



**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**

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

**Issuing Office - Bureau de distribution**  
Defence Communications Division. (QD)  
11 Laurier St./11, rue Laurier  
Place du Portage, Phase III, 8C2  
Gatineau, Québec K1A 0S5

|                                                                                                                                                                               |                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Title - Sujet</b><br>VOICE COMMUNICATIONS SYSTEM                                                                                                                           |                                                                           |
| <b>Solicitation No. - N° de l'invitation</b><br>W8485-173810/A                                                                                                                | <b>Date</b><br>2016-11-16                                                 |
| <b>Client Reference No. - N° de référence du client</b><br>W8485-173810                                                                                                       |                                                                           |
| <b>GETS Reference No. - N° de référence de SEAG</b><br>PW-\$\$QD-032-26061                                                                                                    |                                                                           |
| <b>File No. - N° de dossier</b><br>032qd.W8485-173810                                                                                                                         | <b>CCC No./N° CCC - FMS No./N° VME</b>                                    |
| <b>Solicitation Closes - L'invitation prend fin</b><br><b>at - à 02:00 PM</b><br><b>on - le 2016-12-07</b>                                                                    | <b>Time Zone</b><br><b>Fuseau horaire</b><br>Eastern Standard Time<br>EST |
| <b>F.O.B. - F.A.B.</b><br><b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>   |                                                                           |
| <b>Address Enquiries to: - Adresser toutes questions à:</b><br>Pui(032qd), Ivy                                                                                                | <b>Buyer Id - Id de l'acheteur</b><br>032qd                               |
| <b>Telephone No. - N° de téléphone</b><br>(873) 469-4813 ( )                                                                                                                  | <b>FAX No. - N° de FAX</b><br>(819) 934-0610                              |
| <b>Destination - of Goods, Services, and Construction:</b><br><b>Destination - des biens, services et construction:</b><br><br>Specified Herein<br>Précisé dans les présentes |                                                                           |

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

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Amd. No. - N° de la modif.  
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032qd.W8485-173810

Buyer ID - Id de l'acheteur  
032qd  
CCC No./N° CCC - FMS No./N° VME

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## **PART 1 - GENERAL INFORMATION**

### **1 Introduction**

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

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

### **2 Summary**

- 2.1 This bid solicitation is being issued to satisfy the requirement of the Department of National Defence for the provision of a Voice Communication System (VCS) to be installed at 4 Wing, 42 Radar Squadron, Cold Lake, Alberta, and it also includes the option to procure training, service support and a second VCS for 12 escadron de radar, 3ere, Bagotville, Quebec. It is intended to result in the award of one (1) contract for one year with two (2) one-year irrevocable options allowing Canada to extend the term of the contract.
- 2.2 There are security requirements associated with this requirement. For additional information, consult Part 6 - Security, Financial and Other Requirements, and Part 7 - Resulting Contract Clauses. For more information on personnel and organization security screening or security clauses, Bidders should refer to the [Industrial Security Program \(ISP\)](http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html) of Public Works and Government Services Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website".
- 2.3 The requirement is subject to the provisions of the Agreement on Internal Trade (AIT).

### **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.

## **PART 2 - BIDDER INSTRUCTIONS**

### **1 Standard Instructions, Clauses and Conditions**

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions 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 (2016-04-04) 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: 120 days

#### **1.1 SACC Manual Clauses**

A7035T (2007-05-25) List of Proposed Subcontractors

### **2 Submission of Bids**

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

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

### **3 Former Public Servant**

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

### 3.1 Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the Financial Administration Act, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the Supplementary Retirement Benefits Act, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the Canadian Forces Superannuation Act, R.S., 1985, c. C-17, the Defence Services Pension Continuation Act, 1970, c. D-3, the Royal Canadian Mounted Police Pension Continuation Act, 1970, c. R-10, and the Royal Canadian Mounted Police Superannuation Act, R.S., 1985, c. R-11, the Members of Parliament Retiring Allowances Act, R.S., 1985, c. M-5, and that portion of pension payable to the Canada Pension Plan Act, R.S., 1985, c. C-8.

### 3.2 Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? Yes ( ) No ( )

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

### 3.3 Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? Yes ( ) No ( )

If so, the Bidder must provide the following information:

- a. name of former public servant;

- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

#### **4 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.

#### **5 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.

## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **1 Bid Preparation Instructions**

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

Section I: Technical Bid (3 hard copies and 1 soft copy on USB key)

Section II: Financial Bid (1 hard copy and 1 soft copy on USB key)

Section III: Certifications and Additional Information (1 hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

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

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

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

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

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre 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 demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work.

For Mandatory Technical Requirements, bidders must use Annex E– Bid Compliance and Evaluation Matrix to provide their responses.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

Bidders should provide the page number and exact location of the brochures, document, and evidence of compliance, proof or any other material submitted with the Technical Bid to demonstrate compliance.

Bidder should provide their responses in its technical proposal as per the following:



- 1) A compliance statement ("Compliant" or "Non-compliant"). "Compliant" statement will be interpreted as meaning full agreement with the requirement, whereas a Non-complaint statement will be interpreted as meaning not in full agreement with the requirement and the proposal will be deemed non-responsive and not given any v .
- 2) For mandatory requirements, statements such as "Read", "Comply with Intent", "Partial Compliance", "Noted" or the like will be considered as non-responsive; Paragraphs, elements and subparagraphs that convey information rather than a requirement must be marked with "Noted and Understood".

## **Section II: Financial Bid**

- 1.1 Bidders must submit their financial bid in accordance with the Basis of Payment in Annex B. The total amount of Applicable Taxes must be shown separately.

### **1.2 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.

## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 1 Evaluation Procedures

- (a) Bids will be evaluated to determine if they comply with the entire requirement of the RFP including the technical and financial evaluation criteria. Canada will utilize a two-step evaluation process as more fully described herein.
- (b) Bids that do not meet all of the RFP requirements will be declared non-responsive and the Bid will receive no further consideration.
- (c) The quality and completeness of the Bids will form the basis of the evaluation.
- (d) **MANDATORY REQUIREMENTS:** All MANDATORY requirements are identified specifically with the word "shall", "must", "will", or "mandatory".
- (e) An evaluation team composed of representatives of Canada will evaluate the Bids.

#### 1.1 Evaluation Overview and Underlying Principles

- (a) Canada will conduct a two-step evaluation process for this requirement.
- (b) Step 1 consists of a preliminary evaluation of the Bids for those requirements identified in section 2 below, preparation of a Preliminary Evaluation Report by Canada (if required) and Canada's review of any non-responsive Bid's submission in response to the Preliminary Evaluation Preliminary Evaluation Report.
- (c) At the completion of Step 1, only those Bids deemed to be responsive will continue to evaluation at Step 2. Canada will conduct a full Bid evaluation at Step 2 for all responsive Bids in accordance with the process described herein.
- (d) Notwithstanding the limited review which Canada may conduct for certain parts of the Bids during Step 1, Bidders are and will remain solely responsible for the accuracy and completeness of their Bids at all times and Canada does not undertake, by reason of this review, any obligations or responsibility for identifying errors or omissions in Bids submitted nor does Canada undertake to identify any or all such errors or omissions or represent that any or all errors or omissions will be identified. Without limiting the foregoing, Bidders are and will remain solely responsible for ensuring that any information provided in response to a Preliminary Evaluation Report is consistent with any other information originally submitted in their Bid in response to other requirements. Failure to do so may prejudice the evaluation of previously submitted information and/or render the Bid non-responsive, in which case, the Bid will receive no further consideration.
- (e) This two-step Bid evaluation process shall not limit Canada's rights under *SACC 2003 (2016-04-04) Standard Instructions - Goods or Services - Competitive Requirements* nor Canada's right to request or accept any information during the RFP solicitation period or after RFP solicitation period closing in circumstances where the RFP expressly provides for this right.

### 2 Preliminary Evaluation – Step 1

- (a) **Bid review.** For Step 1, the evaluation team will conduct a limited Bid review to:
  - 1. identify any instances where the Bidder has failed to submit documentation which must be submitted concurrently with the submission of the Bid; and
  - 2. identify any instances where the Bidder has failed to meet a mandatory requirement of an administrative nature, such as failure to submit required certification or proof/evidence of

compliance, or where a submitted document lacks the requisite signature(s), only for those documents which must be submitted concurrently with the Bid; and

3. For the financial bid, Canada's review will be limited to identifying whether required data is missing from the Bid or whether GST/HST amounts are not shown separately. In instances where a different price for the same item is provided in more than one location within the financial bid, Canada will identify this discrepancy and the Bidder must confirm which price applies.

Where a required line item has been left blank, only the missing information may be added to the financial bid for Step 2, except that, in those instances where the addition of such information will necessarily result in a change to other pricing or cost information previously submitted as a result of calculations required by the RFP (for example, the calculation to determine a total price), such necessary adjustments shall be identified by the Bidder and only these adjustments shall be made. Any other changes to the Bid shall be considered to be new information and will be disregarded.

(b) **Preliminary Evaluation Report and Information Submission**

1. If any Bid is determined to be non-responsive to the requirements reviewed at Step 1, the Contracting Authority will provide a Preliminary Evaluation Report to all Bidders. For Bidders whose Bid was determined to be non-responsive, the Preliminary Evaluation Report will identify only those areas of the Bid which were non-responsive. For Bidders whose Bids were considered to be responsive, the Preliminary evaluation Report will only identify that they are responsive for the requirements evaluated at Step 1.
2. Bidders may submit information only in response to those items specifically identified in the Preliminary Evaluation Report. Any other changes to the Bid shall be considered new information and will be disregarded.
3. Bidder's whose Bids have been evaluated as non-responsive at Step 1 are not required to continue with the procurement process and may withdraw their Bids at their sole discretion.
4. For Bidders whose Bids are considered to be responsive, the Preliminary Evaluation Report will only identify that they are responsive for the requirements evaluated.
5. All Bidders are requested to provide written confirmation of receipt of the Preliminary Evaluation Report to the Contracting Authority. Bidders who do not confirm receipt will be deemed to have received the Preliminary Evaluation Report as of the date issued by Canada pursuant to Canada's records.
6. Only non-responsive Bidders shall submit further information in response to the Preliminary Evaluation Report.
7. A Bid responding to a Preliminary Evaluation Report must not modify, alter or substitute any of the proposed hardware or software to correct a non-responsive issue. There will be no change permitted to the Bidder's financial bid as a result of the additional or different information submitted except as permitted above. All submitted information must otherwise comply with the requirements of this RFP solicitation. Failure to comply with these requirements will result in the additional or different information being returned to the Bidder without further consideration.
8. Information submitted by non-responsive Bidders in response to the Preliminary Evaluation Report and accepted by Canada will be deemed to replace, in full, only the non-responsive information or response in the Bidder's original Bid as identified in the Preliminary Evaluation

Report and will be used for the remainder of the Bid evaluation process. The additional or different information submitted will only be used to determine the Bidder's responsiveness to the RFP requirements evaluated as non-responsive.

9. The Bidder's response to the Preliminary Evaluation Report must follow the RFP Preparation Instructions (such as, for example, separating financial information from other information as required). Canada requests that Bidders clearly indicate, for each response, which non-responsive requirement identified in the Preliminary Evaluation Report is being responded to.
10. Responses to the Preliminary Evaluation Report must be submitted to the Bid Receiving Unit on or before the date and time specified in the Preliminary Evaluation Report. Failure to do so will result in the Bid being deemed non-responsive and the Bid will receive no further consideration.
11. Any adjustments to a non-responsive Bid are at the Bidder's sole discretion and will be made solely by the Bidder. Canada will not provide information about any other Bid or any information as to how a Bidder should complete its response, if any, to the Preliminary Evaluation Report.
12. For those instances where a Bidder chooses not to submit additional or different information for a requirement identified as non-responsive, the Bidder must submit a response indicating "No Change" for such requirement and the original response for that item will continue to apply. If a Bidder does not provide a "No Change" response, the Bidder shall be deemed to have provided a "No Change" response and the original response for that item shall continue to apply.

- (c) **Proceeding to Step 2.** Bids meeting all the requirements evaluated at Step 1, will proceed to the Step 2 evaluation process described below.

If all Bids are determined to be responsive, no Preliminary Evaluation Reports will be issued and the Contracting Authority will proceed to Step 2 and will complete the full Bid evaluation using the original Bid documents submitted.

### 3 Technical Bid Evaluation – Step 2

Canada will conduct a final and full evaluation for all responsive Bids.

For those Bids which were non-responsive at Step 1, Canada's evaluation of such Bids will take into account the additional or different information submitted in response to the Preliminary Evaluation Report to determine if these requirements have been met as required in the RFP. A Bid will be considered to be non-responsive and receive no further consideration if:

- a. one or more of the requirements initially evaluated as non-responsive continues to be evaluated as non-responsive; or
- b. the additional or different information submitted renders non-responsive any other mandatory requirements (even if previously evaluated as responsive).

### 4 Financial Bid Evaluation

The Financial Bid will be evaluated as follows:

- (a) Bidders must submit firm unit prices DDP Incoterms 2000, firm all inclusive hourly rates FOB destination, and firm material mark-up rate in percentage for material and sub-contract work, Canadian customs duties and excise taxes included, and the applicable taxes excluded.

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032qd  
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- (b). Financial bids will be evaluated in Canadian currency. Prices submitted in foreign currency will be converted into Canadian dollars based on the exchange rate provided by the Bank of Canada at noon on the RFP solicitation period closing date and the resulting conversion values will be used for the evaluation.
- (c). Financial bids will be evaluated based on prices received from Bidders set out in Annex B – Basis of Payment. No other pricing or financial information, if provided, will be evaluated.

## **5 Basis of Selection**

### **5.1 Mandatory Technical Criteria**

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 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.

### **1 Certifications Required with the Bid**

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

#### **1.1 Integrity Provisions - Declaration of Convicted Offences**

In accordance with 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 with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

### **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 specified will render the bid non-responsive.

#### **2.1 Integrity Provisions – Required Documentation**

In accordance with 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.

## **PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS**

### **1 Security Requirements**

1. Before award of a contract, the following conditions must be met:
  - (a) the Bidder must hold a valid organization security clearance as indicated in Part 7 - 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 7 - 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. Bidders are reminded to obtain the required security clearance promptly. Any delay in the award of a contract to allow the successful Bidder to obtain the required clearance will be at the entire discretion of the Contracting Authority.
3. For additional information on security requirements, Bidders should refer to the [Industrial Security Program \(ISP\)](http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html) of Public Works and Government Services Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website.

### **2 Financial Capability**

SACC Manual clause [A9033T](#) (2012-07-16) Financial Capability

## **PART 7 - RESULTING CONTRACT CLAUSES**

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

### **1 Statement of Work**

The Contractor must perform the Work in accordance with the Statement of Work at Annex A and the Contractor's technical bid entitled \_\_\_\_\_, dated \_\_\_\_\_.

#### **1.1 Optional Goods and/or Services**

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A 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, 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.

### **2 Task Authorization**

The Work or a portion of the Work to be performed under the Contract will be on an "as and when requested basis" using a Task Authorization (TA). The Work described in the TA must be in accordance with the scope of the Contract.

#### **2.1 Task Authorization Process**

- 2.1.1. The Technical Authority will provide the Contractor with a description of the task using the DND 626, Task Authorization Form specified in Annex D.
- 2.1.2. The Task Authorization (TA) will contain the details of the activities to be performed, a description of the deliverables, and a schedule indicating completion dates for the major activities or submission dates for the deliverables. The TA will also include the applicable basis (bases) and methods of payment as specified in the Contract.
- 2.1.3. The Contractor must provide the Procurement/Contracting Authority (depending on dollar value), within ten (10) calendar days of its receipt, the proposed total estimated cost for performing the task and a breakdown of that cost, established in accordance with the Basis of Payment specified in the Contract.
- 2.1.4. The Contractor must not commence work until a TA authorized by the Procurement/Contracting Authority has been received by the Contractor. The Contractor acknowledges that any work performed before a TA has been received will be done at the Contractor's own risk.

#### **2.2 Task Authorization Limit**

The Procurement Authority may authorize individual task authorizations up to a limit of \$25,000.00, Applicable Taxes included, inclusive of any revisions.

Any task authorization to be issued in excess of that limit must be authorized by Contracting Authority before issuance.

#### **2.3 Canada's Obligation - Portion of the Work - Task Authorizations**



Canada's obligation with respect to the portion of the Work under the Contract that is performed through task authorizations is limited to the total amount of the actual tasks performed by the Contractor.

## **2.4 Periodic Usage Reports - Contracts with Task Authorizations**

The Contractor must compile and maintain records on its provision of services to the federal government under authorized Task Authorizations issued under the Contract.

The Contractor must provide this data in accordance with the reporting requirements detailed below. If some data is not available, the reason must be indicated. If services are not provided during a given period, the Contractor must still provide a "nil" report.

The data must be submitted on a quarterly basis to the Contracting Authority.

The quarterly periods are defined as follows:

1st quarter: January 1 to March 31;

2nd quarter: April 1 to June 30;

3rd quarter: July 1 to September 30; and

4th quarter: October 1 to December 31.

The data must be submitted to the Contracting Authority no later than thirty (30) calendar days after the end of the reporting period.

### **2.4.1 Reporting Requirement - Details**

A detailed and current record of all authorized tasks must be kept for each contract with a task authorization process. This record must contain:

#### **(a) For each authorized task**

- i. the authorized task number or task revision number(s);
- ii. a title or a brief description of each authorized task;
- iii. the total estimated cost specified in the authorized Task Authorization (TA) of each task, exclusive of Applicable Taxes;
- iv. the total amount, exclusive of Applicable Taxes, expended to date against each authorized task;
- v. the start and completion date for each authorized task; and
- vi. the active status of each authorized task, as applicable.

#### **(b) For all authorized tasks:**

- i. the amount (exclusive of Applicable Taxes) specified in the contract (as last amended, as applicable) as Canada's total liability to the contractor for all authorized TAs; and
- ii. the total amount, exclusive of Applicable Taxes, expended to date against all authorized TAs.

## **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.

### 3.1 General Conditions

2030 (2016-04-04), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

### 3.2 Supplemental General Conditions

4001 (2015-04-01), Hardware Purchase, Lease and Maintenance

4003 (2010-08-16), Licensed Software

4004 (2013-04-25), Maintenance and Support Services for Licensed Software

## 4 Security Requirements

**4.1** The following security requirements (*SRCL and related clauses provided by ISP*) apply and form part of the Contract:

1. The Contractor must, at all times during the performance of the Contract, 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 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 must comply with the provisions of the:
  - (a) Security Requirements Check List and security guide (if applicable), attached at Annex C;
  - (b) *Industrial Security Manual* (Latest Edition).

## 5 Term of Contract

### 5.1 Period of the Contract

The contract period is one (1) year from the date of contract award.

### 5.2 Delivery Date

It is highly desired to have all the firm deliverables received no later than March 31, 2017.

### 5.3 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to two (2) additional one (1) 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 any time 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.

#### **5.4 Delivery Points**

Delivery of the requirement will be made to delivery point(s) specified at Annex A of the Contract.

### **6 Authorities**

#### **6.1 Contracting Authority**

The Contracting Authority for the Contract is:

Ivy Pui  
Public Works and Government Services Canada  
Acquisitions Branch  
Land and Aerospace Equipment Procurement and Support Sector (LAEPSS)  
Place du Portage, Phase III, 11Laurier Street, Gatineau, QC K1A 0S5  
Government of Canada

Telephone: (873) 469-4813  
Facsimile: (819) 953-4510  
E-mail address: [ivy.pui@tpsgc-pwgsc.gc.ca](mailto:ivy.pui@tpsgc-pwgsc.gc.ca)

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

#### **6.2 Technical Authority**

The Technical Authority for the Contract is:

*To be inserted at contract award.*

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.

#### **6.3 Procurement Authority**

The Procurement Authority for the Contract is:

*To be inserted at contract award.*

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.

#### **6.4 Contractor's Representative**

*To be inserted at contract award.*

Bidder to provide name, title, telephone number and e-mail address.

### **7 Payment**

#### **7.1 Basis of Payment**

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid in accordance with Annex B – Basis of Payment. Customs duties are included and Applicable Taxes are extra.

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

Canada's obligation with respect to the portion of the Work under the Contract that is performed through task authorizations is limited to the total amount of the actual tasks performed by the Contractor.

#### **7.2 Limitation of Expenditure – Portion of the Work - Task Authorizations**

1. Canada's total liability to the Contractor under the Contract must not exceed \$ (to be inserted at contract award). Customs duties and Applicable Taxes are included.
2. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
  - a. when it is 75 percent committed, or
  - b. four (4) months before the contract expiry date, or
  - c. as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work,whichever comes first.
3. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

#### **7.3 Method of Payment**

H1001C (2008-05-12) Multiple Payments  
H1008C (2008-05-12) Monthly Payments

## 8 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 time sheets to support the time claimed;
  - b. a copy of the release document and any other documents as specified in the Contract;
  - c. a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses;
  - d. a copy of the monthly progress report.
2. Invoices must be distributed as follows:
    - a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
    - b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

## 9 SACC Manual Clauses

C0705C (2010-01-11) Discretionary Audit  
C0711C (2008-05-12) Time Verification  
A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)  
A2001C (2006-06-16) Foreign Nationals (Foreign Contractor)  
A9006C (2012-07-16) Defence Contract  
A9062C (2011-05-16) Canadian Forces Site Regulations  
C2000C (2007-11-30) Taxes - Foreign-based Contractor  
C2604C (2013-04-25) Customs Duties, Excise Taxes and Applicable Taxes – Non Resident  
C2800C (2013-01-28) Priority Rating  
C2801C (2014-11-27) Priority Rating - Canadian Contractors  
D5510C (2014-06-26) Quality Assurance Authority (DND) - Canadian-based Contractor  
D5515C (2010-01-11) Quality Assurance Authority (Department of National Defence) - Foreign- based and United States Contractor  
D5604C (2008-12-12) Release Documents (DND) - Foreign-based Contractor  
D5605C (2010-01-11) Release Documents (DND) - United States-based Contractor  
D5606C (2012-07-16) Release Documents (DND) - Canadian-based Contractor

## 10 Certifications and Additional Information

### 10.1 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.

## **11 Applicable Laws**

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

## **12 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 2030 (2016-04-04), General Conditions – Goods (Higher Complexity)
- (c) the supplemental conditions 4001 (2015-04-01), Hardware Purchase, Lease and Maintenance;
- (d) the supplemental conditions 4003 (2010-08-16), Licensed Software;
- (e) the supplemental conditions 4004 (2013-04-25), Maintenance and Support Services for Licensed Software;
- (f) Annex A, Statement of Work;
- (g) Annex B, Basis of Payment;
- (h) Annex C, Security Requirements Check List;
- (i) the signed Task Authorizations (including all of its annexes, if any);
- (j) the Contractor's bid dated \_\_\_\_\_, *(to be inserted at Contract award)*

## **13 Insurance Requirements**

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

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## **ANNEX A – STATEMENT OF WORK**

### **STATEMENT OF WORK**

#### **FOR**

### **VOICE COMMUNICATION SYSTEM (VCS)**

#### **FOR**

### **4 WING, 42 RADAR SQUADRON, COLD LAKE, ALBERTA**

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## LIST OF ACRONYMS AND ABBREVIATIONS

|         |                                                            |
|---------|------------------------------------------------------------|
| ATP     | Acceptance Test Plan                                       |
| BITE    | Built In Test Equipment                                    |
| CA      | Call Access                                                |
| CDRL    | Contract Data Requirements List                            |
| COTS    | Commercial Off The Shelf                                   |
| CSA     | Canadian Standards Association                             |
| CTP     | Course Training Plan                                       |
| CTS     | Course Training Schedule                                   |
| DA      | Direct Access                                              |
| DID     | Data Item Description                                      |
| DND     | Department of National Defence                             |
| ELE     | Estimated Life Expectancy                                  |
| EMI/EMC | Electromagnetic Interference/Electromagnetic Compatibility |
| er      | escadron de radar                                          |
| FAT     | Factory Acceptance Test                                    |
| G/G     | Ground/Ground                                              |
| G/A/G   | Ground/Air/Ground                                          |
| HS      | Headset                                                    |
| Hz      | Hertz                                                      |
| IC      | Intercom                                                   |
| ILS     | Integrated Logistics Support                               |
| ISO     | International Organization for Standardization             |
| LRU     | Line Replaceable Unit                                      |
| LS      | Loudspeaker                                                |
| MDF     | Main Distribution Frame                                    |
| MIL-STD | Military Standards                                         |
| NATO    | North Atlantic Treaty Organization                         |
| NCAGE   | NATO Commercial and Government Entity Code                 |
| NSN     | NATO Stock Number                                          |
| OEM     | Original Equipment Manufacturer                            |
| PCIA    | Physical Configuration Installation Audit                  |
| PHS     | Packaging, Handling & Storage                              |
| QA      | Quality Assurance                                          |
| Rdr     | Radar                                                      |
| RTOC    | Remote Training Operations Centre                          |
| SRPL    | Spare and Repair Parts List                                |
| SAT     | Site Acceptance Test                                       |
| SATP    | Site Acceptance Tests Plan                                 |
| SOW     | Statement of Work                                          |
| SPTD    | Supplementary Provisioning Technical Documentation         |
| SERL    | Support Equipment and Requirements List                    |
| TED     | Touch Entry Display                                        |
| TA      | Technical Authority                                        |

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|      |                                    |
|------|------------------------------------|
| TCR  | Tactical Control Radar             |
| TRR  | Test Readiness Review              |
| VAC  | Voltage Alternative Current        |
| VMSR | Verification Matrix Summary Report |
| USA  | Unites States of America           |
| UL   | Underwriters Laboratories          |
| VC   | Voice Call                         |
| VCS  | Voice Communication System         |

## 1. INTRODUCTION

### 1.1 BACKGROUND

The Tactical Control Radar (TCR) installed at 4 Wing, 42 Radar (Rdr) Squadron, Cold Lake, Alberta was acquired in 1991-1992. It is used by the Department of National Defence (DND) for Air Defence operations. The voice switch which is included in the TCR is well past the Estimated Life Expectancy (ELE) and is no longer supportable. With no spares for some modules and a severe shortage of others, any failure could be catastrophic to Air Defence operations.

### 1.2 SCOPE

DND has a requirement to procure a Voice Communication System (VCS) to replace the obsolete VCS at the Remote Training Operations Centre (RTOC) at the Tactical Control Radar (TCR) at 4 Wing, 42 Radar (Rdr) Squadron, Cold Lake, Alberta. The VCS must not be a prototype or a pre-production model, it must be a proven, fielded system that is already in service and is considered a Commercial Off The Shelf (COTS) product.

### 1.3 APPLICABLE DOCUMENTS

#### 1.3.1 Standards and Certification

- a. CSA 60950-1-07/UL 60950-1 Safety Standards;
- b. MIL-STD-1472G Human Engineering Design Criteria for Military Systems, Equipment and Facilities;
- c. MIL-STD-1521B Technical Reviews and Audits for System, Equipment, and Computer Software;
- d. EN61000-4-2 Electrostatic Discharge; and
- e. ISO 9001:2008 (International Organization for Standardization) Quality Management Systems.

#### 1.3.2 **Installation Standards.** The following lists installation standards for telecommunications equipment. Any other standards must be approved by the DND TA prior to implementation:

- a. ANSI/TIA/EIA-568-B.1-1-2001;
- b. ANSI/TIA/EIA-568-B.1-2001;
- c. ANSI/TIA/EIA-568-B.2-2001;
- d. ANSI/TIA/EIA-568-B.2-1-2002;
- e. ANSI/TIA/EIA-568-B.3-2000;
- f. ANSI/TIA/EIA-568-B.3-1-2002;
- g. ANSI/TIA/EIA-569B;
- h. ANSI/TIA/EIA-606-A-2002;
- i. ANSI-J-STD-607-A-2002;
- j. IPC/WHMA -A -620;

- k. C22.2 No. 0.12-M1985; and
- l. TBITS 6.9.

1.3.3 **Grounding and Bonding.** The Contractor must provide DND with specific building ground requirements to support the VCS system for the RTOC. Grounding must utilize a facility single-point ground system. The Canadian Electrical Code Sections 10 and 60 refer. The system electrical bonding must provide electrical continuity across external mechanical interfaces on electrical and electronic equipment, both within the equipment and between the equipment and other system elements, for control of Electronic Environmental Effects (E3) such that the system operational performance requirements are met. Bonding of all electrically conductive items subject to electrical fault currents must be provided to control hazard voltages and allow proper operation of circuit protection devices. The VCS must be electromagnetically compatible within itself, and within the environment in which it will operate such that system operational performance requirements are met.

1.3.4 **Specifications**

- a. A-LM-505-010/JS-001 Official Languages Requirements for Technical Documentation;
- b. C-01-100-100/AG -006 - Specification - Writing, Format and Production of Technical Publications;
- c. D-01-100-201/SF-000 for Preparation of Installation Instructions;
- d. D-01-100-203/SF-000 Preparation of Operating Instructions;
- e. D-01-100-207/SF-000 Preparation of Parts Identification Lists;
- f. D-01-100-214/SF-000 - Define Provisioning Documentation (PD) Requirements;
- g. D-01-400-002/SF-000 – National Defence Specification for Levels of Engineering Drawings and Associated Lists;
- h. A-LM-505-010/JS-001 Official Languages Requirements for Technical Documentation;
- i. D-LM-008-001/SF-001 - Canadian Forces Methods of Packaging; and
- j. D-02-002-001/SG-001 - Identification Marking of Canadian Military Property.

**2. REQUIREMENT**

2.1 VOICE COMMUNICATION SYSTEM

- 2.1.1 The Contractor must perform the work specified in this Statement of Work (SOW) including acquisition, site preparation, documentation, installation, integration, testing and sustainment of the VCS. The VCS must include six (6) operator positions and a separate maintenance position at 42 Radar Squadron, Cold Lake.
- 2.1.2 The Contractor must supply all necessary tools, equipment, hardware, software, and engineering and installation support services to carry out the work in this SOW. All hardware and software provided must be the most recent version of COTS items available.
- 2.1.3 The Contractor must provide a recommended spares kit for the VCS.

2.1.4 The Contractor must meet or exceed all the technical requirements specified in Appendix AA – Technical Specifications.

## 2.2 VCS INSTALLATION

2.2.1 The Contractor must install, wire and test the VCS system at the RTOC.

2.2.2 **RTOC Design.** The RTOC design must take into account Human Factors Engineering (HFE) and Computer Human Interfacing (CHI) considerations in accordance with MILSTD 1472G (or latest version). The Contractor must present how the RTOC layout addresses the HFE and CHI for DND approval.

2.2.3 **Mandatory Site Visit.** The Contractor must visit 42 Radar Cold Lake for a pre-installation visit to determine, at a minimum, the following:

Cable Lengths and types;  
Rack Location;  
Rack Layout;  
Power and grounding requirements;  
Console location;  
Cable Tray;  
Circuit requirements; and  
Bix requirements.

2.2.4 **Transition Plan.** The Contractor must submit a Transition Plan in accordance with CDRL C-TP-001. The Transition Plan must include the work effort and requirements to accomplish each phase of transition for the installation. The Transition Plan must include a cutover plan to ensure that communication connectivity during installation is maintained.

2.2.5 **Patch Panels.** The Contractor must install jackfields/patch panels ‘in-circuit’ for the radio and landline VCS circuits. These patch panels must be labelled to identify all connected functions. The Contractor must supply a minimum of ten (10) Test cords.

