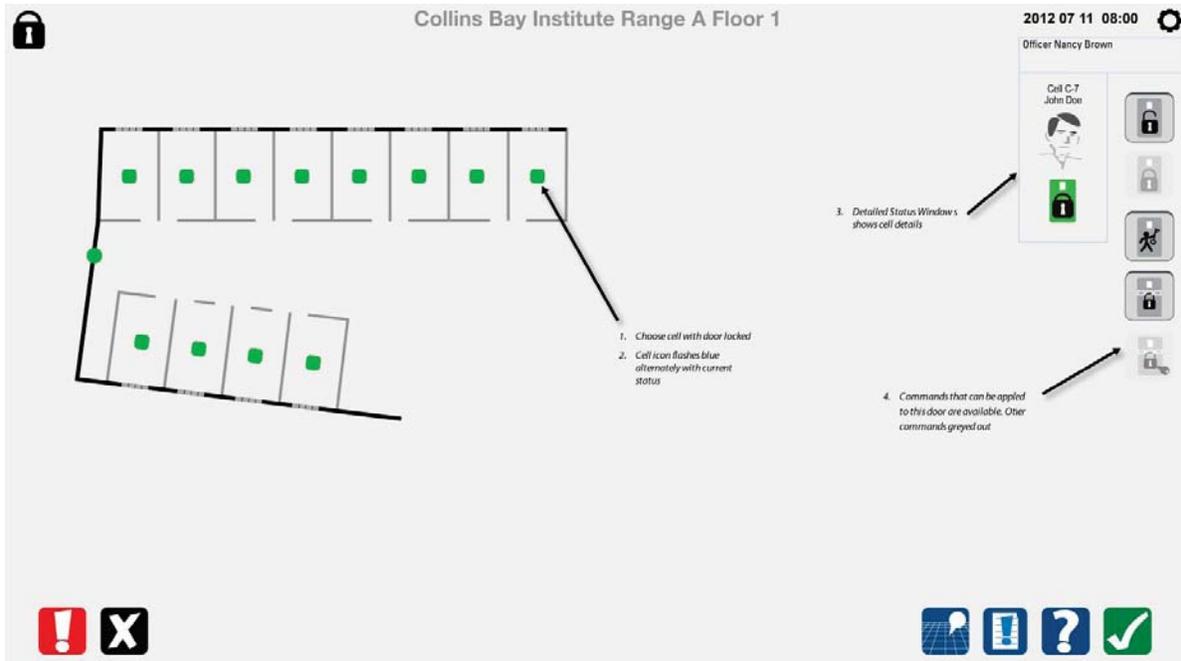


8.2.16 Unlock swing door completed

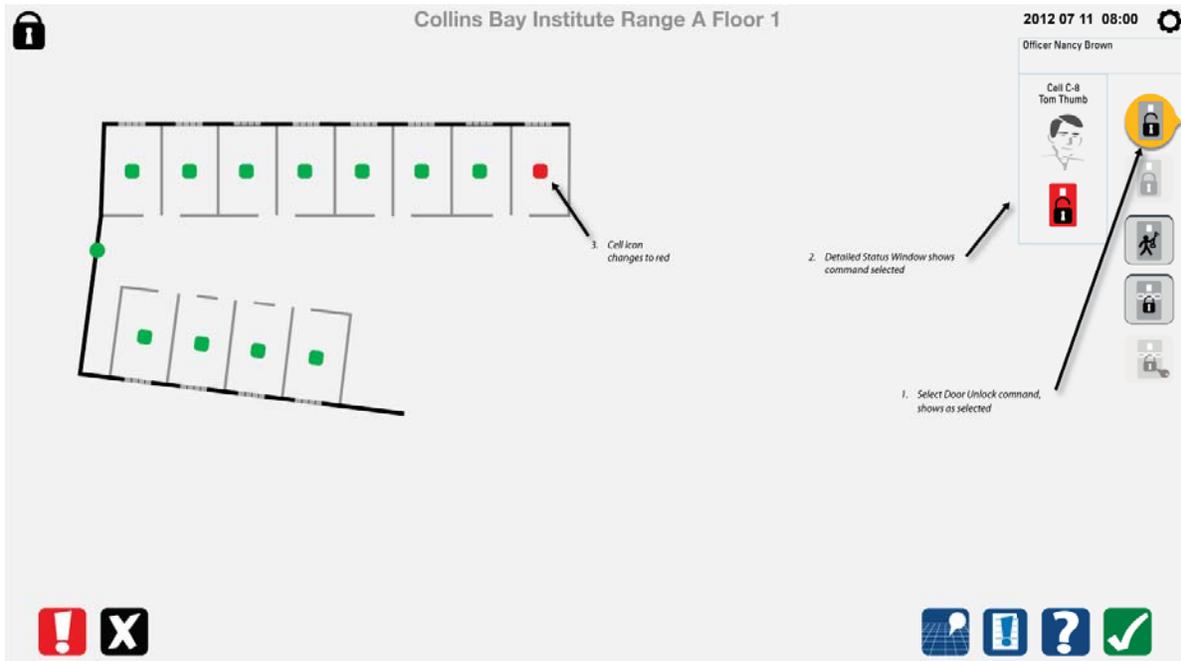


8.3 Swing cell doors with inmate enable

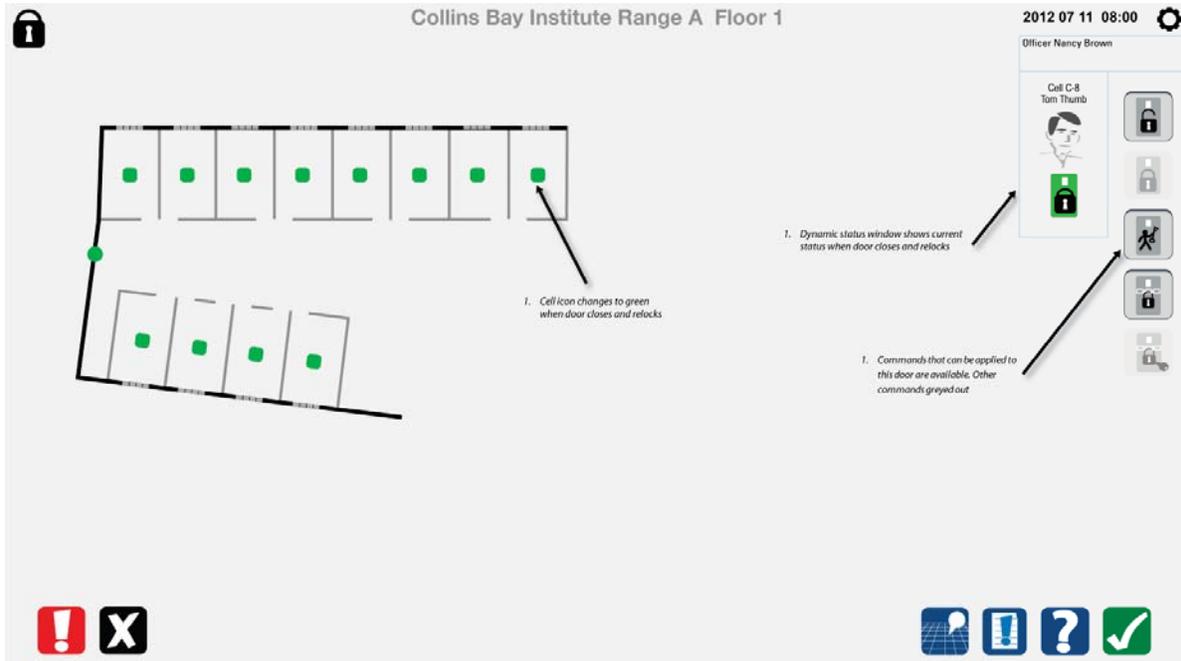
8.3.1 Choose cell swing door to unlock



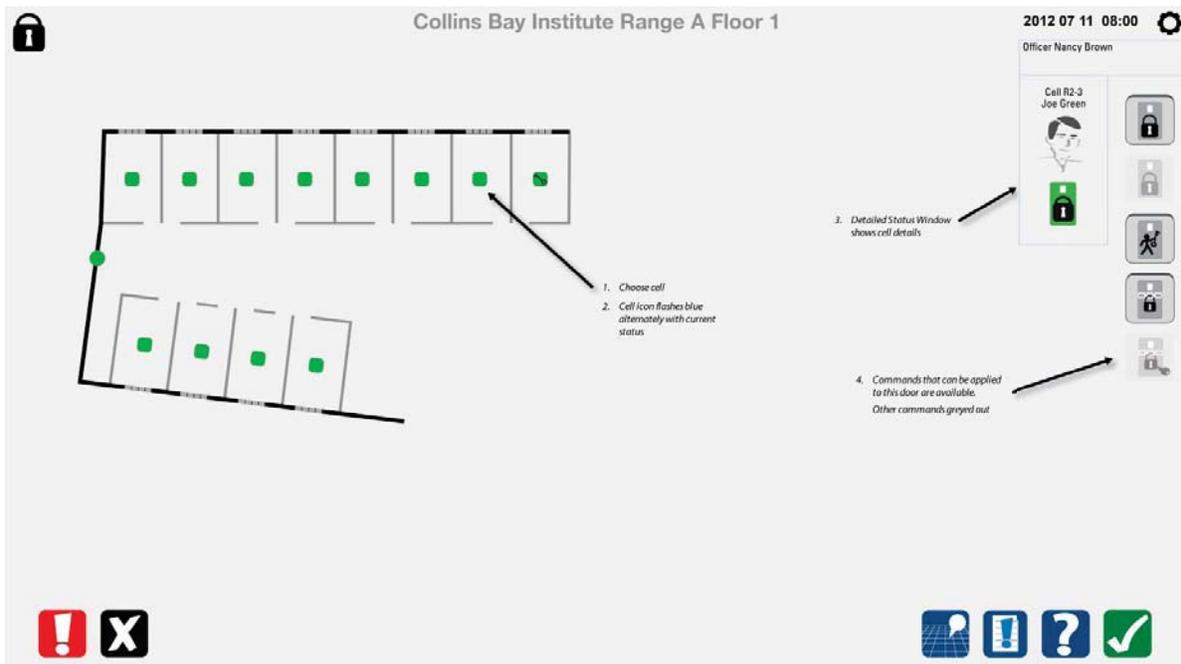
8.3.2 Cell swing door unlock command



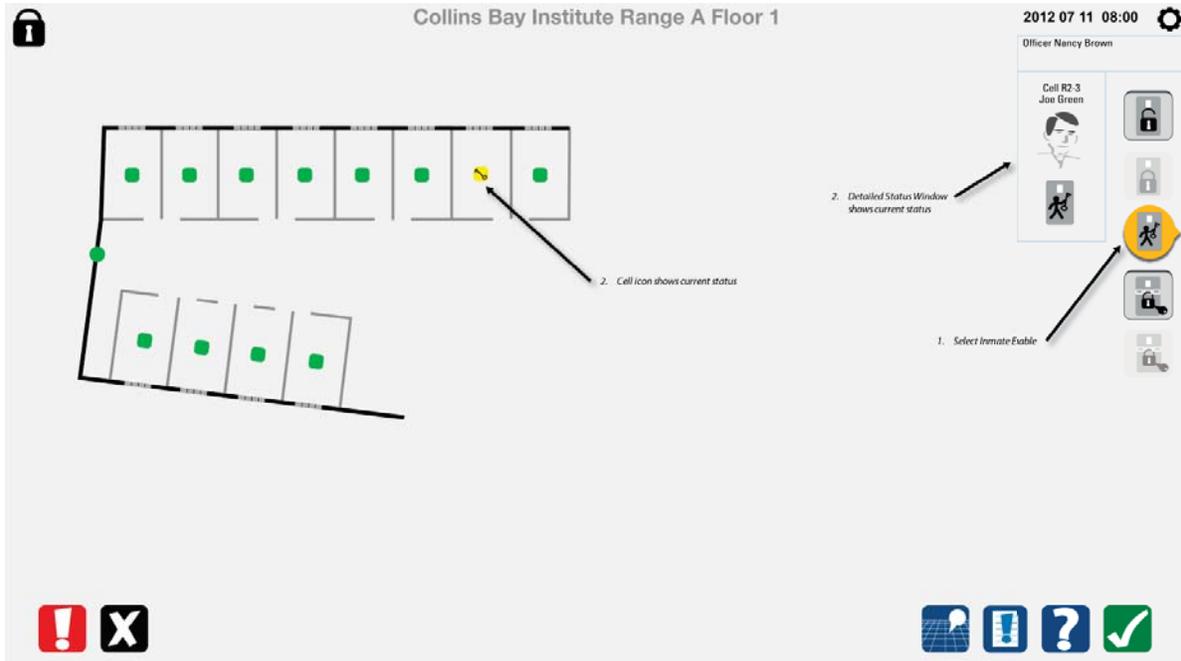
8.3.3 Cell swing door unlock complete



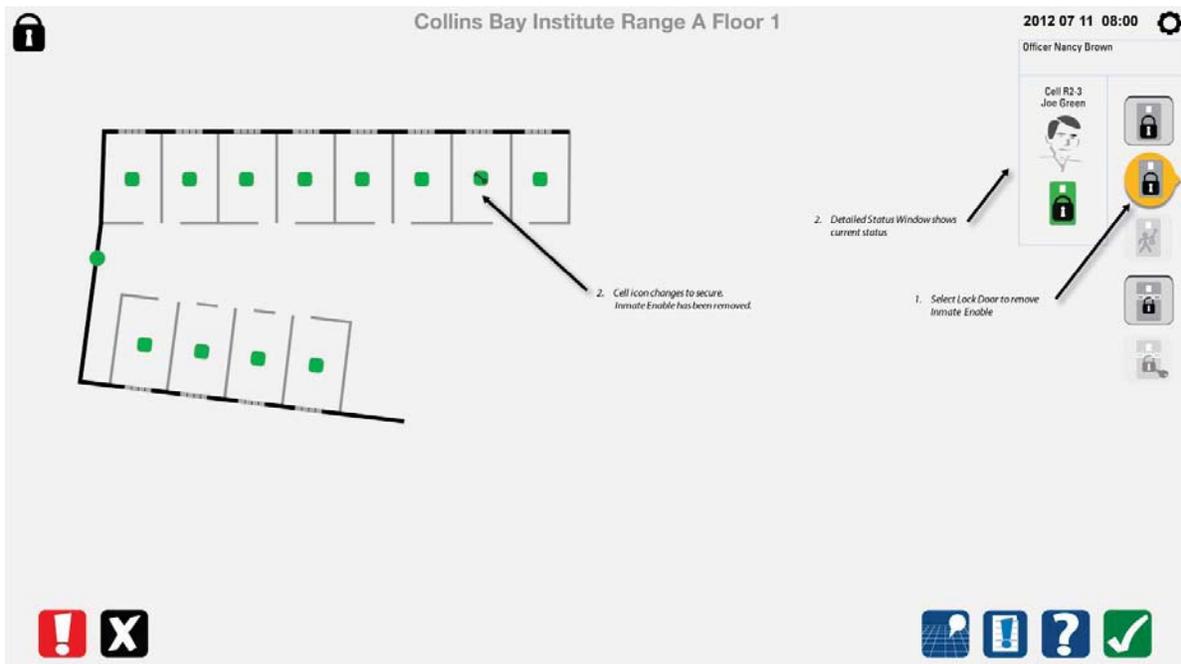
8.3.4 Cell swing door inmate enable – chose door



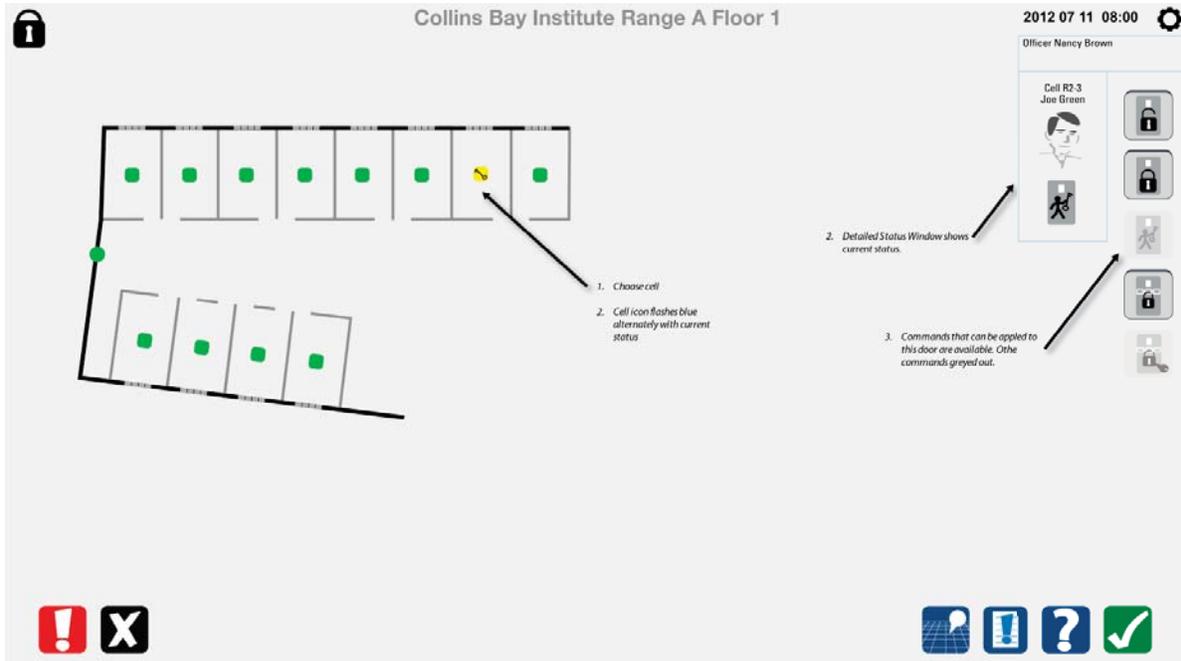
8.3.5 Cell swing door inmate enable – select command



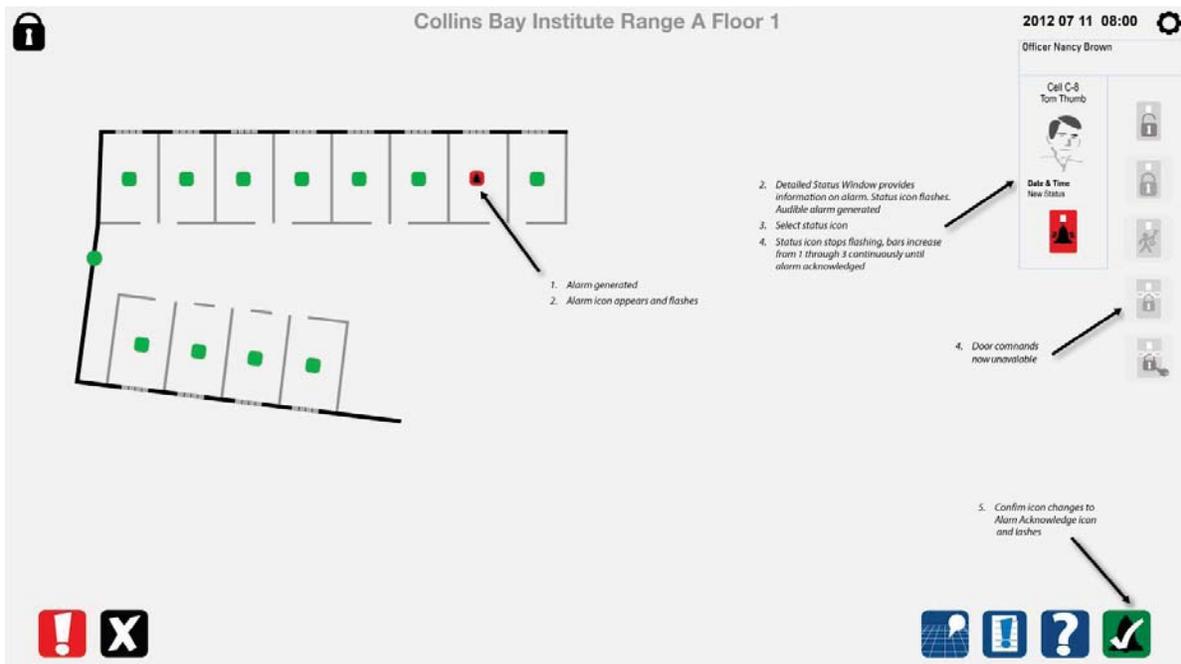
8.3.6 Cell swing door inmate enable – remove inmate enable



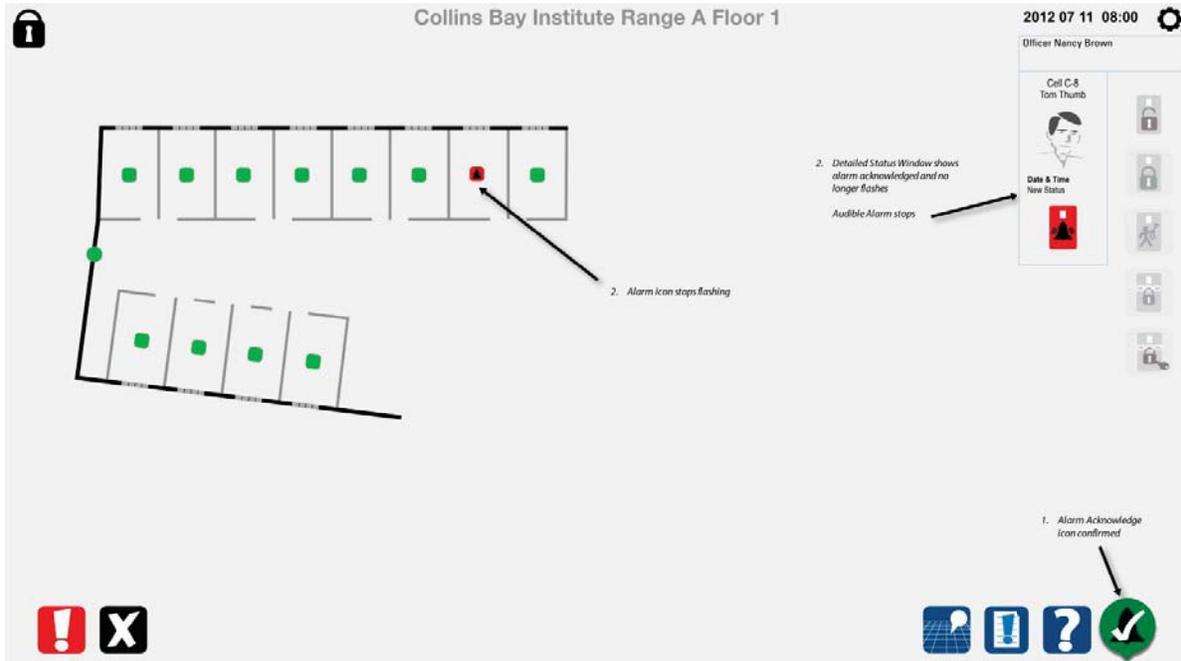
8.3.7 Cell swing door inmate enable – remove inmate enable complete



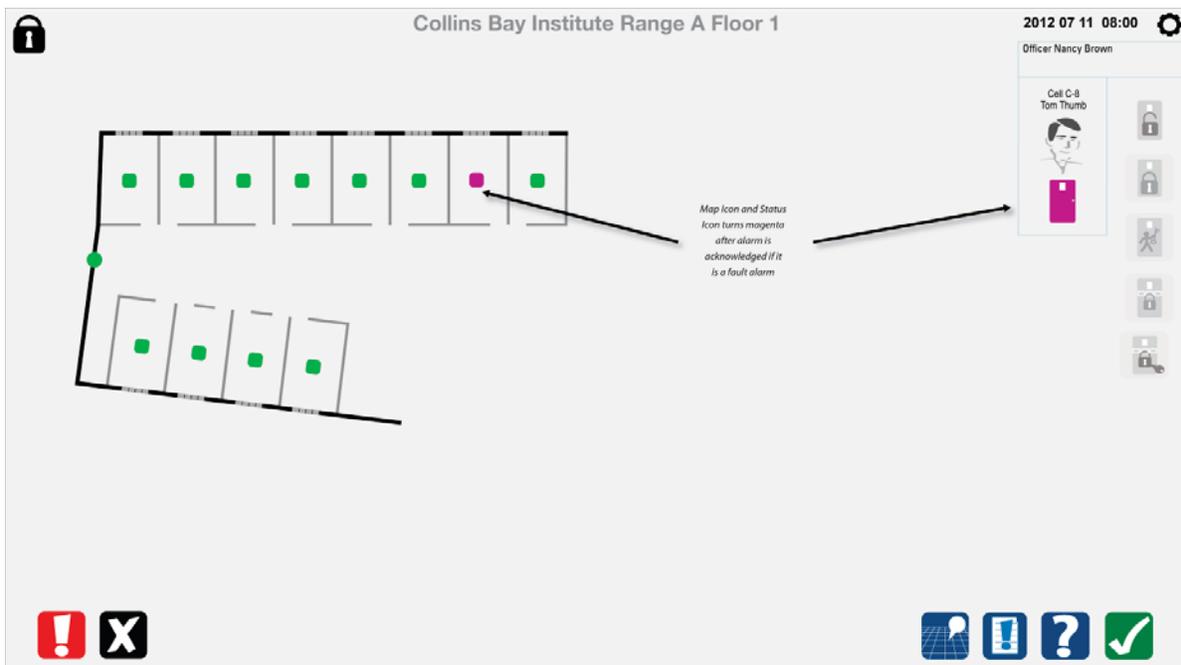
8.3.8 Cell swing door alarm



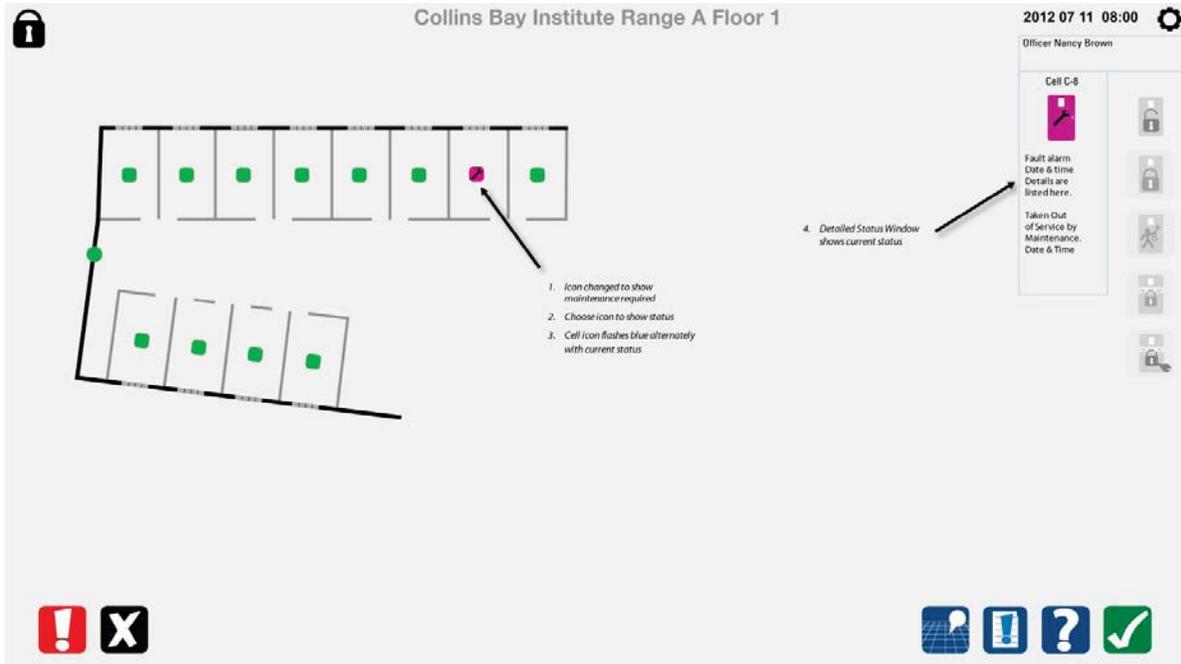
8.3.9 Cell swing door alarm acknowledge in progress



8.3.10 Cell swing door alarm acknowledge complete

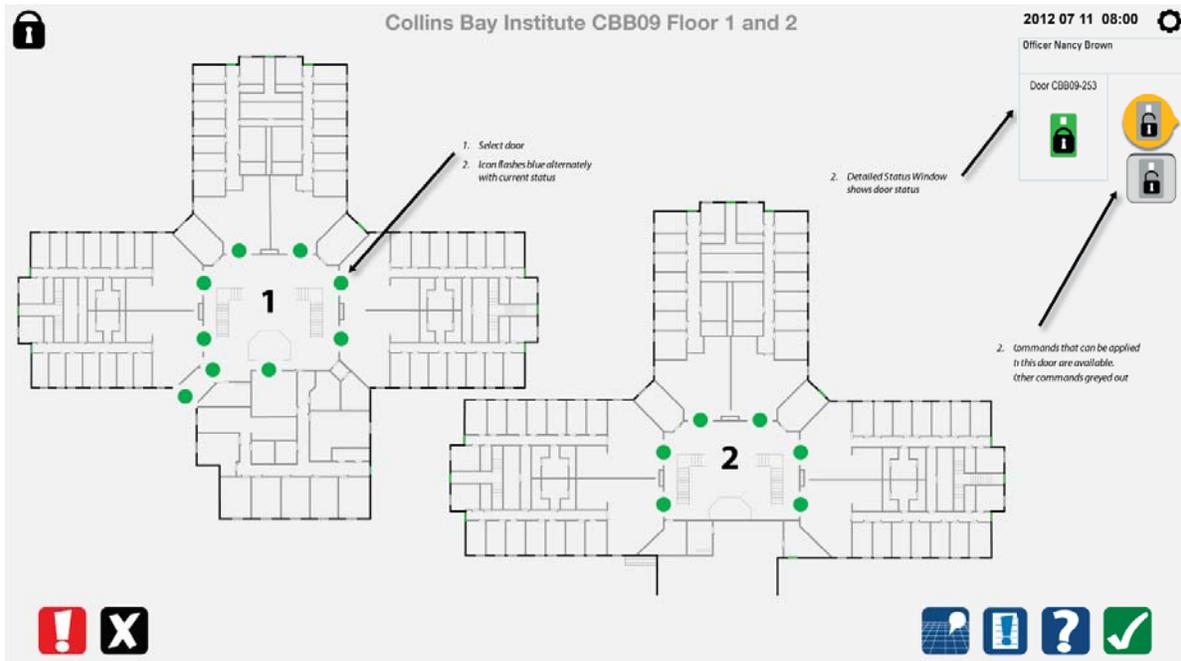


8.3.11 Cell swing door taken out of service by maintenance

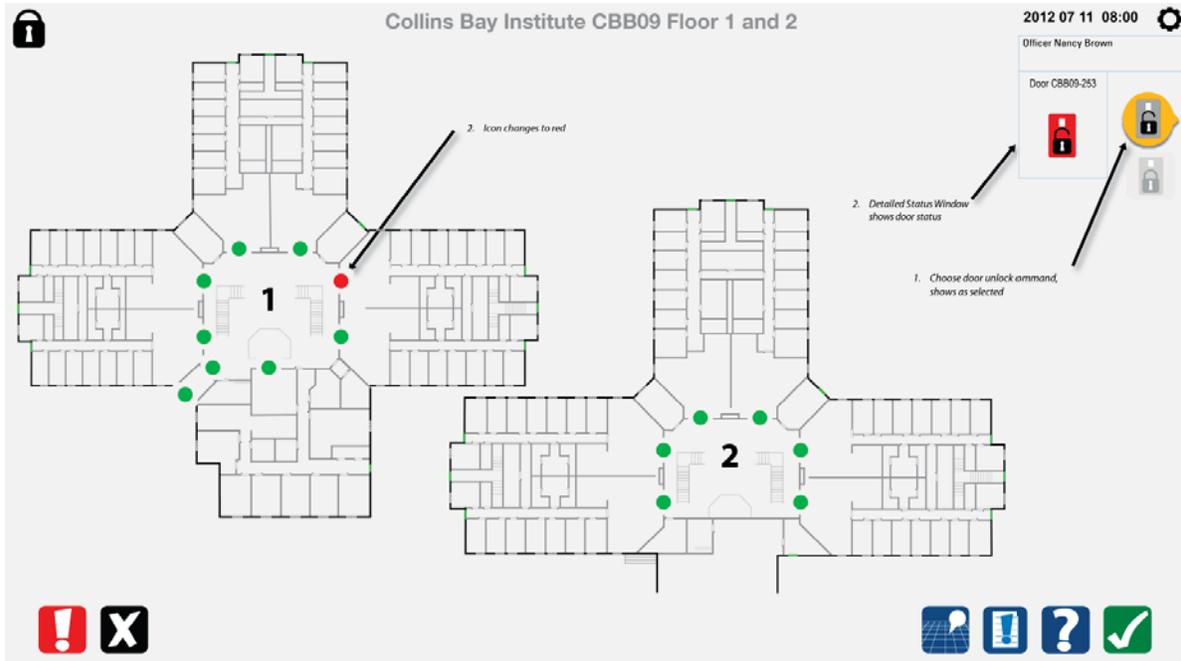


8.4 Cell Doors Responsibility Unit

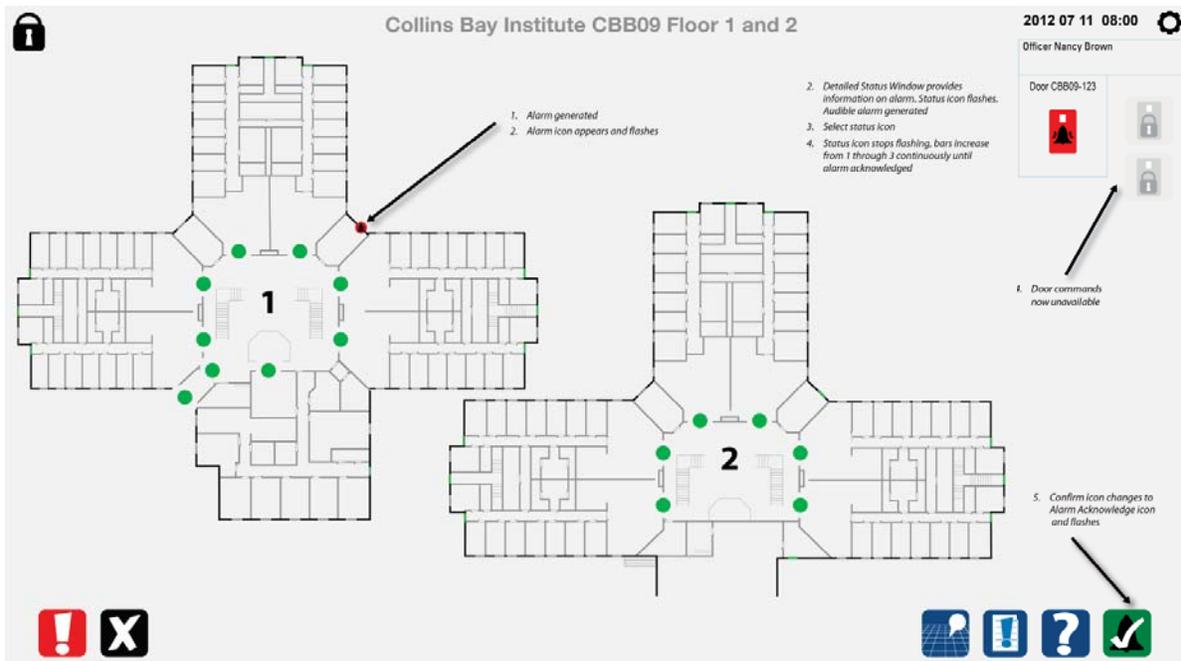
8.4.1 Choose door to unlock



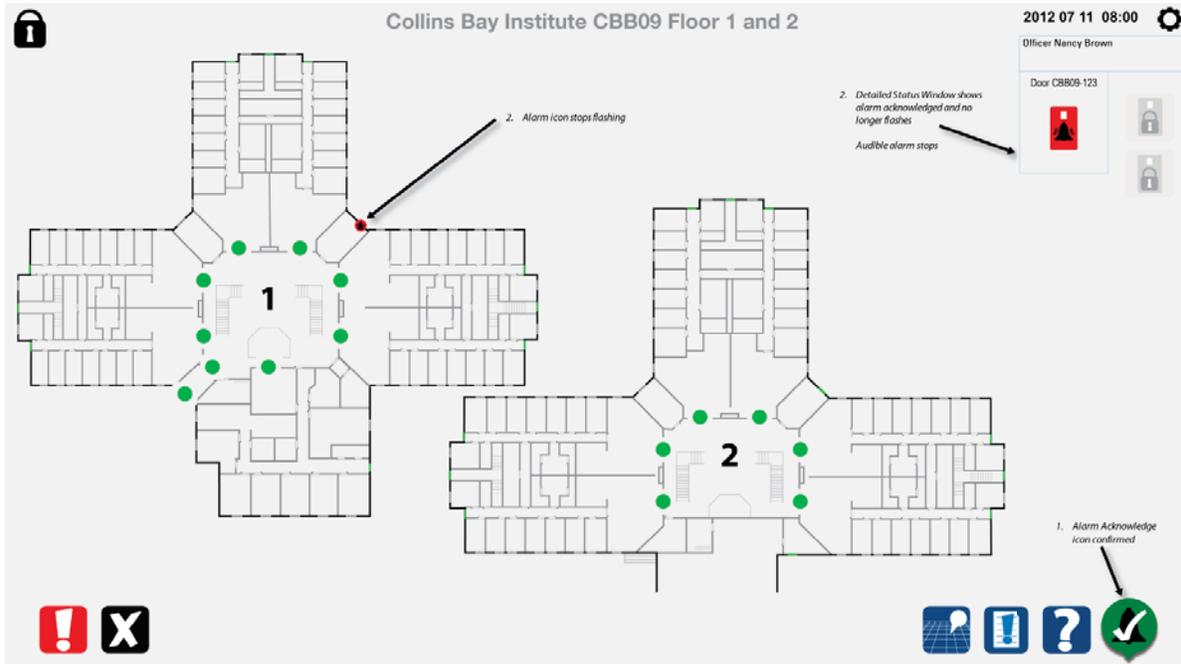
8.4.2 Unlock door command complete



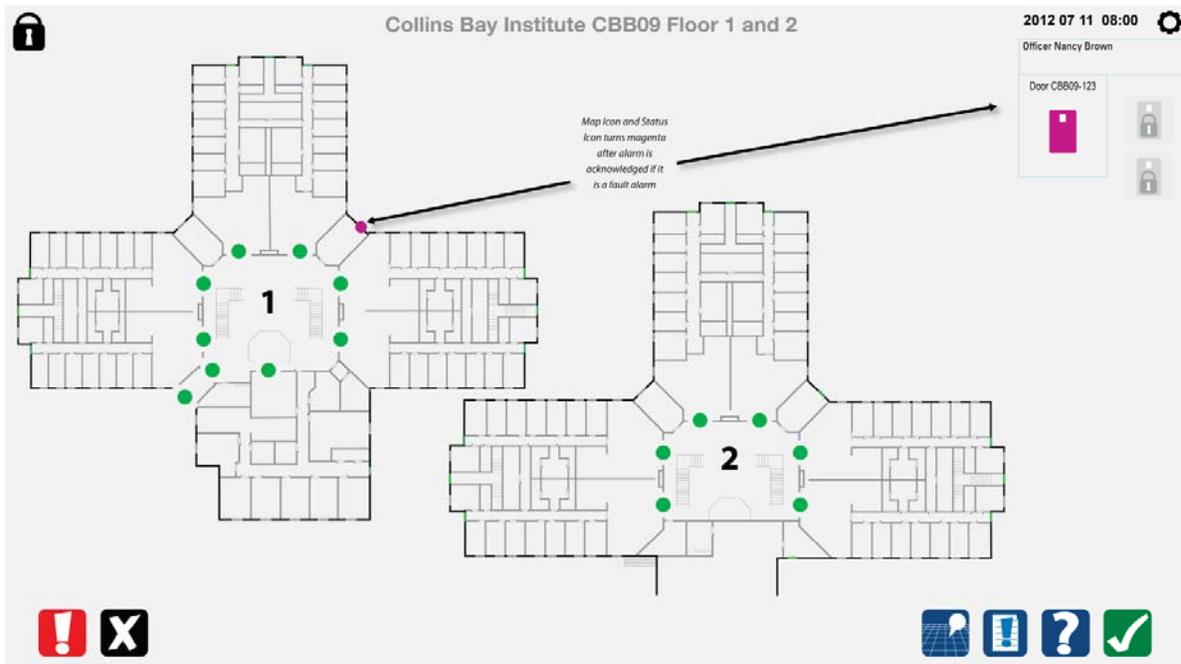
8.4.3 Door alarm – overview map does not change



