



**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

THIS DOCUMENT CONTAINS A SECURITY
REQUIREMENT / DOCUMENT CONTIENT DES
EXIGENCES RELATIVES À LA SÉCURITÉ

Title - Sujet Audio-Visual Technology	
Solicitation No. - N° de l'invitation W8474-197662/A	Date 2018-06-11
Client Reference No. - N° de référence du client 6000436037	
GETS Reference No. - N° de référence de SEAG PW-\$\$HN-331-74963	
File No. - N° de dossier hn331.W8474-197662	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-07-24	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: Turner, Louie	Buyer Id - Id de l'acheteur hn331
Telephone No. - N° de téléphone (873) 469-3342 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF NATIONAL DEFENCE 101 COLONEL BY DRIVE OTTAWA Ontario K1A0K2 Canada	

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 2018-11-30	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



Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Destination	Unit Price/Prix unitaire FOB/FAM	Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	Audio Visual equip, inst, training etc Supply and Install a fully functional audio-visual technology system including, integration and control systems as per Annex B - Statement of Work, Appendix A - Audio Visual Capabilities, Appendix B - Drawing Package, Appendix C - General Information and Performance Requirements, Appendix D - Drawing Standards, Appendix E - Equipment List and Appendix F - Evaluation Criteria/Mandatory Requirements Alternates or equivalents will be considered where identified in Appendix E, Equipment List	W8474	W8474	1	Each	\$	XXXXXXXXXXXX	XXXXXXXXXXXX	2018-11-30	
	<ul style="list-style-type: none"> Pricing to be inserted at Appendix G - Pricing 									

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Attachments:

Annex A - Security Requirements Checklist (SRCL)

Annex B - Statement of Work

Annex C - Schedule of Milestones

Appendix A - Audio Visual Capabilities

Appendix B - Drawing Package

Appendix C - General Information and Performance Requirements

Appendix D - Drawing Standards

Appendix E - Equipment List

Appendix F - Evaluation Criteria/Mandatory Requirements

Appendix G - Pricing

PART 1 - GENERAL INFORMATION

1.1 Security Requirements

1. At the date of bid closing, the following conditions must be met:
 - (a) the Bidder must hold a valid organization security clearance as indicated in Part 6 - Resulting Contract Clauses;
 - (b) the Bidder's proposed individuals requiring access to classified or protected information, assets or sensitive work sites must meet the security requirements as indicated in Part 6 - Resulting Contract Clauses;
 - (c) the Bidder must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites;
2. For additional information on security requirements, Bidders should refer to the [Contract Security Program of Public Works and Government Services Canada](http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html>) website.

1.2 Statement of Work/Requirement

The contractor must provide the goods and services in accordance with the technical requirements stated herein.

1.2.1 Delivery Requirement

Delivery is requested to be completed by November 30, 2018.

1.3 Debriefings

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 from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.4 Trade Agreements

The requirement is subject to the provisions of the Canadian Free Trade Agreement (CFTA).

PART 2 - BIDDER INSTRUCTIONS

2.1 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 Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-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 the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2017-04-27) 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: 60 days
Insert: 90 days

The 2003 standard instructions is amended as follows:

- Section 5, entitled Submission of bids, is amended as follows:
 - Subsection 1 is deleted entirely and replaced with the following: "Canada requires that each bid, at solicitation closing date and time or upon request from the Contracting Authority, for example in the case of epost Connect service, be signed by the Bidder or by an authorized representative of the Bidder. If a bid is submitted by a joint venture, it must be in accordance with the section entitled Joint venture."
 - subsection 2.d is deleted entirely and replaced with the following: "send its bid only to the specified Bid Receiving Unit of Public Works and Government Services Canada (PWGSC) identified in the bid solicitation, or to the address specified in the bid solicitation, as applicable;"
 - subsection 2.e is deleted entirely and replaced with the following: "ensure that the Bidder's name, return address and procurement business number, bid solicitation number, and solicitation closing date and time are clearly visible on the bid; and,"
- Section 6, entitled Late bids, is deleted entirely and replaced with the following: "PWGSC will return bids delivered after the stipulated solicitation closing date and time, unless they qualify as a delayed bid as described in the section entitled Delayed bids. For bids submitted using means other than the Canada Post Corporation's epost Connect service, the bid will be returned. For bids submitted using Canada Post Corporation's epost Connect service, conversations initiated by the Bid Receiving Unit via the epost Connect service that contain access, records and information pertaining to a late bid will be deleted."
- Section 07, entitled Delayed bids, is amended as follows:
 - Subsection 1 is amended to add the following piece of evidence: "d. a CPC epost Connect service date and time record indicated in the epost Connect conversation activity."
- Section 8, entitled Transmission by facsimile, is deleted and replaced by the following:

1. Facsimile

 - a. Unless specified otherwise in the bid solicitation, bids may be submitted by facsimile. The only acceptable facsimile number for responses to bid solicitations issued by PWGSC headquarters is 819-997-9776 or, if applicable, the facsimile number identified in the bid

- solicitation. The facsimile number for responses to bid solicitations issued by PWGSC regional offices is identified in the bid solicitation.
- b. For bids transmitted by facsimile, Canada will not be responsible for any failure attributable to the transmission or receipt of the faxed bid including, but not limited to, the following:
- i. receipt of garbled or incomplete bid;
 - ii. availability or condition of the receiving facsimile equipment;
 - iii. incompatibility between the sending and receiving equipment;
 - iv. delay in transmission or receipt of the bid;
 - v. failure of the Bidder to properly identify the bid;
 - vi. illegibility of the bid; or
 - vii. security of bid data.
- c. A bid transmitted by facsimile constitutes the formal bid of the Bidder and must be submitted in accordance with the section entitled Submission of bids.
2. ePost Connect
- a. Unless specified otherwise in the bid solicitation, bids may be submitted by using the [epost Connect service provided by Canada Post Corporation](https://www.canadapost.ca/web/en/products/details.page?article=epost_connect_send_a) (https://www.canadapost.ca/web/en/products/details.page?article=epost_connect_send_a).
- b. To submit a bid using epost Connect service, the Bidder must either:
- i. send directly its bid only to the specified PWGSC Bid Receiving Unit, using its own licensing agreement for epost Connect provided by Canada Post Corporation; or
 - ii. send as early as possible, and in any case, at least six business days prior to the solicitation closing date and time, an email that includes the bid solicitation number to the specified PWGSC Bid Receiving Unit requesting to open an epost Connect conversation. Requests to open an epost Connect conversation received after that time may not be answered.
- c. If the Bidder is sending an email to the Bid Receiving Unit, the Bid Receiving Unit will then initiate an epost Connect conversation which will allow the Bidder to transmit its bid afterward at any time prior to the solicitation closing date and time. The epost Connect conversation will create an email notification from Canada Post Corporation prompting the Bidder to access the message within the conversation, and the Bidder can reply to the email notification by transmitting its bid.
- d. If the Bidder is using its own licensing agreement to send its bid, the Bidder must keep the epost Connect conversation open until at least 30 business days after solicitation closing date and time.
- e. The email address of PWGSC Bid Receiving Unit in Headquarters is: TPSGC.DGAreceptiondessoumissions-ABBidReceiving.PWGSC@tpsgc-pwgsc.gc.ca. The solicitation number must be identified in the epost Connect message field of all electronic transfers.
- f. It should be noted that the use of epost Connect service requires a Canadian mailing address. Should a bidder not have a Canadian address, they may use the Bid Receiving Unit address specified on page 1 of the solicitation in order to register for the epost Connect service.
- g. For bids transmitted by epost Connect service, Canada will not be responsible for any failure attributable to the transmission or receipt of the bid including, but not limited to, the following:
- i. receipt of a garbled or incomplete bid;
 - ii. availability or condition of the epost Connect service;
 - iii. incompatibility between the sending and receiving equipment;
 - iv. delay in transmission or receipt of the bid;
 - v. failure of the Bidder to properly identify the bid;
 - vi. illegibility of the bid;
 - vii. security of bid data; or

- viii. inability to create an electronic conversation through the epost Connect service.
h. A bid transmitted by epost Connect service constitutes the formal bid of the Bidder and must be submitted in accordance with the section entitled Submission of bids."

2.1.1 SACC Manual Clauses

SACC Reference	Section	Date
<u>A9033T</u>	Financial Capability	2012-07-16
<u>B1000T</u>	Condition of Material	2014-06-26

2.2 Submission of Bids

Bids must be submitted ONLY TO THE BID RECEIVING UNIT by the date, time and place indicated on page 1 of the bid solicitation. Do not send proposal directly to the Contracting Officer.

PWGSC Bids Receiving Unit
11 Laurier Street, Place du Portage, Phase 3, Core 0B2,
Gatineau, Québec, K1A 0S5
Tel.: 819-420-7201 Fax: 819-997-9776

2.3 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 question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 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.

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2.5 Mandatory Site Visit

It is mandatory that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the following:

Thursday, June 28th, 2018 at 8:00 am

Location: 101 Colonel By Drive, Main Entrance (North entrance, near Mackenzie King)

Bidders will be required to sign an attendance form at the required 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.

To apply for the site visit, contact the Contracting Authority: louie.turner@pwgsc-tpsgc.gc.ca and Patti.Hallman@tpsgc-pwgsc.gc.ca

The site visit request must be submitted no later than June 20, 2018, 9:00 am

Bidders **must** clearly identify the name of the participant(s) and provide the following information:

Surname
Forenames (as per passport)
Date of Birth
Security Clearance Level
Company / Agency

Bidder's representatives attending the site visit must have minimum "Secret" level security clearance

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

All bidders participating in the site visit June 28, 2018 at 0800 will need to wear Long Pants (No shorts or cut offs).

All electronic devices (cell phones, cameras, laptops, MP3 players, smart watches etc....) are prohibited on site.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

- Section I: Technical Bid (3 soft copies on USB key)
- Section II: Financial Bid (1 hard copy)
- Section III: Certifications (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 hard copy 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 should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fiber certified as originating from a sustainably-managed forest and 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.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

3.1.1 Equivalent Product

- 1. Products that are equivalent in form, fit, function and quality to the item(s) specified in the bid solicitation will be considered where the Bidder designates the brand name and model and/or part number and NCAGE of the substitute product;
- 2. Products offered as equivalent in form, fit, function and quality will not be considered if:
 - (a) the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute product; or
 - (b) the substitute product fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.
- 3. In conducting its evaluation of the bids, Canada may, but will have no obligation to, request bidders offering a substitute product to provide technical information demonstrating the equivalency (e.g. Drawing, specifications, engineering reports and/or test reports), or to demonstrate that the substitute product is equivalent to the item specified in the bid solicitation, at the sole cost of bidders, within three (3) business days of the request. If the bidder fails to provide the requested information within the specified timeframe, Canada may declare the bid non-responsive.

3.1.2 Equivalent Products - Samples (DND)

If the Bidder offers an equivalent product, Canada reserves the right to request a sample from the Bidder in order to determine its equivalency in form, fit, function, quality and performance to the item specified in the bid solicitation.

The Bidder must, upon request from the Contracting Authority, provide a sample to the Technical Authority, transportation charges prepaid, and without charge to Canada, within ten (10) calendar days from the date of request. The sample submitted by the Bidder will remain the property of Canada and will not be considered as part of the deliverables in any resulting contract. If the sample does not meet the requirements of the bid solicitation or the Bidder fails to comply with the request of the Contracting Authority, the bid will be declared non-responsive.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment.

3.2 Exchange Rate Fluctuation

The requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All bids including such provision will render the bid non-responsive.

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

3.2.1 Delivery Offered

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

3.2.2 Contractor's Representative

Name and telephone number of the person responsible for: (will be inserted at contract)

General enquiries

Name: _____
Telephone: _____
Facsimile: _____
E-mail: _____

Delivery follow-up

Name: _____
Telephone: _____
Facsimile: _____
E-mail: _____

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

You are reminded that this solicitation requires the compliance and/or completion of requirements attached as an Annex and forming part of this document.

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

All bids must be completed in full and provide all of the information requested in the bid solicitation to enable full and complete evaluation.

4.1.1.1 Mandatory Technical Criteria

The following Mandatory requirements must be submitted with the bid for evaluation

- Technical compliance herein;
- Mandatory technical criteria as per Appendix F, Evaluation Table - Mandatory Criteria

4.1.2 Financial Evaluation

The following Mandatory factors will be taken into consideration in the evaluation of each offer:

Compliance with Pricing Basis;

The Offer price will be determined by processing items at Appendix G as follows:

- a. Sum of all items total price (unit price x qty.) (including option items)

4.1.2.1 Pricing Basis

The bidder must quote firm unit prices or lot prices as applicable in Canadian dollars, DDP Delivered Duty Paid (101 Colonel By Drive), Applicable Taxes extra, as applicable. Freight charges to destination and all applicable Custom duties and Excise taxes must be included

4.2 Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the "lowest evaluated price on an aggregate basis" will be recommended for award of a contract.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, 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 made knowingly or unknowingly, 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 and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 General Environmental Criteria Certification

The Bidder must select and complete one of the following two certification statements.

- A) The Bidder certifies that the Bidder is registered or meets ISO 14001.

Bidders' Authorized Representative Signature

Date

OR

- B) The Bidder certifies that the Bidder meets and will continue to meet throughout the duration of the contract, a minimum of four (4) out of six (6) criteria identified in the table below.

The Bidder must indicate which four (4) criteria, as a minimum, are met.

Green Practices within the Bidders' organization	Insert a checkmark for each criterion that is met
Promotes a paperless environment through directives, procedures and/or programs	
All documents are printed double sided and in black and white for day to day business activity unless otherwise specified by your client	
Paper used for day to day business activity has a minimum of 30% recycled content and has a sustainable forestry management certification	
Utilizes environmentally preferable inks and purchase remanufactured ink cartridges or ink cartridges that can be returned to the manufacturer for reuse and recycling for day to day business activity.	
Recycling bins for paper, newsprint, plastic and aluminum containers available and emptied regularly in accordance with local recycling program.	
A minimum of 50% of office equipment has an energy efficient certification.	

Bidders' Authorized Representative Signature

Date

5.2.3 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](#)" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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](#)" 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](#)" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex titled [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.

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

6.1.1 The following security requirements (SRCL and related clauses provided by the Contract Security Program) apply and form part of the Contract.

SECURITY REQUIREMENT FOR CANADIAN SUPPLIER: PWGSC FILE # W8474-197662

1. The Contractor/Offeror must, at all times during the performance of the Contract/Standing Offer, hold a valid Facility Security Clearance at the level of **SECRET**, issued by the Canadian Industrial Security Directorate (CISD), **Public Works and Government Services Canada (PWGSC)**.
2. The Contractor/Offeror personnel requiring access to sensitive work site(s) must EACH hold a valid personnel security screening at the level of **SECRET**, granted or approved by CISD/PWGSC.
3. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of CISD/PWGSC.
4. The Contractor/Offeror must comply with the provisions of the:
 - (a) Security Requirements Check List and security guide (if applicable), attached at Annex A
 - (b) *Industrial Security Manual* (Latest Edition)

6.2 Statement of Work/Requirement

The contractor must provide the goods and services in accordance with the technical requirements stated herein.

6.2.1 Optional Services

The Contractor grants to Canada the irrevocable option to acquire the services described at Annex B, clauses 21, 22, 23 and 24.c. of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, in whole or in part, through a contract amendment.

The Contracting Authority may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor.

6.2.2 SACC Manual Clauses

SACC Reference	Section	Date
B1501C	Electrical Equipment	2006-06-16
B7500C	Excess Goods	2006-06-16

6.3 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 Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

[2010A \(2016-04-04\), General Conditions - Goods \(Medium Complexity\), apply to and form part of the Contract.](#)

and

[2010C \(2016-04-04\) sections 2010C 16 and 2010C 17 ,General Conditions - Services \(Medium Complexity\) apply to and form part of the Contract.](#)

6.3.1.1 SACC Manual Clauses

SACC Reference	Section	Date
C2800C	Priority Rating	2013-01-28
C2801C	Priority Rating - Canadian Contractors	2014-11-27

6.3.1.2 Warranty Period

If items 31, 32 and 33 of Appendix G, Price Sheet is exercised, Section 09 of general conditions 2010A (2014-09-25) Warranty, will be amended by replacing the period of twelve (12) months by up to three additional 12 month periods. (12 month standard warranty plus option period of up to an additional 36 months)

If item 34 of Appendix G, Price Sheet is exercised, Section 09 of general conditions 2010A (2014-09-25) Warranty, will be amended by replacing the period of twelve (12) months by forty eight (48) months. (12 month standard warranty plus option period of an additional 36 months)

All other provisions of the warranty section remain in effect.

6.4 Term of Contract

6.4.1 Delivery Date

All the deliverables must be received on or before _____ (Delivery as offered and as accepted will be inserted at contract award).

6.4.2 Option to Extend the Contract

For Warranty Coverage and Support Services, clause 21 of Annex B (reference items 31, 32 and 33 of Appendix G, Price sheet), the Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to 3 additional 1 year periods under the same conditions.

For manufacturer's warranty, clause 24.c. of Annex B (reference item 34 of Appendix G, Price sheet), the Contractor grants to Canada the irrevocable option to extend the term of the Contract by 1 additional 3 year period under the same conditions

The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least one calendar day before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:
Louie Turner, Supply Specialist
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: (873) 469-3342
E-mail address: louie.turner@pwgsc-tpsgc.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.

6.5.2 Project Authority

The Project Authority for the Contract is: (will be inserted at contract)

Name: _____
Title: _____
Telephone: _____
E-mail: _____

The Project 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 Project Authority; however the Project 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.

6.5.3 Technical Authority

The Technical Authority for the Contract is: (will be inserted at contract)

Name: _____
Title: _____
Telephone: _____
E-mail: _____

The Technical Authority named above 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.

6.5.4 Procurement authority

The Procurement Authority for the Contract is: (will be inserted at contract)

Name: _____
Title: _____
Telephone: _____
E-mail: _____

The Procurement Authority is the representative of the department or agency for whom the Work is being carried out under the Contract. The Procurement Authority is responsible for the implementation of tools and processes required for the administration of the Contract. The Contractor may discuss administrative matters identified in the Contract with the Procurement Authority however the Procurement Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.5 Contractor's Representative

Name and telephone number of the person responsible for: (will be inserted at contract)

General enquiries

Name: _____
Telephone: _____
Facsimile: _____
E-mail: _____

Delivery follow-up

Name: _____
Telephone: _____
Facsimile: _____
Facsimile: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm unit/lot prices, as specified in Appendix G of the contract and payment schedule as identified in Annex C for a cost of \$ _____ (insert the amount at contract award). Customs duties are included and Applicable Taxes are extra.

6.6.2 Limitation of Price

SACC Manual clause [C6000C](#) (2017-08-17) Limitation of Price

6.6.3 Milestone Payments – Not subject to holdback

1. Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract at Annex C and the payment provisions of the Contract, up to 100 percent of the amount claimed and approved by Canada if:
 - a. an accurate and complete invoice for payment 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 100 percent of the total amount to be paid under the Contract;
 - c. all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.

6.6.4 Insurance

SACC Manual clause [G1005C](#) (2016-01-28) Insurance

6.7 Invoicing Instructions

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 invoice is completed.

Each invoice must be supported by:

- (a) a copy of the applicable release document and any other documents as specified in the Contract.
2. Invoices must be distributed as follows:
 - (a) The original and one (1) copy must be forwarded to the Procurement Authority identified in section 6.5.4 of the Contract for certification and payment.
 - (b) One (1) copy must be forwarded to the consignee.
 - (c) One (1) copy must be forwarded to the Contracting Authority identified under Section 6.5.1 Authorities

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.8.2 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms of the Contract.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (*insert the name of the province or territory as specified by the Bidder in its bid, if applicable*).

6.10 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) the general conditions [2010A \(2016-04-04\)](#), [General Conditions - Goods \(Medium Complexity\)](#), and [2010C \(2016-04-04\) sections 2010C 16 and 2010C 17](#), [General Conditions - Services \(Medium Complexity\)](#);
- (c) Annexe B, Statement of Work;
- (d) Annex A, Security Requirements Check List;
- (e) the Contractor's bid dated _____, as clarified on _____ " **or** ", as amended on _____.