2.2.6 **Operator Positions.** The RTOC in 42 Rdr must have a total of six (6) VCS positions installed. Operator positions must be identical. The Contractor must provide a physically stable, secure mount for each Operator position that allows the operator to easily access the touchscreen; the Contractor must supply the table/stand. All keyboards and peripheral equipment in the RTOC must be retractable and storable.

2.2.7 **Maintenance Position.** The Maintenance Position must be co-located with the VCS rack(s). The VCS must not be co-located with the consoles located in the RTOC but in the adjacent maintenance room. The Maintenance position must either be installed in the VCS rack or an adjacent rack depending on rack design. The Maintenance position must be a one (1) Rack Unit (RU), retractable keyboard, screen combination.

- 2.2.8 **Racks.** The Contractor must supply standard equipment rack(s). The rack spacing must be the standard 1-3/4 inch for one (1) rack unit. Blank/unused spaces must be fitted with blank panels. Protection (360°) of cable entry ports must be installed to protect incoming/outgoing power, ground and control cables from chafing/rubbing. The rack(s) must be levelled, attached to the floor, powered and grounded.
- 2.2.9 **RTOC Cabling.** Unless otherwise approved by DND, all RTOC cabling must be, at a minimum:
- FT 4 Rated;
  - Double shielded;
  - Category 6; and
  - Adhere to industry standard colour codes.
- 2.2.10 **Demarcation.** Each DND facility has a wall-mounted demarcation point, Main Distribution Frame (MDF), for cable connection and signal routing. Cross connect sheets for existing equipment are available on request. All cabling must terminate, and cross connect, in the building equipment room on the “Bix” interconnect terminals. The Contractor must provide DND with the proposed standards that will be used for this installation; these standards must be approved by DND. DND will provide the cable records of the present configuration as well as a template for new cable installations in Microsoft Excel; the Contractor must provide up-dated cable records for the completed installation. At a minimum, the Contractor must provide a draft/red-line copy of all installation cable records as part of Site Acceptance Test (SAT).
- 2.2.11 **Wiring Requirements.** At a minimum:
- All cabling must be dressed in accordance with the installation standards listed in para 1.3.2 and routed utilizing existing cable tray systems;
  - All cabling must be labelled at both ends in a manner agreed upon by both DND and the Contractor;
  - All cabling from the operations room in the RTOC to the RTOC demarcation point at the Main MDF at 42 Rdr must be supplied by the Contractor. The final layout of the MDF will be approved by DND prior to installation. The Contractor must supply, at a minimum, connectors, cables, crimping tools, pins, back shells, cable ties, cross-connect wire, and termination tool(s). The Contractor must supply replacement termination blocks for the existing MDF terminals;
  - The Contractor must ensure that all Bix blocks used throughout the installation are labelled using the appropriate Bix colour label as per the DND standard listed below: and
    - Blue – Bix to Bix located in another Bix field such as a cabinet or Intermediate Distribution Frame (IDF);
    - Yellow – Bix to equipment harness in a cabinet or rack;
    - Red – Multiplier Bix block;

- iv. Green - Incoming cable from the MDF and indicate the Bix block position on the Bix field; and
  - v. White – Spare.
- e. The blocks in a Bix terminal must be identified with the alpha-numeric designation for the Bix position in that Bix field. (I.e. T3/2D where 'T' is terminal, '3' is the terminal number, '2' is the Bix mount location and 'D' is the Bix block location on the mount).

#### 2.2.12 Existing Facilities.

- a. There are a total of two (2) C7999 Remote Control heads (for use with AN/GRC171 UHF A/G/A Transceivers) currently installed in a console at 42 Rdr. The Contractor must ensure these devices remain in any console design and maintain connectivity.
- b. The Contractor must integrate the current Commlog Voice Recorder (CVDS DL2410), installed at the RTOC, to record all Ground/Air/Ground (G/A/G) radios and designated Ground/Ground (G/G) signals. This recorder provides channelized Voice Recording. Connection to this recorder is at the RTOC MDF.
- c. There is a separate console in the RTOC control room, at 42 Radar, which includes up to eight (8) hard drives, a keyboard, modems, a terminal and a Proconnect 8 Station CPU switch. These components comprise the remote control system for the current low-level communication (LLC) system at Primrose Lake Evaluation Range (PLER). This equipment does not form part of the VCS contract and therefore, this equipment must remain operational.

#### 2.2.13 Operational Test & Evaluation (OT&E)

- a. The Contractor must support the Operational Test and Evaluation (OT&E) of the VCS, which is a prerequisite to acceptance of the system by operations staff. The Contractor must, at a minimum, provide:
  - i. Direct support including planning and conducting OT&E;
  - ii. Applicable manuals, supporting plans and documentation defined during planning; and
  - iii. Investigation and resolution of system/equipment deficiencies
- b. The VCS must satisfy all 1 Canadian Air Division Operational Test and Evaluation requirements. There is an operational requirement to obtain Operational Airworthiness (OA)

### 2.3 PROJECT MANAGEMENT

The Contractor must assign a Project Manager, who must be the single point of contact with DND for the duration of the contract. The Contractor's Project Manager must manage all technical performance and data delivery requirements of the contract.

## 2.4 HUMAN FACTOR ENGINEERING

The Contractor must apply personnel hazard and safety criteria in a manner equivalent to MIL-STD-1472G to the equipment and system design (hardware and software) to ensure safety of personnel responsible for the testing, installation, implementation, training, operation and maintenance of all sub-systems.

## 2.5 LANGUAGE REQUIREMENTS

All meetings and correspondence are to be conducted in English. Publications must be produced in English and French using Microsoft Word (contractor format is acceptable). The bilingual documentation must be in accordance with A-LM-505-010/JS-001 Official Languages Requirements for Technical Documentation. The VCS system user interfaces must be available in French and English.

All soft copies of documentation to support the VCS must be in Microsoft Word, Microsoft Excel and Microsoft Visio Professional or a TA approved alternate format

## 2.6 MAINTENANCE

The Contractor must provide recommended Preventive maintenance schedules and corrective maintenance plans and procedures as described in the Maintenance Plan CDRL C-ILS-002.

## 2.7 QUALITY ASSURANCE (QA) SAFETY AND HEALTH

The VCS must comply with applicable Canadian Standard Association (CSA) standards for safety and health, or equivalent standard, approved by the TA.

## 2.8 INTEGRATED LOGISTIC SUPPORT (ILS)

2.8.1 **General.** The VCS supplier must demonstrate supportability for a minimum of ten (10) years. Each ILS package must include all the items listed in CDRL C-ILS-001. The ILS documentation must be prepared in accordance with CDRL C-PUB-001 & C-PUB-002.

2.8.2 **Spare and Repair Parts List (SRPL).** The Contractor must provide a recommended Spare and Repair Parts Lists for the VCS per CDRL C-ILS-004.

2.8.3 **Supplementary Provisioning Technical Documentation (SPTD).** The SPTD, as prepared by the actual manufacturer of the item and is required for the codification and cataloguing of all items listed in the SRPL. At a minimum, the Contractor must provide:

- a. Name and Description of the Item;
- b. Unit Price;
- c. NATO Stock Number (NSN), if applicable;



- d. Original Equipment Manufacturer (OEM) NATO Commercial and Government Entity Code (NCAGE) Number, from Original Equipment Manufacturer; and
  - e. OEM Item Part Number.
- 2.8.4 **Drawings.** The Contractor must provide Level 2 Engineering Drawings, Associated Lists and Schematic or Block diagrams as specified in D-01-400-002/SF-000 paragraph 3.3.2, and the guidelines specified in CDRL C-PUB-002. This documentation package must provide a high-level parts breakdown and general description of all the proposed VCS components and sub-components. These diagrams and descriptions must serve to place the components in an understandable and logical framework, and for the precise makeup of each individual system, a site specific Configuration Manual must be provided.
- 2.8.5 **Support Equipment and Requirements List (SERL).** The Contractor must provide an SERL as per CDRL C-ILS-003 and must include all software / documentation that is required to operate the equipment.
- 2.8.6 **Special Support Equipment.** The Contractor must provide, if any, a list of all special support test equipment (e.g. specific meter made for the VCS that is required to maintain the VCS) as per CDRL C-ILS-003 and the equipment listed must be delivered at the Site Acceptance Test (SAT).
- 2.8.7 **Special Tools.** The Contractor must provide, if any, a list of all special tools that are required to perform maintenance (e.g. specific key/tool to open the cabinets) and these tools must be delivered at the SAT.
- 2.8.8 **Identification Plate.** The Contractor must provide the VCS with an identification plate with the following data at a minimum:
- a. VCS Model Number;
  - b. VCS Item Name;
  - c. VCS Serial Number;
  - d. Manufacturer Name; and
  - e. Special Characteristics, if applicable (e.g. 110 VAC 60 Hz).
- 2.8.9 **Physical Installation Configuration Audit (PCIA).** The Contractor must conduct a formal PCIA which includes a detailed audit of engineering drawings, specifications, technical data and manuals for sub-systems. The DND TA must be advised 30 days prior to the PCIA. The review must also include an audit of the released engineering documentation and quality control records to make sure the as-built configuration is reflected in the documentation as per MIL-STD-1521B.
- 2.8.10 **Packaging, Handling & Storage (PHS).** The Contractor must individually pack and label each VCS in accordance with CDRL C-ILS-005 and must include, at a minimum, the following information:

- a. Item Model Number;
- b. Item Name;
- c. Serial Number (when applicable); and
- d. Special Characteristics, if applicable.

### **3. OPTIONAL REQUIREMENT**

#### **3.1 TRAINING**

- 3.1.1 The Contractor must provide the following optional training courses, in accordance with Appendix AD, on an “as and when requested” basis at the site specified by the Technical Authority (TA):

- a. Technical Maintenance Course
- b. Operator Training Course

#### **3.2 SERVICE SUPPORT**

- 3.2.1 The Contractor must provide the following service support, using the DND 626 “Task Authorization” form, on an “as and when requested” basis. The tasking process, administration, procedures are identified in the resultant contract.

a. On Site Corrective Maintenance

- i. Scheduled Mobile Repair Parties (MRP). The Contractor may use the scheduled MRP to perform the Work defined in the Task SOW via a DND 626 Task Authorization and/or to affect repairs or modifications to the installations. The scheduled MRP may also be used to perform in depth system performance checks.
- ii. Unscheduled MRP. When an operational mission is endangered and an immediate response is required, the Contractor must provide the requested MRP within 48 hours.

b. Off Site Corrective Maintenance

The Contractor must provide telephone technical support during core working hours (7am to 5 pm Monday to Friday) to the Technical Authority (TA) (or the TA’s designated representative) in order to troubleshoot Voice Switch system faults.

c. Repairs

- i. The Contractor must monitor the cost of each repair to ensure that total repair costs remain within approved limits. Appropriate management control procedures must be in place and records maintained. These control procedures and records shall be available for review and audit on request.

- ii. Unless specifically identified within the contract, equipment Turn-Around Time to a serviceable state must be achieved in no more than 90 Calendar days.
  - iii. The Contractor must maintain the capability to provide replacement parts or suggest “form, fit, function” replacements for all Voice Switch components.
  - iv. The repair process will be via the TA/LCMM. The unit will indicate to the TA/LCMM that there is a part in need of repair; the PA will initiate a DND 626 Task Authorization and supply shipping instructions to the repair facility.
- 3.3 OPTIONAL VOICE COMMUNICATION SYSTEM FOR 12 ESCADRON DE RADAR (ER), 3ere, BAGOTVILLE, QUEBEC
- 3.3.1 The Contractor must provide DND the option to procure an additional VCS with four (4) operator positions to be deployed at 12 escadron de radar (ER), 3ere, Bagotville, Quebec.
  - 3.3.2 The Contractor must perform the work specified in this Statement of Work (SOW) should DND exercise the option to purchase this additional VCS.
  - 3.3.3 The Contractor must provide a recommended spares kit for this optional VCS.
  - 3.3.4 The Contractor must meet or exceed all the technical requirements specified in Appendix AA – Technical Specifications.
- 4. TEST AND ACCEPTANCE**
- 4.1 Verification Matrix Summary Report (VMSR). The Contractor must provide a VMSR in accordance with CDRL C-TEST-001 indicating how each technical and operational requirements will be verified, the stage of testing (Factory Acceptance Test, Site Acceptance Test), and when the verification will take place. This matrix must also be used to record the status and subsequently close the verification effort for each individual requirement. Every test must be assessed by the Contractor on a pass/fail basis, with the pass/fail criteria documented in the test procedures.
  - 4.2 The existing test data/results, where the required performance has already been demonstrated and documented in the same equipment configuration and test environment, proposed to be used by the Contractor must be submitted to Canada no later than 30 calendar days prior to conduct of the planned tests. Should Canada consider that the existing test data is not sufficient to prove compliance, the Contractor must conduct full or partial retesting as required.

4.3 Types of Tests. The Contractor must plan, develop, and conduct functional level tests to include the following:

- a. Hardware integration tests;
- b. System-level and sub-system software integration tests;
- c. Internal interface tests (sub-system level);
- d. External interface tests;
- e. Environmental tests;
- f. System verification and acceptance tests to demonstrate operational performance; and
- g. Regression tests and re-tests as necessitated by changes/modifications to the hardware or software and by test failures.

4.4 Test Conduct. At least one Government representative, or designate, must be present to witness the Factory Acceptance Test (FAT) and the Site Acceptance Test (SAT). The Contractor must notify the TA via email at least 30 days prior to the conduct of each formal test (FAT, SAT).

4.5 Factory Acceptance Test (FAT)

4.5.1 The Contractor must plan and conduct a FAT before the delivery of the VCS to fully demonstrate that the VCS and subsystem equipment provides the required functionality and performance.

4.5.2 Prior to any FAT, the Contractor must prepare and deliver a Factory Acceptance Test Plan (FATP) and a Factory Acceptance Test Procedures (FATPR) in accordance with CDRL C-TEST-002 and C-TEST-004 respectively.

4.5.3 The Test Readiness Review (TRR) must be held after FATPR are approved by Canada but prior to commencement of the FAT.

4.5.4 The Contractor must conduct the FAT on all equipment as follows:

- a. FAT must include interface tests (for internal and external interfaces) using simulated inputs or live feeds if available. All interfaces must be tested live unless DND approval of factory simulations in lieu of testing is received; and
- b. Any deviations in the parameters to be tested or measured must be approved by the TA. Formal acceptance testing for the FAT must be part of the Factory Acceptance Test Plan (FATP). The FATP must address how, who, what and where the Contractor proposes to demonstrate proof of performance and compliance with the SOW requirements. Those performance/requirements that can't be tested in the FAT must be identified to DND.

4.5.5 Upon completion of FAT, the Contractor must prepare and deliver the Acceptance Test Report (ATR) in accordance with CDRL C-TEST-006.

- 4.5.6 Failure to Comply. In the event that the VCS fails to meet any of the FAT performance requirements, the Contractor must take corrective action to remedy the problem at no additional cost to DND. Upon review of the cause of the deficiency, and following corrective action being taken by the Contractor, the Contractor must again verify the performance of the unit to ensure that it meets the requirements using the agreed FATP.
- 4.6 Site Acceptance Test (SAT)
- 4.6.1 The Contractor must plan and conduct formal SAT at 4 Wing, 42 Radar Squadron, Cold Lake, Alberta (and at 12 escadron de radar (er), 3 ere, Bagotville Quebec, if applicable) to demonstrate compliance to the requirements of this SOW. The SAT must verify system functionality and performance in Air Defence environments and must be conducted on a non-disruptive basis to operations.
- 4.6.2 Prior to the SAT, the Contractor must prepare and deliver a Site Acceptance Test Plan (SATP) and Site Acceptance Test Procedure (SATPR) in accordance with CDRL C-TEST-003 and C-TEST-005 respectively.
- 4.6.3 The Contractor must deliver the special support equipment (para 2.10.6) and special tools (para 2.10.7) to the SAT site for the performance of the SAT.
- 4.6.4 At a minimum, the Contractor must provide a draft/red-line copy of all installation cable records as part of SAT (para 2.3.10 Demarcation).
- 4.6.5 The Test Readiness Review (TRR) must be held after SATPR are approved by Canada but prior to commencement of the SAT.
- 4.6.6 The Contractor must coordinate closely with Canada in scheduling of the SAT to ensure proper coordination with supporting agencies. (If applicable, the Contractor must allow a minimum of two weeks between the completion of SAT at Cold Lake, AB and the commencement of SAT at Bagotville, QC).
- 4.6.7 The Contractor must provide Canada with at least 30 day notice prior to the formal commencement of SAT.
- 4.6.8 Tests that are physically not possible or practical to conduct in a factory/plant environment must be performed by the Contractor during the SAT.
- 4.6.9 The Contractor must also repeat tests already performed during the FAT for those parameters that can potentially behave differently from the factory to the field. All internal and external interfaces must be tested at the SAT, using live feeds.
- 4.6.10 The Contractor must correct all site deficiencies prior to formal site acceptance by Canada.

4.6.11 Upon completion of SAT, the Contractor must prepare and deliver the Acceptance Test Report (ATR) in accordance with CDRL C-TEST-006.

4.6.12 Failure to Comply. In the event that the VCS fails to meet any of the SAT performance requirements, the Contractor must take corrective action to remedy the problem at no additional cost to DND. Upon review of the cause of the deficiency, and following corrective action being taken by the Contractor, the Contractor must again verify the performance of the unit to ensure that it meets the requirements using the agreed SATP.

## **5. DELIVERABLES**

5.1 Six (6) fully tested and operational operator console positions installed at 42 Radar Squadron Cold Lake.

5.2 Software licences for the VCS prior to the system acceptance. Any software upgrades must be provided at no additional cost to DND during the warranty period.

5.3 All Maintenance and Operator Manuals delivered to the site prior to SAT. All manuals must adhere to the standards specified in CDRL C-PUB-001 and must be delivered in an MS Word format compatible with Word 2010 or a TA approved alternate format. The final version of these manuals must be as follows:

- a. Hard copy – 2 copies, one copy to the site and one copy to the TA.
- b. Soft copy – 1 copy to the TA

5.4 As-built drawings required by the project to be delivered to the site prior to SAT. All drawings must adhere to the standards detailed in the SOW and must be delivered in an MS Visio format compatible with Visio 2010 or a TA approved alternate format. The final version of drawings must be as follows:

- a. Hard copy – 2 copies, one copy to the site and one copy to the TA.
- b. Soft copy – 1 copy to the TA

5.5 All cross connectivity tables must be delivered to the site prior to SAT. All tables must adhere to the standards detailed in the SOW and must be delivered in an MS Excel format compatible to Excel 2010 or a TA approved alternate format. The final version of these manuals must be as follows:

- a. Hard copy – 2 copies, one copy to the site and one copy to the TA.
- b. Soft copy – 1 copy to the TA

5.6 Recommended Spares List as approved by the TA.

5.7 Recommended Spares to be supplied “as and when” requested by the CA.

Solicitation No. - N° de l'invitation  
W8485-173810/A  
Client Ref. No. - N° de réf. du client  
W8485-173810

Amd. No. - N° de la modif.  
File No. - N° du dossier  
032qd.W8485-173810

Buyer ID - Id de l'acheteur  
032qd  
CCC No./N° CCC - FMS No./N° VME

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5.8 Optional training

5.9 Optional service support

5.10 Optional VCS for 12 escadron de radar (er) 3ere, Bagotville, Québec

**TECHNICAL SPECIFICATIONS  
FOR  
VOICE COMMUNICATION SYSTEM (VCS)  
FOR  
4 WING, 42 RADAR SQUADRON, COLD LAKE, ALBERTA**



## SPECIFICATIONS

## 1.1 VCS Specifications.

## 1.1.1 System Performance Criteria. The Contractor must ensure that:

- a. Power Requirements. The VCS operates on 110 VAC, 15 A+/- 10 % at 60 Hz;
- b. Environment. The VCS adheres to the following:
  - i. The operating temperature must be from 0°C to +50°C;
  - ii. The storage temperature must be from -40°C to +50°C (excluding the Touch Screen which must range from -10°C to +50°C); and
  - iii. The VCS operates in conditions where absolute humidity is 0 to 95% non-condensing.
- c. Software. The Contractor must provide two (2) serial numbered copies of the system software for the VCS at each site upon delivery. After delivery, if software updates or revisions are required, the new software version must be approved by the DND TA in writing and must be identified, showing the portion that has been revised, authority for change if applicable, date of revision, revision number and necessary instructions.

## 1.1.2 Circuits. The Contractor must ensure that the exact number of and type of circuit is configurable and will depend upon site requirements. The number and type of audio interface modules must also be configurable. The VCS must be capable of integrating/interfacing with the following at each of the six (6) console positions at each site:

- a. Eight (8) PABX circuits connected to a Public Switched Telephone Network (PSTN);
- b. Four (4) "Ring Down" and two 4 Wire E&M analog circuits;
- c. Canadian Switched Network (CSN);
- d. Access to a minimum of thirty-six (36) G/A/G Radios (4 Wire E&M); which includes expansion positions;
- e. Tactical Satellite communications data/voice relay to North Bay; and
- f. Satellite Voice Radios (C2, time critical targeting, combat SAR).

## 1.1.3 Console Positions. The Contractor must ensure that each operator position utilizes touchscreen technology. Each console position must have the following characteristics:

- a. The VCS allows any operator position to monitor, but not override, the voice communications of any other position;
  - b. Each operator position is equipped with two (2) user Jacks; one (1) for the operator and one (1) for the 'supervisor' monitor and over-ride capability. The supervisor jack must have the additional functionality to override the voice communications of the user jack;
  - c. At a minimum, there must be two (2) loudspeakers (radios and landline) per operator position, with a volume control for each;
  - d. Each operator position must be equipped with a Push To Talk (PTT) footswitch jack and footswitch;
  - e. The VCS must have intercom capabilities between all operator positions at the RTOC; and
  - f. Each operator position must have a visual "in-use" indication. Each operator position must have a visual and audible call indicator (ringer) that can be turned on or off. The operator must be able to answer calls (hear ringer) with or without the headset and from anywhere in the RTOC Ops area.
- 1.1.4 Maintenance Position. The Contractor must ensure that each VCS includes a maintenance position separate from the six (6) operator positions the site.
- 1.1.5 VCS Architecture and Reliability. The Contractor must ensure that each VCS is a distributed system made up of independent switching nodes and operator position equipment; the reliability of each VCS must be of 99.5% availability with a Mean Time Between Failure (MTBF) of 10,000 hours and a Mean Time To Repair (MTTR) of no more than thirty (30) minutes.
- 1.1.6 Common Equipment. The Contractor must ensure that the common equipment rack of each VCS is located in the adjacent equipment room and must contain all the electronics necessary to interface with the external communication resources, and the operator positions, (i.e. Radios, Landlines and 4 Wire circuits etc.) in the RTOC Operations room. The common equipment rack must also house the maintenance position.
- 1.1.7 Operator Touch Screen. The Contractor must ensure that all operator Touch Screens are identical and consist of a high resolution color video display with a resistive type touch-sensitive overlay (meeting as a minimum SVGA Standards). Each touch screen must be a minimum of 10 inches (25.4 cm) diagonal workable area. A keyboard must not be required to operate the touch screen operator panel. The operator Touch Screens must have the capability of displaying textual elements such as on-screen labels and commands.
- 1.1.8 Supervisory Control and Maintenance Configuration. The Contractor must ensure that the VCS is capable of providing reconfiguration capabilities

(including supervisory, maintenance, language and administrative capability) from one central computer console.

- 1.1.9 The Contractor must ensure that the Supervisory Control function is e password protected.
- 1.1.10 The Contractor must provide a portable plug-in Audio Splitting device for each console (total 6). The device must plug into the Supervisory jack at each console. The device must maintain the supervisory functions (Transmit, Receive and PTT) as detailed in 4.1.3 b. and provide two positions that are for headset monitor only (i.e. no PTT/over-ride capability).

For example, the standard configuration at the RTOC must be six (6) consoles with an Operator jack and Supervisory jack; total twelve (12) jacks. During training or exercise conditions one or all of the consoles must be able plug in an Audio Splitting device allowing for a full function supervisory position and an additional 1 or 2 monitor positions per console; the total number of users could be 18-24.

- 1.1.11 Supervisory Control Capability. The Contractor must ensure that the supervisory control capability allows personnel to configure touch screen and touch-button layouts, name them, and map them to users. The supervisory control capabilities must include the ability to:
  - a. Create operator panel configurations (screen layouts);
  - b. Configure users;
  - c. Create user profiles;
  - d. Add consoles;
  - e. Set supervisor console communication parameters;
  - f. Use "Mission" capabilities (view currently active users, configurations, and consoles. Change current configurations for specific operators.);
  - g. Gain access to the operator panel portion of the supervisor console; and
  - h. Lock the supervisor console.
- 1.1.12 Maintenance Capability. The Contractor must ensure that the Maintenance capability allows technical personnel to maintain, observe, and program VCS hardware. Operations must not be affected by maintenance procedures. Maintenance capabilities must include the ability to:
  - a. Upload the VCS database and software files to the system;
  - b. Download the VCS database file from the system;
  - c. Add positions;
  - d. Add interface modules;

- e. Add radio channels, interphones, Input and Output (I/O) circuits to the appropriate modules; and
- f. Configure radio channel, interphone, and I/O circuit parameters.

1.1.13 Reconfiguration Software. In the event that the network encounters communication difficulties, the Contractor must equip each console with a copy of the database that resides on the Common Equipment. Thus, even in the absence of a network, each position must remain fully functional (with the exception of configuration capabilities). The reconfiguration software must be configurable such that:

- a. All reconfiguration capabilities are available on each console; or
- b. Supervisory control, maintenance, and administrative capabilities are divided onto separate consoles.

## 1.2 VCS Operation.

### 1.2.1 Ground/Air/Ground Operation

- a. The Contractor must ensure that in order to add and delete a Frequency.
  - i. The VCS permits operators to add or drop frequencies to their position up to the limit of available frequencies at each site; and
  - ii. The VCS does not permit frequency add and delete operations at one position to affect operations at other positions.

### 1.2.2 Select/De-select Transmitter and Receiver. The Contractor must ensure that:

- a. For each frequency at each position, the VCS permits the operator to select and deselect the transmitter and receiver associated with a frequency;
- b. The VCS permits selection and de-selection to be accomplished with a single touch action of a latching selector;
- c. At each position, the VCS allows simultaneous selection in any combination of transmitters and receivers assigned to the position;
- d. Upon selection of a transmitter, the VCS furnishes all future PTT commands to the on-line (either main or standby) G/A/G frequency transmitter interface;
- e. Upon de-selection of a transmitter, the VCS withholds future PTT commands from the on-line transmitter;
- f. At each position, the VCS allows simultaneous selection in any combination of the non-emergency frequency transmitters assigned to the position; and
- g. For selected receivers the VCS furnishes incoming audio to the selected position headset (HS) or loudspeaker (LS).

1.2.3 Main/Standby (M/S) Transmitter /Receiver Transfer. The Contractor must ensure that:

- a. At each position, and for each frequency assigned to the position, the VCS permits the operator to transfer between main and standby transmitters or receivers;
- b. The VCS permits main/standby switchover to be initiated via a single touch action of an assigned latching selector;
- c. The VCS makes each successive transfer effective at all positions to which the affected frequency is assigned;
- d. When the PTT is activated, the VCS inhibits M/S transfer of active transmitters; and
- e. If an M/S selector is connected to a frequency without a Standby radio installed, operation of the M/S selector must have no effect i.e., transmitter or receiver placed off-line.

1.2.4 G/A/G Push To Talk (PTT) Activation. The Contractor must ensure that:

- a. The VCS provides a PTT activation signal to the transmit G/A/G frequency interface to activate the selected on-line transmitters. The Contractor must also provide 4 Wire E&M ground keying;
- b. The VCS connects the operator microphone audio at the transmitting position to the selected transmitters;
- c. The VCS provides a continuous visual indication of transmitter-in-use for each active transmitter to all positions to which the frequency has been assigned; and
- d. The VCS resolves simultaneous PTT actuations for a frequency transmitter such that only one position must be connected to a transmitter and all other positions must be locked out.

1.2.5 Squelch Break. The Contractor must ensure that

- a. The VCS provides a unique visual indication of the presence of audio on each G/A/G receiver circuit;
- b. The squelch break indication is derived from either of the following two sources:
  - i. Receipt of an appropriate squelch break signal from the remote radio control system; or
  - ii. Audio detection by the VCS.

1.2.6 Ground/Ground Operation.

- a. G/G Call Placement. The Contractor must ensure that the VCS permits the operator to place a G/G call by either of the following means:

- i. Activation of a Direct Access (DA) selector (if supplied) assigned to the call or circuit; or
    - ii. Entry of a code assigned to the Interphone circuit (or intercom (IC) call) via the Keypad.
  - b. The Contractor must ensure that upon placement of a call of any type identified below, the VCS performs the indicated steps to connect the call to its destination:
    - i. For an IC call, indicate a call at the called position; and
    - ii. For non-IC calls, provide outgoing call signaling to the trunk or circuit interface appropriate to the type of trunk or circuit and the type of call.
  - c. The Contractor must ensure that the VCS permits the operator to enter prefix and suffix digits, as required, at the Keypad; and provide such digits to the circuit interface in the format appropriate to the circuit.
  - d. Whenever the operator seizes a circuit that permits hook flash signaling for the operation of special functions, the VCS must permit the operator to operate the hook flash selector manually or automatically.
- 1.2.7 Conference Call. The Contractor must ensure that the Intercom function is equipped with an “all-call” feature. The operator must be able to connect to one or all of the six (6) consoles in addition to the Maintenance console.
- 1.2.8 Intercom (IC) Call
- a. The Contractor must ensure that in order to initiate or receive an Intercom Call the VCS must:
    - i. Provide incoming call chime at the called position when chime control has been activated;
    - ii. Provide visual indication of incoming call at the Direct Access (DA) selector assigned to the calling party or to the Call Access (CA) selector if no DA selector is provided; and
    - iii. Provide ring back tone to the calling party.
    - iv. Discontinue the audio and visual indications established in (i) and (ii) above when the call is answered by the called party or is abandoned by the calling party; and
    - v. Not remove the incoming chime until the last incoming G/G call to the position has been either answered or abandoned.
- 1.2.9 Voice Call (VC).

- a. Upon detection of incoming audio on a voice call circuit interface, and at each position to which a DA selector has been assigned for the circuit, the VCS must:
  - i. Provide a visual indication of incoming call at the DA selector assigned for the circuit; and
  - ii. Direct the incoming audio from the circuit to the position Loudspeaker (LS) at each position designated for incoming voice alert on the circuit.
- b. If the voice call has not been answered in less than 20 seconds, the VCS must remove the visual indication and audio connection.

#### 1.2.10 Selective Interphone Calls.

- a. Upon detection of incoming call address signaling from an Interphone circuit interface configured for selective calling, the VCS must:
  - i. Accept and decode the call address;
  - ii. Determine whether the address information refers to any local VCS positions or groups of positions;
  - iii. Provide visual indication of incoming call at each position to which the call address refers;
  - iv. Activate incoming call chime at each position to which the call address refers; and
  - v. Discontinue the chime and visual indication established in (iii) and (iv) above when either the call has been answered or the call has not been answered by any position after 30 seconds.

#### 1.2.11 Interphone Inward Dial Calls. The Contractor must ensure that:

- a. Upon detection of incoming call address signaling from an Interphone circuit configured for incoming dial, the VCS must:
  - i. Determine whether the address information refers to any local VCS positions or groups of positions;
  - ii. Provide visual indication of incoming call at each position to which the call address refers;
  - iii. Activate incoming call chime at each position to which the call address refers; and
  - iv. Provide ring back tone to the Interphone circuit.
- b. Discontinue the visual indication in (ii.) and ring back tone in (iv.) when:
  - i. The call is answered by a position; or
  - ii. The call is abandoned by the calling party.