8.4.4 Door alarm acknowledged using detailed status window

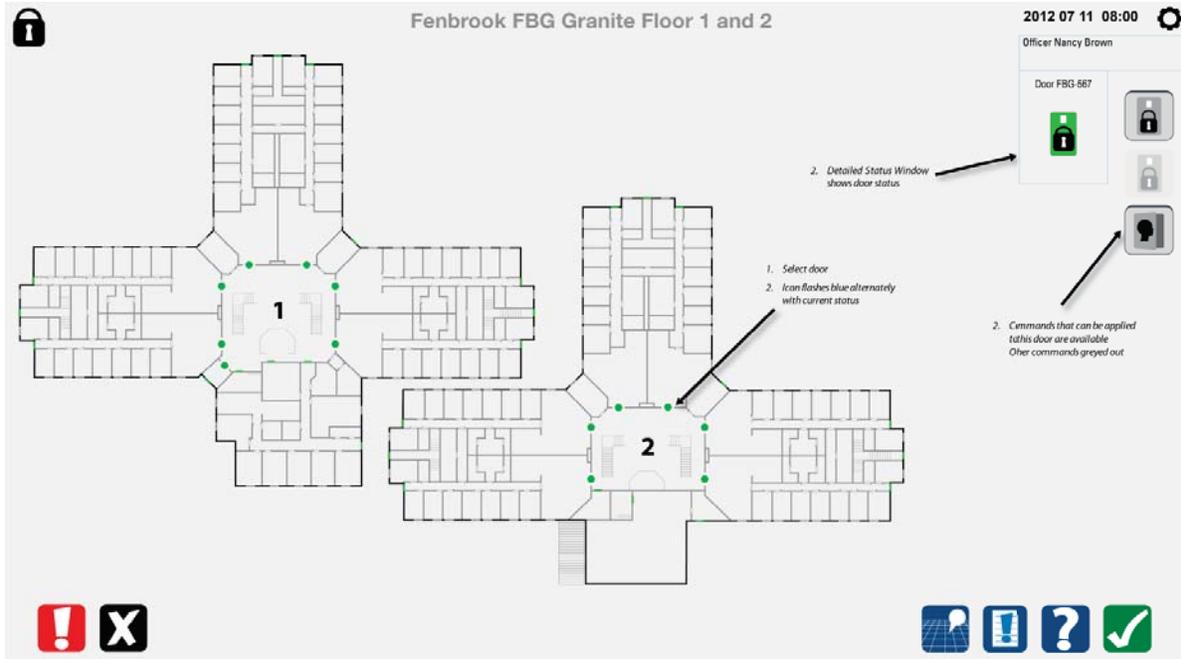


8.4.5 Door alarm acknowledgement complete

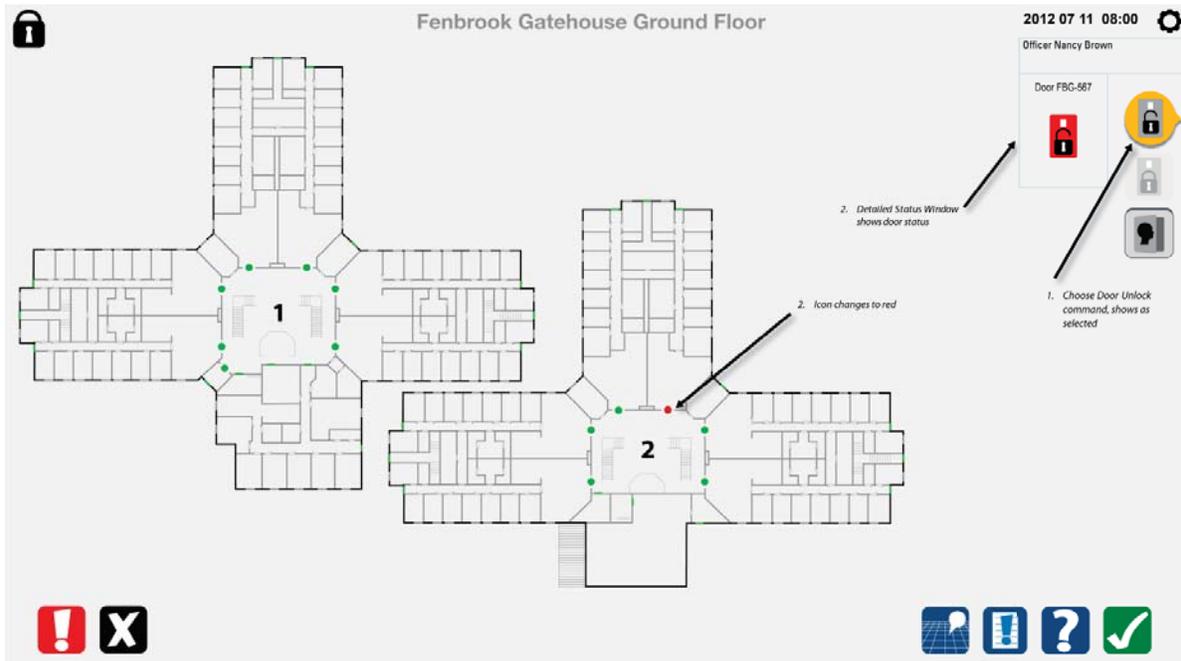


8.5 Responsibility Unit with inmate card entry

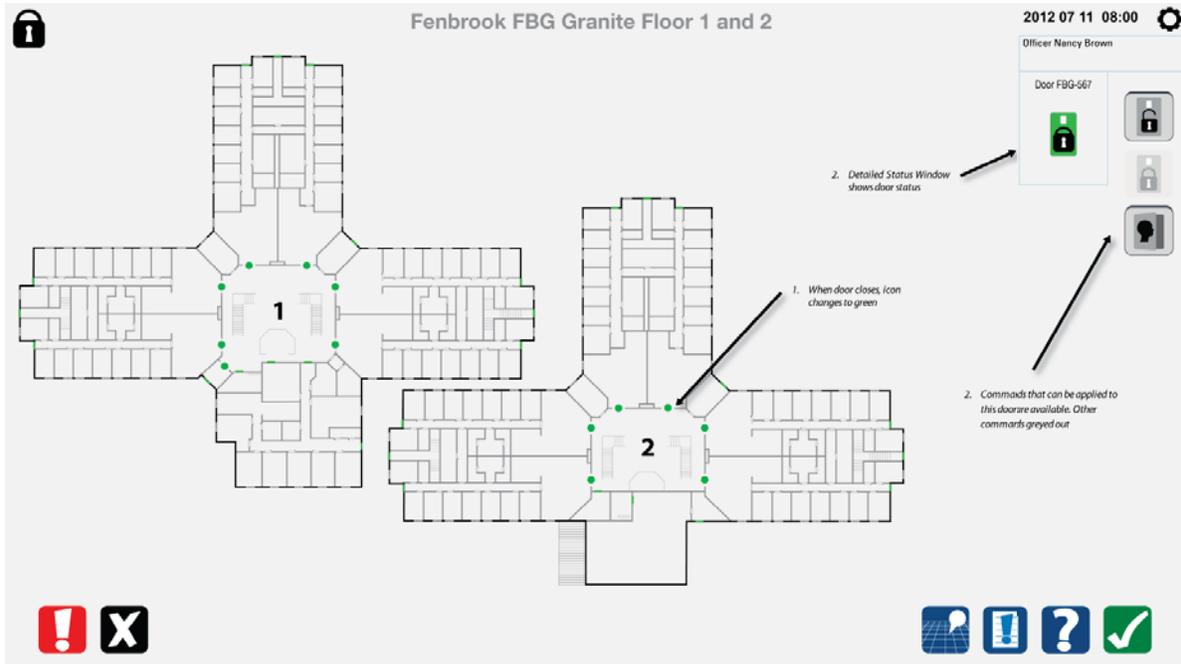
8.5.1 Choose door to unlock



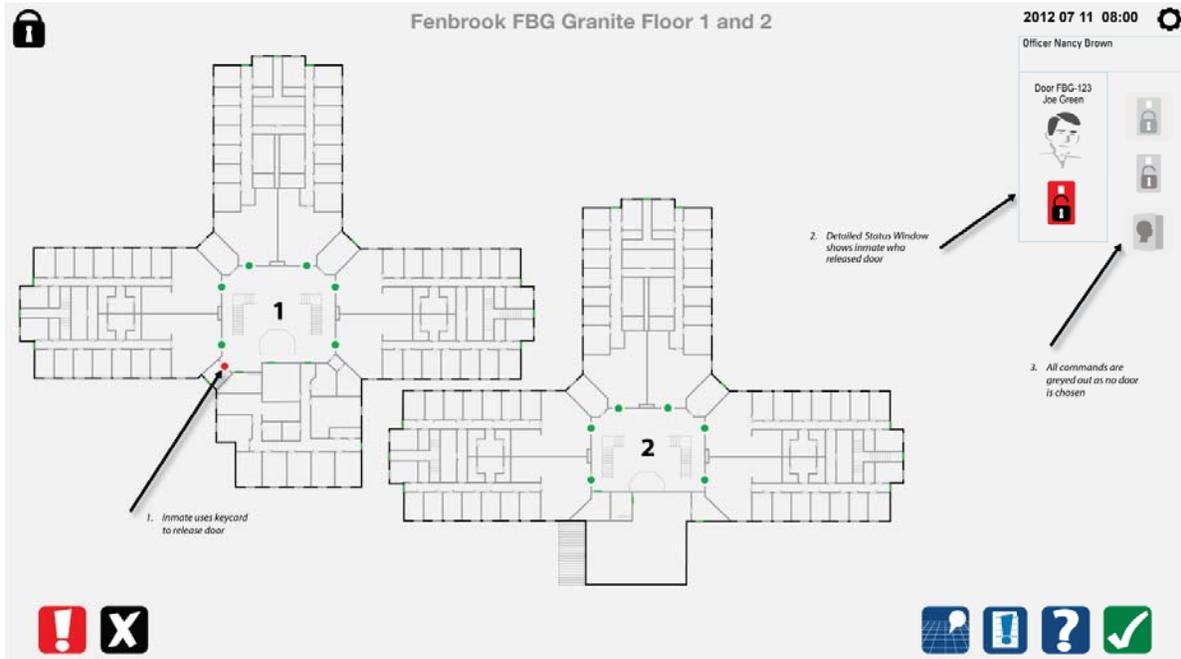
8.5.2 Select door unlock command



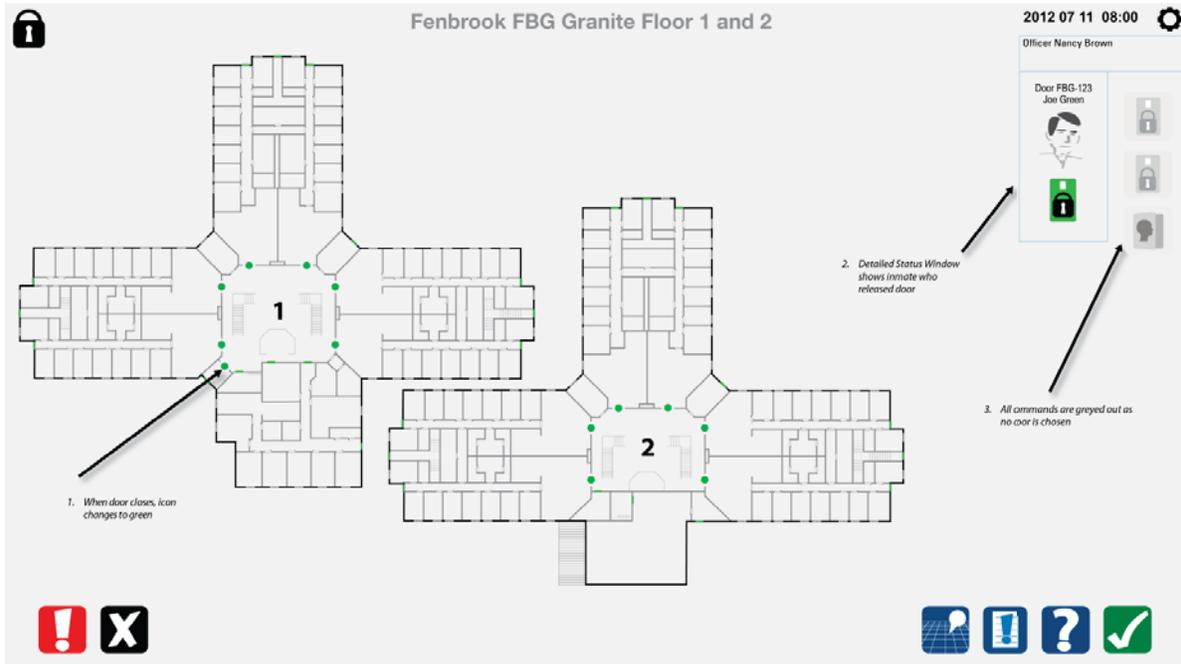
8.5.3 Door unlock command completed



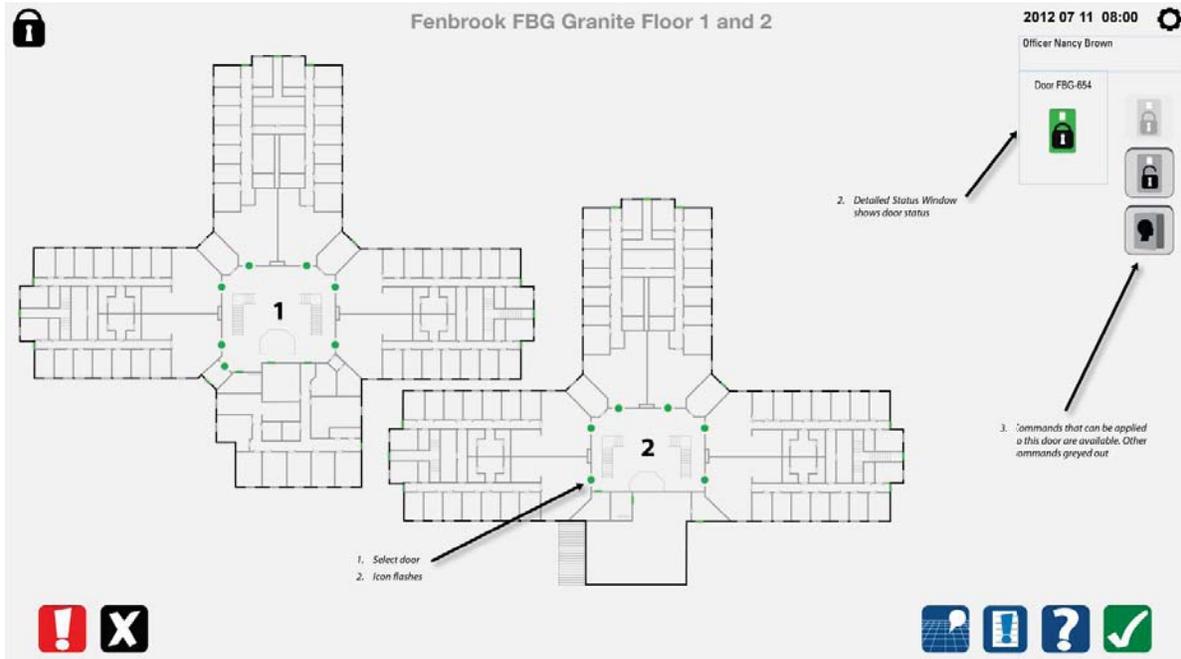
8.5.4 Inmate open with card swipe



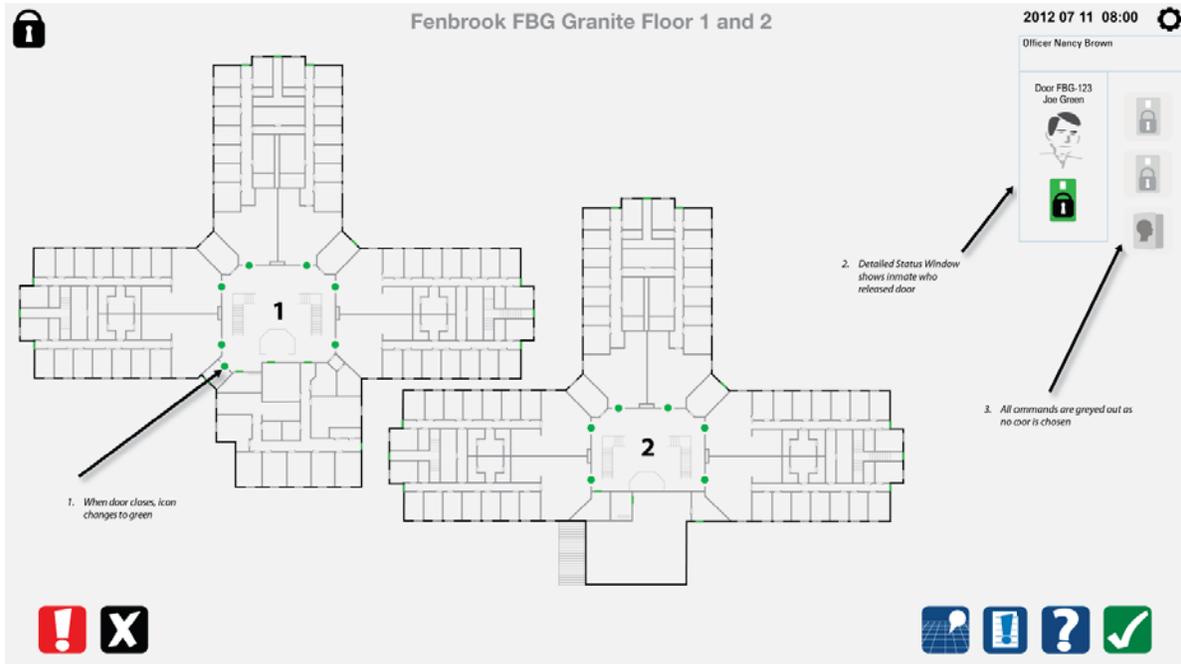
8.5.5 Inmate open command completed



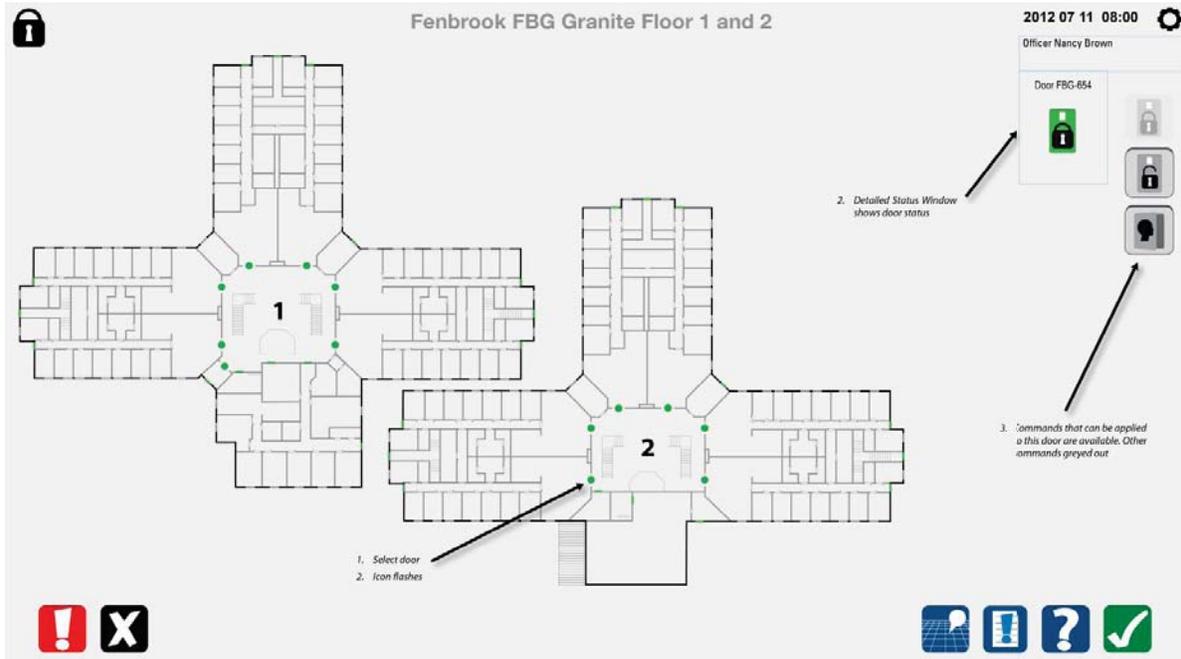
8.5.6 Select last opened command



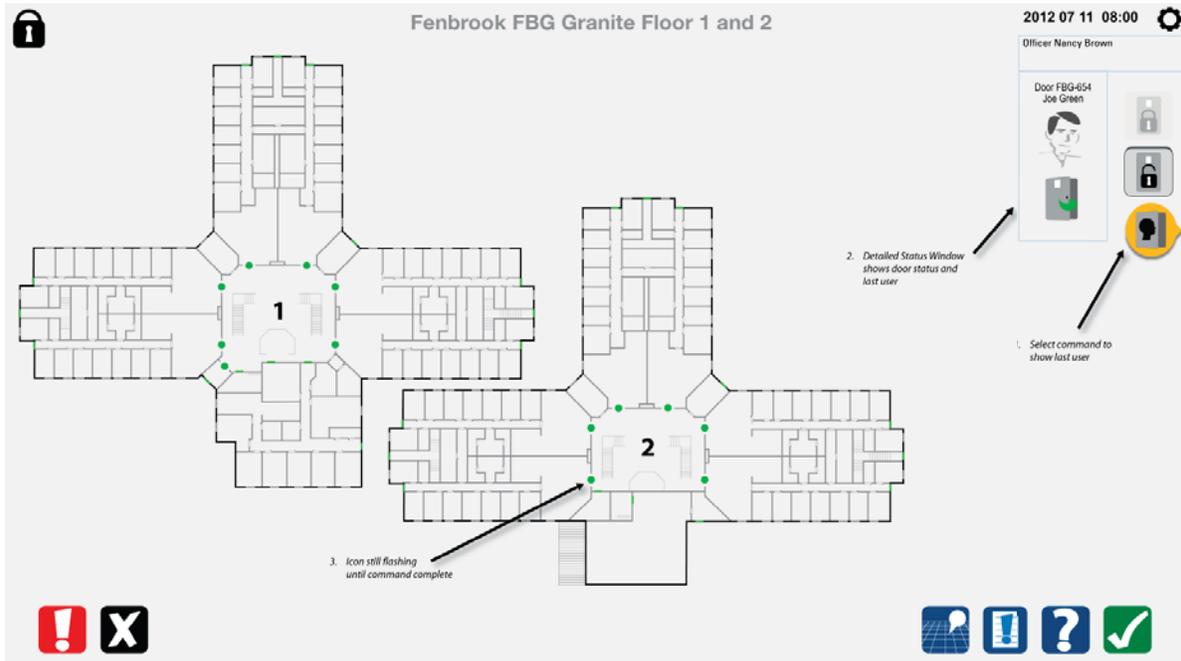
8.5.5 Inmate open command completed



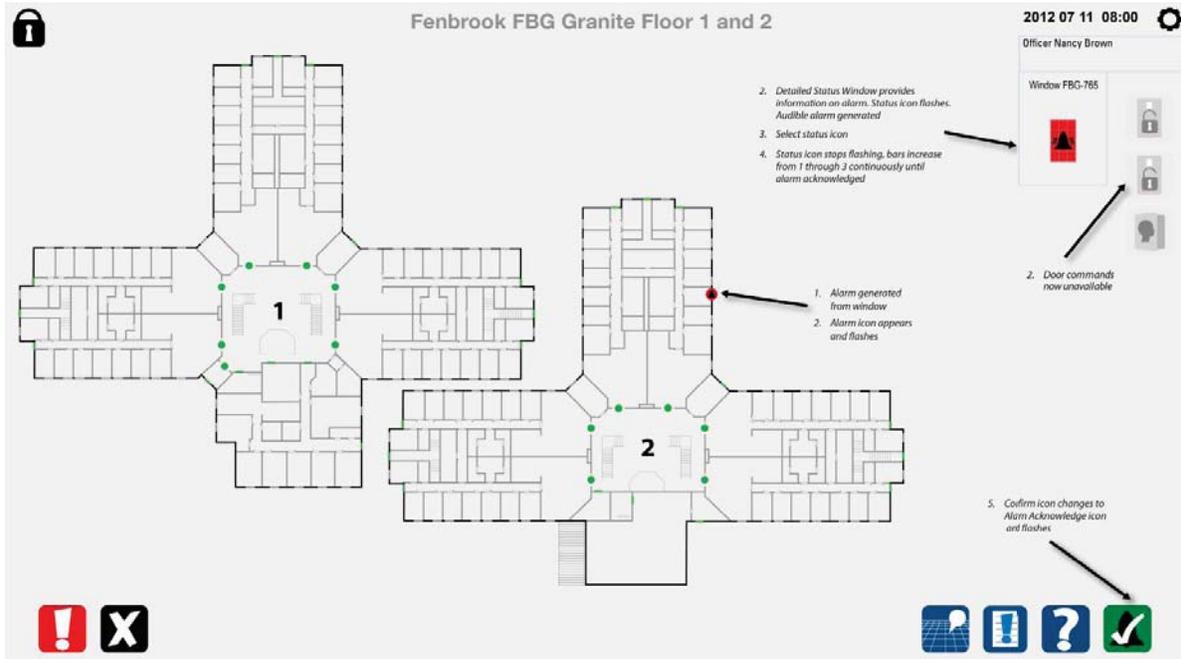
8.5.6 Select last opened command



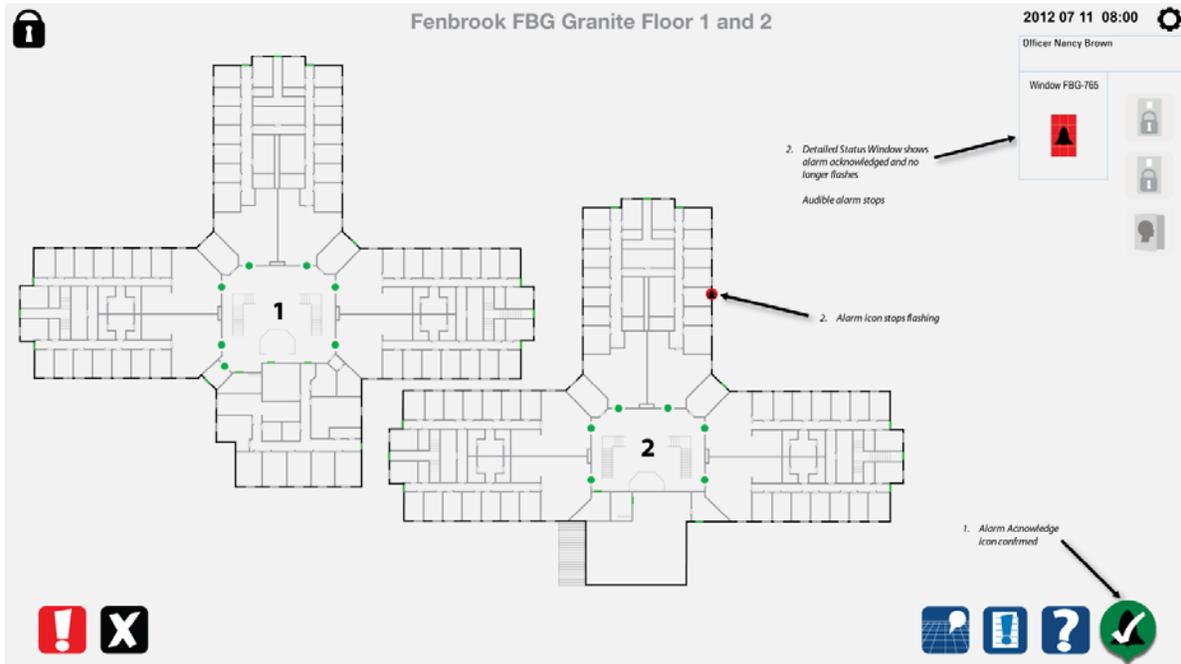
8.5.7 Last opened command completed



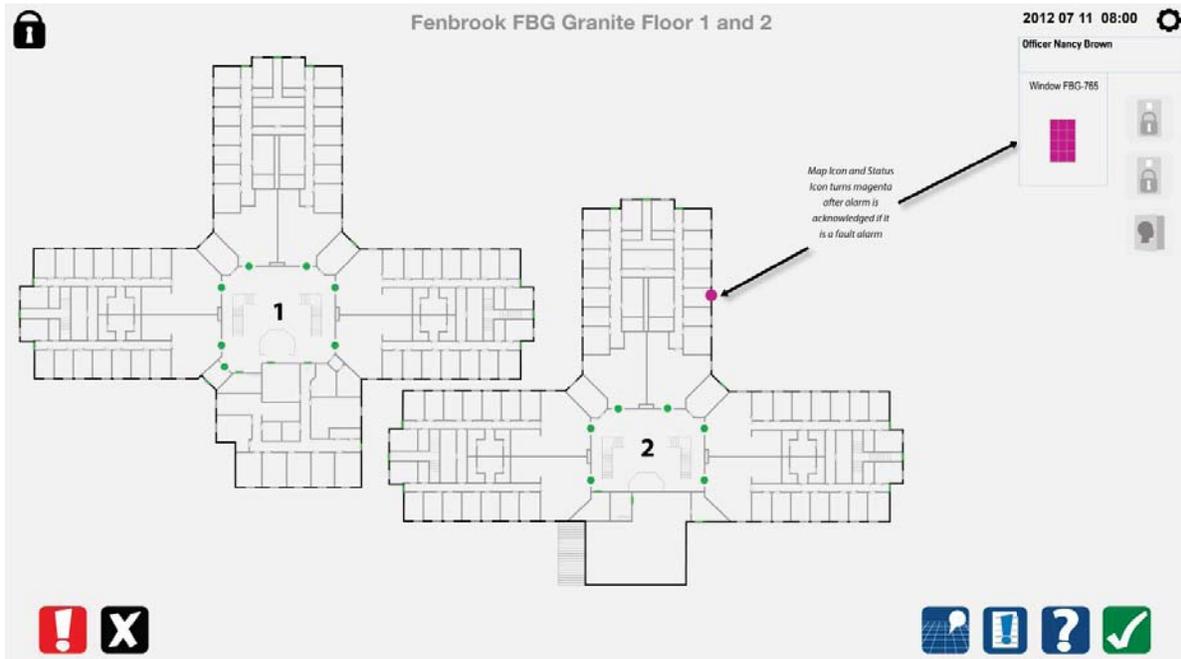
8.5.8 Window alarm generated



8.5.9 Window alarm acknowledged

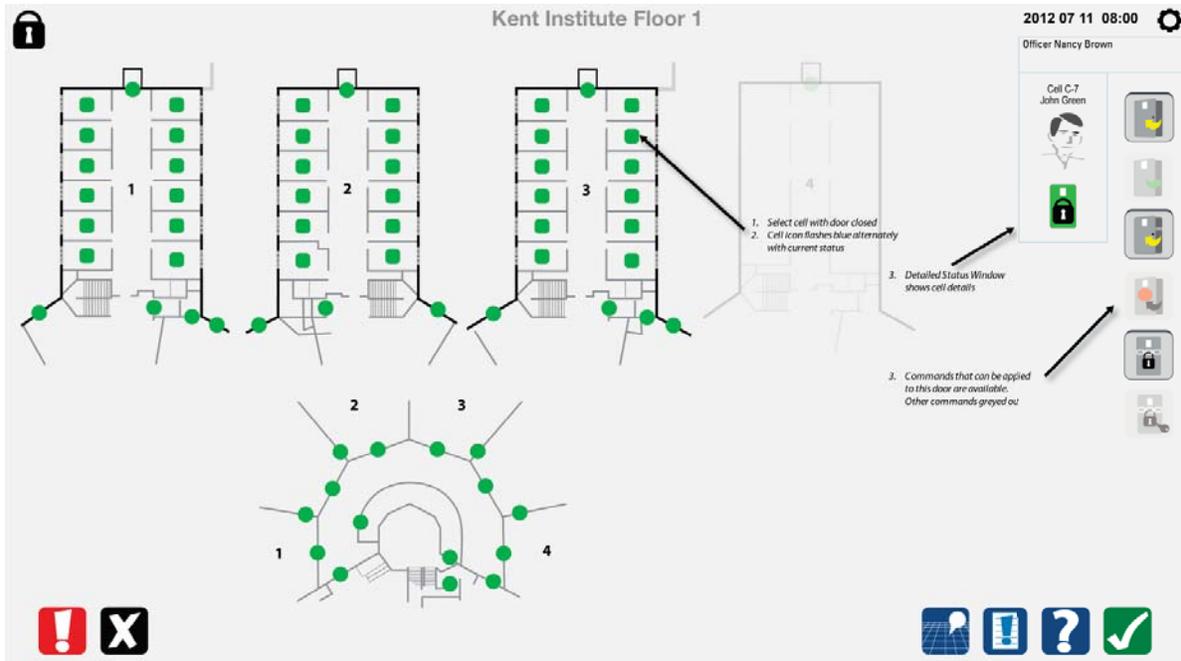


8.5.10 Window alarm acknowledgement complete

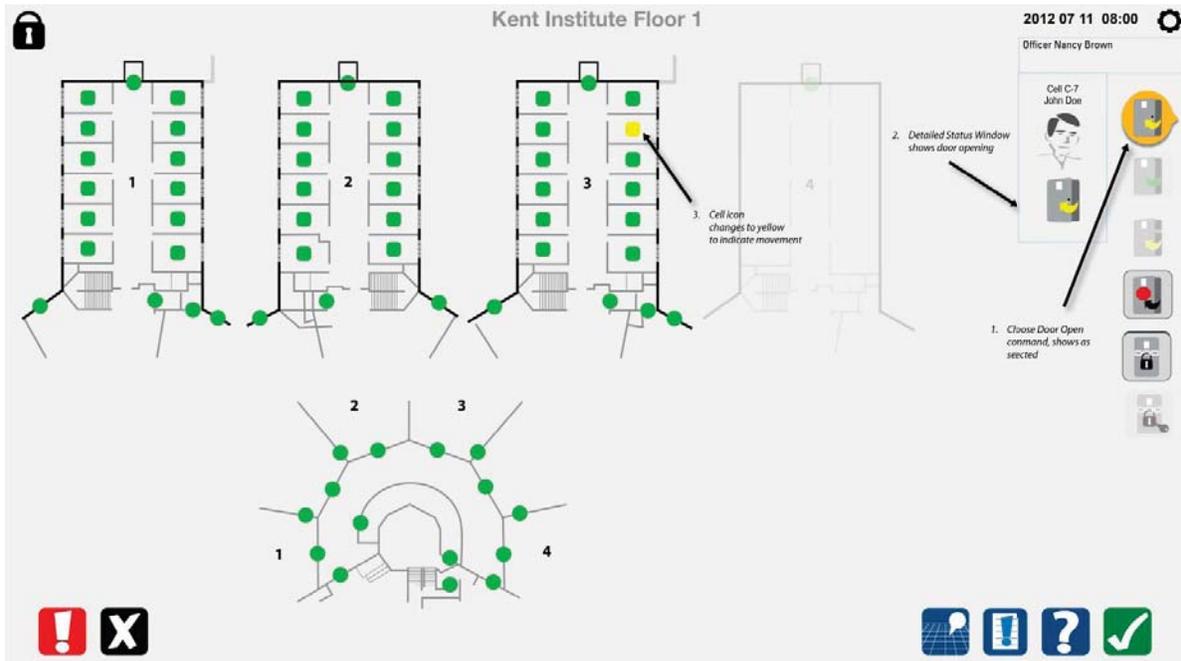


8.6 Cell slider door commands

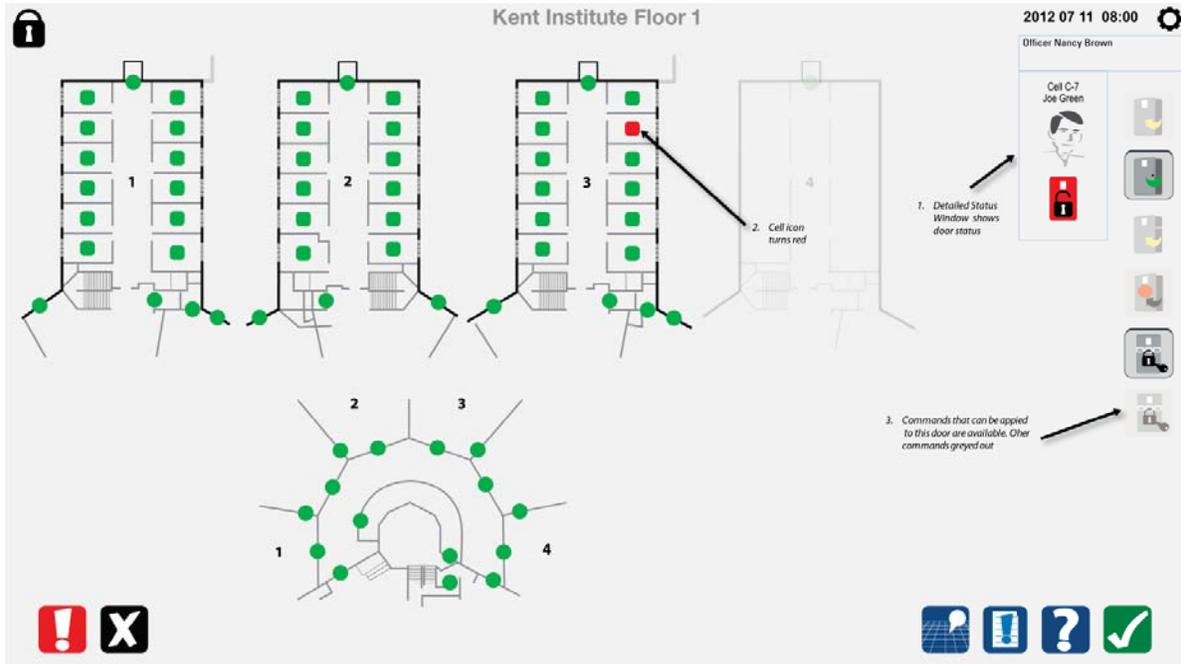
8.6.1 Choose door to open



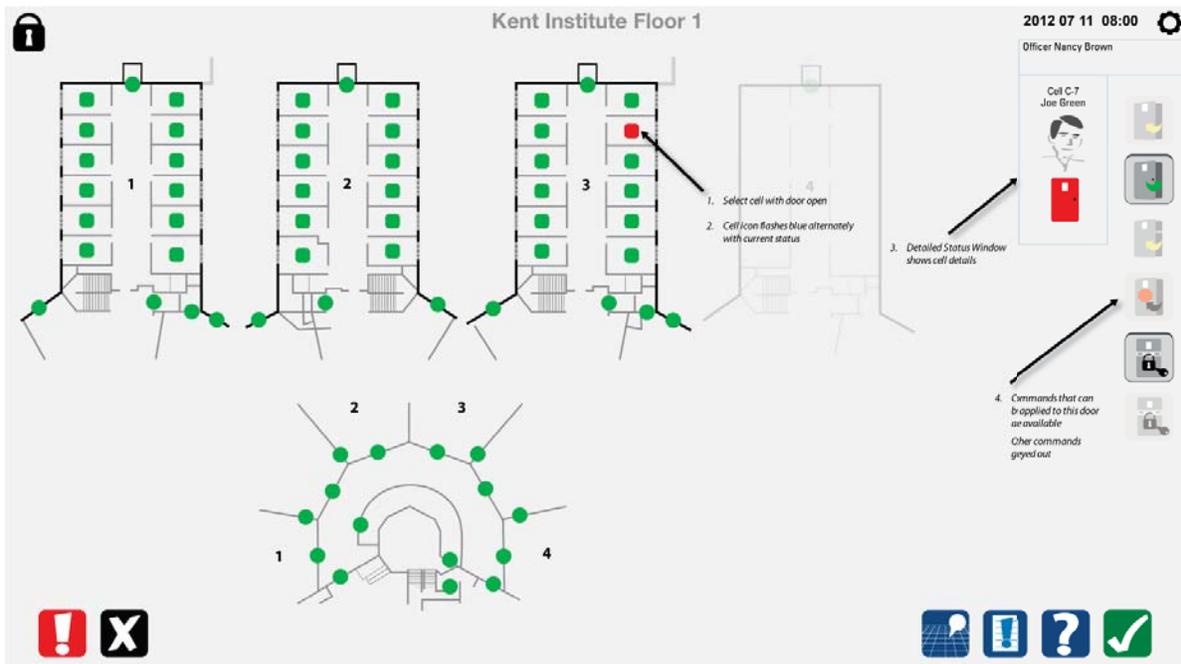
8.6.2 Select open command



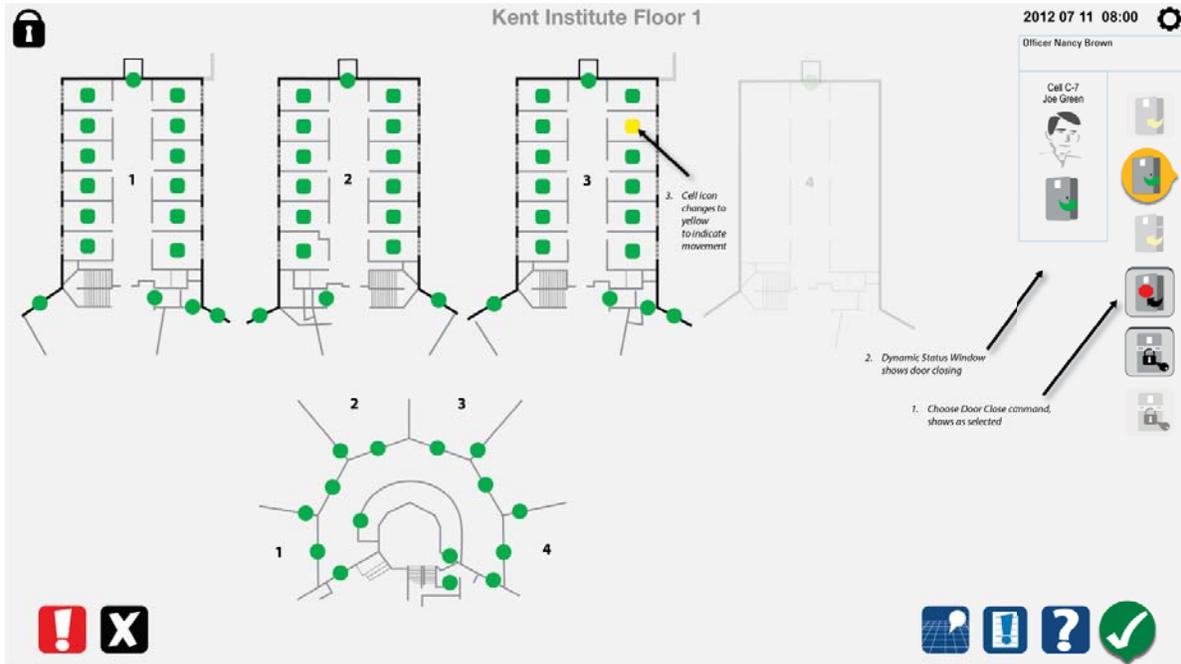
8.6.3 Open command completed



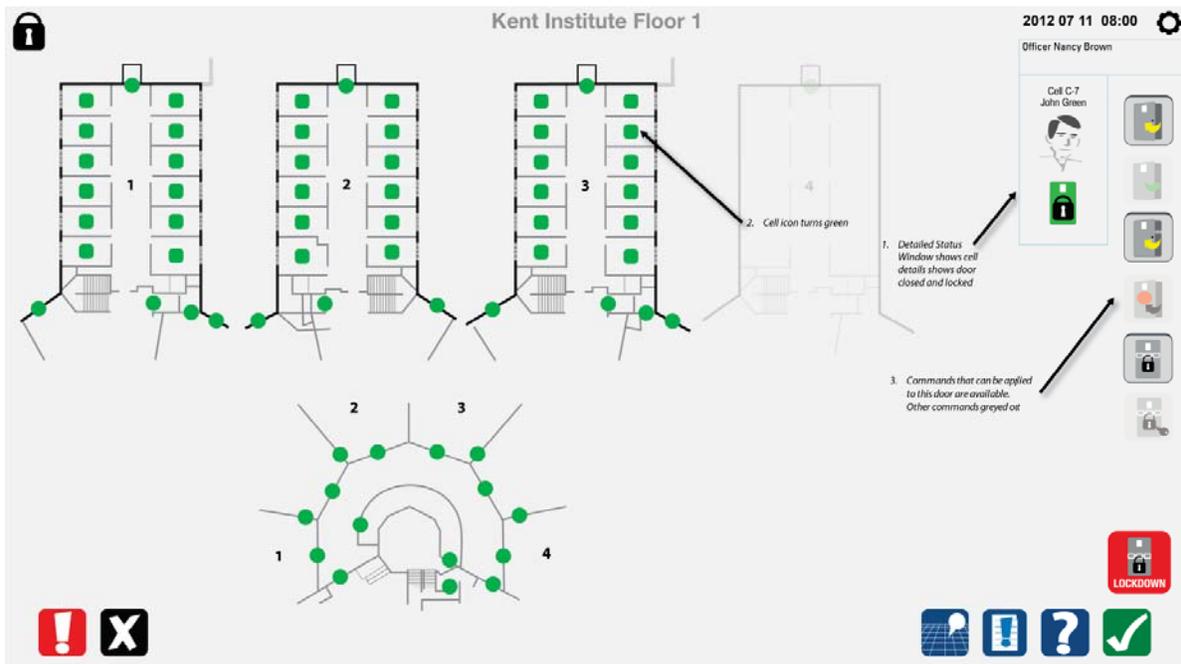
8.6.4 Choose door to close



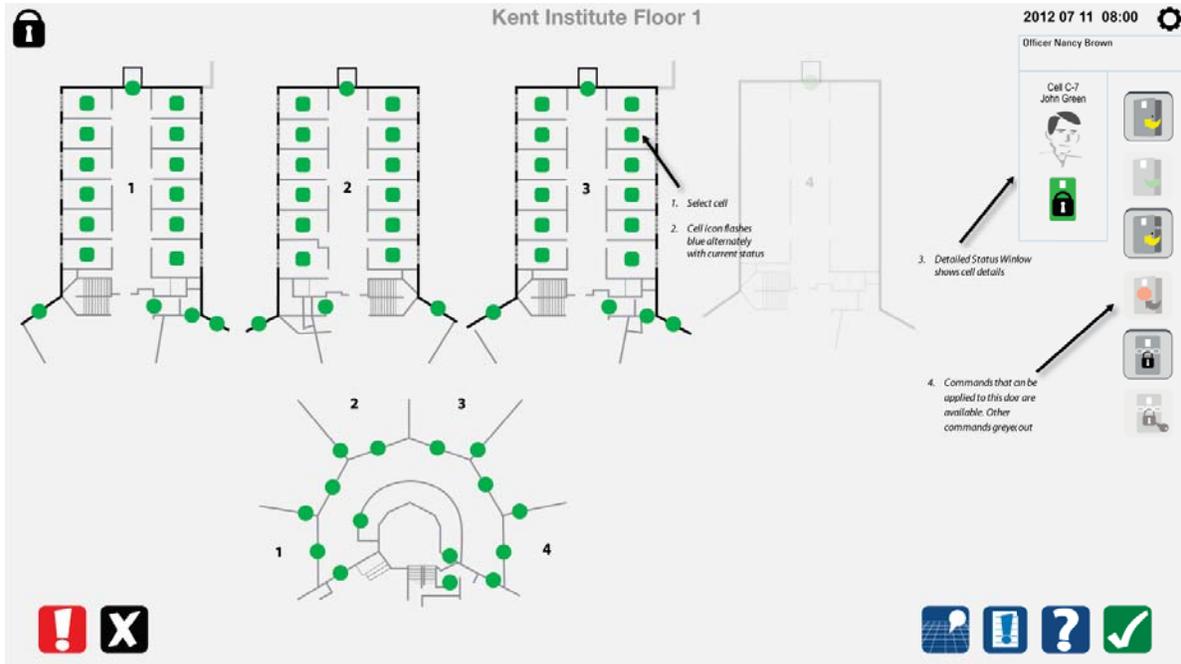
8.6.5 Select close command



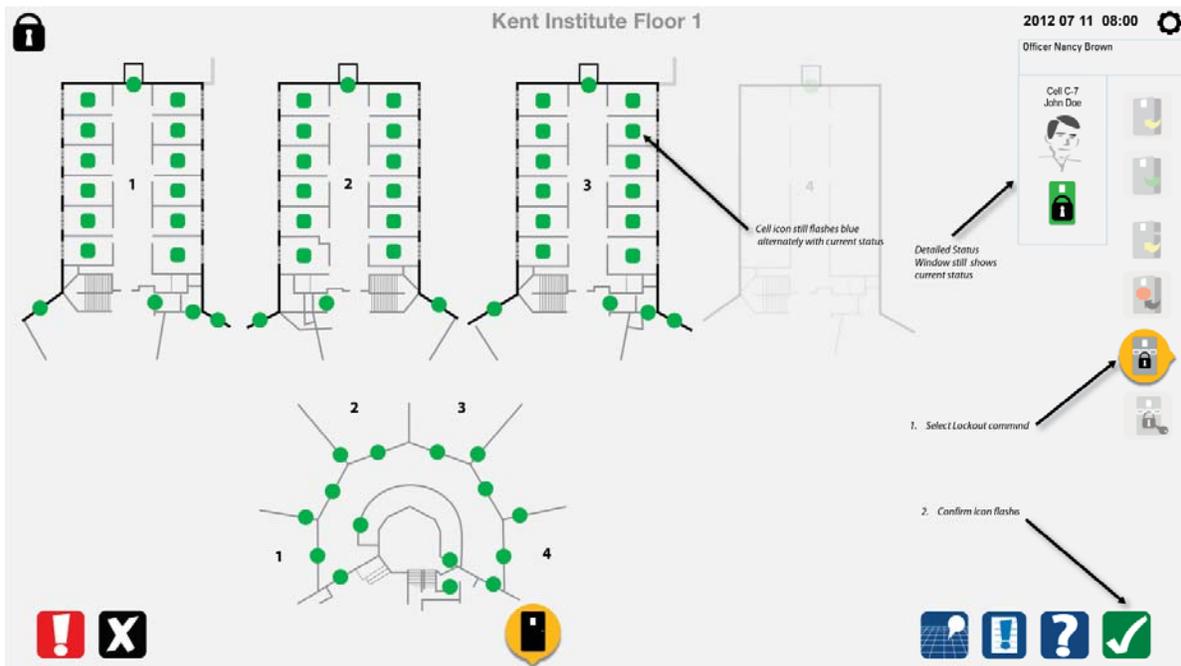
8.6.6 Close command completed



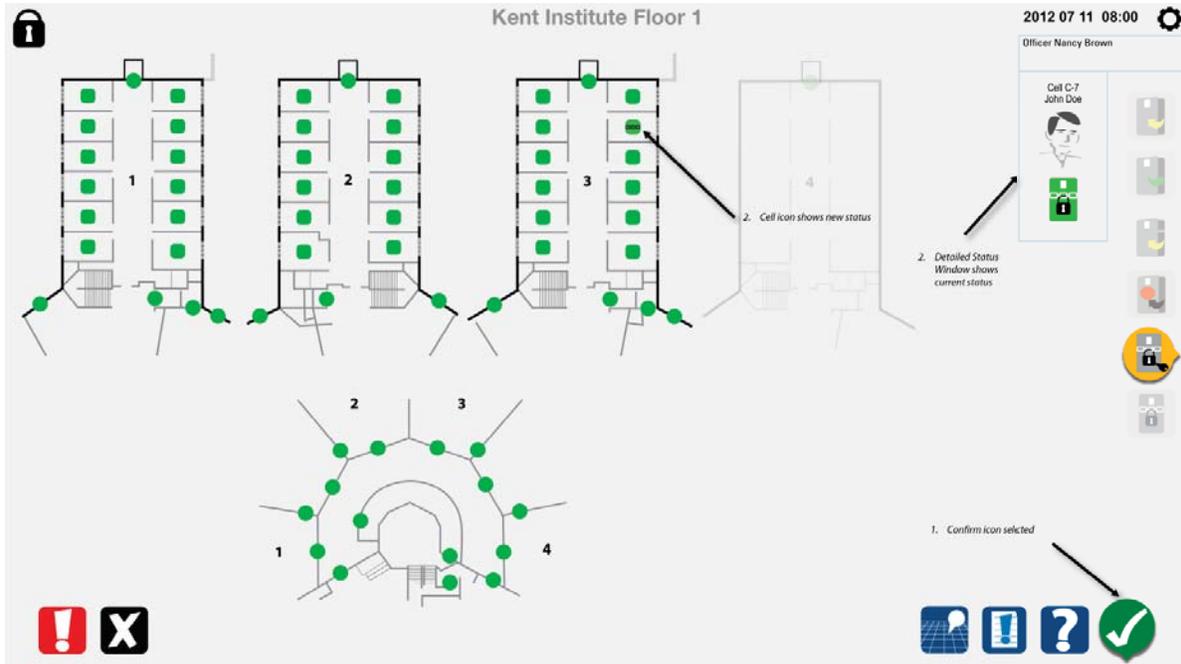
8.6.7 Choose a cell to lockout



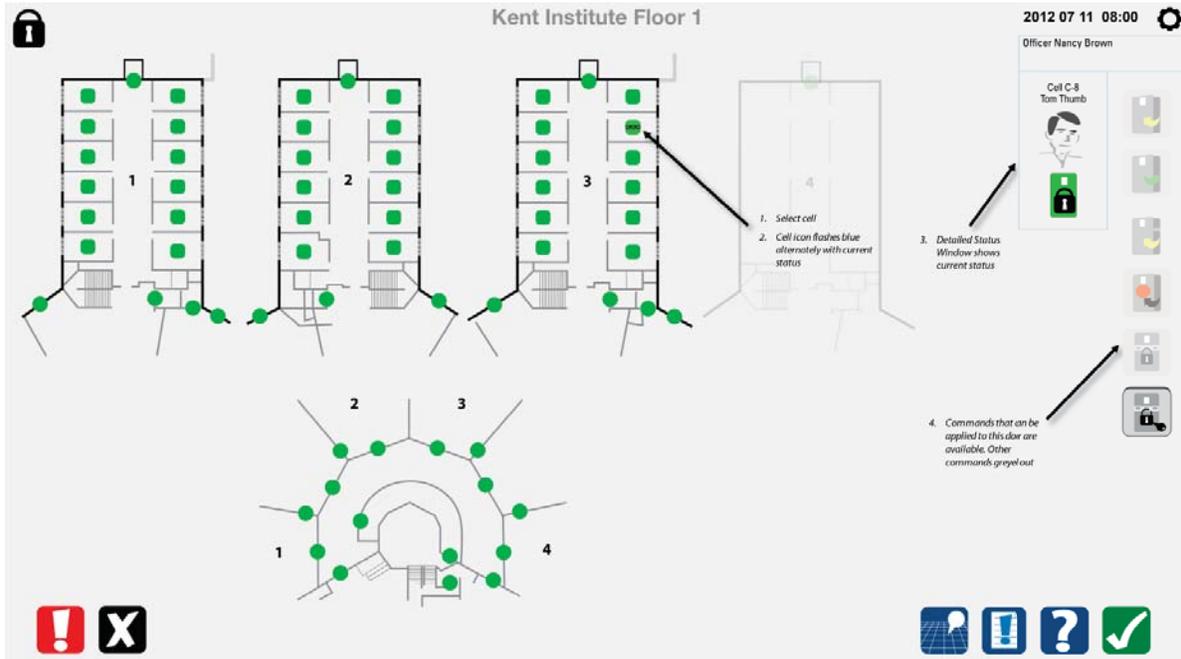
8.6.8 Select the lockout command



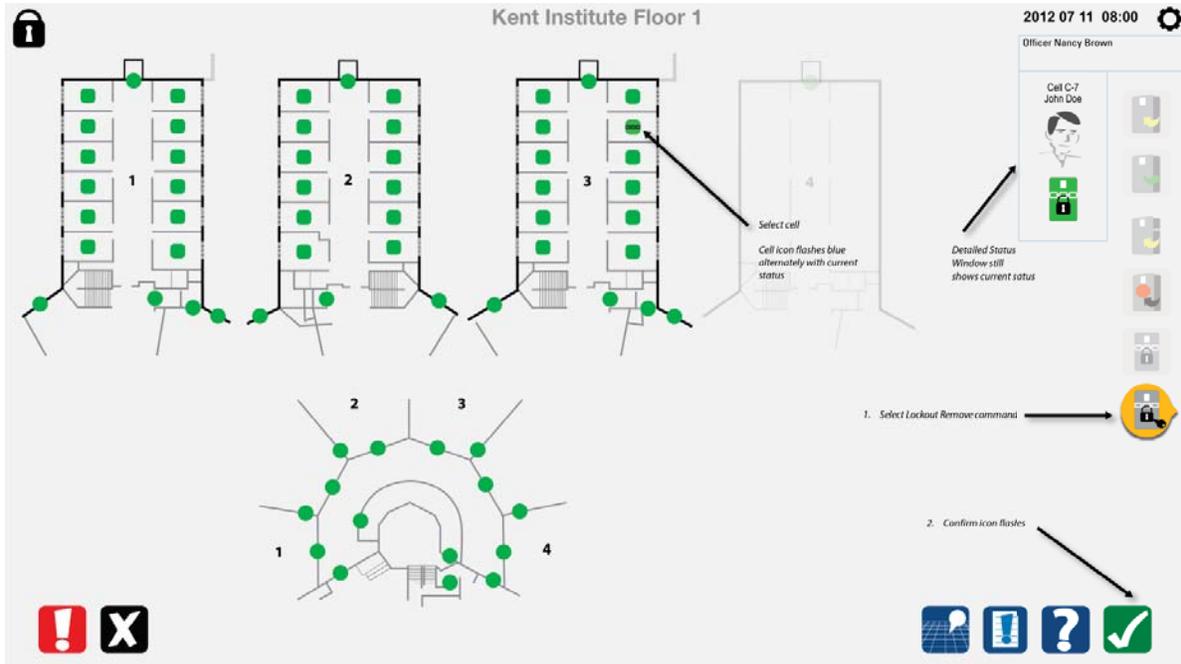
8.6.9 Lockout command complete



8.6.10 Choose a cell to remove lockout

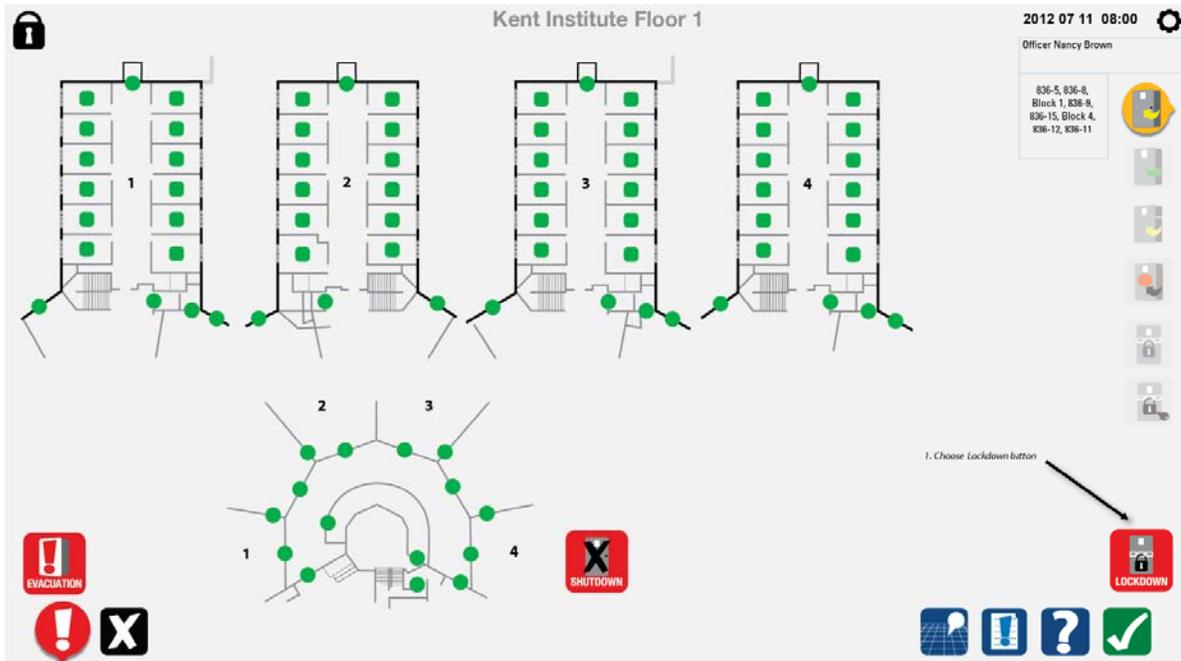


8.6.11 Select the remove lockout command

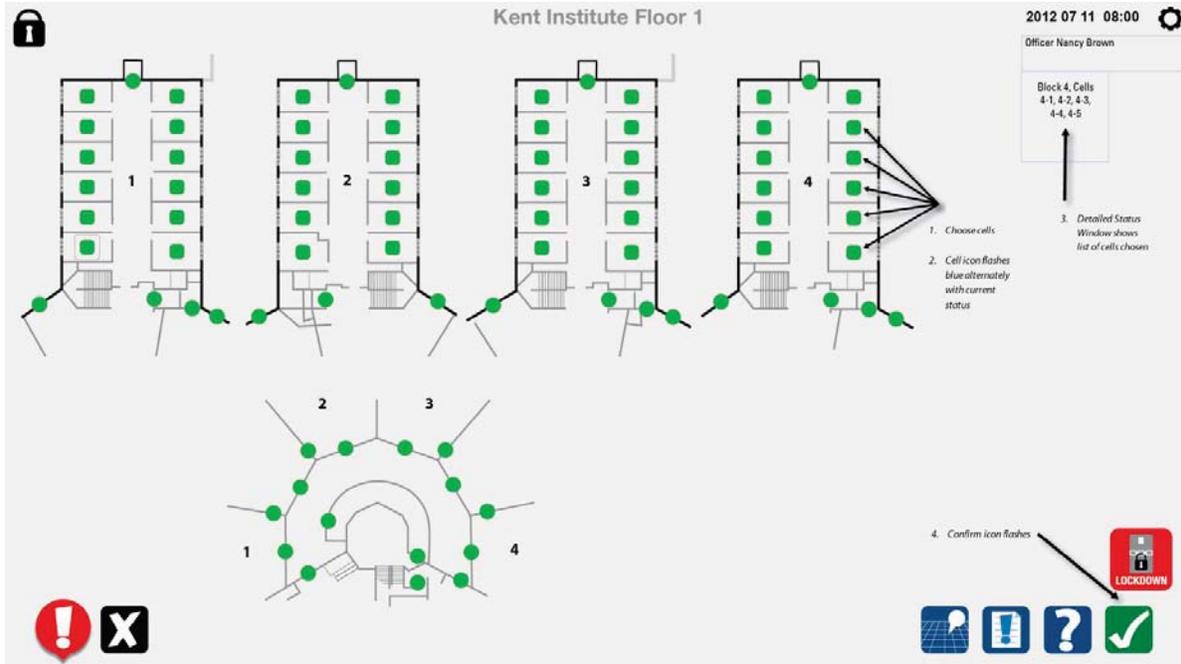


8.7 Special commands

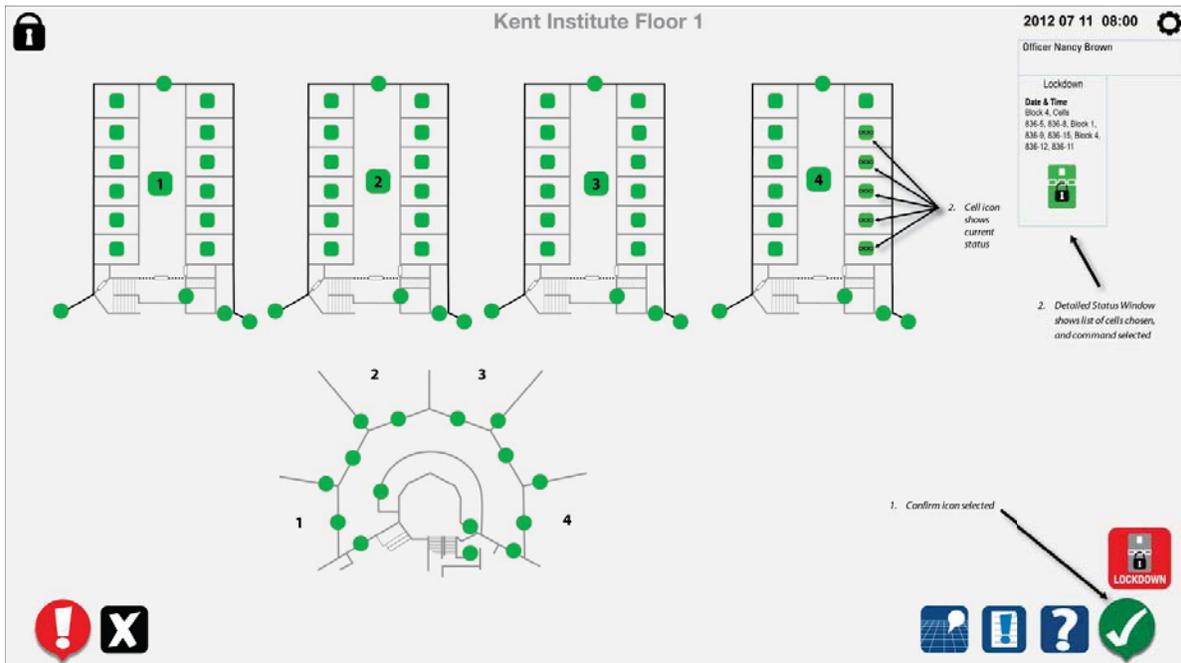
8.7.1 Choose special commands and choose lockdown



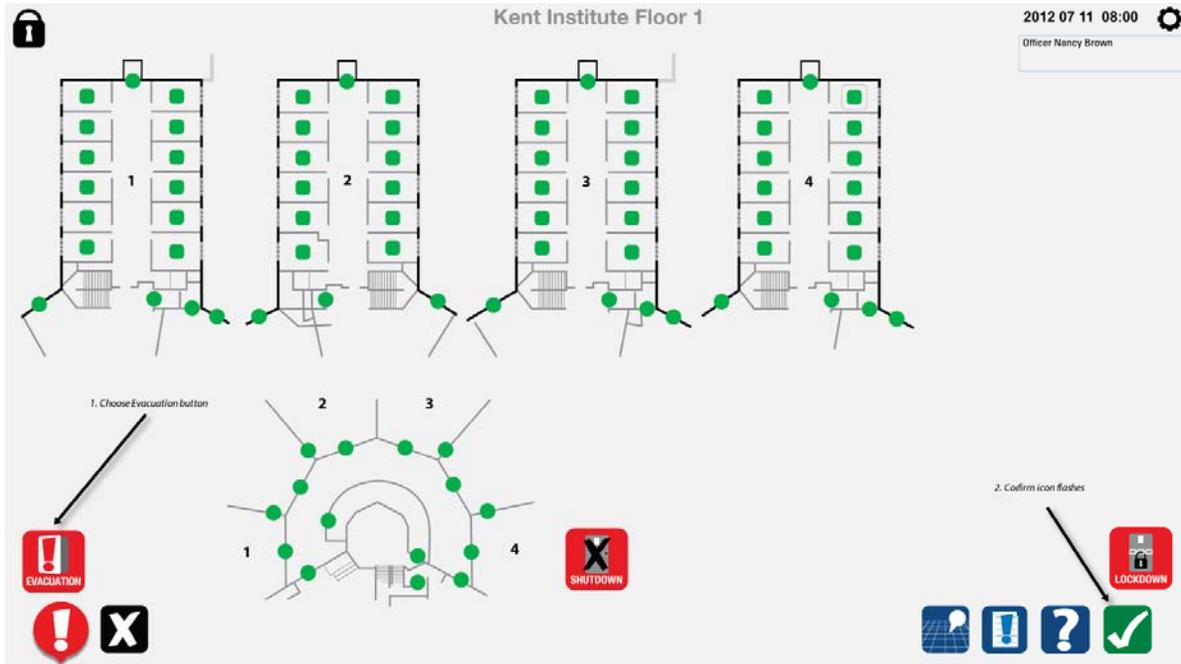
8.7.2 Choose cell doors to lockdown or choose range



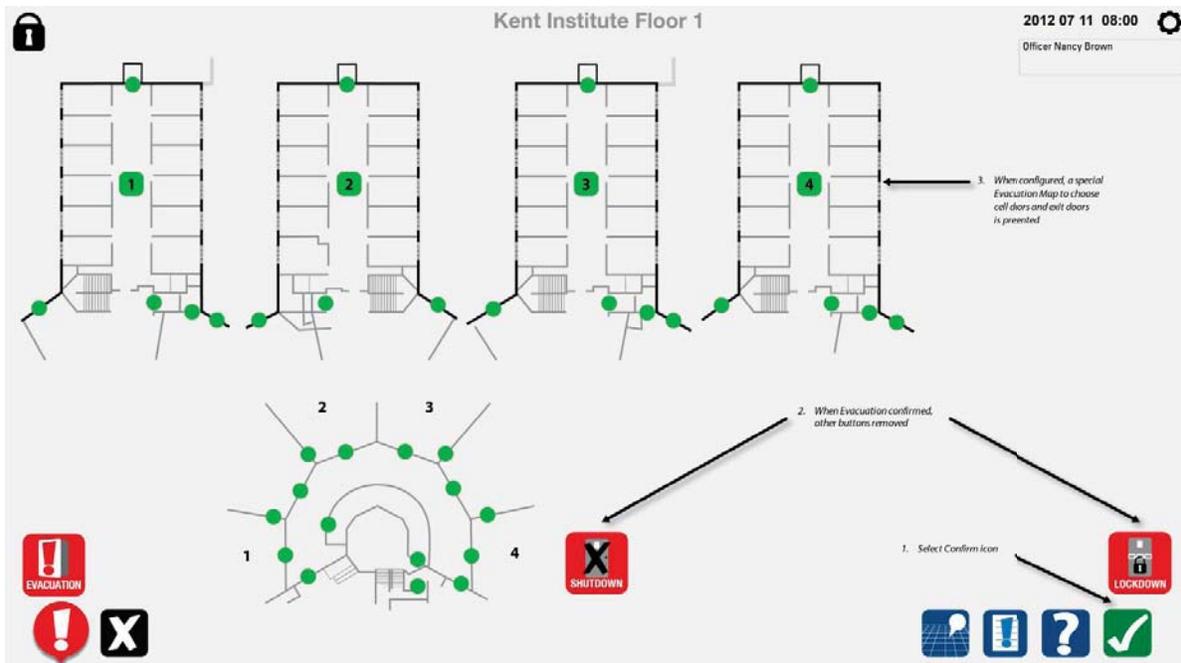
8.7.3 Lockdown command completed



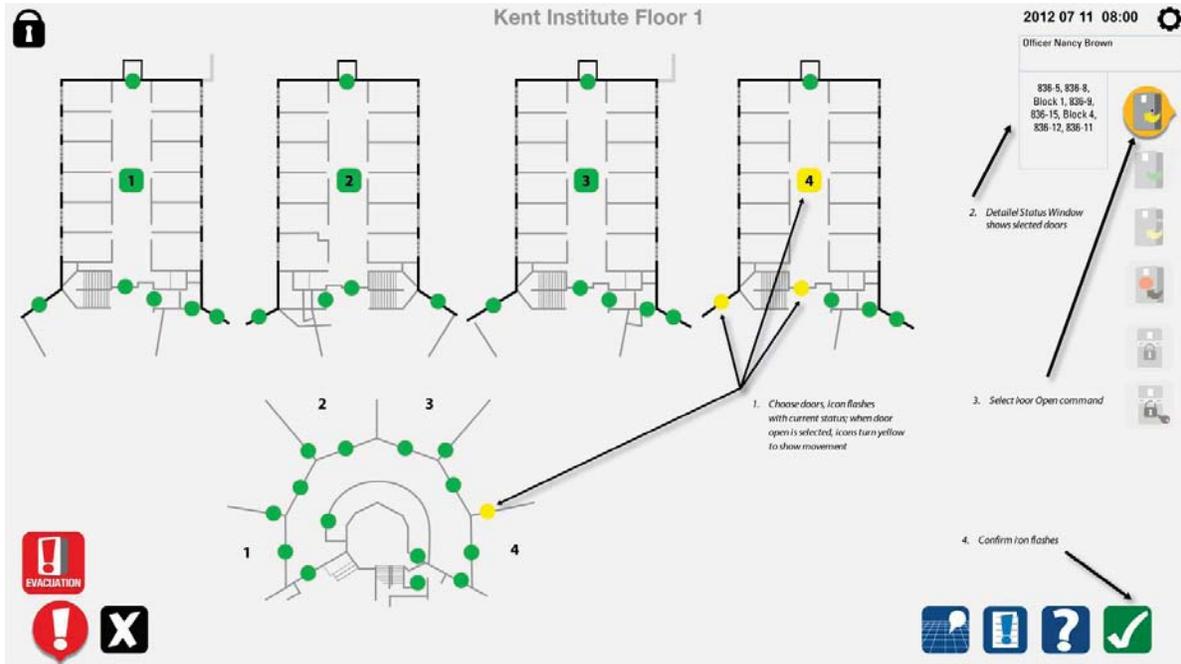
8.7.4 Choose emergency evacuation



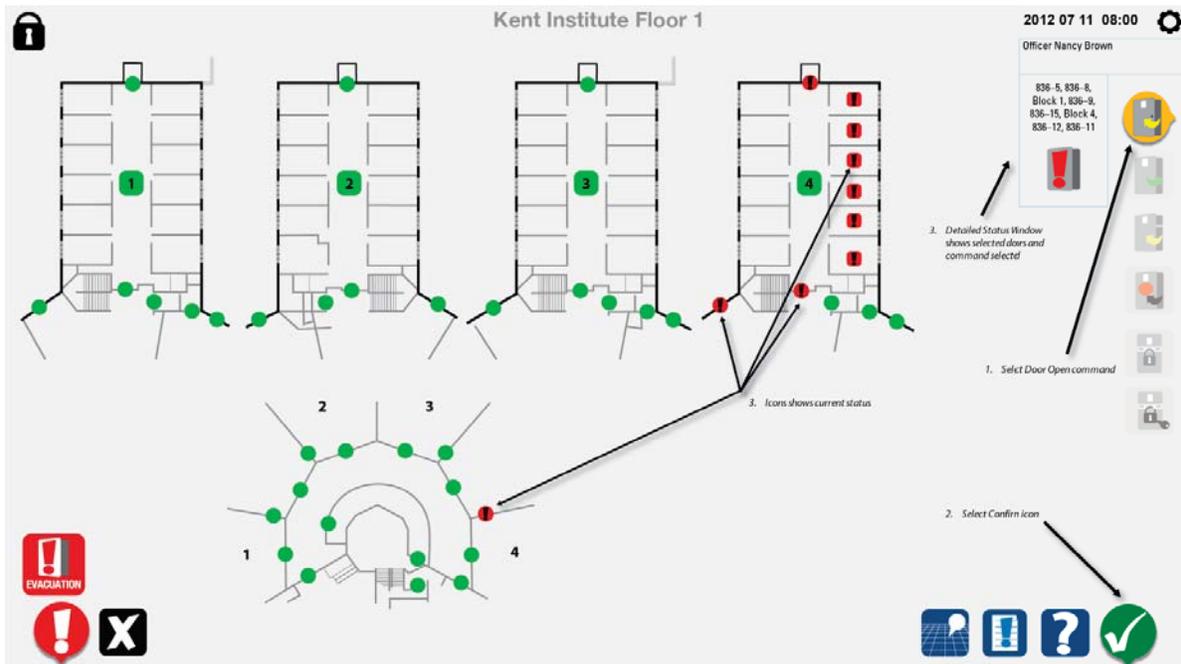
8.7.5 Evacuation map is presented



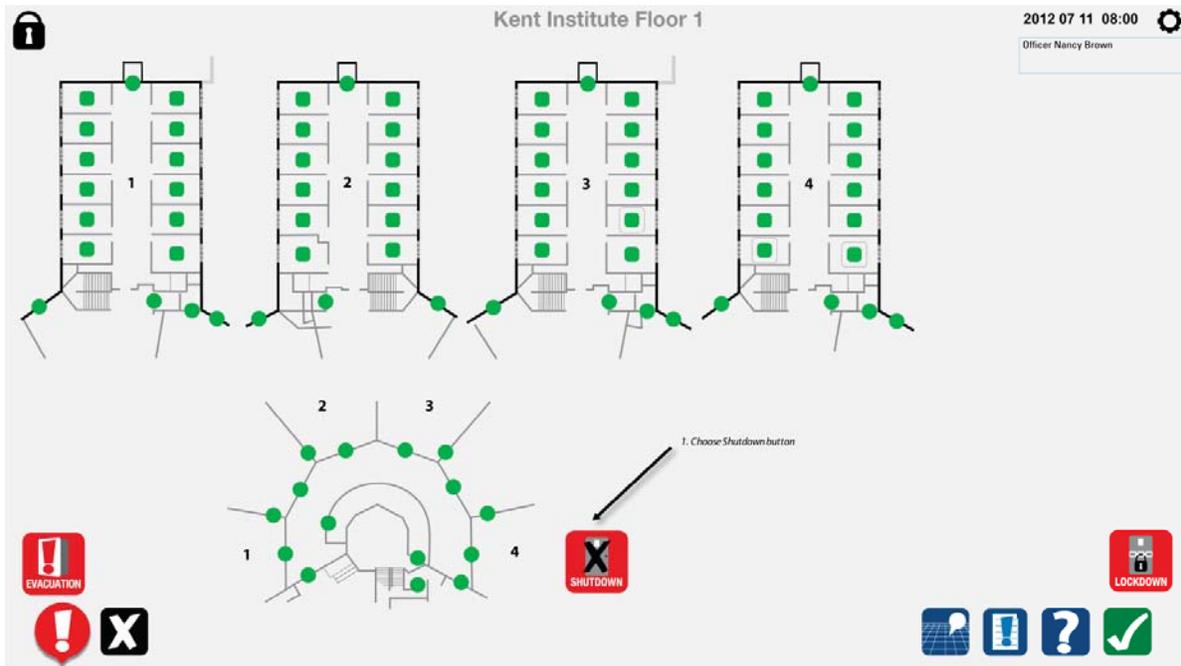
8.7.6 Choose range to evacuate



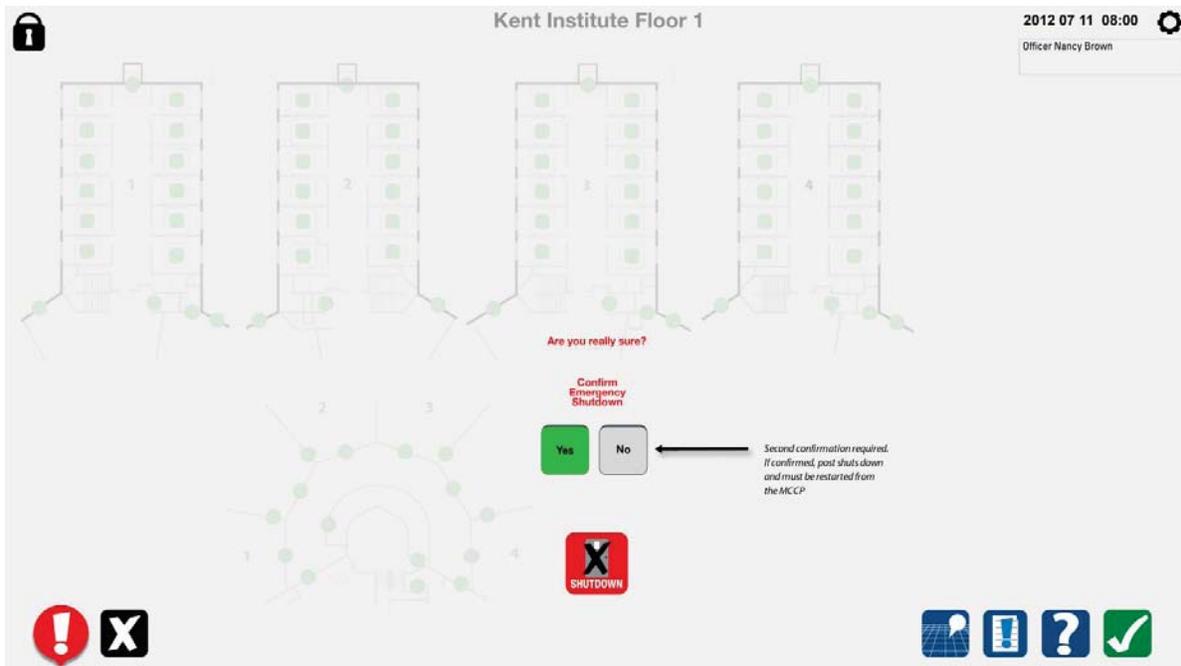
8.7.7 Command completed



8.7.8 Special commands choose emergency shutdown



8.7.9 Specific confirmation required



9 ICONS FOR THE DCMS

.1 All icons are available from CSC in .png format.

9.1 DCMS Command icons

Icon Description	Location	Icon Name	Icon	Description for Help
CloseAll icons are available from CSC in .png format.	Command Area	D1_Door_close		Select icon to issue "door close" command to selected door
		D2_Door_close_selected		Indicates "door close" command selected
		D3_Door_close_greyed		Indicates command not available
Open	Command Area	D4_Door_open		Select icon to issue "door open" command to selected door
		D5_Door_open_selected		Indicates "door open" command selected
		D6_Door_open_greyed		Indicates command not available
Open Partial	Command Area	D7_Door_open_partial		Select icon to issue "door open partial" command to selected door
		D8_Door_open_partial_selected		Indicates "door open partial" command selected
		D9_Door_open_partial_greyed		Indicates command not available

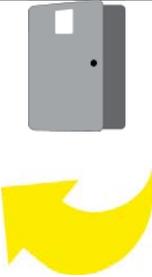
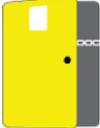
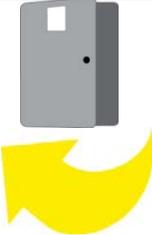
Stop	Command Area	D10_Door_stop		Select icon to issue "door stop" command to selected door
		D11_Door_stop_selected		Indicates "door stop" command selected
		D12_Door_stop_greyed		Indicates command not available
Unlock/Release	Command Area	D13_Door_unlock		Select icon to issue "unlock" command to selected door
		D14_Door_unlock_selected		Indicates "door unlock" command selected
		D15_Door_unlock_greyed		Indicates command not available
Lock	Command Area	D16_Door_lock		Select icon to issue "lock" command to selected door
		D17_Door_lock_selected		Indicates "door lock" command selected
		D18_Door_lock_greyed		Indicates command not available
Selected Lockout	Command Area	D19_lockout		Select icon to lockout a specific door or group of doors. Not the same as emergency lockdown which is activated by the selection of the emergency button, and locks down all doors. Note

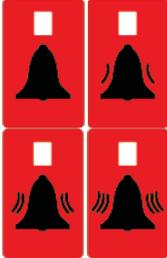
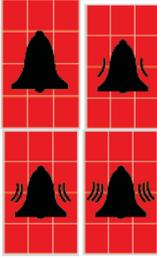
				config info as to which doors it applies to.
		D20_lockout_selected		Indicates "selected lockdown" command selected
		D21_lockout_greyed		Indicates command not available
Release Selected Lockdown or Lockout, and Release Global Lockout	Command Area	D22_Release_lockout		Select icon to release selected lockdown of a specific door or group of doors and to release a Global Lockdown
		D23_Release_lockout_selected		Indicates "release selected lockdown" command selected
		D24_Release_lockout_greyed		Indicates command not available
Enable inmate control	Command Area	D25_Door_inmate_enabled		Indicates inmate can lock or unlock door
		D26_Door_inmate_enabled_selected		Indicates that "inmate enable" command has been selected
		D27_Door_inmate_enabled_greyed		Indicates that the "inmate enable" command is not available to be applied to the selected door.
View last person opening the door	Command area	D28_Last_door_user		Select to view picture of last person who used a card to release the door