6.11 Defence Contract

SACC Manual clause [A9006C](#) (2012-07-16) Defence Contract

6.12 NATO Commercial and Government Entity Code (NCAGE) Traceability

Material supplied for the items specified in this contract is subject to investigation by Canada. Material which can neither be demonstrated by the contractor as having originated directly from the NCAGE specified for the item in this contract, nor as supplied with the specific written permission of this specified NCAGE, are subject to the following action by Canada.

Canada may either:

- a) terminate the contract for default with respect to that item, return the item to the Contractor at the Contractor's risk and expense, and demand and receive from the Contractor (who shall forthwith so pay) all procurement and other costs incurred by Canada, including any increased costs required for the purpose of expediting production; or
- b) retain the item, and demand and receive from the Contractor (who shall forthwith so pay) the difference between the Contractor's costs relating to the item, as determined by Canada, and the costs which, in Canada's opinion, the Contractor would have incurred had it obtained and supplied an item which did not differ in any way from that specifically required under the contract.

6.13 SACC Manual Clauses (Delivery)

SACC Reference	Section	Date
D2000C	Marking	2007-11-30
D2025C	Wood Packaging Materials	2013-11-06
D9002C	Incomplete Assemblies	2007-11-30

6.13.1 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered:

- (a) Delivered Duty Paid (DDP) 101 Colonel By Drive Incoterms 2000 for shipments from a commercial contractor.

6.13.2 Shipping – Scheduling (DND)

The Contractor must deliver the goods to 101 Colonel By Drive and all aspects of the project must be co-ordinated with (to be completed at contract award)

ANNEX "A"

APR 24 2018



Contract Number / Numéro du contrat W8474-197662
Security Classification / Classification de sécurité Unclass

SECURITY REQUIREMENTS CHECK LIST (SRCL)
LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE		
1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine National Defence	2. Branch or Directorate / Direction générale ou Direction IM(Gp)/D Strat CS	
3. a) Subcontract Number / Numéro du contrat de sous-traitance	3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant Vendor Name TBD RFP Vendor Address TBD by RFP	
4. Brief Description of Work / Brève description du travail D Strat CS is raising a RFP to install A/V equipment in Second City watch floor. Contractor requires clearance to access facilities to deliver services on contract. Site: Second City Watch floor, 101 Colonel By Drive, Ottawa, K1A0K2.		
5. a) Will the supplier require access to Controlled Goods? Le fournisseur aura-t-il accès à des marchandises contrôlées?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations? Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
6. Indicate the type of access required / Indiquer le type d'accès requis		
6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets? Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) (Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c)	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted. Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé.	<input type="checkbox"/> No / Non <input checked="" type="checkbox"/> Yes / Oui	
6. c) Is this a commercial courier or delivery requirement with no overnight storage? S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit?	<input checked="" type="checkbox"/> No / Non <input type="checkbox"/> Yes / Oui	
7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès		
Canada <input type="checkbox"/>	NATO / OTAN <input type="checkbox"/>	
Foreign / Étranger <input type="checkbox"/>		
7. b) Release restrictions / Restrictions relatives à la diffusion		
No release restrictions / Aucune restriction relative à la diffusion <input type="checkbox"/>	All NATO countries / Tous les pays de l'OTAN <input type="checkbox"/>	
Not releasable / À ne pas diffuser <input type="checkbox"/>		
Restricted to: / Limité à: <input type="checkbox"/>	Restricted to: / Limité à: <input type="checkbox"/>	
Specify country(ies): / Préciser le(s) pays:	Specify country(ies): / Préciser le(s) pays:	
7. c) Level of information / Niveau d'information		
PROTECTED A / PROTÉGÉ A <input type="checkbox"/>	NATO UNCLASSIFIED / NATO NON CLASSIFIÉ <input type="checkbox"/>	PROTECTED A / PROTÉGÉ A <input type="checkbox"/>
PROTECTED B / PROTÉGÉ B <input type="checkbox"/>	NATO RESTRICTED / NATO DIFFUSION RESTREINTE <input type="checkbox"/>	PROTECTED B / PROTÉGÉ B <input type="checkbox"/>
PROTECTED C / PROTÉGÉ C <input type="checkbox"/>	NATO CONFIDENTIAL / NATO CONFIDENTIEL <input type="checkbox"/>	PROTECTED C / PROTÉGÉ C <input type="checkbox"/>
CONFIDENTIAL / CONFIDENTIEL <input type="checkbox"/>	NATO SECRET / NATO SECRET <input type="checkbox"/>	CONFIDENTIAL / CONFIDENTIEL <input type="checkbox"/>
SECRET / SECRET <input type="checkbox"/>	COSMIC TOP SECRET / COSMIC TRÈS SECRET <input type="checkbox"/>	SECRET / SECRET <input type="checkbox"/>
TOP SECRET / TRÈS SECRET <input type="checkbox"/>		TOP SECRET / TRÈS SECRET <input type="checkbox"/>
TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>		TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>

TBS/SCT 350-103(2004/12)

Security Classification / Classification de sécurité
Unclass





Government of Canada / Gouvernement du Canada

[Handwritten signature]

Contract Number / Numéro du contrat
Security Classification / Classification de sécurité Unclass

PART A (continued) / PARTIE A (suite)

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS?
If Yes, indicate the level of sensitivity:
Dans l'affirmative, indiquer le niveau de sensibilité:

No / Non Yes / Oui

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?
Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate?

No / Non Yes / Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel:
Document Number / Numéro du document:

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10 a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> RELIABILITY STATUS
COTE DE FIABILITÉ | <input type="checkbox"/> CONFIDENTIAL
CONFIDENTIEL | <input checked="" type="checkbox"/> SECRET
SECRET | <input type="checkbox"/> TOP SECRET
TRÈS SECRET |
| <input type="checkbox"/> TOP SECRET- SIGINT
TRÈS SECRET - SIGINT | <input type="checkbox"/> NATO CONFIDENTIAL
NATO CONFIDENTIEL | <input type="checkbox"/> NATO SECRET
NATO SECRET | <input type="checkbox"/> COSMIC TOP SECRET
COSMIC TRÈS SECRET |
| <input type="checkbox"/> SITE ACCESS
ACCÈS AUX EMPLACEMENTS | | | |

Special comments:
Commentaires spéciaux: Required for physical access to facility for installation services - no data access during work.

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.
REMARQUE: Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?
Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail?
If Yes, will unscreened personnel be escorted?
Dans l'affirmative, le personnel en question sera-t-il escorté?

No / Non Yes / Oui

No / Non Yes / Oui

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?
Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS?

No / Non Yes / Oui

11. b) Will the supplier be required to safeguard COMSEC information or assets?
Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC?

No / Non Yes / Oui

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?
Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ?

No / Non Yes / Oui

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?
Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS?

No / Non Yes / Oui

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?
Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale?

No / Non Yes / Oui

Handwritten initials/signature



Government of Canada / Gouvernement du Canada

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PART C - (continued) / PARTIE C - (suite)

For users completing the form manually use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.
Les utilisateurs qui remplissent le formulaire **manuellement** doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form online (via the Internet), the summary chart is automatically populated by your responses to previous questions.
Dans le cas des utilisateurs qui remplissent le formulaire **en ligne** (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category / Catégorie	PROTECTED / PROTÉGÉ			CLASSIFIED / CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL	SECRET	TOP SECRET	NATO RESTRICTED	NATO CONFIDENTIAL	NATO SECRET	COSMIC TOP SECRET	PROTECTED / PROTÉGÉ			CONFIDENTIAL	SECRET	TOP SECRET
											A	B	C			
Information / Assets / Renseignements / Biens / Production																
IT Media / Support TI																
IT Link / Lien électronique																

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquez qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).



Government of Canada / Gouvernement du Canada

[Handwritten initials]

Contract Number / Numéro du contrat
Security Classification / Classification de sécurité Unclass

PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Chargé de projet de l'organisme			
Name (print) - Nom (en lettres moulées) Maj G Braden		Title - Titre SVD Section Head	Signature <i>[Signature]</i>
Telephone No. - N° de téléphone 613-991-5228	Facsimile No. - N° de télécopieur DASO - Industrial Security	E-mail address - Adresse courriel gerald.braden@forces.gc.ca	Date 13 Mar 2018
14. Organization Security Authority / Responsable de la sécurité de l'organisme			
Name (print) - Nom (en lettres moulées) Tippy Graham Senior Security Analyst Tel: 613-996-0283 E-mail: tippy.graham@forces.gc.ca		Title - Titre	Signature <i>[Signature]</i>
Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date 18 Apr 2018
15. Are there additional instructions (e.g. Security Guide, Security Classification Guide) attached? Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes?			<input type="checkbox"/> No / <input checked="" type="checkbox"/> Yes Non / Oui
16. Procurement Officer / Agent d'approvisionnement			
Name (print) - Nom (en lettres moulées) Louise TURNER		Title - Titre SUPPLY SPECIALIST	Signature <i>[Signature]</i>
Telephone No. - N° de téléphone 873-469-3342	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date May 30 2018
17. Contracting Security Authority / Autorité contractante en matière de sécurité			
Name (print) - Nom (en lettres moulées) Denis Lecompte		Title - Titre Contract Security Officer	Signature <i>[Signature]</i>
Telephone No. - N° de téléphone 6139527907	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel	Date May 7/2018

ANNEX B – STATEMENT OF WORK

March 7th 2018

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INTRODUCTION

1. Background. Due to major construction upcoming in 2018-2019 part of DND Military personnel will be relocated into a secondary location. The project is defined as 2nd City.
2. Scope. The work includes: providing equipment, engineering, project management, fabrication, assembly, software programming, installation, documentation, training, and the warranty of audiovisual systems.
3. Requirement. CANADA has a requirement to outfit the facility with audio-visual technology, integration and control systems in DND 2nd City at 101 Colonel by Drive, Ottawa, ON.

PROJECT AUTHORITY

4. Project Authorities have been identified as:
 - a. Design Authority (DA) DJCIS FD 2-5
 - b. Technical Authority (TA) DJCIS FD 2-5– AV LCMM: and
 - c. Procurement Authority (PA) DES Proc 5-4-4

SCOPE AND INSTRUCTIONS

5. The Contractor must provide and integrate audiovisual systems based on appendix A to Annex B; Audio Visual Capabilities.
6. The Contractor must provide and assemble all new hardware, equipment and AV furniture, as required, to produce a completely functioning AV system as outlined in Appendix A to Annex B – Statement of Work (Audio Visual Capabilities) and Appendix B to Annex B – Statement of Work (Drawing Package).
7. The Contractor must configure and install all new equipment, cables, wiring, connectors, plates and other material at 2nd City project to provide a fully functioning AV system based off Appendix A to Annex B – Statement of Work (Audio Visual Capabilities) and Appendix B to Annex B – Statement of Work (Drawing package).
8. The Contractor must follow the installation practices as outlined in Appendix C to Annex B – Statement of Work (General Information and Performance Requirements).
9. The Contractor must provide all necessary project management and supervisory personnel required to assure the accurate and professional implementation of the project.
10. The Contractor must coordinate with the company Think Logical to be on-site during the installation to commission the main components of the design which are listed under the same product name and are defined as not to be substituted (see Appendix E to Annex B - Equipment List). The commissioning is included with the purchase and is not considered as a service- charge.
11. The Contractor personnel must have all required provincial certifications required to work on a construction site in Ontario including, but not limited to, Working at Heights and Workplace Hazardous Materials Information System (WHMIS).
12. The Contractor must ensure supplied equipment can be transported from the loading area to the installation area.

13. The Contractor must protect the existing structures and furniture during equipment movement and installation within the building contracted work area.
14. The security of any equipment and/or tools provided by the Contractor for the purpose of installing the systems remains the responsibility of the Contractor.
15. The Contractor must coordinate secure on-site storage for all equipment with the DND Project Authority.
16. The Contractor must remove, sort and discard all packing material (e.g., boxes, pallets, foam) pursuant to local rules.

TASKS AND DELIVERABLES

17. Five (5) days following contract award, the Contractor must schedule a kick-off meeting with the DND project authority.
18. Fifteen (15) days prior to the commencement of on-site work, the Contractor must have completed the following items:
 - a. a review of all relevant project documentation, including Proposal Drawings (Schematics), HVAC requirements, electrical power and grounding/earth connection;
 - b. a visit to the project site to verify the physical conditions of the project site that may affect work conditions;
 - c. a finalized detailed AV project schedule to the DND Project Authority; and
 - d. preliminary screen shots of all touch panel layouts depicting the “Look and Feel” for DND Project Authority concept acceptance.
19. As part of the project deliverables, the Contractor must deliver to the DND Project Authority, the following items:
 - a. Acceptance Test Plan, within 15 days prior to room testing and system acceptance, including the procedures of the tests that must be used by the Contractor to demonstrate the complete integration and proper operation of the hardware and system software. It must describe the general procedures terms and conditions governing the planning, preparation and completion of acceptance tests covering the system submitted for acceptance.

It must include step-by-step procedures on how each test will be performed. The tests procedures must be in a table format. The table must contain columns for the following information:

 - i. System/sub-system name scope of the test;
 - ii. Control parameters;
 - iii. Test equipment provided by Contractor to perform the test(s);
 - iv. Results: Pass/Fail; and

- v. Spaces/columns at each test for Contractor and DND Project Authority signatures.

Test Parameters – The Contractor must perform end-to-end testing of all signal flows to verify proper functionality. The testing must adhere to the suggested manufacturer testing protocol.

Cable Testing – All Contractor-fabricated cables must be tested and results submitted to the DND Project Authority:

- i. Continuity tests;
- ii. Short tests; and
- iii. Wiremap tests.

The audiovisual system must be tested in accordance to the AVIXA / InfoComm International Standard for Audiovisual Systems performance verification (ANSI/INFOCOMM 10:2013). As part of ANSI/INFOCOMM 10:2013, the functional categories to be tested must include the following:

- i. Audio System Performance;
- ii. Video System Performance;
- iii. Audio/Video System Performance;
- iv. Cable Management, Termination and Labeling;
- v. Control System Performance;
- vi. System and record Documentation;
- vii. Electrical;
- viii. Information Technology;
- ix. Operations and Support;
- x. Physical Environment;
- xi. Physical Installation; and
- xii. Serviceability.

- b. Acceptance Test Results, within three days following Project Authority sign off. Before any Acceptance Tests are scheduled, the Contractor must perform its own system checkout. When this checkout is completed and adjustments are made, the Contractor must notify the DND Project Authority that the systems are in compliance with the specifications and are ready for acceptance tests. The Contractor must furnish all required test equipment and must perform all work necessary to determine and/or modify performance of the system to meet the requirements of the statement of work.
- c. Manufacturers Operating/User Manuals of each piece of installed equipment within three days of room testing and system acceptance. The manuals may be provided in hardcopy and/or electronic format.
- d. Programming Source and DSP Codes within three days of room testing and system acceptance.

The Contractor must create all control systems software programming required to provide a complete operational system in accordance with these specifications, including all control logic and graphical user interface programming. The Contractor must revisit the site, up to 90 days from the acceptance date, if minor “tweaks” are required to the touch panel layouts and operation.

- e. Bilingual System Operating Handbook describing the basic operation of the AV system for end users and technical support staff. The purpose of the System Operating Handbook is to show the users how to set-up, use and operate the audiovisual and videoconferencing systems as well as basic troubleshooting procedures.

The Contractor must submit to the Project Authority for his review and approval a manual titled System Operating Handbook. Use of block diagrams, laminated “cheat sheets” and cross-references to the Manufacturer Operating Manuals must be included in the technical section of the handbook. One copy of each room “cheat sheet” (final version) must remain in each respective room.

This document must be graphical and written in non-technical terminology for ease of use. It must include the main operation for each component of the system. A draft of the handbook (unilingual) must be due within 10 days prior to room testing and acceptance. The final version of the handbook (unilingual) must be due within 30 days following room testing and acceptance. The translated version of the final handbook must be due within 60 days following room testing and acceptance. The handbook must be provided in hardcopy format (quantity 10 in French and 10 in English) and electronic format (Microsoft Word 2013 and Adobe PDF).

As a minimum, the handbook must include the following information:

- i. Overview of the local presentation, audioconference and videoconference components;
- ii. How to set-up, adjust and use all the features of all the components based on Appendix A to Annex B (Audio Visual Capabilities); and
- iii. Pictorial representation of the steps needed to start, connect and present using the different equipment installed within each room. Written verbiage to accompany each step in the process.

The technical section of the handbook must contain:

- i. a complete list of all the settings for the equipment used, including a snap shot or screen capture of each configuration page;
- ii. a troubleshooting guide section that contains sufficient information to allow a technician to pinpoint which equipment has failed in case of problems, and to ensure that the problem is not due to a bad set up or connection;
- iii. directions on how to bypass the video and audio switching equipment in case of failure to allow the conference or local presentation to be conducted by manually switching the audio and video sources;
- iv. a description of each module used in the presentation system;
- v. the as-built/installed drawings; and
- vi. if necessary, the handbook must make reference to sections of the documentation contained in the Manufacturers Operating/User Manuals.

- f. System design documentation completion, which includes electronic schematics, hardware drawings, and a list of installed components. Draft drawings and inventory due five days prior to room testing and acceptance. As-Built drawings and final inventory due 30 days following room testing and acceptance.

- I. As-built Drawings

The as-built drawings must include schematics comprising of video, audio and control interconnectivity, rack layout and floor plan of each room. The as-built drawings must indicate the location of all major components of each system and how these components are interconnected. The Contractor must supply as-built drawings in accordance the D Strat CS / AVC2 drawing standards in Appendix D to Annex B – Statement of Work (Drawing Standards). Three copies of all as-built drawings must be delivered to the Project Authority. In addition, the electronic version of all as-built drawings must be provided to the Project Authority on a USB drive in an AutoCAD 2015 format.

II. Inventory

The Contractor must provide a spreadsheet itemizing the make, model number, serial number, firmware version, MAC address, location, and warranty information of all installed equipment. The spreadsheet must be provided to the Project Authority on a USB drive in a Microsoft Excel 2013 compatible format.

- g. On-site Training to end users and technical staff instructing them on the AV systems capabilities, maintenance and troubleshooting. Specific structure and scheduling of training must be established in cooperation with the DND Project Authority prior to the completion of the installation. The Contractor must provide a total of eight hours of end user training and four hours of technical training. The DND Project Authority must create the training schedule and allocate the number of training hours based on the room complexity.

As the rooms can accommodate a large number of end users and technical staff, the number of participants attending the training session will not be limited.

The training syllabus must be centered on content of the System Operating Handbook and must cover system set-up, functions, and operations.

The training must teach end users with no previous experience how to:

- i. set-up and display a local presentation;
- ii. set-up, adjust and use all of the system features;
- iii. establish a video conferencing call (where applicable); and
- iv. establish an audio conferencing call (where applicable).

In addition to the end user syllabus, the technical staff training must cover:

- i. the identification of faulty or failed equipment and the problem cause;
- ii. the steps to bypass the video and audio switching equipment; and
- iii. a review of the as-built drawings including schematics, rack layouts and floor plans.

Training must be conducted in English and French.

20. The Contractor must update and deliver a Progress Report to the DND Project Authority every Tuesday by noon for the duration of the contract via email (address to be provided at contract award). The report must include the following milestones;

- **Project documentation reviewed**
- **Contractor site visit completed**
- **Critical dimensions identified**
- **Detailed AV project schedule provided**
- **Detailed Acceptance Test provided**

- Preliminary touch panel screen shots delivered
- Schedule pressures identified
- Installation completed
- Acceptance testing completed
- Documentation delivered
- Training delivered
- Final deliverables received
- Project signed-off

WARRANTY

21. The Contractor must provide warranty coverage and support services as per Public Services and Procurement Canada standard clauses and must include the following:
- i. Response time (call back) for warranty service no longer than four hours from time of request for servicing
22. During the Warranty Period, the Contractor must deliver Maintenance Warranty Reports providing a record of all customer service calls and the actions taken to resolve each service call. These reports must be provided on a monthly basis to the DND Project Authority. Updates to on-going maintenance issues must be documented and tracked in future monthly reports. If no service calls were reported in a given month and there are no on-going issues, a NIL report must be submitted. The Maintenance Warranty Reports must include the following information:
- a. Room number;
 - b. Reason for call;
 - c. Device type and serial number;
 - d. Call date and time;
 - e. Dispatch date and time;
 - f. Arrival date and time;
 - g. Departure date and time;
 - h. Down time;
 - i. Action taken/service performed;
 - j. Remarks; and
 - k. Summary information for:
 - i. Number of preventive maintenance calls;
 - ii. Number of corrective maintenance calls;
 - iii. Number of return merchandise authorizations;
 - iv. Average call time per type of call; and
 - v. Average response time.
23. The Contractor must provide the irrevocable option to extend the Warranty Period for up to three additional one year periods.