1.2.12 Interphone Non-Selective Call. The Contractor must ensure that:

- a. Upon detection of incoming signalling from the Interphone circuit designated for non-selective service, including automatic or manual ring (re-ring), the VCS must:
  - i. Provide visual indication of incoming call at each position to which the call refers;
  - ii. Activate incoming call chime at each position to which the call refers; and
  - iii. Provide ring back tone to the Interphone circuit.
- b. The VCS must discontinue the visual indication, chime, and ring back tone established in a) above when:
  - i. The call is answered by a position; or
  - ii. The call is abandoned by the calling party

1.2.13 Incoming G/G Call Answering. The Contractor must ensure that:

- a. The VCS permits the operator to answer incoming G/G calls by all of the following means:
  - i. Activation of the DA selector assigned to the circuit (or IC call) if any; and
  - ii. Entry of a code assigned to the circuit or call via the Keypad;
- b. When answering an incoming non-hotline call, the VCS must:
  - i. Connect the answering operator with the calling position (for IC calls) or the trunk/circuit interface bearing the incoming call (for non-IC calls);
  - ii. Discontinue incoming call chime or voice alert, if any, for the current call;
  - iii. At the answering position (and the calling position for IC calls), provide visual indication of an active call at the DA selectors assigned to the call (if any) or to the CA selector if the call does not have a DA assigned to the other party; and
  - iv. For all Interphone G/G calls, at all positions having a DA selector assigned to the circuit, provide visual indication of busy call at the DA selectors.

1.2.14 G/G Call Release and Termination. The Contractor must ensure that:

- a. The VCS permits the operator to release G/G calls in progress (i.e., not on hold), except for hotline calls in which the operator is the called party, by all of the following methods:



- i. Placement of another call via Indirect Access (IA) or Direct Access (DA) (except during progressive conferences);
    - ii. De-selection of the DA selector assigned to the call if the call appears as a DA call; and
    - iii. Selection of a designated call release DA selector.
  - b. Discontinue visual indications of an active call at the called and/or calling positions and a busy call at all other positions having a DA assigned.
- 1.2.15 Use of PTT in G/G Communications. The Contractor must ensure that the VCS allows operators to transmit on G/G calls without activating PTT.
- 1.2.16 Call Hold. The Contractor must ensure that:
- a. At each position, the VCS permits the operator to put the active G/G call on hold upon activation of a designated DA selector;
  - b. During call hold, the VCS permits the operator initiating the hold to place G/A/G calls and other G/G calls on hold as if no G/G call were active;
  - c. For each call on hold, the VCS provides a visual indication of call-on-hold;
  - d. The VCS permits the operator at any position to retrieve any non-IC call on hold by seizing the circuit via IA (or DA, if assigned) regardless of which VCS operator originally placed the call on hold.
  - e. Upon retrieval of a call on hold, the VCS must restore the call audio and the visual indication of active call (to be provided at the retrieving position) and busy call (to be provide at all other positions having a DA selector assigned to the call); and
  - f. The VCS must maintain calls on hold until they are retrieved or released, whichever comes first.
- 1.2.17 Call Forwarding. The Contractor must ensure that:
- a. The VCS provides a call forwarding function that, upon activation and selection of a forwarded-to position, causes all subsequent G/G calls destined for the forwarding position to be forwarded to the selected position;
  - b. The VCS permits the call forwarding function to be activated by entry of an IA code and by activation of a DA assigned for the purpose;
  - c. The VCS provides a visual indication at the forwarding position whenever call forwarding is in effect;
  - d. While call forwarding is in effect at any position, the VCS prevents audio distortion or oscillation due to such connectivity by either of the following means:
    - i. Blocking such connectivity; or

- ii. Conditioning or regulating the audio resulting from such connectivity so that distortion and oscillation are not present.
- e. The VCS permits only the forwarding position operator to release call forwarding;
- f. The VCS discontinues the attempt and provide an error indication to the position attempting to forward calls whenever the attempt cannot be completed due to any of the following:
  - i. Error in entry; and
  - ii. Call forwarding in effect already.
- g. The VCS permits any position to forward its own calls while it has calls forwarded to it from any other position; and
- h. During call forwarding at any position, the VCS permits operators to place outgoing calls from the forwarding position (e.g., for coordination to terminate call forwarding).

1.2.18 Incoming Call Chime. The Contractor must ensure that:

- a. The VCS provides an audible chime device with each position (sounded at the position equipment) to alert the operator of incoming G/G calls;
- b. The VCS provides a choice of chime tone character, selectable by the operator, or by the supervisory control via mission configuration, such that each position may have an identifiably different chime tone from those of other positions in the vicinity;
- c. The VCS permits the operator to turn the chime on and off at each position;
- d. The VCS provides visual indication at the position whenever the chime has been turned off, independent of the visual indications provided for incoming calls;
- e. The VCS provides means for the operator at each position to adjust individually the volume of the chime, independent of other volume levels;
- f. The VCS does not sound the chime through the HS; and
- g. The VCS does not record the chime on the voice-logging recorder.

1.2.19 Hook Flash - As designated by the system administrator/supervisor during mission reconfiguration, the VCS must provide a non-latching DA selector for hook flash to access to special features of an external telephone exchange.

1.2.20 Manual Ring Down - As designated by the system administrator/supervisor during mission reconfiguration, the VCS must provide a non-latching DA selector for manual ring down which, when activated, provides a signal to the trunk/circuit interface bearing the G/G call in progress.

- 1.2.21 Public Address: The Contractor must ensure that the VCS connects to the public address system as required.
- 1.2.22 Simultaneous G/G and G/A/G Calls: The Contractor must ensure that:
- a. Under facility PTT parameters, the VCS permits each operator to place and receive G/A/G calls at any time during any G/G call without interrupting the G/G call; and
  - b. The VCS does not furnish audio received from G/A/G frequencies to the external party of the G/G call in progress.
- 1.2.23 Operator Position Headset/Handset Jacks. The Contractor must ensure that:
- a. At each position, the VCS provides a jack module wired to industry standard and to accommodate a standard connector type PJ-7;
  - b. This jack module must accommodate two headsets or handsets (two operators) or a combination of both;
  - c. One jack must be identified and marked as the “Supervisor” jack, and the other identified and marked as the “Operator” jack;
  - d. The supervisor and operator jacks must be juxtaposed;
  - e. The VCS allows either jack to be used for all communications features;
  - f. Upon insertion of HS devices into both jacks of the dual jack set, the VCS routes all HS audio transmitted to the position to both HS devices;
  - g. The VCS routes operator transmit audio to the supervisor HS device for monitoring;
  - h. The VCS permits a HS device connected to the supervisor jack to pre-empt G/A/G communications at the operator jack by activation of PTT;
  - i. During pre-emption, the VCS provides the pre-empting supervisor jack transmit audio to the operator HS device for monitoring purposes, and
  - j. For each G/G call when PTT parameters are in effect, the VCS makes both HS devices audible on the call and furnishes call audio, including side tone, to both HS devices.
- 1.2.24 Headset Jack Volume. The Contractor must ensure that:
- a. The VCS provides a separate volume control for each HS jack, located in a convenient location for use by the position operator; and
  - b. The HS volume control adjusts the audio output level relative to the transmission level defined for the HS output jack.
- 1.2.25 Headset (HS) Jack Volume Limiter - As a means to protect operators’ hearing the VCS must implement an audio compression function after any tone elimination function and volume control.

1.2.26 Side Tone. The Contractor must ensure that:

- a. The VCS provides individual side tone to each HS earpiece jack only during active G/G calls and outgoing G/A/G calls;
- b. Side tone is not be audible in the LS; and
- c. Side tone consists of the operator outgoing call audio only.

1.2.27 Position Loudspeakers. The Contractor must ensure that:

- a. The VCS provides each position with two separate loudspeakers (one for G/A/G and one for L/L);
- b. The VCS provides each LS with a separate volume control, adjacent to the LS, or in another convenient location for use by the position operator; and
- c. At the maximum setting of the volume control, when driven by input signals encountered in normal use, the VCS is audible within at least eight feet of the position, and not overdrive the LS so as to produce audible distortion or clipping.

1.2.28 Foot Switch Operation. The Contractor must ensure that:

- a. Each operational position is provided with a removable pedal-type footswitch for activation of PTT;
- b. When only one HS device is plugged into the operational position (either operator or supervisor jack), the VCS permits the footswitch to be used as an alternate PTT device, i.e., in parallel with the HS PTT device; and
- c. When one HS device is plugged into the supervisor jack of the operational position, and one other HS device is plugged into the operator jack at the position, the VCS permits the footswitch to be used as an alternate PTT device for the operator only, i.e., in parallel with the operator jack HS PTT device only (with supervisor jack operator retaining pre-emption capability).

1.2.29 Facility PTT Operating Parameters. The Contractor must ensure that:

- a. The VCS PTT is capable of providing the following methods of keying radios:
  - i. Phantom keying;
  - ii. Tone keying;
  - iii. Ground Keying;
  - iv. Loop back keying; and
  - v. Voltage keying.

1.2.30 PTT Release and Activation. The Contractor must ensure that:

- a. The following actions take place upon PTT activation:
  - i. Connect the operator to the selected G/A/G transmitters while maintaining position audio to any G/G calls in process;
  - ii. Key those transmitters; and
  - iii. Transfer all incoming G/G audio to the position LS except for incoming override calls.

1.2.31 PTT Release. The Contractor must ensure that:

- a. The VCS un-keys the selected G/A/G transmitters;
- b. The VCS disconnects the operator from these transmitters; and
- c. The VCS resumes all incoming G/G call audio.

1.2.32 Position Confidence Test. The Contractor must ensure that:

- a. The VCS provides each operational position with a position confidence-testing feature that can be invoked on demand by the operator by activation of an IA sequence;
- b. The confidence-testing feature:
  - i. Verifies that the functioning of all controls and displays is according to system configuration;
  - ii. Verifies proper audio transmission as per system configuration;
  - iii. Affects the position under test; and
  - iv. Does not change the position's configuration, nor any settings or selections made by the operator.

1.2.33 Voice Recording of Position Activity - The VCS must provide connectivity to the site installed voice-logging recorder to record all audio traffic activities at each operational position in an analog format.

1.2.34 Headset/Loudspeaker (HS/LS) Selectors. The Contractor must ensure that:

- a. For each frequency at each position, the VCS provides a selector to direct incoming G/A/G calls either to the HS or to the LS; and
- b. Each per-frequency HS/LS selector provides a continuous display of the actual routing in effect, which may vary due to precedence of other selectors described below.

1.2.35 G/G HS/LS Selector. The Contractor must ensure that:

- a. The VCS allows the system administrator/supervisor to assign a non-latching selector to direct incoming G/G call audio (other than from

incoming hotline calls) either to the HS or to the LS at each position during mission reconfiguration; and

- b. The G/G HS/LS selector provides a continuous display of the actual routing in effect, which may vary due to precedence of other selectors described below.

1.2.36 Incoming Hotline HS/LS Selector. The Contractor must ensure that:

- a. The VCS allows the system administrator/supervisor to assign a latching selector to direct incoming audio from incoming hotline calls either to the HS or to the LS at each position during mission reconfiguration; and
- b. The incoming hotline HS/LS selector provides a continuous display of the actual routing in effect, which may vary due to precedence of other selectors described below.

1.2.37 Master LS Transfer for All Audio. The Contractor must ensure that:

- a. The VCS allows the system administrator/supervisor to assign a latching selector to direct all incoming audio from all G/A/G frequencies and all G/G calls (including hotline calls) at the position to the LS regardless of the state of the subordinate HS/LS routing selectors, at each position during mission reconfiguration; and
- b. The master LS transfer selector provides a continuous display of its state (which may not represent the actual routing in effect, due to precedence of other selectors described below).

1.2.38 LS Routing for Unattended Positions.

- a. Immediately upon the removal of all instruments from the HS jacks of any position, that position must be considered unattended and the VCS must transfer all incoming audio from G/A/G and G/G calls (including incoming hotline calls) to the LS;
- b. If a HS is reinserted into any jack within the first thirty seconds after a position has become unattended, the VCS must restore incoming audio, including calls in progress, to the HS/LS routing previously selected by the operator before the position became unattended;
- c. After any position has remained unattended for more than thirty seconds consecutively, the VCS must:
  - i. Release any incoming G/G calls in progress at the position (including IC hotline calls);
  - ii. Route any subsequent incoming G/A/G calls on selected frequencies to the position LS;

- iii. Route any subsequent incoming hotline calls to the position LS; and
- iv. Continue to provide call alert signals (chimes, voice alerts, and visual indications) for all incoming G/G calls.
- d. The thirty-second pause is to permit operators to change jacks or headsets without having to reactivate control functions.
- e. Upon reinsertion of the first HS instrument plug into the jacks of a position that has been unattended for more than thirty seconds resulting in the conditions of (c) above, the VCS must:
  - i. Route subsequent incoming G/A/G and G/G calls, and G/A/G calls in progress, in accordance with the HS/LS routing selected by the operator before the position became unattended; and
  - ii. Restore the ability to place and answer calls and to perform all other control actions.

1.2.39 Precedence of Routing Features. The Contractor must ensure that:

- a. Selectors and features that control HS/LS routing of G/A/G communications follow the following order of precedence:
  - i. Unattended position transfer to LS (highest precedence);
  - ii. Master LS transfer (if assigned);
  - iii. Group G/A/G LS transfer (if assigned);
  - iv. Automatic G/A/G transfer to LS during G/G call (if enabled); and
  - v. Per-frequency HS/LS routing.
- b. Selectors and features that control HS/LS routing of non-hotline G/G communications follow the following order of precedence:
  - i. Unattended position transfer to LS (highest precedence);
  - ii. Master LS transfer (if assigned); and
  - iii. G/G LS transfer.
- c. Selectors and features that control HS/LS routing of hotline G/G communications follow the following order of precedence:
  - i. Unattended position transfer to LS (highest precedence);
  - ii. Master LS transfer (if assigned); and
  - iii. Hotline LS transfer (if assigned).

1.2.40 Acceptance of Mission Reconfiguration

- a. At each position the VCS must provide a non-latching DA selector for reconfiguration acceptance that, when activated, must reconfigure the position subject to requirements; and
- b. The reconfigure acceptance selector must have no effect if activated while no reconfiguration is pending at that position.

1.2.41 Access Restriction and Password Management. The Contractor must ensure that:

- a. The VCS segregates any on-line (e.g., terminal-based) functions performed at the maintenance console and the supervisory console from each other and from those performed at the operational position;
- b. The VCS requires password entry to gain access to supervisory and maintenance functions;
- c. The VCS provides facilities to permit authorized users and only such users, to view, originate, assign, modify permissions of, and delete passwords;
- d. Each VCS password is associated with the name of the password owner, as well as the permissions currently granted to that owner;
- e. The permissions associated with a password define what a user is able to do when he or she logs on using the password. For example, only supervisors would be permitted to define and execute mission reconfiguration over resources currently in the physical configuration file; and
- f. Passwords are encrypted if they pass over a network that is not entirely inside a protected area.

1.3 Maintenance and Testing Functions

1.3.1 General. The Contractor must ensure that:

- a. The VCS provides maintenance and testing functions for maintenance technicians;
- b. The VCS automatically detects system faults;
- c. When commercially available off the shelf items are used as Line Replaceable Units (LRU) in the VCS, those items are exempt from automatic fault detection;
- d. The fault detection must operate continually and must not interfere with Air Defence communications;
- e. The VCS automatically localizes faults to the level of LRU when the LRU has inherent fault detection; and
- f. The VCS reports all fault localizing results to the maintenance console, to the supervisory console, and to the maintenance logging function.

1.3.2 Automatic Fault Diagnosis and Recovery. The Contractor must ensure that:

- a. The VCS have physical redundancy of all critical circuits, automatic and manual fault diagnosis, automatic reconfiguration;
- b. Core VCS processors (core modules) have numerous built-in circuit tests, and due to the nature of the VCS architecture, must initiate recovery procedures that isolate faulty modules and activate backups. The VCS



resorts to the back-up strategy and continue to operate without loss of function;

- c. Radio interface and/or landline modules must be duplicated. Redundancy must be extended to audio interface modules with respect to their function and control; and
- d. In addition to self-recovery, the VCS must have a comprehensive set of diagnostic indicators. Clear diagnostic messages must be sent to the appropriate consoles, audible alarms must be generated, and indicators (i.e. Light Emitting Diodes (LED) or other display methods) must reflect the current state of the VCS.

#### 1.3.3 Automatic Tests on Core Modules. The Contractor must ensure that:

- a. VCS circuits undergo automatic test routines at various levels. Audio interface modules must perform periodic loop-back tests on all idle ports. If a loop-back test fails a message must be sent to the maintenance console. If a fault occurs in the Central Processing Unit (CPU) of a VCS module, an autonomous "watch-dog" circuit, must cause it to reset;
- b. Each core system module monitors the operation of each audio interface module under its control through the use of "hand shaking" routines. If an audio module does not respond to a handshaking message from the core module, the core module must reset the audio module. A switchover to a backup audio module must occur, and a message must be displayed at the maintenance console;
- c. Idle position circuits (positions in which the headset is not inserted) must automatically undergo loop-back tests. During these tests, tones must be sent from the core module to the earpiece amplifier of the operator (and supervisor), and then "looped-back" into the microphone amplifier and returned to the core module; and
- d. Mission communications are not affected at any time during the above test routines.

#### 1.3.4 Automatic Tests on Positions. The Contractor must ensure that:

- a. Position audio circuits are continually tested during the VCS operation. A significant failure on the primary link must cause the position to automatically switch its operation to the secondary link;
- b. The data link between core module and position is continually verified to ensure operation. The data links are be separately and automatically tested;
- c. All failed automatic tests must result in the initiation of recovery procedures (if required), and the transmission of diagnostics to the maintenance console; and

- d. The position electronics contain power supply sensors and temperature sensors. All of these devices must be continually scanned for any abnormalities, which are reported to the maintenance position.
- 1.3.5 Automatic Tests on Audio Interface Modules - Core modules that control audio interface modules must test all audio ports located on those interface modules. These automatic tests must be carried out when the ports are idle. Any abnormalities must be reported to the maintenance position.
- 1.3.6 Manual "Position" Tests
  - a. In addition to the automatic system tests, a variety of manual tests must be available to maintenance personnel. These manual tests must be entered via password from the operator panel keypad. The tests must allow personnel to:
    - i. View the position name;
    - ii. View the VCS software version number;
    - iii. Verify selector assignments;
    - iv. Verify volume controls;
    - v. Verify operator and supervisor headset jack operation;
    - vi. Adjust the time and date;
    - vii. Verify speaker and headset operation;
    - viii. Verify the microphone operation;
    - ix. Verify the PTT operation;
    - x. Adjust chime volume;
    - xi. Substitute the MIC audio with an internally generated tone and
    - xii. reset the position without turning OFF the power.
- 1.3.7 Visual and Auditory Indicators. The Contractor must ensure that:
  - a. VCS modules have indicator devices (i.e. LEDs or other type of displays) on their front panels indicating status. Red LEDs must not be used to indicate normal operation;
  - b. When a fault is detected, a diagnostic message is sent to the maintenance position and an auditory alarm must be generated; and
  - c. Indicator devices indicate the following:
    - i. CPU operation on module. Indicates the operational status of hardware and software;
    - ii. Power status. Indicates the operational status of power supplies;
    - iii. Data exchange. Indicates the operational status data channel;
    - iv. Audio exchange. Indicates the operational status audio channels; and

- v. Audio port operation. Indicates the operational status of all audio ports.

1.3.8 Maintenance Position. The Contractor must ensure that:

- a. The maintenance position provides any displays, etc. required for fault detection and fault localizing; and
- b. The maintenance console permits the user to:
  - i. Monitor fault detection and fault localizing routines;
  - ii. Modify mission reconfiguration items and initiate mission reconfiguration actions involving resources excluded from the physical configuration file; and
  - iii. Access to the maintenance-logging feature to view and update maintenance log data.

1.3.9 VCS Audio Alignment and Test Point Access. The Contractor must ensure that:

- a. The VCS provides access for connecting test equipment to external G/A/G and G/G circuits for local testing;
- b. The VCS provides access for connecting test equipment to the inputs and outputs of position equipment;
- c. The VCS provides means to monitor the output of position equipment;
- d. The VCS provides means to monitor the input from external lines;
- e. The VCS provides means to align the system for use with external lines; and
- f. All test points and alignment controls are readily accessible without disassembly of equipment.

1.3.10 Maintenance Logging Function. The Contractor must ensure that:

- a. The VCS provides a maintenance logging function to allow users of the maintenance position to access information on the recent maintenance history of the system;
- b. The VCS permits users to annotate the maintenance logging function by adding their own information or updating the information already present; and

- c. The VCS provides a hard copy of the maintenance log upon request through the maintenance console.
- 1.3.11 Remote Alarms - The VCS must be capable of providing additional remote audible and visible alarms outputs to signal the detection of system faults.
- 1.3.12 Default Configuration. The Contractor must ensure that:
  - a. The VCS continually retains the most recent configuration indefinitely in non-volatile memory; and
  - b. The VCS uses the most recent configuration when restarting the system (e.g., for unattended restart after extended power failure).

**CONTRACT DATA REQUIREMENTS LIST**  
**(CDRLs)**  
**FOR**  
**VOICE COMMUNICATION SYSTEM (VCS)**  
**FOR**  
**4 WING, 42 RADAR SQUADRON, COLD LAKE, ALBERTA**

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## **CONTRACT DATA REQUIREMENTS LIST (CDRL) -General Information**

Each CDRL contains the following information:

### **BLOCK A – System / ITEM**

The System / Item represents the project to which the CDRL is applicable.

### **BLOCK B – CONTRACT / RFP NUMBER**

PWGSC's internal filing or document number is entered in this block.

### **BLOCK C – SOW / IDENTIFIER**

A unique TCR Project Statement of Work identifier is entered in this block as required.

### **BLOCK D – DATA CATEGORY**

The category under which the CDRL is classified is entered in this block.

### **BLOCK E - CONTRACTOR**

The name of the Contractor is entered in this block.

### **BLOCK 1 – ITEM NUMBER**

An alphanumeric allocation representing a functional area of responsibility.

### **BLOCK 2- TITLE OR DESCRIPTION OF DATA**

The title of the DID is entered in this block.

### **BLOCK 3 - SUBTITLE**

The subtitle for the DID is entered in this block as required.

### **BLOCK 4 – AUTHORITY (DATA ITEM NUMBER)**

The Data Item Number is entered in this block (e.g. D-ILS-001).

### **BLOCK 5 – CONTRACT REFERENCE**

The specific paragraph number of the Contract, Statement of Work, Request for Proposal, Specifications, or other applicable document, which will assist in identifying the effort associated with the data item, is entered in this block.

### **BLOCK 6 – REQUIRING OFFICE**

The technical office of primary interest, i.e., the PM responsible for the adequacy of the data, is entered in this block.

### **BLOCK 7 – INSPECTION AND ACCEPTANCE METHOD**

If applicable, the inspection and acceptance method of the data is entered in this block according to the following codes (otherwise this block will be left blank):

| CODE | INSPECTION  | ACCEPTANCE  |
|------|-------------|-------------|
| SS   | Source      | Source      |
| DD   | Destination | Destination |
| SD   | Source      | Destination |
| DS   | Destination | Source      |

Table -1 - Inspection and Acceptance Methods

An “A” in this block identifies items of critical data requiring specific advanced written approval. The Contractor is to submit the data to the Department of National Defence Technical Authority (DND TA) for approval prior to official use. Unless otherwise specified, the DND TA will provide its comments to the Contractor within a maximum of 15 days of receiving the Data item. If the Contractor has not received response or acknowledgement within 15 days of submitting the data to the DND TA, the data may be considered approved. The DND TA will forward approval, comments and/or acknowledgement on data items via letter, FAX or E-MAIL

Unless otherwise specified, final Data Items against which the Contractor has received comments from the DND TA must be re-submitted with DND TA’s comments incorporated within 7 days of receipt of the comments.

Amendments or revisions to approved documents must require the prior approval of the DND TA in writing. Each update or revision that is submitted must be properly identified, showing the portion that has been revised (redlines/strikeouts), authority for change if applicable, date of revision, revision number and necessary instructions.

### **BLOCK 9 - INPUT**

If data are the integrated results of specific inputs from associated Contractors, an "X" is entered in this block. Otherwise this block is left blank.

### **BLOCK 10 - FREQUENCY**

This block indicates the frequency of the delivered data. The frequency codes are as follows:



- a. ANNLY Annually;
- b. ASGEN As generated;
- c. BI-MO Each 2 months;
- d. BI-WE Each 2 weeks;
- e. DAILY Daily;
- f. DFDEL Deferred delivery;
- g. DFREQ Deferred requisitioning;
- h. MNTHY Monthly;
- i. ONE/R One time with revisions;
- j. OTIME One time;
- k. QRTLY Quarterly;
- l. R/ASR Revisions as required;
- m. SEMIA Semi Annually; and
- n. WKLY Weekly.

#### BLOCK 11 - AS OF DATE

If the data are submitted only once, the "as of" date will be entered in this block as follows: day/month/year (e.g., "03 November 2016"). If submittal is constrained by a specific event or milestone, this constraint/milestone is entered using the abbreviations (e.g. PROPOSAL), as follows:

- a. PROPOSAL Submitted with Contractors' proposals;
- b. ASGEN As generated;
- c. ASREQ As required;
- d. DACA/MACA Days/Months after contract award;
- e. DFDEL Deferred delivery;
- f. DFREQ Deferred requisitioning;

- g. EOC                      End of contract;
- h. EOM                     End of month; and
- i. EOQ                     End of quarter.

If there is insufficient space in block 11, the phrase "SEE BLOCK 16" is entered in block 11 and block 16 will have the constraint/milestone entered (e.g., Final draft due 2 weeks prior to FAT. DND will comment on the final draft. will be discussed at FAT. Final due x weeks after receipt of review comments.)

## **BLOCK 12 - DATE OF 1ST SUBMISSION**

The initial submission date is entered in this block as follows: day/month/year (e.g., 03 November 2016). If submittal is constrained by a specific event or milestone, this constraint/milestone is entered using the abbreviations as listed above (e.g. PROPOSAL). If there is insufficient space in block 12, the phrase "SEE BLOCK 16" will be entered in block 12 and block 16 will have the constraint/milestone entered. Abbreviations, as listed above, for Block 11 are to be used.

## **BLOCK 13 - DATE OF SUBSEQUENT SUBMISSION / EVENT**

If data are submitted more than once, the date(s) of subsequent submission(s) is entered in this block. If submittal is constrained by a specific event or milestone, this constraint/milestone is entered using the abbreviations as listed in above (e.g. PROPOSAL). If there is insufficient space in block 13 the phrase "SEE BLOCK 16" is entered in block 13 and block 16 will have the constraint/milestone entered.

## **BLOCK 14 - DISTRIBUTION AND ADDRESSES**

The addresses and number of copies, regular (REG.) and reproducible/soft copies (REPRO.) to be provided to each (e.g. PM TCR Project 3/1) is entered in this block.

SUB-BLOCK A specifically identifies the addressee to whom either the regular or the reproducible copy to be provided to each (e.g. CA, PM).

SUB-BLOCK B specifically identifies the format and the number of copies to be provided to each

| <b>A.<br/>ADDRESS</b>            | <b>B. COPIES</b>           |                      |                      |                      |
|----------------------------------|----------------------------|----------------------|----------------------|----------------------|
|                                  | <b>PRELIM. /<br/>DRAFT</b> |                      | <b>FINAL</b>         |                      |
|                                  | <b>Hard<br/>Copy</b>       | <b>Soft<br/>Copy</b> | <b>Hard<br/>Copy</b> | <b>Soft<br/>Copy</b> |
| <b>TCR<br/>Sustain-<br/>ment</b> | <b>2</b>                   | <b>1</b>             | <b>2</b>             | <b>1</b>             |
| <b>CA</b>                        |                            | <b>1</b>             | <b>1</b>             | <b>1</b>             |
| <b>OTHER</b>                     |                            |                      |                      |                      |

**BLOCK 15 - TOTAL**

The total number of regular/reproducible copies required by block 14 is entered in this block.

**BLOCK 16 - REMARKS**

This block is used to provide additional or clarifying information for blocks 1 through 15. Any forms that further define deliverable data requirements will be referred to in this block.

**IDENTIFICATION INFORMATION AT BOTTOM OF PAGE**

The identification information at the bottom of the page is completed as follows:

PREPARED BY. The originator's name and/or designation of the person by whom the CDRL was prepared is entered in this block

DATE. The date this CDRL was approved.

APPROVED BY. The individual responsible for

**CDRL NUMBER:** An alphanumeric allocation representing a functional area of responsibility.

|            |                              |
|------------|------------------------------|
| C-TP-xxx   | Transition                   |
| C-TEST-xxx | Tests and Evaluation         |
| C-ILS-xxx  | Integrated Logistics Support |
| C-PUB-xxx  | Publications                 |

## VCS CONTRACT DATA REQUIREMENTS LIST (CDRL)

### TRANSITION

| CDRL     | DID      | TITLE           | DRAFT DUE | FINAL DUE |
|----------|----------|-----------------|-----------|-----------|
| C-TP-001 | D-TP-001 | Transition Plan | 30 DACA   | 60 DACA   |

### TEST AND EVALUATION

| CDRL       | DID        | TITLE                                      | DRAFT DUE                  | FINAL DUE                  |
|------------|------------|--------------------------------------------|----------------------------|----------------------------|
| C-TEST-001 | D-TEST-001 | Verification Matrix Summary Report (VMSR)  | 90 Days prior to first FAT | 70 Days prior to first FAT |
| C-TEST-002 | D-TEST-002 | Factory Acceptance Test Plan (FATP)        | 60 Days prior to FAT       | 30 Days prior to first FAT |
| C-TEST-003 | D-TEST-003 | Site Acceptance Test Plan (SATP)           | 60 Days prior to SAT       | 30 Days prior to SAT       |
| C-TEST-004 | D-TEST-004 | Factory Acceptance Test Procedures (FATPR) | 60 Days prior to FAT       | 30 Days prior to FAT       |
| C-TEST-005 | D-TEST-005 | Site Acceptance Test Procedures (SATPR)    | 60 Days prior to SAT       | 30 Days prior to SAT       |
| C-TEST-006 | D-TEST-006 | Acceptance Test Reports                    |                            | 30 Days after FAT or SAT   |

### INTEGRATED LOGISTICS SUPPORT

| CDRL      | DID       | TITLE                                      | DRAFT DUE | FINAL DUE                 |
|-----------|-----------|--------------------------------------------|-----------|---------------------------|
| C-ILS-001 | D-ILS-001 | ILS General Requirements                   | 90 DACA   | 60 DACA                   |
| C-ILS-002 | D-ILS-002 | Maintenance Plan                           | 45 DACA   | 30 DACA                   |
| C-ILS-003 | D-ILS-003 | Support Equipment Requirements List (SERL) | 45 DACA   | 20 DACA                   |
| C-ILS-004 | D-ILS-004 | Spare and Repair Parts List (SRPL)         | 45 DACA   | 20 DACA                   |
| C-ILS-005 | D-ILS-005 | Packaging, Handling and Storage            |           | 30 Days prior to shipping |

### PUBLICATIONS

| CDRL      | DID       | TITLE                                                | DRAFT DUE            | FINAL DUE                  |
|-----------|-----------|------------------------------------------------------|----------------------|----------------------------|
| C-PUB-001 | D-PUB-001 | System Description, Operation and Maintenance Manual | 30 DACA              | 45 Days after Installation |
| C-PUB-002 | D-PUB-002 | Engineering Drawings and Associated Lists            | 90 Days prior to FAT | 30 Days prior to FAT       |

### NOTES:

1. DACA – Days after Contract Award.

2. Each of the above must be delivered to the Technical Authority (TA) DAEPM (R&CS) 4-4.
3. All documents must be delivered in Electronic media as well as hard copies as per the individual CDRL.