		D29_Last_door_user_selected		Indicates that the picture in the Dynamic Status Window is the last person who used a card to release the door
		D30_Last_door_user_greyed		Indicates command not available
Interlock override	Command area	D31_Interlock_override		Overrides the interlock allowing two or more doors in an interlocked group to be open. Confirmation is required, and an alarm is generated in the MCCP.
		D32_Interlock_override_selected		Indicates command is selected, and once confirmed, this command becomes available and the open door command shows as selected
		D33_Interlock_override_greyed		Indicates command not available

9.2 DCMS Status Icons

Icon Description	Location	Icon Name	Icon	Description for Help
Door closed and locked	Status window	W20_Door_status_closed_locked		Indicates the true status of the door – closed and locked
Door open - only applies to slider doors	Status window	W21_Door_status_open		Indicates door is open or unlocked.

Door moving after door open command chosen - only applies to slider doors	Status window	W22_Door_opening and W23_Yellow_arrow		Indicates that the door is in the process of opening. The yellow arrow flashes, indicating movement. When the movement completes, and the door is open, open door status is displayed.
Door moving after door close command chosen – only applies to slider doors	Status window	W22_Door_opening and W24_Green_arrow		Indicates the door is in the process of closing. The green arrow flashes indicating movement. When the movement completes, and the door is closed and locked, locked door status is displayed.
Door partial open – only applies to slider cell doors	Status window	W25_Door_status_partial_open		Indicates that door is partially open and that movement is complete.
Door moving after door open partial command chosen – only applies to slider cell doors	Status window	W26_Door_partial_opening and W23_yellow_arrow		Indicates that the door is in the process of opening. The yellow arrow flashes, indicating movement. When the movement completes, and the door is open, open partial door status is displayed.
Door unlocked	Status window	W27_Door_status_unlocked		Indicates that the door has had an unlock command sent to it, and it is not yet closed and locked (ie full cycle has not completed)
Door inmate enabled	Status window	W28_Door_inmate_enabled		Indicates that the door is inmate enabled.
Door or barrier with stop command issued – only applies to	Status window	W29_Door_status_stop		Indicates that a stop command is the most recent command sent to this door, and that the door is open or partially open.

slider doors				
Emergency release	Status window	W30_Door_status_emergency_release		Indicates that the door has been opened or unlocked using the emergency release function.
Locked-down – whether global lockdown or selected lockdown	Status window	W31_Selected_lockout		Indicates the current status of the door is locked out – whether by a selected lockout or a global lockdown
Door alarm	Status window	W32_Door_alarm_0 W32_Door_alarm_1 W32_Door_alarm_2 W32_Door_alarm_3		When an alarm is first initiated, and the cell is selected, the detailed status window shows the doors cycling through the icons to emulate the animation of the alarm. When the audible alarm is acknowledged, only the door with the alarm bell is displayed.
Window alarm		W33_Window_alarm_0 W33_Window_alarm_1 W33_Window_alarm_2 W33_Window_alarm_3		Indicates alarm for a window.
Door fault		W34_door_status_fault		Indicates alarm is a fault alarm.
Door maintenance		W35_door_status_maintenance		Indicates door taken out of service by maintenance

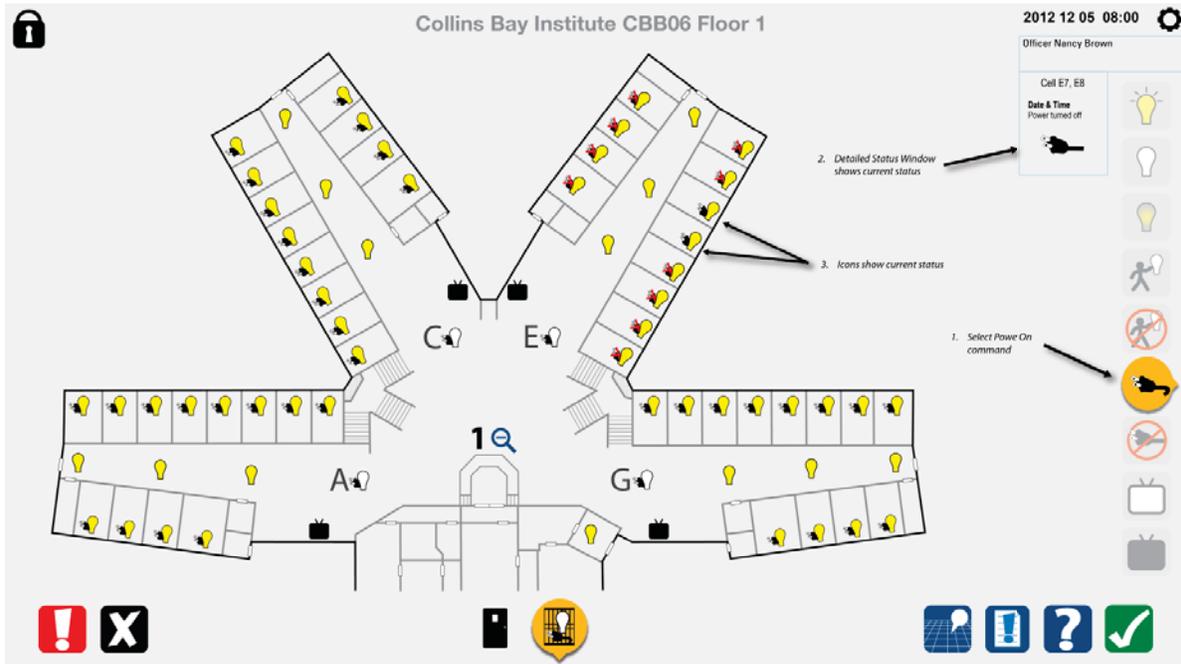
9.3 Map Icons

Icon Description	Location	Icon Name	Icon	Description for Help
Door locked	Map view	M20_cell_secure		Indicates the cell door is locked and secure.
Door open or unlocked	Map view	M21_cell_unsecure		Indicate that the door is not secure, and either open or unlocked. It is

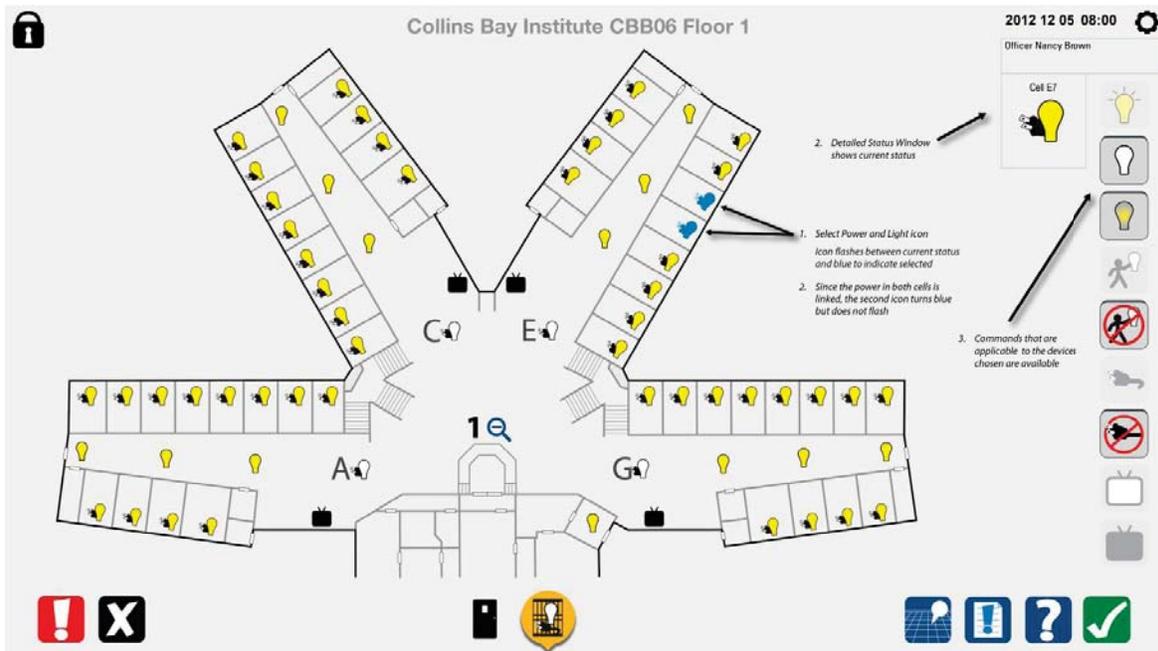
				not closed and locked.
Door is being opened	Map view	M22_cell_opening		Indicates that the door is opening, and the yellow symbol flashes.
Door locked out or locked down	Map view	M23_cell_locked_out		Indicates that the cell door is locked out or locked down. The unlock command cannot be used when the door is in this state.
Door closed and locked with inmate enable	Map view	M24_cell_locked_inmate_enabled		Indicates that the door has the ability to be inmate enabled, but is not enabled
Door opened by inmate	Map view	M25_inmate_enabled		Indicates that inmate enable is enabled, the door is locked and that the inmater has the ability to unlock the door.
Door open or unlocked with inmate enable	Map view	M26_cell_unsecured_inmate_enabled		Indicates that an inmate enabled door has been unlocked or opened.
Door emergency release	Map view	M27_emergency_release		Indicates that the door has been opened using the Emergency Release procedure. It cannot be closed or locked.
Door alarm acknowledged	Map view	M28_cell_alarm		Indicates that an alarm has been generated, and acknowledged at that location. Acknowledgement of the alarm turns off the audible alarm. The alarm indicator remains until the alarm is cleared.
Fault	Map view	M29_Fault		Indicates that a fault has been generated. When the alarm is acknowledged, the cell status colour changes to magenta to indicate the existence of the fault. These faults are cleared by maintenance.
Maintenance	Map view	M30_maintenance		Indicates that a fault has been registered, and the object is taken out of service by maintenance until functionality can be restored.
Non-cell door, under DCS, secure	Map view	M31_secure		Indicates a non-cell door that is under door control is closed, locked and secure.
Non-cell door, moving	Map view	M32_door_opening		Indicates a door that is moving.