FINANCIAL PROPOSAL

24. The Contractor must provide pricing for a fully functional AV system as outlined in Appendix A to Annex B – Statement of Work (Audio Visual Capabilities) including;
- a. equipment listed in Appendix E to Annex B – Statement of Work (Equipment List);
 - b. all costs associated with the supply and installation of the fully functional AV system
 - c. option of extending the manufacturer's warranty to three years after the first year standard warranty
 - d. pricing to be inserted at Appendix G - Pricing

Annex C -- Schedule of Milestones

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

Milestone No.	Milestone	Firm Amount
1	Delivery of complete Proposal Drawings, accepted by Technical Authority	5%
2	Delivery of equipment	60%
3	Removal, installation and successful testing of all cabling	10%
4	Installation and successful testing of all equipment	20%
5	Completion of remaining deliverables	5%

APPENDIX A TO ANNEX B – STATEMENT OF WORK

AUDIO VISUAL CAPABILITIES

March 7th 2018

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GLOSSARY

<i>AV</i>	Audio-Visual
<i>EDID</i>	Extended Display Identification Data; provide information on video capabilities and data structure for digital displays.
<i>GUI</i>	Graphical User Interface
<i>HDCP</i>	HIGH-bandwidth Digital Copy Protection: form of digital protection preventing digital copy across inter-connections.
<i>HDMI</i>	High Definition Multimedia Interface; type of connector
<i>Hot Key</i>	Also referred to shortcut key; defines a combination of keys on a keyboard linked to a computer command.
<i>KVM</i>	Refers to Keyboard Video and Mouse, type of switcher box for computer peripherals and video monitors
<i>LCD</i>	Liquid Crystal Display; refers to a type of monitor used with computers and video screen.
<i>OSD</i>	On Screen Display
<i>SMP</i>	System Management Portfolio
<i>UPS</i>	Uninterruptible Power Supply

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1. 2ND CITY SPECIAL PURPOSE SPACE

a) Requirement

This Appendix identifies the installation to be performed by the Contractor. It includes delivery, installation and commissioning of audio-visual equipment to the Department of National Defence (CANADA) under the 2nd City project.

At a high level, the 2nd City special purpose space consists of areas that gather and process information over various networks. The following provides a brief description of each area:

- i) **EQT_1** is an audio-visual and communication room (closet), which:
 - (1) processes information; and
 - (2) receives information from the Floor area; and
 - (3) sends information to the Floor area.
- ii) **Floor Area** is a large open space room, which:
 - (1) processes information; and
 - (2) receives information from the communication room EQT_1; and
 - (3) sends information to the communication room EQT_1.

(Figure 1 below illustrates the flow of information from area to area)

For the purpose of this requirement the Contractor must propose a solution based on the Audio-Visual Capabilities with the configuration presented in Appendix B to Annex B - Drawing Package, and Appendix E to Annex B – Equipment list. The Contractor must present final Proposal Drawings (Schematics) and these are to be followed during installation.

During the installation and commissioning of the facility, the 2nd City special purpose space may not have telephone or Internet access. Furthermore, cellular devices are strictly prohibited within the building thus rendering external communications a challenge. In order to ensure the installation is performed according to manufacturer specifications as well as completing the project within the given timeframe, the Bidder is encouraged to include on-site manufacturer field engineers as part of its solution.

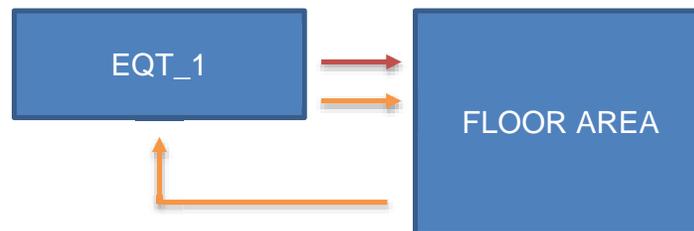


Figure 1: Information Flow within 2nd CITY Special Purpose Space

2. COMMON CONSIDERATIONS

- a) The equipment within the 2nd City Special Purpose Space will operate over a combination of twenty-five (25) networks and other video sources:

NETWORKS (NET) AND VIDEO SOURCES	
NET 2	NET 21
NET 3	NET 23
NET 5	NET 25
NET 6	NET 27
NET 7	NET 33
NET 9	NET 47
NET 11	NET 53
NET 13	NET 61
NET 15	NET 71
NET 16	NET 90
NET 17	HDTV TUNERS
NET 19	THINK LOGICAL OSD MODULES
NET 20	LOGO GENERATOR

Table 1: Networks and video source available onto the 2nd City Special Purpose Space

- b) The design must allow sources of varying resolutions, horizontal and vertical frequencies, and aspect ratios to be scaled to a common high definition (HD) resolution seamlessly.
- c) Scaling must be performed prior to reaching the display device, set to a maximum native resolution of 1,920 x 1,080 pixels (1080p). The EDID must be set to 1,280 x 720 pixels (720p). Scalers embedded in displays are not to be used.
- d) All sources must be displayed full screen onto the HD displays.
- e) The Contractor must be responsible to install the 70" inch and 55" inch wall-mounted HD displays throughout the Floor area.
- f) "Audio breakaway" allows users to listen to sources independently of whether the video is sent to the displays.
- g) Fibre optic cabling will be supplied and installed by CANADA between EQT_1 and the Floor area thus forming the backbone of the facility.
- h) CANADA will be responsible to terminate and test all fibre optic patch panels in EQT_1 as well as data video outlets (DVOs) composing the core backbone cabling infrastructure throughout the facility.

- i) The Contractor must be responsible to provide and connect patch cords from the AV-Equipment to the CANADA installed patch panels and DVOs
- j) The Contractor must be responsible to provide and install all copper cables and connectors from EQT_1 to the Floor.

3. EQT_1

a) Specifications

- EQT_1 will house AV equipment required to operate the system, including:

- i) CANADA Supplied:
 - (1) Remote PCs (NET)
- ii) Contractor Supplied:
 - (1) Controller expansion modules
 - (2) Control processor
 - (3) HDTV tuners
 - (4) Logo generator
 - (5) Media converters
 - (6) Audio DMP
 - (7) Power amplifiers
 - (8) Power controllers
 - (9) UPS rack unit
 - (10) Think Logical Matrix Distribution System, comprised of:
 - (a) Fibre Matrix Switch
 - (b) Fibre Input / Output Cards
 - (c) Fibre transmitters
 - (d) Fibre receivers
 - (e) Controller / Processor
 - (f) System Management Portfolio (SMP)
 - (g) On-Screen Display modules (OSD)

The above equipment will be housed in five (5) equipment racks already in place, secured to the floor and grounded. Those will be supplied with patch panels, which make up the core backbone-cabling infrastructure, installed in equipment racks and terminated by CANADA.

Each AV rack will be fitted with both 115v and 208v capability. Power requirement will be met and in place for the installation.

The Think Logical Matrix Distribution System in EQT_1 must have the ability to route sources to the Floor area and its sub-areas:

- i) Floor / Sub-Areas:
 - (1) Main Wall Monitors;
 - 70-inch HD displays (qty 4);
 - (a) Left Display
 - (b) Mid-Left Display
 - (c) Mid-Right Display
 - (d) Right Display
 - (2) Side Wall Display;
 - (a) 55-inch HD display (qty 1);

- (3) Master Desk # 10 Wall Display;
 - (a) 55-inch HD display (qty 1);
- (4) Operation Desks (qty 12);
 - (a) PC Monitors (qty 58)

Note: The proposed Think Logical Matrix Switcher must be configured with **16** input/output cards, which include additional input/output space for expansion as well as flexibility to the provisioning of the sources and destinations.

(Table 2 lists the Remote PC and video sources displayable onto the Floor area)

Available Sources from EQT_1 via the Think Logical KVM Matrix system	
NET 3 (qty 2)	NET 20 (qty 1)
NET 5 (qty 2)	NET 21 (qty 2)
NET 6 (qty 2)	NET 61 (qty 2)
NET 7 (qty 2)	NET 71 (qty 2)
NET 9 (qty 2)	NET 90 (qty 2)
NET 11 (qty 4)	HDTV Tuner (qty 6)
NET 13 (qty 10)	Think Logical OSD module (qty 3) <i>(Not to be distributed on the wall displays)</i>
NET 16 (qty 2)	Logo Generator (qty 1) <i>(Not to be distributed at the operation desks)</i>
NET 19 (qty 1)	

Table 2: Sources available in EQT_1 onto the Floor area

b) Information

i) General:

- (1) Refer to Appendix B to Annex B - Drawing Package for EQT_1 AV Racks layout and elevation
- (2) Refer to Appendix B to Annex B - Drawing Package for details of the Floor layout.
- (3) Interconnecting diagram(s) to be provided by the Contractor, approved by CANADA.

4. FLOOR AREA

a) Requirements

- i) Ability to send local PC sources onto the HD displays through the EQT_1 Think Logical Matrix Switch
- ii) Ability to select local PC sources through computer KVM at the identified Operation desks
- iii) Ability to send onto the HD displays remote PC sources originating from the EQT_1
- iv) Ability to “call” EQT_1 remote PC and Video sources at the operation desks via the Keyboard Hot Keys & the Think Logical OSD interface
- v) Ability to display video source HDTV Tuner onto the HD displays
- vi) Ability to display multiple times on digital display clock

b) Specifications

- The Floor Area will house AV equipment required to operate the system, including:
 - i) CANADA supplied;
 - (1) Desktop local PCs (NET)
 - (2) PC monitors
 - (3) Computer KVMs
 - (4) PC peripherals (keyboard, mouse, CAC Reader)
 - (5) 70-inch HD Displays
 - (a) Ceiling mount kit
 - (6) 55-inch HD Displays
 - (a) Wall mount kit
 - ii) Contractor Supplied;
 - (1) Think Logical Chassis* furnished with;
 - (a) Fibre receivers
 - (b) Fibre transmitters
 - (c) HDCP fibre receivers
 - (2) HD scalers
 - (3) Ceiling speakers
 - (4) Frame mounted speakers
 - (5) Stereo headphones
 - (6) Touch panels
 - (7) Digital display clock

**The Think Logical Chassis for transmitter and receiver modules must be mounted underneath the Operation Desks # 1 to # 12. The Chassis for the HDCP receivers must be secured behind the Wall HD Displays.*

Table 3a lists the local PC (NET) sources originating from the Floor area

Local PC (NET) Sources from the Floor area
NET 2 originating from the Floor Area (qty 10)
NET 6 originating from the Floor Area (qty 1)

Local PC (NET) Sources from the Floor area
NET 7 originating from the Floor Area (qty 2)
NET 11 originating from the Floor Area (qty 8)
NET 15 originating from the Floor Area (qty 2)
NET 17 originating from the Floor Area (qty 1)
NET 20 originating from the Floor Area (qty 1)
NET 23 originating from the Floor Area (qty 1)
NET 25 originating from the Floor Area (qty 1)
NET 27 originating from the Floor Area (qty 1)
NET 47 originating from the Floor Area (qty 1)
NET 53 originating from the Floor Area (qty 6)
NET 61 originating from the Floor Area (qty 2)

Table 3a: Local PC (NET) available from the Floor Area area

Table 3b lists the Remote PC (NET) and Video sources called from the EQT_1

Remote PC (NET) and Video Sources called from the EQT_1
NET 3 originating from the EQT_1 (qty 2)
NET 5 originating from the EQT_1 (qty 2)
NET 6 originating from the EQT_1 (qty 2)
NET 7 originating from the EQT_1 (qty 2)
NET 9 originating from the EQT_1 (qty 2)
NET 11 originating from the EQT_1 (qty 4)
NET 13 originating from the EQT_1 (qty 10)
NET 16 originating from the EQT_1 (qty 2)
NET 19 originating from the EQT_1 (qty 1)
NET 20 originating from the EQT_1 (qty 1)
NET 21 originating from the EQT_1 (qty 2)
NET 61 originating from the EQT_1 (qty 2)

Remote PC (NET) and Video Sources called from the EQT_1
NET 71 originating from the EQT_1 (qty 2)
NET 90 originating from the EQT_1 (qty 2)
HDTV Tuner (qty 6)
Think Logical OSD Module (qty 3)

Table 3b: Remote PC (NET) and Video sources called from the EQT_1

- The Floor Area sources can be displayed onto those destinations:

(1) Floor Area Operation Desks

- (a) Think Logical Fibre Receiver (qty 27);
 - (i) Video onto CANADA PC monitors - 4 display setup (qty 13)
 - (ii) Video onto CANADA PC monitors – 6 Display setup (qty 1)
 - (iii) Audio onto the 3.5 mm Output

(2) Floor Area Displays

- (a) Think Logical HDCP Fibre Receiver (qty 6);
 - (i) Video onto 70-inch front wall displays (qty 4)
 - (ii) Video onto 55-inch side wall displays (qty 2)

(3) Floor Area Speakers

- (b) Audio onto ceiling-mounted speakers (qty 4)
- (c) Audio onto main monitor wall frame-mounted speakers (qty 2)

c) Detailed Functional Requirements

- i) Video:

Table 4 lists the PC and Video sources displayable at the Floor Area Operation Desks

Destination	Available Sources
Floor Area Operation Desk Desk # 1	NET 2, NET 53, NET 61 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1

Destination	Available Sources
Floor Area Operation Desk Desk # 2	NET 2, NET 11 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 3	NET 47 source Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 4	NET 2, NET 11 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 5	NET 2, NET 11, NET 6, NET 20 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 6	NET 2, NET 11, NET 7 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 7	NET 2, NET 11, NET 17 NET 53 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 8	NET 2 source Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 9	NET 2, NET 11, NET 19, NET 61 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 10 (Master Desk)	NET 2, NET 11, NET 25, NET 27, NET 15, NET 23, NET 53 NET 33 sources Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1
Floor Area Operation Desk Desk # 11	(NO LOCAL PC AVAILABLE) Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1

Destination	Available Sources
Floor Area Operation Desk Desk # 12	NET 53 Source Any PC sources called from the EQT_1 HDTV TUNER pushed from the EQT_1

Table 4: Sources available from the Floor Area Operation Desks

ii) Audio:

(1) Floor Area – Operation Desks

- (a) Audio must be based on *audio-breakaway* *Capability to send different audio sources to different zones ;
- (b) Each Operation Desk will be equipped with Contractor supplied stereo headphone, and;
- (c) Since the Floor Area is an open environment, 2nd City personnel must only use the headphone 3.5mm connection at the desk to not disturb their fellow co-workers;
- (d) Hi fidelity audio from the following sources must be distributed to the Operation Desks
 - (i) Floor Area PC sources originating from their respective desk 1 thru 12;
 - (ii) Any of the six (6) HDTV Tuner.

(2) Floor Area

- (a) Audio must be based on “audio breakaway”
- (b) Program audio in the Floor Area area must originate from two (2) front-wall speakers mounted on the main wall monitor left display and right display, and;
- (c) Four (4) ceiling-mounted speakers located above Floor Area, central area
- (d) Any speaker must only be used for broadcast, when necessary, and must only amplify a single source at any one time
- (e) Hi fidelity audio from the following sources must be amplified onto the speakers:
 - (i) Any PC source from Floor Area Operation Desks # 1 thru # 12;
 - (ii) Any Remote PC sources from the EQT_1
 - (iii) Video source HDTV Tuner (qty 6) from the EQT_1

iii) Control:

(1) Floor area– Wall Displays

- (a) Control of the Floor Area AV system must be achieved via five (5) 15-inch touch screen positioned at Operation Desk # 2,6,9,10,& 12;
- (b) The touch screen GUI must allow the user to select language (French or English);

- (c) The touch screen GUI must allow user(s) to select Local and/or Remote PC & Video sources available and send them to wall display destinations as well as select and save pre-set scenario(s) under key(s) to use a pre-defined group of sources to be sent at once;
- (d) The touch screen GUI must allow user(s) to control HDTV sources which include source selection, channel selection, volume control, and give the ability to select and save prioritized channels under pre-set keys;
- (e) The touch screen GUI must allow user(s) to control and mute the Floor Area speakers volume;
- (f) In the event where multiple touch screens are connected to the AV system, all touch screens must mirror the actions of one another;
- (g) The touch screen GUI must allow user(s) to shut down the system which will shut volume off and turn off the displays.

iv) Override

- (a) Floor area user or designated controller must have the ability to blank the wall displays of all content and mute the program audio thus sanitizing the system in the event someone unauthorized enters the Floor area
- (b) A 2nd City representative logo must appear on all displays while in this state
- (c) The system must revert to its last state when the override is removed by one of the Floor Area users or designated controller

v) Pushing of Sources – Desks 1 thru 12

- (1) Local PC sources from the Operation Desks # 1 thru # 12 must be available to be selected and displayed on a single or multiple wall display(s) destination.
 - (2) When the Floor Area controller and/or user no longer wish to view the displayed source, he or she must select another source (e.g., HDTV TUNER) thereby overriding the previous one.
- (2) Operation Desks – LCD Widescreens PC Monitor
 - (a) Source selection including EQT_1 Remote PCs and HDTV Tuners must be achieved via the Think Logical Hot Key service on Keyboard available at each Floor Area Operation desks; or
 - (b) Source selection including EQT_1 Remote PCs and HDTV Tuners must be achieved via the Think Logical OSD available at each Floor Area Operation Desk
 - (c) User at an Operation Desk equipped with computer KVM must select the desired local PC source to be displayed on the LCD PC Monitors using the KVM physical interface

vi) Calling of Sources – Operation Desks 1 thru 12

- (3) User at the Floor Area Operation Desk # 1 thru # 12 must be able to enter a Hot-Key to “call” the remote PC source associated to the command thereby displaying it on the LCD PC monitor(s); or
- (4) User at the Floor Area Operation Desk # 1 thru # 12 must be able to enter a pre-defined hot-key to display the Think Logical OSD Source and use the GUI interface to select the desired Remote Pc source thereby displaying it on the LCD PC monitor(s).
- (5) Master Desk: Operator at Desk # 10 must be able to access the Think Logical SMP via Web GUI and use the “Drag and Drop” feature thereby sending a source to a destination. He or she can execute such similar command to send another source to another destination.
- (6) When the user no longer wishes to view the displayed source, he or she must enter another pre-defined Hot Key on the keyboard to “call” another remote PC source associated to the command thereby displaying it on the LCD PC monitors (e.g. HDTV TUNER 1); or
- (7) Master Desk: When the Operator at Desk # 10 no longer wishes to send the selected source to the destination, he or she must access the Think Logical SMP via Web GUI and use the “Drag and Drop” feature to send another source to the same destination

d) Information

i) General:

- (1) Refer to Appendix B to Annex B - Drawing Package for EQT_1 AV Rack layout and elevation
- (2) Refer to Appendix B to Annex B - Drawing Package for details of the Floor Area layout.
- (3) The Side wall 55-inch HD displays must be mounted on wall-mount kit
- (4) The main monitor wall 70-inch HD displays must be mounted on ceiling mount kit

ii) Environment:

- (1) Floor Area is covering approximately 90 sq. metres
- (2) Floor Area has a ceiling height of approximately 3 metres, finished floor to suspended ceiling
- (3) Floor Area has a raised floor

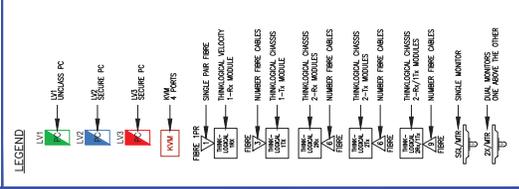
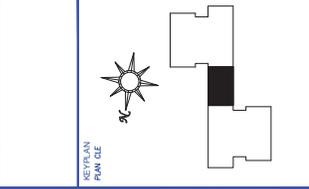
APPENDIX B TO ANNEX B – STATEMENT OF WORK

DRAWING PACKAGE

March 7th 2018

THIS CONFIGURATION SHALL NOT BE ALTERED WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT AND DESIGN CONSULTANT. FINAL DESIGN MUST BE APPROVED BY DEPARTMENT OF NATIONAL DEFENCE.