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                           |                                  |                                                    |                                           |                                                    |                    |              |              |              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|-------------------------------------------|----------------------------------------------------|--------------------|--------------|--------------|--------------|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                  |                                  |                                                    |                                           | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                               |                                  | D. DATA CATEGORY<br>Transition                     |                                           | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-TP-001                                                                                                                                                                                                                                             |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Transition Plan |                                           | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>DID - D-TP-001                                                                                                                                                                                                                      |                                  | 5. CONTRACT REFERENCE<br>SOW Para 2.2.4            |                                           | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br><b>DD</b>                                                                                                                                                                                                                                             | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                             | 12. SUBMISSION<br>DATE – DRAFT<br>30 DACA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |              |
| 8. APP CODE<br><b>A</b>                                                                                                                                                                                                                                                |                                  | 11. AS OF DATE<br>See Block 16                     | 13. SUBMISSION<br>DATE – FINAL<br>60 DACA | A. ADDRESS<br>DAEPM<br>(R&CS)                      | B. COPIES          |              |              |              |
|                                                                                                                                                                                                                                                                        |                                  |                                                    |                                           |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |              |
|                                                                                                                                                                                                                                                                        |                                  |                                                    |                                           |                                                    | Hard<br>Copy       | Soft<br>Copy | Hard<br>Copy | Soft<br>Copy |
| 16. REMARKS<br><br>16.1 The DRAFT submission of the Transition Plan is due 30 days after contract award. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes within 60 days after contract award. |                                  |                                                    |                                           | PM TCR<br>Sustain-<br>ment                         | 2                  | 1            | 2            | 1            |
|                                                                                                                                                                                                                                                                        |                                  |                                                    |                                           | CA                                                 |                    | 1            | 1            | 1            |
|                                                                                                                                                                                                                                                                        |                                  |                                                    |                                           | OTHER                                              |                    |              |              |              |
|                                                                                                                                                                                                                                                                        |                                  |                                                    |                                           |                                                    |                    |              |              |              |
| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                         |                                  | DATE<br>September 2016                             |                                           | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                 | 18. ESTIMATED NUMBER<br>OF PAGES |                                                    | 19. ESTIMATED<br>PRICE                    | 15. TOTAL                                          | 2                  | 2            | 3            | 2            |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                                              |                                  |                                                                              |                                           |                                                    |                    |              |              |   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------|--------------------|--------------|--------------|---|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                                     |                                  |                                                                              |                                           | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |   |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                                                  |                                  | D. DATA CATEGORY<br>Test and Evaluation                                      |                                           | E. CONTRACTOR                                      |                    |              |              |   |
| 1. ITEM NUMBER<br>C-TEST-001                                                                                                                                                                                                                                                              |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Verification Matrix Summary Report (VMSR) |                                           | 3. SUBTITLE                                        |                    |              |              |   |
| 4. AUTHORITY (Data Item Number)<br>DID - D-TEST-001                                                                                                                                                                                                                                       |                                  | 5. CONTRACT REFERENCE<br>SOW Para 4.1                                        |                                           | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |   |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                                       | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                                                       | 12. SUBMISSION<br>DATE – DRAFT<br>90 DACA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |   |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                                          |                                  | 11. AS OF DATE<br>See Block 16                                               | 13. SUBMISSION<br>DATE – FINAL<br>70 DACA | A.<br>ADDRESS<br>DAEPM<br>(R&CS)                   | B. COPIES          |              |              |   |
|                                                                                                                                                                                                                                                                                           |                                  |                                                                              |                                           |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |   |
|                                                                                                                                                                                                                                                                                           |                                  |                                                                              |                                           | Hard<br>Copy                                       | Soft<br>Copy       | Hard<br>Copy | Soft<br>Copy |   |
| 16. REMARKS<br><br>16.1 The DRAFT submission of the Verification Matrix Summary Report (VMSR) is due 90 days after contract award. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes 70 days after contract award. |                                  |                                                                              |                                           | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1 |
|                                                                                                                                                                                                                                                                                           |                                  |                                                                              |                                           | CA                                                 |                    |              | 1            | 1 |
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|                                                                                                                                                                                                                                                                                           |                                  |                                                                              |                                           |                                                    |                    |              |              |   |
| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                                            |                                  | DATE<br>September 2016                                                       |                                           | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |   |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                                    | 18. ESTIMATED NUMBER<br>OF PAGES |                                                                              | 19. ESTIMATED<br>PRICE                    | 15.<br>TOTAL                                       | 2                  | 2            | 3            | 2 |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                   |          |                                                                      |                                      |                                                    |              |                              |              |   |   |   |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------|--------------------------------------|----------------------------------------------------|--------------|------------------------------|--------------|---|---|---|---|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                          |          |                                                                      |                                      | B. CONTRACT / RFP NUMBER<br>Contract #             |              |                              |              |   |   |   |   |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                       |          | D. DATA CATEGORY<br>Test and Evaluation                              |                                      | E. CONTRACTOR                                      |              |                              |              |   |   |   |   |
| 1. ITEM NUMBER<br>C-TEST-002                                                                                                                                                                                                                                   |          | 2. TITLE OR DESCRIPTION OF DATA<br>Factory Acceptance Test Plan FATP |                                      | 3. SUBTITLE                                        |              |                              |              |   |   |   |   |
| 4. AUTHORITY (Data Item Number)<br>DID-D-TEST-002                                                                                                                                                                                                              |          | 5. CONTRACT REFERENCE<br>SOW Para 4.5.2                              |                                      | 6. REQUIRING OFFICE<br>TCR Sustainment             |              |                              |              |   |   |   |   |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                            | 9. INPUT | 10. FREQUENCY<br>R/ASR                                               | 12. SUBMISSION<br>DATE – DRAFT<br>NA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |              |                              |              |   |   |   |   |
| 8. APP CODE<br>A                                                                                                                                                                                                                                               |          | 11. AS OF DATE<br>See Block 16                                       | 13. SUBMISSION<br>DATE – FINAL<br>NA | A. ADDRESS<br>DAEPM<br>(R&CS)                      | B. COPIES    |                              |              |   |   |   |   |
| 16. REMARKS<br><br>16.1 The DRAFT submission of the FATP is due 60 days prior to Factory Acceptance Test (FAT). The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes 30 days prior to FAT. |          |                                                                      |                                      | PRELIM. /<br>DRAFT                                 |              | FINAL                        |              |   |   |   |   |
|                                                                                                                                                                                                                                                                |          |                                                                      |                                      | Hard<br>Copy                                       | Soft<br>Copy | Hard<br>Copy                 | Soft<br>Copy |   |   |   |   |
|                                                                                                                                                                                                                                                                |          |                                                                      |                                      | PM TCR<br>Sustain-<br>ment                         |              |                              |              | 2 | 1 | 2 | 1 |
|                                                                                                                                                                                                                                                                |          |                                                                      |                                      | CA                                                 |              |                              |              |   | 1 | 1 | 1 |
| OTHER                                                                                                                                                                                                                                                          |          |                                                                      |                                      |                                                    |              |                              |              |   |   |   |   |
| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                 |          |                                                                      |                                      | DATE<br>September 2016                             |              | APPROVED BY<br>Mr. BR Stokes |              |   |   |   |   |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                         |          | 18. ESTIMATED NUMBER<br>OF PAGES                                     |                                      | 19. ESTIMATED<br>PRICE                             |              | 15. TOTAL                    |              |   |   |   |   |
|                                                                                                                                                                                                                                                                |          |                                                                      |                                      |                                                    |              | 2                            | 2            |   |   |   |   |
|                                                                                                                                                                                                                                                                |          |                                                                      |                                      |                                                    |              | 3                            | 2            |   |   |   |   |





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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                          |                                  |                                                                   |                                      |                                                    |                    |              |              |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------------|--------------------------------------|----------------------------------------------------|--------------------|--------------|--------------|--------------|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                 |                                  |                                                                   |                                      | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                              |                                  | D. DATA CATEGORY<br>Test and Evaluation                           |                                      | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-TEST-003                                                                                                                                                                                                                                          |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Site Acceptance Test Plan SATP |                                      | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>DID - D-TEST-003                                                                                                                                                                                                                   |                                  | 5. CONTRACT REFERENCE<br>SOW Para 4.6.2                           |                                      | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                   | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                                            | 12. SUBMISSION<br>DATE – DRAFT<br>NA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |              |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                      |                                  | 11. AS OF DATE<br>See Block 16                                    | 13. SUBMISSION<br>DATE – FINAL<br>NA | A. ADDRESS<br>DAEPM<br>(R&CS)                      | B. COPIES          |              |              |              |
|                                                                                                                                                                                                                                                                       |                                  |                                                                   |                                      |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |              |
|                                                                                                                                                                                                                                                                       |                                  |                                                                   |                                      |                                                    | Hard<br>Copy       | Soft<br>Copy | Hard<br>Copy | Soft<br>Copy |
| 16. REMARKS<br><br>16.1.The DRAFT submission of the SATP is due 60 days prior to first Site Acceptance Test (SAT). The DRAFT is subject to review and approval by DND.<br><br>16.2.The FINAL copy must be delivered with the agreed changes 30 days prior to the SAT. |                                  |                                                                   |                                      | PM TCR<br>Sustain-<br>ment                         | 2                  | 1            | 2            | 1            |
|                                                                                                                                                                                                                                                                       |                                  |                                                                   |                                      | CA                                                 |                    | 1            | 1            | 1            |
|                                                                                                                                                                                                                                                                       |                                  |                                                                   |                                      | OTHER                                              |                    |              |              |              |
|                                                                                                                                                                                                                                                                       |                                  |                                                                   |                                      |                                                    |                    |              |              |              |
| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                        |                                  | DATE<br>September 2016                                            |                                      | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                | 18. ESTIMATED NUMBER<br>OF PAGES |                                                                   | 19. ESTIMATED<br>PRICE               | 15. TOTAL                                          | 2                  | 2            | 3            | 2            |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                          |          |                                                                               |                                       |                                                    |                    |              |              |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------|--------------------|--------------|--------------|--------------|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                 |          |                                                                               |                                       | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                              |          | D. DATA CATEGORY<br>Test and Evaluation                                       |                                       | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-TEST-004                                                                                                                                                                                                                                          |          | 2. TITLE OR DESCRIPTION OF DATA<br>Factory Acceptance Test Procedure<br>FATPR |                                       | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>DID - D-TEST-004                                                                                                                                                                                                                   |          | 5. CONTRACT REFERENCE<br>SOW Para 4.5.2                                       |                                       | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                   | 9. INPUT | 10. FREQUENCY<br>R/ASR                                                        | 12. SUBMISSION<br>DATE – DRAFT<br>N/A | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |              |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                      |          | 11. AS OF DATE<br>See Block 16                                                | 13. SUBMISSION<br>DATE – FINAL<br>N/A | A.<br>ADDRESS<br>DAEPM<br>(R&CS)                   | B. COPIES          |              |              |              |
|                                                                                                                                                                                                                                                                       |          |                                                                               |                                       |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |              |
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| 16. REMARKS<br><br>16.1 The DRAFT submission of the FATPR is due 60 days prior to the Factory Acceptance Test (FAT). The DRAFT is subject to review and approval by DND<br><br>16.2 The FINAL copy must be delivered with the agreed changes 30 days prior to the FAT |          |                                                                               |                                       | PM TCR<br>Sustain-<br>mant                         |                    |              | 2            | 1            |
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| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                        |          | DATE<br>September 2016                                                        |                                       | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                |          | 18. ESTIMATED NUMBER<br>OF PAGES                                              |                                       | 19. ESTIMATED<br>PRICE                             |                    | 15.<br>TOTAL |              |              |
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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                        |                                  |                                                                                |                                       |                                                    |                    |              |              |              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------------------------------|---------------------------------------|----------------------------------------------------|--------------------|--------------|--------------|--------------|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                               |                                  |                                                                                |                                       | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                            |                                  | D. DATA CATEGORY<br>Test and Evaluation                                        |                                       | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-TEST-005                                                                                                                                                                                                                                        |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Site Acceptance Test Procedures SATPR 3.4.1 |                                       | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>DID - D-TEST-005                                                                                                                                                                                                                 |                                  | 5. CONTRACT REFERENCE<br>SOW Para 4.6.2                                        |                                       | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                 | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                                                         | 12. SUBMISSION<br>DATE – DRAFT<br>N/A | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |              |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                    |                                  | 11. AS OF DATE<br>See Block 16                                                 | 13. SUBMISSION<br>DATE – FINAL<br>N/A | A.<br>ADDRESS<br>DAEPM<br>(R&CS)                   | B. COPIES          |              |              |              |
|                                                                                                                                                                                                                                                                     |                                  |                                                                                |                                       |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |              |
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| 16. REMARKS<br><br>16.1 The DRAFT submission of the SATPR is due 60 days prior to the Site Acceptance Test (SAT). The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes 30 days prior to the SAT |                                  |                                                                                |                                       | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1            |
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| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                      |                                  | DATE<br>September 2016                                                         |                                       | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                              | 18. ESTIMATED NUMBER<br>OF PAGES |                                                                                | 19. ESTIMATED<br>PRICE                |                                                    | 15. TOTAL          |              | 3            | 2            |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                                                                                                              |                                  |                                                            |                                       |                                                    |                    |              |              |              |
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| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                                                                                                     |                                  |                                                            |                                       | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                                                                                                                  |                                  | D. DATA CATEGORY<br>Test and Evaluation                    |                                       | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-TEST-006                                                                                                                                                                                                                                                                                                                              |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Acceptance Test Reports |                                       | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>DID - D-TEST-006                                                                                                                                                                                                                                                                                                       |                                  | 5. CONTRACT REFERENCE<br>SOW Para 4.5.5 and 4.6.10         |                                       | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                                                                                                       | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                                     | 12. SUBMISSION<br>DATE – DRAFT<br>N/A | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |              |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                                                                                                          |                                  | 11. AS OF DATE<br>See Block 16                             | 13. SUBMISSION<br>DATE – FINAL<br>N/A | A. ADDRESS<br>DAEPM<br>(R&CS)                      | B. COPIES          |              |              |              |
|                                                                                                                                                                                                                                                                                                                                                           |                                  |                                                            |                                       |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |              |
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| 16. REMARKS<br><br>16.1 Test Reports must be delivered in Final format not more than 30 days after conclusion of the test.<br><br>16.2 The DRAFT Test Readiness Review (TRR) shall be delivered 30 days prior to any DND attended testing (e.g. FAT or SAT)<br><br>16.3 The Final Test Readiness Review (TRR) must be delivered 10 days prior to testing. |                                  |                                                            |                                       | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1            |
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| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                                                                                                            |                                  | DATE<br>September 2016                                     |                                       | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                                                                                                    | 18. ESTIMATED NUMBER<br>OF PAGES |                                                            | 19. ESTIMATED<br>PRICE                |                                                    | 15. TOTAL          |              | 3            | 2            |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                                    |                                  |                                                             |                                           |                                                    |                    |              |              |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-------------------------------------------------------------|-------------------------------------------|----------------------------------------------------|--------------------|--------------|--------------|---|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                           |                                  |                                                             |                                           | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |   |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                                        |                                  | D. DATA CATEGORY<br>Integrated Logistics Support            |                                           | E. CONTRACTOR                                      |                    |              |              |   |
| 1. ITEM NUMBER<br>C-ILS-001                                                                                                                                                                                                                                                     |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>ILS General Requirements |                                           | 3. SUBTITLE                                        |                    |              |              |   |
| 4. AUTHORITY (Data Item Number)<br>DID - D-ILS-001                                                                                                                                                                                                                              |                                  | 5. CONTRACT REFERENCE<br>SOW Para 2.8.1                     |                                           | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |   |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                             | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                                      | 12. SUBMISSION<br>DATE – DRAFT<br>60 DACA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |   |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                                |                                  | 11. AS OF DATE<br>See Block 16                              | 13. SUBMISSION<br>DATE – FINAL<br>90 DACA | A. ADDRESS<br>DAEPM<br>(R&CS)                      | B. COPIES          |              |              |   |
|                                                                                                                                                                                                                                                                                 |                                  |                                                             |                                           |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |   |
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| 16. REMARKS<br><br>16.1 The DRAFT submission of the ILS General Requirements is due 60 days after contract award. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes within 90 days after contract award. |                                  |                                                             |                                           | PM TCR<br>Sustain-<br>ment                         | 2                  | 1            | 2            | 1 |
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| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                                  |                                  | DATE<br>September 2016                                      |                                           | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |   |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                          | 18. ESTIMATED NUMBER<br>OF PAGES |                                                             | 19. ESTIMATED<br>PRICE                    | 15. TOTAL                                          | 2                  | 2            | 3            | 2 |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                           |                                  |                                                     |                                           |                                                    |                    |              |              |   |
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| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                  |                                  |                                                     |                                           | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |   |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                               |                                  | D. DATA CATEGORY<br>Integrated Logistics Support    |                                           | E. CONTRACTOR                                      |                    |              |              |   |
| 1. ITEM NUMBER<br>C-ILS-002                                                                                                                                                                                                                                            |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Maintenance Plan |                                           | 3. SUBTITLE                                        |                    |              |              |   |
| 4. AUTHORITY (Data Item Number)<br>DID D-ILS-002                                                                                                                                                                                                                       |                                  | 5. CONTRACT REFERENCE<br>SOW Para 2.6               |                                           | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |   |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                    | 9. INPUT                         | 10. FREQUENCY<br>ONE/R                              | 12. SUBMISSION<br>DATE – DRAFT<br>30 DACA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |   |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                       |                                  | 11. AS OF DATE<br>See Block 16                      | 13. SUBMISSION<br>DATE – FINAL<br>45 DACA | A. ADDRESS<br>DAEPM<br>(R&CS)                      | B. COPIES          |              |              |   |
|                                                                                                                                                                                                                                                                        |                                  |                                                     |                                           |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |   |
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| 16. REMARKS<br><br>16.1 The DRAFT submission of the Maintenance Plan is due 30 days after contract award. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes within 45 days after contract award |                                  |                                                     |                                           | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1 |
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| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                         |                                  | DATE<br>September 2016                              |                                           | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |   |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                 | 18. ESTIMATED NUMBER<br>OF PAGES |                                                     | 19. ESTIMATED<br>PRICE                    |                                                    | 15. TOTAL          |              | 3            | 2 |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                                                      |                                  |                                                                                |                                           |                                                    |                    |              |              |              |
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| A. System / ITEM<br>DID - Voice Communications System (VCS)                                                                                                                                                                                                                                       |                                  |                                                                                |                                           | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                                                          |                                  | D. DATA CATEGORY<br>Integrated Logistics Support                               |                                           | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-ILS-003                                                                                                                                                                                                                                                                       |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Support Equipment Requirements List<br>SERL |                                           | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>D-ILS-003                                                                                                                                                                                                                                                      |                                  | 5. CONTRACT REFERENCE<br>SOW Para 2.8.5 and 2.8.6                              |                                           | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                                               | 9. INPUT                         | 10. FREQUENCY<br>ONE/R                                                         | 12. SUBMISSION<br>DATE – DRAFT<br>20 DACA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |              |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                                                  |                                  | 11. AS OF DATE<br>See Block 16                                                 | 13. SUBMISSION<br>DATE – FINAL<br>45 DACA | A.<br>ADDRESS<br><br>DAEPM<br>(R&CS)               | B. COPIES          |              |              |              |
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| 16. REMARKS<br><br>16.1 The DRAFT submission of the Support Equipment Requirements List (SERL.) is due 20 days after contract award. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes within 45 days after contract award |                                  |                                                                                |                                           | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1            |
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| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                                                    |                                  | DATE<br>September 2016                                                         | APPROVED BY<br>Mr. BR Stokes              |                                                    |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                                            | 18. ESTIMATED NUMBER<br>OF PAGES |                                                                                | 19. ESTIMATED<br>PRICE                    | 15.<br>TOTAL                                       |                    |              | 3            | 2            |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                                             |                                  |                                                                     |                                           |                                                    |                    |              |              |              |
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| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                                    |                                  |                                                                     |                                           | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                                                 |                                  | D. DATA CATEGORY<br>Integrated Logistics Support                    |                                           | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-ILS-004                                                                                                                                                                                                                                                              |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Spare and Repair Parts List SRPL |                                           | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>DID - D-ILS-004                                                                                                                                                                                                                                       |                                  | 5. CONTRACT REFERENCE<br>SOW Para 2.8.2                             |                                           | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                                      | 9. INPUT                         | 10. FREQUENCY<br>ONE/R                                              | 12. SUBMISSION<br>DATE – DRAFT<br>20 DACA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |              |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                                         |                                  | 11. AS OF DATE<br>See Block 16                                      | 13. SUBMISSION<br>DATE – FINAL<br>45 DACA | A. ADDRESS<br>DAEPM<br>(R&CS)                      | B. COPIES          |              |              |              |
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| 16. REMARKS<br><br>16.1 The DRAFT submission of the Spare and Repair Parts List (SRPL) is due 20 days after contract award. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes within 45 days after contract award |                                  |                                                                     |                                           | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1            |
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| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                                           |                                  | DATE<br>September 2016                                              |                                           | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                                   | 18. ESTIMATED NUMBER<br>OF PAGES |                                                                     | 19. ESTIMATED<br>PRICE                    | 15. TOTAL                                          |                    |              | 3            | 2            |





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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                   |                                  |                                                                    |                                                |                                                    |                    |              |              |              |
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| A. System / ITEM<br>Voice Communications System (VCS)                                                                          |                                  |                                                                    |                                                | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |              |
| C. SOW IDENTIFIER<br>SOW 00000547                                                                                              |                                  | D. DATA CATEGORY<br>Integrated Logistics Support                   |                                                | E. CONTRACTOR                                      |                    |              |              |              |
| 1. ITEM NUMBER<br>C-ILS-005                                                                                                    |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>Packaging, Handling and Storage |                                                | 3. SUBTITLE                                        |                    |              |              |              |
| 4. AUTHORITY (Data Item Number)<br>DID - ILS-005                                                                               |                                  | 5. CONTRACT REFERENCE<br>SOW Para 2.8.10                           |                                                | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |              |
| 7. INSPECTION<br>DD                                                                                                            | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                                             | 12. SUBMISSION<br>DATE – DRAFT<br>See Block 16 | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainmnet |                    |              |              |              |
| 8. APP CODE<br>A                                                                                                               |                                  | 11. AS OF DATE<br>See Block 16                                     | 13. SUBMISSION<br>DATE – FINAL<br>See Block 16 | A.<br>ADDRESS<br>DAEPM<br>(R&CS)                   | B. COPIES          |              |              |              |
|                                                                                                                                |                                  |                                                                    |                                                |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |              |
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| 16. REMARKS<br><br>16.1 Packaging, Handling, and Storage considerations must be submitted 30 days prior to equipment shipment. |                                  |                                                                    |                                                | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1            |
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|                                                                                                                                |                                  |                                                                    |                                                |                                                    |                    |              |              |              |
| PREPARED BY<br>TCR Sustainment                                                                                                 |                                  | DATE<br>September 2016                                             |                                                | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |              |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                         | 18. ESTIMATED NUMBER<br>OF PAGES |                                                                    | 19. ESTIMATED<br>PRICE                         | 15.<br>TOTAL                                       |                    |              | 3            | 2            |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                                                        |                                  |                                                                                 |                                           |                                                    |                    |              |              |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------|--------------------|--------------|--------------|---|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                                               |                                  |                                                                                 |                                           | B. CONTRACT / RFP NUMBER<br>Contract #             |                    |              |              |   |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                                                            |                                  | D. DATA CATEGORY<br>Publications                                                |                                           | E. CONTRACTOR                                      |                    |              |              |   |
| 1. ITEM NUMBER<br>C-PUB-001                                                                                                                                                                                                                                                                         |                                  | 2. TITLE OR DESCRIPTION OF DATA<br>System Description Operation and Maintenance |                                           | 3. SUBTITLE                                        |                    |              |              |   |
| 4. AUTHORITY (Data Item Number)<br>DID - D-PUB-001                                                                                                                                                                                                                                                  |                                  | 5. CONTRACT REFERENCE<br>SOW Para 2.8.1 and 5.3                                 |                                           | 6. REQUIRING OFFICE<br>TCR Sustainment             |                    |              |              |   |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                                                 | 9. INPUT                         | 10. FREQUENCY<br>R/ASR                                                          | 12. SUBMISSION<br>DATE – DRAFT<br>60 DACA | 14. DISTRIBUTION AND<br>ADDRESSEES TCR Sustainment |                    |              |              |   |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                                                    |                                  | 11. AS OF DATE<br>See Block 16                                                  | 13. SUBMISSION<br>DATE – FINAL<br>90 DACA | A.<br>ADDRESS<br><br>DAEPM<br>(R&CS)               | B. COPIES          |              |              |   |
|                                                                                                                                                                                                                                                                                                     |                                  |                                                                                 |                                           |                                                    | PRELIM. /<br>DRAFT | FINAL        |              |   |
|                                                                                                                                                                                                                                                                                                     |                                  |                                                                                 |                                           | Hard<br>Copy                                       | Soft<br>Copy       | Hard<br>Copy | Soft<br>Copy |   |
| 16. REMARKS<br><br>16.1 The DRAFT submission of the System Description, Operation and Maintenance is due 60 days after contract award. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes within 90 days after contract award |                                  |                                                                                 |                                           | PM TCR<br>Sustain-<br>ment                         |                    |              | 2            | 1 |
|                                                                                                                                                                                                                                                                                                     |                                  |                                                                                 |                                           | CA                                                 |                    |              | 1            | 1 |
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|                                                                                                                                                                                                                                                                                                     |                                  |                                                                                 |                                           |                                                    |                    |              |              |   |
| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                                                      |                                  | DATE<br>September 2016                                                          |                                           | APPROVED BY<br>Mr. BR Stokes                       |                    |              |              |   |
| 17. CONTRACT FILE /<br>DOCUMENT NUMBER                                                                                                                                                                                                                                                              | 18. ESTIMATED NUMBER<br>OF PAGES |                                                                                 | 19. ESTIMATED<br>PRICE                    |                                                    | 15. TOTAL          |              | 3            | 2 |



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| CONTRACT DATA REQUIREMENTS LIST<br>LISTE DES DONNÉES ESSENTIELLES DU CONTRAT                                                                                                                                                                                                                                                                                                              |                               |                                                                              |                                             |                                                 |                 |           |           |           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------|---------------------------------------------|-------------------------------------------------|-----------------|-----------|-----------|-----------|
| A. System / ITEM<br>Voice Communications System (VCS)                                                                                                                                                                                                                                                                                                                                     |                               |                                                                              |                                             | B. CONTRACT / RFP NUMBER<br>Contract #          |                 |           |           |           |
| C. SOW IDENTIFIER<br>SOW                                                                                                                                                                                                                                                                                                                                                                  |                               | D. DATA CATEGORY<br>Publications                                             |                                             | E. CONTRACTOR                                   |                 |           |           |           |
| 1. ITEM NUMBER<br>C-PUB-002                                                                                                                                                                                                                                                                                                                                                               |                               | 2. TITLE OR DESCRIPTION OF DATA<br>Engineering Drawings and Associated Lists |                                             | 3. SUBTITLE                                     |                 |           |           |           |
| 4. AUTHORITY (Data Item Number)<br>DID - D - PUB-002                                                                                                                                                                                                                                                                                                                                      |                               | 5. CONTRACT REFERENCE<br>SOW Para 2.8.1 and 2.8.4                            |                                             | 6. REQUIRING OFFICE<br>TCR Sustainment          |                 |           |           |           |
| 7. INSPECTION<br>DD                                                                                                                                                                                                                                                                                                                                                                       | 9. INPUT                      | 10. FREQUENCY<br>R/ASR                                                       | 12. SUBMISSION DATE – DRAFT<br>See Block 16 | 14. DISTRIBUTION AND ADDRESSEES TCR Sustainment |                 |           |           |           |
| 8. APP CODE<br>A                                                                                                                                                                                                                                                                                                                                                                          |                               | 11. AS OF DATE<br>See Block 16                                               | 13. SUBMISSION DATE – FINAL<br>See Block 16 | A. ADDRESS<br>DAEPM (R&CS)                      | B. COPIES       |           |           |           |
|                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                              |                                             |                                                 | PRELIM. / DRAFT | FINAL     |           |           |
|                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                              |                                             |                                                 | Hard Copy       | Soft Copy | Hard Copy | Soft Copy |
| 16. REMARKS<br><br>16.1 The DRAFT submission of the Engineering Drawings and Associated Lists is due 90 days prior to FAT. The DRAFT is subject to review and approval by DND.<br><br>16.2 The FINAL copy must be delivered with the agreed changes within 30 days prior to FAT<br><br>16.3 Canada will provide its comments to the Contractor within 45 days of receiving the Data Item. |                               |                                                                              |                                             | PM TCR Sustainment                              |                 |           | 2         | 1         |
|                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                              |                                             | CA                                              |                 |           | 1         | 1         |
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|                                                                                                                                                                                                                                                                                                                                                                                           |                               |                                                                              |                                             |                                                 |                 |           |           |           |
| PREPARED BY<br>TCR Sustainment                                                                                                                                                                                                                                                                                                                                                            |                               | DATE<br>September 2016                                                       |                                             | APPROVED BY<br>Mr. BR Stokes                    |                 |           |           |           |
| 17. CONTRACT FILE / DOCUMENT NUMBER                                                                                                                                                                                                                                                                                                                                                       | 18. ESTIMATED NUMBER OF PAGES |                                                                              | 19. ESTIMATED PRICE                         |                                                 | 15. TOTAL       |           | 3         | 2         |

**DATA ITEM DESCRIPTION**  
**(DIDs)**  
**FOR**  
**VOICE COMMUNICATION SYSTEM (VCS)**  
**FOR**  
**4 WING, 42 RADAR SQUADRON, COLD LAKE, ALBERTA**

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## DATA ITEM DESCRIPTIONS (DIDs) – GENERAL INFORMATION

1. **TITLE:** The DID title identifies the data item. It is a meaningful short name for the data item that identifies its nature.
2. **IDENTIFICATION NUMBER:** An alphanumeric allocation is representing a functional area of responsibility. Its root is the Contract Data Requirements List (CDRL) number with a “D” preceding. Expressed as follows:

|            |                              |
|------------|------------------------------|
| D-TP-xxx   | Transition                   |
| D-TEST-xxx | Tests and Evaluation         |
| D-ILS-xxx  | Integrated Logistics Support |
| D-PUB-xxx  | Publications                 |

3. **DESCRIPTION/PURPOSE:** The description/purpose entry presents a concise description (abstract) of the data content requirements and presents the purpose for which the data is required.
4. **APPROVAL DATE:** The originator’s approval date.
5. **OFFICE OF PRIMARY INTEREST:** The office designation of the directorate or individual responsible for specifying the data requirement.
6. **GIDEP APPLICABLE:** The box will be marked by an X when copies of the data are required to be submitted by a government organization or the contractor to the Government/Industry Data Exchange Program (GIDEP).
7. **APPLICATION/INTERRELATIONSHIP:** A block, which contains information to assist in the proper selection and application of the data item.
8. **ORIGINATOR:** Title of author
9. **APPLICABLE FORMS:** Forms associated with the DID are identified in Block 9
10. **PREPARATION INSTRUCTIONS:** A block which contains the description of the information required in the DID. The following subparagraphs provide the generic format and content instructions for the preparation of all deliverables:

**10.1. Source Documents.** The applicable issue of the documents cited in the SOW and individual DIDs, including their approval dates, and dates of any applicable amendment notices and revisions shall be specified in the contract.