Unsecure door	Map view	M33_door_unsecure		Indicates a door that is not secure
Interlock opening	Map view	M34_Interlock_opening		Indicates an interlocked door that is moving.
Interlocked door secure	Map view	M35_interlocked_secure		Indicates that an interlocked door is closed and locked.
Interlocked door open as part of emergency evacuation	Map view	M36_Interlock_emergency_open		Indicates an interlocked door open as part of emergency evacuation
Interlocked door unsecure	Map view	M37_interlock_unsecure		Indicates that an interlocked door is unlocked or not closed and is in an unsecure state.
Door open as part of emergency evacuation	Map view	M38_Door_emergency_open		Indicates a door open as part of emergency evacuation
Door or window alarm	Map view	M39_Door_window_alarm		Indicates an alarm has been generated from a door or a window
Door or window fault alarm	Map view	M40_Door_window_fault		Indicates a fault alarm has been generated by a door or window
Door taken out of service by maintenance	Map view	M41_door_maintenance		Indicates a door taken out of service by maintenance

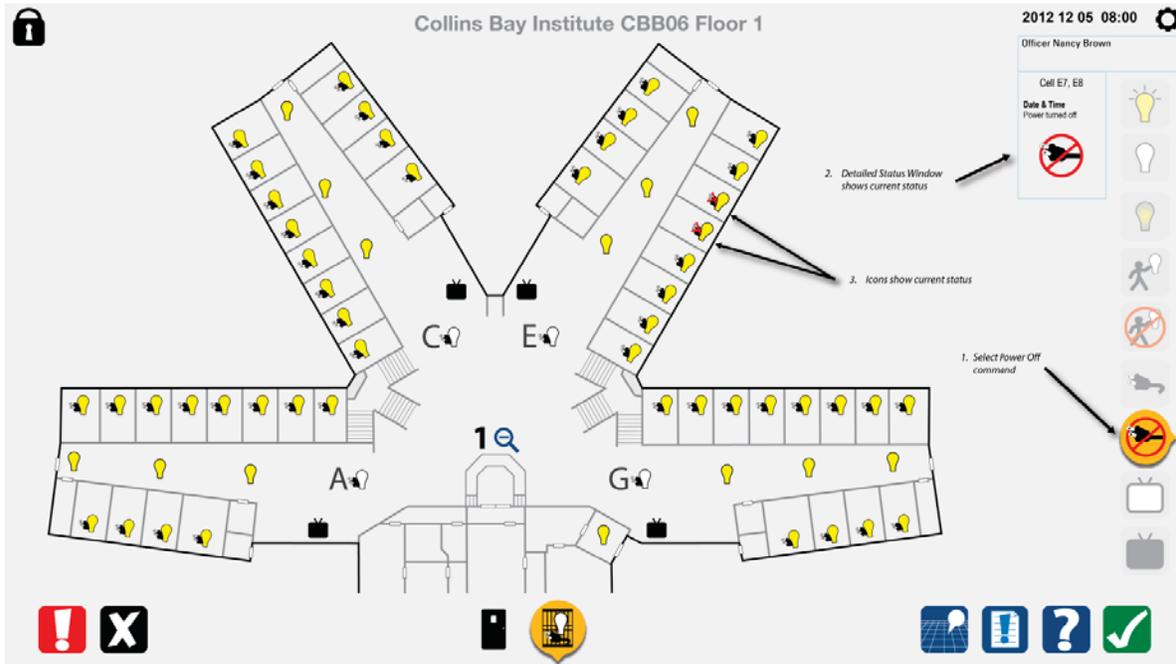
8.23 Enable power in a single cell that is joined – command completed



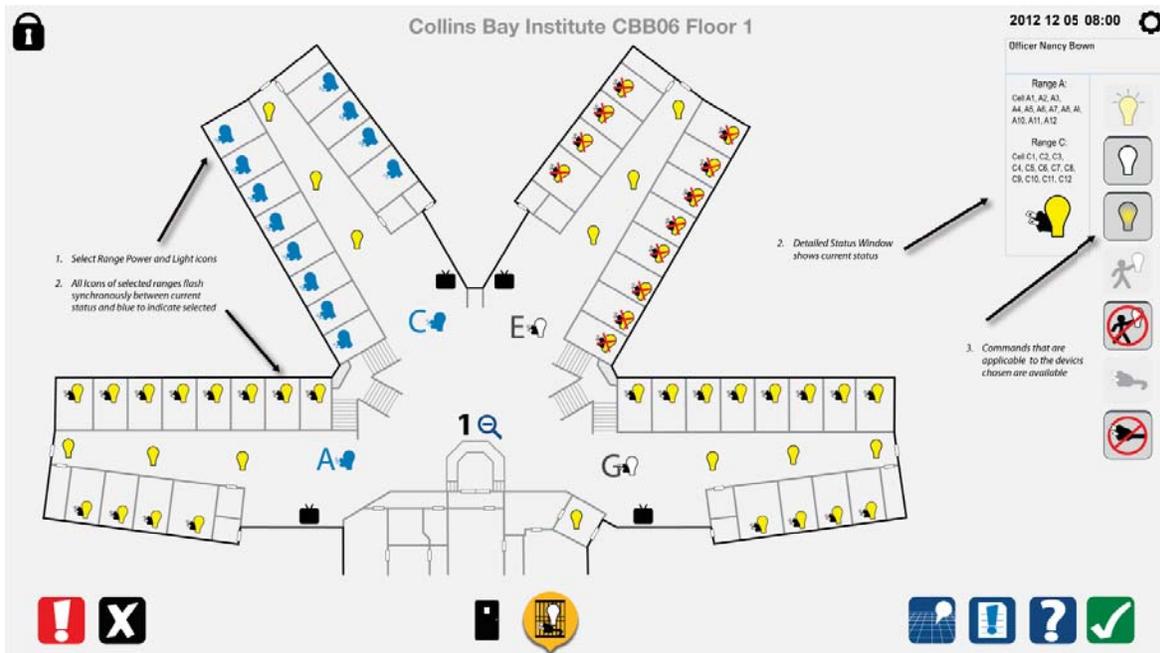
8.24 Disable power in a single cell that is joined



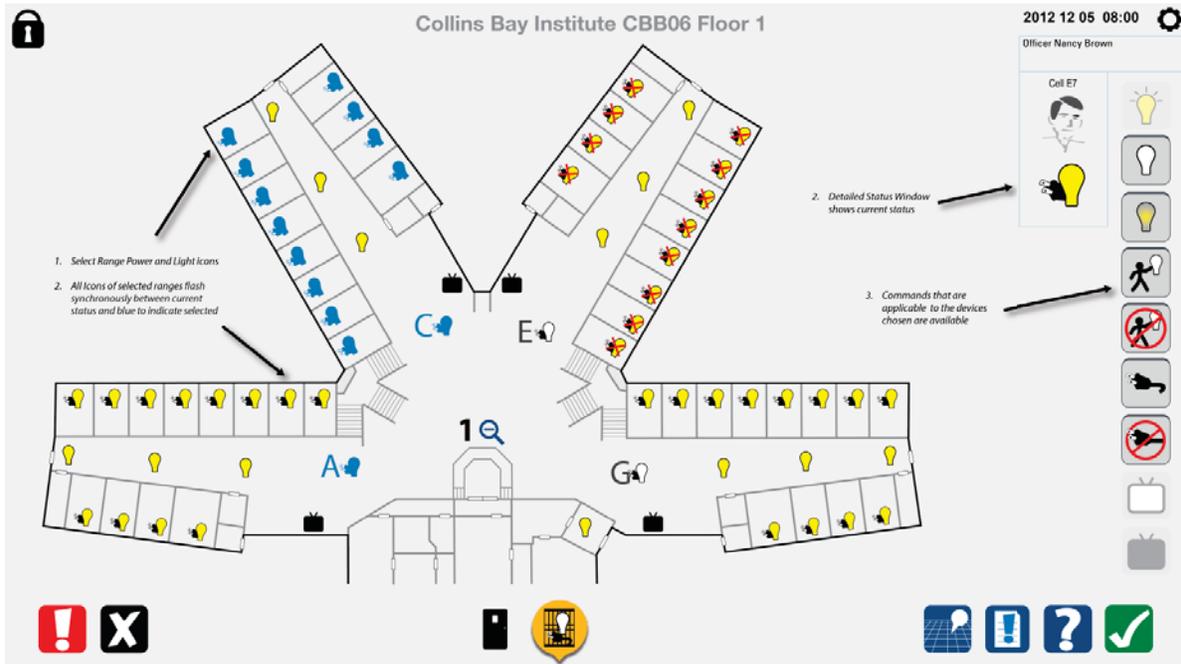
8.25 Disable power in a single cell that is joined – command completed



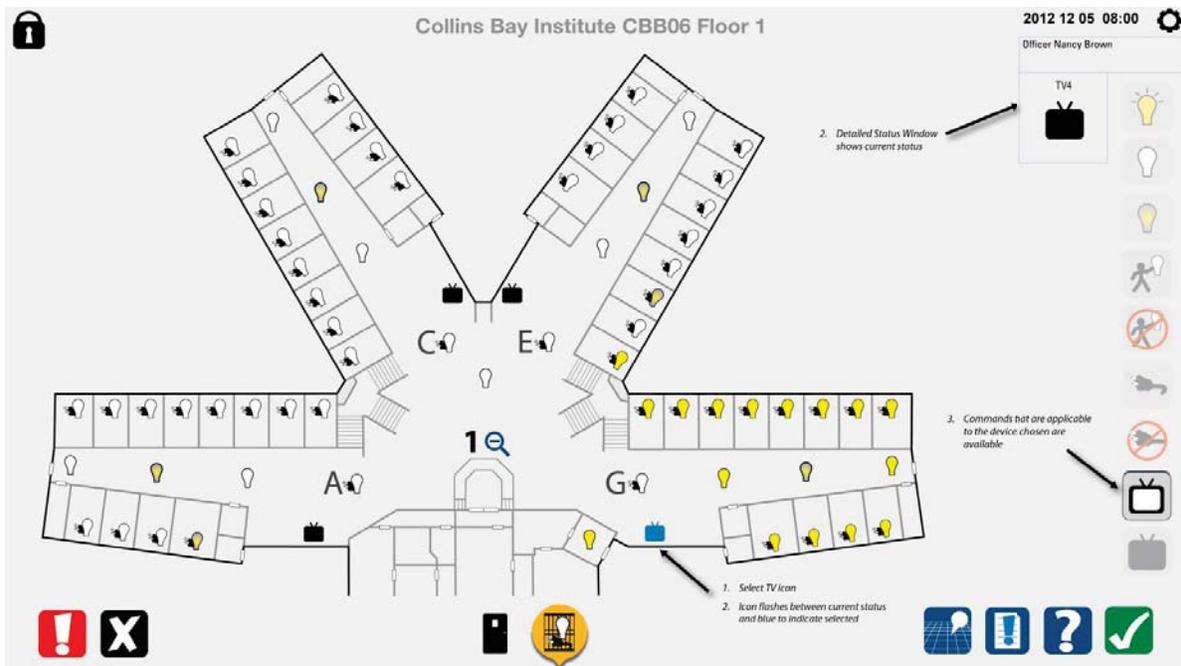
8.26 Disable power in a range



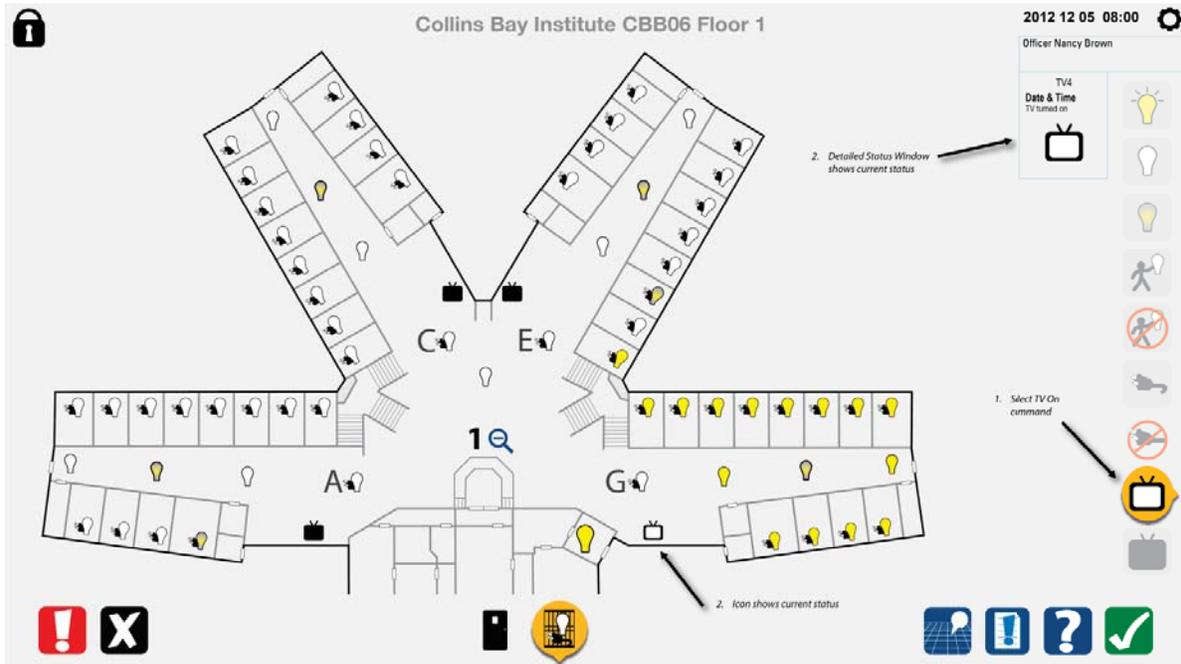
8.27 Disable power in a range – command completed



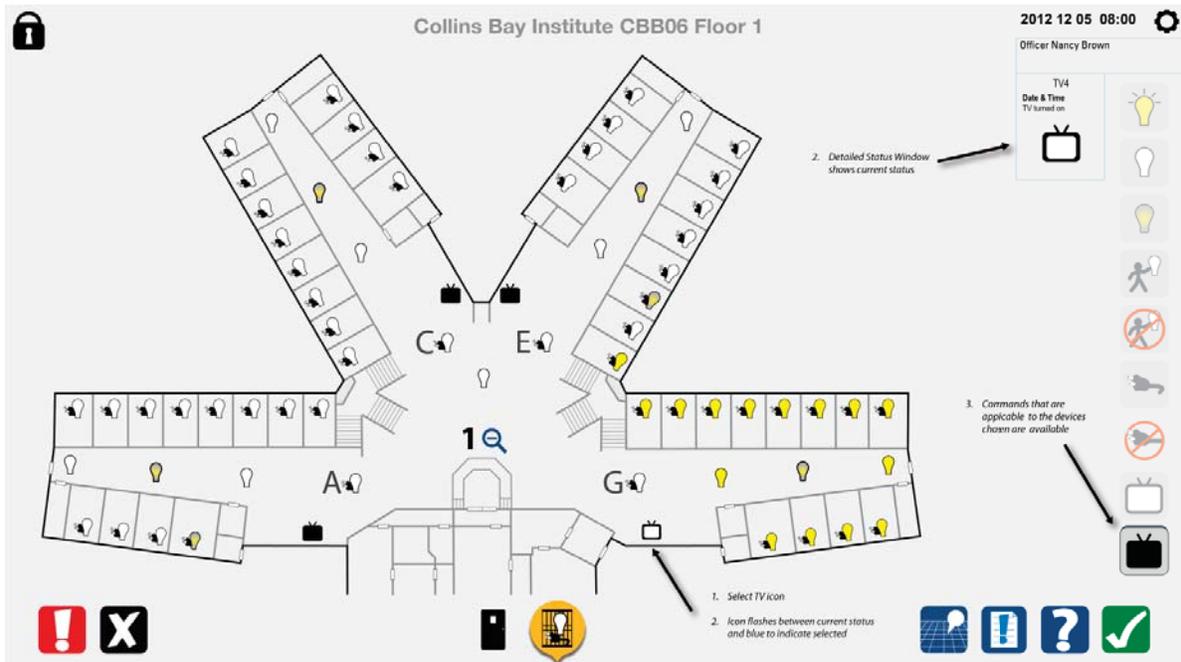
8.28 TV On



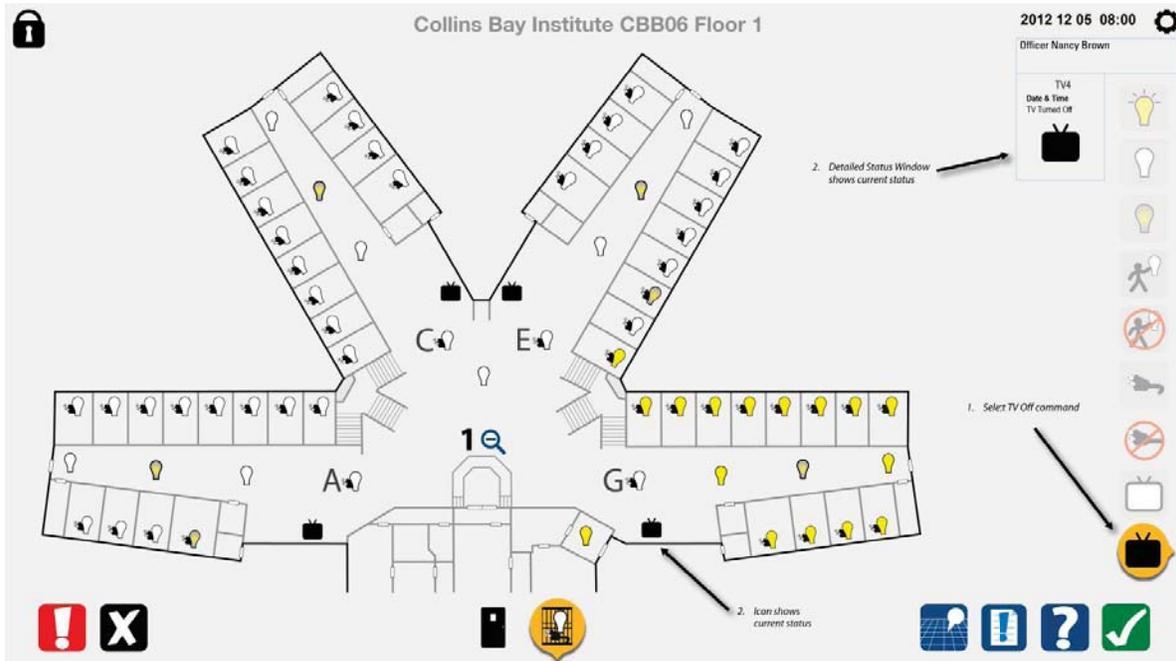
8.29 TV on – command completed



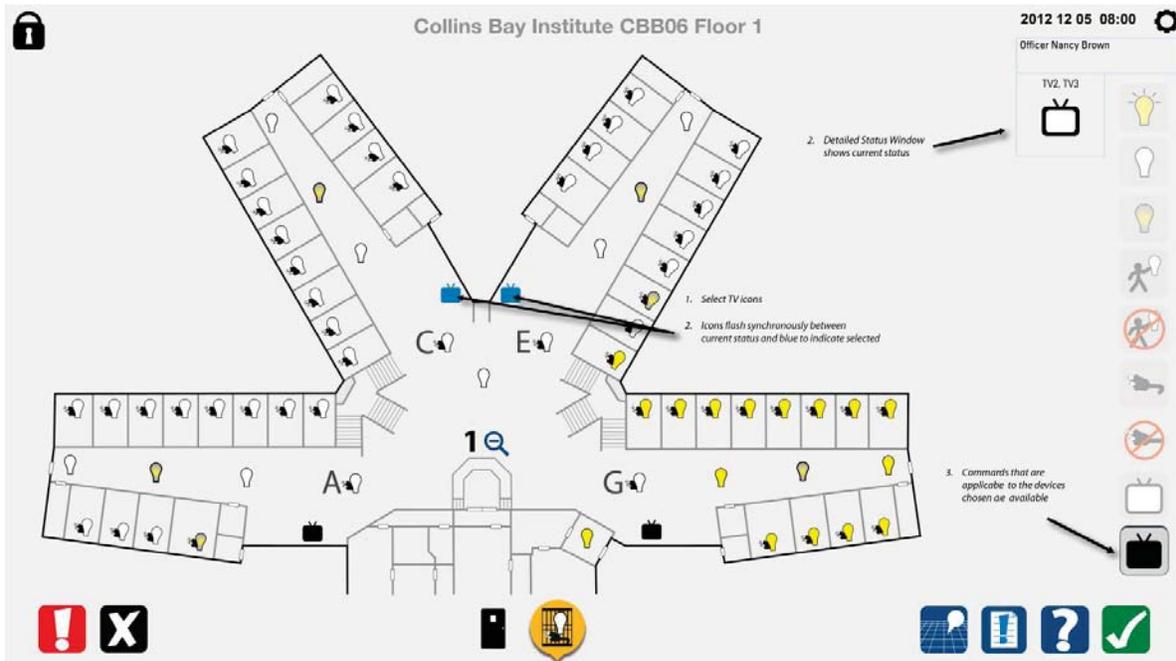
8.30 TV Off



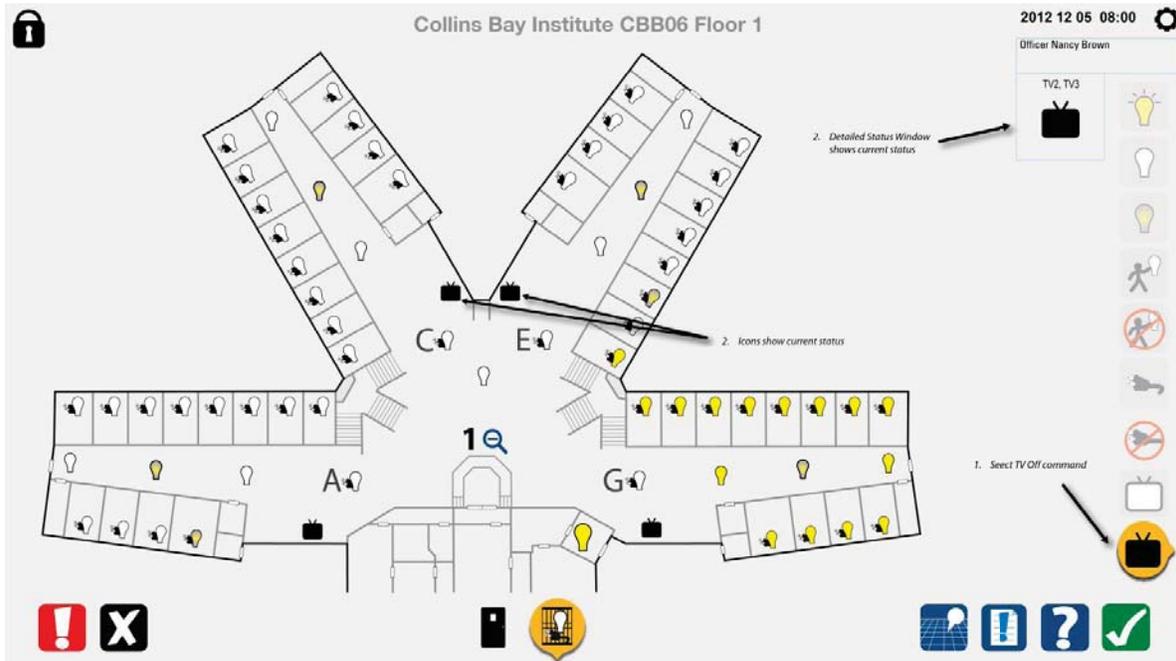
8.31 TV off – command completed



8.32 TV Group off



8.33 TV group off – command completed



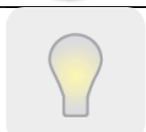
9 POWER AND LIGHT ICONS FOR LIVING UNIT CONTROL POST

.1 All icons are available from CSC in .png format.

9.1 Power and light command icons

Icon Description	Location	Icon Name	Icon	Description for Help
Turn lights on	Command area	R1_light		Command to turn lights on
		R2_light_selected		Command to turn lights on selected
		R3_light_greyed		Command to turn lights on not available
Turn lights off	Command area	R4_light_off		Command to turn lights off
		R5_light_off_selected		Command to turn lights off selected
		R6_light_off_greyed		Command to turn lights off not available
Disable lights from inmate control	Command area	R7_light_disabled		Command to disable lights in cell for inmate control
		R8_light_disabled_selected		Command to disable lights in cell for inmate control selected
		R9_light_disabled_greyed		Command to disable lights in cell for inmate control not available

Power on	Command area	R10_power		Command to turn power on
		R11_power_selected		Command to turn power on selected
		R12_power_greyed		Command to turn power on not available
Power off	Command area	R13_power_off		Command to disable power
		R14_power_off_selected		Command to disable power selected
		R15_power_off_greyed		Command to disable power not available
TV on	Command area	R16_tv_on		Command to provide power to TV
		R17_tv_on_selected		Command to provide power to TV selected
		R18_tv_on_greyed		Command to provide power to TV not available
TV off	Command area	R19_tv_off		Command to turn power off to TV
		R20_tv_off_selected		Command to turn power off to TV selected

		R21_tv_off_greyed		Command to turn power off to TV not available
Nightlight ob	Command area	R22_night_light_on		Command to turn on night light
		R23_night_light_on_selected		Command to turn on night light selected
		R24_night_light_on_greyed		Command to turn on night light unavailable
Enable inmates to control lights	Command area	R25_cell_light_enable		Command to enable lights in cell for inmate to turn on, turn off, or turn on night light
		R26_cell_light_on_selected		Command to enable lights in cell for inmate to turn on, turn off, or turn on night light not available
		R27_cell_light_on_greyed		Command to enable lights in cell for inmate to turn on, turn off, or turn on night light not available

9.2 Power and light status icons

Icon Description	Location	Icon Name	Icon	Description for Help
Light off	Detailed status window	W40_cell_light_off		Indicates light is off
Night light on	Detailed status window	W41_night_light_on		Indicates night light is on
Light on	Detailed status window	W42_cell_light_on		Indicates light is on
Lights disabled, power on	Detailed status window	W43_lights_on_disabled_power_on		Indicates lights are disabled, and light is on. Power is available

		W65_no_power		
		W66_TV_off		
		W67_TV_on		
		W68_power_light_on		
		W88_power_on		
		W69_no_power_light_on		
		W70_no_power_night_light		
		W71_no_power_light_disabled_on		

9.3 Power and light map icons

Icon Description	Location	Icon Name	Icon	Description for Help
Light off power on	Map area	M60_power_light_off		Indicates light is off; power is available
Light on power on	Map area	M61_power_light_on.		Indicates light is on; power is available
Night light on power on	Map area	M62_power_night_light		Indicates nightlight is on; power is available
Lights off power off	Map area	M63_no_power_light_off		Indicates power is disabled; light is enabled and off
Lights on power off	Map area	M64_no_power_light_on		Indicates power is disabled; light is enabled and on
Light and power selected	Map area	M65_power_light_selected.		Indicates light and power are chosen to send a command to
Light off and disabled power on	Map area	M66_power_light_disabled_off		Indicates power is available; lights are disabled, light is off
Light on and disabled, power on	Map area	M67_power_light_disabled_on		Indicates power is available; lights are disabled, light is on
Night light on power on	Map area	M68_power_light_disabled_night		Indicates power is available; lights are disabled, night light is on

Light disabled, light off and power off	Map area	M69_no_power_light_disabled_off		Indicates power is off; lights are disabled, light is off
Light disabled, light on and power off	Map area	M70_no_power_light_disabled_on		Indicates power is off; lights are disabled, light is on
Light disabled, night light on and power off	Map area	M71_no_power_light_disabled_night		Indicates power is off; lights are disabled, night light is on
Power off, night light on	Map area	M72_no_power_night_light		Indicates power is off; night light is on
TV on	Map area	M73_tv_off		Indicates TV is off
TV off	Map area	M74_tv_on.		Indicates TV is on
TV selected	Map area	M75_tv_selected		Indicates TV is chosen to send a command to
Light (not a cell light) on	Map area	M76_light_on		Indicates light is on
Light (not a cell light) off	Map area	M77_light_off		Indicates light is off
Power off	Map area	M78_no_power		Indicates power is off
Power on	Map area	M79_power_on		Indicates power is on
Night light (not a cell light) on	Map area	M80_night_light_on		Indicates night light is on

**CORRECTIONAL SERVICE CANADA
FACILITIES BRANCH
ELECTRONIC SECURITY SYSTEMS**

31 July 2014

DESIGN REQUIREMENTS

**FOR THE OPERATOR GRAPHICAL USER INTERFACE FOR THE
LIVING UNIT POWER AND LIGHT SYSTEM**

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TABLE OF ABBREVIATIONS

Abbreviation	Expansion
API	Application Programming Interface
ATP	Acceptance Test Procedure
BIFMA	Business & Industrial Furniture Manufacturers Association
CA	Contract Authority
CCDA	Command Control and Data Acquisition
CCTV	Closed Circuit Television
CD	Commissioner's Directive
CER	Common Equipment Room
COTS	Commercial-Off-The- Shelf
CSA	Canadian Standards Association
CSC	Correctional Service Canada
DCMS	Door Control and Monitoring System
DES	Director Engineering Services
EIA	Electronic Industries Association
FAAS	Facility Alarm Annunciation System
FAR	False Alarm Rate
FDS	Fence Disturbance Detection System
FIU	FAAS Interface Unit
GFE	Government Furnished Equipment
IVRMS	Inmate Voice Recording and Management System
IP	Internet Protocol
MCCP	Main Communications and Control Post
MDS	Motion Detection System
MTBF	Mean Time Between Failure
MTTR	Mean Time to Repair
NAR	Nuisance Alarm Rate
NTP	Network Time Protocol
PA	Public Address
PC	Personal Computer
Pd	Probability of Detection
PIDS	Perimeter Intrusion Detection System
PIU	Perimeter Intrusion Detection System Integration Unit
PLC	Programmable Logic Controller
RFP	Request for Proposal
RTEO	Regional Technical and Engineering Officer
PPA	Portable Personal Alarm

Abbreviation	Expansion
PPAL	Portable Personal Alarm Locatable
SCC	Security Control Centre
SIO	Security Intelligence Officer
SOR	Statement / Observation Report
SOW	Statement of Work
STR	Statement of Technical Requirements
TCP/IP	Transport Control Protocol/Internet Protocol
TER	Telecommunications Equipment Room
UI	User Interface
UPS	Uninterruptible Power Supply
V&C	Visits and Correspondence
VDU	Video Display Unit
VIRS	Visits Intercept and Recording System
VMS	Video Management System

TABLE OF DEFINITIONS

#	Term	Example	Description	Function
1	Administrative User Interface		Monitor and Software that supports task specific User Interaction for System Administrators, located in a secure area	Provides Administrative Personnel with the ability to map enrolled users to the functional domains that they are allowed to access and change
2	Application	Cell Call Management, PA Management	Software that is used to deliver Application Support functionality for a sub-system	Software that provides the Operator Interface and supporting logic that allows a sub-system (Control Domain) to be managed
3	CCTV Monitor	PIDS or Range CCTV Monitor	Computer Monitor Hardware	Displays CCTV images for Operator viewing
4	Client		Rack mounted computer located in a secure area away from a Control Post or Control Desk.	Runs software and supports one or more Application
5	Configuration Data	Site floor plans showing quantity of cameras, doors, cells etc. Camera locations. Number of User Interfaces required in a Post.	Site and System specific information typically supplied by CSC that defines how a sub-system Application is to be set-up for a site, location within a site, or post.	The configuration data provides the information that a sub-system application requires to tailor it to meet site, location within a site, or post user requirements.
6	Configuration User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows suppliers or qualified personnel to add, delete and modify Application Configuration
7	Contract Authority		Public Works and Government Services Canada (PW&GSC) is responsible for all contractual matters associated with the system design and implementation.	
8	Contractor		The company selected as the successful bidder.	
9	Control Console	MCCP Console, Living Unit Control Post Console	Console, typically located in a Control Post. Serves as the physical support infrastructure for Operator User Interfaces	Contains User Interfaces or Control Panels used by staff to execute their management responsibilities and interact with the Domains over which they have Control
10	Control Desk	Living Unit Control Desk	Desk, typically located in a Control Post or Office. Serves as the physical support infrastructure for Operator User Interfaces	Equipped with User interfaces used by staff to execute their management responsibilities and interact with the Domains over which they have Control

#	Term	Example	Description	Function
11	Control Domain	Cell Call, Guard Tour, Public Address	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that performs a set of related functions	Collect information, or activate capabilities in their operational domain
12	Control Panel	PACP, Fire Alarm	Hardware and Software device that provides an Operator Interface (I/O device), located in a Control Post	Allows Operators to manage one or more Domain
13	Control Post	Living Unit Control Post/MCCP	Room or area, typically located in a secure area in an institution	Room used by staff to execute their management responsibilities and interact with the Domains over which they have Control
14	Custom Equipment		Equipment designed and/or manufactured specifically for a specific contract.	
15	Design Authority		Director, Electronic Security Systems (DES) Correctional Service of Canada (CSC) is responsible for all technical aspects of the system design and implementation.	
16	Device	CCTV Camera, Managed Door, Call Origination Device	A specialized device, typically consisting of hardware and software	Provides data collection or activate functions associated with a specific system or sub-system
17	Enrolment User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows Designated Personnel to enroll and delete Users from the Command, Control and Data Acquisition System.
18	Maintenance User Interface		Monitor and Software that supports task specific User Interaction, located in the CER or Maintenance Service Provider Office	Provides Maintenance Personnel with the ability to interact with one or more Systems to carry out their day to day tasks to troubleshoot and maintain Systems and Subsystems
19	Notification	Notification that a door is opened, or a door is closed, or a sensor is in alarm	A notification is a message that can be shown on a User Interface and/or logged in a database that represents a change in state or a command initiated by an operator.	

#	Term	Example	Description	Function
20	Off-the Shelf		Equipment currently on the market with available field reliability data, manuals, engineering drawings and parts price list.	
21	Operator User Interface	PIDS Display, Door Control and Monitoring System Display	Computer Monitor and Software that supports User Interaction (I/O device)	Provides an Operator with the ability to interact with one or more Systems to carry out their day to day tasks at a Control Console or Control Desk
22	Project Officer		A CSC employee or a contracted person designated by DES to be responsible for the implementation of the project.	
23	Reporting User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Provides Management Personnel with the ability to access preconfigured reports and to create custom reports
24	Server	Network Video Recorder	Rack mounted computer that runs software and is located in an equipment room such as a CER or TER	Runs software that is used to deliver services that support Command and Control Applications to connect to sub-systems
25	State		The state of a device as reported to a sub-system or system	This is a logical representation of the state of a device that is being monitored or managed
26	Sub-system	Cell Call, Guard Tour	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that perform a specific set of related functions	Collects information, or activates capabilities in their operational domain
27	System	PIDS	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, including devices from sub-systems that perform a more general set of related functions	Collects information, or activates capabilities in their operational domain
28	Touch Screen User Interface	Door Control and Monitoring System User Interface	Typically an LCD Monitor with touch screen technology	Allows an Operator to view and interact with the Systems presented on the Monitor

#	Term	Example	Description	Function
29	Workstation		Rack mounted computer located in a secure area away from a Control Post or Control Desk	Runs software that is used to deliver Command and Control Capabilities

1 INTRODUCTION

- .1 The intent of the User Interface for the Power and Light System is to enable Operational Staff in the living unit control post to turn on and off the power and lights in living units.

2 SCOPE

- .1 This standard defines the functionality and operational processes intended to be provided through the User Interface for the system used in the management and control of the Power and Light System used in the living unit control posts at Federal Correctional Institutions. The standard does not specify the actual data involved in the processes, but describes in detail the Human Machine Interface. This system shall share displays with the Door Control and Monitoring System in the Control Posts, if they are from the same supplier.

3 AUDIENCE

- .1 The intended audience includes potential developers, suppliers or those that configure the software application that will provide both the Human Machine Interface for the functionality described in the balance of the standard as well as the logic that will integrate and manage the other components of the system as required. This standard must be read in conjunction with the Standard for the Configuration of a Living Unit Control Post as this document will define the scale of the system and provide ranges and parameters that will be needed in defining the logic that underlies the User Interface.

4 GENERAL

- .1 The primary purpose of the Range Office is to monitor and control as applicable one or more ranges from a living unit control post. The functions of the living unit control post vary from institution to institution.
- .2 The living unit control post can support monitoring and/or control of:
 - .1 DCMS for cell doors, for exit doors, windows, doors in residential units
 - .2 Security Patrol System
 - .3 Inmate Cell Call System
 - .4 Power and Light System for cells, power to TV and control of other lights
 - .5 CCTV
 - .6 Other systems as they are implemented
- .3 The User Interface must be designed in such a way that it supports multiple management domains in a seamless and transparent manner as the system is expanded, supporting the representation of one domain through all domains that must be managed on the same User Interface.
- .4 The living unit control post is comprised of two main components from a UI perspective:
 - .1 Two status displays for the Security Patrol, and control systems for functions such as cell call
 - .2 Four status displays for DCMS for monitoring and/or control of access points managed by that living unit control post (including cell doors, doors and windows) and for control of power and light
- .5 This document covers the control systems for power and light.
- .6 The Status Display displays the Power and Light application. The existing Interior Security System (known as FAAS) will collect, record, and display alarm signals in the MCCP for alarms that are escalated to the MCCP.
- .7 This capability may be called upon to meet operational requirements or to meet situations in which a User Interface fails or for the aggregation of Control Post functionality as posts are reconfigured to accommodate staffing requirements. The definition of how User Interfaces in control posts provide redundancy within a control post and at another control post must be flexible and must be defined in configuration information.
- .8 Commands originating from Operator actions at the User Interface and events that represent a change of state at a device will typically result in a message that will be "logged" by the underlying data logging services of the Service Delivery Platform on which this application runs. This data can and will be accessed at a later date for evidentiary use, assessment, and follow-up.

5 DESIGN REQUIREMENTS

5.1 General

- .1 The cell power and light control consists of a User Interface presented on individual Touch Screen Video Displays in each Living Unit Control Post . In general, there are two UIs for each range
- .2 The Power and Light System shares the UI with the DCMS.
- .3 The status of the doors are always shown on the UI, whether the system selected for use in sending commands to devices is the Power and Light System or the Door Control and Monitoring System.

5.1.1 User Interface

- .1 The User Interface must use iconography and guidelines provided or approved by CSC.
- .2 The preferred display layout will be based on a simplified floor plan of the whole or part of a unit based on screen space. Icons must be used instead of text where possible.

5.2.1 Human Factors

- .1 The UI for the living unit control post must conform to accepted principles of good human factors design and be implemented according to the standards listed below:

ES/STD-0900	Standard for Design of Icons for User Interfaces
ES/STD-0901	Standard for Design of the Look and Feel of the User Interface
ES/STD-0902	Standard for Design of the Framework of the User Interface

5.3.1 Requirements from other systems not managed but this UI

- .1 No requirements at this time.

6 OPERATIONAL REQUIREMENTS

6.1 Operational functions or tasks

- .1 This is a list of the operational functions that the monitoring and control display in the range office must cover for cell light and cell power:

6.1.1 Control of lights and power at range office control post

- .1 Lights
 - .1 Turn on and turn off regular lights in one cell
 - .2 Choose a group of cells to turn on or turn off regular lights
 - .3 Turn on and turn off night lights in one cell
 - .4 Choose a group of cells to turn on or turn off night lights
 - .5 Enable and disable the light switch in the cells that inmates use to turn on and off their lights
 - .6 Choose a group of cells to enable or disable the light switch in the cells
 - .7 Turn on and off other lights (including night lights)
 - .8 Choose a group of lights to turn on and off (including night lights)
 - .9 Turn on and turn off lights to a range using range icon
 - .10 Turn on and turn off night lights to a range using range icon
- .2 Power
 - .1 Turn on and turn off power in one cell
 - .2 Turn on and turn off power in two connected cells
 - .3 Choose a group of cells to turn power on or off
 - .4 Turn on and turn off power to a range
 - .5 Turn on and turn off power a location that is not a cell
 - .6 Choose several locations to turn power on and off to that is not a cell
- .3 TV
 - .1 Turn on and turn off one TV
 - .2 Choose more than one TV to turn power on or off
- .4 Alarms and fault states

6.2 List of commands that are to be confirmed

- .1 At the range office, the following commands are to be confirmed with respect to power and light.

Command	Confirmation Mechanism
None	

6.3 List of system alarms and alarm handling attributes

- .1 These are the alarms and alerts that are generated, displayed and managed at the Range Office UI.

Alarm or alert	Source	Category	Audible alarm and displayed locally	Displayed and listed at MCCP	Audible alarm at MCCP
GUI failure (either of GUI or one of the cell call system managed at that GUI)	External	Minor – Priority 8	Yes, alarm sound 4c at pre-configured backup monitor	Yes	Yes, Sound 4c

- .2 Once a system alarm is generated, the alarm must be acknowledged. When the device returns to its pre-alarm state, the status of the device is also returned to its normal state. None of these alarms are cleared or reset at the SIO UI. The MCCP would restore the V&C control post when appropriate.
- .3 Acknowledging an alarm using the Alarm Acknowledge Icon, acknowledges all unacknowledged alarms listed at the UI.
- .1 Where there is an alarm from a device managed or monitored by that UI:
 - .2 the device shows an alarm state and flashes
 - .3 the detailed status window pops up with the details of the alarm that are determined to be displayed for that device at that control post in that window (ie determined by configuration data), Alarm icon flashes cycling between 1,2 and 3 bars on icon. Flashes of map icon and detailed status icon are in synchrony.
 - .4 there is an audible alarm
 - .5 when Acknowledge Alarm icon chosen, the map icon stops flashing and the Alarm icon in the detailed status window shows the Alarm icon with no bars, and the audible alarm ceases.
- .4 There are no alarms for power, lights or TV for tamper or fault

6.4 List of devices and states for those devices

- .1 See section 9 for a diagram of the icons.