NO.	DATE	BY	REVISION
1			ISSUED FOR PERMITTING
2			ISSUED FOR PERMITTING
3			ISSUED FOR PERMITTING



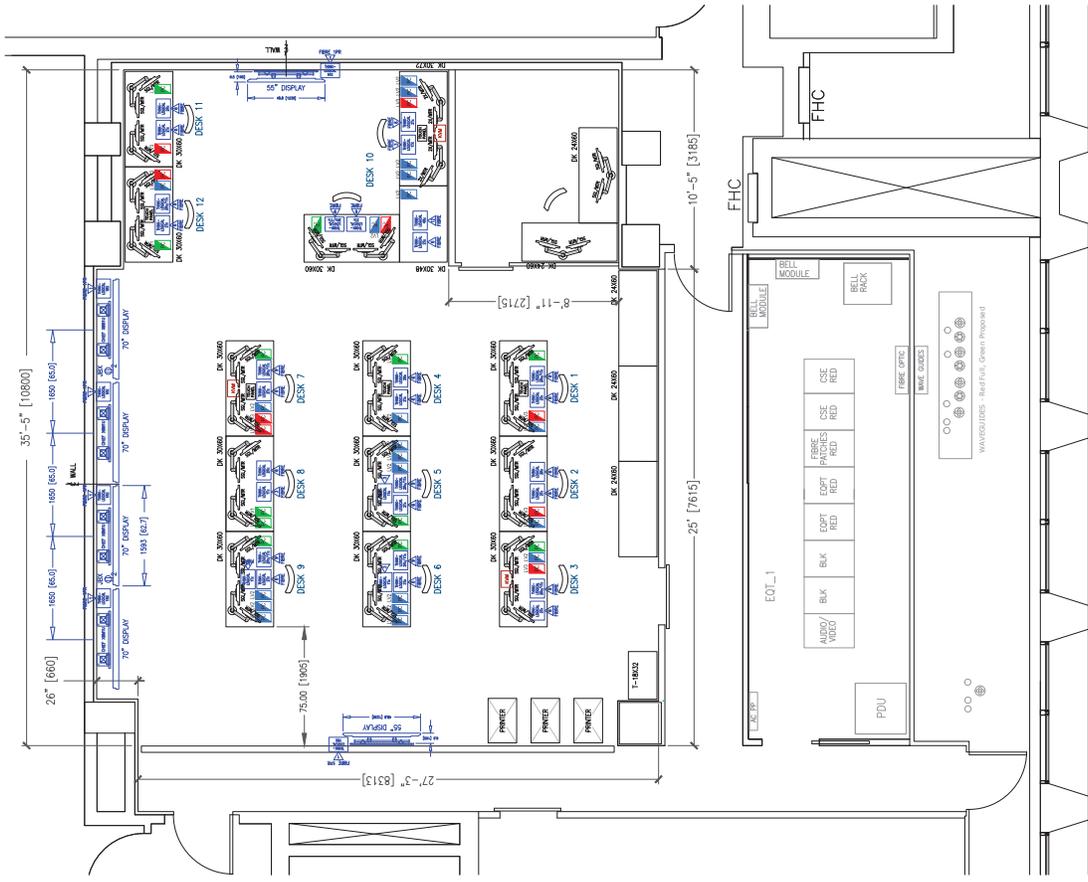
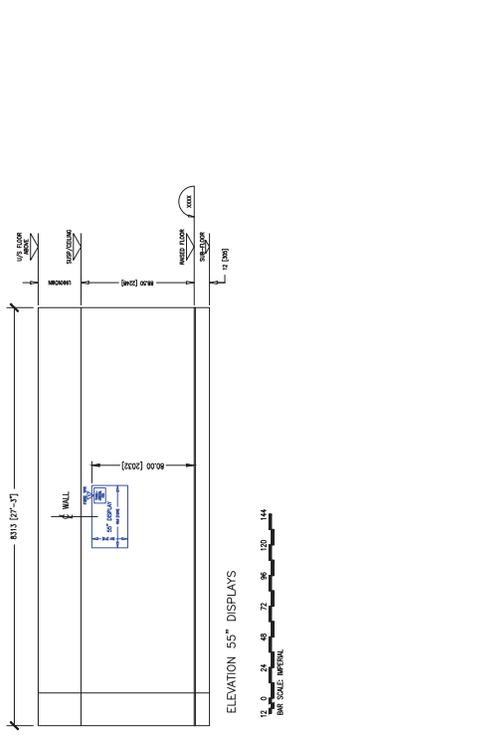
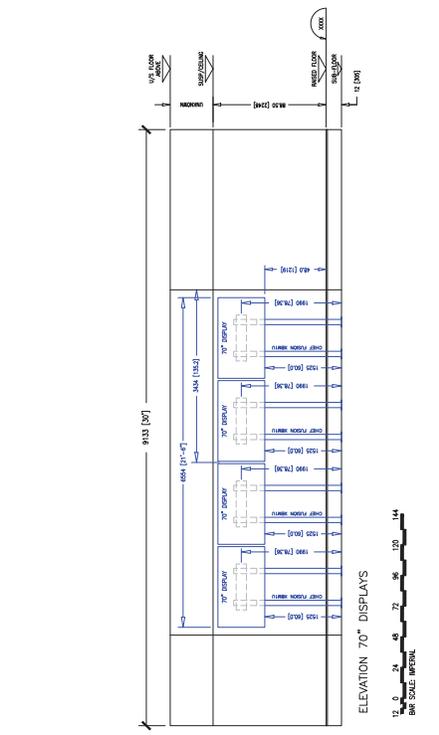
PROPOSAL-P2
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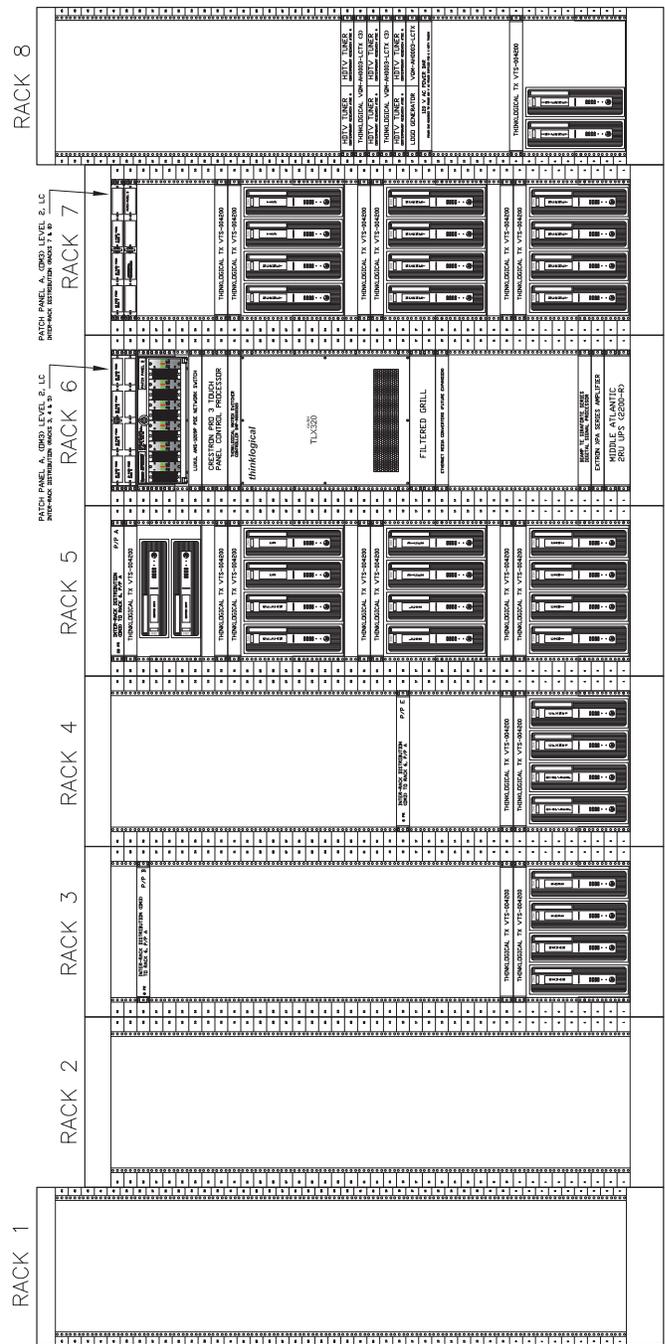
DUCIS / AVC2

101 COLONEL BY
 2ND CITY
 NCR / OTAWA

GENERAL ARRANGEMENT
 THINKLOGICAL RX & TX
 2ND CITY / FLOOR AREA

JURISDICTION	PROJ. NO.	DUCIS / AVC2
DESIGNER	DESIGNER NO.	LAENW0
DATE	DATE	2018
SCALE	SCALE	1:1
PROJECT NO.	PROJECT NO.	18010000
PROJECT NAME	PROJECT NAME	101 COLONEL BY
PROJECT LOCATION	PROJECT LOCATION	2ND CITY
PROJECT STATUS	PROJECT STATUS	ISSUED FOR PERMITTING
PROJECT CLASSIFICATION	PROJECT CLASSIFICATION	SECRET
PROJECT CLASSIFICATION	PROJECT CLASSIFICATION	SECRET





KEYPLAN

N.T.S.

EQT_1/2ND CITY

DATE	DESCRIPTION	NAME
REVISIONS		
DRAWN BY: XXX	CHECKED BY:	APPROVAL:
TITLE: GENERAL ARRANGEMENT THINKLOGICAL AV RACK 2ND CITY / EQT_1		
DRAWING No: XXXX	SCALE: N.T.S.	
SHEET 1	OF 1	



National Defence
Défense nationale

DND - NOTICE

THIS CONFIGURATION SHALL NOT BE ALTERED UNLESS AUTHORIZED BY JCS/CS-SVD OR DESIGNATED DESIGN CONSULTANT. FINAL DESIGN MUST BE APPROVED BY DEPARTMENT OF NATIONAL DEFENCE.

REVISION - REVISION

REV	DATE	DESCRIPTION	BY	CHKD
P1	03/2018	PROJ DIR: D1017EL05 RFP PROPOSAL	AWG	LI

PROPOSAL-P1
07/MAR/2018

PROJECT CONSULTANT

PROJ.# D1017EL05

D C4I FD / AVC2

SITE LOCATION
2ND CITY WATCH-FLOOR
OTTAWA, NCR

SUBJECT

FIBER MATRIX EQUIPMENT RACK
THINK LOGICAL SYSTEM
COMPUTER & VIDEO DISTRIBUTION

CLIENT: ELARMIERE
OR: D C4I FD/AVC2

PROJECT MANAGER: NAME: L.MENARD

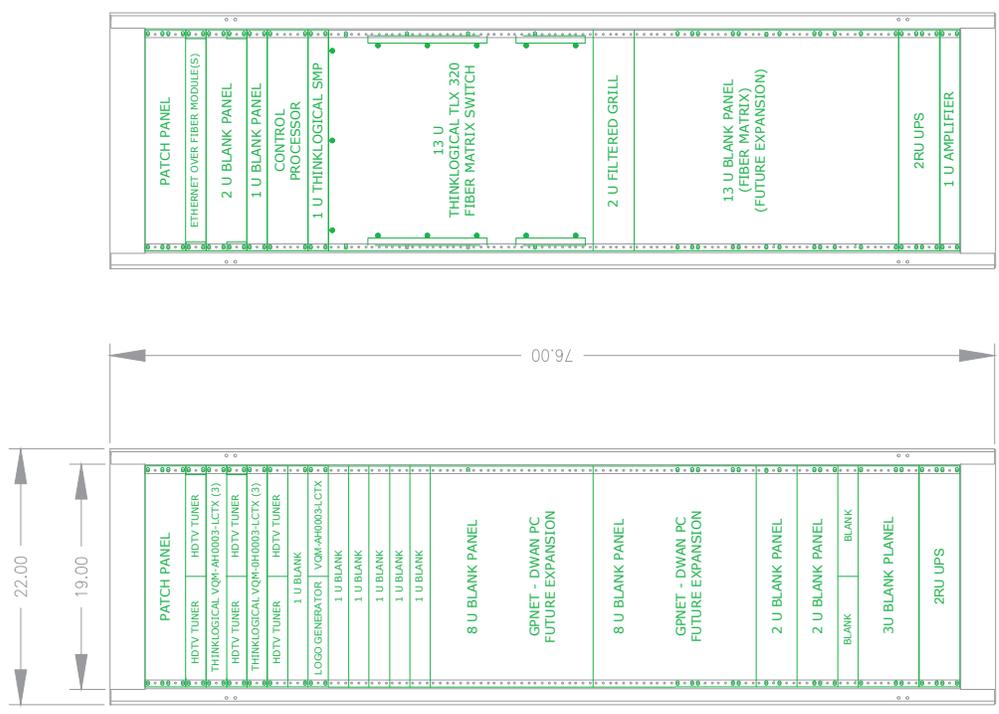
DATE: 07/MAR/2018
SCALE: NTS
CONF: 36374

FILE REFERENCE NO: RFC#85692, D1017EL05

CLASSIFICATION: UNCLASSIFIED

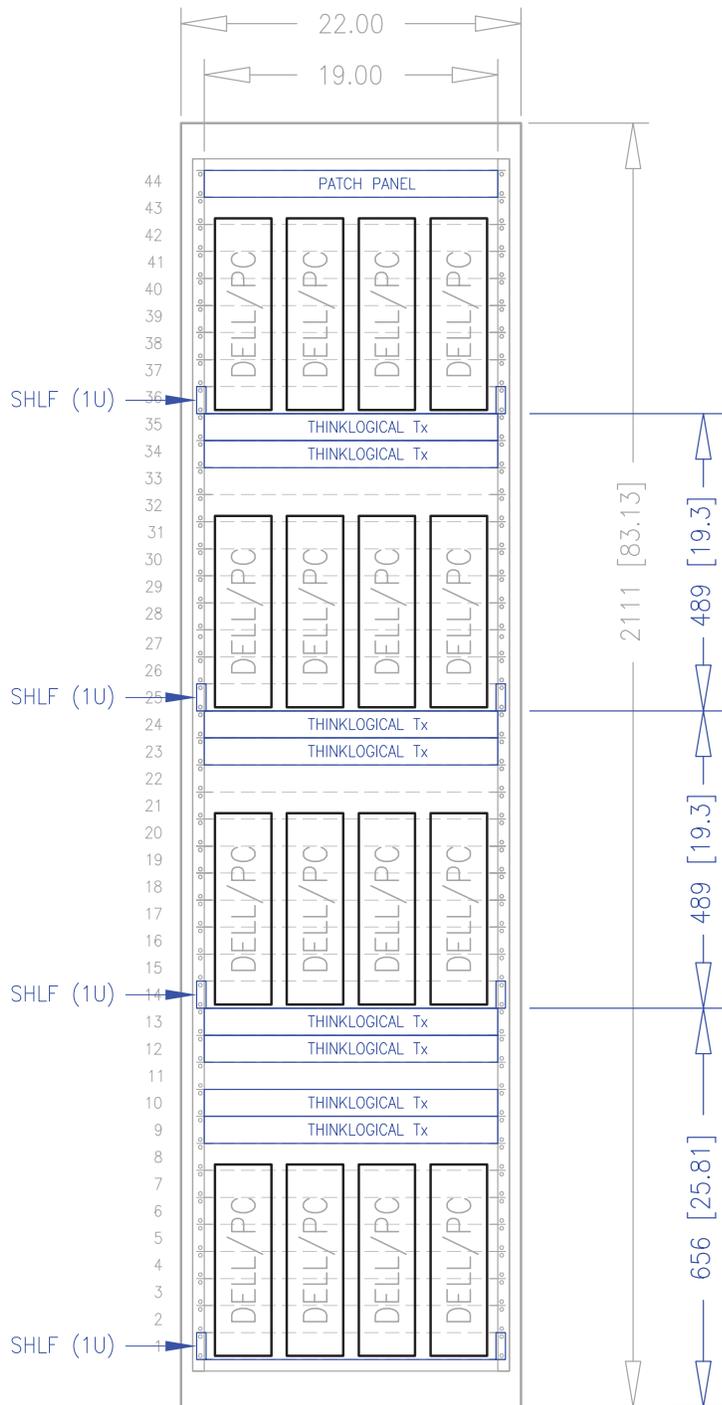
ISSUE NO: B3

ISSUE NAME: 2ND-CITY-RK5-THINKLGL-FIB



THINKLOGICAL TLX 320 RK
FRONT VIEW-40U

HDTV TUNER RACK
FRONT VIEW-40U



TYPE-PC:
 DELL OPTIPLEX 760
 CHASSIS: SMALL FORM FACTOR

MIDDLE ATLANTIC
 VRK-44-31.5"

LEGEND

- DELL PC
- PROPOSED EQUIPMENT

-	XX	XX	A.S.
NO.	DESCRIPTION	DATE	INIT.
REVISIONS			
DRAWN BY:	JW.DIXON	DATE:	12/02/2018
		DESIGN AUTHORITY:	D C4I FD/AVC2
TITLE:		DRAWN NO:	
SMALL FACTOR PC RACK LAYOUT		16-DELLPC-RK44U	
16 DELL PC		SCALE:	
2ND CITY WATCH FLOOR		NTS	
SHEET 1 OF 1			

APPENDIX C TO ANNEX B – STATEMENT OF WORK

GENERAL INFORMATION AND PERFORMANCE REQUIREMENTS

February 28th, 2018

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GENERAL INSTALLATION

INSTALLATION

- 1) Installation shall include the following:
 - a) Uncrating, setting in place, fastening to walls, floors, ceilings, counters, or other structures where required of all equipment except as otherwise noted;
 - b) Interconnect wiring of the components of the system;
 - c) Equipment alignment and adjustment;
 - d) Discarding all packing material (e.g., boxes, pallets, foam) at designated disposal areas; and
 - e) All other work whether or not expressly required herein which is necessary to result in a completely tested and functional system.
- 2) All equipment shall be firmly secured in place unless requirements of portability dictate otherwise. Fastenings and supports shall be support the equipment and mounts with a safety factor of 3.
- 3) All boxes, equipment, etc. shall be plumb and square.

CONTRACTOR PERFORMANCE

- 4) All assembly and material cutting shall be limited to a working area specifically designated for this purpose.
- 5) Cable and wire stripping scrap and conductor strands shall be kept away from sensitive electronic equipment such that loose pieces do not become lodged inside equipment.
- 6) All racks, consoles, connection boxes and other equipment enclosures shall be degreased and vacuum cleaned prior to installation of equipment or panels.
- 7) The Contractor shall take measures to protect all cabinets, casework, finished flooring, wall coverings, equipment, etc. from damage resulting from its work. This shall include, but not limited to, the installation of temporary protective coverings. Any such damage shall be corrected by the Contractor at no additional cost to the Client.
- 8) All equipment racks and sub-assemblies shall be substantially constructed at the Contractor's premises or at a designated DND facility. This will include, but not be limited to, wiring, labeling, dressing, supports, and ventilation.
- 9) All spaces shall be cleaned as an ongoing activity. The Contractor shall vacuum clean all work areas and remove all debris, scrap and waste at least daily and after any substantial debris accumulation. At the conclusion of the work in a given room area, a final vacuum cleaning of all such access spaces shall be performed. All loose items, including those which were existing at the start of the project shall be removed. Wet mopping shall be performed on flooring only when other dry cleaning methods are insufficient. No brushing or wet cleaning of equipment shall be permitted.
- 10) The Contractor shall submit construction drawings including interconnecting schematics and rack layouts for approval prior to commencement of work.
- 11) The Contractor shall be responsible for the proper alignment, adjustment and calibration of all audiovisual equipment and shall provide all personnel and test equipment for the system test and adjust.
- 12) The Contractor shall be responsible for verifying the compatibility of all equipment and related hardware with related work performed by others. This includes, but is not limited to, electrical, mechanical, structural, and all finish work.
- 13) The Contractor shall furnish all software necessary to operate software controlled audiovisual equipment or sub-systems (e.g. remote control system, audio DSP). Whether produced by the Contractor or supplied by a software manufacturer, all software will be installed and tested prior to the delivery of equipment to the site.