**10.2. Data Item Formats and Delivery Mediums.** Unless otherwise defined within this contract, the Contractor must submit the contract deliverables in paper and electronic formats. Best commercial practices are to be used for charts, tables, matrices, page numbering and document control numbering.

**10.2.1. Paper Format.** Deliverables in paper format must be provided in typewritten form on plain, 8 ½ by 11 inch or 8 ½ by 14 inch, bond paper. Note that the preceding size restriction does not apply to Engineering Drawings.

**10.2.2. Electronic Format.** Electronic documents must be delivered in a format fully compatible with the products listed in the following table.

TABLE 1 - FORMAT COMPATIBILITY FOR ELECTRONIC DOCUMENTS

| Application Type             | Product/Format                   |
|------------------------------|----------------------------------|
| Word Processing              | Microsoft Word for Windows       |
| Spreadsheet                  | Microsoft Excel for Windows      |
| Presentation                 | Microsoft PowerPoint for Windows |
| Database                     | Microsoft Access for Windows     |
| Project Management/Schedules | Microsoft Project for Windows    |
| Drawing                      | AutoCAD (Autodesk)               |
| Photos                       | JPEG, TIFF                       |

Electronic versions of documents must be delivered on CD-ROMs. CD-ROMs shall be labeled with the following information, as a minimum:

- a. project name;
- b. contract Number;
- c. subject matter; and
- d. date of delivery.

Alternatively, for working or draft documents, the contractor may deliver electronic data via e-mail (must comply with the Department of National Defence (DND) internet/firewall maximum file size limitation of 5 Mb).



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                           |                                                                       |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|--|
| <b>1. TITLE – TITRE</b><br>Transition Plan (TP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                           | <b>2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION</b><br>D-TP-001 |  |
| <b>3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET</b><br>3.1 The purpose of the Transition Plan is to describe the Contractor's methodology to transition from the current system to the new system. The plan includes a description of work efforts, hardware and software requirements for accomplishing each phase of the transition.<br><br>3.2 The Transition Plan provides a detailed description of the Contractor's strategies and methodologies for implementing the VCS system in discrete steps to coincide with established program objectives, milestones, and/or implementation phases. |                                                                                                           |                                                                       |  |
| <b>4. APPROVAL DATE</b><br>DATE D'APPROBATION<br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <b>5. OFFICE OF PRIMARY INTEREST (OPI)</b><br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br>DAEPM/R&CS 4-4-4 | <b>6. GIDEP APPLICABLE</b><br>D'ÉCHANGE DE DONNÉES PERTINENT          |  |
| <b>7. APPLICATION/INTERRELATIONSHIP – APPLICATION/INTERDÉPENDANCE</b><br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the VCS SOW.<br>7.2 This document is to be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br>7.3 CDRL-TP-001 and SOW paragraph 2.2.4 refer                                                                                                                           |                                                                                                           |                                                                       |  |
| <b>8. ORIGINATOR - AUTEUR</b><br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                           | <b>9. APPLICABLE FORMS - FORMULES PERTINENTES</b>                     |  |
| <b>10. PREPARATION INSTRUCTIONS – INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                           |                                                                       |  |





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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Transition Plan (TP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | D-TP-001                                           |
| <p>10.1 <b>Content and format instructions.</b> Production of this document using automated techniques is encouraged. Best commercial practices are to be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. Transition Plan (TP) must consist of the following:</p> <ul style="list-style-type: none"> <li>(1) Title Page;</li> <li>(2) Table of Contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Purpose;</li> <li>(6) References;</li> <li>(7) Introduction/Transition Planning;</li> <li>(8) Concept of Operations;</li> <li>(9) Transition equipment requirements;</li> <li>(10) Transition equipment requirements – Alternatives;</li> <li>(11) Notes; and</li> <li>(12) Appendices.</li> </ul> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <ul style="list-style-type: none"> <li>a. Transition Plan (TP) for the VCS Project (DAEPM/R&amp;CS 4-4-4);</li> <li>b. Contract No.;</li> <li>c. CDRL Sequence No.;</li> <li>d. Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&amp;CS 4-4-4); and</li> <li>e. Prepared by: Contractor's name and address.</li> </ul> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Purpose.</b> This section must describe the purpose of the TP.</p> <p>10.1.6 <b>References.</b> This section must list all references used in the TP.</p> <p>10.1.7 <b>Transition Planning.</b> The Transition Plan must, as a minimum, contain the following information:</p> <ul style="list-style-type: none"> <li>a. A description of the plan and methodology to accomplish each phase of the transition;</li> </ul> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Transition Plan (TP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | D-TP-001                                           |
| <p>b. Identification of hardware and software capabilities required to install and test the system in the existing facilities;</p> <p>c. Plans and procedures for the test and verification effort required to verify successful completion of each transition phase; and</p> <p>d. The Transition Plan shall include a cutover plan to ensure that communication connectivity during installation is maintained.</p> <p><b>10.1.8 Concepts of Operation (Transition).</b> This section must define the transition scenarios of the current System to the completed integration of the new VCS. Each scenario must identify the following:</p> <p>a. Co-ordination required before, during, and after switchover;</p> <p>b. Sequential events (script/check list);</p> <p>c. Organisational responsibilities for each event;</p> <p>d. Operational risk and mitigation procedures;</p> <p>e. Impact on the unit's operations/procedures; and</p> <p>f. Impact on maintenance operations/procedures.</p> <p><b>10.1.9 Transition Equipment Requirements.</b> As applicable, this section must identify the requirements to be satisfied by any temporary transition equipment (hardware, software and communications) necessary during the period of transitional operation. The transition equipment requirements must address the following:</p> <p>a. General requirements;</p> <p>b. Functional requirements of the following:</p> <p>(1) Interface;</p> <p>(2) Switching; and</p> <p>(3) Support and Test Equipment.</p> <p>c. Physical requirements/constraints of:</p> <p>(1) Floor space;</p> <p>(2) Power;</p> <p>(3) Cabling;</p> <p>(4) Heating/cooling;</p> <p>(5) EMI/EMC; and</p> <p>(6) Grounding.</p> <p>d. Logistic Support.</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Transition Plan (TP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D-TP-001                                           |
| <p>10.1.10 <b>Transition Equipment Requirements Alternatives.</b> In the process of identifying any transition equipment requirements, the various transition equipment alternatives investigated must be discussed. The purpose of the plan is to identify alternatives and to minimize the time required for use of these alternate services.</p> <p>10.1.11 <b>Notes.</b> This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.</p> <p>10.1.12 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                    |                                                                  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------|--|
| 1. TITLE – TITRE<br>Verification Cross Reference Matrix (VCRM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                    | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION<br>D-TEST-001 |  |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br>3.1 The Verification Matrix Summary Report (VMSR) must depict how the Contractor will verify and demonstrate compliance with the Requirements of the contract.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                    |                                                                  |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br>DAEPM/R&CS 4-4-4 | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT            |  |
| 7. APPLICATION/INTERRELATIONSHIP – APPLICATION/INTERDÉPENDANCE<br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the VCS SOW.<br>7.2 This document must be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br>7.3 CDRL-TEST-001 and SOW paragraph 4.1 refer.                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                    |                                                                  |  |
| 8. ORIGINATOR – AUTEUR<br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                    | 9. APPLICABLE FORMS - FORMULES PERTINENTES                       |  |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br>10.1 <b>Content and format instructions.</b> Production of this document using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. The VMSR must consist of the following:<br><ul style="list-style-type: none"> <li>(1) Title page;</li> <li>(2) Table of contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Purpose;</li> <li>(6) References;</li> <li>(7) Validation Method;</li> <li>(8) VMSR Content;</li> <li>(9) Notes; and</li> <li>(10) Appendices</li> </ul> 10.1.1 <b>Title Page.</b> The Title Page must contain the following information: |                                                                                                    |                                                                  |  |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION |
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| Verification Cross Reference Matrix (VCRM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | D-TEST-001                                         |
| <p>a. Verification Matrix Summary Report (VMSR) for the VCS Project (DAEPM/R&amp;CS 4-4-4);</p> <p>b. Contract No.;</p> <p>c. CDRL Sequence No.;</p> <p>d. Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&amp;CS 4-4); and</p> <p>e. Prepared by: Contractor's name and address.</p> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Purpose.</b> This section must describe the purpose of the VMSR.</p> <p>10.1.6 <b>References.</b> This section must describe all references used in the VMSR.</p> <p>10.1.7 <b>Verification Method.</b> The following verification methods must be used in the VMSR:</p> <p>a. Analysis (A) - The processing of accumulated data obtained from other qualification methods. Examples are reduction interpolation, or extrapolation of test results.</p> <p>b. Demonstration (D) - The operation of the system, or a part of the system that relies on observable functional operation not requiring the use of instrumentation, special test equipment, or subsequent analysis.</p> <p>c. Inspection (I) - The visual examination of system components, documentation, etc.</p> <p>d. Test (T) - The operation of the system, or a part of the system, using instrumentation or other special test equipment to collect data for later analysis.</p> <p>10.1.8 <b>Requirements Verification Matrix Content.</b> The VMSR must address all requirements to be tested. The VMSR must be organised in a table format. The following information must be included for each requirement to be tested:</p> <p>a. Unique requirement object identifier;</p> <p>b. Test scenario, test case, or group of test applicable to the specific requirement;</p> <p>c. Test unique identifier;</p> <p>d. Test type or class;</p> <p>e. Level/stage of the test (i.e. FAT or SAT);</p> <p>f. Qualification method (i.e., analysis, demonstration or inspection);</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION |
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| Verification Cross Reference Matrix (VCRM)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | D-TEST-001                                         |
| <p>g. First Article Test only (yes/no);</p> <p>h. Overview of the test itself;</p> <p>i. Sub-tests as applicable;</p> <p>j. Details of the pass/fail criteria;</p> <p>k. Test status;</p> <p>l. Remark; and</p> <p>m. Any additional information not mentioned above and judged relevant to the requirement tests activity</p> <p>10.1.9 <b>Notes.</b> This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.</p> <p>10.1.10 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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| 1. TITLE – TITRE<br>Factory Acceptance Test Plan (FATP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                        | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION<br>D-TEST-002 |  |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br><br>3.2 The FAT plan is used to document test plans required to perform tests on systems, subsystems, equipment, and Configuration Items (CI's) at the factory acceptance level and to provide information for evaluation and determination of subsequent actions. This DID is applicable to all systems and equipment requiring tests.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                        |                                                                  |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br><br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br><br>DAEPM/R&CS 4-4-4 | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT            |  |
| 7. APPLICATION/INTERRELATIONSHIP – APPLICATION/INTERDÉPENDANCE<br><br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the VCS SOW.<br><br>7.2 This document is to be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br><br>7.3 The FAT Plan must not conflict with other Test Plans, Procedures, or Reports.<br><br>7.4 CDRL-TEST-002 and SOW paragraph 4.5.2 refers.                                                                                                                                                                                                                                                                                                                          |                                                                                                        |                                                                  |  |
| 8. ORIGINATOR – AUTEUR<br><br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                        | 9. APPLICABLE FORMS - FORMULES PERTINENTES                       |  |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br><br>10.1 <b>Content and format instructions.</b> Production of this document using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. Factory Acceptance Test Plan (FATP) must consist of the following:<br><ul style="list-style-type: none"> <li>(1) Title page;</li> <li>(2) Table of contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record</li> <li>(5) Purpose;</li> <li>(6) References;</li> <li>(7) Factory Acceptance Test Plan;</li> <li>(8) Test Environment;</li> <li>(9) Formal Test Identification;</li> <li>(10) Factory Acceptance Test Schedule;</li> <li>(11) Existing test data;</li> </ul> |                                                                                                        |                                                                  |  |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION |
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| Factory Acceptance Test Plan (FATP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | D-TEST-002                                         |
| <p>(12) First Article Tests;<br/>(13) Deficiency Reports<br/>(14) FAT Vs SAT;<br/>(15) Notes; and<br/>(16) Appendices.</p> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <ol style="list-style-type: none"> <li>Factory Acceptance Test Plan (FATP) for the VCS Project (DAEPM/R&amp;CS 4-4-4);</li> <li>Contract No.;</li> <li>CDRL Sequence No.;</li> <li>Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&amp;CS 4-4); and</li> <li>Prepared by: Contractor's name and address.</li> </ol> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Purpose.</b> This section must describe the purpose of the FATP.</p> <p>10.1.6 <b>References.</b> This section must describe all references used in the FATP.</p> <p>10.1.7 <b>Factory Acceptance Test Plan.</b> The Factory Acceptance Test Plan must document the necessary test data in such format as required to demonstrate the degree to which the test item meets all performance specifications of the Contract.</p> <p>10.1.8 <b>Test Environment.</b> This subparagraph must be divided into the following subparagraphs:</p> <ol style="list-style-type: none"> <li><b>Hardware/Software Under Test.</b> This subparagraph must identify the hardware/software under test; and</li> <li><b>Hardware/Software Support Tools.</b> This subparagraph must provide a description of the hardware/software used in support of the verification of the hardware/software identified in the previous subparagraph.</li> </ol> <p>10.1.9 <b>Formal Test Identification.</b> This section must be divided into the following subparagraphs to identify each formal test and to describe the formal test requirements to which this plan applies.</p> |                                                    |





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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION |
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| Factory Acceptance Test Plan (FATP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | D-TEST-002                                         |
| <p>a. <b>Project-Unique Identifier.</b> This paragraph must identify a formal test phase by name and project-unique identifier, and must be divided into the following subparagraphs to describe the total scope of testing for the Factory Acceptance Test;</p> <p>b. <b>General Test Requirements.</b> This subparagraph must describe pre-test requirements that apply to all of the formal tests or to a group of formal tests;</p> <p>c. <b>Test Definitions.</b> This subparagraph must identify and describe each formal test to be conducted during the Factory Acceptance Test;</p> <p>d. <b>Test Name and Project-Unique Identifier.</b> This subparagraph must identify a formal test by name and project-unique identifier. This subparagraph must provide the information specified below for the test. Some or all of this information may be provided graphically;</p> <ol style="list-style-type: none"> <li>(1) Test objective;</li> <li>(2) Any special requirements (e.g., 48 hours of continuous facility time, simulation, live interface feed or simulated data);</li> <li>(3) Test type or class;</li> <li>(4) Test scenario(s) or test cases(s);</li> <li>(5) Qualification method (i.e., analysis, demonstration or inspection);</li> <li>(6) Test Preference. Verification by demonstration must be the preferred method of test whenever applicable/feasible to do so. Every test must be conducted on a pass/fail basis and each test must be assessed against the pass/fail criteria, which must be documented in the test procedures.</li> <li>(7) Cross reference to the system specifications requirement(s) addressed by this test;</li> <li>(8) Type of data to be recorded for test purposes; and</li> <li>(9) Assumptions and constraints.</li> </ol> <p>10.1.10 <b>Factory Acceptance Test Schedule.</b> This subparagraph must contain or reference the test schedule for conducting the tests.</p> <p>10.1.11 <b>Existing Test data.</b> This section must describe the nature of existing test data, if any, that the Contractor plans to submit for the DND TA's review, in order to demonstrate compliance to specific requirements or groups of requirements.</p> <p>10.1.12 <b>First Article Tests.</b> This section must address the requirements or groups of requirements and the sub-system, or equipment which the Contractor plans to submit to First Article Equipment tests only versus all articles equipment. The details of the rationale for each individual selection must be provided.</p> <p>10.1.13 <b>Deficiency Reports.</b> This section must describe in detail the method by which the Contractor will keep track of all deficiencies identified during any and all tests. Deficiencies must be tracked in a database that permits the generation of reports required by DND so that a permanent record is maintained that logs each deficiency by giving it a unique identity, identifies the person(s) recording</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION |
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| Factory Acceptance Test Plan (FATP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | D-TEST-002                                         |
| <p>the deficiency, date/time that the deficiency was identified, describes the deficiency and how it is to be addressed, describes the severity of the deficiency (e.g. as category A, B, C or similar to indicate whether the deficiency is critical, major, minor, etc), current status (e.g. open, closed, rejected, other category as appropriate), date/time it is resolved, and other data as mutually agreed and necessary to ensure accurate recording and tracking of deficiencies. It must be possible to compile various reports utilizing this database based on status, category of deficiency, or any other mutually agreed criteria. The plan must describe the use of the deficiency reports and the visibility that DND will be afforded throughout this process. For ease of use, the layout of the deficiency report must be such that all of the information pertinent to any one deficiency can easily fit on a single 8 ½ by 11 inch page. Test procedures together with all of the associated deficiency reports, when completed, must form the basis for the Test Reports required to satisfy DID D-TEST-006.</p> <p>10.1.14 <b>FAT vs SAT.</b> This section must identify the requirements that cannot be tested at the Factory. The details of the rationale for such a selection must be provided.</p> <p>10.1.15 <b>Notes.</b> This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.</p> <p>10.1.16 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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| 1. TITLE – TITRE<br>Site Acceptance Test Plan (SATP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                    | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION<br>D-TEST-003 |  |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br>3.3 To document test plans required to perform tests on systems, subsystems, equipment and CIs at the Site Acceptance level and to provide information for evaluation and determination of subsequent actions. This DID is applicable to all systems and equipment requiring tests. Each site must have its own SATP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                    |                                                                  |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br>DAEPM/R&CS 4-4-4 | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT            |  |
| 7. APPLICATION/INTERRELATIONSHIP – APPLICATION/INTERDÉPENDANCE<br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the VCS SOW.<br>7.2 This document is to be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br>7.3 This DID applies to SAT “Name of Site”.<br>7.4 The SAT Plan must not conflict with other Test Plans, Procedures, or Reports.<br>7.5 CDRL-TEST-003 and SOW paragraph 4.6.2 refers.                                                                                                                                                                                                                                             |                                                                                                    |                                                                  |  |
| 8. ORIGINATOR – AUTEUR<br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                    | 9. APPLICABLE FORMS - FORMULES PERTINENTES                       |  |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br>10.1 <b>Content and format instructions.</b> Production of this document using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. Site Acceptance Test Plan (SATP) must consist of the following:<br><ol style="list-style-type: none"> <li>(1) Title page;</li> <li>(2) Table of contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Purpose;</li> <li>(6) References;</li> <li>(7) Site Acceptance Test Plan;</li> <li>(8) Test Environment;</li> <li>(9) Formal Test Identification;</li> <li>(10) Site Acceptance Test Schedule;</li> </ol> |                                                                                                    |                                                                  |  |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION |
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| Site Acceptance Test Plan (SATP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | D-TEST-003                                         |
| <p>(11) Existing Test Data;<br/> (12) First Article Tests;<br/> (13) Deficiency Reports,<br/> (14) Notes; and<br/> (15) Appendices.</p> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <ol style="list-style-type: none"> <li>Site Acceptance Test Plan (SATP) for the VCS Project (DAEPM/R&amp;CS 4-4) “Site Name”;</li> <li>Contract No.;</li> <li>CDRL Sequence No.;</li> <li>Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&amp;CS 4-4); and</li> <li>Prepared by: Contractor’s name and address.</li> </ol> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Purpose.</b> This section must describe the purpose of the SATP.</p> <p>10.1.6 <b>References.</b> This section must describe all references used in the SATP.</p> <p>10.1.7 <b>Site Acceptance Test Plan.</b> The Site Acceptance Test Plan must document the necessary test data in such format as required to demonstrate the degree to which the test item meets all performance specifications of the Contract. The SATP must also:</p> |                                                    |

- a. Include repeatable procedures detailing all test sequences that must be used to ensure compliance as per CDRL/DID VCSTE-005;
- b. Incorporate all remaining interface tests that must be conducted for those interfaces that could not be tested "live" at FAT;
- c. Clearly identified and described the tests performed during FAT that must be repeated for those parameters that could potentially behave differently from the factory to the field;
- d. Incorporate all the interface requirements that must be done for those interfaces which could not be practically demonstrated except on site; and
- e. Identify all the parameters that could potentially impact flight safety. These parameters must be tested thoroughly for all systems.

10.1.8 **Test Environment.** This subparagraph must be divided into the following subparagraphs:

- a. **Hardware/Software Under Test.** This subparagraph must identify the hardware/software under test; and
- b. **Hardware/Software Support Tools.** This subparagraph must provide a description of the hardware/software used in support of the verification of the software identified in the previous subparagraph. The specific environment in which the tests will be performed must be described as well.

10.1.9 **Formal Test Identification.** This section must be divided into the following subparagraphs to identify each formal test and to describe the formal test requirements to which this plan applies.

- a. **(Project-Unique Identifier).** This paragraph must identify a formal test phase by name and project-unique identifier, and must be divided into the following subparagraphs to describe the total scope of testing for the Site Acceptance Test;
- b. **General Test Requirements.** This subparagraph must describe pre-test requirements that apply to all of the formal tests or to a group of formal tests;
- c. **Test Definitions.** This subparagraph must identify and describe each formal test to be conducted during the Site Acceptance Test; and
- d. **(Test Name and Project-Unique Identifier).** This subparagraph must identify a formal test by name and project-unique identifier. This subparagraph must provide the information specified below for the test. Some or all of this information may be provided graphically.
  - (1) Test objective;
  - (2) Any special requirements (e.g., 48 hours of continuous facility time, real-time);
  - (3) Test type or class;
  - (4) Test scenario(s) or test cases(s);
  - (5) Qualification method (i.e., analysis, demonstration or inspection);
  - (6) Cross reference to the system specifications requirements addressed by this test;
  - (7) Type of data to be recorded; and
  - (8) Assumptions and constraints.

10.1.10 **Site Acceptance Test Schedule.** This subparagraph must contain or reference the test schedule for conducting the tests.

10.1.11 **Existing Test data.** This section must describe the nature any existing test data, if any, that the Contractor plans to submit to the DND TA's for review in order to demonstrate compliance to specific requirements or groups of requirements.



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2. IDENTIFICATION NUMBER – NUMÉRO D'IDENTIFICATION |
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| Site Acceptance Test Plan (SATP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | D-TEST-003                                         |
| <p>10.1.12 <b>First Article Tests.</b> This section must address the requirements or groups of requirements and the sub-system, equipment or CI's which the Contractor plans to submit to First Article Equipment tests only versus all articles equipment. The rationale for each individual selection must be provided. (Note: -There should be no items that fall into this category.)</p> <p>10.1.13 <b>Deficiency Reports.</b> This section must describe in detail the method by which the Contractor will keep track of all deficiencies identified during any and all tests. Deficiencies must be tracked in a database that permits the generation of reports required by DND so that a permanent record is maintained that logs each deficiency by giving it a unique identity, identifies the person(s) recording the deficiency, date/time that the deficiency was identified, describes the deficiency and how it is to be addressed, describes the severity of the deficiency (e.g. as category A, B, C or similar to indicate whether the deficiency is critical, major, minor, etc), current status (e.g. open, closed, rejected, other category as appropriate), date/time it is resolved, and other data as mutually agreed and necessary to ensure accurate recording and tracking of deficiencies. It must be possible to compile various reports utilizing this database based on status, category of deficiency, or any other mutually agreed criteria. The plan must describe the use of the deficiency reports and the visibility that DND will be afforded throughout this process. For ease of use, the layout of the deficiency report must be such that all of the information pertinent to any one deficiency can easily fit on a single 8 ½ by 11 inch page. Test procedures together with all of the associated deficiency reports, when completed, must form the basis for the Test Reports required to satisfy DID D-TEST-006.</p> <p>10.1.14 <b>Notes.</b> This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.</p> <p>10.1.15 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |                                                    |



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| 1. TITLE – TITRE<br>Factory Acceptance Test Procedures (FATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                    | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION<br>D-TEST-004 |  |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br>3.1 This document is used to describe the acceptance test procedures for tests performed on systems, and subsystems. The formal test procedures enable DND TA to assess the adequacy of the test cases and procedures to be performed during formal testing.                                                                                                                                                                                                                                                                    |                                                                                                    |                                                                  |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br>DAEPM/R&CS 4-4-4 | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT            |  |
| 7. APPLICATION/INTERRELATIONSHIP – APPLICATION/INTERDÉPENDANCE<br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the VCS SOW.<br>7.2 This document must be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br>7.3 The procedures must not conflict with other Test Plans, Procedures, or Reports for the VCS Project.<br>7.4 CDRL-TEST-004 and SOW paragraph 4,5,2 refers |                                                                                                    |                                                                  |  |
| 8. ORIGINATOR – AUTEUR<br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                    | 9. APPLICABLE FORMS - FORMULES PERTINENTES                       |  |
| 10. PREPARATION INSTRUCTIONS – INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                    |                                                                  |  |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Factory Acceptance Test Procedures (FATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | D-TEST-004                                         |
| <p>10.1 <b>Content and format instructions.</b> Production of this document using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. Test Procedures (TP) must consist of the following:</p> <ol style="list-style-type: none"> <li>(1) Title page;</li> <li>(2) Table of contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Purpose;</li> <li>(6) Introduction;</li> <li>(7) References;</li> <li>(8) Factory Acceptance Test Procedures;</li> <li>(9) Support Requirements;</li> <li>(10) Formal Factory Acceptance Pre-Test Procedures;</li> <li>(11) Formal Factory Acceptance Test Procedure Descriptions;</li> <li>(12) Notes; and</li> <li>(13) Appendices.</li> </ol> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <ol style="list-style-type: none"> <li>a. Factory Acceptance Test Procedures for the VCS Project (DAEPM/R&amp;CS 4-4);</li> <li>b. Contract No.;</li> <li>c. CDRL Sequence No.;</li> <li>d. Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&amp;CS 4-4); and</li> <li>e. Prepared by: Contractor's name and address.</li> </ol> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Purpose.</b> This section must describe the purpose of the Test Procedure (TP).</p> <p>10.1.6 <b>Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the Factory Acceptance Test Procedures.</p> <p>10.1.7 <b>References.</b> This section must describe all references used in the TP.</p> |                                                    |