Device	State	Visual indication of state
Light bulb	Off	Icon is white
	On	Icon is yellow
	Nightlight	Icon is grey with muted yellow center
Lights disabled from inmate control	Inmate control disabled with lights on	Light bulb icon is on with a red X through it
	Inmate control disabled with lights on	Light bulb icon is off with a red X through it
	Inmate control disabled with nightlight on	Light bulb icon is the nightlight state with a red X through it
Power	On	Black plug

	Off	Black plug with red X through it
TV	Power to TV is on	TV icon has a white interior
	Power to TV is off	TV icon has a black interior
All	Selected	Icon flashes alternatively with current state (and colour) and blue until command selected, or 10 seconds has passed, when icon reverts to previous state

- .2 Power and light can control the range lights, inmate power and light, and power to the TVs.
- .3 The light icons are combined with the power icons to show the various combinations that are managed in different kinds of living units.

7 OPERATIONAL SEQUENCES

- .1 These show the operational sequences to be implemented by the range office system to control power and lights. The UI layouts that show visually how these actions are to be implemented are provided in Section 8.
- .2 It is likely that these control systems will share a monitor with other systems. There are specific maps default maps that apply to each system, and when that system is selected from the Selection tray, the default map for that system for that control post is presented. When another system is selected, the default map for that system is presented.
- .3 If the range icon is used to select the range lights, and both night lights and regular lights are on in the range, selecting lights off will turn off both the regular lights and the night lights.
- .4 In some cases, range lights have no local switch and are only controlled from the range office control post.
- .5 In some cases, there are miscellaneous lights which cannot be disabled. This is captured in configuration data.
- .6 If a locked out cell is selected, lights commands are not available - night light automatically turns on as part of lockout command (but not cell lockdown command).
- .7 When the range is selected, light commands are not sent to any locked out cells.
- .8 If the lights are disabled, the officer can still turn the lights on, turn the night light on, or turn the lights off. The lights remain disabled for inmate control.
- .9 In some cases, the power to two cells is connected, and enabling or disabling power in one of the cells also enables or disables the power in the other cell. Where power to two cells is connected, when the power and light icon is chosen in one cell and flashes blue alternately with its current status, the power and light icon for the other cell also flashed blue alternately with its current status to indicate that the command will be sent to both cells.

7.1.1 Light control

- .1 Turn on lights on and turn off in a single cell, night light on – light is off and lights are enabled, power is enabled; TV is off

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
		Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose cell	Power and light is selected; DCMS		- Light on -Night light -Light disable -Power off	- Light off -Light enable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	Cell identifier displayed with name of inmate, picture of inmate and icon of current power and light status – lights off and enabled, power enabled
3	Select lights on command	Power and light is selected; DCMS	-Light on		-Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights on and enabled, power enabled
4	Choose the same cell	Power and light is selected; DCMS		- Light off -Night light -Light disable -Power off	-Light on -Light enable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	As above
5	Select lights off command		-Light off		-Light on -Night light -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights off and enabled, power enabled
6	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		Pops out after 10 seconds

- .2 Turn on lights and turn off lights to a group of cells – some cells have lights on, some have lights off, some have night lights on.

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off			NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose cell with light off	Power and light is selected; DCMS		- Light on -Night light -Light disable -Power off	- Light off -Lightenable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	Cell identifier displayed with name of inmate, picture of inmate icon of current power and light status – lights off & enabled, power enabled	
3	Choose other cells, some with light on, and some with night light	Power and light is selected; DCMS		- Light on -Light off -Night light -Light disable -Power off	- Light enable -Power on -TV on -TV off	Icons flashes to indicate cells chosen; all icons flash together at same rate	List of cells selected presented	NOTE: since the cells chosen have a range of states, all commands that could apply to any cell are available
3	Select Lights on command	Power and light is selected; DCMS	-Light on		-Night light -Light off -Lightenable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	List of cells with change to status listed; including cells where the command was not applied	Only cells to which lights on command apply has the command applied
4	Choose another group of cells	Power and light is selected; DCMS		- Light on -Light off -Night light -Light disable -Power off	-Lightenable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	First choice shows status for cell, subsequent choices show only the list	The change to command icons available takes place in real time as the cells are selected
5	Select lights off command		-Light off		-Light on -Night light -Lightenable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights off and enabled, power enabled	Only cells to which lights on command apply has the command applied
6	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Lightenable -Light disable - Power on -Power off		Pops out after 10 seconds	

					-TV on -TV off			
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.3 Enable and disable the light switch in the cells that inmates use to turn on and off their lights, and turn on their night lights

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Lightenable -Light disable - Power on -Power off -TV on -TV off			NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose cell that has lights enabled and lights off	Power and light is selected; DCMS		- Light on -Night light -Light disable -Power off	- Light off -Lightenable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	Cell identifier displayed with name of inmate, picture of inmate and icon of current power and light status – lights off and enabled, power enabled	
3	Select lights disable command	Power and light is selected; DCMS	-Light disable	-	-Light on -Night light -Light off -Lightenable -Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights off and disabled, power enabled	
4	Choose the same cell	Power and light is selected; DCMS		- Light off -Night light -Lightenable -Power off	-Light on -Light disable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	As above	
5	Select Night light command		-Night light	-	-Light on -Light off -Lightenable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status – lights disabled, night light, power enabled	
6	Choose a cell with lights on and cell lights disabled	Power and light is selected; DCMS		- Light off -Night light -Light disable -Power off	-Light on -Lightenable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	Cell identifier displayed with name of inmate, picture of inmate and icon of current power and light status – lights on and disabled, power enabled	When lights are enabled or disabled, the light remains in its current state
7	Select Light Enable	Power and light is	-Light enable		-Light on -Night light	Icon changes to show	As above, reflecting	

		selected; DCMS			-Light off -Light disable - Power on -Power off -TV on -TV off	current status	current status – lights enabled and on, power enabled	
8	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		Pops out after 10 seconds	

.4 Choose a group of cells to enable or disable the light switch in the cells

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off			NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose cell with light off	Power and light is selected; DCMS		- Light on -Night light -Light disable -Power off	- Light off -Light enable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	Cell identifier displayed with name of inmate, picture of inmate and icon of current power and light status – lights off and enabled, power enabled	
3	Choose other cells, some with light on, and some with night light, with lights enabled	Power and light is selected; DCMS		- Light on -Light off -Night light -Light enable -Light disable -Power off	- Light enable -Power on -TV on -TV off	Icons flashes to indicate cells chosen; all icons flash together at same rate	List of cells selected presented	NOTE: since the cells chosen have a range of states, all commands that could apply to any cell are available
4	Select Light Disable command	Power and light is selected; DCMS	-Light disable		-Light on -Night light -Light off -Light enable -Power on -Power off -TV on -TV off	Icon changes to show current status	List of cells with change to status listed;	Only cells to which lights on command apply has the command applied
5	Choose another group of cells, some with lights disabled and one with lights enabled	Power and light is selected; DCMS		- Light on -Light off -Night light -Light enable -Light disable -Power off	-Power on -TV on -TV off	Icons flashes to indicate cells chosen; all icons flash together at same rate	First choice shows status for cell (as in step 2) subsequent choices show only the list	The change to command icons available takes place in real time as the cells are selected
6	Choose the light that is enabled (within 10 seconds of the last light chosen)	Power and light is selected; DCMS	-	- Light on -Light off -Night light -Light enable -Power off	-Light disable -Power on -TV on -TV off	Icons flashes to indicate cells chosen; all icons flash together at same rate Icon for light enabled not longer flashes	As above, with the cell with lights enabled no longer part of the list	NOTE: Choosing and already chosen object de-selects it. Command availability changes

7	Select Light enable command		-Light enable	-	-Light on -Night light -Light off -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights off and enabled, power enabled	Cell lights remain in same state as before.
8	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		Pops out after 10 seconds	

.5 Turn on and off other lights (including night lights)

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off			NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose a light that is off	Power and light is selected; DCMS		- Light on	- Light off -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon flashes to indicate light chosen	Light identifier presented with icon of current light status – light off	Fewer commands apply to lights that are not cell lights
3	Select Lights on command	Power and light is selected; DCMS	-Light on	-	-Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - light on	
4	Choose a night light that is on	Power and light is selected; DCMS		- Light off	-Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon flashes to indicate light chosen	Light identifier presented with icon of current light status – light on	
5	Select Lights off command	Power and light is selected; DCMS	-Light off		-Light on -Night light -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights off and enabled, power enabled	
6	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		Pops out after 10 seconds	

.6 Choose a group of lights to turn on and off (including night lights)

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		NOTE: if the overview map is displayed, may need to choose detailed map	
2	Choose light that is off	Power and light is selected; DCMS		- Light on	- Light off -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon flashes to indicate light chosen	Light identifier presented with icon of current light status – light off	
3	Choose other lights including night light that is on	Power and light is selected; DCMS		- Light on -Light off	- Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icons flashes to indicate lights chosen; all icons flash together at same rate	List of lights presented	NOTE: since the cells chosen have a range of states, all commands that could apply to any cell are available
3	Select Lights on command	Power and light is selected; DCMS	-Light on		-Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	List of cells with change to status listed; including cells where the command was not applied	Only cells to which lights on command apply has the command applied
4	Choose night light and other lights where lights are on	Power and light is selected; DCMS		- Light on	- Light off -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icons flashes to indicate lights chosen; all icons flash together at same rate	List of lights presented	
5	Select lights off command		-Light off		-Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icon changes to show current status	List of cells with change to status listed	
6	Command completed	Power and light is			- Light on -Night light -Light off		Pops out after 10 seconds	

		selected; DCMS			-Light enable -Light disable - Power on -Power off -TV on -TV off			
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.7 Turn on and turn off lights to a range (including night lights)

Action	Selection Tray	Command Tray			Map View	Detailed Status Window	Comments	
		Selected	Avail	Not Avail				
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		NOTE: Command can be applied from overview map	
2	Choose icon representing lights for a range where lights are on; night lights off	Power and light is selected; DCMS		-Night light -Light off	-Light on -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Range icon flashes to indicate range chosen. All light icons that would be affected by the command flash at the same frequency	List of lights that are affected are listed with icon showing current status – lights on	Can turn lights on, lights off, or night lights for a range
3	Select light off		-Light off		-Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icons show change in status	List of lights that are affected are listed with icon showing current status – lights on	NOTE if lights are on and night lights are on, the light off command turns both off
4	Choose icon representing lights for a range where lights are off	Power and light is selected; DCMS		-Night light -Light on	-Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Range icon flashes to indicate range chosen. All light icons that would be affected by the command flash at the same frequency	List of lights that are affected are listed with icon showing current status – lights on	
5	Select Night Light command	Power and light is selected; DCMS	-Night light		-Light on -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icons change to show current status	List of lights that are affected are listed with icon showing current status – night light	
4	Command completed	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off		Pops out after 10 seconds	

					-TV on -TV off			
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.8 Turn on and turn off lights to more than one range (including night lights) – lights are off, night lights are on

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off			NOTE: Command can be applied from overview map
2	Choose icon representing lights for a range where lights are off, night lights are on	Power and light is selected; DCMS		-Light on -Light off	-Night light -Light enable -Light disable - Power on -Power off -TV on -TV off	Range icon flashes to indicate range chosen. All light icons that would be affected by the command flash at the same frequency	List of lights that are affected are listed with icon showing current status – lights off night lights on	Can turn lights on, lights off, or night lights for a range
3	Choose another range icon where lights are off, night lights are on	Power and light is selected; DCMS		As above	-As above	As above	List of lights that are affected are listed with icon showing current status – lights off night lights on	
4	Select Light on	Power and light is selected; DCMS	-Light on	-	-Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off	Icons show change in status	List of lights that are affected are listed with icon showing current status – lights on	Turning lights on for the range automatically turns night lights off Can still turn night lights on
5	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		Pops out after 10 seconds	

7.2 Power control

.1 Turn on power and turn off power to a single cell; lights enabled and on

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off			NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose cell	Power and light is selected; DCMS		- Light off -Night light -Light disable -Power off	- Light on -Light enable -Power on -TV on -TV off	Icon flashes to indicate cell chosen	Cell identifier displayed with name of inmate, picture of inmate and icon of current power and light status – lights off and enabled, power enabled	
3	Select Power Off command	Power and light is selected; DCMS	-Power off	-	-Light on -Night light -Light off -Light enable -Light disable - Power on -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights on and enabled, power enabled	
4	Choose the same cell	Power and light is selected; DCMS		- Light off -Night light -Light disable -Power on	-Light on -Light enable -Power off -TV on -TV off	Icon flashes to indicate cell chosen	As above	
5	Select Power on command		-Power on	-	-Light on -Night light -Light off -Light enable -Light disable -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights off and enabled, power enabled	
6	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		Pops out after 10 seconds	

.2 Turn on power and turn off power to two connected cells ; lights are on and enabled, power is on

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off			NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose cell	Power and light is selected; DCMS		- Light off -Night light -Light disable -Power off	- Light on -Lightenable -Power on -TV on -TV off	Icon flashes to indicate cell chosen; if power is connected, power and light icon for connected cell turns blue and does not flash	Cell identifier displayed with name of inmate, picture of inmate and icon of current power and light status – lights off and enabled, power enabled	Note: Connected cell does not flash as a light command sent to that cell would only affect that cell.
3	Select Power Off command	Power and light is selected; DCMS	-Power off		-Light on -Night light -Light off -Lightenable -Light disable - Power on -TV on -TV off	Both icons change to show current status	Cell identifiers displayed; reflecting current status - lights on and enabled, power enabled	
4	Choose the same cell	Power and light is selected; DCMS		- Light off -Night light -Light disable -Power on	-Light on -Lightenable -Power off -TV on -TV off	Icon flashes to indicate cell chosen; if power is connected, power and light icon for connected cell turns blue and does not flash	Cell identifier displayed with name of inmate, picture of inmate and icon of current power and light status – lights off and enabled, power enabled	
5	Select light off command		-Light off	-	-Light on -Night light -Light off -Lightenable -Light disable -Power off -TV on -TV off	Icon changes to show current status; connected cell no longer blue	As above, reflecting current status - light off and enabled, power disabled	Once a light command is selected, the interconnected cell for power no longer shows blue
6	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Lightenable -Light disable - Power on -Power off		Pops out after 10 seconds	

					-TV on -TV off			
--	--	--	--	--	-------------------	--	--	--

- .3 Turn on power and turn off power to a group of cells
 - .1 Similar to turning on and off flights to a group of cells; the commands that are available and unavailable depend on what the state of the lights are.
- .4 Turn on and off power to a range
 - .1 Similar to turning on and off lights to a range
- .5 Turn on and turn off power to a location that is not a cell
 - .1 Similar to turning on and off power to a location that is not a cell
- .6 Choose several locations to turn power on and off that is not a cell
 - .1 Similar to turning on and off power to a group of locations that are not cells

7.1.2 TV on and off

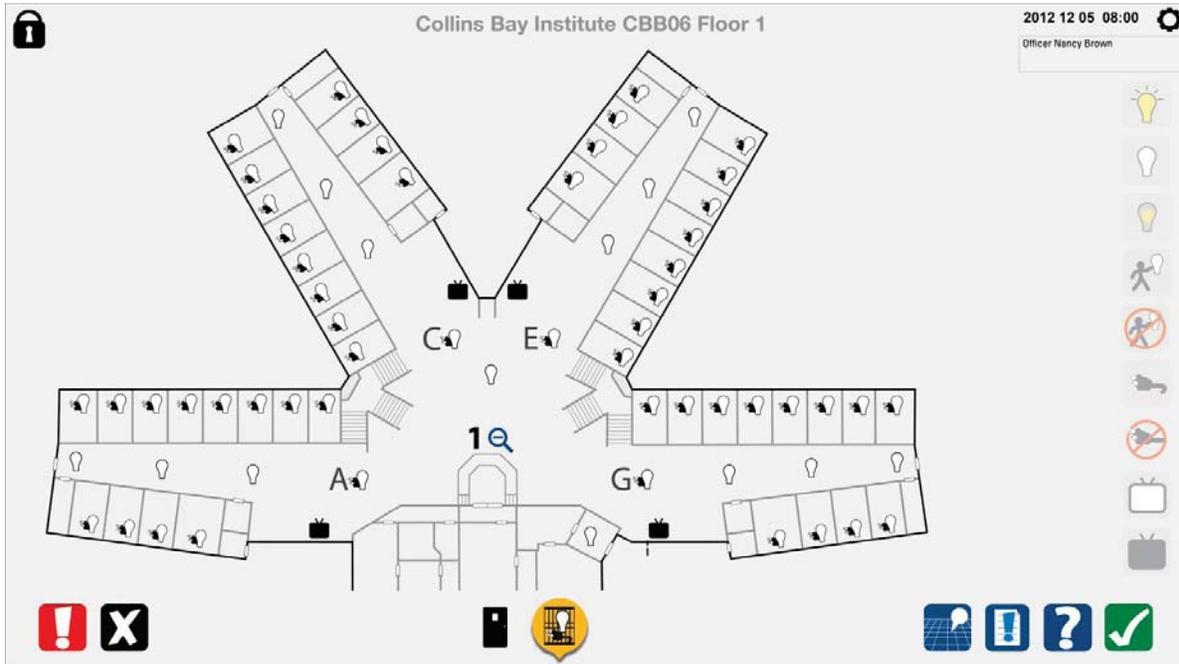
.1 Turn the power on and off to one TV

Action		Selection Tray	Command Tray			Map View	Detailed Status Window	Comments
			Selected	Avail	Not Avail			
1	Select power and light system	Power and light is selected; DCMS		-	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off			NOTE: if the overview map is displayed, may need to choose detailed map
2	Choose a TV with power off	Power and light is selected; DCMS		- TV on	- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV off	Icon flashes to indicate chosen	TV identifier displayed with current status	
3	Select TV on command	Power and light is selected; DCMS	-TV on	-	-Light on -Night light -Light off -Light enable -Light disable - Power on -TV off	Icon changes to show current status	As above, reflecting current status	
4	Choose the same TV	Power and light is selected; DCMS		- TV off	-Light on -Night light -Light off -Light enable -Light disable - Power on -TV on	Icon flashes to indicate cell chosen	TV identifier displayed with current status	
5	Select TV off command		-TV off	-	-Light on -Night light -Light off -Light enable -Light disable -Power off -TV on -TV off	Icon changes to show current status	As above, reflecting current status - lights off and enabled, power enabled	
6	Command completed	Power and light is selected; DCMS			- Light on -Night light -Light off -Light enable -Light disable - Power on -Power off -TV on -TV off		Pops out after 10 seconds	

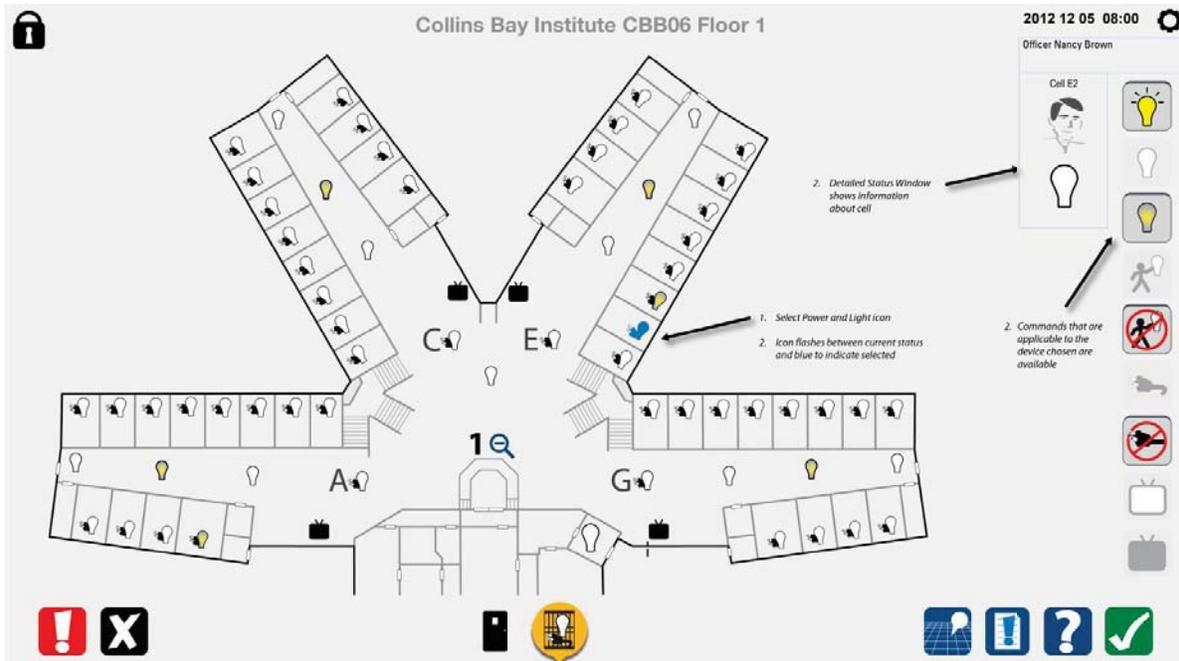
8 VISUAL LAYOUTS OF UI FOR POWER & LIGHT FOR THE RANGE OFFICE

- .1 The following provide some samples of how the operational sequences would be displayed on the UI. NOTE: when an action causes the state to change in different locations simultaneously on the UI, actions that take place at the same time have the same number. Where actions are serial, the numbering of the steps increments. Where several items happen at the same time, the same number is given to those items.
- .2 Usually the Power and Light system is configured on the same displays as the DCMS and normally the door icons are always shown on the UI. The power and light icons are only shown when the Power and Light System Icon is selected and then they are shown together with the door icons.
- .3 For illustrative purposes, the door symbols for the DCMS are not shown on these UIs.
- .4 These are examples of the Power and Light functionality:
 - .1 :Power and Light in steady state
 - .2 Turn a single light on in a cell
 - .3 Turn a single light on in a cell – command completed
 - .4 Choose a group of cell lights to turn on the night light
 - .5 Choose a group of cell lights to turn on the night light – command completed
 - .6 Choose a light, not a cell light, to turn on
 - .7 Choose a light, not a cell light, to turn on – command completed
 - .8 Use range command to turn on hall lights in range
 - .9 Use range command to turn on hall lights in range – command completed
 - .10 Use range command to turn on all the cell lights in range
 - .11 Use range command to turn on all the cell lights in range – command completed
 - .12 Use range command to disable the lights in range
 - .13 Use range command to disable the lights in range – command completed
 - .14 Enable light in a single cell
 - .15 Enable light in a single cell – command completed
 - .16 Use range command to turn lights on in the range with a locked-out cell
 - .17 Use range command to turn lights on in the range with a locked-out cell – command completed
 - .18 Disable power in a single cell
 - .19 Disable power in a single cell – command completed
 - .20 Enable power in a single cell
 - .21 Enable power in a single cell – command completed
 - .22 Enable power in a single cell that is joined
 - .23 Enable power in a single cell that is joined – command completed
 - .24 Disable power in a single cell that is joined
 - .25 Disable power in a single cell that is joined – command completed
 - .26 Disable power in a range'
 - .27 Disable power in a range – command completed
 - .28 TV On
 - .29 TV on – command completed
 - .30 TV Off
 - .31 TV off – command completed
 - .32 TV Group off
 - .33 TV group off – command completed

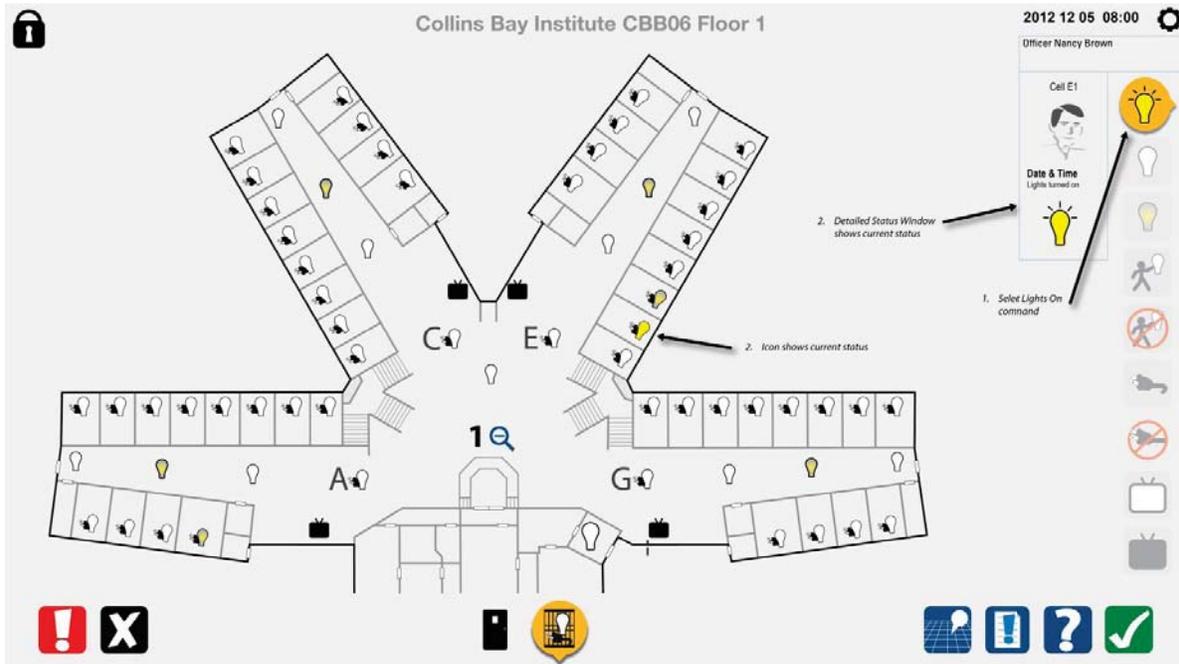
8.1 Power and Light in steady state



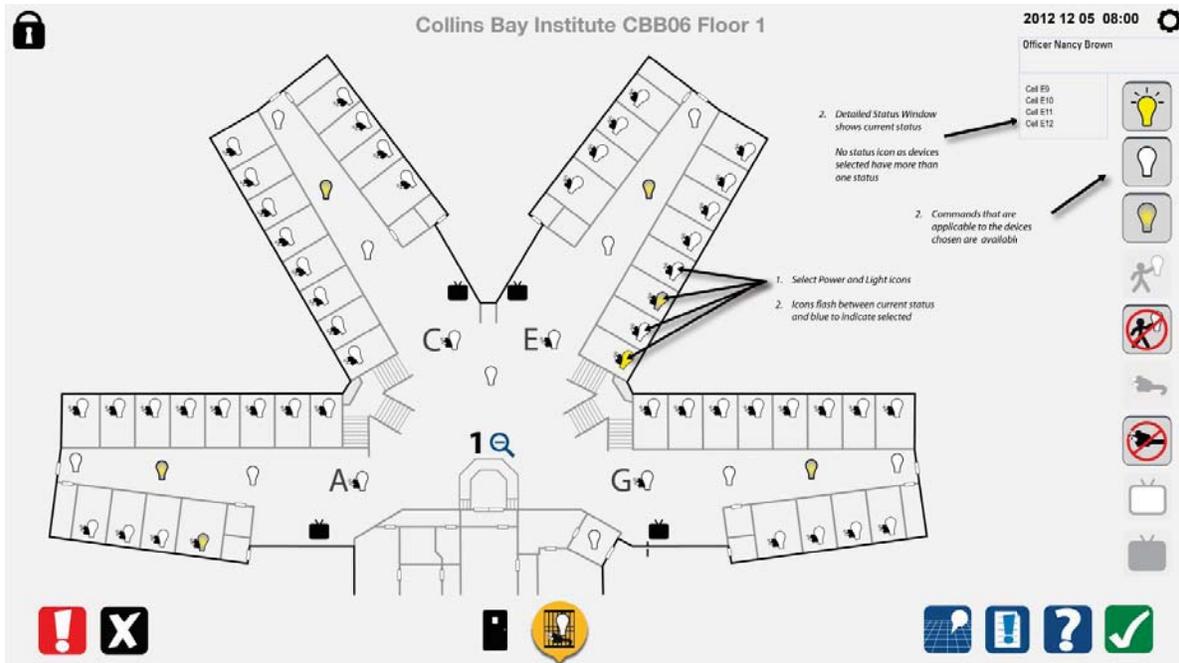
8.2 Turn a single light on in a cell



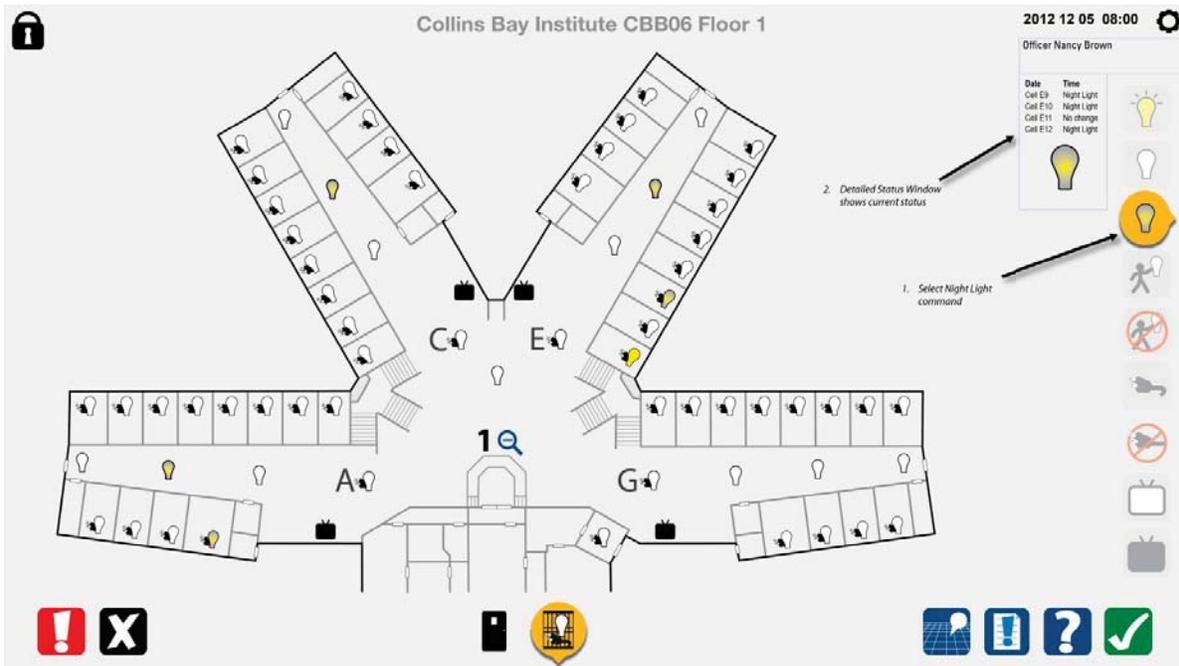
8.3 Turn a single light on in a cell – command completed



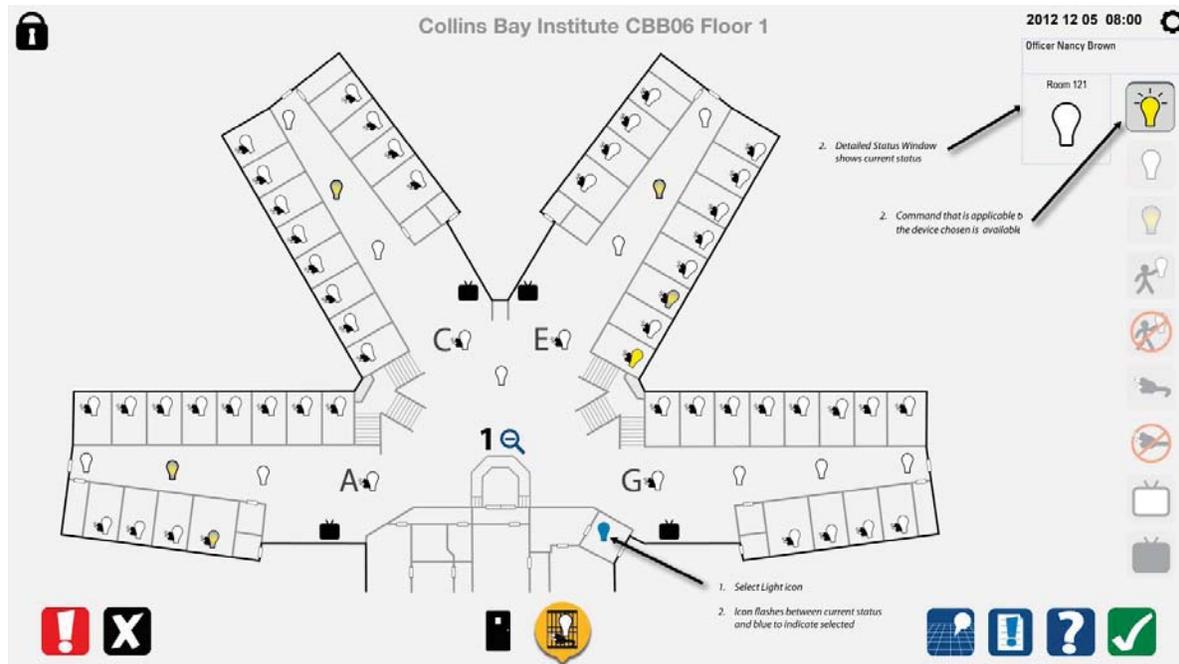
8.4 Choose a group of cell lights to turn on the night light



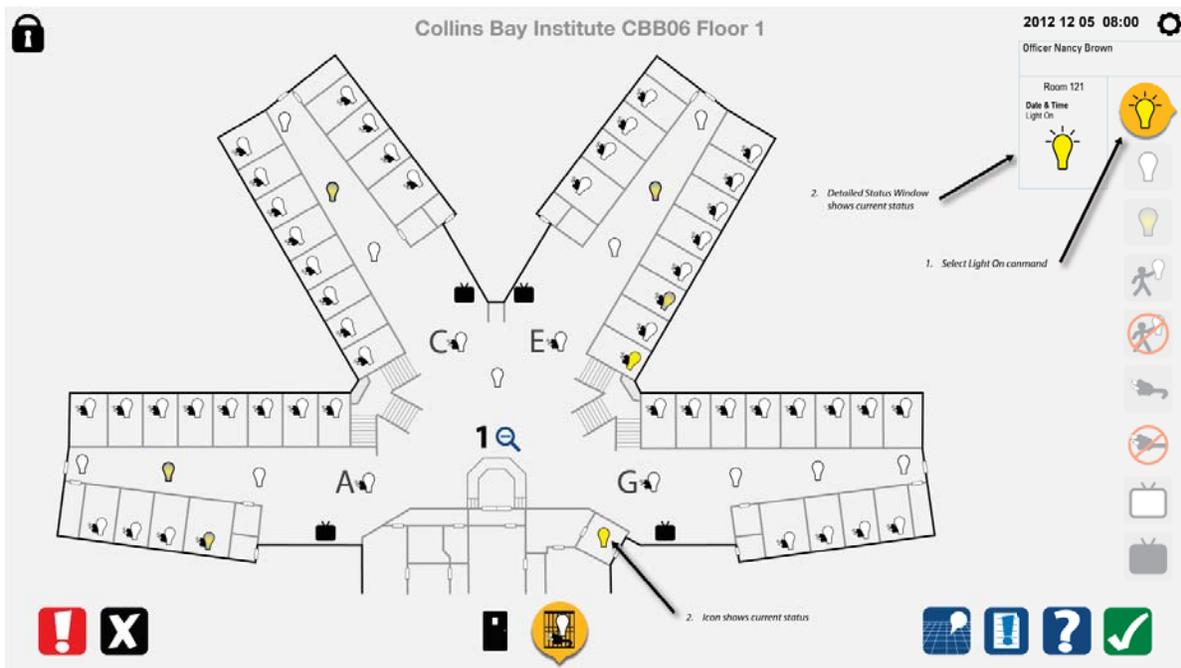
8.5 Choose a group of cell lights to turn on the night light – command completed



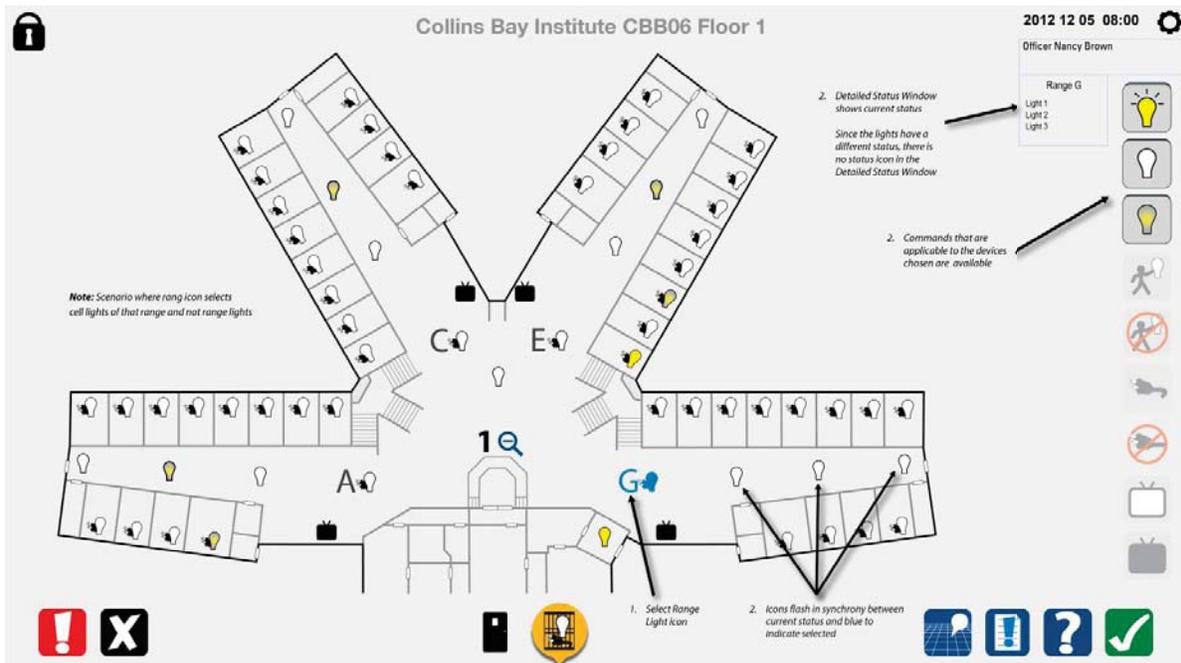
8.6 Choose a light, not a cell light, to turn on



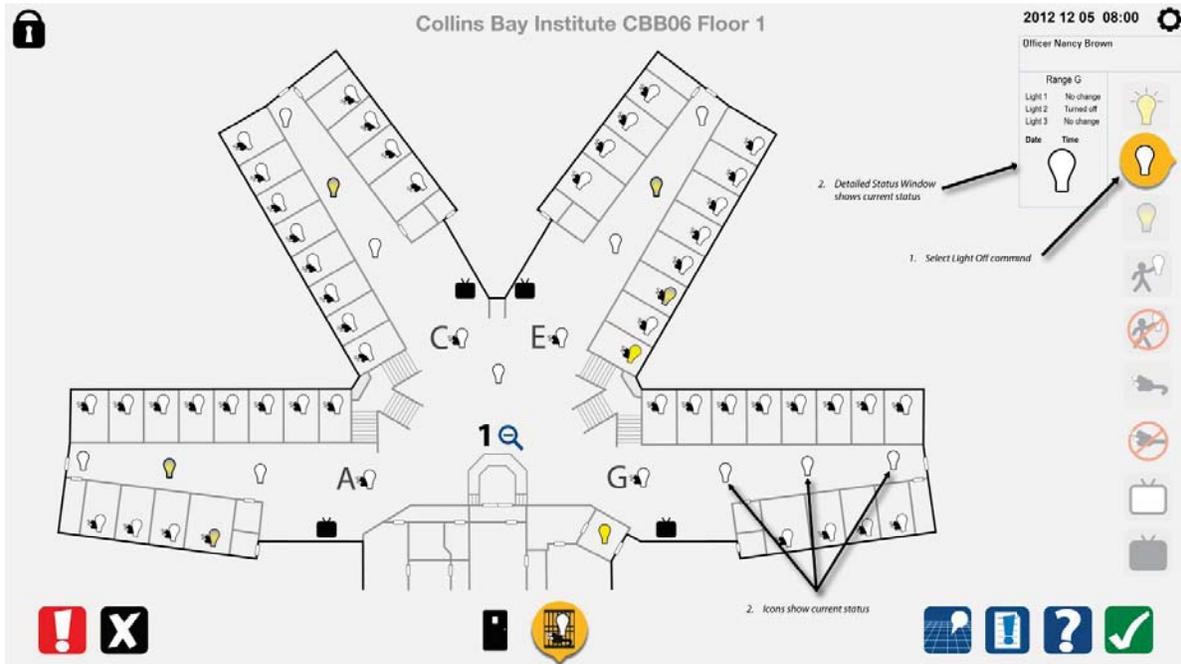
8.7 Choose a light, not a cell light, to turn on – command completed



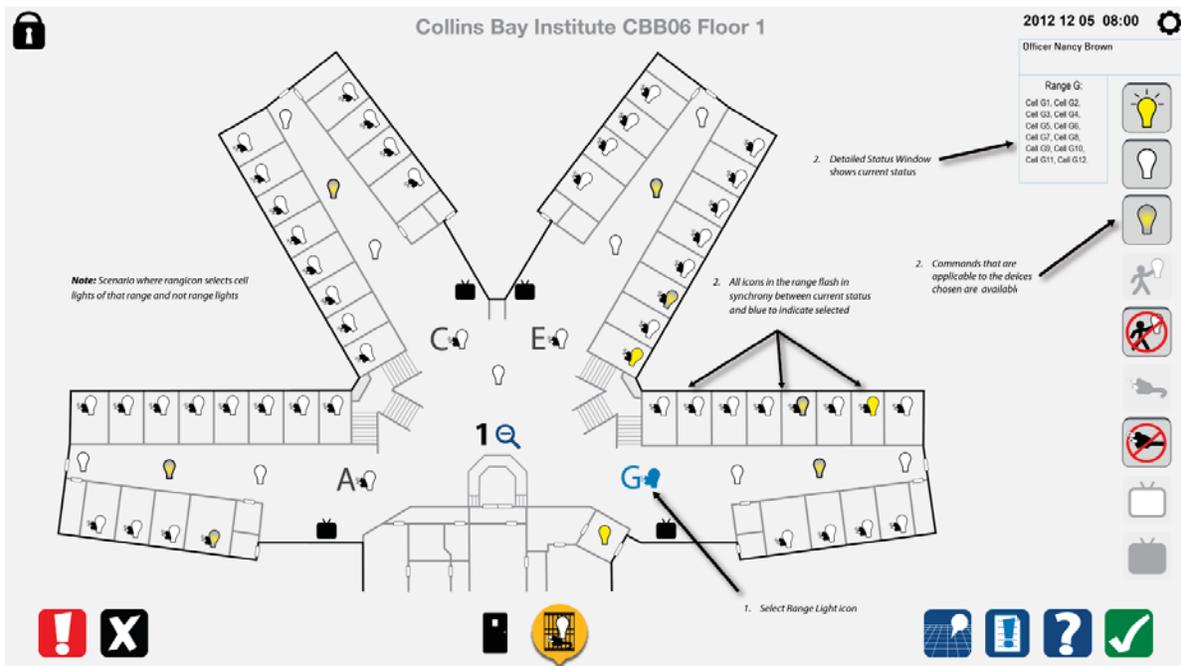
8.8 Use range command to turn on hall lights in range