EQUIPMENT RACKS

- 14) The Contractor shall use equipment racks (40 RU, 31" deep) to mount all necessary equipment.
- 15) Equipment mounting shall conform to the industry standards of 1-3/4" rack units.
- 16) Each AV rack shall only be filled with a maximum of 60% product and passive patch panels.
- 17) The Contractor shall only use rack rails that are tapped for #10-32 screws (no clip nuts shall be used). A #10-32 x 3/4" inch black truss head Philips rack screw with nylon washer shall be utilized throughout the facility.
- 18) The Contractor shall implement a general ventilation scheme for all racks in the systems. The internal temperature of the racks shall be measured and not exceed 29.5°C.
- 19) All racks shall be inspected carefully prior to installation of equipment. All rough or sharp edges that may cause injury to personnel or damage equipment or cabling shall be deburred or a permanent protective covering applied.
- 20) Provide blank rack panels in all rack openings not occupied by equipment. Blank filler panels shall not exceed three rack units in size. Panel color shall be matte black. Perforated panels may be used to aid in proper ventilation.
- 21) Allow sufficient space for installation of all owner-furnished equipment such as PCs, etc.
- 22) Allow some space for future expansion where possible. All devices within equipment racks shall be mounted to the equipment rack. No devices shall be resting atop (monitor excepted) or mounted to other devices within the equipment racks unless otherwise noted.
- 23) Devices will be mounted in the racks in logical order. Generally, signal flow should move from the top of the rack to bottom. Heavier devices should be mounted in the lower portion to ensure that the assembly is not too top heavy. Frequently used devices will be mounted at the optimal elevation for operator use.
- 24) Contractor rack logo panels shall not be accepted.

CABLE DRESS

- 25) In general, cable dressing shall be considered from a maintenance standpoint. Suitable service loops shall be provided to allow removal of equipment, or to extend equipment that is mounted in the rack on rack slides. Where there is no rear access to the rack mounted equipment, this requirement shall be carefully addressed, and cabling shall be of sufficient length to enable the removal and replacement of any individual piece of equipment with all others in place.
- 26) It is expected that the Contractor will fabricate some portions of the system off-site. Pre-wiring is acceptable provided that the pre-wired assembly can easily be transported to its final location without complication, and without risk of cable or equipment damage.
- 27) The Contractor shall be responsible for determining the proper length of all cables whether manufactured on or off the job site.
- 28) The Contractor shall determine the desired method of securing cables. All of the following requirements shall be met by the system:
 - a) Velcro cable ties are the preferred method of cable lacing. Lay-in systems are not acceptable except as applied to a horizontal cable tray;

- b) Wires and cables shall be installed in a neat and orderly fashion, with like cable types following similar paths. Groups of cables shall be neatly combed and harnessed. Harnessed groups of cables shall be anchored at suitable intervals to reduce and relieve wire strain, especially strain on connections. Adequate service loops shall be provided at all cable endpoints;
- c) Some rack-mounted equipment utilizes slide assemblies for front extension while in operation. For this type of mounting, additional, carefully dressed service loops on all cables shall be provided and installed with spring operated cable retractor assemblies to gather and recoil the service loop;
- d) For all schemes of cable routing, no point in the path shall be subjected to a bend radius of less than eight times the cable diameter, or minimum cable bend radius specified by the manufacturer;
- e) Captive cables shall not be laced in such a manner as to prevent removal of the equipment to which they are captive;
- f) Wires and cables shall be segregated according to signal type. In addition, audio cable shall be subdivided into three classes: microphone level circuits, line level circuits, and speaker level circuits;
- g) Microphone level audio circuits shall be kept at least 7.5 cm [3"] from any other type of parallel signal circuits and at least 15 cm [6"] from any parallel AC power circuits;
- h) Speaker level audio circuits shall be kept a minimum of 7.5 cm [3"] from line level audio and AC power circuits. All other signal circuits shall be kept at least 7.5 cm [3"] away from any parallel AC power circuits;
- i) Where circuits of different types shall cross, they shall do so at right angles and then return to the above required separations in as short a distance as possible;
- j) Conductors, wires, and cables shall be continuous between termination points. Splices are not acceptable; and
- k) Rack mounting rails shall not be used for cable lacing. Vertical and horizontal lacing bars and/or tie mount bases mounted to cabinets or console shall be provided where appropriate.

CABLE TYPES

- 29) The Contractor shall determine the desired method of securing cables. All of the following requirements shall be met by the system:
- 30) All cables installed shall meet appropriate D Strat CS/ AVC2 cabling standards. Instructions on how to terminate cables are described in the W8474-17-CA17 drawing package.
- 31) The Contractor is encouraged to suggest alternate cable types where a significant cost savings may be realized without any loss of quality, reliability and performance. Alternates shall be approved by the Departmental Representative prior to use.
- 32) The Contractor shall determine building and other regulating authority requirements for cables installed as part of the AV scope of the Project. This requirement applies to cables in return air plenums as well as other areas. If the cable type indicated does not comply with these requirements, the Contractor shall propose alternate cable types, and/or encasement in complying raceways or conduits. All cabling not in conduit shall be plenum-rated.

POWER CORDS

- 33) All equipment power cords shall terminate in a standard plug that shall be wired in compliance with governing codes and standards.

- 34) The power cord connector type at the equipment shall be provided by the manufacturer. Custom power cords (e.g., 30cm, 60cm, and 90cm) are permitted but shall be manufactured with the same gauge as the OEM power cord. Field terminated power cords shall not be used. If the manufacturer provides a choice, a removable power cord that attaches to the equipment with an IEC 320/CEE 22 connector is preferred. The use of factory manufactured custom length cables are acceptable.
- 35) The power cord may be laced to the rack as long as the cord is removable at the power connector on the piece of equipment. This is to allow removal of the equipment without undoing the cable lacing. Power cords shall not be laced in the same bundle with signal or control cables. Variable lengths power cords must be used to prevent tied sheepshanks fashion. If the power cord is an active component of the equipment, the cable shall be dressed separately from all other cables terminating at the equipment to facilitate easy removal of the equipment. All power cords shall be plugged into an AC power distribution strip which will be pre-wired into the rack prior to delivery to site.

CABLE TERMINATION

- 36) Wire and cable termination shall be performed in accordance with Department of National Defence standards and the guidelines of generally accepted installation practices. The enclosed Drawing Package includes examples of proper cable terminations.
- 37) With respect to audio equipment interconnects, the Contractor shall make every effort to use equipment with balanced inputs and outputs. When this is not possible, such as the case to meet specification, the following are recommended (in order of preference):
- a) An electronic balancing device (professional interface) or balancing transformer should be utilized;
 - b) In the case of an unbalanced output driving a balanced input, forward referencing should be utilized; and
 - c) An active-balanced to unbalanced interconnect is not recommended.
- 38) It is ultimately the Contractor's responsibility to choose the best wiring practices to achieve maximum sonic quality.
- 39) Wire and cable termination shall include all aspects of equipment connection, including, but not limited to, the following:
- a) Wire and cable length;
 - b) Protective jacket removal;
 - c) Conductor separation, dressing and trimming;
 - d) Conductor stripping; and
 - e) Connector device installation including, but not limited to, the following:
 - i) Conductor termination;
 - ii) Shell assembly;
 - iii) Strain relief installation; and
 - iv) Locking/latching device installation.
- 40) All cable labeling shall adhere to AVIXA / InfoComm F501.01:2015 Cable Labeling for Audiovisual Systems (CLAS).

- 41) All cables and patch points on input panels shall be labelled to denote their source device or input panel location, cable number and destination device.
- 42) Cable designators shall start with upper case letters: A for audio, C for control, N for network, P for power, and V for video followed by a three digit numeric designation (e.g. V015, C001). Hand-written labels or PAN-CODE™ cable markers shall not be accepted.
- 43) It is the responsibility of the Contractor to determine and affirm the type and extender of all required mating connectors. Since manufacturers of equipment may exercise their right to make changes in connector types and wiring, it shall remain the responsibility of the Contractor to verify this aspect of the design prior to cable fabrication and installation.
- 44) Exposed portions of shield shall be protected with a PVC heat shrinkable sleeve. Exposed ends of outer jackets on shielded cables shall be insulated with sleeves to eliminate the possibility of portions of the cut off foil shielded touching adjacent shields or metal. Either rubber "Hellerman" type sleeves or heat shrink sleeves shall be used. Bare shield drain wires shall be insulated with small diameter clear Teflon or PVC heat shrink (as appropriate) from under the sleeve to within 3.175 mm [1/8"] of the point of termination.
- 45) Conductors and/or cables interconnecting assemblies shall be formed into a bundled harness and dressed to preclude damage from adjacent surfaces and sharp edges,
- 46) Cabling required in pedestrian areas such as hallways, shall be contained in floor track and conform to the vertical and horizontal directions of the walls and ceilings;
- 47) Cable runs shall be continuous, without splices or adapters from terminal to terminal;
- 48) Primary power and electronic wiring shall not be co-located in conduit;
- 49) Murette type connectors are not permitted, nor is the use of nail rings or staples to secure cable harnesses to structures.

CABLE AND CONDUCTOR PREPERATION

- 50) All cables shall be prepared in such a way that the individual conductors, shield or their insulation are not nicked or cut in any way. The cable outer jacket shall be cut square.
- 51) Insulation shall be removed from conductor in such a manner that conductor strands shall be nicked to the extent that base metal shows through the plating and wire strands remain in the original lay, and are not combed out. The conductor's insulation shall be cut square within 6.35 mm [1/4"] of the outer diameter of the insulated conductor. If required, the conductor shall be tinned with a minimum amount of 60-40 or 63-37 solder (tin/lead with resin flux).

CONNECTORS

- 52) Only approved cable connectors shall be used. All cable mounted connectors shall be covered by a metal shell connector hood or shall have crimp ferrules which securely grasp the cable outer jacket to provide protection to the rear connections made on the connector and provide strain relief for the cable. All connectors shall have incorporated a mechanical means of attaching the connector to its mate to assure that a connector will not fall off unless intentionally removed.
- 53) Audio Connector Requirements - Circular (XLR type): These shall be approved connectors with tarnish resistant contact surfaces. No connection shall be made to the shell unless specifically called out in the drawings.
- 54) Video Connector Requirements: Only approved connectors with tarnish resistant contact surfaces shall be used. Kings TRS finish ("bright nickel") or equal is recommended. The center conductor pin and socket shall be captive

and finished with gold or silver surfaced over nickel. All connectors shall be specified by the manufacturer as to be acceptable with the specific cable being used. Kings crimp BNC connectors or approved alternate shall be used.

- 55) Panel Mounted Connectors: Care shall be taken to insure that the approved sleeves of panel mount connectors make contact with the mounting panel. This shall include:
- a) Audio (microphone, line level): Locking XLR type;
 - b) Audio (speaker level): Locking/latching "Speakon" type;
 - c) Audio (line level): ¼" diameter locking/latching, tip/ring/sleeve;
 - d) Video: HDMI or DVI type;
 - e) Serial Data: DB-9 or DB-25, metal shell; and
 - f) Video/Audio: Shielded CAT6 metal shell.

SOLDER CONNECTIONS

- 56) Only Kester, or an approved alternate, 60-40 or 63-37 solder (tin/lead) with rosin flux shall be used. The solder shall be designed for electronic use. Solder fillets shall wet and flow around conductor and terminal. In no case shall the general outline of the conductor be visible in excessive solder. The insulation shall not be charred, melted or burned by the soldering operation. There shall be no evidence of either lead or terminal contamination. The final solder joint shall be bright and shiny and shall show no evidence of being a "cold" joint.
- 57) Mechanical connections made to terminals prior to soldering shall be the minimum required to reliably retain wire, usually a simple bend around solder eyelet or post. Avoid practice of multiple wraps on solder terminals, as that practice makes conductor removal very difficult after soldering.

INSULATION DISPLACEMENT CONNECTIONS

- 58) Insulation displacement connections such as ribbon cables and the telephone connector technology shall only be installed with termination tooling as specified by the connector manufacturer. If shown in the connector manufacturer's data, the controlled-cycle crimp tool shall be selected. If the manufacturer has a multi-conductor mass-termination tool available, this shall be selected for all connectors of ten pins or more.
- 59) Individual conductors of cables installed on terminal blocks shall not be stripped, and shall be punched down with a spring loaded impact tool designed for this specific purpose. Bare cable conductors shall be insulated with Teflon, PVC heat shrink or other insulating sleeve (as appropriate) prior to being punched down on terminal block. During the punch down process, the free end of the conductor shall be cut off, and the installer shall ascertain that this cut off end is not left within the block or block assembly.
- 60) Only cables designed specifically for insulation displacement termination with the specific termination device employed shall be used.

CRIMP CONNECTIONS

- 61) Where crimp connectors are utilized, they shall be installed using the manufacturer recommended controlled cycle crimp tool that assures that the proper crimp pressure has been applied. The Contractor shall develop a procedure to insure that the crimp tooling is properly checked for compliance with the manufacturer's standards, and that it is producing crimp-type connections within the required tolerances. The frequency of this depends on the usage and on the length of time a particular tool holds its calibration.

- 62) Only tooling recommended by the manufacturer shall be used. Only pins and connectors of the proper size and design for the cable to which they are to be applied shall be used. There shall be no abnormal deformation of the contact during the crimping operation. There shall be no damage to the contact during the crimping operation that could interfere with its retention in its shell or its mating. There shall be no damage done to the conductor which either severs strands or exposes the individual strands base metal by the crimping operation.

SCREW CONNECTIONS

- 63) Only insulated crimp on spade terminals shall be used for application to barrier strips. Multiple gang lugs or ring lugs are not acceptable for this purpose. This is only applicable to stranded conductor wires. It is suggested that stranded conductor wire be "double over" on the crimp end prior to crimping. Solid conductors may be attached directly to the barrier strip.
- 64) All conductors shall be stripped prior to installation underneath screws on terminals. Unlike the stranded control cable, solid conductor wire does not require crimp lugs on individual conductors. All screw terminated solid connectors shall be wrapped in the same direction as screw rotation during tightening.

GROUNDING PRACTICES

- 65) The audiovisual system will be serviced by the earthing conductor that is provided with the mains supply.
- a) All devices in the audiovisual system racks will be serviced with a grounded AC outlet. Devices having two prong power cords will also have a 14-gauge green copper wire connected from the chassis to the grounded copper buss bar mounted to the equipment rack frame. Under no circumstances will the prong of a three prong power cord be removed;
 - b) Audio cables shield shall be connected to ground at one point only. Exceptions may be made for phantom powered microphones. This ground point shall be at the system ground of the destination device, which shall be strapped to the system ground in the rack. For intra-rack wiring this requires the shield to be connected at both ends, but grounded at only one end;
 - c) All video receptacles shall be insulated from the mounting panel, outlet box, or wire way. Unless otherwise detailed, this shall be accomplished by using insulated-from-panel type receptacles; and
 - d) The Contractor should take care to consider ground references within each device and the grounding factors on site.

MATERIALS

- 66) General: Materials used in installations shall be chosen with due consideration being given to the intended use, safety, durability, retention of appearance and avoidance of corrosion or other chemical effects.
- 67) Toxic Materials: Material capable of producing harmful toxic effects under operating conditions, equipment malfunction, or accidental other causes, shall not be used.
- 68) Metals: Metals used shall be corrosion-resistant or treated to resist corrosion in atmospheric conditions to which the installation will be subjected.
- 69) Plastics: Plastics shall be durable and resistant to cracking, brittleness, discoloration, deformation or similar defects, upon ageing or when subjected to hot or cold thermal extremes.

GENERAL PERFORMANCE REQUIREMENTS

STANDARDS

- 70) General standards used in the design and installation of the audiovisual system shall conform to the highest quality broadcast industry standards. The following list provides a general indication of the type of industry organizations with published technical standards, and is not intended to be all-inclusive.

AES	Audio Engineering Society: Audio Standards
ASTM	American Society for Testing and Materials: Test and Materials Standards
AVIXA	Audiovisual & Integrated Experience Association
BICSI	Building Industry Consulting Service International
CEC	Canadian Electrical Code: Electrical Standards
CSA	Canadian Standards Association
DND	Department of National Defence
EIA	Electronic Industry Association: Equipment Mounting, Construction, and Tooling
IEEE	Institute of Electrical and Electronic Engineers: Electrical/Signal Standards
InfoComm	Audiovisual Communications Industry Association
NCAC	National Council of Acoustical Consultants: Acoustic Standards

MAINTAINABILITY

- 71) The Contractor shall provide a fully functioning system that is easily accessible for service while the system is operational. Where this is not practical due to mutually accepted circumstances, service functions will be designed to allow a minimal amount of equipment and support disassembly. The audiovisual system design, construction and installation will allow components to be accessible for inspection, maintenance and repair with a minimal disassembly of other components or surrounding equipment.

SAFETY

- 72) The audiovisual system will be inherently safe, when operated and maintained in compliance with the Contractor provided operations and maintenance / technical manuals. In addition, equipment will meet or exceed governing standards and requirements for safety. This shall include provisions and installation of seismic bracing and restraints.

EQUIPMENT MODIFICATIONS

- 73) The audiovisual systems shall be designed to utilize new "Commercial-Off-The Shelf" equipment. Every effort shall be made to avoid the use of custom or modified equipment. However, some AV equipment may require modifications to accommodate installation, remote control or other integration requirements.
- 74) Where equipment shall be modified to conform to system specifications and design parameters, the modifications made shall in no way affect the performance of the equipment as published by the manufacturer. Equipment modifications may also be impacted by and shall comply with the terms of other sections of this AV Specification.

EQUIPMENT SUBSTITUTIONS

- 75) Requests for use of alternate equipment to that recommended in the Equipment Specification will be considered on an item by item basis. Equipment substitutions will be considered in cases where a specific component of the system is no longer available, or where the alternate equipment is shown to provide equal or greater quality and performance.

- 76) All proposed equipment substitutions shall be submitted to the Departmental Representative with the Contractor's bid. Proposed substitution submittals shall include full information, specifications, and data sheets for the proposed alternative equipment. All equipment shall be new and shall meet or exceed the last published specifications of the manufacturer in all respects.
- 77) Equipment substitutions will be considered after commencement of work on the Project only where the contracted equipment becomes unavailable, where unanticipated lead times could delay the Project for other legitimate practical considerations. Equipment substitutions submitted after commencement of work on the Project shall be approved by the departmental representative in writing.
- 78) Approval of equipment substitutions shall not imply release of Contractor responsibility for meeting all requirements and design objectives as outlined in Solicitation W8474-17-CA17.

CUSTOM / MODIFIED EQUIPMENT

- 79) It shall be the responsibility of the Contractor to provide all appropriate design, engineering and fabrication in the provision of specified custom or modified equipment.
- 80) All specified custom or modified equipment shall be included in the scope of the Contractor's work. No portion may be omitted from the scope of the Contractor's work. Bids excluding any portion of the custom or modified equipment will be deemed non-responsive.
- 81) Substitutions of "Commercial-Off-The-Shelf" equipment for specified custom equipment will be considered when submitted per the procedures noted for Equipment Substitutions.

SYSTEM SOFTWARE AND SOFTWARE PROGRAMMING

- 82) The Contractor shall be responsible for providing a complete and working system in the provision of software programming.
- 83) All software programming shall be included in the scope of the Contractor's work. No portion may be omitted from the scope of the Contractor's work. Bids excluding any portion of the software programming will be deemed non-responsive.
- 84) Contractor shall supply system software as specified in Appendix C to Annex B – Statement of Work (Audio Visual Capabilities).
- 85) The Contractor shall supply a complete set of system software, software programming code including IP tables and DSP programs.
- 86) All equipment shall be upgraded to the latest version of approved firmware prior to final commissioning.
- 87) In the case of commercial software, a complete set of software shall be provided including the license and documentation for all devices, utilities, and tools used in the operation and maintenance of the audiovisual system.
- 88) In the case of non-commercial or custom software, a complete set of software shall be provided, including license (if applicable) and documentation for all devices, utilities, and tools used in the operation and maintenance of the audiovisual system. Documentation shall be presented in such a way as to allow the Client or support cell the ability to perform unassisted operation, maintenance, troubleshooting and programming.
- 89) All commercial software provided by the Contractor as part of the Project shall be procured and transferred in full compliance with the publisher's copyright, licensing and other requirements of ownership and use. All software license agreements shall be registered in Client's name.