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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Factory Acceptance Test Procedures (FATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | D-TEST-004                                         |
| 10.1.8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |
| <p><b>Factory Acceptance Test Procedures.</b> The Test Procedure(s) must include a detailed description of the proposed tests, including block diagrams and/or schematics as applicable and identification of instruments for making the required determinations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                    |
| 10.1.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                    |
| <p><b>Support Requirements.</b> The Test Procedures must identify and describe all significant technical and logistical supports, including personnel (Contractor and Government) required to implement all test tasks required by the FAT. The requirements should be expressed in sufficient detail to permit a determination of whether the DND TA has the capability to support the test or needs to take action to acquire a capability.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                    |
| <p>Instrumentation, logistics, facilities, personnel, test and support equipment and data processing must be addressed for each test or group of tests. Procedures must be developed for all tests identified in the applicable plans, specification and verification matrix.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                    |
| 10.1.10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                    |
| <p><b>Formal Factory Acceptance Pre-Test Procedures.</b> This section must describe the factory acceptance pre-test procedures for each formal acceptance test.</p> <ol style="list-style-type: none"> <li>a. <b>(Test Name and Project-Unique Identifier).</b> This paragraph must identify a formal acceptance test by name and identifier, and must be divided into the following subparagraphs to describe the factory acceptance pre-test procedures for the test;</li> <li>b. <b>(Test Name) Schedule.</b> This subparagraph must provide (either directly or by reference) the location and schedule for the following activities associated with the test as applicable: <ol style="list-style-type: none"> <li>(1) Briefings;</li> <li>(2) Pre-test activities (e.g., equipment and software preparation, facilities);</li> <li>(3) Test;</li> <li>(4) Debriefings;</li> <li>(5) Data reduction and analysis; and</li> <li>(6) Submission of test reports.</li> </ol> </li> <li>c. <b>(Test Name) Factory Acceptance Pre-test Preparations.</b> This subparagraph must describe the preparation and set-up for the test. When the information required duplicates information previously specified for another test, that information may be referenced rather than repeated;</li> <li>d. <b>Hardware Preparation.</b> This subparagraph must describe the procedures necessary to prepare the hardware for the test. Reference may be made to published operating manuals for these procedures. The following must be provided, as applicable: <ol style="list-style-type: none"> <li>(1) The specific hardware to be used, identified by name and, if applicable, number;</li> <li>(2) Any switch settings and cabling necessary to connect the hardware. These must be identified by name and location;</li> <li>(3) One or more diagrams to show hardware, interconnecting control, and data paths; and</li> <li>(4) Precise step-by-step instructions for placing the hardware in a state of readiness.</li> </ol> </li> </ol> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Factory Acceptance Test Procedures (FATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | D-TEST-004                                         |
| <p>e. <b>Software Preparation.</b> This subparagraph must describe the procedures and related information necessary to prepare the software for the test. Reference may be made to published software manuals for these procedures;</p> <p>f. <b>Interface preparation.</b> This subparagraph must describe the procedures and related information necessary to prepare the interface(s) to be tested. Government provided information required for the proper testing of the interface (live feed) must be described in this subparagraph; and</p> <p>g. <b>Other Pre-test Preparations.</b> This subparagraph must describe any other pre-test preparations or procedures necessary to perform the test.</p> <p>10.1.11 <b>Formal Factory Acceptance Test Procedure Descriptions.</b> This section must be divided into the following subparagraphs to identify the test cases, test procedures, and related information associated with each formal acceptance test.</p> <p>a. <b>(Test Name and Project-Unique Identifier).</b> This subparagraph must identify a formal acceptance test by name and project-unique identifier;</p> <p>b. <b>(Test Case Name and Project-Unique Identifier).</b> This subparagraph must identify a test case by name and project-unique identifier, state its purpose, and provide a brief description. The following subparagraphs must provide a detailed description of the test case;</p> <p>c. <b>(Test Case Name) Initialisation.</b> This subparagraph must identify any prerequisite conditions that must be established prior to performing the test. When the information required in this subparagraph duplicates information previously specified, that information may be referenced rather than repeated. The following must be addressed, as applicable:</p> <ol style="list-style-type: none"> <li>(1) Hardware and software configuration;</li> <li>(2) Flags, initial breakpoints, pointers, control parameters, or initial data to be set/reset prior to test commencement;</li> <li>(3) Pre-set hardware conditions or electrical states necessary to run the test case;</li> <li>(4) Initial conditions to be used in making timing measurements;</li> <li>(5) Conditioning of the simulated environment; and</li> <li>(6) Special instructions peculiar to the test case.</li> </ol> <p>d. <b>(Test Case Name) Test Inputs.</b> This subparagraph must describe the test inputs necessary for the test case. The following must be provided, as applicable:</p> <ol style="list-style-type: none"> <li>(1) Source of the test input and the method to be used for selecting the test input; and</li> <li>(2) Whether the test input is real/live or simulated.</li> </ol> <p>e. <b>(Test Case Name) Expected Test Results.</b> This subparagraph must identify all expected test results for the test case. Both intermediate and final test results must be provided, as applicable;</p> <p>f. <b>(Test Case Name) Criteria for Evaluation Results.</b> This subparagraph must identify the criteria to be used for evaluating the intermediate and final results of the test case. When the information required in this subparagraph duplicates information previously specified, that</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                           | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Factory Acceptance Test Procedures (FATPR) | D-TEST-004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                            | <p>information may be referenced in this subparagraph. For each test result, the following information must be provided, as applicable:</p> <ul style="list-style-type: none"> <li>(1) Accuracy requirements for the test result;</li> <li>(2) Allowable upper and lower bounds of the test result;</li> <li>(3) Maximum and minimum duration of the test, in terms of time or number of events, in order to obtain the test results;</li> <li>(4) Conditions under which the test result is inconclusive and re-testing is to be performed;</li> <li>(5) Severity of processing errors associated with the test result; and</li> <li>(6) Additional criteria not mentioned above.</li> </ul> <p>g. <b>(Test Case Name) Test Procedure.</b> This subparagraph must define the test procedure for the test case. The test procedure must be defined as a series of individually numbered steps listed sequentially in the order in which the steps are to be performed. For convenience in document maintenance, the test procedure may be included as an appendix and referenced in this subparagraph. The following must be provided for each test procedure, as applicable:</p> <ul style="list-style-type: none"> <li>(1) Test operator actions and equipment operation required for each step;</li> <li>(2) Expected result for each step;</li> <li>(3) Evaluation criteria for each step, as applicable;</li> <li>(4) Actions to follow in the event of a program stop or indicated error; and</li> <li>(5) Procedures to be used to reduce and analyse test results.</li> </ul> <p>h. <b>(Test Case Name) Assumptions and Constraints.</b> This subparagraph must identify any assumptions made and constraints imposed in the description of the test case. If waivers or exceptions to specified limits and parameters are approved, they must be identified in this subparagraph and must address their effects and impact upon the test case.</p> <p>10.1.12 <b>Notes.</b> This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.</p> <p>10.1.13 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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| 1. TITLE – TITRE<br>Site Acceptance Test Procedures (SATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                    | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION<br>D-TEST-005 |  |
| 3. DESCRIPTION/PURPOSE – DESCRIPTION/OBJET<br>3.1 This document is used to document and describe the acceptance test procedures for tests performed on systems and subsystems. . The formal test procedures enable DND TA to assess the adequacy of the test cases and procedures to be performed during formal testing.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                    |                                                                  |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br>DAEPM/R&CS 4-4-4 | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT            |  |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE<br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the VCS SOW.<br><br>7.2 This document must be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br><br>7.3 CDRL-TEST-005 and SOW paragraph 4.6.2 refers.                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                    |                                                                  |  |
| 8. ORIGINATOR – AUTEUR<br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                    | 9. APPLICABLE FORMS - FORMULES PERTINENTES                       |  |
| 10. PREPARATION INSTRUCTIONS – INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br>10.1 <b>Content and format instructions.</b> Production of this document using automated techniques is encouraged. Best commercial practices are to be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. Site Acceptance Test Procedures (SATPR) must consist of the following:<br>(1) Title page;<br>(2) Table of contents;<br>(3) Document Control Log;<br>(4) Revision Record;<br>(5) Purpose;<br>(6) Introduction;<br>(7) References;<br>(8) Site Acceptance Test Procedures;<br>(9) Support Requirements;<br>(10) Formal Site Acceptance Pre-Test Preparations;<br>(11) Formal Site Acceptance Test Descriptions;<br>(12) Notes; and<br>(13) Appendices. |                                                                                                    |                                                                  |  |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| Site Acceptance Test Procedures (SATPR) | D-TEST-005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 10.1.1                                  | <p><b>Title Page.</b> The Title Page must contain the following information:</p> <ul style="list-style-type: none"> <li>a. Site Acceptance Test Procedures (SATPR) for the VCS Project (DAEPM/R&amp;CS 4-4);</li> <li>b. Contract No.;</li> <li>c. CDRL Sequence No.;</li> <li>d. Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&amp;CS 4-4); and</li> <li>e. Prepared by: Contractor's name and address.</li> </ul>                                                                                                                                                                                                                            |
| 10.1.2                                  | <p><b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 10.1.3                                  | <p><b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 10.1.4                                  | <p><b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10.1.5                                  | <p><b>Purpose.</b> This section must describe the purpose of the SATPR.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10.1.6                                  | <p><b>Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the Site Acceptance Test Procedure.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 10.1.7                                  | <p><b>References.</b> This section must describe all references used in the SATPR.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10.1.8                                  | <p><b>Site Acceptance Test Procedures.</b> The prepared Test Procedure(s) must include a detailed description of the proposed tests, including block diagrams and/or schematics as applicable and identification of instruments for making the required determinations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10.1.9                                  | <p><b>Support Requirements.</b> The Site Acceptance Test Procedures must identify and describe all significant technical and logistical supports, including personnel (Contractor and government) required to implement all test tasks required by the SAT. The requirements should be expressed in sufficient detail to permit a determination of whether the DND TA has the capability to support the test or needs to take action to acquire a capability.</p> <p>Instrumentation, logistics, facilities, personnel, test and support equipment (including aircraft if applicable), and data processing must be addressed for each test phase. Procedures must be developed for all tests specified in applicable plans and specification.</p> |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Site Acceptance Test Procedures (SATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D-TEST-005                                         |
| <p>10.1.10 <b>Formal Site Acceptance Pre-Test Preparations.</b> This section must describe the Site acceptance pre-test preparations for each formal acceptance test.</p> <ul style="list-style-type: none"> <li>a. <b>(Test Name and Project-Unique Identifier).</b> This paragraph must identify a formal acceptance test by name and identifier, and must be divided into the following subparagraphs to describe the Site acceptance pre-test preparations for the test;</li> <li>b. <b>(Test Name) Schedule.</b> This subparagraph must provide (either directly or by reference) the location and schedule for the following activities associated with the test as applicable: <ul style="list-style-type: none"> <li>(1) Briefings;</li> <li>(2) Pre-test activities (e.g., equipment and software preparation);</li> <li>(3) Test;</li> <li>(4) Debriefings; and</li> <li>(5) Data reduction and analysis.</li> </ul> </li> <li>c. <b>(Test Name) Site Acceptance Pre-test Procedures.</b> This subparagraph must describe the preparation and set-up for the test. When the information required duplicates information previously specified for another test, that information may be referenced rather than repeated;</li> <li>d. <b>Hardware Preparation.</b> This subparagraph must describe the procedures necessary to prepare the hardware for the test. Reference may be made to published operating manuals for these procedures. The following must be provided, as applicable: <ul style="list-style-type: none"> <li>(1) The specific hardware to be used, identified by name and, if applicable, number;</li> <li>(2) Any switch settings and cabling necessary to connect the hardware. These must be identified by name and location;</li> <li>(3) One or more diagrams to show hardware, interconnecting control, and data paths; and</li> <li>(4) Precise step-by-step instructions for placing the hardware in a state of readiness.</li> </ul> </li> <li>e. <b>Software Preparation.</b> This subparagraph must describe the procedures and related information necessary to prepare the software for the test. Reference may be made to published software manuals for these procedures;</li> <li>f. <b>Interface preparation.</b> This subparagraph must describe the procedures and related information necessary to prepare the interface(s) to be tested. Government provided information required for the proper testing of the interface (live feed) must be described in this subparagraph; and</li> <li>g. <b>Other Pre-test Preparations.</b> This subparagraph must describe any other pre-test preparations or procedures necessary to perform the test.</li> </ul> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Site Acceptance Test Procedures (SATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | D-TEST-005                                         |
| <p>10.1.11 <b>Formal Site Acceptance Test Descriptions.</b> This section must be divided into the following subparagraphs to identify the test cases, Site acceptance test procedures, and related information associated with each formal acceptance test.</p> <ul style="list-style-type: none"> <li>a. <b>(Test Name and Project-Unique Identifier).</b> This subparagraph must identify a formal acceptance test by name and project-unique identifier;</li> <li>b. <b>(Test Case Name and Project-Unique Identifier).</b> This subparagraph must identify a test case by name and project-unique identifier, state its purpose, and provide a brief description. The following subparagraphs must provide a detailed description of the test case;</li> <li>c. <b>(Test Case Name) Initialisation.</b> This subparagraph must identify any prerequisite conditions that must be established prior to performing the test case. When the information required in this subparagraph duplicates information previously specified, that information may be referenced rather than repeated. The following considerations must be discussed, as applicable: <ul style="list-style-type: none"> <li>(1) Hardware and software configuration;</li> <li>(2) Flags, initial breakpoints, pointers, control parameters, or initial data to be set/reset prior to test commencement;</li> <li>(3) Pre-set hardware conditions or electrical states necessary to run the test case;</li> <li>(4) Initial conditions to be used in making timing measurements;</li> <li>(5) Conditioning of the simulated environment; and</li> <li>(6) Special instructions peculiar to the test case.</li> </ul> </li> <li>d. <b>(Test Case Name) Test Inputs.</b> This subparagraph must describe the test inputs necessary for the test case. The following must be provided, as applicable: <ul style="list-style-type: none"> <li>(1) Source of the test input and the method to be used for selecting the test input; and</li> <li>(2) Whether the test input is real or simulated.</li> </ul> </li> <li>e. <b>(Test Case Name) Expected Test Results.</b> This subparagraph must identify all expected test results for the test case. Both intermediate and final test results must be provided, as applicable;</li> <li>f. <b>(Test Case Name) Criteria for Evaluation Results.</b> This subparagraph must identify the criteria to be used for evaluating the intermediate and final results of the test case. When the information required in this subparagraph duplicates information previously specified, that information may be referenced in this subparagraph. For each test result, the following information must be provided, as applicable:</li> </ul> |                                                    |





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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Site Acceptance Test Procedures (SATPR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | D-TEST-005                                         |
| <p>(1) Accuracy requirements for the test result;</p> <p>(2) Allowable upper and lower bounds of the test result;</p> <p>(3) Maximum and minimum duration of the test, in terms of time or number of events, in order to obtain the test results;</p> <p>(4) Conditions under which the test result is inconclusive and re-testing is to be performed;</p> <p>(5) Severity of processing errors associated with the test result; and</p> <p>(6) Additional criteria not mentioned above.</p> <p>g. <b>(Test Case Name) Test Procedure.</b> This subparagraph must define the test procedure for the test case. The test procedure must be defined as a series of individually numbered steps listed sequentially in the order in which the steps are to be performed. For convenience in document maintenance, the test procedure may be included as an appendix and referenced in this subparagraph. The following must be provided for each test procedure, as applicable:</p> <p>(1) Test operator actions and equipment operation required for each step;</p> <p>(2) Expected result for each step;</p> <p>(3) Evaluation criteria for each step, as applicable;</p> <p>(4) Actions to follow in the event of a program stop or indicated error; and</p> <p>(5) Procedures to be used to reduce and analyse test results.</p> <p>h. <b>(Test Case Name) Assumptions and Constraints.</b> This subparagraph must identify any assumptions made and constraints imposed in the description of the test case. If waivers or exceptions to specified limits and parameters are approved, they must be identified in this subparagraph and must address their effects and impact upon the test case.</p> <p>10.1.12 <b>Notes.</b> This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.</p> <p>10.1.13 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |                                                    |





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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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| 1. TITLE – TITRE<br>Test Reports (TR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION<br>D-TEST-006 |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br><br>3.1 The Test Report (TR) will be used to document results of FAT and SAT performed on systems and subsystems, and to provide information for evaluation and determination of subsequent actions<br><br>3.2 The Test Readiness Review (TRR) will be a formal review of the Contractor's readiness to begin formal testing of sub-systems and the full system..                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                        |                                                                  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br><br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br><br>DAEPM/R&CS 4-4-4 | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT            |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE<br><br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the VCS SOW.<br>7.2 This document must be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br>7.3 The TRR and TR will both be part of this DID.<br>7.4 CDRL-TEST-006 and SOW paragraphs 4.5.5 and 4.6.10 refer                                                                                                                                                                                                                                                                                                          |                                                                                                        |                                                                  |
| 8. ORIGINATOR - AUTEUR<br><br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                        | 9. APPLICABLE FORMS - FORMULES PERTINENTES                       |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br><br>10.1 <b>Content and format instructions.</b> Production of this document using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. This DID must consist of the following for both the TR and TRR:<br>(1) Title page;<br>(2) Table of contents;<br>(3) Document Control Log;<br>(4) Revision Record;<br>(5) Purpose;<br>(6) Introduction;<br>(7) References;<br>(8) Test Readiness Review;<br>(9) Test Reports;<br>(10) Test Overview;<br>(11) Formal Qualification Test Name and Project Unique Identifier;<br>(12) Test Results;<br>(13) Evaluations and Recommendations; |                                                                                                        |                                                                  |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Test Reports (TR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D-TEST-006                                         |
| <p>(14) Notes; and<br/>(15) Appendices.</p> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <ol style="list-style-type: none"> <li>Test Reports (TR) for the VCS Project (DAEPM/R&amp;CS 4-4);</li> <li>Contract No.;</li> <li>CDRL Sequence No.;</li> <li>Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&amp;CS 4-4); and</li> <li>Prepared by: Contractor's name and address.</li> </ol> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Purpose.</b> This section must describe the purpose of the Test Readiness Review or Test Report</p> <p>10.1.6 <b>Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the Test Readiness Reviews and Test Reports.</p> <p>10.1.7 <b>References.</b> This section must describe all references used in the TRR or TR.</p> <p>10.1.8 <b>Test Readiness Review.</b> The TRR must be held after Acceptance Test Procedures are approved by the TA but prior to commencement of FAT using Contractor established Standard Operating Procedures. There must be at least one TRR prior to FAT. The following items must be presented:</p> <ol style="list-style-type: none"> <li>Test plans, procedures, scenarios and test cases;</li> <li>Test facility and equipment readiness;</li> <li>Test status of problem reports and engineering changes;</li> <li>Test results of informal testing;</li> <li>Scope of tests; and</li> <li>Test Limitations</li> </ol> <p>10.1.9 <b>Test Reports.</b> The Test Report(s) must document and report on the necessary test data in such form as required to demonstrate the degree to which the test item met all performance specifications of the</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Test Reports (TR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | D-TEST-006                                         |
| <p>Contract. The test report must identify the equipment clearly and must be complete enough to allow duplication of the tests for those configurations of equipment, at any time.</p> <p>Test report(s) must contain all the collected data and all conclusions resulting from tests for various configurations/designs. Each test must be clearly identified with supporting test procedures, identified test equipment, appropriate drawings, and results attained before a major configuration/approach is altered. Opinions and subjective conclusions included or referenced in each test must be clearly identified as such.</p> <p>All of the test report(s) must be provided to the TA in Microsoft Office so that they can be easily searched. Closed test reports must remain in the database for historical purposes.</p> <p>10.1.10 <b>Test Overview.</b> This section must be divided into the following paragraphs and subparagraphs to describe the results of each formal qualification test covered by this report.</p> <p>10.1.11 <b>(Formal Test Name and Project-Unique Identifier).</b> This paragraph must identify a formal qualification test by name and number.</p> <p>a. <b>(Formal Qualification Test Name) Summary.</b> This subparagraph must summarise the results of the formal qualification test. The summary must include the completion status of the test (i.e., success or failure). For failures, the step of the test procedure where the failure occurred and an identification of the resulting problem report must be included. This information may be provided by reference to a test results summary table;</p> <p>b. <b>(Formal Test Name) Test Record.</b> This subparagraph must present a chronological record of all events relevant to test preparation, test performance, and analysis and interpretation of formal qualification test results. This paragraph may reference a test log that contains the chronological record of the conduct of the formal qualification test. This subparagraph must include the following information:</p> <ol style="list-style-type: none"> <li>(1) The date(s), time(s), and location(s) of the test, as well as hardware and/or software configurations used for the test. The description of the test configuration must include, when available and if applicable, part number, model number, serial number, manufacturer, revision level, and calibration date of all hardware, and version number and name for the software components used;</li> <li>(2) The date and time of each test-related activity, the identity of the individual(s) who performed the activity, and the identities of Government witnesses;</li> <li>(3) Any problems encountered and the specific step(s) of the test procedures associated with the problem, including the number of times an individual step in a procedure had to be repeated in attempting to correct a problem and the outcome of each attempt; and</li> <li>(4) Back up points or test steps where tests were resumed for re-testing.</li> </ol> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Test Reports (TR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | D-TEST-006                                         |
| <p>10.1.12 <b>Test results.</b> This section must be divided into the following subparagraphs to describe the detailed results for each formal test.</p> <ul style="list-style-type: none"> <li>a. <b>(Formal Test Name and Project-Unique Identifier) Test Results.</b> This paragraph must identify a formal test by name and project-unique identifier, and must be divided into the following subparagraphs to describe the detailed results for each test case of the formal test; and</li> <li>b. <b>(Test Case Name and Project-Unique Identifier).</b> This subparagraph must identify a test case by name and project-unique identifier, and must be divided into the following subparagraphs to describe the detailed results for the test case; <ul style="list-style-type: none"> <li>(1) <b>(Test Case Name) Test Results.</b> This subparagraph must present the test results for the test case. For each step of the test procedure executed, the result must be recorded. Any anomalies, discrepancies or deficiencies of any kind encountered during the execution of the test case must be described in this subparagraph. Amplifying information (e.g., memory dumps, record of registers, display diagrams) that may help to isolate and correct the cause of any discrepancies must be included or referenced. The assessment of the test conductor as to the cause of each discrepancy and a means of correcting it must be provided;</li> <li>(2) <b>(Test Case Name) Test Deficiency Category.</b> This subparagraph must assign a rated category to a test case that is identified as deficient. Agreement must be reached between the Contractor and DND in determining the category level of each deficiency. In the event that an agreement can't be reached between the Contractor and DND, the deficiency must be categorized by DND. The following categories must apply to all test case deficiencies: <ul style="list-style-type: none"> <li>A – Critical deficiency. Test was stopped – repair is essential prior to continuing the test case, can be safety related, outcome may affect other test case or procedure is not achievable;</li> <li>B – Major deficiency. Test continued – test did not meet the expected or specified results, where minor repair, alignment or recoding may be necessary; and</li> <li>C – Minor deficiency. Test continued – minor deficiency was noted such as a mistyped instruction.</li> </ul> </li> <li>(3) <b>(Test Case Name) Deviations From Test Procedure.</b> This subparagraph must discuss in detail any deviations from the test procedure described in the corresponding Test Procedure (e.g., substitution of required equipment, changes to support software, procedural steps not followed, and schedule deviations). For each deviation, the rationale for allowing it and its impact on the validity of the test must be provided.</li> </ul> </li> </ul> <p>10.1.13 <b>Evaluation and Recommendations.</b> This section must be divided into the following paragraphs:</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Test Reports (TR)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | D-TEST-006                                         |
| <p>a. <b>Evaluation.</b> This paragraph must provide an overall analysis of the test results in this report. The analysis must identify any remaining deficiencies, limitations, or constraints in the system, which was detected by the performance test. Problem/change reports must be used to provide deficiency information. For each deficiency, limitation or constraint, the analysis must:</p> <ol style="list-style-type: none"> <li>(1) Describe its impact on system performance;</li> <li>(2) Describe the impact on the system design in order to correct it; and</li> <li>(3) Provide a recommended solution/approach for correcting it.</li> </ol> <p>b. <b>Recommended improvements.</b> This paragraph must provide any recommended improvements in the design, operation, or testing of the system. A discussion of each recommendation and its impact on the system must be provided as applicable.</p> <p>10.1.14 <b>Notes.</b> This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.</p> <p>10.1.15 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |                                                    |



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| 1. TITLE – TITRE<br><br>ILS General Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION<br><br>D-ILS-001 |                                                       |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br><br>3.1 This Data Item Description (DID) details delivery requirements for general ILS requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                        |                                                                     |                                                       |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br><br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br><br>DAEPM/R&CS 4-4-4 |                                                                     | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE<br><br>7.1 This DID contains the format and content preparation instructions for the data generated under the work described in the DND ILS proposal.<br><br>7.2 This document must be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br><br>7.3 CDRL-ILS-001 and SOW paragraph 2.8.1 refer                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                        |                                                                     |                                                       |
| 8. ORIGINATOR – AUTEUR<br><br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                        | 9. APPLICABLE FORMS - FORMULES PERTINENTES                          |                                                       |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br><br>10.2 <b>Content and format instructions.</b> Production of this list using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. This DID must consist of the following:<br><br><ul style="list-style-type: none"> <li>(1) Title Page;</li> <li>(2) Table of Contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Introduction;</li> <li>(6) Required Sections;</li> <li>(7) Notes; and</li> <li>(8) Appendices.</li> </ul><br>10.1.1 <b>Title Page.</b> The Title Page must contain the following information: <ul style="list-style-type: none"> <li>a. ILS General for the VCS Project (DAEPM/R&amp;CS 4-4-4);</li> <li>b. Contract No.;</li> <li>c. CDRL Sequence No.;</li> </ul> |                                                                                                        |                                                                     |                                                       |



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| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| ILS General Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | D-ILS-001                                          |
| <p>d. Prepared for: National Defence, for the Directorate Aerospace Engineering and Project Management/Radar and Communications Systems (DAEPM/R&amp;CS 4-4); and</p> <p>e. Prepared by: Contractor's name and address.</p> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the deliverable ILS publications, together with applicable definitions, references and related documents.</p> <p>10.1.6 <b>Required sections.</b> As part of the ILS package for the VCS the Contractor must supply one English and one French copy of the following:</p> <ul style="list-style-type: none"> <li>a. Operators Manuals that must include the following as a minimum: a description of the console set-up, menu explanations, troubleshooting &amp; diagnostics;</li> <li>b. Preventive Maintenance Schedule and Corrective Maintenance Procedures manual indicating step by step procedures;</li> <li>c. Technical Maintenance Manuals incorporating the system configuration, hardware and software component breakdown and theory of operation of each circuit.</li> <li>d. Illustrated Parts Lists;</li> <li>e. The Contractor must provide Level 2 Engineering drawings as per D-01-400-002/SF-000 National Defence Specification – Drawing, Engineering and Associated Lists, including component layout and schematic diagrams; and</li> <li>f. Site Installation Instructions</li> </ul> <p>10.1.7 <b>Notes:</b> This section, the last section in the list, must contain any general information that aids in understanding this document (e.g., background information, glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this plan.</p> <p>10.1.8 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                 | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| ILS General Requirements                                                                                                                                         | D-ILS-001                                          |
| referenced in the main body of the plan where the data would normally have been provided.<br>Appendices may be bound as separate documents for ease in handling. |                                                    |





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| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION    |  |
| Maintenance Plan (MP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                | D-ILS-002                                             |  |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                |                                                       |  |
| 3.1 This Data Item Description (DID) describes the maintenance plan requirements for the VCS equipment at the first, second and third level of Maintenance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                |                                                       |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR) | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT |  |
| 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | DAEPM/R&CS 4-4-4                                                               |                                                       |  |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                |                                                       |  |
| 7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the DND ILS proposal.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                |                                                       |  |
| 7.2 This document must be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                |                                                       |  |
| 7.3 CDRL-ILS-002 and SOW paragraph 2.6 refers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                |                                                       |  |
| 8. ORIGINATOR - AUTEUR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                | 9. APPLICABLE FORMS - FORMULES PERTINENTES            |  |
| DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                |                                                       |  |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                |                                                       |  |
| <p>10.1 <b>Content and format instructions.</b> Production of this plan using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, and document control numbering. This plan must consist of the following:</p> <ul style="list-style-type: none"> <li>(1) Title Page;</li> <li>(2) Table of Contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Introduction;</li> <li>(6) Updating Process;</li> <li>(7) Maintenance Plan Content; <ul style="list-style-type: none"> <li>(i) Section 1 - General Considerations;</li> <li>(ii) Section 2 - Repair Capability;</li> <li>(iii) Section 3 - Maintenance Requirements;</li> <li>(iv) Section 4 - Annual Man-hours;</li> </ul> </li> <li>(8) Notes; and</li> <li>(9) Appendices.</li> </ul> |                                                                                |                                                       |  |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Maintenance Plan (MP)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | D-ILS-002                                          |
| <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the Maintenance Plan, together with applicable definitions, references and related documents.</p> <p>10.1.6 <b>Updating Process.</b> The Updating Process for periodic review and updating of the Maintenance Plan must be described in this subsection. The methods for incorporating Technical Authority changes and the approval cycle for updates must be identified.</p> <p>10.1.7 <b>Maintenance Plan Content.</b> The Maintenance Plan must consist of three sections as detailed below:</p> <ul style="list-style-type: none"> <li>(i) <b>Section 1 - General Considerations.</b> This section must describe the function of the item, the maintenance concept and the maintenance plan rational as well as the necessary identification and administrative data.</li> <li>(ii) <b>Section 2 - Repair Capability.</b> This section must describe the repair capability of the item and include the maintenance parameters and technical factors as well as a listing of maintenance significant items.</li> <li>(iii) <b>Section 3 - Maintenance Requirements.</b> This section must contain a complete listing of maintenance task by category (preventive, corrective, servicing, and calibration) as well as a complete listing of all materials (consumables, replacement and repair parts, tools, test equipment, publications or instructions, etc.) to affect the maintenance action.</li> <li>(iv) <b>Section 4 - Annual Man-hours.</b> This section must contain a summary of annual man-hour expenditures for each level of maintenance recommended and the number of maintenance tasks performed.</li> </ul> <p>10.1.8 <b>Notes:</b> This section, the last section in the plan, must contain any general information that aids in understanding this document (e.g., background information, glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this plan.</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                              | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Maintenance Plan (MP)                                                                                                                                                                                                                                                                                                                                                         | D-ILS-002                                          |
| <p>10.1.9 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the plan where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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| 1. TITLE – TITRE<br><br>Support Equipment Requirements List (SERL)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION<br><br>D-ILS-003 |                                                       |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br><br>3.1 This Data Item Description (DID) identifies, documents, and recommends all support equipment required for preventive and corrective maintenance of the VCS Systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                        |                                                                     |                                                       |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br><br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br><br>DAEPM/R&CS 4-4-4 |                                                                     | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE<br><br>7.4 This DID contains the format and content preparation instructions for the data generated under the work described in the DND ILS proposal.<br><br>7.5 This document is to be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br><br>7.6 CDRL-ILS-003 and SOW paragraphs 2.8.5 and 2.8.6 refer                                                                                                                                                                                                                                                                                                   |                                                                                                        |                                                                     |                                                       |
| 8. ORIGINATOR – AUTEUR<br><br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                        | 9. APPLICABLE FORMS - FORMULES PERTINENTES                          |                                                       |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br><br>10.1 <b>Content and format instructions.</b> Production of this list using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. This SERL must consist of the following:<br><ul style="list-style-type: none"> <li>(1) Title Page;</li> <li>(2) Table of Contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Introduction;</li> <li>(6) Required Sections;</li> <li>(7) Data Elements;</li> <li>(8) Calibration of GPTE;</li> <li>(9) Notes; and</li> <li>(10) Appendices.</li> </ul> 10.1.1 <b>Title Page.</b> The Title Page must contain the following information: |                                                                                                        |                                                                     |                                                       |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Support Equipment Requirements List (SERL)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D-ILS-003                                          |
| <p>a. Support Equipment Requirements List (SERL) for the VCS Project (DAEPM/R&amp;CS 4-4-4);</p> <p>b. Contract No.;</p> <p>c. CDRL Sequence No.;</p> <p>d. Prepared for: National Defence, for the Directorate Aerospace Engineering and Project Management/Radar and Communications Systems (DAEPM/R&amp;CS 4-4); and</p> <p>e. Prepared by: Contractor's name and address.</p> <p><b>10.1.2 Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p><b>10.1.3 Document Control Log.</b> The Document Control Log must contain a listing of pages and their revision status.</p> <p><b>10.1.4 Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p><b>10.1.5 Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the SERL, together with applicable definitions, references and related documents.</p> <p><b>10.1.6 Required Sections.</b> The SERL must be divided into six separate sections (As applicable):</p> <p>a. Section 1 – General Purpose Test Equipment (GPTE);</p> <p>b. Section 2 – Special Purpose Test Equipment (SPTE);</p> <p>c. Section 3 – Automatic Test Equipment (ATE);</p> <p>d. Section 4 – Special Purpose Tools;</p> <p>e. Section 5 – General Purpose Tools; and</p> <p>f. Section 6 – Handling and Miscellaneous Equipment.</p> <p><b>10.1.7 Data Elements.</b> The sections in the SERL must contain the following information:</p> <p>a. Item name;</p> <p>b. NATO Stock Number (NSN) or (PSCN)(if assigned);</p> <p>c. Manufacturer's Part Number;</p> <p>d. NATO Stock Code for Manufacturer's (NSCM)/Commercial and Government Entity (CAGE) Code;</p> <p>e. Recommended quantity;</p> <p>f. Unit of Issue;</p> <p>g. Weight;</p> <p>h. Standard Unit Price (in Canadian Dollars showing the Exchange Rate and the date of the price);</p> <p>i. Logistics Control Number (if applicable);</p> <p>j. Shelf Life (if applicable);</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Support Equipment Requirements List (SERL)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | D-ILS-003                                          |
| <p>k. Mean Time Between Failure;<br/>l. Repairability Indicator;<br/>m. Lead Time for Procurement; and<br/>n. Cross reference to Operation or Maintenance Task.</p> <p>10.1.8 <b>Calibration of GPTE.</b> GPTE must be calibrated utilising existing DND contracted Calibration centres.</p> <p>10.1.9 <b>Notes:</b> This section, the last section in the list, must contain any general information that aids in understanding this document (e.g., background information, glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this plan.</p> <p>10.1.10 <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the plan where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                 |                                                                                | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION    |  |
| Spare and Repair Parts Lists (SRPL)                                                                                                                                                                                                                                                              |                                                                                | D-ILS-004                                             |  |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET                                                                                                                                                                                                                                                       |                                                                                |                                                       |  |
| 3.1 This Data Item Description (DID) is required to identify those spare and repair parts (and their unique features) which must be acquired for various phases of the VCS equipment life cycle. It includes a Recommended Spare Parts List (RSPL).                                              |                                                                                |                                                       |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION                                                                                                                                                                                                                                                           | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR) | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT |  |
| 2016                                                                                                                                                                                                                                                                                             | DAEPM/R&CS 4-4-4                                                               |                                                       |  |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE                                                                                                                                                                                                                                   |                                                                                |                                                       |  |
| 7.1 The SRPL deliverable must grow iteratively as production proceeds.                                                                                                                                                                                                                           |                                                                                |                                                       |  |
| 7.2 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the DND ILS proposal.                                                                                                                                             |                                                                                |                                                       |  |
| 7.3 These documents must be submitted in electronic media consistent with the current issue of Canadian Forces Specification D-01-100-214/SF-000.                                                                                                                                                |                                                                                |                                                       |  |
| 7.4 The lists must provide the means to integrate and co-ordinate spares activities within the Integrated Logistics Support Program.                                                                                                                                                             |                                                                                |                                                       |  |
| 7.5 The Contractor must manage its parts obsolescence program to prevent shortages or problems with parts, material, or process.                                                                                                                                                                 |                                                                                |                                                       |  |
| 7.6 CDRL-ILS-004 and SOW paragraph 2.8.2 refers.                                                                                                                                                                                                                                                 |                                                                                |                                                       |  |
| 8. ORIGINATOR – AUTEUR                                                                                                                                                                                                                                                                           |                                                                                | 9. APPLICABLE FORMS - FORMULES PERTINENTES            |  |
| DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                 |                                                                                | D-01-100-214/SF-000                                   |  |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES                                                                                                                                                                                                                      |                                                                                |                                                       |  |
| 10.1 <b>Content and format instructions.</b> Production of these lists using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. The Spare and Repair Parts List must consist of the following: |                                                                                |                                                       |  |
| (1) Title Page;                                                                                                                                                                                                                                                                                  |                                                                                |                                                       |  |
| (2) Table of Contents;                                                                                                                                                                                                                                                                           |                                                                                |                                                       |  |
| (3) Document Control Log;                                                                                                                                                                                                                                                                        |                                                                                |                                                       |  |
| (4) Revision Record;                                                                                                                                                                                                                                                                             |                                                                                |                                                       |  |
| (5) Introduction;                                                                                                                                                                                                                                                                                |                                                                                |                                                       |  |
| (6) Updating Process;                                                                                                                                                                                                                                                                            |                                                                                |                                                       |  |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Spare and Repair Parts Lists (SRPL)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | D-ILS-004                                          |
| <p>(7) Government Furnished Equipment Spares/Requirements;<br/> (8) Spare and Repair Parts Determination;<br/> (9) Repair Turn-Around Time;<br/> (10) Recommended Spare Parts List (RSPL);<br/> (11) Queries;<br/> (12) Notes; and<br/> (13) Appendices.</p> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <ul style="list-style-type: none"> <li>a. Spare and Repair Parts Lists for the VCS Project (DAEPM/R&amp;CS 4-4-4);</li> <li>b. Contract No.;</li> <li>c. CDRL Sequence No.;</li> <li>d. Prepared for: National Defence, for the Directorate Aerospace Engineering and Project Management/Radar and Communications Systems (DAEPM/R&amp;CS 4-4); and</li> <li>e. Prepared by: Contractor's name and address.</li> </ul> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the SRPL, together with applicable definitions, references and related documents.</p> <p>10.1.6 <b>Updating Process.</b> The Updating Process for periodic review and updating of the SRPL must be described in this subsection. The methods for incorporating Technical Authority changes and the approval cycle for updates must be identified.</p> <p>10.1.7 <b>Government Furnished Equipment Spares/Requirements.</b> The Contractor is responsible for identifying all spares necessary to support its test programs and production line. Identification of requirements must include quantity of GFE spares required and justification for requirements and date required.</p> <p>10.1.8 <b>Spare and Repair Parts Determination.</b> The Contractor is to use internal Logistics Support Analysis (LSA) determinations to recommend the provisioning requirement for spares and repair</p> |                                                    |