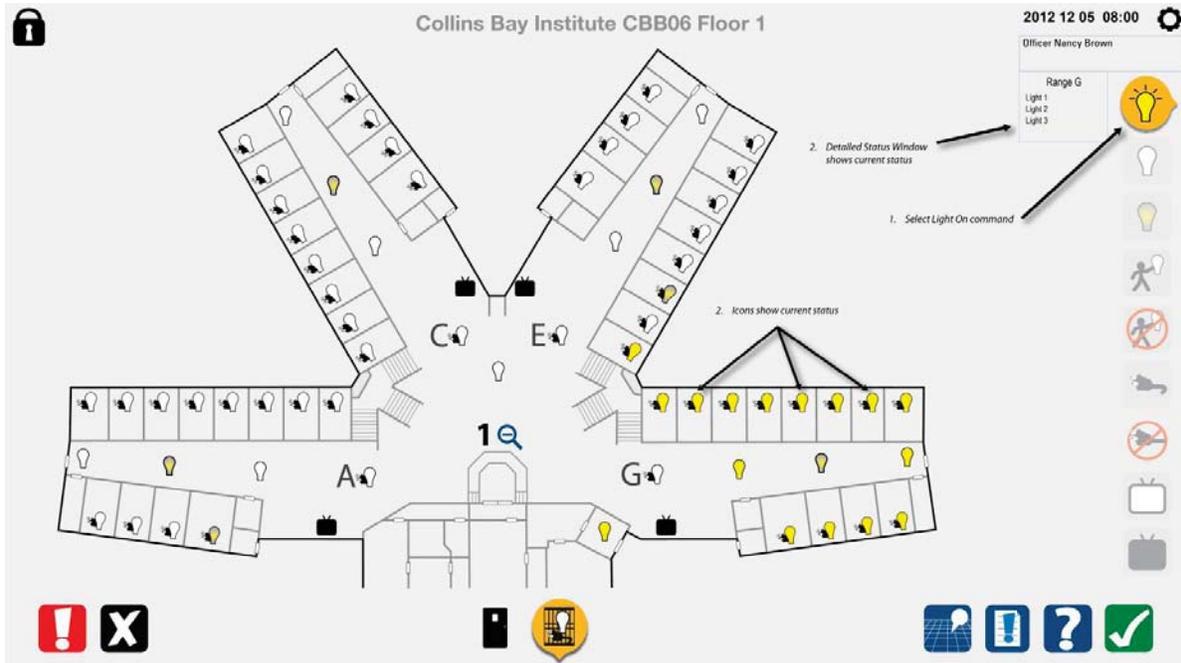
8.9 Use range command to turn on hall lights in range – command completed



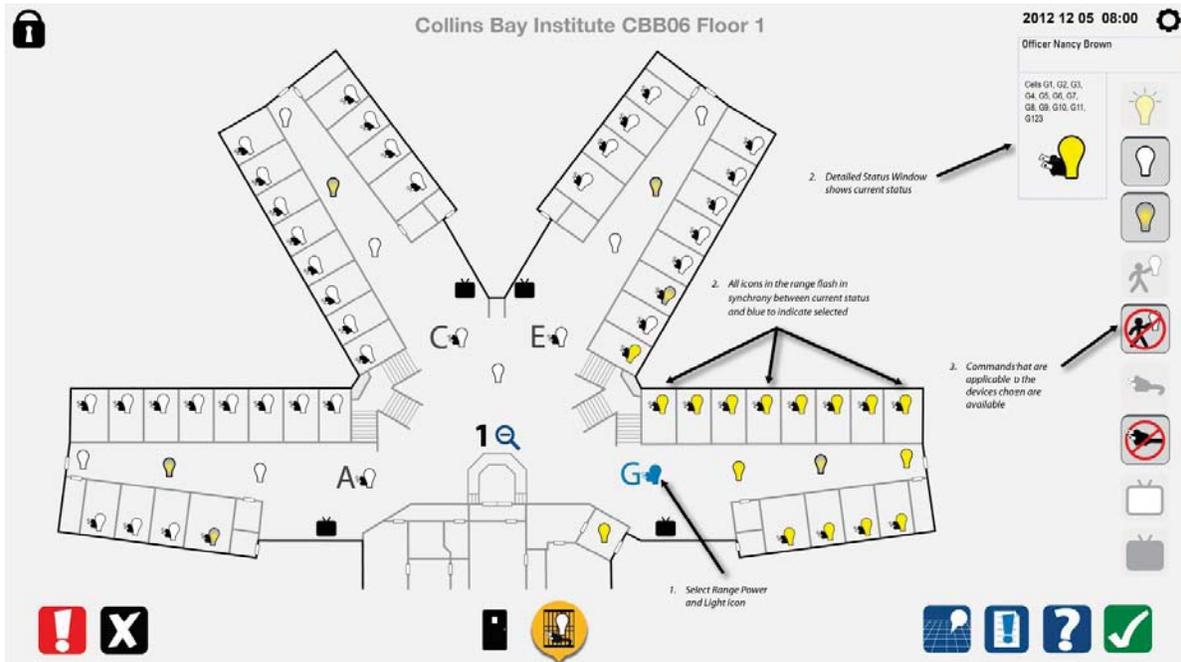
8.10 Use range command to turn on all the cell lights in range



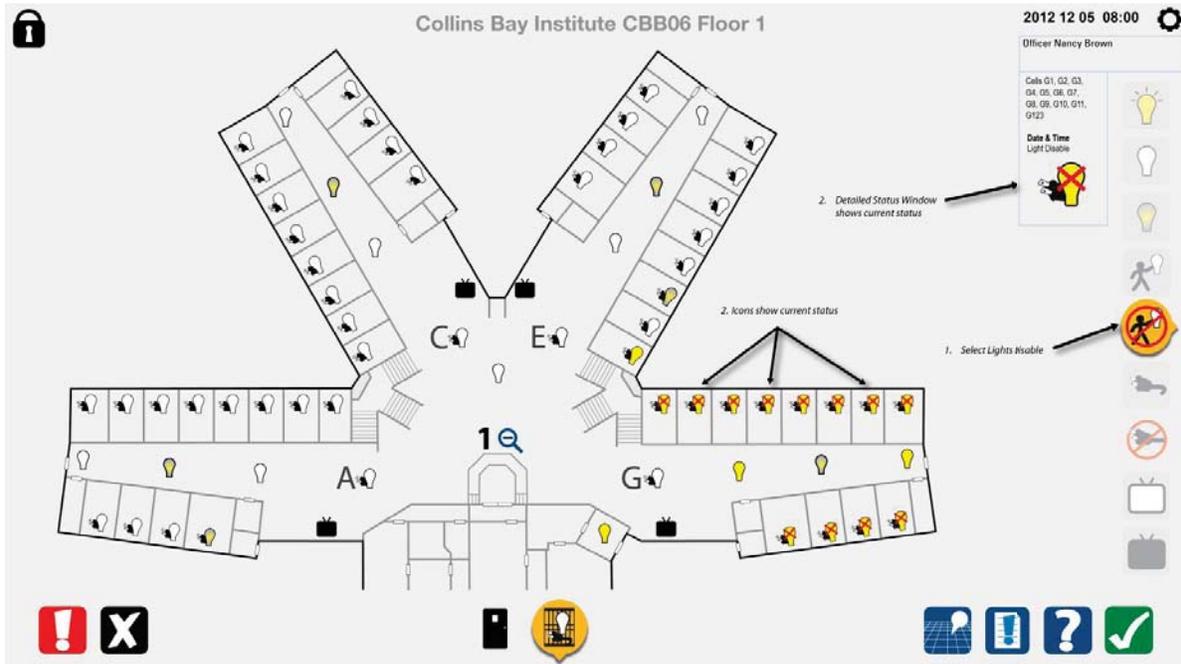
8.11 Use range command to turn on all the cell lights in range – command completed



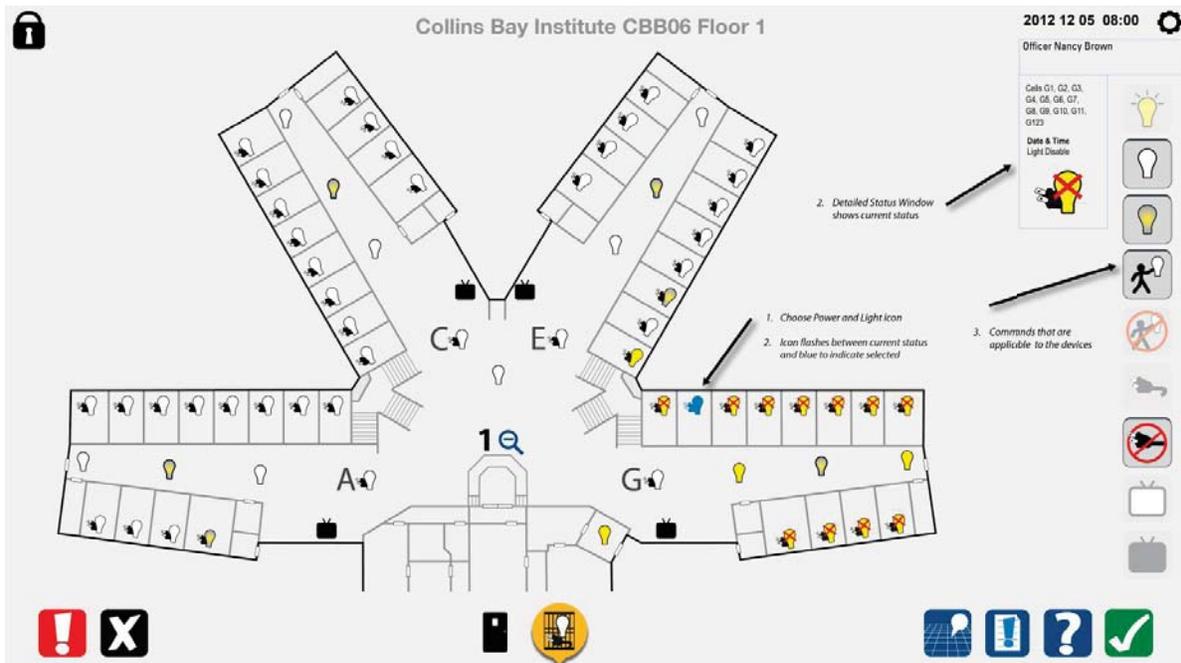
8.12 Use range command to disable the lights in range



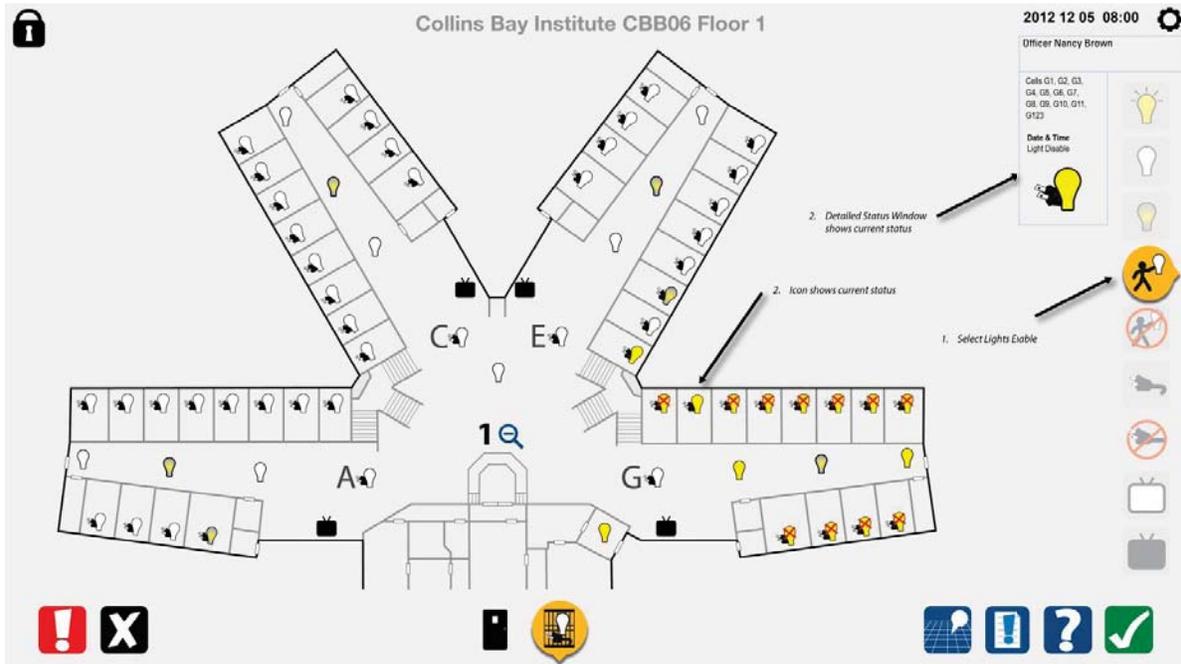
8.13 Use range command to disable the lights in range – command completed



8.14 Enable light in a single cell

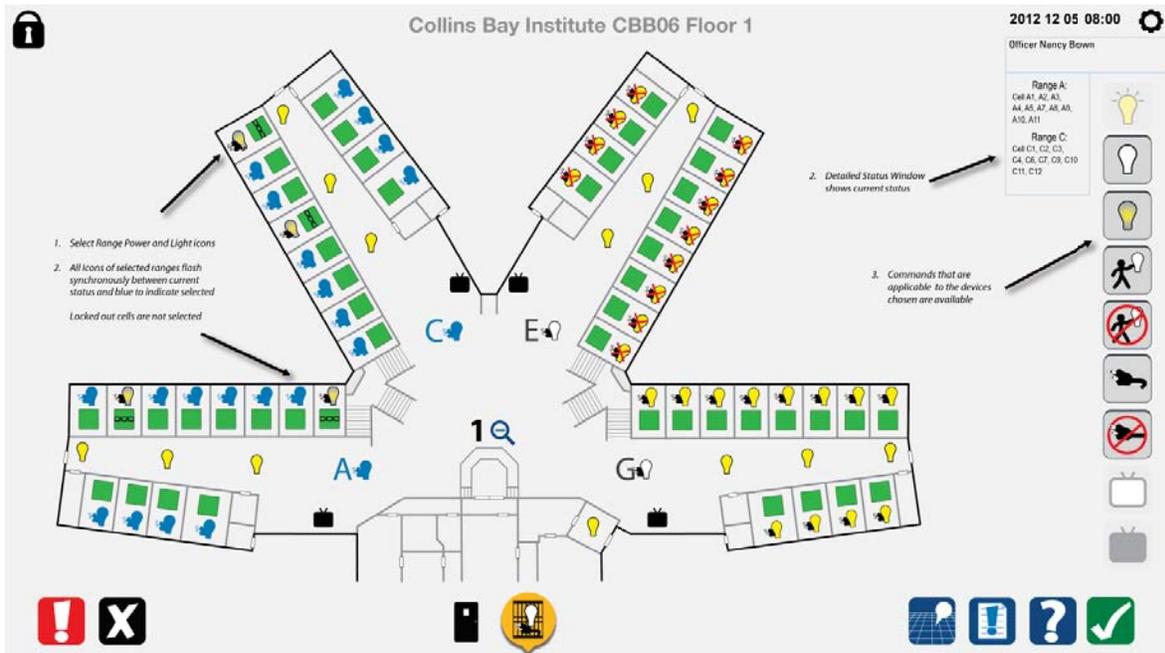


8.15 Enable light in a single cell – command completed

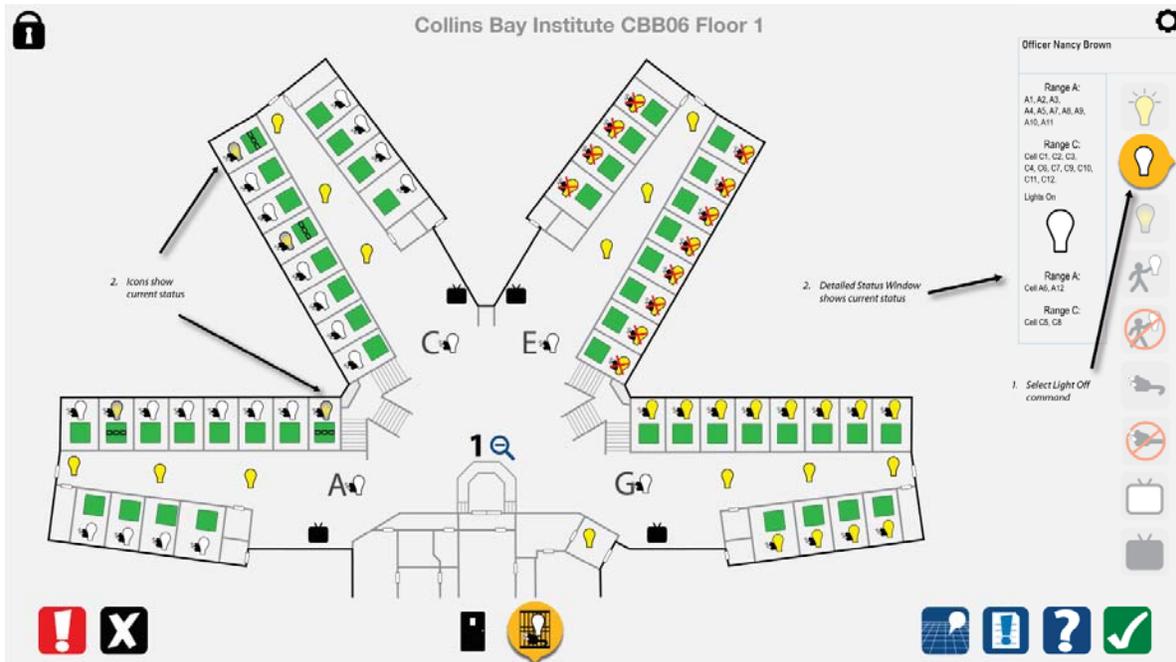


8.16 Use range command to turn lights on in the range with a locked-out cell

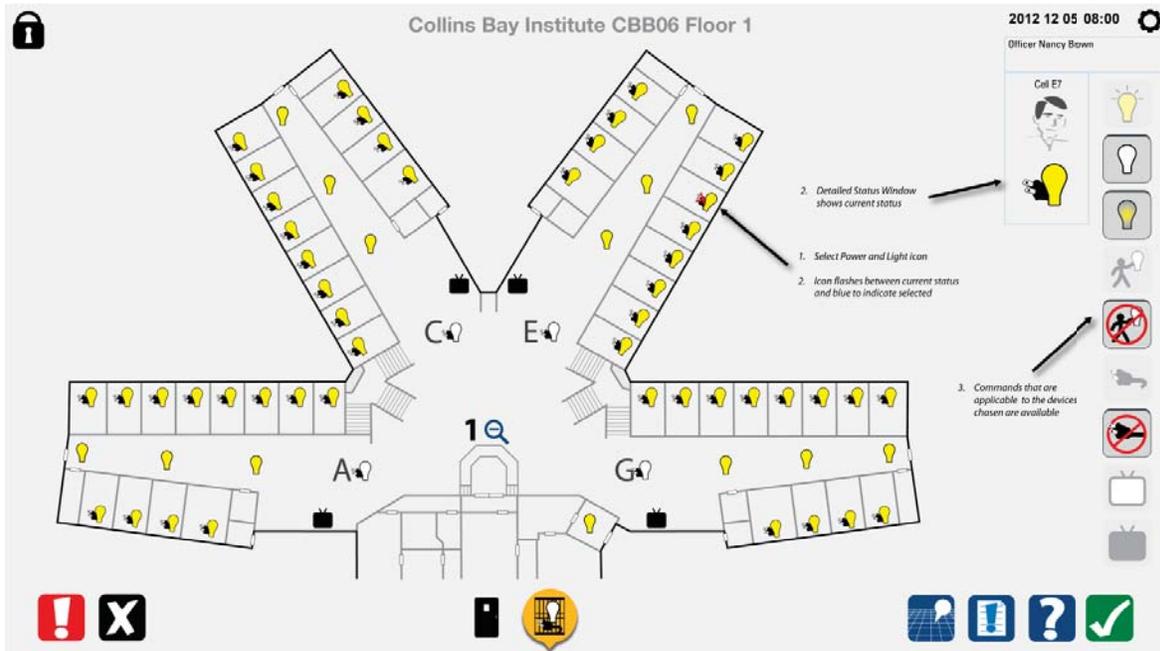
- .1 Normally, this would be what the UI would look like with both DCMS and the Power and Light system selected. Both sets of icons are shown here to illustrate the locked out cell.



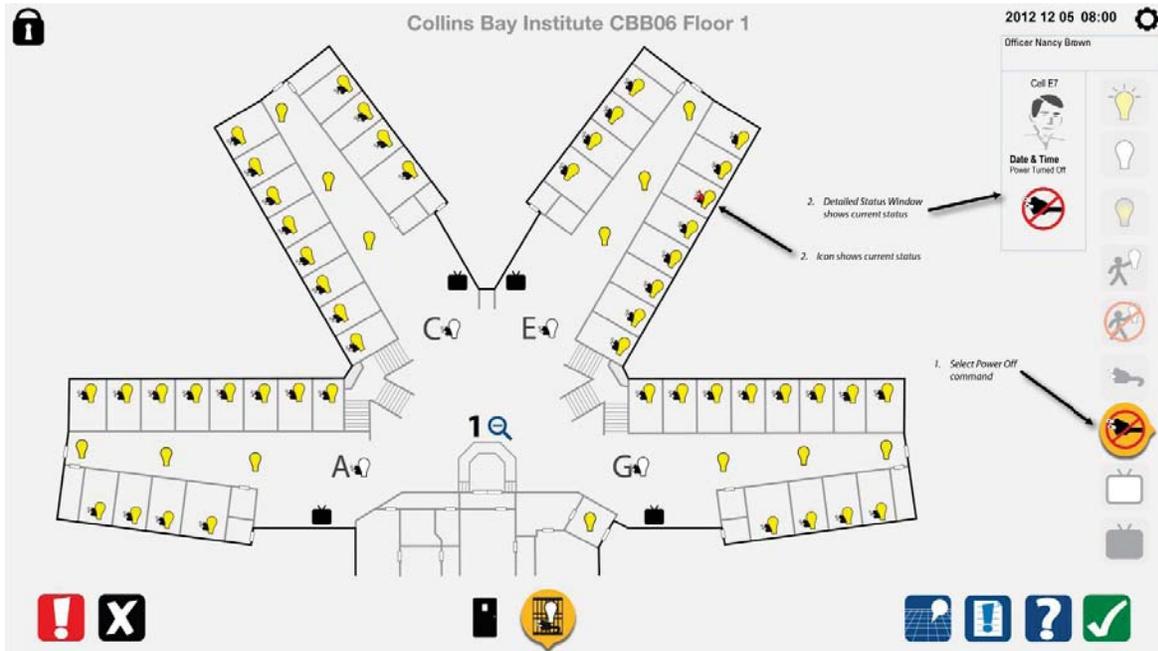
8.17 Use range command to turn lights on in the range with a locked-out cell – command completed



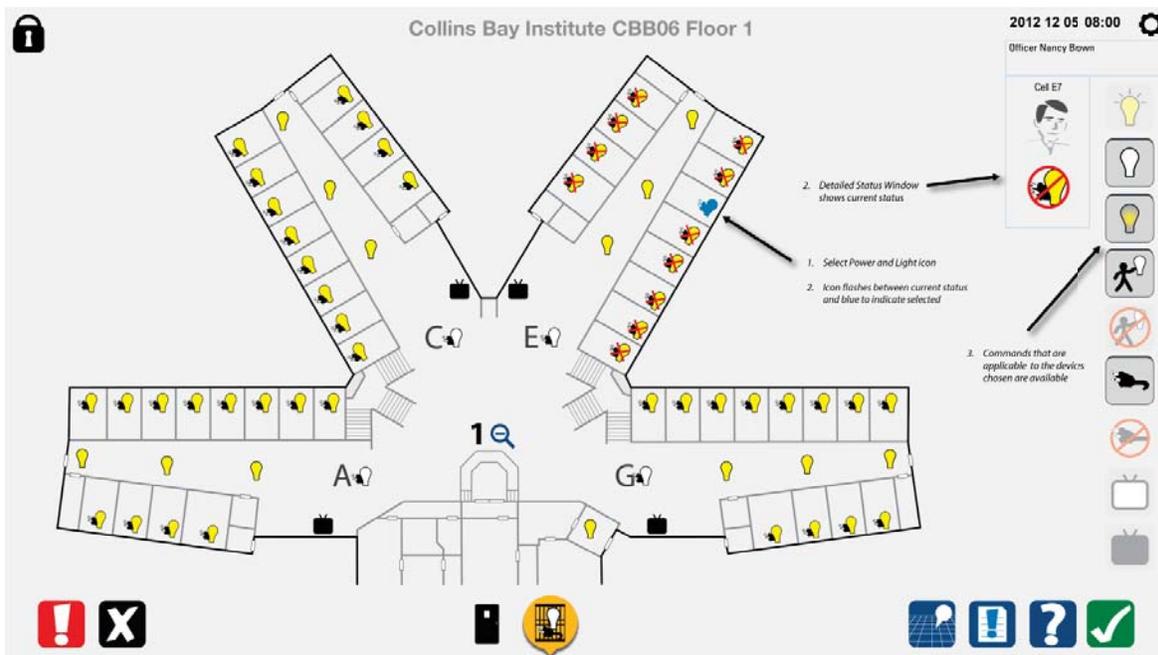
8.18 Disable power in a single cell



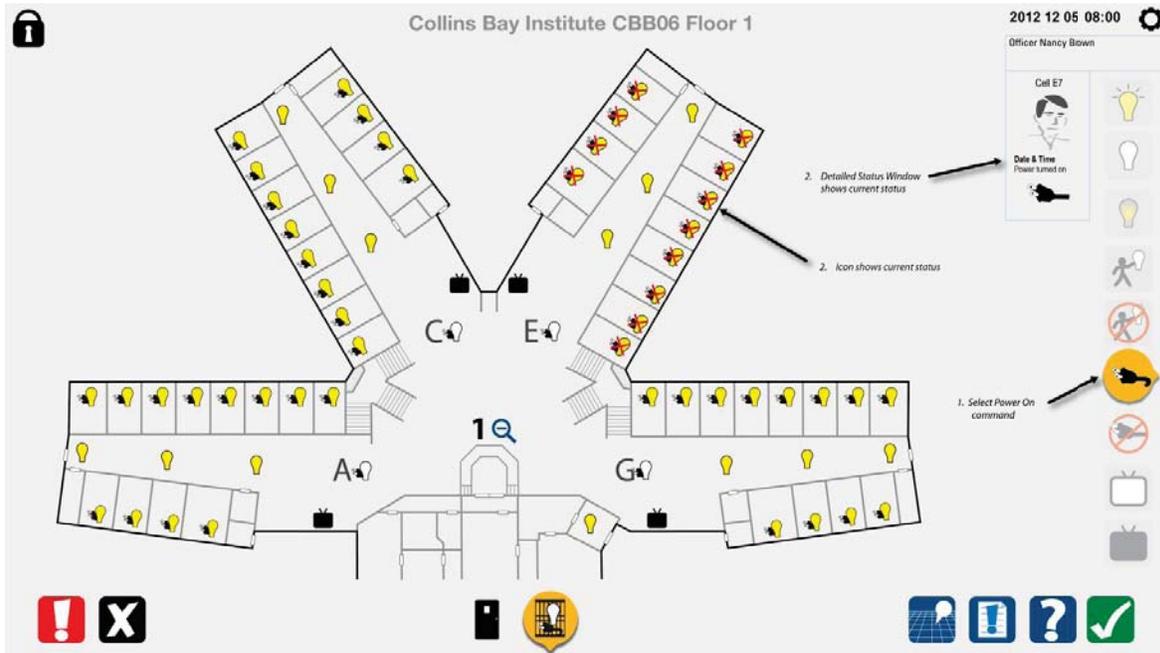
8.19 Disable power in a single cell – command completed



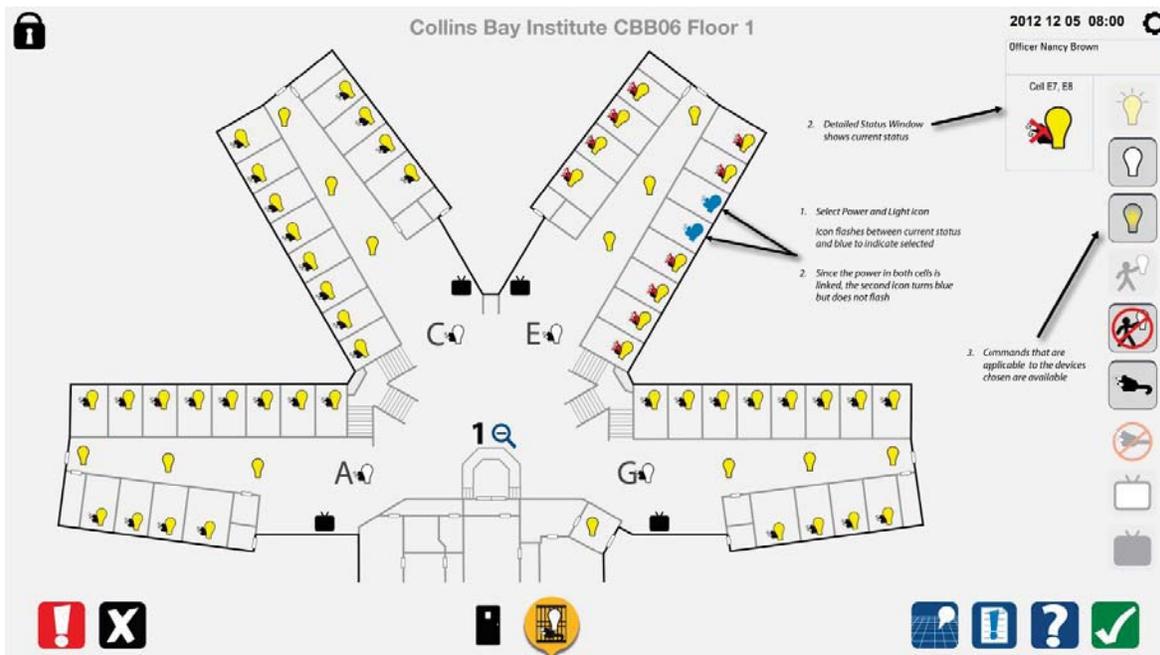
8.20 Enable power in a single cell



8.21 Enable power in a single cell – command completed



8.22 Enable power in a single cell that is joined





**CORRECTIONAL SERVICE CANADA
FACILITIES BRANCH
ELECTRONIC SECURITY SYSTEMS**



31 July 2014

DESIGN REQUIREMENTS

**FOR THE FRAMEWORK OF THE USER INTERFACE
FOR USE IN FEDERAL CORRECTIONAL INSTITUTIONS**

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TABLE OF ABBREVIATIONS

Abbreviation	Expansion
API	Application Programming Interface
ATP	Acceptance Test Procedure
BIFMA	Business & Industrial Furniture Manufacturers Association
CA	Contract Authority
CCDA	Command Control and Data Acquisition
CCTV	Closed Circuit Television
CD	Commissioner's Directive
CER	Common Equipment Room
COTS	Commercial-Off-The- Shelf
CSA	Canadian Standards Association
CSC	Correctional Service Canada
DCMS	Door Control and Monitoring System
DES	Director Engineering Services
EIA	Electronic Industries Association
FAAS	Facility Alarm Annunciation System
FAR	False Alarm Rate
FDS	Fence Disturbance Detection System
FIU	FAAS Interface Unit
GFE	Government Furnished Equipment
IVRMS	Inmate Voice Recording and Management System
IP	Internet Protocol
MCCP	Main Communications and Control Post
MDS	Motion Detection System
MTBF	Mean Time Between Failure
MTTR	Mean Time to Repair
NAR	Nuisance Alarm Rate
NTP	Network Time Protocol
PA	Public Address
PC	Personal Computer
Pd	Probability of Detection
PIDS	Perimeter Intrusion Detection System
PIU	Perimeter Intrusion Detection System Integration Unit
PLC	Programmable Logic Controller
RFP	Request for Proposal
RTEO	Regional Technical and Engineering Officer

Abbreviation	Expansion
PPA	Portable Personal Alarm
PPAL	Portable Personal Alarm Locatable
SCC	Security Control Centre
SIO	Security Intelligence Officer
SOR	Statement / Observation Report
SOW	Statement of Work
STR	Statement of Technical Requirements
TCP/IP	Transport Control Protocol/Internet Protocol
TER	Telecommunications Equipment Room
UPS	Uninterruptible Power Supply
V&C	Visits and Correspondence
VDU	Video Display Unit
VIRS	Visits Intercept and Recording System
VMS	Video Management System

TABLE OF DEFINITIONS

#	Term	Example	Description	Function
1	Administrative User Interface		Monitor and Software that supports task specific User Interaction for System Administrators, located in a secure area	Provides Administrative Personnel with the ability to map enrolled users to the functional domains that they are allowed to access and change
2	Application	Cell Call Management, PA Management	Software that is used to deliver Application Support functionality for a sub-system	Software that provides the Operator Interface and supporting logic that allows a sub-system (Control Domain) to be managed
3	CCTV Monitor	PIDS or Range CCTV Monitor	Computer Monitor Hardware	Displays CCTV images for Operator viewing
4	Client		Rack mounted computer located in a secure area away from a Control Post or Control Desk.	Runs software and supports one or more Application
5	Configuration Data	Site floor plans showing quantity of cameras, doors, cells etc. Camera locations. Number of User Interfaces required in a Post.	Site and System specific information typically supplied by CSC that defines how a sub-system Application is to be set-up for a site, location within a site, or post.	The configuration data provides the information that a sub-system application requires to tailor it to meet site, location within a site, or post user requirements.
6	Configuration User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows suppliers or qualified personnel to add, delete and modify Application Configuration
7	Contract Authority		Public Works and Government Services Canada (PW&GSC) is responsible for all contractual matters associated with the system design and implementation.	
8	Contractor		The company selected as the successful bidder.	
9	Control Console	MCCP Console, Living Unit Control Post Console	Console, typically located in a Control Post. Serves as the physical support infrastructure for Operator User Interfaces	Contains User Interfaces or Control Panels used by staff to execute their management responsibilities and interact with the Domains over which they have Control
10	Control Desk	Living Unit Control Desk	Desk, typically located in a Control Post or Office. Serves as the physical support infrastructure for Operator User Interfaces	Equipped with User interfaces used by staff to execute their management responsibilities and interact with the Domains over which they have Control
11	Control Domain	Cell Call, Guard Tour, Public Address	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that performs a set of related functions	Collect information, or activate capabilities in their operational domain
12	Control Panel	PACP, Fire Alarm	Hardware and Software device that provides an Operator Interface (I/O device), located in a Control Post	Allows Operators to manage one or more Domain

#	Term	Example	Description	Function
13	Control Post	Living Unit Control Post/MCCP	Room or area, typically located in a secure area in an institution	Room used by staff to execute their management responsibilities and interact with the Domains over which they have Control
14	Custom Equipment		Equipment designed and/or manufactured specifically for a specific contract.	
15	Design Authority		Director, Electronic Security Systems (DES) Correctional Service of Canada (CSC) is responsible for all technical aspects of the system design and implementation.	
16	Device	CCTV Camera, Managed Door, Call Origination Device	A specialized device, typically consisting of hardware and software	Provides data collection or activate functions associated with a specific system or sub-system
17	Enrolment User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows Designated Personnel to enroll and delete Users from the Command, Control and Data Acquisition System.
18	Maintenance User Interface		Monitor and Software that supports task specific User Interaction, located in the CER or Maintenance Service Provider Office	Provides Maintenance Personnel with the ability to interact with one or more Systems to carry out their day to day tasks to troubleshoot and maintain Systems and Subsystems
19	Notification	Notification that a door is opened, or a door is dosed, or a sensor is in alarm	A notification is a message that can be shown on a User Interface and/or logged in a database that represents a change in state or a command initiated by an operator.	
20	Off-the Shelf		Equipment currently on the market with a available field reliability data, manuals, engineering drawings and parts price list.	
21	Operator User Interface	PIDS Display, Door Control and Monitoring System Display	Computer Monitor and Software that supports User Interaction (I/O device)	Provides an Operator with the ability to interact with one or more Systems to carry out their day to day tasks at a Control Console or Control Desk
22	Project Officer		A CSC employee or a contracted person designated by DES to be responsible for the implementation of the project.	
23	Reporting User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Provides Management Personnel with the ability to access pre configured reports and to create custom reports
24	Server	Network Video Recorder	Rack mounted computer that runs software and is located in an equipment room such as a CER or TER	Runs software that is used to deliver services that support Command and Control Applications to connect to sub-systems
25	State		The state of a device as reported to a sub-system or system	This is a logical representation of the state of a device that is being monitored or managed

#	Term	Example	Description	Function
26	Sub-system	Cell Call, Guard Tour	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that perform a specific set of related functions	Collects information, or activates capabilities in their operational domain
27	System	PIDS	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, including devices from sub-systems that perform a more general set of related functions	Collects information, or activates capabilities in their operational domain
28	Touch Screen User Interface	Door Control and Monitoring System User Interface	Typically an LCD Monitor with touch screen technology	Allows an Operator to view and interact with the Systems presented on the Monitor
29	Workstation		Rack mounted computer located in a secure area away from a Control Post or Control Desk	Runs software that is used to deliver Command and Control Capabilities

1 INTRODUCTION

- .1 The intent of the Framework of the User Interface is to be used in conjunction with the Design Requirement for each Control Post to enable the Operational Staff in each control post, as appropriate to their span of control, to conduct the operations at their control post in a manner that is consistent with the other control posts both within the individual institution and across all institutions.

2 SCOPE

- .1 This Design Requirement defines the essential design and functional requirements of the Correctional Service of Canada for the Framework of the User Interface that is to be incorporated into the design of all User Interfaces for all control posts for Federal Correctional Institutions. The design requirement does not specify the actual data involved in the processes, but describes in detail the Framework for the Human Machine Interface

3 AUDIENCE

- .1 The intended audience includes potential developers, suppliers or those that configure the software application that will provide both the Human Machine Interface for the functionality described in the balance of the design requirement as well as the logic that will integrate and manage all the components of all the systems such as Microphones, Audio Recorders, CCTV Cameras, Video Recorders, Doors, Perimeter Security and Interior Security. This design requirement must be read in conjunction with the Design Requirement for each system in each control post.

4 GENERAL

- .1 The primary purpose of the Operator User Interface is to control and monitor devices from a control post. The devices controlled and monitored vary from control post to control post and are defined in configuration files.
- .2 The User Interface must be designed in such a way that it supports multiple management domains in a seamless and transparent manner as the system is expanded, supporting the representation of one domain through all domains that must be managed on the same User Interface.
- .3 The different systems are comprised of two main components from a UI perspective, and the configuration and layout is determined by the functionality of the control post:
 - .1 A status display which is part of the control post
 - .2 A monitoring display or displays for CCTV
- .4 This capability may be called upon to meet operational requirements or to meet situations in which a User Interface fails or for the aggregation of Control Post functionality as posts are reconfigured to accommodate staffing requirements. The definition of how User Interfaces in control posts provide redundancy within a control post and at another control post must be flexible and must be defined in the associated configuration information.
- .5 Commands originating from Operator actions at the User Interface and events that represent a change of state at a device will typically result in a message that will be "logged" by the underlying data logging services of the Command, Control and Data Acquisition Platform on which this application runs. This data can and will be accessed at a later date for evidentiary use, assessment, and follow-up.

5 DESIGN REQUIREMENTS

5.1 General

- .1 The priorities for the User Interface design are to:
 - .1 Enable operators to respond to emergencies and situations with potential for danger effectively in a manner that ensures safety of staff, the safety of the inmates and public safety [i.e. safety is number 1] – maximizing the preservation of life
 - .2 Enable all tasks to be conducted efficiently and effectively – this requires the design to support operational processes in a way that are intuitive and automatic, minimizes the use of text, and do not require interpretation or memory to execute a task
 - .3 Consistency across all operational processes and tasks
- .2 The User Interface shall be designed:
 - .1 Embodying best principles of UI design
 - .2 To present a consolidated and integrated view of numerous existing security, operations and communications systems onto one consistent user interface that can be configured across touch screen monitors
 - .3 To enable users to easily and safely conduct their tasks under a variety of operational situations
 - .4 To provide operational efficiency and effectiveness
 - .5 With the flexibility to accommodate the integration of future systems
- .3 Thus the UI design will be clean, elegant with minimal visual clutter, as any other design will not meet the above three priorities.

5.1.1 *User Interface*

- .1 The User Interface must use iconography and guidelines provided or approved by CSC.
- .2 The preferred display layout will be based on a simplified floor plan of the whole or part of a unit based on screen space. Icons must be used instead of text where possible.

5.1.2 *Human Factors*

- .1 The UI for the V&C and SIO must conform to accepted principles of good human factors design and be implemented according to the design requirements listed below:

Design Requirement for Design of Icons for User Interfaces

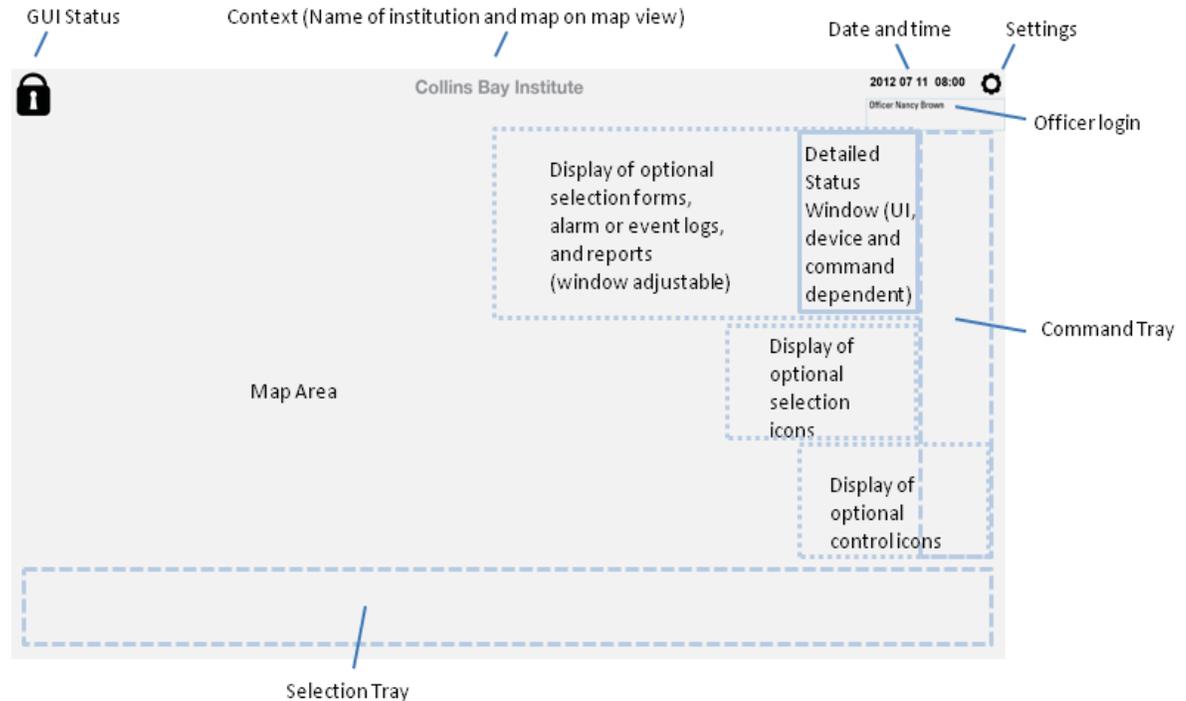
Design Requirement for Design of the Look and Feel of the User Interface

5.2 Design focus for each type of task

Type of tasks	Key objective
Emergency tasks	Focus: Safety and security of corrections staff , inmates and the general public
Daily tasks and actions of corrections staff	Focus: Operational efficiency and effectiveness (i.e. ensure tasks can be executed with a minimum number of steps, without a requirement to remember how to do a task) ensuring that unsafe or unsecure selections cannot be made inadvertently
Oversight, reporting and management processes	Focus: Operational efficiency and effectiveness. Ensure all system information needed for oversight and management is available to implement the tasks.

6 FUNCTIONAL AREAS OF THE FRAMEWORK

- .1 These are the key areas that comprise the Framework for all User Interfaces.



- .2 Detailed dimensions and guidelines for the optional areas are provided in Section 10.

6.1 UI status

- .1 Under the date and time is the Officer Login area, which displays the names of officers who are logged in. RFID cards can be used to login.
- .2 In order to log out, an officer selects their name, and chooses Cancel. They will be asked to confirm the selection either by the Confirm icon or swipe of an RFID card. If there is no RFID card scanner, or the scanner is not functional, the Confirm icon will be used.
- .3 The officer can scroll up and down the list by swiping.

NOTE: This area is provided in anticipation of a future requirement, and the space reserved. If not implemented in the initial release, the position of the remaining windows will be implemented as if the officer login area is present.

6.2 Settings

- .1 The settings icon enables officers to select the language used in text and help field, choosing from English or French.
- .2 This area is always present.