- 90) Client shall retain full rights to all custom software, programming, and software programming code developed by the Contractor as part of the project. This shall include the right to use, reproduce and modify the software and software programming code as reasonably required to operate the audiovisual systems and to support their ongoing maintenance and development.
- 91) Further improvements of custom programming shall occur up to 90 days after commissioning is completed. This shall allow for unforeseen adjustments that shall allow for optimal functioning of the systems.

APPENDIX D TO ANNEX B – STATEMENT OF WORK

D STRAT CS /AVC2 DRAWINGS STANDARDS (REV B)

February 28th 2018

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ACRONYMS

DND	Department of National Defence
AEC	Architectural, Engineering, and Construction
CAD	Computer Aided Design
ISO	International Organization for Standardization
SI	International System of Units

DEFINITIONS

Layer: Classification system for graphics in the design/drawing file. Allows grouping of drawing components, which enables the user to turn items on and off, change colour, line width, and other properties as a group. The term Layer is used in AutoCAD.

Sheet Layout: A Model file used to assemble Design Model data, border graphics and annotation to compose the final plotted drawing. This is referred to as Paper Space in AutoCAD.

INTRODUCTION

Traditionally this Standard has focused on CAD and the requirements surrounding the graphics drawing conventions in support of AEC project delivery. While the basic requirements involving CAD remain, it is important to support within the framework of the D Strat CS/AVC2. Standard to suit AEC industry advances. The practical use of any drawing or package of drawings within the D STRAT CS/AVC2 does not terminate with the construction of the facility, but continues over the life cycle of the facility. All drawings produced as part of the final contract document package shall be completely computer-generated; manual revisions to existing drawings are not permitted.

1. GENERAL REQUIREMENTS

1.1. IMPERIAL / METRIC UNIT REQUIREMENTS

All drawings detailing construction engineering, architectural, and related works for D STRAT CS/AVC2 shall be prepared using the International System of Units (SI). Units for linear dimensioning are restricted to Primary & Alternate Units. Primary units may be in Imperial in feet & inches (0'-0") or decimal form (two decimal places) & Alternate units be single digit for metric numerals between square brackets. Refer to chart below.

SET DIM STYLE: AV-Imperial		SET DIM STYLE: AV-Metric	
Line Type	Continuous	Line Type	Continuous
Line Weight	Bylayer	Line Weight	Bylayer
Colour	Bylayer	Colour	Bylayer
Text	Romans	Text	Romans
Primary Units Imperial	Engineering 0'-0"	Primary Units mm	Single Decimal (0)
Conversion to mm	X units by 25.4	Conversion to inches	X units by 0.039375
Alternate Units [mm]	Single Decimal (0)	Alternate Units Imperial	Engineering 0'-0"
Conversion to imperial	X units by 0.3048	Conversion to imperial	X units by 0.039375

1.2. OVERALL LAYOUT DWG

Overall schematic layout is one drawing consisting of audio, control, video, fibre, network, power, any other system required to be illustrated for the project. This provides over-all view of AV system. For clarity multiple sheet layouts may be required, keep same file name but add Pg1 or Pg2 at the end of each electronic file name. Require separate electronic file for AV Rack & Architectural layouts consist of a floor plan, elevations, electrical conduit and reflective ceiling plan and any miscellaneous details.

1.3. DELIVERABLES REQUIREMENTS - AS-BUILT DWGS

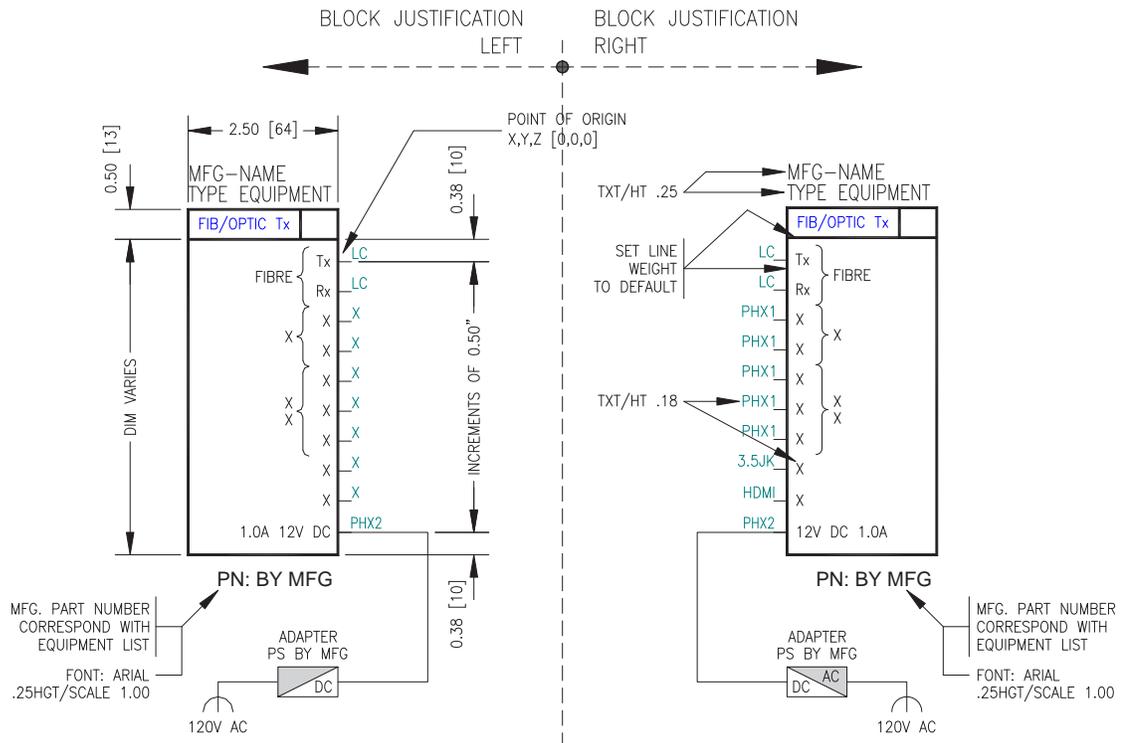
Upon completion of the project, final project drawings (all disciplines) shall be updated to —As-Built status by the consultant/contractor responsible for the work. Final Deliverables —2 sets of hard copies of As-Built drawings and 2 copies native digital files (ACAD drawing & PDF). **Save all AutoCAD files in release 2015 format.**

1.4. TEXT SPECIFICATIONS

D STRAT CS/AVC2 will not accept any drawing with lower text characters. This includes 8.5x11 & 11x17 drawing sizes. All character text to be UPPER CASE. Minimum height 3mm [1/8"] and title block text minimum height 6mm [1/4"]. AVC2 standard font style is ROMANS for all closed shapes, general text, & dimensions. ARIAL font may be used for all title descriptions. For more information refer to Section 3.5 & 3.6.

1.5. CLOSED SHAPES

All shapes drawn shall be closed shapes by having a graphic point at the point of origin. This is particularly important for sitting as it ensures that data migration to GIS can be performed correctly.

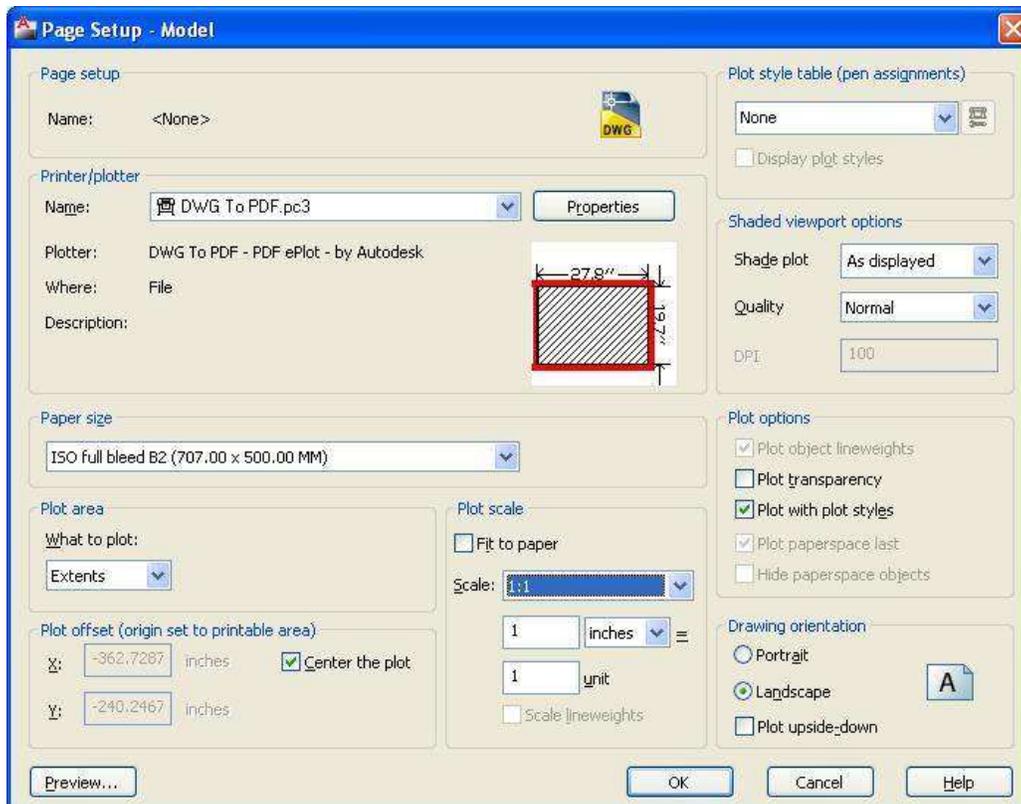


NOTE:

- SET DEFAULT LINE WEIGHT TO .35
- FONT TYPE TO BE ROMANS, ALL CHARACTER TEXT MUST BE UPPER CASE (UNLESS NOTED OTHERWISE).
- IF NO MANUFACTURER PART NUMBER AVAILABLE, INSERT TEXT 'P/N: BY NAME'. (MODEL NAME IS LISTED ABOVE BLOCK OUTLINE).

1.6. PDF AS-BUILT DWG CONVERSION

- As-built DWG drawings shall be converted at plot scale of 1:1.
- Refer to 3.1 for JSCSS standard drawing sizes
- Change Printer/Plotter setup to 'DWG To PDF.pc3'
- Select paper size
- Click 'OK' icon

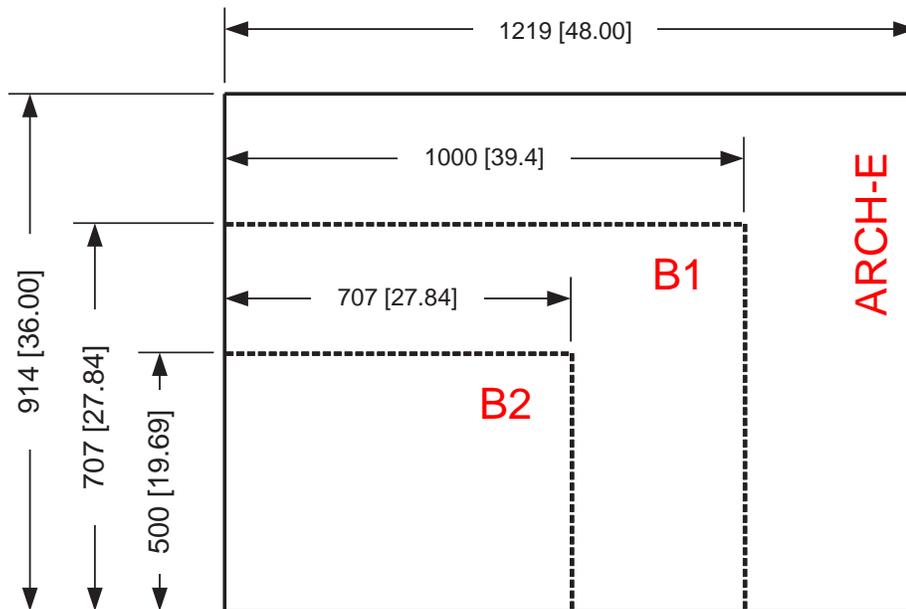


2. DRAWING NUMBER CONVENTION

2.1. D STRAT CS/AVC2 STANDARD DWG SIZES

New DND ISO drawing sizes as illustrated below.

Dimensions included 13mm [0.50 inch] cutting binder.



OVER SIZED ISO DRAWING STANDARDS

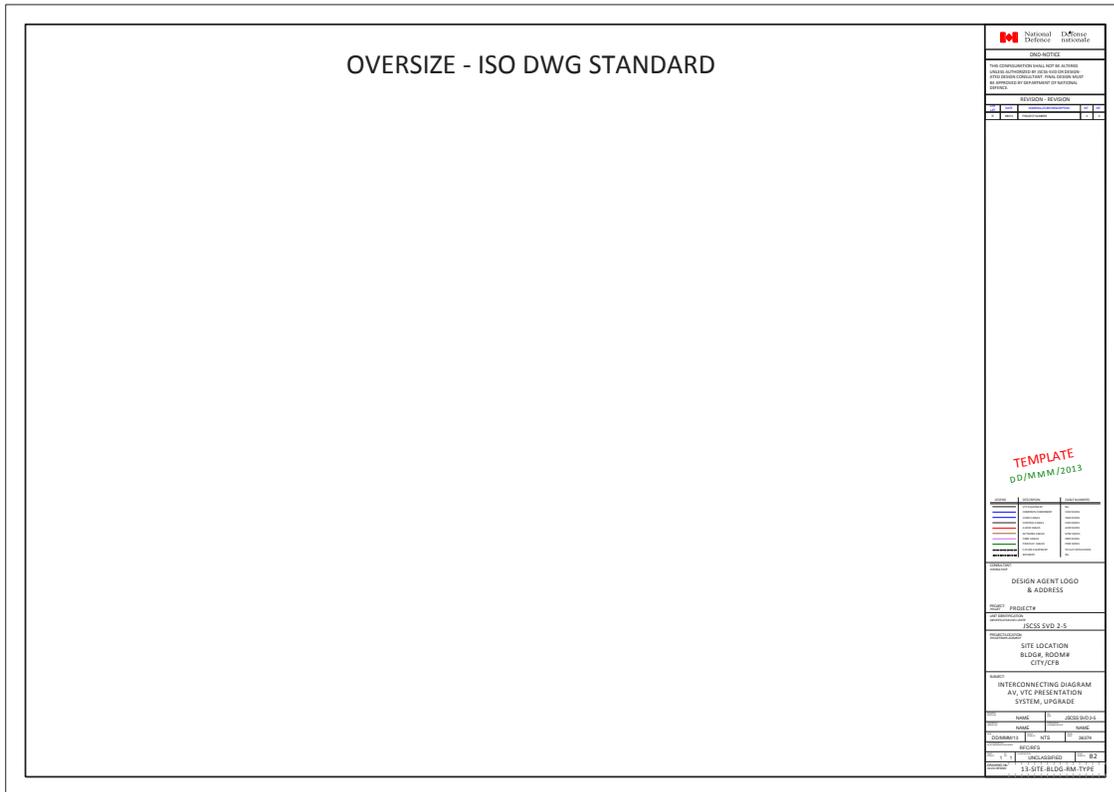
2.2. FUNCTION D STRAT CS/AVC2 STANDARD DWG SIZES

- B2 used for cable assembly and rack layout. This drawing shall indicate a list of all manufacturer components used to build proposed items.
- B1 used for architectural layouts & elevations or independent interconnecting diagrams of Audio, Control or Video schematic layouts.
- ARCH-E combines all audio, control, video, fibre, network, and power interconnecting schematic or architectural layouts.

2.3. ACTUAL SIZE REQUIREMENT

All drawing information shall be drawn true scale (1:1). That is, if a building segment is 50'-0" long, the line drawn to represent it shall also be 50'-0" long.

2.4. D STRAT CS/AVC2 BORDER SETUP



2.5. BORDER DESCRIPTIONS

All final DND drawings shall use one of D STRAT CS/AVC2 standard templates.

- Borders can be placed as an external reference or as a block.
- Border blocks shall not be exploded.
- Borders can be placed in or referenced to the sheet layout. Borders shall not be scaled in a sheet layout. The scaling of the design should occur through scaled reference or viewport attachments.

- All layout viewport scales shall be locked when submitted.
- Borders should be initially set up using a DND template.

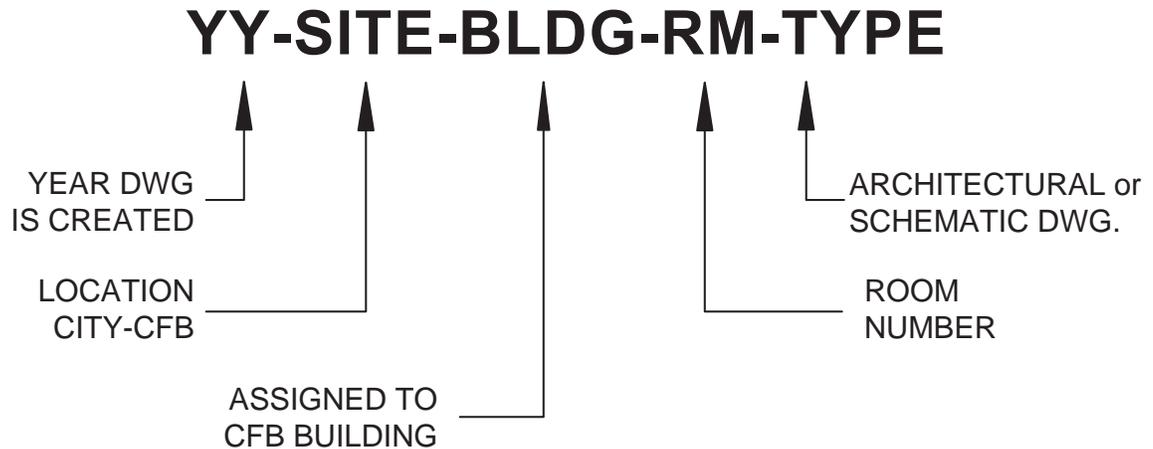
2.6. TEXT BLOCK NAMING CONVENTION (D STRAT CS/AVC2 USE ONLY)

Project Managers will assign drawing numbers to all schematic and engineering drawings and fill in Project/Location text block and Subject text block and send a PDF illustration below to design agent.

DND - NOTICE				
THIS CONFIGURATION SHALL NOT BE ALTERED UNLESS AUTHORIZED BY D-STRAT-CS/AVC2 OR DESIGNATED DESIGN CONSULTANT. FINAL DESIGN MUST BE APPROVED BY DEPARTMENT OF NATIONAL DEFENCE.				
REVISION - REVISION				
INT. LET	DATE	NOMENCLATURE / DESCRIPTION	DATE DES INT.	DATE DES INT.
P1	MMM/YY	PROJ/DIR: DT-017LMXX, PROPOSAL	INT.	INT.
AB	MMM/YY	PROJ/DIR: DT-017LMXX, CLOSED AS-BUILT	INT.	INT.
CONSULTANT: CONSULTANT DESIGN AGENT LOGO & ADDRESS				
PROJECT: PROJET UNIT IDENTIFICATION IDENTIFICATION DE L'UNITÉ D-STRAT-CS / AVC2				
PROJECT LOCATION: PROJET/EMPLACEMENT PROJECT SITE LOCATION BLDG #, ROOM # CITY / CFB				
SUBJECT: INTERCONNECTING DIAGRAM AUDIO, VIDEO & CONTROL PRESENTATION SYSTEM UPGRADE				
DRAWN BY: DSS	NAME	DATE RDC	NAME	
CHECKED BY: VERIFIE PAR	NAME	APPROVED BY: APPROBATION PAR	D-STRAT-CS/AVC2	
DATE: DD/MMM/YY	SCALE: ECHELLE	NTS	NSCM CONF	36374
FILE REFERENCE NO. NO DE REFERENCE DU DOSSIER		RFC/RFS		
SHEET FEUILLE	OF DE	CLASSIFICATION	DATE DATE	DATE DATE
1	1	UNCLASSIFIED	B2	
DRAWING NO. NO DU DESSIN YY-SITE-BLDG-RM-TYPE				

2.7. D STRAT CS/AVC2 DRAWING NUMBER

Project Managers will assign drawing numbers to all schematic and engineering drawings and send assigned numbers to design agents. Contract and other non-standard drawings shall be numbered with the combination of following illustration.



Year: Fiscal year RFC has been approved to D STRAT CS/AVC2.