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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Spare and Repair Parts Lists (SRPL)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | D-ILS-004                                          |
| <p>parts to satisfy the DND support requirements for the recommended Level of maintenance. The Contractor is encouraged to use a sparing calculator to estimate the spares requirements.</p> <p>10.1.9 <b>Repair Turn-Around Time.</b> For purposes of spares and repair parts determination a repair turn-around time (RTAT) of 90 days must be used. The Repair turn-around time is defined as the time to repair an item, excluding transportation and DND time for repair/discard decision, but including Contractor administration time.</p> <p>10.1.10 <b>Recommended Spare Parts List (RSPL).</b> The RSPL identifies those spare parts, which are deemed necessary to maintain the Systems for a period of one, five (5) and ten (10) years, exclusive of any warranty period. The Contractor must prepare a Recommended Spare Parts List (RSPL) in accordance with the current issue of Canadian Forces Specification D-01-100-214/SF-000. The recommended quantities appearing in the RSPL must be computed in accordance with the Contractor's model. The RSPL must be listed by Configuration Item (CI) (i.e. Processor Module, etc) and contain:</p> <ul style="list-style-type: none"> <li>a. Item Number;</li> <li>b. Item Basic Name;</li> <li>c. NATO Stock Number (NSN) (if assigned);</li> <li>d. Original Equipment Manufacturer's Part Number;</li> <li>e. NATO Stock Code for Manufacturer's (NSCM)/Commercial and Government Entity (CAGE) Code;</li> <li>f. Quantity per site;</li> <li>g. Unit of Issue;</li> <li>h. Weight;</li> <li>i. Standard Unit Price (in Canadian Dollars showing the Exchange Rate and the date of the price);</li> <li>j. Mean Time Between Failure; and</li> <li>k. Repairability Indicator.</li> </ul> <p>Any special storage requirements must be reported.</p> <p>10.1.10.1 The spare parts recommended must enable the site technician to restore a faulty VCS system to full operational status within thirty (30) minutes from the time a fault has been reported on the VCS system.</p> <p>NOTE: DND reserves the right to exercise the option to procure all or a portion of the parts identified in any of the provided SRPLs.</p> <p>10.1.11 <b>Queries.</b> Should the Contractor have any questions regarding the preparation, format or content of these lists, they must be directed to:</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE – TITRE                                                                                                                                                                            | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION                                                                                                                                                                                                                                                                                                                     |
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| Spare and Repair Parts Lists (SRPL)                                                                                                                                                         | D-ILS-004                                                                                                                                                                                                                                                                                                                                                              |
| <p>National Defence Headquarters<br/>MGen George R. Pearkes Building<br/>101 Colonel By Drive<br/>Ottawa ON K1A 0K2</p> <p>Attention: DAEPM/R&amp;CS 4-4-4<br/>Information : DSCO/DTICS</p> |                                                                                                                                                                                                                                                                                                                                                                        |
| 10.1.12                                                                                                                                                                                     | <p><b>Notes.</b> This section, the last section in the plan, must contain any general information that aids in understanding this document (e.g., background information, glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this plan.</p>                                                    |
| 10.1.13                                                                                                                                                                                     | <p><b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g. charts, graphical data). As applicable, each appendix must be referenced in the main body of the plan where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.</p> |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| 1. TITLE - TITRE<br>Packaging, Handling, Storage (PHS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION<br>D-ILS-005                                               |                                                       |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET<br>3.1 This Data Item Description (DID) identifies the packaging, handling and storage requirements for the VCS Systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                        |                                                                                                               |                                                       |
| 4. APPROVAL DATE<br>DATE D'APPROBATION<br><br>2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)<br><br>DAEPM/R&CS 4-4-4 |                                                                                                               | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE<br>7.1 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the DND proposal.<br>7.2 This document is to be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.<br>7.3 It is recognized, in most cases, that "best commercial practices/standards" should provide appropriate protection for most System repairables, repair parts, consumables and bulk items, tools, test equipment, etc. The Contractor must deliver all contracted repairables, repair parts, consumables and bulk items, tools, test equipment with level B packaging in accordance with Canadian Forces Specification D-LM-008-001/SF-001, or US equivalent. This level of packaging is called up in recognition of the electrostatic discharge, water vapour, movement and vibration, shock, and other like protection necessary for this refurbishment.<br>7.4 CDRL-ILS-005 and SOW paragraph 2.8.10 refers |                                                                                                        |                                                                                                               |                                                       |
| 8. ORIGINATOR - AUTEUR<br>DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                        | 9. APPLICABLE FORMS - FORMULES PERTINENTES<br>Best commercial practices equivalent to or better than para 7.3 |                                                       |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES<br>10.1 <b>Content and format instructions.</b> Production of this plan using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this plan are specified below:<br>(1) Title Page;<br>(2) Table of Contents;<br>(3) Document Control Log;<br>(4) Revision Record;<br>(5) Introduction;<br>(6) Updating Process;                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                        |                                                                                                               |                                                       |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| Packaging, Handling, Storage (PHS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | D-ILS-005                                          |
| <p>(7) Packaging, Handling, Storage (PHS);<br/> (8) Labeling;<br/> (9) Reports;<br/> (10) Special PHS Requirement Report;<br/> (11) Shelf Life Materials;<br/> (12) Dangerous Goods/Hazardous Materials List;<br/> (13) Notes; and<br/> (14) Appendices.</p> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:<br/> a. Packaging, Handling and Storage for the VCS Project (DAEPM/R&amp;CS 4-4-4);<br/> b. Contract No.;<br/> c. CDRL Sequence No.;<br/> d. Prepared for: National Defence, for the Directorate Aerospace Engineering and Project Management/Radar and Communications Systems (DAEPM/R&amp;CS 4-4); and<br/> e. Prepared by: Contractor's name and address.</p> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> <p>10.1.5 <b>Introduction.</b> The Introduction must define the scope, purpose, application, content and organisation of the Equipment Packaging, Handling and Storage, together with applicable definitions, references and related documents.</p> <p>10.1.6 <b>Updating Process.</b> The Updating Process for periodic review and updating of the PHS Report must be described in this subsection. The methods for incorporating Technical Authority changes and the approval cycle for updates must be identified.</p> <p>10.1.7 <b>Packaging, Handling and Storage (PHS).</b> The VCS will be installed in existing facilities therefore PHS that meets the conditions normally experienced in commercial warehousing practices must be acceptable. This section defines the requirements for the identification of items, which require special attention in order to control damage during storage and handling related to operations, supply, and maintenance functions. The requirements of this section must apply to all selected spares and repair parts.</p> |                                                    |



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## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                   | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| Packaging, Handling, Storage (PHS) | D-ILS-005                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 10.1.8                             | <b>Labeling.</b> All major components/parts must be labelled and serialized I.A.W. the Identification Marking of Canadian Military Property, D-02-002-001/SG-001.                                                                                                                                                                                                                                                                                                                                                                                         |
| 10.1.9                             | <b>Reports.</b> The Contractor must prepare and deliver the following reports:                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 10.1.10                            | <b>Special PHS Requirement Report.</b> The Contractor must prepare and deliver a Special PHS Requirements Report for all items included in the RSPL. Items which are hazardous to personnel handling the item; easily degraded by magnetic or may produce electromagnetic radiation to the extent that it may degrade magnetic-susceptible items in close proximity and other like characteristics must be included on the report. Items that may be susceptible to heat or cold storage such as batteries and LCD's must also be included in the report; |
| 10.1.11                            | <p><b>Shelf Life Materials.</b> For all repairables, repair parts and consumables required for the operation and maintenance of the Systems, the Contractor must ensure that each packaged shelf life restricted item is marked with the following:</p> <ul style="list-style-type: none"> <li>(1) The Cure date or date of manufacture; and</li> <li>(2) The Shelf Life expiry date. and</li> </ul>                                                                                                                                                      |
| 10.1.12                            | <b>Dangerous Goods/Hazardous Materials List.</b> The Contractor must prepare and deliver a Dangerous Goods/Hazardous materials List. The Contractor must provide Material Safety Data sheets for each listed item as required by the Hazardous Products Act and the Transportation of Dangerous Goods Act.                                                                                                                                                                                                                                                |
| 10.1.13                            | <b>Notes:</b> This section, the last section in the plan, must contain any general information that aids in understanding this document (e.g., background information, glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this plan.                                                                                                                                                                                                                                              |
| 10.1.14                            | <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the plan where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.                                                                                                                                                                                          |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

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| <b>1. TITLE - TITRE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                        | <b>2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION</b>                    |  |
| System Description, Operation and Maintenance Manual(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                        | D-PUB-001                                                                    |  |
| <b>3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                        |                                                                              |  |
| <p>3.1 This Data Item Description (DID) defines the content of the System Description, Operation and Maintenance Manuals required. The System Description Manual must provide overall system description, performance and specifications for the complete VCS. Functional and Detailed descriptions must be consistent with the levels of maintenance developed through the Logistics Support Analysis (LSA) process and information available from the original equipment manufacturer.</p> <p>3.2 The Systems Operation Manual(s) must provide information and detailed procedures for initiating, operating, monitoring and shutting down the complete VCS equipment.</p> <p>3.3 The Systems Maintenance Manual(s) must cover Performance Monitoring, PM Instructions, CM Instructions, Installation/Removal Instructions, Diagrams/Schematics and Parts Identification/CI Listing. These Manuals must be consistent with the levels of maintenance developed through the LSA process, and information available from the original equipment manufacturer.</p>                                                                                                                         |                                                                                        |                                                                              |  |
| <b>4. APPROVAL DATE<br/>DATE D'APPROBATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>5. OFFICE OF PRIMARY INTEREST (OPI)<br/>BUREAU DE PREMIERE RESPONSABILITÉ (BPR)</b> | <b>6. GIDEP APPLICABLE<br/>D'ÉCHANGE DE DONNÉES PERTINENT</b>                |  |
| 2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DAEPM/R&CS 4-4-4                                                                       |                                                                              |  |
| <b>7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                        |                                                                              |  |
| <p>7.1 This DID applies to the System Description, Operation and Maintenance Manuals only.</p> <p>7.2 This DID contains the format and content preparation instructions for the data generated under the work tasks described in the DND ILS proposal.</p> <p>7.3 This document must be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper.</p> <p>7.4 The System Description, Operation and Maintenance Manuals must also be delivered in CD/DVD ROM Media.</p> <p>7.5 DND must be authorised to reproduce any of these documents for internal use.</p> <p>7.6 All new documentation must be double-sided, English/French, bilingual format using Canadian Forces specification C-01-100-100/AG-006 (Writing, Format and Production of Technical Publications).</p> <p>7.7 The Contractor must make good any shortcomings of the Vendor delivered manuals in these Manuals.</p> <p>7.8 D-01-100-203/SF-000 Preparation of Operating Instructions.</p> <p>7.9 D-01-100-201/SF-000 Preparation of Installation Instructions.</p> <p>7.10 D-01-100-207/SF-000 Preparation of Parts Identification Lists</p> <p>7.11 CDRL-PUB-001 and SOW paragraphs 2.8.1 and 5.3 refer</p> |                                                                                        |                                                                              |  |
| <b>8. ORIGINATOR – AUTEUR</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                        | <b>9. APPLICABLE FORMS - FORMULES PERTINENTES</b>                            |  |
| DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                        | Best commercial practices equivalent to or better than C-01-100-100/AG –006. |  |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| System Description, Operation and Maintenance Manual(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | D-PUB-001                                          |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                    |
| <p>10.1 <b>Content and format instructions.</b> Production of this plan using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this plan are specified below:</p> <ul style="list-style-type: none"> <li>(1) Title Page;</li> <li>(2) Table of Contents;</li> <li>(3) Document Control Log;</li> <li>(4) Revision Record;</li> <li>(5) Requirement to Translate;</li> <li>(6) Media;</li> <li>(7) Safety;</li> <li>(8) Safety Precautions;</li> <li>(9) Equipment Safety Decals;</li> <li>(10) Notes;</li> <li>(11) Appendices;</li> <li>(12) Supplementary Data;</li> <li>(13) System Description Manual;</li> <li>(14) System Operation Manual; and</li> <li>(15) System Maintenance Manual.</li> </ul> <p>10.1.1 <b>Title Page.</b> The Title Page must contain the following information:</p> <ul style="list-style-type: none"> <li>a. (Name of System) System Description (or Operation or Maintenance) Manual for the VCS Project (DAEPM/R&amp;CS 4-4-4);</li> <li>b. Contract No.;</li> <li>c. CDRL Sequence No.;</li> <li>d. Prepared for: National Defence, for the Directorate Aerospace Engineering and Project Management/Radar and Communications Systems (DAEPM/R&amp;CS 4-4); and</li> <li>e. Prepared by: Contractor's name and address.</li> </ul> <p>10.1.2 <b>Table of Contents.</b> The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.</p> <p>10.1.3 <b>Document Control Log.</b> The Document Control Log must contain three columns: Revision, Date, and Reason for Change.</p> <p>10.1.4 <b>Revision Record.</b> The Revision Record must contain a listing of pages and their revision status.</p> |                                                    |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION                                                                                                                                                                                                                                                                                                                                                                                             |
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| System Description, Operation and Maintenance Manual(s) | D-PUB-001                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 10.1.5                                                  | <b>Requirement to Translate.</b> If any form of French/English bilingual documentation is available, the Contractor must provide it. Should the documents not be available in French then the Contractor must translate all new System Description, Operation and Maintenance Manuals to provide them in bilingual English/French.                                                                                                             |
| 10.1.6                                                  | <b>Media.</b> The new System Description, Operation and Maintenance Manuals must be submitted in hardcopy and CDROM. The CDROM disks must be labelled as follows:<br><br>a. The project name and contract number;<br>b. The title(s) [Manual name and National Defence Index of Documentation (NDID)]; and<br>c. The date of delivery.                                                                                                         |
| 10.1.7                                                  | <b>Safety:</b> This section must state any and all safety issues relevant to an operator and accident prevention methods must be clearly stated. This section must include the following:<br><br>a. Workplace safety; and<br>b. Hazardous Material Safety.                                                                                                                                                                                     |
| 10.1.8                                                  | <b>Safety Precautions.</b> Any hazard, danger, safety or precautionary measure to be observed while doing maintenance tasks, must be highlighted in the text by the use of DANGER, WARNING, CAUTION, or NOTE immediately prior to or following the procedure as applicable.                                                                                                                                                                    |
| 10.1.9                                                  | <b>Equipment Safety Decals.</b> Equipment safety decals warn the maintainers of dangers from high voltage, poisonous chemicals, heavy lift weights, radiation, charged capacitors, electrostatic discharge, and other dangers to personnel and equipment and must be applied to the equipment in the appropriate locations. The drawings of the decals must appear in the applicable maintenance manuals with the relating safety information. |
| 10.1.10                                                 | <b>Notes:</b> This section, the last section in the Manual, must contain any general information that aids in understanding this manual (e.g., background information, glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this manual.                                                                                                                                 |
| 10.1.11                                                 | <b>Appendices.</b> Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the manual where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.                                                                             |





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| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| System Description, Operation and Maintenance Manual(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | D-PUB-001                                          |
| <p>10.1.12 <b>Supplementary Data.</b> This section must include information not conveniently placed elsewhere in these instructions. Details of replacement procedures must be included for CI's, which may fail during preventive maintenance.</p> <p>10.1.13 <b>System Description Manual.</b> This manual must provide overall system description, performance and specifications for the complete VCS. It must also provide functional and detailed descriptions of the major assemblies and sub-assemblies/CI's. The narrative of theory of operation must be supported by illustrations, schematics, photographs, block diagrams, specification data, flow and wiring diagrams, as necessary to complement the text and to ensure better understanding by the reader. This manual must ensure that the following is covered:</p> <ul style="list-style-type: none"> <li>a. <b>System Description Overview.</b> This section must provide an overall description for the VCS;</li> <li>b. <b>Functional Description.</b> This section must provide a functional description of the major assemblies of the VCS equipment;</li> <li>c. <b>Detailed Description.</b> This section must provide a detailed description of the major sub-assemblies/CI's of the VCS equipment. This section must describe the purpose and limitations of each of the sub-assemblies/CI's, how each accomplishes its function, and any other general information deemed essential to the understanding of its purpose.</li> <li>d. <b>System Performance/Specifications.</b> This section must provide system performance, standards and specifications for the VCS, as well as the major assemblies. This section must also contain specifications and standards applicable to each sub-assembly/CI, followed by other relevant information, which would be required at unit or depot for maintenance.</li> </ul> <p>10.1.14 <b>System Operation Manual.</b> This manual must provide information and detailed procedures for initiating, operating, monitoring and shutting down the VCS equipment. This manual must be as per DND publication D-01-100-203/SF-000 "Preparation of Operating Instructions". This manual must ensure that it contains procedures to enter/modify site-specific data and variable System parameters.</p> <p>10.1.15 <b>System Maintenance Manual.</b> This manual must cover Performance Monitoring, Preventive Maintenance (PM) Instructions, Corrective Maintenance (CM) Instructions, Installation/Removal Instructions, Diagrams/Schematics and Parts Identification Listing. This manual must ensure that the following is covered:</p> <ul style="list-style-type: none"> <li>a. <b>Introduction.</b> This section must explain the purpose and scope of the System Maintenance manual and state the name and model of the System / CI to which it applies. Illustrations, as required, must be included;</li> <li>b. <b>Performance Monitoring Checks.</b> This section must detail the step-by-step instructions for each major unit, assembly or cabinet, necessary to carry out checks to determine that each of the System / CI is operating within the specified parameters. Checks may be detailed to be</li> </ul> |                                                    |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| System Description, Operation and Maintenance Manual(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D-PUB-001                                          |
| <p>performed daily, weekly, monthly or at greater intervals. Checks must be detailed so that as many of the operations as possible may be performed without interrupting normal performance of the System:</p> <ol style="list-style-type: none"> <li>(1) <b>General Information</b>, to outline the average time required to complete the work involved, the purpose of the checks, and information of a general nature;</li> <li>(2) <b>Test Equipment Required</b>, to list all test equipment or BIT features required in the procedures including calibration checks prior to use;</li> <li>(3) <b>Material Required</b>, to list all material such as special tools, cables, cleaners, lubricants, etc; and</li> <li>(4) <b>Procedures</b>, to detail the work to be accomplished in step-by-step form.</li> </ol> <p>c. <b>PM Instructions.</b> This section must detail the step-by-step instructions designed to identify malfunctions, potential sources of trouble, or gradual loss of performance, which may result in interruptions to service. Preventive maintenance may be carried out weekly, monthly or at greater intervals, and must include detailed information on inspection, cleaning, checking of voltages and critical specifications:</p> <ol style="list-style-type: none"> <li>(1) Detail the adjustment necessary to obtain optimum performance for System as a result of inadequate performance disclosed by previous checks and may detail set intervals at which such adjustments must be made. Adjustments may be made with System either “in situ” (preferred) or on a test bench;</li> <li>(2) Include all information a maintainer requires to maintain, load, tune, adjust, and modify any software or firmware;</li> <li>(3) Include a Maintenance Loading Chart; and</li> <li>(4) Identify and describe the diagnostic procedures and diagnostic tools available to the operator. The Diagnostic procedure must describe (1) Hardware, software, or firmware necessary for executing the procedure, (2) Step-by-step instructions for executing the procedure, and (3) Diagnostic messages and the corresponding required action.</li> </ol> <p>d. <b>CM Instructions.</b> This section must provide System Troubleshooting and Repair instructions for the System. This section must include the location of LRU's, including the method of access to them for maintenance purposes. This section must ensure that the following is covered:</p> <ol style="list-style-type: none"> <li>(1) Reference to the removal instructions for each LRU or subassembly, including any special tools or handling equipment required. Where LRU's block the removal of another LRU, the removal instructions must also be referenced here;</li> <li>(2) The disassembly instructions for each LRU, if not already described in the Installation/Removal section;</li> <li>(3) Reference to any special instructions required for System level adjustments, inspections, testing, Systems check-out procedures, etc;</li> </ol> |                                                    |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
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| System Description, Operation and Maintenance Manual(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | D-PUB-001                                          |
| <p>(4) Any special fault finding and correction procedures must be described in a step-by-step method, or in chart form;</p> <p>(5) Any instructions required for minor repairs, replacements, adjustments, cleaning, etc if not already described in the PM Instructions section;</p> <p>(6) The assembly instructions for each LRU, if not already described in the Installation/Removal section; and</p> <p>(7) Reference to the installation instructions for each LRU or subassembly and the reference for other LRU's that were removed prior to the removal of the LRU.</p> <p>e. <b>Installation/Removal Instructions.</b> This section must include installation, checkout and removal instructions. This section must detail the step-by-step procedures for installing all of the LRU (s). Any special tools or other equipment required for installation must be mentioned. Sufficient illustrations must be provided to ensure correct installation. This section must also detail the step-by-step procedures required to remove the LRU (s) in order to repair, replace and restore the basic LRU (s) to its original condition. Sufficient illustrations must be supplied to ensure correct removal instructions. Refer to D-01-100-201/SF-000 for Preparation of Installation Instructions.</p> <p>f. <b>Diagrams/Schematics.</b> This section must include but not be limited to the schematic and wiring diagrams and associated electrical/electronic data. The following depth of coverage is required:</p> <p>(1) Identification tables covering wires, cables, items and circuit functions;</p> <p>(2) Wiring diagram symbol charts;</p> <p>(3) Cable routing diagrams;</p> <p>(4) LRU location diagrams;</p> <p>(5) System level schematic diagrams for each circuit and the LRU installation must show all wiring, and connections. Schematic diagrams must precede wiring diagrams;</p> <p>(6) Each wiring diagram must contain an item list which must show the item number, description (brief), part number or specification, and reference to the appropriate LRU location diagram;</p> <p>(7) Each schematic and wiring diagram must show the location of the circuit and LRU that it portrays by a small location diagram, or by the use of phantom outlines and nomenclature at the top and sides of the diagram. The nomenclature at the sides of the diagram must locate the area where the panel is installed;</p> <p>(8) Complete internal wiring of LRU's must not be shown, however, continuity of wiring through junction boxes and electrical equipment must be indicated to the extent necessary to understand the circuit; and</p> <p>(9) All connectors/connections must be identified and all signal levels and voltages must be indicated.</p> |                                                    |



## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| System Description, Operation and Maintenance Manual(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | D-PUB-001                                          |
| <p>g. <b>Parts Identification/LRU Listing.</b> This section must list the types, makes and models of the Configuration Items making up a specific System and its associated equipment. The associated equipment listing must be presented in the same order as the main LRU's commencing with normal or primary configuration, followed by secondary/alternate. This section must also include but not be limited to the information required to positively identify all of the parts in the System, which may require maintenance or replacement action. The list must include figures such as line drawings, exploded views, photographs, etc., to ensure positive identification and to relate the part with regard to other parts in the System or the LRU in question. Refer to D-01-100-207/SF-000 for Preparation of Parts Identification Lists.</p> |                                                    |



National Defence  
Defense Nationale

## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

|                                                                                                                                                                                                                                                                                                                      |                                                                                |                                                       |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-------------------------------------------------------|--|
| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                     |                                                                                | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION    |  |
| Engineering Drawings and Associated List                                                                                                                                                                                                                                                                             |                                                                                | D-PUB-002                                             |  |
| 3. DESCRIPTION/PURPOSE - DESCRIPTION/OBJET                                                                                                                                                                                                                                                                           |                                                                                |                                                       |  |
| 3.1 This Data Item Description (DID) establishes the requirement for engineering drawings and associated list for the VCS project.                                                                                                                                                                                   |                                                                                |                                                       |  |
| 4. APPROVAL DATE<br>DATE D'APPROBATION                                                                                                                                                                                                                                                                               | 5. OFFICE OF PRIMARY INTEREST (OPI)<br>BUREAU DE PREMIERE RESPONSABILITÉ (BPR) | 6. GIDEP APPLICABLE<br>D'ÉCHANGE DE DONNÉES PERTINENT |  |
| 2016                                                                                                                                                                                                                                                                                                                 | DAEPM/R&CS 4-4-4                                                               |                                                       |  |
| 7. APPLICATION/INTERRELATIONSHIP - APPLICATION/INTERDÉPENDANCE                                                                                                                                                                                                                                                       |                                                                                |                                                       |  |
| 7.1 This DID contains the format and specifications for the preparation and delivery of engineering drawings and associated list.                                                                                                                                                                                    |                                                                                |                                                       |  |
| 7.2 These drawings are to be submitted on plain 11 x 17 inch bond paper and in electronic media (CD or DVD media) in a format which is compatible with Autocad (version agreeable to TA) or Microsoft Office Suite design products such as (VISIO – version agreeable to TA).                                        |                                                                                |                                                       |  |
| 7.3 CDRL-PUB-002 and SOW paragraphs 2.8.1 and 2.8.4 refer                                                                                                                                                                                                                                                            |                                                                                |                                                       |  |
| 8. ORIGINATOR - AUTEUR                                                                                                                                                                                                                                                                                               |                                                                                | 9. APPLICABLE FORMS - FORMULES PERTINENTES            |  |
| DAEPM/R&CS 4-4-4                                                                                                                                                                                                                                                                                                     |                                                                                | As listed in Section 10.1.3                           |  |
| 10. PREPARATION INSTRUCTIONS - INSTRUCTIONS SUR LA PRÉSENTATION DES DONNÉES                                                                                                                                                                                                                                          |                                                                                |                                                       |  |
| 10.1 <b>Content and format instructions.</b> Production of this plan using automated techniques is encouraged. Best commercial practices must be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this plan are specified below:          |                                                                                |                                                       |  |
| <ul style="list-style-type: none"> <li>(1) Title Page;</li> <li>(2) Requirements;</li> <li>(3) Governing Specifications;</li> <li>(4) Drawing Requirements;</li> <li>(5) Media;</li> <li>(6) Drawing Details;</li> <li>(7) Control Drawings;</li> <li>(8) Drawing Lists; and</li> <li>(9) Reference Data.</li> </ul> |                                                                                |                                                       |  |
| 10.1.1 <b>Title Page.</b> The Title Page must contain the following information:                                                                                                                                                                                                                                     |                                                                                |                                                       |  |
| <ul style="list-style-type: none"> <li>a. Engineering Drawings and Associated List for (System / LRU Name) for the VCS Project (DAEPM/R&amp;CS 4-4-4);</li> <li>b. Contract No.;</li> <li>c. CDRL Sequence No.;</li> </ul>                                                                                           |                                                                                |                                                       |  |



National Defence  
Défense Nationale

## DATA ITEM DESCRIPTION - DESCRIPTION DE DONNÉES

| 1. TITLE - TITRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 2. IDENTIFICATION NUMBER - NUMÉRO D'IDENTIFICATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Engineering Drawings and Associated List                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | D-PUB-002                                          |
| <p>d. Prepared for: National Defence, for the Directorate Aerospace Engineering and Project Management/Radar and Communications Systems (DAEPM/R&amp;CS 4-4); and</p> <p>e. Prepared by: Contractor's name and address.</p> <p>10.1.2 <b>Requirements.</b> Engineering drawings and associated list must be prepared for each System / CI and must be supplied in the final form specified below. Engineering drawings and associated list must be produced in accordance with the following requirements necessary to support the material as accepted. Engineering drawings and associated list must be commensurate with the operational and support concept.</p> <p>10.1.3 <b>Governing Specifications.</b></p> <p>a. <b>NEW DRAWINGS</b><br/>D-01-400-002/SF-000, Drawings, Engineering and Associated List (Canada)</p> <p>b. <b>EXISTING DRAWINGS</b><br/>Existing drawings/associated list must be accepted if they meet the requirements of D-01-400-002/SF-000, para. 3.2 and DOD-D-1000B, para. 3.2.</p> <p>10.1.4 <b>Drawing Requirements:</b> The level of engineering drawings and associated list must be Level 2, as per D-01-400-002/SF-000 – National Defence Specification – Drawing, Engineering and Associated Lists .</p> <p>10.1.5 <b>Media:</b> Provided on CDROM and paper format. Microfilm and aperture cards are not required.</p> <p>10.1.6 <b>Drawing Details:</b> The use of mono-detail to multi-detail drawings is optional, however the use of mono-detail is preferred. Existing multi-detail drawing must not be redrawn to satisfy this preference.</p> <p>10.1.7 <b>Control Drawings:</b> Control drawings are defined in the governing specifications and must be prepared if applicable.</p> <p>10.1.8 <b>Drawing Lists:</b> Data List, Index List and cover sheet must be prepared and delivered.</p> <p>10.1.9 <b>Reference Data.</b> All documents referenced in the Engineering Drawings (excepting those that are Government, Society, or Readily Available Industrial Specification and Standards) must be delivered.</p> |                                                    |

**OPTIONAL TRAINING**  
**FOR**  
**VOICE COMMUNICATION SYSTEM (VCS)**  
**FOR**  
**4 WING, 42 RADAR SQUADRON, COLD LAKE, ALBERTA**

## Training

### 1.1.1 Optional Technical Maintenance Training. If Canada exercises this option:

- a. The Contractor must provide one technical maintenance course at 42 Radar Cold Lake.
- b. The Contractor must also provide one “Train the Trainer” type program that will focus on TCR site-specific applications. The training course must cover both operations and technical maintenance. Technical training must also cover the operation, set-up and capabilities of the VCS. The training must support troubleshooting and repair to the LRU level or as further defined in the DND 626 Task Authorization.
- c. The number of VCS technical training attendees will not exceed eight technicians.
- d. A technical maintenance manual and an operator manual must be provided to each student as per CDRL C-PUB-001.
- e. Upon completion of this course, the Contractor must provide all course training material, including Instructors notes, Lesson Plan, Slides (Power Point Format), Student guide, Training Material, and Test and Verification questions sufficient for DND to conduct follow-on technical training.