6.3 Selection tray

- .1 The Selection Tray to select systems and initiate system commands is on the bottom. There are Action Icons that are present on all control posts – such as Cancel, Alarm Acknowledgement, Map Selection, and Help.
- .2 There are other Action Icons that are present only if required at that control post – such as Special Commands, Confirm, RFID Confirm and Emergency Checklist.
- .3 The Selection Tray also contains the System Icons that represent systems that are controlled by that post – such as CCTV or Audio Recording – that when selected, bring up the set of commands that apply to that system. At some posts, there may be more than one system which is controlled and managed by the User Interface at that control post. Which systems are controlled by which post, and therefore available at that post, is determined by configuration files.
- .4 If the control post only supports one system, there will be no System Icons in the Selection Tray, only the Action Icons.
- .5 If a control post requires only one system under normal operating conditions, and the UI for that control post fails (in a Living Unit Control Post), and the operations transfer to another status display, then the Touch Screen one would now show both System Icons.
- .6 This area is always present, and the only icons shown are those needed at that monitor at that control post. There are no icons present which are not required for the operation of the control post at that time.

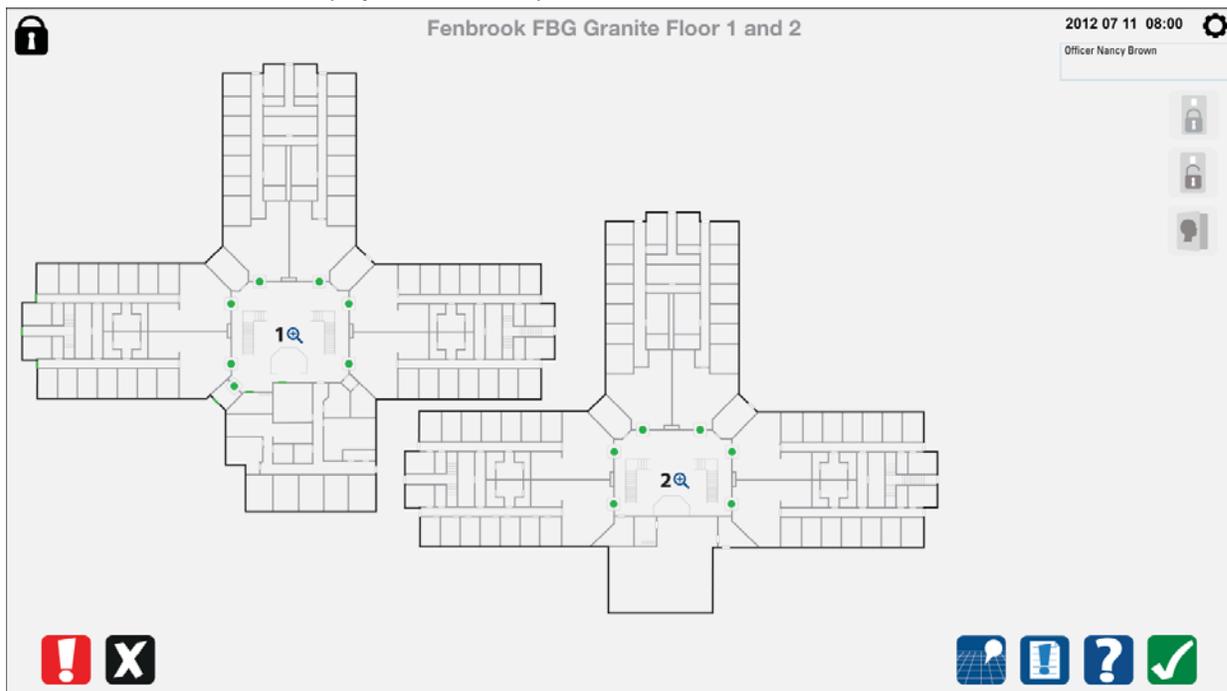
6.4 Command tray

- .1 The Command Tray is on the right hand side, which enables selection of commands represented by icons with a right hand that does not then obscure the monitor (the vast majority of people are right handed) yet left handed people could also use their right hand, as there is no requirement for fine motor control. Command Icons displayed here are context sensitive, and only those commands that can be applied to that device are displayed; and if a command does not apply to the device in its current state, that command icon is “greyed out” to show that it is not available to be selected when the device is in its current state (i.e. can't turn “on” a device which is already on).
- .2 This area is also used to display thumbnails of the maps to be chosen for the Map Area. When there are more maps to be displayed in thumbnail format, the officer can scroll up and down the list by swiping. The maps that are able to be selected at any control post are determined by configuration data. The order of the maps displayed in thumbnail format for selection is also determined by configuration data. This ensures that a map thumbnail is always in the same location, and that the most commonly used thumbnail maps are displayed at the top.
- .3 This area is always present, although the number of command icons that are shown vary by system. Also, if there are additional control icons for a device – such as camera control, or audio control, they are presented at the bottom of the command tray, above the Selection Tray.

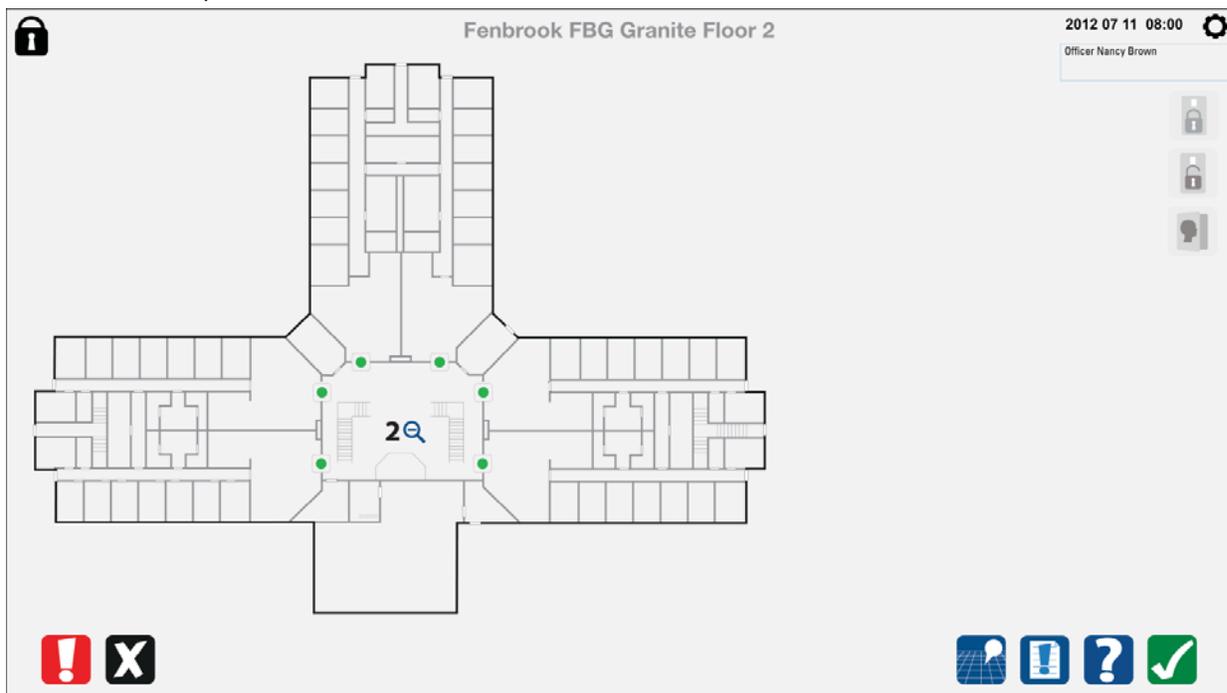
6.5 Map area

- .1 The largest area is for display of the interactive map – the Map Area – which displays status and also enables selection of an device to which a command will apply.
- .2 There are four types of maps that are displayed in the map area of a range control post:
 - .1 A detailed map that has an icon that represents the device in a selectable size. There is a detailed map for every area that is controlled and managed by a control post. The default detailed map for each control post is set up in configuration data.

- .2 An overview map that shows the area controlled and managed from that control post and provides the status of all the devices but the icon representing the status of the device is not a selectable size. There is an icon on the overview map that enables selection of the detailed map which has icons of a selectable size. On these detailed maps, there will also be an icon to return to the overview map. Not all control posts will require an overview map – only those where the area controlled is larger than can be displayed on one detailed map for that control post. This is set up in configuration data.
- .3 An emergency evacuation map may apply to certain control posts. This map is brought up when the emergency evacuation icon is selected. When the emergency status is cleared, the map returns to the default map for that control post (whether a detailed map or an overview map).
- .4 A site map showing the layout of all buildings in the institution for the MCCP. There are two variations of this map: one is used to monitor the perimeter security, the other is used to monitor interior security. The interior security user interface has the ability to drill down as required within the building.
- .3 There are specific default maps that are specified for each user interface for each system and control post.
- .4 The default maps and the maps that are displayed for Emergency Evacuation are defined by configuration data.
- .5 The map area is always displayed, although on some UIs (such as the Corrections Manager UI) it may be obscured by reports.
- .6 This shows an overview map with the ability to select the appropriate detail map. Note that the entire status is displayed, but the map icons are not a selectable size.



- .7 This shows one of the detailed maps that is linked to the overview map. A standard detail map would look just like this map but without the icon to return to the overview map. Note that the map icons are the selectable size.



6.6 Detailed status window

- .1 There is also a Detailed Status Window that is brought up when there is information to display about a chosen device, to provide the status of that device and to display alarms. The contents vary depending upon what is needed to be displayed on that UI for that system and control post and command and device choice.
- .2 The Detailed Status Window will also display the specific name of the device being selected, if applicable.
- .3 An alarm icon in the Detailed Status Window is chosen to acknowledge an alarm.
- .4 This area is only displayed when there is relevant information associated with the device selected or an alarm generated. If the Detailed Status Window is not required, and there is a form window presented, the form window will align with the edge of the Command Tray.

6.7 Form and reports area

- .1 For some UIs there is a need to provide a window to display a list of alarms or an event log, or reports. The information presented in this area can be invoked by a separate command, and can remain on the display.
- .2 This area is displayed at the top of the map area, next to the Detailed Status Window (if one is presented) or next to the Command Area. The display should have the capability to be made wider and longer by using standard multi touch gestures. The area can be cancelled with a cancel button in the upper right corner. Since these can often cover the map view, should there be an alarm, this window is reduced to a standard size determined by configuration data. When the alarm is acknowledged, the officer can return the window to its larger size to be able to see the entire contents of the window.
- .3 This area is only used on certain UIs based on configuration data.

6.8 Display of other optional selection icons

- .1 Other icons are presented when there is some selection required for a device, or to enter data in forms. As soon as the selection is made or the information in the form completed, these icons pop-out.
- .2 This area is only used on certain UIs based on configuration data.

6.9 Display of other optional control icons

- .1 Other icons are presented when they represent ways to control some of the other devices on the map.
- .2 They are presented either just below the Detailed Status Window beside the Command Tray
- .3 Since these icons may be used more than once to control an object, they are presented when the command icon is selected, and remain on the map view until another device is chosen or the icon is cancelled by the cancel button in the upper right corner.
- .4 This area is only used on certain UIs based on configuration data

7 TYPES OF ICONS

- .1 There are six different types of icons:
 - .5 Action icons
 - .6 System selection icons
 - .7 Command icons
 - .8 Status icons
 - .9 Map status icons
 - .10 Structure icons
- .2 Each icon type has a style that is consistent within the type, and is slightly distinct from each other type to enable rapid recognition of type.

7.1 Action icons

- .1 These are the icons that appear on every User Interface. They are 1.905 cm by 1.905 cm. See Section 8 for more details.

7.2 Icons used to confirm or acknowledge

7.2.1 *Confirm icon*

- .1 This icon is used to confirm some commands chosen in the Command Area. When confirmation is required for a command or an action, the Confirm icon will flash. In some locations, RFID cards will be used to confirm actions, and the Confirm icon will be replaced by an icon indicating an RFID card. In these locations, the Confirm icon will be used only when the RFID card reader is not functioning.

7.2.2 *Confirm RFID icon*

- .1 This icon is used to confirm any command or action chosen in the Command Area with the swipe of an RFID card. When confirmation by RFID card is required for a command or an action, the Confirm RFID icon will flash. In some locations, RFID cards will be used to confirm actions, and the Confirm icon will be replaced by an icon indicating an RFID card. In these locations, the Confirm icon will be used only when the RFID card reader is not functioning.

7.2.3 *Acknowledge alarm icon*

- .1 This icon is used to acknowledge all unacknowledged alarms. When the alarm icon in the Detailed Status Window.

7.2.4 *Cancel icon*

- .1 This icon is used to cancel any command chosen in the Command Area, to cancel a selection or to cancel the display of a form.

7.2.5 *Special commands icon*

- .1 This icon is used to select any command for special actions, such as Lockdown, Evacuation and Shutdown. When Special Commands is selected, there are three new icons that are displayed for each of the special states. The level of confirmation required depends on the special set of commands being invoked..
- .2 When "Special Commands" is selected, there are three icons that are presented just above the Selection Tray, and any system icons which may have been present are removed.. Each

- type has a different severity, and the actions taken by the UI are consistent with the degree of emergency. These icons are larger, 2.5 cm by 2.5 cm. See Section 8 for more details.
- .3 Lockdown requires only a single confirmation – the rationale being that confirmation is the third icon selected. Selecting Lockdown presents a special map that allows an entire range to be selected with a single icon.
 - .4 Similarly Shutdown requires only a single confirmation presented as a text box that is presented on the Map View that asks if they are sure they want to shutdown the system(s) at that post. The Map View is dimmed when Shutdown is selected.
 - .5 When Evacuation is selected an evacuation map is presented that has all the ranges and external doors on one display. Ranges of cells are represented as a single block to enable release of all doors in that range. The external doors are individually selectable; this enables selection of a particular range with a particular exit door. No confirmation is required. The names of the doors released are listed in the Detailed Status Window.
 - .6 When doors are released with the emergency evacuation, there is an alarm generated and logged.
 - .7 When Shutdown is selected, the user is prompted with text pop-ups to confirm Shutdown. When confirmed, the post is shut down, the user interface is no longer operable, and the post can only be re-enabled from the MCCP or the local equipment room.
 - .8 Where there is a both a closed control post and an open control post, when the closed control post initiates a Shutdown, the open control post is also Shutdown. Each post is re-enabled from the MCCP or the local equipment room, individually.
 - .9 When there is an emergency in effect, the Emergency icon will show that it has been selected. In order to cancel the Emergency, the Cancel icon needs to be selected, and then the selection must be confirmed, either by selecting the Confirm icon, or by swiping an RFID card.

7.2.6 Help icon

- .1 This icon is used to bring up Help for an icon or task. Help is selected, and then the device or command is selected, and the help text is displayed in the Detailed Status Window.

7.2.7 Map selection icon

- .1 Each control post has a map, defined by configuration data, that is presented when the control post comes up. For some control posts, this is the only map that is needed. Also, as part of configuration data, the backup for each control post is defined, and how that control post is presented when there is a requirement for it to assume backup duties is also configured.
- .2 There are also control posts where there is a need to select the map displayed on the map view. When a control post has a requirement to look at or control different maps of the institution, in order to choose a map, the Map Choose icon is selected, and all the maps that can be displayed at that post (which is also configured) are displayed as thumb nails in the Command Area. If there are more maps than can be displayed, the user has the ability to swipe (instead of using a scroll bar) to display the full range of maps available at that post. The order of the maps presented in the thumbnails is defined by configuration data.

7.2.8 Emergency checklist icon

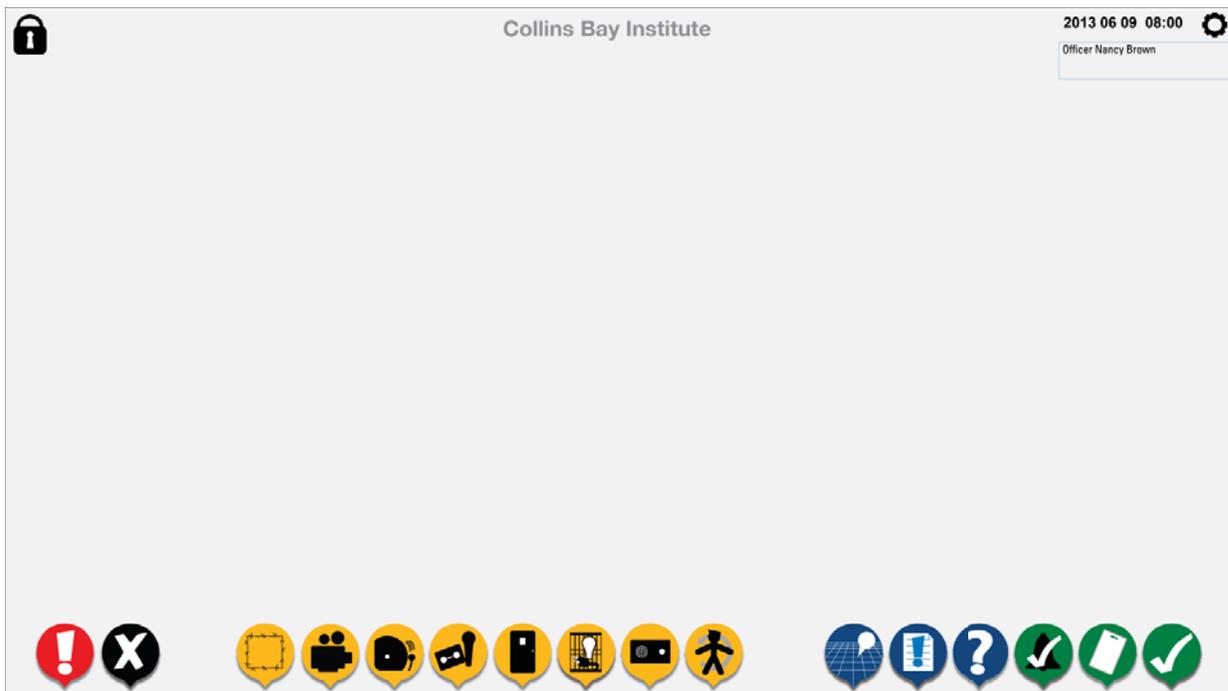
- .1 This icon is used to bring up the Emergency Checklist for an alarm. From the Emergency Checklist, the emergency instruction set can be brought up for each item in the Emergency Checklist.

7.3 Systems selection icons

- .1 These are the icons that go in the Selection Tray to choose which set of system commands are to be used. They are 1.905 cm by 1.905 cm. See Section 8 for more details.
- .2 Only those systems that are able to be managed and controlled from that control post are displayed in the selection tray together with the other Action Icons.
- .3 If only one system is available at a control post, there are no system icons displayed in the Selection Tray. When one control post is configured as a back up to another control post, and one of them fails, then the remaining control post will then display the System Icons in the Selection Tray.
- .4 The Systems that are available on a control post, either as primary systems that are always available, or as systems that are available only as a backup when the primary system fails, are part of configuration data.
- .5 When there is more than one system configured on a User Interface, whether as primary or backup, the devices that are shown on the map view are defined by configuration data. For example, in the V&C, the cameras and microphones (tables) are shown on the Map View at the same time, even though the system needs to be selected in order to send a command to the device that is shown on the map view. At other User Interfaces, such as a Living Unit Control Post, if one User Interface because of fallback manages both doors and power and light, the doors would always be displayed on the map view, and the power and light devices (including TV) would only be displayed when that system is selected. Under these circumstances if the power and light system was selected, and a door was chosen on the map view, the system selection would change to the Door Control System and the commands relevant to the state of the device chosen would be presented, and the power and light devices would not be shown.



- .6 The systems that are currently envisaged as being managed at a control post User Interface are:
 - .1 PIDS (in MCCP)
 - .2 FAAS (in MCCP)
 - .3 CCTV (in MCCP, V&C, and any other location where cameras are monitored and controlled, except SIO)
 - .4 Audio Monitoring (in V&C and SIO)
 - .5 Security Management and Supervision System (in ECP, MCP, MCCP, range office)
 - .6 Cell Call (in range office)
 - .7 Power, Light and TV control
 - .8 Security Patrol (in range office and Correctional Managers' Office)
 - .9 Limited Call Intercom System (LCIS)
 - .10 Public Address (PA)
- .7 When there is only one system active on a control post, there are no System Icons presented in the Selection Tray. When there is more than one system active on a control post, the systems available are presented in the Selection Tray. Selected versions of the icons are shown below:



- .8 Only one system can be selected at a time, and the commands that apply to that system are shown in the Command Tray.

7.4 Command icons

- .1 The command icons presented are dependent upon the system selected, the device chose, and the status of that device. They are generally 1.9 cm by 1.9 cm, with small variations when available or selected. See Section 8 for details.
- .2 In general, the sequence is to choose device (or devices) on the map view and then select a command to be performed. In some cases there is information to provide to complete the command, or there may be additional controls related to a command.
- .3 In some cases, a command will always be available, such as to present a list.
- .4 There are three other types of command icons, and each of these icons has its own shape and size, however the size of the icon that is needed to make a selection or move a control button will be 1 cm by 1 cm (although the visible part of the icon may not fill the entire space. See Appendix A for details).
 - .1 Form icons for selection
 - .2 Selection icons
 - .3 Control icons

7.5 Status icons

- .1 The status icons are presented in the Detailed Status Window, and are dependent on the device chosen, and the command selected. They are generally unique to each system. They are 1.75 cm by 1.75 cm, although the outside border of the icon is not visible, and so the colored part of the status icon is smaller. See Section 8 for more details.

7.6 Map icons

- .1 Map icons are presented on the Map View, and represent the true status of the device.
- .2 Many of the map icons are unique to each system.
- .3 Map icons are 1 cm by 1 cm (the actual target) on a detailed map so as to be a minimum size to be selectable. Map icons on an overview map are adjusted to be a minimum of .3 cm by .3 cm, although .5 cm by .5 cm is the size used in the examples in this section.
- .4 The colored part of the icon is .8 cm by .8 cm (the visual target). There is a minimum space of .225 cm (the padding to next target) between selectable map icons on a detail view.
- .5 See Section 8 for details.

7.7 Structure icons

- .1 The structure symbols or icons represent the physical elements of the institution, such as walls, stairs, etc. Commands cannot be sent to them. They generally apply to all map views.

8 OPERATIONAL RULES FOR USER INTERFACES

8.1 Key principles

- .1 One device, one command processed at a time
 - .1 General rule is one device, one command. For some devices and commands, several devices may be chosen (grouped), and the command sent to those devices which are in the state that the command would apply.
 - .2 In some cases, there may be more than one step to complete a command or there are ongoing actions with that command – such as choosing a camera, selecting the monitor to which the camera feed is sent, and then controlling the movement of a PTZ camera. In this case, the user does not need to re-select the camera to first select the feed, and then activate the controls.
 - .3 The exception to this is that upon completion of the command, the Detailed Status Window shows the device that had been chosen, and the status at the end of the command. There is a 10 second window before the Detailed Status Window pops out where another command to that same device may have a command sent to it. In this case, the map icon would not flash to show selection, only the new state. The Detailed Status Window would also show the new status.
 - a. For the Perimeter Security UI in the MCCP, there is no timeout for the Detailed Status Window and an MDS or FDS alarm. Once an alarm is generated from an MDS or FPS, the map view shows the sector in alarm, shows the FOV of the 4 cameras with the best view of that sensor (which are also displayed on the CCTV monitor). There is no change to the map view for that sector or the detailed status window until the operator either clears the alarm, masks the alarm, or chooses another sector.
 - .4 Note: For a description of how a second alarm is handled, see the Alarm Handling section of this document.
- .2 Change in state of an icon
 - .1 Every touch of an icon results in a change in the visual appearance of the icon selected to indicate it was selected.
 - .2 Every action by the user is reflected in a change of state of one or more icons on the UI.
 - .3 An icon flashes when an action is required. The confirm icon or RFID confirm icon or Alarm Acknowledge icon flashes when a confirmation of the command is required. The alarm acknowledgement icon flashes when acknowledgement of an alarm is required. These are the main types of states for the map icons and status icons.

Status	Action to indicate status
Reflecting current status quo (may be one of many states)	No flashing, may be one of many states
Device chosen for a command to be performed	Map icon flashes alternately blue and its current status until command completed or timeout is reached
Alarm generated	Map icon(s) changes to alarm icon(s) for that device (red, and sometimes with an alarm bell inside) Detailed Status Window icon shows alarm icon for that device with red bell inside and bars indicating alarm incrementing from 1 to 3.

	Icon no longer flashes Audible alarm sounds
Alarm acknowledged (alarm acknowledgement icon selected)	Same map icon no longer flashes Detailed Status Window icon shows alarm icon for that device with red bell inside and no bars Audible alarm stops

8.2 Operational rules

- .1 Resting state of GUI shows:
 - .1 Map view
 - .2 Standard action icons that apply
 - .3 System icons if the control post controls more than one system
 - .4 Command icons that apply to that system are greyed out as no device chosen, with the exception of general commands that are UI specific and not device specific, such as displaying a list.
- .2 Map view always provides the real status of the device: NOTE inmate enable still to be determined.
- .3 When user logs in, Login Status icon changes from grey to black.
- .4 Users logged out after 60 seconds of inactivity, and Login Status Icon changes to grey.
- .5 When systems logged off (Login Status Icon is grey), no commands are displayed in the command tray
- .6 When user logs in, and there is only one system configured for that control post, there is no system icon shown in the selection tray and the commands for that system are shown as unavailable [until a device is chosen]. If more than one system is accessible at the control post, the systems are displayed in the selection tray.
- .7 If there is more than one system configured for that user interface, the only time no system would be selected is when the monitor first comes up. Otherwise, there would always be one system selected. I.e., the system does not become unselected after an elapsed period of inactivity.
- .8 If there are multiple systems controlled by that post, as soon as one is selected, the commands relevant to that system are displayed in the command tray and shown as unavailable.
- .9 As soon as a device is chosen, the commands that can be applied are displayed in the Command Tray, with those that are applicable to the device in its current state shown as available. Other commands are shown as unavailable. Detailed Status Window displays detailed information as applicable, and an icon that represents the current status of the device.
- .10 As soon as a device is chosen, it flashes alternately between its current state and blue, and flashes for 10 seconds. After 10 seconds, the device is no longer chosen, stops flashing, and commands no longer displayed as available. Detailed Status Window is popped out after 10 seconds as well. Commands become unavailable until another device is chosen, or another system is selected (if that is applicable) and a device is chosen.
- .11 When a device is chosen, choosing the device again de-selects it within the 10 second window. Selecting "Cancel" also de-selects a device or a command. Touching another part of the screen does not de-select a device. De-selecting requires an active step avoiding the situation where an accidental touching of the screen can terminate the choose device / select command sequence.
- .12 A device previously chosen as part of a group of devices can be de-selected by choosing the device again. In this case, selecting cancel de-selects all of the chosen devices
- .13 When a command is selected for a device, that command is shown as selected, and other

- commands are shown as available or unavailable as appropriate. The Detailed Status Window reflects the command selected, and in the case of a slider door that has sensors to indicate door movement, the current status of the door (ie opening or closing).
- .14 If a command is to be confirmed, the other commands are shown as still available until the command is confirmed. Then the command tray reflects the commands available and not available as a result of the change in state of the device resulting from the command.
 - .15 If a command is to be confirmed, another command can be selected and replaces the previous selection (as long as it is available and applies to the chosen device in its current state). In other words, you can change what command is selected without having to choose the device again, as long as the confirm icon is not selected or the RFID card is not scanned (as long as confirmation is required).
 - .16 Once a command is selected and a confirm is required, the user has 10 seconds to confirm the command before the UI returns to its previous state before the device was chosen.
 - .17 If the command is one that can continue to be engaged with the device (such as recording audio or a camera feed directed to a monitor), the selected device turns green.
 - .18 If another device is chosen the Detailed Status Window and the command tray reflect the current state of that device, even if other commands are still be in progress against other devices. [The system cannot be held up waiting for a command to be complete before another command can be applied to another device.]
 - .19 If multiple devices are chosen, the 10 second time out takes place after the last device chosen. Choosing another device as part of a group of those devices effectively resets the 10 second timer.
 - .20 When multiple devices are chosen, the Detailed Status Window lists the devices chosen, and if all devices have the same status, an icon representing that status is displayed. If there is more than one status amongst the devices chosen, no status icon is displayed in the Detailed Status Window.
 - .21 When multiple devices are chosen as a group and there are different statuses for the devices, all commands that can apply to any of the devices are available. If a “close” command is chosen, and some doors are open, then the command is only sent to the doors to which it applies. The Detailed Status Window then reports which devices were sent the command, and to which devices the command was not sent as it did not apply.
 - .22 If a command is in progress against a device with the Detailed Status Window showing the current status of the device, then the device does not need to be re-chosen to send a new command to that device. Example, slider door that is opening or closing can have “close” or “open” respectively selected while the previous command is still being completed. As long as that device is displayed in the Detailed Status Window, commands can be sent to that device. The Detailed Status Window pops out 10 seconds after the command completes. This provides a 10 second window to send another command to the device.
 - .23 When the command is complete, the Detailed Status Window continues to display the current status, and after 10 seconds, the Detailed Status Window pops out, and the icons in the Command Tray return to the unavailable status until a device is chosen.
 - .24 For doors and barriers, where there is an ability to know whether the door is moving, the door icon will be yellow while the door is moving. When the door stops – whether for open cuff mode or after a stop command, the door icon will be insecure (red).
 - .25 Where there is a control post that is controlling an area that does not easily fit onto one map, which means that all the devices being managed from that post cannot be displayed at a size that allows for their selection on a touch screen:
 - .26 There is a representation of the whole area being monitored (called an overview map), with an icon (magnifying glass) on the map to provide a detailed map of a specific wing or area. It is pre-determined how many detailed maps can be selected from the main Map View of the entire area of control
 - .27 When a detailed map is presented, there is an icon representing how to return to the overview map.

8.3 Alarm handling

- .1 Alarms have two states:
 - .1 Alarm generated
 - .2 Alarm acknowledged
- .2 If a detailed map is being presented on the UI, and the alarm is generated from an area that is not displayed on the detailed map, the overview map for that area is presented.
- .3 When an alarm is generated at a control post, the map icon changes status and flashes, and the Detailed Status Window pops up to display the information about the alarm, and to present a status icon.
- .4 The alarm is acknowledged by selecting the Alarm Acknowledge icon:
 - .1 Eliminates any switching of maps (which would require a visual re-orientation by the officer)
 - .2 Becomes a consistent set of steps to acknowledge any alarm
 - .3 Faster time to acknowledge an alarm, as the user does not have to re-orient themselves to the new map
 - .4 Leaves the overview map in place to constantly provide status of area under control of that post
 - .5 Consistent set of iconography for every stage in alarm acknowledgement
 - .6 All the user can do is acknowledge the alarm - there are no other commands that are able to be applied to the device in that state, so there is no need to switch the map view to one that displays the map icons of a sufficient size to send a command to
 - .7 Consistent with philosophy of every action by the user results in a change of state of one or more icons
 - .8 Enables a more consistent alarm handling between MCCP and control posts
- .5 All unacknowledged alarms are deemed acknowledged when this icon is selected.
- .6 If there is more than one alarm generated, and there are different audible sounds for the alarms, the sound that is generated is that of the highest priority alarm. There is only one sound generated at a time at a GUI. [Note: fire alarms may be an exception as there may be an audible alarm from the fire panel]
- .7 If there are more than one alarm unacknowledged at the GUI, there is a change in the frequency of the audible alarm to indicate that more than one alarm has been generated.
- .8 When there is more than one unacknowledged alarm, the status display changes to list the unacknowledged alarms in order of priority.
- .9 Selecting the Alarm Acknowledge icon silences the audible alarm.
- .10 This table shows how the three states of an alarm is represented on all UIs, except SIO UI, where there are no alarms presented at the UI which require acknowledgement by the SIO:

Alarm State	Map icon	Detailed Status Window icon	Audible Alarm
Alarm generated	Map icon changes to alarm icon for that device (usually red with alarm bell inside)	Detailed Status Window icon shows alarm icon for that device with red bell inside and icon is flashing and bars indicating alarm incrementing from 1 to 3.	Yes
Alarm selected in Detailed Status Window	Same map icon continues to flash	Detailed Status Window icon shows alarm icon for that device with red bell inside and bars indicating alarm incrementing from 1 to 3. Icon no longer flashes,	Yes

Alarm acknowledged (using alarm acknowledged icon)	Same map icon no longer flashes. If it is a fault alarm, the icon turns magenta.	Detailed Status Window icon shows alarm icon for that device with red bell inside and no bars – alarm acknowledged status icon. If this is a fault alarm, the status icon is magenta.	No
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- .11 If the officer has selected a device, and an alarm comes in before the command is chosen, the device is de-selected and the alarm process must be followed. Once the alarm (or alarms) has been acknowledged, the officer has to choose the device again.
- .12 When there is an alarm generated, and there is a special situation, the officer can still select the Special Commands icon without acknowledging the alarm. In this case, the audible alarm will sound for one second every 5 seconds at half volume until the emergency state is cleared, in which case the audible alarm will return to its normal sound until acknowledged. In these circumstances, the Detailed Status Window will also list the device which has generated the alarm (for Emergency Evacuation or for Lockdown). If there is more than one alarm generated, then the audible alarm will be that of multiple alarm. The officer will not be able to acknowledge the alarm until the emergency state is clear. Then the alarm process will be applied.
- .13 The following table describes the operational processes when there are alarms and other actions in progress:

Action in progress when alarm comes in	What happens when alarm generated	What happens when alarm acknowledged
Device chosen; and is flashing to indicate selection	Device no longer selected	Device no longer selected
Device chosen; and is flashing to indicate selection; command is selected; no confirmation required	Command completes, but status not updated in Detailed Status Window; map reflects current status Alarm generated, reflected in Detailed Status Window	Detailed Status Window shows current alarm status; status for completing other command not displayed
Device chosen; and is flashing to indicate selection; command is selected; confirmation required	Command does not complete; device no longer selected; commands are not available; Detailed Status Window shows alarm information	Detailed Status Window shows current alarm status
Alarm generated, and need to invoke a Special Command (see Note 1 below)	As soon as Special Commands icon is selected, alarm cannot be acknowledged. Map changes and detailed status window may not be presented /available. Audible alarm will be as described below.	When Special Command is completed, all previous alarms are presented. Alarms that had been generated and the alarm state resolved itself – would not be shown on the control post, but would be shown on the MCCP detailed alarm, and would generate a timeout alarm at the MCCP. Example – a door does not close within a timeout value, which would normally generate an alarm. If there is a need to lockdown cells, or a need to evacuate certain cells, that alarm would not be acknowledged at the control post. If there is a

		timeout for an alarm, then it would be reported at the MCCP.
System shutdown	No alarms from the UI as it is shutdown. Alarm is generated at the MCCP.	When system restored, only new alarms are presented. All old alarms are already captured at MCCP.

8.3.1 Alarm handling at the MCCP

- .1 The design requirement for the UI for each control post lists all the alarms generated at the post, and whether they are displayed and listed at the MCCP, and whether the alarm generates an audible alarm at the MCCP.
- .2 All alarms are reported at the MCCP and displayed on the Active Alarm Display which is a scrollable list of all alarms generated, listed in order of priority and then time generated. Once an alarm is acknowledged or cleared, it is no longer displayed. Officers can choose to have the Active Alarm Display shown or not.
- .3 The priorities described below are used to determine the order of display of the alarms in the Active Alarm Display on the Interior Security Display Monitor. A Priority 1 alarm would be displayed at the top of the Active Alarm Display, even if there are other alarms being displayed that are lower priority. The Detailed Status Window will always display the highest priority unacknowledged alarm, and the map will move to show the detailed map associated with the location of that alarm, as per configuration data.
- .4 By using the Detailed Status Window to present the highest priority alarm, the Active Alarm Display does not need to be sized to the minimum size used for the map icons in order to select an alarm to be acknowledged.
- .5 When an alarm comes in, the map view shifts to provide a detailed view of the location of the alarm. The level of detail is determined by the type of alarm, and is captured in configuration data. Some alarms may not shift to a detailed map, for example a fire alarm from a building. Other alarms, like a PPA, may trigger both a shift to a detailed map, and automatic display of certain cameras on the CCTV display monitors (part of configuration data).
- .6 If an alarm of a higher priority comes in, the map shifts to display the new higher priority alarm, the sound changes to one consistent with the new priority, and any other actions that may have been underway are cancelled until the alarm is acknowledged.
- .7 With the density of alarms that are possible on the Interior Security UI, the UI may have a large number of icons for alarms. Icons for alarms are never placed over the building identifier. In an emergency where there may be a significant number of alarms coming in from one building, given the priority of the alarms, it is very likely that there would be a detailed display that allows all alarms to be shown in an uncluttered way. If not, the operator can choose to display a detailed map by selecting the building name.

8.3.2 Alarm priorities

.1 This is the current list of alarm and alarm priorities:

Location	Alarm	Category	Rationale for category	Display Monitor	Ack'd or reset at MCCP
Any location in interior	PPA and PALS	Urgent– Priority 1a	Life and safety of officer	<ul style="list-style-type: none"> Interior security Active alarm display on interior security 	Reset
Periphery	Sensor alarm MDS or FDS:	Urgent – Priority 1b	Security (public safety)	<ul style="list-style-type: none"> Perimeter security Active alarm display on interior security 	Reset
PFV periphery	Sensor alarms, glass break alarms, window, door IR, motion detection in crawl space	Major – Priority 2	Security	<ul style="list-style-type: none"> Mini PIDS often in MCCP on Interior Security 	Reset or Ack'd depending on alarm
Any control post	Control post shutdown	Major– Priority 2	Major incident - Life and safety of officers and inmates	<ul style="list-style-type: none"> Interior security Active alarm display on interior security 	Ack'd Note: MCCP can shutdown and reactivate control posts (incl V&C)
Periphery or PFV periphery	MDS or FDS fault or tamper alarm	Major – Priority 3	Security	<ul style="list-style-type: none"> Perimeter security for perimeter; Interior security for PFV Active alarm display on interior security 	Ack'd, Can mask
Any location in interior	Fire Alarm	Major – Priority 4 (for active alarm display)	Backup - life and safety of officers and inmates	<ul style="list-style-type: none"> Interior security Active alarm display on interior security 	Display only
Interior, cells and medical area	ICCS and Nurse Cell Call Systems, uncancelled and unacknowledged	Minor – Priority 5	Life and safety of inmate	<ul style="list-style-type: none"> Range control post Nurses station Interior security Active alarm display on interior security 	Ack'd

Location	Alarm	Category	Rationale for category	Display Monitor	Ack'd or reset at MCCP
Any location in interior	Fault or tamper alarm in an area not covered by SMSS, i.e. no one else to look at it; exit door alarms; interlock override	Minor – Priority 7a	Security – lower in priority as alarm may resolve itself	<ul style="list-style-type: none"> • Interior security • Active alarm display on interior security 	No, can mask from MCCP
Any control post	Fault or tamper alarms for the devices that report are managed by that CP	Minor – Priority 7b	Security	<ul style="list-style-type: none"> • CP responsible to manage those devices 	Only sounds in MCCP if alarm escalated to the MCCP
Any SMSS	Interlock override	Minor Priority 7c	Security	<ul style="list-style-type: none"> • Interior security • Active alarm display on interior security 	Ack'd
Any location in interior	Facility and mechanical alarms, UPS alarms, operational audio logger alarms; includes other system failures	Minor – Priority 8	Security	<ul style="list-style-type: none"> • Interior security • Active alarm display on interior security 	Ack'd
Any location in interior	PPA low battery	Minor – Priority 9a	Backup – potential life and safety of officers	<ul style="list-style-type: none"> • Interior security • Active alarm display on interior security 	No
Any location in interior	Alarms from other control posts that generate an audible alarm at MCCP, usually on timeout of alarm acknowledgement	Minor – Priority 10	Security	<ul style="list-style-type: none"> • Interior security • Active alarm display on interior security 	Ack'd

8.3.3 Alarms that generate sounds across all control posts

- .1 Alarms from control posts that generate audible alarms both at that CP, the Correctional Manager's CP and /or the MCCP are shown below:

Alarm		Category	Rationale for category	Audible Alarm at MCCP	Audible Alarm or Alert at that CP	Audible Alarm or Alert at CM CP
SMMS (range office and other access control posts)	Shutdown	Major – Priority 3	Major incident - Life and safety of officers and inmates	Sound 3	None, shut down	
	Exit door opened (that reports to that range control post)	Minor – Priority 7	Security – lower in priority as it identifies a possible risk	Only if a acknowledgement time out expired	Sound 5	
	Interlock override	Minor – Priority 7	Security – lower in priority as it identifies a possible risk	Sound 5	Sound 5	
	Door not locking within pre-specified time of being closed (usually 10 seconds)	Minor – Priority 7	Security – lower in priority as it identifies a possible risk	Only if a acknowledgement time out expired	Sound 5	
	Door open too long (swing door), usually for 60 seconds after being released	Minor – Priority 7	Security – lower in priority as it identifies a possible risk	Only if a acknowledgement time out expired	Sound 5	
	Fault or tamper alarm for window or door or any other device managed by control post	Minor – Priority 7	Security – lower in priority as it identifies a possible risk	Only if a acknowledgement time out expired	Sound 5	
Cell call (range office)	Cell call not answered within timer	Minor – Priority 6	Life and safety of inmate	Sound 4	Sound 4	
Security patrol (range office and CM)	Time limit has expired	Minor – Priority 6	Life and safety of inmate		Re-use sound 1	Sound 1
	Time limit warning interval for next security patrol	Minor – Priority 9	Potential life and safety of inmates		Re-use sound 2	

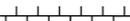
V&C	Shutdown	Major – Priority 3	Major incident - Life and safety of officers and inmates	Sound 3	None, shut down	
	Camera or microphone tamper or failure	Minor – Priority 7	Security			
SIO	None – the alarms that show on the V&C UI map view are also shown on the SIO UI map view, but there are no audible alarms at the SIO UI					
Other range office systems (lights), excluding SMSS (aka DCS)	None					
All control posts	System failure	Minor – Priority 8	Security	Alarm sound 5	Alarm sound 5 only if the other systems are still up;	
	Fault or tamper alarms for the devices that report are managed by that CP	Minor – Priority 8	Security	Alarm sound 5 Only if acknowledgement time out expired	Alarm sound 5	

9 LIST OF COMMON COMMANDS ACROSS ALL USER INTERFACES

- .1 All icons are available from CSC in .png format.

9.1 Structure icons

- .1 All of these icons are static, and no commands can be sent to them. They indicate the physical presence of a structural element on the Map View.

Icon Description	Location	Icon Name	Icon	Description for Help
Perimeter fence - location	Map area	S1_perimeter_fence		Indicates outer perimeter of institution to indicate location, but not the monitored status
Sally port	Map area	S3_sally_port		Indicated location of a sally port
Yard fence	Map area	S4_yard_fence		Indicates a fence for a yard
Exterior wall	Map area	S5_exterior_wall		Indicates an exterior wall
Interior wall	Map area	S6_interior_wall		Indicates an Interior wall
Stair case	Map area	S9_stair		Indicates a stair, with an arrow indicating direction of change in elevation.
Locked indicator	Map area	S10_locked		Indicates that the object on which the locked icon is in place can be locked manually. For a door it indicates that it can be locked manually, and is located in an area that offenders and visitors have physical access to, and must be kept locked unless unlocked for a specific purpose.
Door, not under DCS	Map area	S11_door		Indicates a door that is not under control of a DCS, where you want to know the location of the door.
Male washroom indicator	Map area	S12_male_washroom		Indicates a washroom for men.
Female washroom indicator	Map area	S13_female_washroom		Indicates a washroom for women.
Generic washroom indicator	Map area	S14_generic_washroom		Indicates a washroom for men or women.