Location City/CFB: Refer to 3.6 Naming Convention.

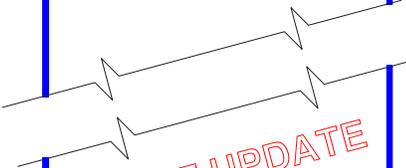
Building: Armed forces assigned building numbers to existing building on most CFB sites.

Room Number: Example, 101A listed by floor assigned room number (maximum 3 or 4 characters).

Architectural/Schematic: Two types

- PL01 – Architectural layout showing electrical conduits and proposed AV equipment; and
- SCH01 – Interconnecting diagram schematic layout illustrating multiple AV cables & equipment.

2.8. SAMPLE D STRAT CS/AVC2 TITLE BLOCK

 National Defence / Défense nationale				
DND - NOTICE				
THIS CONFIGURATION SHALL NOT BE ALTERED UNLESS AUTHORIZED BY D-STRAT-CS/AVC2 OR DESIGNATED DESIGN CONSULTANT. FINAL DESIGN MUST BE APPROVED BY DEPARTMENT OF NATIONAL DEFENCE.				
REVISION - REVISION				
LTS REV	DATE	NOMENCLATURE / DESCRIPTION	DWN DES	L'ORD REVISE
P1	MMM/YY	PROJ/DIR: DT-017LMXX, PROPOSAL	INT.	INT.
AB	MMM/YY	PROJ/DIR: DT-017LMXX, CLOSED AS-BUILT	INT.	INT.
 LAST UPDATE DD\MMM\20YY				
LEGEND	DESCRIPTION	CABLE NUMBERS		
	VTC EQUIPMENT	NIL		
	VIDEO CABLES	V100 & V600 SERIES		
	CONTROL CABLES	C200 SERIES		
	AUDIO CABLES	A300 SERIES		
	NETWORK CABLES	N700 SERIES		
	FIBRE CABLES	F800 SERIES		
	PWR/SUP. CABLES	P900 SERIES		
	FUTURE EQUIPMENT	TO SUIT APPLICATION		
	BOUNDARY	NIL		
CONSULTANT: CONSULVANT:				
PROJECT: PROJET:				
UNIT IDENTIFICATION IDENTIFICATION DE L'UNITÉ D-STRAT-CS / AVC2				
PROJECT LOCATION: PROJET/EMPLACEMENT PROJECT SITE LOCATION BLDG #, ROOM # CITY / CFB				
SUBJECT: INTERCONNECTING DIAGRAM AUDIO, VIDEO & CONTROL PRESENTATION SYSTEM UPGRADE				
DWN BY: DESS	NAME	DATE:	SCALE: ECHELLE	NSCM CONF
		DD/MMM/YY	NTS	36374
CHECKED BY: VERIFIE PAR	NAME	APPROVED BY: APPROBATION PAR	D-STRAT-CS/AVC2	
FILE REFERENCE NO: NO DE REFERENCE DU DOSSIER	RFC/RFS			
SHEET FEUILLE	OF DE	CLASSIFICATION	DWG. SIZE GRANDEUR	
1	1	UNCLASSIFIED	B1	
DRAWING NO. NO DU DESSIN YY-SITE-BLDG-RM-TYPE				

2.9. LAYER STANDARDS

Features or items can be grouped together and classified into Layers in AutoCAD. The standards set forth in this document do not encompass every case and condition imaginable; therefore, there may be some cases where items cannot be classified into one of the predefined layers. In those cases, exceptions to the standards will be accepted. Layer names that are created should follow the general structure layer types, and a description shall be provided.

2.10. PREDEFINED LAYER STATUSES

All features shall be drawn with their properties of colour, line width, and line style set to by layer. This allows all properties of the objects to be inherited from the settings of the layer in which they are placed. The CAD user can change the line width, colour, and line style by simply changing the properties of the entire layer.

2.11. D STRAT CS/AVC2 BORDER LAYERS

NAME	COLOUR	LINE/WT	DESCRIPTION
B2 BDR *	5 (BLUE)	Default 0.35	New construction related to RFC
B2 BDRTXT *	1 (RED)	0.20	Block titles within drawing template
B2 BTXT *	7 (BLACK)	0.20	Equipment blocks stating manufacture & model number
B2 IDTXT *	7 (BLACK)	0.20	Identification text within ISO title block
DIM-IMP	7 (BLACK)	0.20	JSCSS Dimension style (imperial units)
DESIGN AGENT	7 (BLACK)	0.20	Design Agent logo or address
VP	253 (GRAY)	0.09	Outline of viewport window

All layers shall have continuous line type. Refer to 3.1 Standard Drawing Sizes. The layers denoted by (*) will change depending on which oversize drawing is selected.

2.12. D STRAT CS/AVC2 SCHEMATIC LAYERS

LAYER NAME	COLOUR	LINE/WT	DESCRIPTION
PROPOSAL	94 (DK-GRN)	Default 0.35	New construction related to RFC or RFS
SCH AUDIO	RED	Default 0.35	Interconnecting Audio cables
SCH BLKS	BLACK	0.20	Equipment blocks stating manufacture & model number
SCH BTXT	BLACK	0.20	Block text within ISO drawing template
SCH BDY	BLACK	0.20	Boundary outline indicating area where equipment to be installed
SCH CONN	134	0.20	Type of connector found at each end of cable assembly
SCH CTRL	BLACK	Default 0.35	Interconnecting Control cables
SCH FIBRE	200 (PURPLE)	Default 0.35	Interconnecting Fibre cables
SCH NTKW	34 (BROWN)	Default 0.35	Interconnecting Network cables
SCH PWR	94 (DK-GRN)	Default 0.35	Interconnecting Power cables
SCH VIDEO	5 (NAVY)	Default 0.35	Interconnecting Video cables (analog & digital)

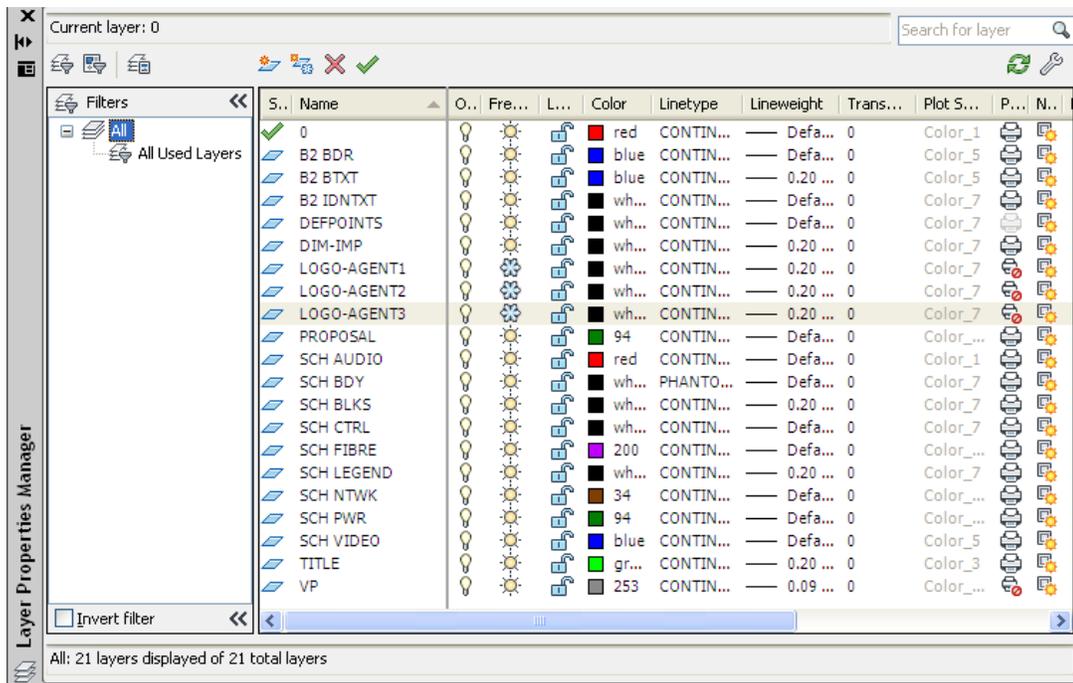
All schematic layers have Continuous line type, except Boundary outline” has Phantom line type.

NOTE: SYMBOL LEGEND-VTC is part of all ISO drawing templates. To remove schematic layers must delete block legend from template drawing and purge drawing.

2.13. D STRAT CS/AVC2 SCHEMATIC LEGEND

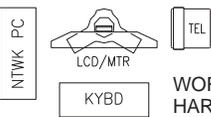
LEGEND	DESCRIPTION	CABLE NUMBERS
	CONTROL CABLES	C200 SERIES
	AUDIO CABLES	A300 SERIES
	OVER FLOW (ANY SERIES)	400 SERIES
	MULTI-PURPOSE CABLE	M500 SERIES
	VIDEO CABLES (DIGITAL)	V600 SERIES
	NETWORK CABLES	N700 SERIES
	FIBRE CABLES	F800 SERIES
	PWR/SUP. CABLES	P900 SERIES
	FUTURE EQUIPMENT	TO SUIT APPLICATION
	BOUNDARY	NIL
	AV EQUIPMENT	NIL

2.14. D STRAT CS/AVC2 LAYER SAMPLE



2.15. D STRAT CS/AVC2 ARCH LEGEND

LEGEND: ARCHITECTURAL

	BUILDING GROUND BUSS BAR (SCHEMATIC)
	BUSS BAR BLDG/GRD (ARCH)
	TELECOM OULET WITH DUAL DVO "CEILING MOUNTED"
	120V AC OULET
	DEDICATED OULET 120V AC
	DVO DROP NETWORK#1
	DVO DROP NETWORK#2
	KVM SWITCH
	CLASSIFIED JIFFY POLE
	JIFFY POLE
	DASCO CABINET
	WORKSTATION HARDWARE

LEGEND: ARCH/SYMBOLS

	CLASSIFIED PULL BOX (SIZE VARIES)
	'A'-200mmX200mm [8X8]
	'B'-300mmX300mm [12X12]
	'C'-400mmX400mm [16X16]
	'D'-600mmX600mm [24X24]

LETTER CHANGES DEPENDING ON SIZE OF PULL BOX (SEE CHART)

REFLECTIVE CEILING:

	DIFFUSER, AC/HT
	AIR RETURN
	LIGHT FIXTURE (24X24 OR 24X48)
	VTC FIXTURE 24X24 (DIMMABLE)
	POCKET LIGHT
	FIRE SPRINKLER
	SPEAKER, CEILING
	PANDUIT (LD3, LD5, LD10) DROP CEILING ENTRANCE FITTING
	PANDUIT T45EE ENTRANCE FITTING
	PANDUIT T702EE ENTRANCE FITTING

LEGEND: LINE IDENTIFICATION'S

	1" EMT (ELECT. MECHANICAL TUBING)		SURFACE RACEWAY
	2" EMT (ELECT. MECHANICAL TUBING)		CONDUIT (EMT) DOWN
	EXISTING CONDUIT 25mmØ (UNLESS OTHERWISE NOTED)		CONDUIT (EMT) UP

2.16. BREAKDOWN OF TITLE BLOCK

CONSULTANT: CONSULTANT	
DESIGN AGENT LOGO & ADDRESS	
PROJECT: PROJET	PROJECT NUMBER
UNIT IDENTIFICATION: IDENTIFICATION DE L'UNITE D-STRAT-CS/AVC2	
PROJECT LOCATION: PROJET/EMPLACEMENT SITE LOCATION BLDG#, ROOM# CITY/CFB	
SUBJECT: INTERCONNECTING DIAGRAM AV, VTC PRESENTATION SYSTEM, UPGRADE	
DRAWN BY: DRETE PAR	NAME D-STRAT-CS/AVC2
CHECKED BY: VERIFIE PAR	NAME
DATE: DD/MM/YY	SCALE: ECHELLE: NTS
FILE REFERENCE No: No DE REFERENCE DU DOSSIER	RFC NOM COMP: 36374
SHEET: FEUILLE: 1 DE 1	CLASSIFICATION: UNCLASSIFIED
DRAWING No: No DU DESSIN	SCALE: ECHELLE: B2
YY-SITE-BLDG-RM-TYPE	

BLOCK TITLES	DESCRIPTION
DRAWING No.	Drawing number assigned by D-STRAT-CS/AVC2
SHEET 1 of 1	Number of sheets required to illustrate subject material
CLASSIFICATION:	For JSCSS SVD 2-5 use only
FILE REFERENCE No.	Approved RFC or Directive No. by D-STRAT-CS/AVC2
DWG SIZE:	ISO oversized drawing standard (B2,B1, or Arch-E)
SCALE:	Use 'NTS' for schematic diagrams. Optional to list viewport window scale used in architectural layouts
NSCM:	NATO Stock Control Manufacture number assigned by DND
CHECKED BY:	Person responsible for overall design
APPROVED BY:	Person signing off as-built drawings
OPI:	Office of primary interest. Dept. responsible for closure
DRAWN BY:	Person who drew conceptual drawing design
PROJECT LOCATION:	Building Name or Building Number, Floor & Room number
UNIT IDENTIFICATION:	Dept. submitted RFC to D-STRAT-CS/AVC2
CONSULTANT:	Authorized Design Agent by D-STRAT-CS/AVC2

2.17. REVISION BLOCK DESCRIPTION

- LTR: Revision letter runs from “A to Z” (Upper Case Only) in the proposal design stage.
- Delete all revisions prior to final as-built drawing and use double digit figure “AB”. Any revision after as-built start with “BB to ZZ” characters.
- DATE: When the revision was made on the drawing stating Day, Month, Year.
- NOMENCLATURE: List type of change made such as Project Directive number or any design change made by others.
- DWN: Person who did drawing change.
- CKD: Authorized design agent signs off the revision.

REVISION - REVISION				
LTR LET	DATE	NOMENCLATURE / DESCRIPTION	DWN DES	CKD VERIFI
P1	MMM/YY	PROJ/DIR: DT-017LMXX, PROPOSAL	INT.	INT.
AB	MMM/YY	PROJ/DIR: DT-017LMXX, CLOSED AS-BUILT	INT.	INT.

3. ELECTRONIC FILE STANDARDS

This information in this section covers the computer-based standards of the final DND drawing. See the accompanying guides for system-specific requirements, instructions, and information on how to comply with DND standard.

3.1. REFERENCE FILE STANDARDS

External reference files shall only be used during design development. All external reference files shall be bound within the final delivered electronic drawing file.

3.2. LAYOUT VS DESIGN MODEL INFORMATION

The following rules shall be used when determining where information should reside:

- Only items that are not graphically linked to objects in the design model shall appear in sheet layout (e.g., borders, title blocks, general notes, titles, legends, notes: to computer operators that are not to be printed).
- All notes directly linked to the design should be placed in the design model (e.g., leaders, dimensions, and labels).
-

3.3. LINE WIDTH

Standards for varying widths of lines have been established to improve presentation and readability of drawings. While CAD systems have the capability of showing a wide array of line widths, only a small number of them are required for drawing legibility.

The following table shall be used to establish these line widths for all drawings unless substantial improvement in readability can be gained through the use of additional widths.

LINE WIDTHS	Width (mm)	APPLICATION
Extra Fine	0.13	Grids
Fine	0.18	Hatching, Centrelines
Thin	0.25	Light & Background features
Medium	0.35	Misc. Features
Wide	0.50	Section Lines, Finished Grade
Extra wide	0.70	Border outline

3.4. COLOUR

The following are important notes on the use of colours on D STRAT CS/AVC2 drawings:

The AutoCAD colour table is to be used as the colour scheme on all CAD drawings to improve interoperability between CAD systems.

- Colour is not used to determine printing pen width. Pen width is determined by the line weight attribute.
- A relationship between line weight and colour has been standardized and is to be maintained where possible to improve screen clarity between features and layers.
- All objects shall be placed using the colour attribute set to “BY LAYER” where possible.

3.5. TEXT STYLES

D STRAT CS/AVC2 has adopted a number of text styles to ensure that drawing text display and print in a consistent manner. To improve interoperability between CAD systems, D STRAT CS/AVC2 has standardized True Type fonts for general use throughout all drawings. See Table 4-11.

The majority of text on D STRAT CS/AVC2 submitted drawings shall be Arial Narrow (size of 2.5 mm) for general notes, dimensions, and annotation. Details, titles, sections, etc., shall be Arial (size 5 mm). Other requirements to consider:

- Full size drawings are often printed at half-size; therefore, text size shall be appropriate to accommodate this requirement.
- All text presented on the drawing should have a vertical orientation and be UPPER CASE only.

3.6. D STRAT CS/AVC2 TEXT STYLES AND FONT USE TABLE

APPLICATION	STYLE FONT	COLOUR	SIZE (mm)	DESCRIPTION
BLOCK TEXT	ROMANS	By layer	0.20	Block text used in creating blocks
GENERAL TEXT	ROMANS	By layer	0.20	Identify objects, general notes
TITLE TEXT	ARIAL	By layer	0.20	Main Titles on drawing (upper case only)
BORDER TEXT	ARIAL NARROW	By layer	Varies	Block Titles within ISO drawing template
CANADA LOGO	Times New Roman	By layer	0.18	ISO drawing templates

3.7. D STRAT CS/AVC2 DIMENSION STYLES

D STRAT CS/AVC2 has adopted a number of dimension styles to ensure that drawing dimensions display and print in a consistent manner. To improve interoperability, these dimension styles are available in both CAD systems.

3.8. D STRAT CS/AVC2 DIMENSION STYLES TABLE

STYLE NAME	APPLICATION/USAGE	SYMBOLS & ARROWS	UNITS	ANGLE UNITS
Architecture	Inside Architectural	Slash	Imperial Feet & Inches [mm]	Decimal degrees
Imperial (FT)	Inside building features	Arrow	Imperial Inches (two decimal places) & [mm]	Decimal degrees
Meters (M)	Outside engineering or siting	Slash	Meters (3 decimal places)	Degrees, Minutes & Seconds

The following rules shall be followed:

- The true dimensions value should be shown and should not to be overridden or altered.
- Where part of the drawing is not to scale (NTS) or there is a break in the information, the dimension shown shall be followed by the abbreviation NTS or by using a break symbol in the dimension line.
- No units are to be designated.

4. GRAPHIC SCALE

Graphic bar scale shall be used in all Architectural drawings to indicate the units of measurement. In scale notation title block note selected scale of view port window or leave default drawing template setting NTS (not to scale).

- Bar scale are only used in architectural drawings
- Bar scale are inserted in model space below main title block such as Floor Plan & Elevation details.
- When two or more scales are used on the same drawing sheet, each scale shall be clearly indicated below each particular title, and notation "AS NOTED" or "SCALE AS SHOWN" indicated in the scale notation in title block.



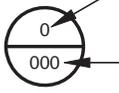
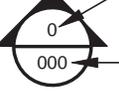
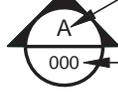
BAR SCALE: IMPERIAL (INCHES)



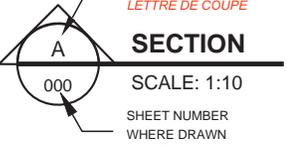
BAR SCALE: METERIC (M)

5.0 D STRAT CS/AVC2 SECTION & DETAIL IDENTIFIERS

DND standard symbols be used shall be used for all cross-referencing identifiers. Details and Elevations are identified by a number; Sections are identified by a letter.