Cabinet	Map area	S15_cabinet		Indicates a cabinet that has a lock that will generate an alarm. Cabinets that do not generate alarms are not placed on the map view.
Interior partial wall	Map area	S16_partial_wall		Indicates a partial wall that does not go to the ceiling.
Road	Map area	S17_road		Indicates a road over which vehicles with mobile sensor data (or GPS) may be tracked and displayed.
Windowed wall	Map area	S18_windowed_wall		Indicates an interior wall with windows to provide observation in an area where inmates can be present
Wall continues	Map area	S19_wall_continues		Indicates that the wall on the drawing continues into another floor plan or building
Barred wall		S20_barred_wall		
Indicates a shaft		S21_shaft_fill		Indicates a shaft that is generally icon
		S22_circular_stairs		

9.2 Common command icons

Icon Description	Location	Icon Name	Icon	Description for Help
UI logged in	Login area	1_UI_logged_in		UI is active. Select to turn off the UI. The icon turns grey, and no commands are available for selection. The map view is still presented.
UI logged out	Login area	2_UI_logged_out		UI is not active. Log in to activate the UI. The icon turns black and commands are available for selection. Default map view for that UI is presented.
Confirm	Selection Tray	3_Confirm		Used to confirm a command or selection. If confirm is required, the confirm icon will flash.
	Selection Tray	4_Confirm_selected		Confirm has been selected.
Cancel	Selection Tray	5_Cancel		Used to cancel any command or action. Selecting cancel will cancel any other selection(s).
	Selection Tray	6_Cancel_selected		The cancel command has been selected, and any other selection has been cancelled.
Emergency	Selection Tray	7_Emergency		Used to select emergency actions. Selecting this icon will bring up the possible emergency actions that can be chosen.
	Selection Tray	8_Emergency_selected		Indicates Emergency command selected, and that the UI is in an emergency state.
Help	Selection Tray	9_Help		Used to apply help to an icon

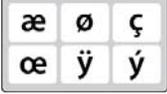
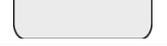
	Selection Tray	10_Help_selected		Help has been selected, and the explanation is displayed in the Detailed Status Window. Choosing cancel or choosing another command will clear the help text from this window.
Map	Selection Tray	11_Map_choose		Used to select a map to display in the Map View. Map thumbnails are displayed
	Selection Tray	12_Map_selected		Indicates that a map can be chosen to be displayed on the main part of the UI
RFID confirm	Selection Tray	13_RFID_confirm		Used to confirm a command or selection with swiping of an RFID card. If confirm is required, the confirm icon will flash.
	Selection Tray	14_RFID_confirm_selected		A swipe of an RFID card has confirmed the command or selection.
Emergency checklist		34_Emergency_checklist		Presents an emergency checklist which can provide detailed steps
		35_Emergency_checklist_selected		Emergency checklist has been selected and the emergency checklist is presented
Acknowledge alarm		42_Ack_alarm		Used to acknowledge an alarm and turn off the audible alarm. Icons for alarms show the 'active alarm unacknowledged' state.
		43_Ack_alarm_selected		Indicates that the alarm has been acknowledged. Icons for alarms now show the 'alarm acknowledged' state.

9.3 Special command icons

Icon Description	Location	Icon Name	Icon	Description for Help
Emergency lockdown	Pops up in System Selection Tray	15_Emergency_lockdown		Used to select Emergency Lockdown. When selected, the other two icons disappear indicating that an Emergency Lockdown is in progress, and only commands related to that state are displayed.
Emergency evacuation	Pops up in System Selection Tray	16_Emergency_evacuation		Used to select Emergency Evacuation. When selected, the other two icons disappear indicating that an Emergency Evacuation is in progress, and only commands related to that state are displayed. A specific Emergency Evacuation map, if configured, is presented when this icon is selected.
Emergency shutdown	Pops up in System Selection Tray	17_Emergency_shutdown		Used to select Emergency shutdown. When selected, the other two icons disappear indicating that an Emergency Evacuation is in progress, the map view is greyed out, and only commands to confirm or cancel the Emergency Shutdown are presented. Emergency Shutdown turns off the GUI at that control position, and it can only be re-initiated from a remote location.
Emergency shutdown confirm	Pops up on map area	36_Emergency_shutdown_confirm		Used to confirm Emergency Shutdown with a double confirmation. Emergency Shutdown turns off the GUI at that control position, and it can only be re-initiated from a remote location.
Select detail map	Only on some map views	37_Detail_View		Displayed on an overview map to select a detail map of the chosen area.
Select overview map	Only on some map views	38_Overview		Displayed on a detail map to return to the overview map that presents the entire status of the area.

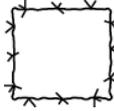
Reactivate control post	Pops up in System Selection Tray	39_Activate_control_post		Used to reactivate a shutdown control post.
Emergency shutdown for a control post – at this point can only be applied to the V&C	Pops up in System Selection Tray	40_Emergency_shutdown_CP		Used to shutdown a V&C control post
Emergency shutdown confirm for V&C	Pops up on map area	41_Emergency_shutdown_confirm_V&C	<p>Are you really sure?</p> <p>Confirm V&C Shutdown</p> <p>Yes No</p>	Confirmation of shutdown of the V&C control post
Activate a control post selected	Pops up in system selection tray	44_Activate_control_post_selected		This shows that activating a Control Post Status Display has been selected.
Shutdown a control post selected	Pops up in system selection tray	45_Emergency_shutdown_CP_selected		This shows that shutting down a Control Post Status Display has been selected.

9.4 Common icons across multiple systems

Icon Description	Location	Icon Name	Icon	Description for Help
Keyboard for accents for A	Pops up above keyboard	C1_keyboard_A		This keyboard provides the ability to select the different accents for the letter A for all required languages.
Keyboard for accents for E	Pops up above keyboard	C1_keyboard_E		This keyboard provides the ability to select the different accents for the letter E for all required languages.
Keyboard for accents for I	Pops up above keyboard	C1_keyboard_I		This keyboard provides the ability to select the different accents for the letter I for all required languages.
Keyboard for accents for O	Pops up above keyboard	C1_keyboard_O		This keyboard provides the ability to select the different accents for the letter O for all required languages.
Keyboard for accents for U	Pops up above keyboard	C1_keyboard_U		This keyboard provides the ability to select the different accents for the letter U for all required languages.
Keyboard for accents for Y	Pops up above keyboard	C1_keyboard_Y		This keyboard provides the ability to select the different accents for the letter Y for all required languages.
Alpha numeric keyboard	Pops up under detailed status window	C2_keyboard_alpha_numeric		Alpha numeric keyboard for data entry
Calendar	Pops up under detailed status window	C3_calendar		Calendar to choose dates for reports or data entry
Select time	Part of report selection parameters	C4_select_time		Numeric keypad to choose time for reports
Select time greyed	Part of report selection parameters	C5_select_time_greyed		Numeric keypad to choose time for reports which is greyed out when that specific field is not ready for data entry
Field for data entry		C6_field_enter		Indicates a field where data is to be entered

Field available for data entry		C7_field_enter_s elected		Indicates a field that is available for data entry
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9.5 System selection icons

Icon Description	Location	Icon Name	Icon	Description for Help
Perimeter monitoring	Selection Tray	18_perimeter_monitoring		Used to by operator to choose commands related to perimeter monitoring, which may include PIDS, PIDTS and / or SIDS.
	Selection Tray	19_perimeter_monitoring_selected		Indicates perimeter monitoring system commands are available for selection
Alarm monitoring	Selection Tray	20_alarm_monitoring		Used to by operator to choose commands related to the alarms that are routed to the Alarm Monitoring GUI
	Selection Tray	21_alarm_monitoring_selected		Indicates alarm monitoring commands are available for selection
CCTV	Selection Tray	22_CCTV		Used by operator to select commands related to CCTV
	Selection Tray	23_CCTV_selected		Indicates CCTV commands are available for selection. When selected, the field of view of PT or PTZ cameras are displayed on the GUI.
Guard tour	Selection Tray	24_Guard_tour		Used by operator to select commands related to guard tour
	Selection Tray	25_Guard_tour_selected		Indicates guard tour commands are available for selection
Door control system	Selection Tray	26_Door_control_system		Used to by operator to choose door commands

	Selection Tray	27_Door_control_system_selected		Indicates door commands are available for selection
Cell Call	Selection Tray	28_Cell_call		Used to by operator to choose cell call commands
	Selection Tray	29_Cell_call_selected		Indicates cell call commands are available for selection
Power and light control	Selection Tray	30_Power_and_light		
	Selection Tray	31_Power_and_light_selected		
Audio record	Selection Tray	32_Audio_record		Used to by operator to choose commands related to audio recording
	Selection Tray	33_Audio_record_selected		Indicates audio recording commands are available for selection

10 DETAILED SPECIFICATIONS FOR ICONS, POSITIONING AND COLOURS

10.1 Colours

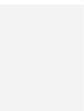
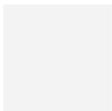
GUI and Icon Standards

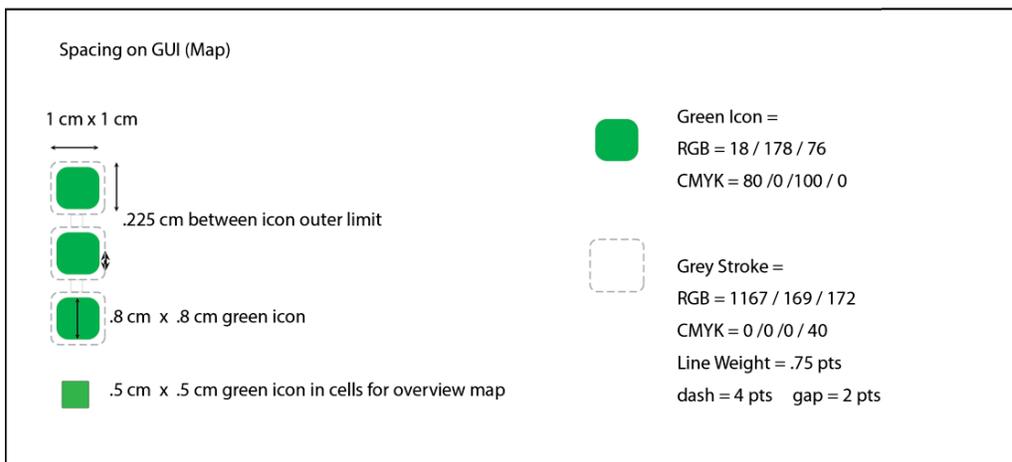
* Monitor Size = 475 mm x 267 mm

CSC Red		RGB = 237 / 28 / 36	CMYK = 0 / 100 / 100 / 0
CSC Magenta Dye=		RGB = 202 / 48 / 146	CMYK = 18 / 94 / 0 / 0
CSC Orng/Yel.=		RGB = 253 / 187 / 48	CMYK = 0 / 29 / 91 / 0
CSC Yellow=		RGB = 255 / 242 / 0	CMYK = 0 / 0 / 100 / 0
CSC Green:		RGB = 0 / 133 / 63	CMYK = 95 / 100 / 27
CSC Blue:		RGB = 0 / 74 / 139	CMYK = 100 / 66 / 0 / 25
CSC Black:		RGB = 19 / 24 / 25	CMYK = 75 / 64 / 63 / 80
CSC Grey Stroke on Icon:		RGB = 99 / 100 / 102	CMYK = 0 / 0 / 0 / 75
CSC Grey in Icon Fill:		RGB = 218 / 217 / 217	CMYK = 14 / 10 / 11 / 0
Apple Grey Background :		RGB = 230 / 230 / 230	CMYK = 8 / 7 / 6 / 0
Building in MCCP - grey fill		RGB= 146 / 148 / 151	CMYK= 45.31 / 36.33 / 35.16 / 1.56
Perimeter Line (site maps)		RBG= 242 / 241 / 240	CMYK: 3.91 / 3.13 / 3.13 / 0

10.2 Detailed icon sizing

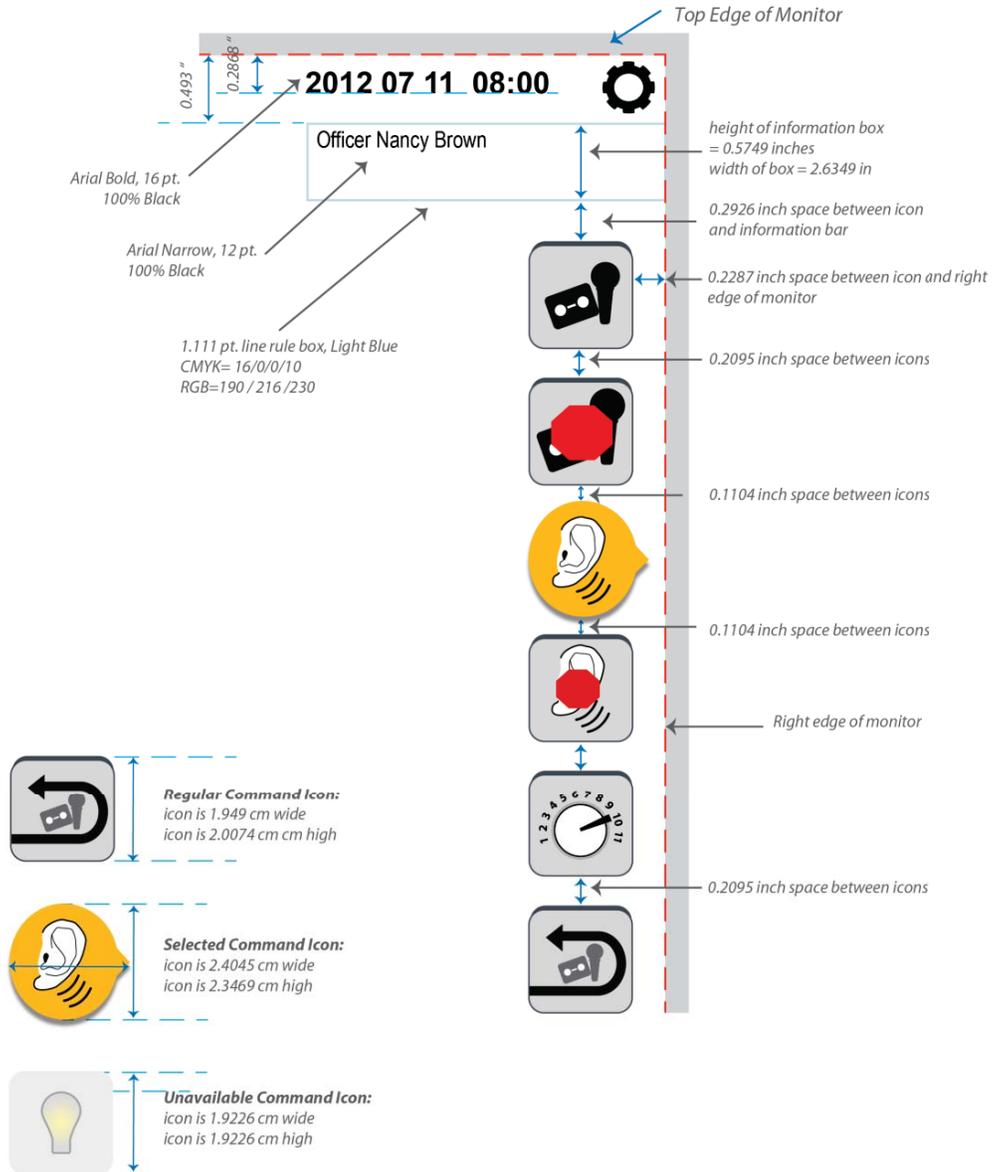
GUI and Icon Standards

CSC Grey Stroke on Icon (.75 pt size) :	RGB = 74 / 81 / 90	CMYK = 71 / 59 / 49 / 0	
Selected icon yellow	RGB = 253 / 187 / 48	CMYK = 0 / 29/91/0	
CSC Grey in Icon background fill:	RGB = 217 / 217 / 217	CMYK = 14 / 10 / 11 / 0	
Icon graphic	Black 100%		
Door icon graphic	RGB = 176 / 176 / 176	CMYK = 31% Black	
Door - grey outline - .18 pt size rule	RGB = 0 / 0 / 0 / 31	CMYK = 75% Black	
GUI Monitor - Grey Background :	RGB = 240/ 240/ 240	CMYK = 4 / 3 / 3 / 0	



10.3 Positioning of command icons

GUI and Icon Standards



10.4 Detailed status window

LL GUIs - Breakdown of Colours & Greys used in CSC GUIs and Icons

Cell ID
John Doe

12 pt. Arial Narrow Reg., Centered

Date & Time
New Status

10 pt. Arial Narrow BOLD., Flush Left
10 pt. Arial Narrow REG., Flush Left

1.75 cm in height (icon)

1.264 pt Line, Blue= 190/216/230 (R/G/B)
16/0/0/10 (C/M/Y/K)

Date	Time
Sensor 1	Alarm generated
Sensor 2	Alarm generated
Sensor 3	Alarm generated
Sensor 4	NO ALARM
Sensor 5	Alarm generated
Sensor 6	Alarm generated

Device ID

Date & Time
New Status

Order of Standard Items Listed in Status Window

1. Location, if different from location of U.I.
2. Description Identifier (i.e. Door XYZ)
3. Date & Time
4. Status

Example
(Device) (Device ID)
Door CBB06-05

Date & Time
New Status

small amount of white space around cancel icon

	Last Name	First Name	FPS	Auth. No.	Type	Start Date	End Date	
<input type="radio"/>	Thumb	Tom	123456	2013 - 1	Restricted	Jan. 1, 2013	Jan. 31, 2013	
<input checked="" type="radio"/>	Doe	John	431837	2013 - 4	Unrestricted	Jan. 4, 2013	Feb. 4, 2013	
<input type="radio"/>	Shoe	Joe	938374	2013 - 8	Unrestricted	Jan. 8, 2013	Feb. 15, 2013	
<input type="radio"/>	Pending				Unrestricted			
<input type="radio"/>	Pending Restricted				Restricted			

line weight = 1.11 pts.
Line colour (RGB) 190 / 216 / 230
No fill in box!! (monitor grey shows through)
*Corner radius = .18 pt (matches cancel button)

10.5 Special icons

GUI and Icon Standards

Cell Tables



Colour Blue = RGB: R100 G120 B189
CMYK: C=100 M=42 Y=4.3 K=0



Colour - Green= RGB: R29 G178 B26
CMYK: C=79.7 M=0 Y=100 K=0



Green circle size = .036 cm x 0.36 cm

Cell Tables

Line Weight = 0.501 pt,
Line Colour = 100% Black
Icon Height = .8 cm

25

Font:
Arial Narrow, 10.8 pts,
100% black



System Icons - Emergency:
icon is 2.5 cm wide
icon is 2.5 cm high



System Icons - Emergency:
icon is 2.5 cm wide
icon is 2.5 cm high



System Icons - Emergency:
icon is 2.5 cm wide
icon is 2.5 cm high



System Icons - Regular:
icon is 1.905 cm wide
icon is 1.905 cm high

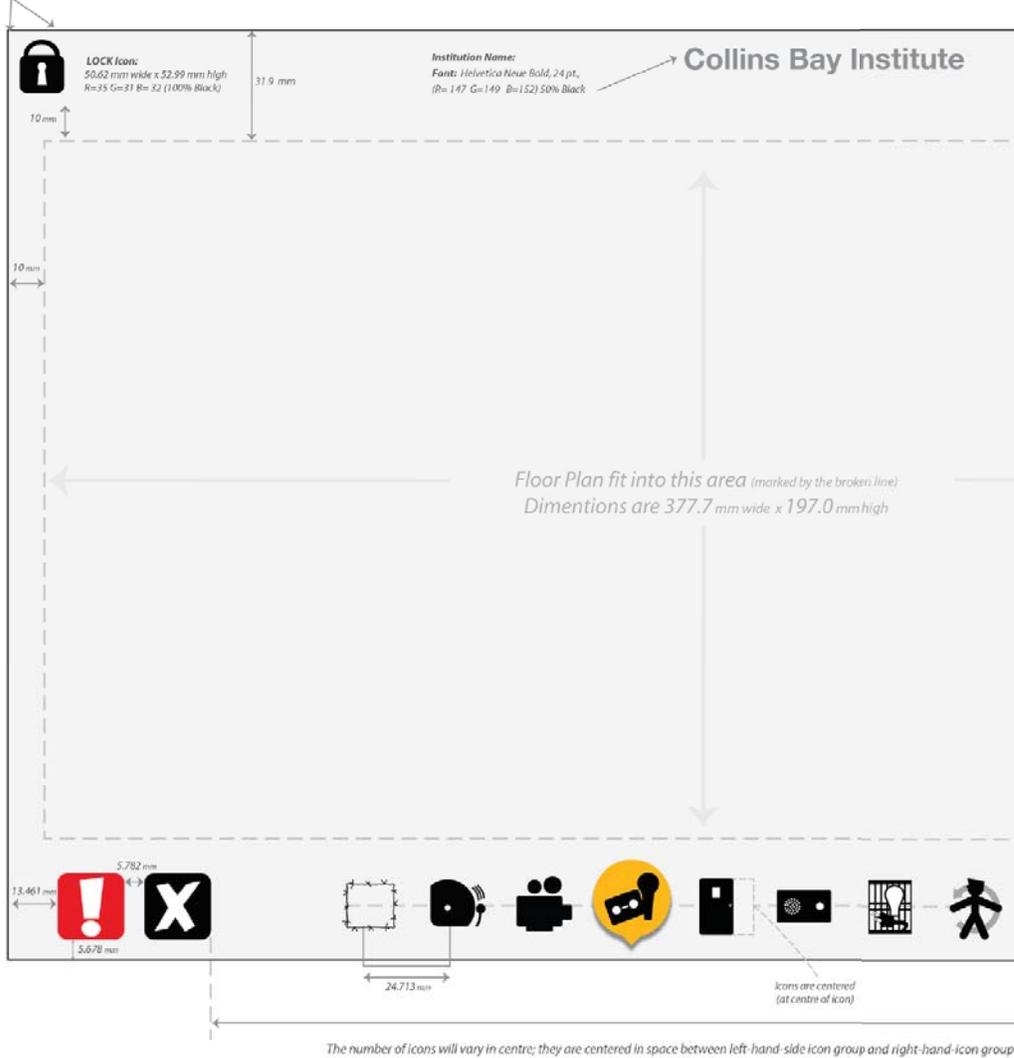


System Icons - Selected:
icon is 2.3961 cm wide
icon is 2.681 cm high

10.7 Sizing on left hand side of display

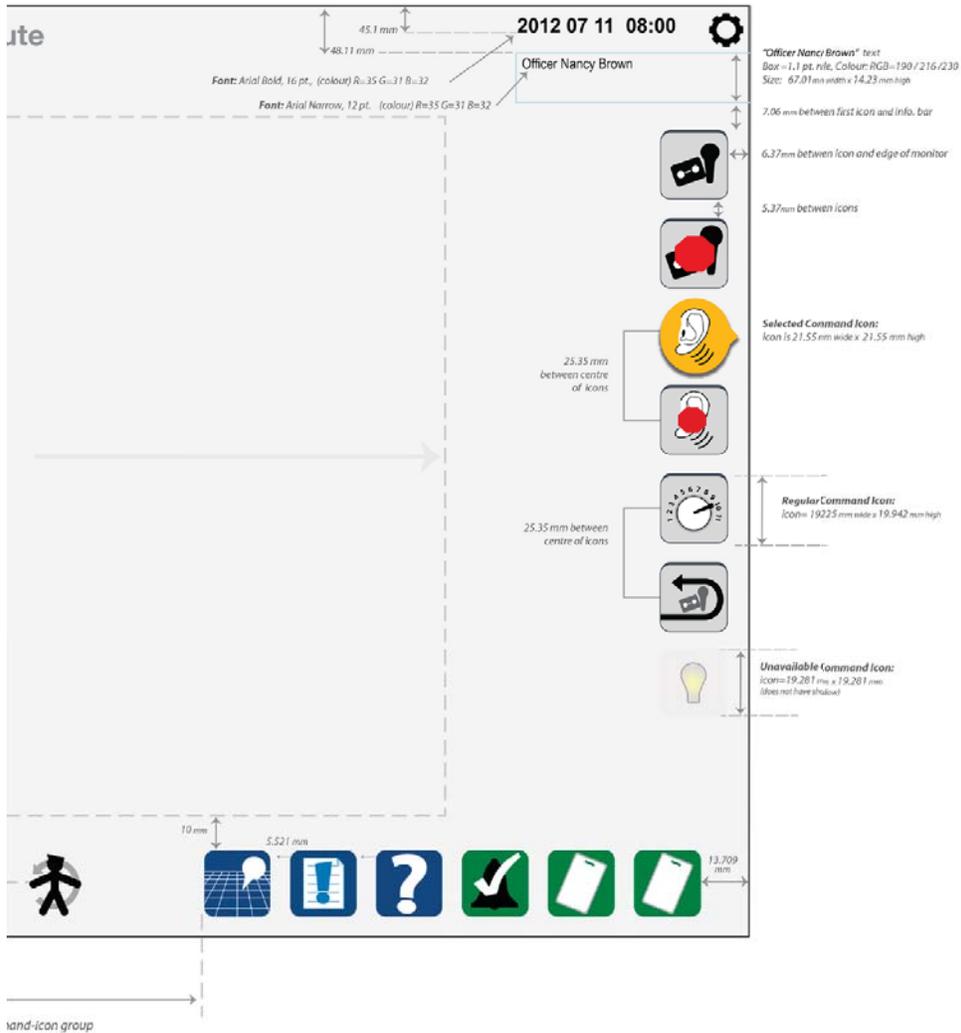
GUI and Icon Standards (Left Hand Side of GUI Master page)

GUI Dimensions= 475mm wide x 267 mm high
Black "keyline" on 4 sides. Reference Use Only. Indicates the size of GUI



10.8 Sizing on right hand side of display

GUI and Icon Standards (Left Hand Side of GUI Master page)



10.9 Details of structure icons

GUI and Icon Standards

Type of map	Example	Weight of lines	Colour	Graphic Example
L1	Site Maps	.523 black line (outline on buildings)	R=145 B=147 B= 150 (fill inside buildings)	
L2	V&C Areas, Some floor plans Building maps used at Interior Security.	<ul style="list-style-type: none"> Line weights are 3 pt. (Interior, exterior, windowed walls, barred walls) Half-walls are .7 pt. Elevators=.75 pt. Stairs=.5 pt width Symbols= 1.5 pt Doors= .5 pt 	<ul style="list-style-type: none"> Exterior line=100% black Interior Line colour is R=145 G=147 B=150 Half-Walls= R=99 G=100 B=103 Doors= white fill with black outline Shaft areas are have continuous black dot fill (half-tone dot) 	
L3 – Overview Map	Floor Plans, often entire floor of building, i.e. Ground Floor Control post to monitor status	<ul style="list-style-type: none"> Line weights are 1 pt. (Interior, exterior, windowed walls, barred walls) Half-walls are .5 pt. Elevators=.5 pt. Stairs=.2 pt width Symbols cont. walls=.0625 pt Doors= .2 pt 	<ul style="list-style-type: none"> Exterior line=100% black Interior Line colour is R=145 G=147 B=150 Half-Walls (colour)= R=99 G=100 B=103 Doors= white fill with black outline Shaft areas are have continuous black dot fill (half-tone dot) 	
L3 – Detailed map	Part of a floor plan, bigger than V&C area Control post to choose icons to send commands to	<ul style="list-style-type: none"> Line weights are 2 pt. (Interior, exterior, windowed walls, barred walls) Half-walls are .6 pt. Elevators=.6 pt. Stairs=.35 pt width Symbols cont.walls= 1.25 pt Doors Lines= .3 pt Perimeter Line= 3 pt. weight, it is a dashed line (dash is made up of 1 pt.dash, and 3 pt. gap) 	<ul style="list-style-type: none"> Exterior line=100% black Interior Line colour is R=145 G=147 B=150 Half-Walls= R=99 G=100 B=103 Doors= white fill with black outline Shaft areas are have continuous black dot fill (half-tone dot) Perimeter line colour: RGB: 240 / 240/240 CMYK: 4/3.5/3.5/0 	

Note: Doors - Length of doors may vary in any of these Map levels; the door length is based upon the blueprint, and the length can vary per institution.



**CORRECTIONAL SERVICE CANADA
FACILITIES BRANCH
ELECTRONIC SECURITY SYSTEMS**



31 July 2014

DESIGN REQUIREMENTS

**ICONS FOR THE GRAPHICAL USER INTERFACES
FOR USE IN FEDERAL CORRECTIONAL INSTITUTIONS**

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TABLE OF ABBREVIATIONS

Abbreviation	Expansion
API	Application Programming Interface
ATP	Acceptance Test Procedure
BIFMA	Business & Industrial Furniture Manufacturers Association
CA	Contract Authority
CCDA	Command Control and Data Acquisition
CCTV	Closed Circuit Television
CD	Commissioner's Directive
CER	Common Equipment Room
COTS	Commercial-Off-The- Shelf
CSA	Canadian Standards Association
CSC	Correctional Service Canada
DCMS	Door Control and Monitoring System
DES	Director Engineering Services
EIA	Electronic Industries Association
FAAS	Facility Alarm Annunciation System
FAR	False Alarm Rate
FDS	Fence Disturbance Detection System
FIU	FAAS Interface Unit
GFE	Government Furnished Equipment
IVRMS	Inmate Voice Recording and Management System
IP	Internet Protocol
MCCP	Main Communications and Control Post
MDS	Motion Detection System
MTBF	Mean Time Between Failure
MTTR	Mean Time to Repair
NAR	Nuisance Alarm Rate
NTP	Network Time Protocol
PA	Public Address
PC	Personal Computer
Pd	Probability of Detection
PIDS	Perimeter Intrusion Detection System
PIU	Perimeter Intrusion Detection System Integration Unit
PLC	Programmable Logic Controller
RFP	Request for Proposal
RTEO	Regional Technical and Engineering Officer

Abbreviation	Expansion
PPA	Portable Personal Alarm
PPAL	Portable Personal Alarm Locatable
SCC	Security Control Centre
SIO	Security Intelligence Officer
SOR	Statement / Observation Report
SOW	Statement of Work
STR	Statement of Technical Requirements
TCP/IP	Transport Control Protocol/Internet Protocol
TER	Telecommunications Equipment Room
UPS	Uninterruptible Power Supply
V&C	Visits and Correspondence
VDU	Video Display Unit
VIRS	Visits Intercept and Recording System
VMS	Video Management System

TABLE OF DEFINITIONS

#	Term	Example	Description	Function
1	Administrative User Interface		Monitor and Software that supports task specific User Interaction for System Administrators, located in a secure area	Provides Administrative Personnel with the ability to map enrolled users to the functional domains that they are allowed to access and change
2	Application	Cell Call Management, PA Management	Software that is used to deliver Application Support functionality for a sub-system	Software that provides the Operator Interface and supporting logic that allows a sub-system (Control Domain) to be managed
3	CCTV Monitor	PIDS or Range CCTV Monitor	Computer Monitor Hardware	Displays CCTV images for Operator viewing
4	Client		Rack mounted computer located in a secure area away from a Control Post or Control Desk.	Runs software and supports one or more Application
5	Configuration Data	Site floor plans showing quantity of cameras, doors, cells etc. Camera locations. Number of User Interfaces required in a Post.	Site and System specific information typically supplied by CSC that defines how a sub-system Application is to be set-up for a site, location within a site, or post.	The configuration data provides the information that a sub-system application requires to tailor it to meet site, location within a site, or post user requirements.
6	Configuration User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows suppliers or qualified personnel to add, delete and modify Application Configuration
7	Contract Authority		Public Works and Government Services Canada (PW&GSC) is responsible for all contractual matters associated with the system design and implementation.	
8	Contractor		The company selected as the successful bidder.	
9	Control Console	MCCP Console, Living Unit Control Post Console	Console, typically located in a Control Post. Serves as the physical support infrastructure for Operator User Interfaces	Contains User Interfaces or Control Panels used by staff to execute their management responsibilities and interact with the Domains over which they have Control

#	Term	Example	Description	Function
10	Control Desk	Living Unit Control Desk	Desk, typically located in a Control Post or Office. Serves as the physical support infrastructure for Operator User Interfaces	Equipped with User interfaces used by staff to execute their management responsibilities and interact with the Domains over which they have Control
11	Control Domain	Cell Call, Guard Tour, Public Address	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that performs a set of related functions	Collect information, or activate capabilities in their operational domain
12	Control Panel	PACP, Fire Alarm	Hardware and Software device that provides an Operator Interface (I/O device), located in a Control Post	Allows Operators to manage one or more Domain
13	Control Post	Living Unit Control Post/MCCP	Room or area, typically located in a secure area in an institution	Room used by staff to execute their management responsibilities and interact with the Domains over which they have Control
14	Custom Equipment		Equipment designed and/or manufactured specifically for a specific contract.	
15	Design Authority		Director, Electronic Security Systems (DES) Correctional Service of Canada (CSC) is responsible for all technical aspects of the system design and implementation.	
16	Device	CCTV Camera, Managed Door, Call Origination Device	A specialized device, typically consisting of hardware and software	Provides data collection or activate functions associated with a specific system or sub-system
17	Enrolment User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Allows Designated Personnel to enroll and delete Users from the Command, Control and Data Acquisition System.
18	Maintenance User Interface		Monitor and Software that supports task specific User Interaction, located in the CER or Maintenance Service Provider Office	Provides Maintenance Personnel with the ability to interact with one or more Systems to carry out their day to day tasks to troubleshoot and maintain Systems and Subsystems

#	Term	Example	Description	Function
19	Notification	Notification that a door is opened, or a door is closed, or a sensor is in alarm	A notification is a message that can be shown on a User Interface and/or logged in a database that represents a change in state or a command initiated by an operator.	
20	Off-the Shelf		Equipment currently on the market with available field reliability data, manuals, engineering drawings and parts price list.	
21	Operator User Interface	PIDS Display, Door Control and Monitoring System Display	Computer Monitor and Software that supports User Interaction (I/O device)	Provides an Operator with the ability to interact with one or more Systems to carry out their day to day tasks at a Control Console or Control Desk
22	Project Officer		A CSC employee or a contracted person designated by DES to be responsible for the implementation of the project.	
23	Reporting User Interface		Monitor and Software that supports task specific User Interaction, located in a secure area	Provides Management Personnel with the ability to access preconfigured reports and to create custom reports
24	Server	Network Video Recorder	Rack mounted computer that runs software and is located in an equipment room such as a CER or TER	Runs software that is used to deliver services that support Command and Control Applications to connect to sub-systems
25	State		The state of a device as reported to a sub-system or system	This is a logical representation of the state of a device that is being monitored or managed
26	Sub-system	Cell Call, Guard Tour	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, that perform a specific set of related functions	Collects information, or activates capabilities in their operational domain
27	System	PIDS	A group of Physical and Virtual devices or objects, often supported by specialized hardware and software, including devices from sub-systems that perform a more general set of related functions	Collects information, or activates capabilities in their operational domain

#	Term	Example	Description	Function
28	Touch Screen User Interface	Door Control and Monitoring System User Interface	Typically an LCD Monitor with touch screen technology	Allows an Operator to view and interact with the Systems presented on the Monitor
29	Workstation		Rack mounted computer located in a secure area away from a Control Post or Control Desk	Runs software that is used to deliver Command and Control Capabilities

1 INTRODUCTION

- .1 The intent of the Design Requirement for the Icons Graphical User Interface is to be used in conjunction with the Design Requirement for the Framework for the Graphical User Interface and the Design Requirement for each Control Post to enable the Operational Staff in each control post, as appropriate to their span of control, to conduct the operations at their control post in a manner that is consistent with the other control posts both within the individual institution and across all institutions.

2 SCOPE

- .1 This document defines the essential design and functional requirements of the Correctional Service of Canada for the Icons to be used for the Graphical User Interface that is to be incorporated into the design of all User Interfaces for all control posts for Federal Correctional Institutions. The Design Requirement does not specify the actual data involved in the processes, but describes in detail the Framework for the Human Machine Interface

3 AUDIENCE

- .1 The intended audience includes potential developers, suppliers or those that configure the software application that will provide both the Human Machine Interface for the functionality described in the balance of the document as well as the logic that will integrate and manage all the components of all the systems such as Microphones, Audio Recorders, CCTV Cameras, Video Recorders, Doors, Perimeter Security and Interior Security. This document must be read in conjunction with the design Requirement for each system in each control post.

4 GENERAL

- .1 Current innovations in touchscreen technology have allowed other industries to optimize their control environments and present users/operators/staff with a consistent and controlled user experience and operating environment. CSC is taking advantage of a number of current and emerging advances in human-computer interaction that are being applied to physical security products and systems to gain significant benefits, the most significant of which is adopting a standard for icons and for the look and feel of interfaces used in CSC facilities.
- .2 The benefits of adopting a consistent standard for future user interfaces include decreased initial training times and cost due to cross-over (either internal to an institution or across the country) of personnel. Furthermore, a system having standardized symbols, layout, and procedures aids in the creation of muscle memory which will decrease error rates under the duress of emergency situations when the user has to try to remember what the icon means.
- .3 Icons can be incredible little visual devices. Their sole purpose is to communicate a great deal of information in the simplest possible way. As pictorial representations of objects, icons are critical as shorthand for conveying meaning that users perceive almost instantaneously.
- .4 For these reasons, the design of the icons as part of a graphical human interface is foundational to conveying the maximum information, consistently, in the least amount of time that enables operators to take the appropriate action to any alarm or change in state that is generated.
- .5 Leading edge human interface design companies recognize the critical role that icons play in conveying information, as described above, and have written guidelines for suppliers who provide applications that work within these frameworks.
- .6 In order to continue providing high quality tools for operational staff, Correction Services Canada requires a Standard for its future command and control architecture that embodies the same rigour as the Standards created by companies that design leading edge human interfaces. The primary purpose of the Operator User Interface is to control and monitor devices from a control post. The devices controlled and monitored vary from control post to control post and are defined in configuration files.
- .7 The User Interface must be designed in such a way that it supports multiple management

domains in a seamless and transparent manner as the system is expanded, supporting the representation of one domain through all domains that must be managed on the same User Interface.

- .8 The different systems are comprised of two main components from a UI perspective, and the configuration and layout is determined by the functionality of the control post:
 - .1 A status display which is part of the control post
 - .2 A monitoring display or displays for CCTV
- .9 This capability may be called upon to meet operational requirements or to meet situations in which a User Interface fails or for the aggregation of Control Post functionality as posts are reconfigured to accommodate staffing requirements. The definition of how User Interfaces in control posts provide redundancy within a control post and at another control post must be flexible and must be defined in the associated configuration information.
- .10 Commands originating from Operator actions at the User Interface and events that represent a change of state at a device will typically result in a message that will be "logged" by the underlying data logging services of the Command, Control and Data Acquisition Platform on which this application runs. This data can and will be accessed at a later date for evidentiary use, assessment, and follow-up.

5 DESIGN REQUIREMENTS

5.1 General

- .1 The priorities for the User Interface design are to:
 - .1 Enable operators to respond to emergencies and situations with potential for danger effectively in a manner that ensures safety of staff, the safety of the inmates and public safety [i.e. safety is number 1] – maximizing the preservation of life
 - .2 Enable all tasks to be conducted efficiently and effectively – this requires the design to support operational processes in a way that are intuitive and automatic, minimizes the use of text, and do not require interpretation or memory to execute a task
 - .3 Consistency across all operational processes and tasks
- .2 The User Interface shall be designed:
 - .1 Embodying best principles of UI design
 - .2 To present a consolidated and integrated view of numerous existing security, operations and communications systems onto one consistent user interface that can be configured across touch screen monitors
 - .3 To enable users to easily and safely conduct their tasks under a variety of operational situations
 - .4 To provide operational efficiency and effectiveness
 - .5 With the flexibility to accommodate the integration of future systems
- .3 Thus the UI design will be clean, elegant with minimal visual clutter, as any other design will not meet the above three priorities.

5.1.1 *User Interface*

- .1 The User Interface must use iconography and guidelines provided or approved by CSC.
- .2 The preferred display layout will be based on a simplified floor plan of the whole or part of a unit based on screen space. Icons must be used instead of text where possible.

5.1.2 *Human Factors*

- .1 The UI for the V&C and SIO must conform to accepted principles of good human factors design and be implemented according to the Design Requirement listed below:

Design Requirement for Design of Icons for User Interfaces

- .2 This Design Requirement for Design of the Look and Feel of the User Interface is the second Design Requirement that forms the basis for the design of all other User Interfaces.

5.2 Detailed design requirements

- .1 The Icons shall meet the following general requirements:
 - .1 have a single graphic (not two or more)
 - .2 be unique
 - .3 have silhouettes (outlines) that are distinct
 - .4 be easily recognizable, capturing the characteristics of the object it represents
 - .5 be readily distinguishable in different colours (i.e. must be large enough and simple enough that it is easy to tell if the icon is in different colours)
 - .6 be consistent with generally recognized icons, using universal images – such as using a camera shape or picture to represent a visual recording device such as a camera or CCTV
 - .7 be equally clear and recognizable in all sizes that are required, which may mean that there are different icons with different levels of detail at the different sizes
 - .8 indicate changes in state that immediately alerts the operator to that change whether by change in colour, change in graphic or action (such as flashing), or any combination thereof
 - .9 changes in state are to be easily determined by those who are red-green colour blind (approximately 20% of the male population). NOTE: this does not mean that red / green can't be used to indicate state change, but that only change between red and green to indicate state change with no other change (such as flashing or change in size) is not acceptable
 - .10 families or groups of Icons must be easily recognizable as being part of a family or group with the unique characteristics of the individual icons still being easily recognizable - for example all variations of CCTV icons must have a consistent element and a distinguishing element
 - .11 fit within the overall context and layout of the UIs; each icon must be different, while still working together as a whole, i.e. each icon must work harmoniously with the other icons
 - .12 icons having a similar role are designed with a similar style (including perspective, shadows, colour, gradients). Icons that represent a device that would require action would have a style different from passive elements / devices, such as walls.
 - .13 show optical balance and perceived accuracy in perspective and details
 - .14 not use words or numbers on icons (unless essential)
 - .15 must have a unique file name system wide
 - .16 there will only be one icon to represent a particular element and each state of that element used system wide

5.3 Functional requirements

- .1 The following functions must apply:
 - .1 The following functions will apply to the represent the different states of the different categories of icons:
 - .2 Passive / wallpaper elements will remain on the main UI at all times and will not change. These architectural elements form the backdrop against which all the other elements are displayed.
 - .3 Active monitored elements will remain on the main UI at all times, and will change form to indicate any activity associated with that element. A unique form for each state is required. The potential change in form associated with a change in state is described in Item 6.8 above.
 - .4 Elements that are not actively monitored, but which generate alarms, **will be optionally be represented** as “ghosted” or not visible until an alarm is generated,

when the element that generates the alarm changes form, and the rest of that set of elements are shown on the main UI as “ghosted”. When an element generates an alarm, it becomes visible on the UI.

- .5 Elements that are masked are those which normally generate alarms, but the alarms have been turned off at the control panel. There needs to be an indication that those elements are active and in steady state, but alarms from those devices will not be reported.
- .6 Mobile elements would initially be represented as a stationary icon in the region / range where that element would report an alarm.
- .7 Some icons represent elements for which commands are sent from the MCCP or the range office. Selecting the icon itself (such as a controlled door or a CCTV with a wiper) would bring up a new window that offers the commands related to that icon, such as “Open Door” or “Turn on Wipers”. Optionally, these actions may be represented by icons. Any icon which is used to generate or choose a command, or is used to select a group of edge devices to which commands are sent, needs to be large enough to be able to be selected on a touch screen, by people with all sizes of fingertips.
- .8 Some icons would represent elements that are actively controlled from the MCCP or the range office. In this case, it is likely that an icon representing that element, such as a joy stick, would have an icon in a tool bar, and the activation of that icon would bring up a new window that would enable the end user to send the appropriate commands to that element or control the movement of that element. These comments are related to how the icons would function, and the expected need for toolbar icons, rather than the design of the icons.

5.4 Technical requirements

- .1 As part of the Icon design, the following technical attributes of the Icons will be specified:
 - .1 The size required for each icon. The size of the icon will be determined by its location and its use. The standard size for icons in toolbars is 22x22 or 24x24 pixels (small), the standard size for icons in menus or lists in applications is 16x16 (tiny), and the standard size for desktop applications is 48x48 pixels. There is also medium – 32x32 pixels used by Windows XP. The standard sizes for use in the next generation UI for each of toolbars and menus will likely differ from the design requirements described in the previous sentence as they must be easily and readily be invoked on a touch screen rather than by a mouse. The exact size for each use and location will be specified.
 - .2 Use of shadows, gradients and anti-aliasing
 - .3 Size of the border for each different sized icon (such as 1 pixel for a 16 x 16 pixel icon)
 - .4 Colour palette for each icon or group of icons
 - .5 Perspective for each group and / or type of icon, whether table or shelf
 - .6 Whether each group of icons should be realistic, photorealistic or illustrative