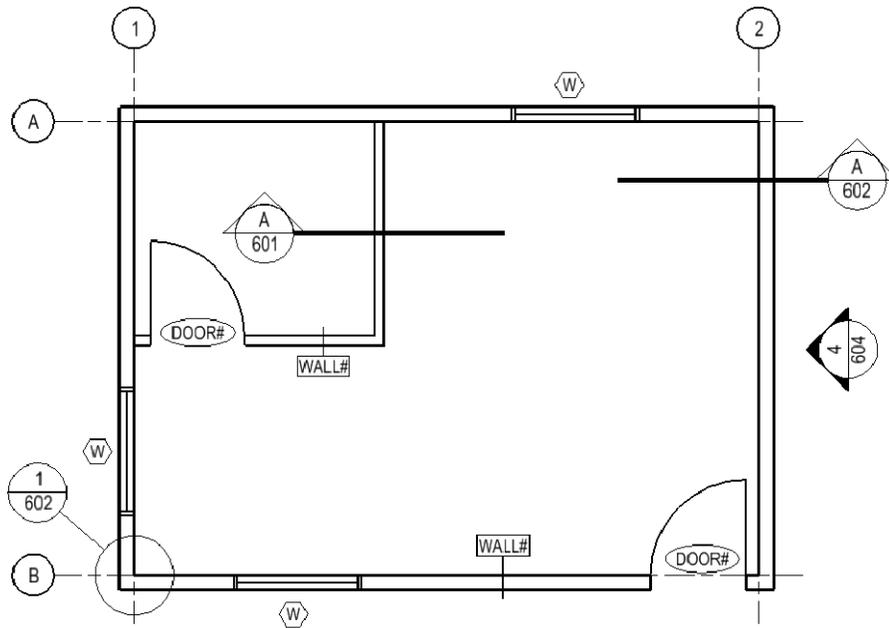
 <p>DETAIL NUMBER <i>NUMERO DU DETAIL</i></p> <p>SHEET NUMBER WHERE DRAWN <i>NUMERO DE FEUILLE OU SE TROUVE LA COUPE</i></p>	 <p>ELEVATION NUMBER <i>NUMERO DU ELEVATION</i></p> <p>SHEET NUMBER WHERE DRAWN <i>NUMERO DE FEUILLE OU SE TROUVE LA COUPE</i></p>	 <p>SECTION LETTER <i>LETTRE DE COUPE</i></p> <p>SHEET NUMBER WHERE DRAWN <i>NUMERO DE FEUILLE OU SE TROUVE LA COUPE</i></p>
<p>DETAIL IDENTIFIER</p>	<p>ELEVATION IDENTIFIER</p>	<p>SECTION IDENTIFIER</p>

TITLE IDENTIFIERS: SECTIONS, DETAILS, ELEVATIONS (LEFT & RIGHT OPTIONS)

 <p>SECTION LETTER <i>LETTRE DE COUPE</i></p> <p>SECTION</p> <p>SCALE: 1:10</p> <p>SHEET NUMBER WHERE DRAWN <i>NUMERO DE FEUILLE OU SE TROUVE LA COUPE</i></p>	<p>SECTION LETTER <i>LETTRE DE COUPE</i></p> <p>SECTION</p> <p>SCALE: 1:10</p> <p>SHEET NUMBER WHERE DRAWN <i>NUMERO DE FEUILLE OU SE TROUVE LA COUPE</i></p>
<p>RIGHT IDENTIFIER</p>	<p>LEFT IDENTIFIER</p>

6.0 SAMPLE USE OF D STRAT CS/AVC2 IDENTIFIERS

It is acceptable practice to have 2 identifiers with the same detail numbers or section letters, provided that the sheet numbers are different. For example, this sample Floor Plan shows 2 Section “A” identifiers for 2 different section details, which is acceptable since one section is drawn on sheet 601 and the other on sheet 602.



FIRST FLOOR PLAN

SCALE: 1:50

APPENDIX E TO ANNEX B – STATEMENT OF WORK

EQUIPMENT LIST

March 7th 2018

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EQT_1 (HDTV TUNER RACK & THINKLOGICAL AV RACK).....	1
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EQT_1 (HDTV TUNER RACK & THINKLOGICAL AV RACK)

Item	Criteria	Quantity	Notes
Fibre Optic Transmitter (For Remote PCs)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	36	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: VQM-0H0024-LCTX
Fibre Optic Rack Mount Chassis (For Remote PCs)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	18	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: VTS-004200
Fibre Optic Transmitter (For Logo Generator)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: VQM-AH0003-LCTX
Fibre Optic Rack Mount Chassis (For Logo Generator)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: CHS-00001

Item	Criteria	Quantity	Notes
Fibre Optic Transmitter (For HDTV TUNERS)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	6	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Models: <ul style="list-style-type: none"> VQM-AH0003-LCTX
Fibre Optic Chassis (For HDTV TUNERS)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	2	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: <ul style="list-style-type: none"> CHS-000004
Fibre Optic Matrix Switch (Matrix Switcher / KVM system)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: <ul style="list-style-type: none"> TLX-MSM-000320
Controller Card (Matrix Switcher / KVM system)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: <ul style="list-style-type: none"> TLX-MSM-C00320

Item	Criteria	Quantity	Notes
Fibre Optic Receiver (Input / Output Card)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	16	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: VXM-D00T16 REV A
SMP (System Management Portfolio Module)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: SMP-M0000320
OSD (On-Screen Display Client Module)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	3	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: SMP-C00001
Fibre Optic Chassis (4 screen Destinations)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: CHS-000004

Item	Criteria	Quantity	Notes
Control Processor (EQT_1)	<ul style="list-style-type: none"> • Eight RS-232 ports • Eight relay ports • Eight IR ports • LAN port to connect to AV network • Four port switch to extend network over a secure isolated Ethernet network • Ability to communicate with other integrated controllers • PoE Power Output = 70W • Height: 1 RU 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • CRESTRON • PRO3 • If alternate product proposed, please provide manufacturer's specification sheet
Control Pack Inter-Block (For Control Processor)	<ul style="list-style-type: none"> • 2 way device control RS-232/422/485 • Support IR/Serial up to 1.2 MHz or Serial TTL 115.2k Baud • Control indicators • I/O up to 8 • 4 Relays • 2 Bidirectional Ports (RS-232/422/485) • 1 LAN (Ethernet 10/100 Tbase) 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • CRESTRON • DIN-AP3 • If alternate product proposed, please provide manufacturer's specification sheet
Media Converter (Red Pc / Black Pc Racks)	<ul style="list-style-type: none"> • Ability to convert 100BaseFX fibre optic signal to 10BaseT or 100BaseTX electrical signal ST connections 	2	<ul style="list-style-type: none"> • Recommended make and models: <ul style="list-style-type: none"> • Luxcom • OM101-MM-ST • OM1001-SX-ST • If alternate product proposed, please provide manufacturer's specification sheet
Media Converter Mounting Panel (EQT_1)	<ul style="list-style-type: none"> • Ability to hold up to three media converters • Height: 1RU 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • Luxcom • MP05 • If alternate product proposed, please provide manufacturer's specification sheet

Item	Criteria	Quantity	Notes
Network Switch (EQT_1)	<ul style="list-style-type: none"> • Rear panel ports • Front facing LED lights • Eight PoE+ ports • PoE Power Output: 130W • Two Gigabit RJ-45 • Two Gigabit SFP 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • Luxul • AMS-1208P • If alternate product proposed, please provide manufacturer's specification sheet
Audio Power Amplifier (EQT_1)	<ul style="list-style-type: none"> • Class D Amplifier • Four channel /200 Watts per channel • 4 or 8 ohms / 800 watts rms output power • Energy Star Qualified • Convection Cooled / Fanless operation • Frequency response 20 Hz to 20 kHz, ±1 dB • THD Noise 0.1%, 20 Hz-20 kHz, 8 ohms, 3 dB below clipping • Voltage Gain 23X (27DB) • Control Port (1) 3.5 mm captive screw connector, 2 pole • Power Input: 100-240 VAC 50/60 Hz • Mounting with Rack Mount 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • EXTRON • XPA-2004 • XPA-2003C • If alternate product proposed, please provide manufacturer's specification sheet
Digital Matrix Processor with rack shelf (Audio distribution)	<ul style="list-style-type: none"> • 4x4 Line Level mixer • DSP signal processing • 24bit/48kHz analog/digital converters • Low latency • Configurable (via software) • Serial Host control port RS 232 3.5 mm • Power consumption 3.6 Watts 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • EXTRON • DMP 44 LC • If alternate product proposed, please provide manufacturer's specification sheet

Item	Criteria	Quantity	Notes
Logo Generator	<ul style="list-style-type: none"> • Internal Memory (min 150 MB) • Supports Media files; Still Image or Video files • Supported format: PNG, JPG, TIFF, BMP, MP4 • Resolution up to 1920X1080 pixels • Chroma sub-sampling up to 4:4:4 • Native resolution decoding • Supports H.264 encoding/decoding • Ethernet & RS-232 pass through control • IR wired control • Web interface for configuration • Front accessible USB port • Min of x1 HDMI output 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • Extron • SMD-101 • If alternate product proposed, please provide manufacturer's specification sheet
UPS	<ul style="list-style-type: none"> • Operates on 120 VAC/60Hz current • Capacity of 1500VA/900 Watts • U module - Height: 2RU • Mounting points: 2 • Power Surge protection • Running downtime: 6 to 18 min (Full/Half load) • Power cord: 10' NEMA 5-15 P Plug • Number of outlets: 8 • Greenguard & RoHS EU Directive 2002/95/ EC - 2011/65/EU Compliant • Covering Warranty: 3yrs / 2yrs for battery cells. 	2	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • Middle Atlantic • UPS S-1500R • If alternate product proposed, please provide manufacturer's specification sheet

FLOOR AREA

Item	Criteria	Quantity	Notes
Fibre Optic Transmitter (For Local PCs)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	41	<ul style="list-style-type: none"> Product cannot be substituted Make: Thinklogical Model: VQM-0H0024-LCTX
Fibre Optic Rack Mount Chassis (For Local PCs)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	21	<ul style="list-style-type: none"> Product cannot be substituted Make: Thinklogical Model: VTS-004200
Fibre Optic Receiver (4 screen destinations - Peripherals)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	13	<ul style="list-style-type: none"> Product cannot be substituted Make: Thinklogical Models: VQM-HAP001-LCRX
Fibre Optic Receiver (4 screen destinations – video audio)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	26	<ul style="list-style-type: none"> Product cannot be substituted Make: Thinklogical Model: VQM-AHV003-LCRX

Item	Criteria	Quantity	Notes
Fibre Optic Receiver (4 screen destinations – Chassis)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	13	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: CHS-000004
Fibre Optic Receiver (6 screen destinations - Peripherals)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Models: VQM-HAP001-LCRX
Fibre Optic Receiver (6 screen destinations – video audio)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	3	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: VQM-AHV003-LCRX
Fibre Optic Receiver (6 screen destinations – Chassis)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	1	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: CHS-000004

Item	Criteria	Quantity	Notes
Fibre Optic HDCP Receiver (HD Wall Displays)	<ul style="list-style-type: none"> The video switching system has been tested and approved to operate in this environment. The Thinklogical system has undergone the Security Assessment and Authorization (SA&A) process and obtained Authorizations to Operate (ATO). 	6	<ul style="list-style-type: none"> Product cannot be substituted <ul style="list-style-type: none"> Make: Thinklogical Model: VEL-0H0003-LCRX
70-inch HD Display (Main Monitor Wall)	<ul style="list-style-type: none"> Not applicable 	4	<ul style="list-style-type: none"> CANADA Supplied Equipment: <ul style="list-style-type: none"> Make: Sharp Model: PN-LE703
55-inch HD Display (Side Wall Display)	<ul style="list-style-type: none"> Not applicable 	2	<ul style="list-style-type: none"> CANADA Supplied Equipment: <ul style="list-style-type: none"> Make: Sharp Model: PN-Y556
HD Scaler (for Main Video Wall and Side Wall Displays)	<ul style="list-style-type: none"> Accepts HDMI video up to 1080p/60 Selectable Output rate HDCP Compliant EDID management HDMI Connector Type A RGB format and YCbCr digital video OSD (front panel control) Power Input 100-240 VAC / Output 12 VDC, 1A, 12 watts Easily mountable behind display frame Low thermal dissipation (-+ 35 BTU/hr) 	6	<ul style="list-style-type: none"> Recommended make and model: <ul style="list-style-type: none"> Extron DSC HD-HD If alternate product proposed, please provide manufacturer's specification sheet

Item	Criteria	Quantity	Notes
Touch Panel	<ul style="list-style-type: none"> Compatible with Control Processor located in EQT_1 15.6-inch touch Screen Table top Powered Via PoE or 24VDC Resolution 1920 x 1080 pixels Brightness 400 nits (cd/m²) Response Time 30ms Color Depth 24-bit, 16,7M LED illumination On-screen keyboard Ethernet Communication 10/100mbps auto-switching /Full-Half-Duplex Supports USB HID Power consumption 25 Watts Temperature : Operate between (0° to 45° C) Mounting with 23° to 45° adjustable tilt Weight: 10.1lb 	5	<ul style="list-style-type: none"> Recommended make and model: <ul style="list-style-type: none"> Crestron TS-1542-TILT If alternate product proposed, please provide manufacturer's specification sheet
Ceiling Speaker	<ul style="list-style-type: none"> Frequency range 75Hz - 20kHz Power Capacity 150 W Cont. Program / 75 W Pink Noise Nominal Coverage Angle 110° Directivity Index 4.6 dB Max SPL 106dB @1m (3.3ft) High Frequency 19mm Dimensions 210 mm X 252 mm Weight 9.7kg (21 lbs) 	4	<ul style="list-style-type: none"> Recommended make and model: <ul style="list-style-type: none"> JBL Control 26CT If alternate product proposed, please provide manufacturer's specification sheet
Front Wall Speaker with Mounting kit	<ul style="list-style-type: none"> Frequency range 65Hz – 19.2kHz Crossover Frequency 2.7 kHz Power Capacity 120 W Cont. Nominal Coverage Angle 115° Horizontal / 55° Vertical Program / 60 W Pink Noise Nominal impedance 8 ohms Weight 4.4kg (9.7 lbs) 	2	<ul style="list-style-type: none"> Recommended make and model: <ul style="list-style-type: none"> Extron SM 26 (speaker) SMK P SM 26/28 (mounting kit) If alternate product proposed, please provide manufacturer's specification sheet
Ceiling Mount Kit (Compatible with Main Monitor Wall Displays – Watch Floor area)	<ul style="list-style-type: none"> Not applicable 	4	<ul style="list-style-type: none"> CANADA supplied Equipment: <ul style="list-style-type: none"> Make: Chief Model: MCM1U
Mount (Compatible with Side Wall Displays – Watch Floor area)	<ul style="list-style-type: none"> Not applicable 	2	<ul style="list-style-type: none"> CANADA supplied Equipment: <ul style="list-style-type: none"> Make: Chief Model: MTM1U

Item	Criteria	Quantity	Notes
Digital Display Clock	<ul style="list-style-type: none"> • Digital / up to 15 characters (alphanumeric) in red, green, yellow and blue color display • Display: 4-digit, 7-segment LED • Character Height:: 2.5" HR/MIN • Character Height:: 1.2" location characters • Accurate to one second per year • Weight: not to exceed 15.8 lbs 	1	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • Digital Display Systems • BTZ-42425-6ERG • If alternate product proposed, please provide manufacturer's specification sheet
Stereo Headphone (At Operation Desks)	<ul style="list-style-type: none"> • Lightweight • Wired • Impedance: 26 Ohms • Frequency response: 18 – 18000 Hz • Cable: min of 1.4m (symmetrical cable) 	24	<ul style="list-style-type: none"> • Recommended make and model: <ul style="list-style-type: none"> • Sennheiser • HD 2.10 • If alternate product proposed, please provide manufacturer's specification sheet

APPENDIX F TO ANNEX B – STATEMENT OF WORK

EVALUATION CRITERIA

March 7th 2018

Appendix F Evaluation Table – Mandatory Criteria

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Appendix F Evaluation Table – Mandatory Criteria

Serial	A "Not met" response in any of the Mandatory Criteria terminates any further consideration	Compliant with Specifications:	Met/Not Met	Reference Location for how vendor meets this requirement.
M1	<p>The bidder must provide three reference projects performed in the last ten years that demonstrate the firm's experience in the overall Project management and accountability to develop and deliver project similar to the one described in Annex B, Statement of work (SOW). To be considered, the projects must have been of a greater value than \$500,000.00 and at least one of the projects must have been in a Government of Canada environment. The experience of the firm in five similar projects (similar scope, value, environment and size) should be clearly identified by providing the following information for each reference project:</p> <p>Project Name</p> <ol style="list-style-type: none"> 1. Name of client organization and the name and telephone number of a reference in the client organization who is familiar with the work performed in the course of the contract; 2. Year and duration of the project; 3. Description of the project including scope; 4. Value of the contract; and 5. Number of resources assigned to the project 	<p>Compliant with Specifications:</p> <p>The bidder must provide three reference projects performed in the last ten years that demonstrate the firm's experience in the overall Project management and accountability to develop and deliver project similar to the one described in Annex B, Statement of work (SOW). To be considered, the projects must have been of a greater value than \$500,000.00 and at least one of the projects must have been in a Government of Canada environment. The experience of the firm in five similar projects (similar scope, value, environment and size) should be clearly identified by providing the following information for each reference project:</p> <p>Project Name</p> <ol style="list-style-type: none"> 1. Name of client organization and the name and telephone number of a reference in the client organization who is familiar with the work performed in the course of the contract; 2. Year and duration of the project; 3. Description of the project including scope; 4. Value of the contract; and 5. Number of resources assigned to the project 		
M2	<p>The bidder provides a narrative indicating that the following deliverables will be provided, as specified in Annex B:</p> <ol style="list-style-type: none"> a. Kick-Off meeting b. Site Visit c. Detailed project schedule d. Screenshots of touch panel layouts e. Acceptance test plan; f. Acceptance Test Results; g. Manufacturers Operating/User Manuals; h. Programming Source and DSP Code; i. Bilingual System Operating Handbook; j. System Design Documentation; k. On-Site Training; and l. Maintenance Warranty Reports. 	<p>The bidder provides a narrative indicating that the following deliverables will be provided, as specified in Annex B:</p> <ol style="list-style-type: none"> a. Kick-Off meeting b. Site Visit c. Detailed project schedule d. Screenshots of touch panel layouts e. Acceptance test plan; f. Acceptance Test Results; g. Manufacturers Operating/User Manuals; h. Programming Source and DSP Code; i. Bilingual System Operating Handbook; j. System Design Documentation; k. On-Site Training; and l. Maintenance Warranty Reports. 		

APPENDIX G TO ANNEX B – STATEMENT OF WORK

Price Sheet

May 25th 2018

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Item	Make	Description	Qty	Price
1	Thinklogical	• VQM-0H0024-LCTX	77	
2	Thinklogical	• VTS-004200	39	
3	Thinklogical	• VQM-AH0003-LCTX	7	
4	Thinklogical	• CHS-00001	1	
5	Thinklogical	• CHS-000004	17	
6	Thinklogical	• TLX-MSC-000320	1	
7	Thinklogical	• TLX-MSM-C00320	1	
8	Thinklogical	• VXM-D00T16 REV A	16	
9	Thinklogical	• SMP-M0000320	1	
10	Thinklogical	• SMP-C00001	3	
11	Thinklogical	• VQM-HAP001-LCRX	14	
12	Thinklogical	• VQM-AHV003-LCRX	29	
13	Thinklogical	• VEL-0H0003-LCRX	6	
14	Crestron	• PRO3	1	
15	Crestron	• DIN-AP3	1	
16	Crestron	• TS-1542-TILT	5	
17	Luxcom	• OM101-MM-ST	2	
18	Luxcom	• MP05	1	
19	Luxul	• AMS-1208P	1	
20	Extron	• XPA-2003C	1	
21	Extron	• DMP 44 LC	1	
22	Extron	• SMD-101	1	
23	Extron	• DSC HD-HD	6	
24	Extron	• SM 26	2	
25	Extron	• SMK P SM 26/28	2	
26	Middle Atlantic	• UPS S-1500R	2	
27	JBL	• Control 26CT	4	
28	Digital Display Systems	• BTZ-42425-6ERG	1	
29	Sennheiser	• HD 2.10	24	
30	N/A	Drawings, Installation, testing, training & all other deliverables	lot	

Item	Make	Description	Qty	Price
31	N/A	Option year 1, one year optional extended warranty, to start after the initial one year warranty period expires (as per warranty clauses 21 and 22 in Annex B, reference clause 23)	ea year	
32	N/A	Option year 2, one year optional extended warranty, to start after the first one year option warranty period expires (as per warranty clauses 21 and 22 in Annex B, reference clause 23)	ea year	
33	N/A	Option year 3, one year optional extended warranty, to start after the second one year option warranty period expires (as per warranty clauses 21 and 22 in Annex B, reference clause 23)	ea year	
34	N/A	Option to extend the manufacturer's warranty of equipment, items 1 to 29 in the Appendix G price list, an additional three years after the first year standard warranty expires (reference clause 24, note c in Annex B)	One lot price	