### 1.1.2 Optional Operator Training. If Canada exercises this option:

- a. The operator-training course will not exceed eight students. The course content must include the following:
  - i. A “Train the Trainer” course for the Operators. This course must contain all the operating functions of the VCS. The operator-training course must be complete enough for the Operators to be able to train any additional students.
  - ii. Upon completion of the course the Contractor must provide all of the operator’s course training material, including Instructors notes, Lesson Plans, Slides (Power Point Format), Student guide, Training Material, and Test and Verification questions sufficient for DND to conduct follow-on operator training.
  - iii. An operator manual must be provided to each student as per CDRL C-PUB-001.

### 1.1.3 Course Training Plan (CTP) and Course Training Schedule (CTS).

- a. The CTP and CTS will only be required if the option for training is exercised by Canada. The purpose of the Training Plan is to describe the Contractor’s



methodology to train technicians and operators on the new VCS system. The training plan must be a “Train the Trainer” type program that covers both operations and technical maintenance requirements.

- b. The DRAFT submission of the Training Plan for both operator and technician training is due 45 days after the option is exercised. The DRAFT is subject to review and approval by Canada.
- c. The FINAL copy will be delivered with the agreed changes within 60 days after the training option has been exercised.
- d. The CTP and CTS must be provided to DND in Microsoft Word format on a CD-ROM. These documents must include:
  - i. An overview of the training;
  - ii. A training schedule in matrix format that must cover each of the training days and must indicate the length of the lessons;
  - iii. The proposed evaluation process by which all aspects of training must be evaluated; and
  - iv. Facility requirements to run the courses

1.1.4 Format and Content. The format and content preparation instructions for the Training documentation are as follows:

- a. This document is to be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.
- b. Production of this document using automated techniques is encouraged. Best commercial practices are to be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. The Training Plan must consist of the following:
  - i. Title Page;
  - ii. Table of Contents;
  - iii. Document Control Log;
  - iv. Revision Record;
  - v. Purpose;
  - vi. References;
  - vii. Technical Maintenance Training;
  - viii. Operator Maintenance Training;
  - ix. Training Material Requirements
  - x. Notes; and
  - xi. Appendices.
- c. The Title Page must contain the following information:

- i. Training Plan for the VCS Project (DAEPM/R&CS 4-4);
  - ii. Contract No.;
  - iii. CDRL Sequence No.;
  - iv. Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&CS 4-4); and
  - v. Prepared by: Contractor's name and address.
- d. The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.
- e. The Document Control Log must contain three columns: Revision, Date, and Reason for Change.
- f. The Revision Record must contain a listing of pages and their revision status.
- g. The Purpose section must describe the purpose of the Training Plan
- h. The References section must list all references used in the Training Plan
- i. Technical Maintenance Training. This section must define the technical course content of the VCS. The technical course must include as a minimum the following elements:
  - i. System configuration, diagnostics and functions;
  - ii. All programmable features and adjustments; and
  - iii. Safety Instructions.
- j. Operator Maintenance Training. This section must define the optional operator course content of the VCS. The operator course must include as a minimum the following elements:
  - i. System configuration and functions;
  - ii. All programmable features; and
  - iii. Safety Instructions.
- k. Training Material Requirements. This section must identify the requirements for the Training Plan and the Training Schedule. The training plan must address the following:
  - i. An overview of the training;
  - ii. A training schedule in matrix format that must cover each of the training days and must indicate the length of the lessons;
  - iii. The proposed evaluation process by which all aspects of training must be evaluated; and
  - iv. Facility requirements to run the courses.

- l. Notes. This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.
- m. Appendices. Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling.

**OPTIONAL VOICE COMMUNICATIONS SYSTEM (VCS)**  
**FOR**  
**3 ere, 12 er, BAGOTVILLE, QUEBEC**

### 1.1 Option for a second Voice Communications System for 3ere, 12 ER Bagotville Quebec

- 1.1.1 This VCS must be identical to the VCS for 42 Radar Squadron Cold Lake with the exception that there is only a requirement for four (4) console positions and a difference in some of the quantities outlined in para 1.1.2 below. Appendix AA paragraph 1.1.2 refers.
- 1.1.2 The Contractor must ensure access, at each console to the following functions:
  - a. Five (5) PABX circuits connected to a Public Switched Telephone Network (PSTN);
  - b. Four (4) “Ring Down” and two 4 Wire E&M analog circuits;
  - c. Canadian Switched Network (CSN);
  - d. Access to a minimum of twenty eight (28) G/A/G Radios (4 Wire E&M); which includes expansion positions;
  - e. Tactical Satellite communications data/voice relay to North Bay; and
  - f. Satellite Voice Radios (C2, time critical targeting, combat SAR).
- 1.1.3 As with the 42 Radar VCS the Contractor must provide the following:
  - a. A Maintenance position located in close proximity to the Voice equipment;
  - b. A Recommended Spare Parts kit;
  - c. An option for a Maintenance training Course;
  - d. An option for an Operators training course; and
  - e. An option for service support, using the DND 626 “Task Authorization” form, on an “as and when requested” basis.
- 1.1.4 In the event Canada exercises this option the Contractor must attend a site visit to 3 ere, 12 ER Bagotville.
- 1.1.5 The Contractor must follow the Installation criteria as detailed in the 42 Radar VCS Statement of Work (SOW).
- 1.1.6 The Contractor must use the same equipment requirements as detailed in the 42 Radar VCS Statement of Work (SOW).
- 1.1.7 The Contractor must utilize the same specifications as detailed in Appendix AA – Technical Specifications of the 42 Radar VCS Statement of Work (SOW).

## ANNEX B - BASIS OF PAYMENT

### 1. FIRM DELIVERABLES

#### 1.1 Hardware and Installation Work

For the satisfactory performance of Work in accordance with the Contract, the Contractor will be paid for Firm Deliverables upon delivery and acceptance, and in accordance with Table 1.1 below.

| Table 1.1 – Unit Pricing for Firm Deliverables             |                                                                                                                                                                                                                       |     |               |       |                                             |
|------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------|-------|---------------------------------------------|
| Item                                                       | Description                                                                                                                                                                                                           | Qty | Unit of Issue | Price | Delivery & Acceptance Date                  |
| 001                                                        | Voice Communication System (VCS) delivered at 4 Wing, 42 Radar Squadron, Cold Lake, Alberta. See Annex A – SOW Section 2.1 for details.                                                                               | 1   | Each          |       | On or before March 31, 2017 highly desired. |
| 002                                                        | Installation, engineering, integration, test and evaluation, plan and report, integrated logistics support and other requirements outlined in Annex A – SOW (Section 2.2 to 2.8 and Section 4) and Appendice AA to AC | 1   | Lot           |       |                                             |
| Firm Unit Price Delivery DDP Destination (Item 001 + 002)* |                                                                                                                                                                                                                       |     |               |       |                                             |
| Applicable Tax                                             |                                                                                                                                                                                                                       |     |               |       |                                             |
| Total Price (Firm Unit Price + Applicable Tax)             |                                                                                                                                                                                                                       |     |               |       |                                             |

\*Shipping, Custom Duties and Travel & Living Expenses are included

## 2. OPTIONAL DELIVERABLES

### 2.1 Hardware and Installation Work

For the satisfactory performance of Work in accordance with the Contract, the Contractor will be paid for Optional Deliverables upon delivery and acceptance, and in accordance with Table 2.1 below.

| Table 2.1 – Unit Pricing for Optional Hardware and Installation Work |                                                                                                                                                                                                                         |     |               |                                                  |                                                   |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------------|--------------------------------------------------|---------------------------------------------------|
| Item                                                                 | Description                                                                                                                                                                                                             | Qty | Unit of Issue | Price (From contract award to December 31, 2017) | Price (From January 1, 2018 to December 31, 2018) |
| 001                                                                  | Voice Communication System (VCS) delivered at 12 escadron de radar, 3ere, Bagotville, Quebec. See Annex A – SOW Section 3.3 and Appendix AE for details.                                                                | 1   | Each          |                                                  |                                                   |
| 002                                                                  | Installation, engineering, integration, test and evaluation, plan and report, integrated logistics support and other requirements outlined in Annex A – SOW (Section 2.2 to 2.8 and Section 4) and Appendices AA to AC. | 1   | Lot           |                                                  |                                                   |
| Firm Unit Price Delivery DDP Destination (Item 001 + 002)*           |                                                                                                                                                                                                                         |     |               |                                                  |                                                   |
| Applicable Tax                                                       |                                                                                                                                                                                                                         |     |               |                                                  |                                                   |
| Total Price (Firm Unit Price + Applicable Tax)                       |                                                                                                                                                                                                                         |     |               |                                                  |                                                   |

\*Shipping, Custom Duties and Travel & Living Expenses are included

## 2.2 Training

For the satisfactory performance of Work in accordance with the Contract (Annex AD – Optional Training), on an “as and when requested” basis, the Contractor will be paid for Optional Training at the rates indicated in Table 2.2. The Contractor must submit a claim for payment in accordance with the invoicing instructions provided in the Contract (Article 8 – Invoicing Instructions)

| Table 2.2.1 – Unit Pricing for Optional Training at Cold Lake, Alberta |                              |     |               |                        |
|------------------------------------------------------------------------|------------------------------|-----|---------------|------------------------|
| Item                                                                   | Description                  | Qty | Unit of Issue | Firm Fixed Unit Price* |
| 001                                                                    | Technical Maintenance Course | 1   | Each          |                        |
| 002                                                                    | Operator Training Course     | 1   | Each          |                        |

\* Travel & Living Expenses are included and Applicable Tax is excluded

| Table 2.2.2 – Unit Pricing for Optional Training at Bagotville, Quebec |                              |     |               |                        |
|------------------------------------------------------------------------|------------------------------|-----|---------------|------------------------|
| Item                                                                   | Description                  | Qty | Unit of Issue | Firm Fixed Unit Price* |
| 001                                                                    | Technical Maintenance Course | 1   | Each          |                        |
| 002                                                                    | Operator Training Course     | 1   | Each          |                        |

\* Both Travel & Living Expenses and Applicable Tax are excluded



## 2.3 Service Support – Maintenance and Repair

For the satisfactory performance of Work in accordance with the Contract (Annex A Section 3.2) on an "as and when requested" basis, the Contractor will be paid for Optional Service Support at the firm hourly rates, including all respective overhead and profit, for the categories and periods listed in Table 2.3 below. The Contractor must submit a claim for payment in accordance with the invoicing instructions provided in the Contract (Article 8 – Invoicing Instructions)

| Table 2.3 – Firm Hourly Labour Rates |                                                        |               |               |
|--------------------------------------|--------------------------------------------------------|---------------|---------------|
| Labour Category                      | Initial Contract Period – One Year From Contract Award | Option Year 1 | Option Year 2 |
| Junior Trainer                       |                                                        |               |               |
| Senior Trainer                       |                                                        |               |               |
| Junior Technologist                  |                                                        |               |               |
| Senior Technologist                  |                                                        |               |               |
| Junior Technician                    |                                                        |               |               |
| Senior Technician                    |                                                        |               |               |
| Junior Project Manager               |                                                        |               |               |
| Senior Project Manager               |                                                        |               |               |
| Junior Software Programmer           |                                                        |               |               |
| Senior Software Programmer           |                                                        |               |               |
| ILS Manager                          |                                                        |               |               |
| Quality Assurance Inspector          |                                                        |               |               |
| Administrator                        |                                                        |               |               |

### 2.3.1 Material

Where the satisfactory performance of approved Optional Service Support, in accordance with Contract, on an "as and when requested" basis, the Contractor shall be paid actual costs plus a firm material mark-up rate, in percentage, including all overhead and profit, as listed in Table 2.3.1 below.

| Table 2.3.1 – Mark-up Rate for Material |         |
|-----------------------------------------|---------|
| Material Mark-up Rate                   | _____ % |

### 2.3.2 Sub-Contract Work

Where the satisfactory performance of approved Optional Service Support, in accordance with Contract, on an "as and when requested" basis, the Contractor shall be paid actual costs plus a firm subcontracting mark-up rate, in percentage, including all overhead and profit, as listed in Table 2.3.2 below.

| Table 2.3.2 – Mark-up Rate for Sub-Contract Work |         |
|--------------------------------------------------|---------|
| Sub-contract Work Mark-up Rate                   | _____ % |

## 3. AUTHORIZED TRAVEL AND LIVING EXPENSES

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the [\*National Joint Council Travel Directive\*](#) and with the other provisions of the directive referring to "travellers", rather than those referring to "employees"

All travel must have the prior authorization of the Procurement/Contracting Authority through the DND 626, Task Authorization Form.

All payments are subject to government audit.

Solicitation No. - N° de l'invitation  
W8485-173810/A  
Client Ref. No. - N° de réf. du client  
W8485-173810

Amd. No. - N° de la modif.  
File No. - N° du dossier  
032qd.W8485-173810

Buyer ID - Id de l'acheteur  
032qd  
CCC No./N° CCC - FMS No./N° VME

---

## **ANNEX C - SECURITY REQUIREMENTS CHECK LIST**

See attached Security Requirements Check List

Solicitation No. - N° de l'invitation  
W8485-173810/A  
Client Ref. No. - N° de réf. du client  
W8485-173810

Amd. No. - N° de la modif.  
File No. - N° du dossier  
032qd.W8485-173810

Buyer ID - Id de l'acheteur  
032qd  
CCC No./N° CCC - FMS No./N° VME

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**ANNEX D - DND 626 TASK AUTHORIZATION FORM**

See attached DND 626 Task Authorization Form

Solicitation No. - N° de l'invitation  
W8485-173810/A  
Client Ref. No. - N° de réf. du client  
W8485-173810

Amd. No. - N° de la modif.  
File No. - N° du dossier  
032qd.W8485-173810

Buyer ID - Id de l'acheteur  
032qd  
CCC No./N° CCC - FMS No./N° VME

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## **ANNEX E – BID COMPLIANCE AND EVALUATION MATRIX**

See attached Bid Compliance and Evaluation Matrix

Solicitation No. - N° de l'invitation  
W8485-173810/A  
Client Ref. No. - N° de réf. du client  
W8485-173810

Amd. No. - N° de la modif.  
File No. - N° du dossier  
032qd.W8485-173810

Buyer ID - Id de l'acheteur  
032qd  
CCC No./N° CCC - FMS No./N° VME

---

## **ANNEX F – BID EVALUATION CRITERIA**

See attached Bid Evaluation Criteria



Government  
of Canada

Gouvernement  
du Canada

JUN 20 2016

Contract Number / Numéro du contrat

W8485-173810

Security Classification / Classification de sécurité

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

DGAPEM

2. Branch or Directorate / Direction générale ou Direction

R&CS 4-4

3. a) Subcontract Number / Numéro du contrat de sous-traitance

3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant

4. Brief Description of Work / Brève description du travail

Procurement and Installation of a Voice Control Switch (VCS) and six operator positions at 42 Radar Squadron, Cold Lake, Alberta.

5. a) Will the supplier require access to Controlled Goods?

Le fournisseur aura-t-il accès à des marchandises contrôlées?

☒ No ☐ Yes  
Non 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?

☐ No ☒ Yes  
Non 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?

☒ No ☐ Yes  
Non Oui

(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)

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.

☐ No ☒ Yes  
Non 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?

☒ No ☐ Yes  
Non 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

☐

NATO / OTAN

☐

Foreign / Étranger

☐

7. b) Release restrictions / Restrictions relatives à la diffusion

No release restrictions  
Aucune restriction relative  
à la diffusion

☐

All NATO countries  
Tous les pays de l'OTAN

☐

No release restrictions  
Aucune restriction relative  
à la diffusion

☐

Not releasable  
À ne pas diffuser

☐

Restricted to: / Limité à :  
Specify country(ies): / Préciser le(s)  
pays :

☐

Restricted to: / Limité à :  
Specify country(ies): / Préciser le(s) pays :

☐

Restricted to: / Limité à :  
Specify country(ies): / Préciser le(s)  
pays :

☐

7. c) Level of information / Niveau d'information

PROTECTED A  
PROTÉGÉ A  
PROTECTED B  
PROTÉGÉ B  
PROTECTED C  
PROTÉGÉ C  
CONFIDENTIAL  
CONFIDENTIEL  
SECRET  
SECRET  
TOP SECRET  
TRÈS SECRET  
TOP SECRET (SIGINT)  
TRÈS SECRET (SIGINT)

NATO UNCLASSIFIED  
NATO NON CLASSIFIÉ  
NATO RESTRICTED  
NATO DIFFUSION RESTREINTE  
NATO CONFIDENTIAL  
NATO CONFIDENTIEL  
NATO SECRET  
NATO SECRET  
COSMIC TOP SECRET  
COSMIC TRÈS SECRET

PROTECTED A  
PROTÉGÉ A  
PROTECTED B  
PROTÉGÉ B  
PROTECTED C  
PROTÉGÉ C  
CONFIDENTIAL  
CONFIDENTIEL  
SECRET  
SECRET  
TOP SECRET  
TRÈS SECRET  
TOP SECRET (SIGINT)  
TRÈS SECRET (SIGINT)





**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 ☐ Yes  
Non 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 ☐ Yes  
Non 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

☐ RELIABILITY STATUS  
COTE DE FIABILITÉ

☐ CONFIDENTIAL  
CONFIDENTIEL

☒ SECRET  
SECRET

☐ TOP SECRET  
TRÈS SECRET

☐ TOP SECRET - SIGINT  
TRÈS SECRET - SIGINT

☐ NATO CONFIDENTIAL  
NATO CONFIDENTIEL

☐ NATO SECRET  
NATO SECRET

☐ COSMIC TOP SECRET  
COSMIC TRÈS SECRET

☐ SITE ACCESS  
ACCÈS AUX EMPLACEMENTS

Special comments:

Commentaires spéciaux :

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 ☐ Yes  
Non Oui

☒ No ☐ Yes  
Non 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 ☐ Yes  
Non 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 ☐ Yes  
Non 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 ☐ Yes  
Non 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 ☐ Yes  
Non 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 ☐ Yes  
Non Oui





**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<br>Catégorie                          | PROTECTED<br>PROTÉGÉ     |                          |                          | CLASSIFIED<br>CLASSIFIÉ  |                          |                          | NATO                      |                          |                          |                          | COMSEC                   |                          |                          |                          |                          |                          |
|------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|---------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                                                | A                        | B                        | C                        | CONFIDENTIAL             | SECRET                   | TOP SECRET               | NATO RESTRICTED           | NATO CONFIDENTIAL        | NATO SECRET              | COSMIC TOP SECRET        | PROTECTED<br>PROTÉGÉ     |                          |                          | CONFIDENTIAL             | SECRET                   | TOP SECRET               |
|                                                |                          |                          |                          | CONFIDENTIEL             |                          | TRÈS SECRET              | NATO DIFFUSION RESTREINTE | NATO CONFIDENTIEL        |                          |                          | COSMIC TRÈS SECRET       | A                        | B                        | C                        | CONFIDENTIEL             |                          |
| Information / Assets<br>Renseignements / Biens | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Production                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| IT Media /<br>Support TI                       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| IT Link /<br>Lien électronique                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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

Contract Number / Numéro du contrat  
W8485-173810

Security Classification / Classification de sécurité

**PART D - AUTHORIZATION / PARTIE D - AUTORISATION**

**13. Organization Project Authority / Chargé de projet de l'organisme**

|                                                         |                                   |                                                                |
|---------------------------------------------------------|-----------------------------------|----------------------------------------------------------------|
| Name (print) - Nom (en lettres moulées)<br>Stokes, B.R. | Title - Titre<br>DAEPM R&CS 4-4   | Signature<br><i>Barry Stokes</i>                               |
| Telephone No. - N° de téléphone<br>(819) 939-4982       | Facsimile No. - N° de télécopieur | E-mail address - Adresse courriel<br>barry.stokes@forces.gc.ca |
|                                                         |                                   | Date<br>13 June 2016                                           |

**14. Organization Security Authority / Responsable de la sécurité de l'organisme**

|                                                          |                                                                        |                                                                         |
|----------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Name (print) - Nom (en lettres moulées)<br>Sasa Medjovic | Title - Titre<br>DDSO - Industrial Security<br>Senior Security Analyst | Signature<br><i>Sasa Medjovic</i>                                       |
| Telephone No. - N° de téléphone<br>Tel: 613-996-9286     | Facsimile No. - N° de télécopieur                                      | E-mail address - Adresse courriel<br>E-mail: sasa.medjovic@forces.gc.ca |
|                                                          |                                                                        | Date<br>2016 - June 20                                                  |

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?

No ☐ Yes ☒  
Non ☐ Oui ☒

**16. Procurement Officer / Agent d'approvisionnement**

|                                                    |                                   |                                                          |
|----------------------------------------------------|-----------------------------------|----------------------------------------------------------|
| Name (print) - Nom (en lettres moulées)<br>Evy Pui | Title - Titre<br>Supply Officer   | Signature<br><i>Evy Pui</i>                              |
| Telephone No. - N° de téléphone<br>613-469-4813    | Facsimile No. - N° de télécopieur | E-mail address - Adresse courriel<br>evy.pui@pwgsc.gc.ca |
|                                                    |                                   | Date<br>Oct 21, 2016                                     |

**17. Contracting Security Authority / Autorité contractante en matière de sécurité**

|                                         |                                   |                                     |
|-----------------------------------------|-----------------------------------|-------------------------------------|
| Name (print) - Nom (en lettres moulées) | Title - Titre                     | Signature<br><i>Sherry Campbell</i> |
| Telephone No. - N° de téléphone         | Facsimile No. - N° de télécopieur | E-mail address - Adresse courriel   |
|                                         |                                   | Date<br>July 12, 2016               |

Sherry Campbell  
Contract Security Officer, Contract Security Division  
Sherry.Campbell@tpsgc-pwgsc.gc.ca  
Tel/Tél - 613-948-1646 / Fax/Télec - 613-948-1712

Design: Forms Management 993-4050  
Conception : Gestion des formulaires 993-4062

## Instructions for completing DND 626 - Task Authorization

### Contract no.

Enter the PWGSC contract number in full.

### Task no.

Enter the sequential Task number.

### Amendment no.

Enter the amendment number when the original Task is amended to change the scope or the value.

### Increase/Decrease

Enter the increase or decrease total dollar amount including taxes.

### Previous value

Enter the previous total dollar amount including taxes.

### To

Name of the contractor.

### Delivery location

Location where the work will be completed, if other than the contractor's location.

### Delivery/Completion date

Completion date for the task.

### for the Department of National Defence

Signature of the DND person who has delegated **Authority** for signing DND 626 (level of authority based on the dollar value of the task and the equivalent signing authority in the PAM 1.4). **Note:** the person signing in this block ensures that the work is within the scope of the contract, that sufficient funds remain in the contract to cover this task and that the task is affordable within the Project/Unit budget.

### Services

Define the requirement briefly (attach the SOW) and identify the cost of the task using the contractor's quote on the level of effort. The Task must use the basis of payment stipulated in the contract. If there are several basis of payment then list here the one(s) that will apply to the task quote (e.g. milestone payments; per diem rates/labour category hourly rates; travel and living rates; firm price/ceiling price, etc.). All the terms and conditions of the contract apply to this Task Authorization and cannot be ignored or amended for this task. Therefore it is not necessary to restate these general contract terms and conditions on the DND 626 Task form.

### Cost

The cost of the Task broken out into the individual costed items in **Services**.

### GST/HST

The GST/HST cost as appropriate.

### Total

The total cost of the task. The contractor may not exceed this amount without the approval of DND indicated on an amended DND 626. The amendment value may not exceed 50% (or the percentage for amendments established in the contract) of the original value of the task authorization. The total cost of a DND 626, including all amendments, may not exceed the funding limit identified in the contract.

### Applicable only to PWGSC contracts

This block only applies to those Task Authorization contracts awarded by PWGSC. The contract will include a specified threshold for DND sole approval of the DND 626 and a percentage for DND to approve amendments to the original DND 626. Tasks that will exceed these thresholds must be passed to the PWGSC Contracting Authority for review and signature prior to authorizing the contractor to begin work.

### Note:

Work on the task may not commence prior to the date this form is signed by the DA Authority - for tasks within the DND threshold; and by both DND and PWGSC for those tasks over the DND threshold.

## Instructions pour compléter le formulaire DND 626 - Autorisation des tâches

### N° du contrat

Inscrivez le numéro du contrat de TPSGC en entier.

### N° de la tâche

Inscrivez le numéro de tâche séquentiel.

### N° de la modification

Inscrivez le numéro de modification lorsque la tâche originale est modifiée pour en changer la portée.

### Augmentation/Réduction

Inscrivez le montant total de l'augmentation ou de la diminution, y compris les taxes.

### Valeur précédente

Inscrivez le montant total précédent, y compris les taxes.

### À

Nom de l'entrepreneur.

### Expédiez à

Endroit où le travail sera effectué, si celui-ci diffère du lieu d'affaires de l'entrepreneur.

### Date de livraison/d'achèvement

Date d'achèvement de la tâche.

### pour le ministère de la Défense nationale

Signature du représentant du MDN auquel on a délégué le **pouvoir d'approbation** en ce qui a trait à la signature du formulaire DND 626 (niveau d'autorité basé sur la valeur de la tâche et le signataire autorisé équivalent mentionné dans le MAA 1.4). **Nota :** la personne qui signe cette attache de signature confirme que les travaux respectent la portée du contrat, que suffisamment de fonds sont prévus au contrat pour couvrir cette tâche et que le budget alloué à l'unité ou pour le projet le permet.

### Services

Définissez brièvement le besoin (joignez l'ET) et établissez le coût de la tâche à l'aide de la soumission de l'entrepreneur selon le niveau de difficulté de celle-ci. Les modalités de paiement stipulées dans le contrat s'appliquent à la tâche. Si plusieurs d'entre elles sont prévues, énumérez ici celle/celles qui s'appliquera/ront à la soumission pour la tâche à accomplir (p.ex. acompte fondé sur les étapes franchies; taux quotidien ou taux horaire établi selon la catégorie de main-d'œuvre; frais de déplacement et de séjour; prix fixe ou prix plafond; etc.). Toutes les modalités du contrat s'appliquent à cette autorisation de tâche et ne peuvent être négligées ou modifiées quant à la tâche en question. Il n'est donc pas nécessaire de répéter ces modalités générales afférentes au contrat sur le formulaire DND 626.

### Prix

Mentionnez le coût de la tâche en le répartissant selon les frais afférents à chaque item mentionné dans la rubrique **Services**.

### TPS/TVH

Mentionnez le montant de la TPS/TVH, s'il y a lieu.

### Total

Mentionnez le coût total de la tâche. L'entrepreneur ne peut dépasser ce montant sans l'approbation du MDN, formulaire DND 626 modifié à l'appui. Le coût de la modification ne peut pas être supérieur à 50 p. 100 du montant initial prévu dans l'autorisation de tâche (ou au pourcentage prévu dans le contrat pour les modifications). Le coût total spécifié dans le formulaire DND 626, y compris toutes les modifications, ne peut dépasser le plafond de financement mentionné dans le contrat.

### Ne s'applique qu'aux contrats de TPSGC

Le présent paragraphe s'applique uniquement aux autorisations de tâche accordées par TPSGC. On inscrira dans le formulaire DND 626 un plafond précis qui ne pourra être approuvé que par le MDN et un pourcentage selon lequel le MDN pourra approuver des modifications au formulaire DND 626 original. Les tâches dont le coût dépasse ces plafonds doivent être soumises à l'autorité contractante de TPSGC pour examen et signature avant qu'on autorise l'entrepreneur à débiter les travaux.

### Nota :

Les travaux ne peuvent commencer avant la date de signature de ce formulaire par le responsable du MDN, pour les tâches dont le coût est inférieur au plafond établi par le MDN, et par le MDN et TPSGC pour les tâches dont le coût dépasse le plafond établi par le MDN.

**VOICE COMMUNICATION SYSTEM (VCS)**  
**BID COMPLIANCE AND EVALUATION MATRIX**  
**TACTICAL CONTROL RADAR**  
**42 RADAR COLD LAKE, ALBERTA**

- Part 1 – Requirement Compliance
- Part 2 – Technical Specifications
- Part 3 – Optional Training
- Part 4 – Optional VCS at Bagotville, Quebec

**VOICE COMMUNICATION SYSTEM (VCS)**  
**REQUIREMENT COMPLIANCE**  
**TACTICAL CONTROL RADAR**  
**42 RADAR COLD LAKE, ALBERTA**



## VOICE COMMUNICATION SYSTEM (VCS) REQUIREMENTS COMPLIANCE TABLE (SOW)

| Item     | Reference    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliant or Non-Compliant | Comments |
|----------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
|          | <b>1</b>     | <b>INTRODUCTION</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>N/A</b>                 |          |
| <b>1</b> | <b>1.2</b>   | SCOPE<br>DND has a requirement to procure a Voice Communication System (VCS) to replace the obsolete VCS at the Remote Training Operations Centre (RTOC) at the Tactical Control Radar (TCR) at 4 Wing, 42 Radar (Rdr) Squadron, Cold Lake, Alberta. The VCS must not be a prototype or a pre-production model, it must be a proven, fielded system that is already in service and is considered a Commercial Off The Shelf (COTS) product.                                                                                                                                                                                                                        |                            |          |
| <b>2</b> | <b>1.3.3</b> | <b>Grounding and Bonding.</b> The Contractor must provide DND with specific building ground requirements to support the VCS system for the RTOC. Grounding must utilize a facility single-point ground system. The Canadian Electrical Code Sections 10 and 60 refer. The system electrical bonding must provide electrical continuity across external mechanical interfaces on electrical and electronic equipment, both within the equipment and between the equipment and other system elements, for control of Electronic Environmental Effects (E3) such that the system operational performance requirements are met. Bonding of all electrically conductive |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                       | Compliant or Non-Compliant | Comments |
|------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
|      |           | items subject to electrical fault currents must be provided to control hazard voltages and allow proper operation of circuit protection devices. The VCS must be electromagnetically compatible within itself, and within the environment in which it will operate such that system operational performance requirements are met. |                            |          |
|      | 2         | <b>REQUIREMENT</b>                                                                                                                                                                                                                                                                                                                | N/A                        |          |
|      | 2.1       | <b>VOICE COMMUNICATIONS SYSTEM (VCS)</b>                                                                                                                                                                                                                                                                                          | N/A                        |          |
| 3    | 2.1.1     | The Contractor must perform the work specified in this Statement of Work (SOW) including acquisition, site preparation, documentation, installation, integration, testing and sustainment of the VCS. The VCS must include six (6) operator positions and a separate maintenance position at 42 Radar Squadron, Cold Lake.        |                            |          |
| 4    | 2.1.2     | The Contractor must supply all necessary tools, equipment, hardware, software, and engineering and installation support services to carry out the work in this SOW. All hardware and software provided must be the most recent version of COTS items available.                                                                   |                            |          |
| 5    | 2.1.3     | The Contractor must provide a recommended spares kit for the VCS.                                                                                                                                                                                                                                                                 |                            |          |
|      | 2.1.4     | The Contractor must meet or exceed all the technical requirements specified in Appendix AA – Technical Specifications.                                                                                                                                                                                                            |                            |          |



| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                 | Compliant or Non-Compliant | Comments |
|------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
| 6    | 2.2       | <b>VCS INSTALLATION</b>                                                                                                                                                                                                                                                                                                                                     | N/A                        |          |
| 7    | 2.2.1     | The Contractor must install, wire and test the VCS system at the RTOC.                                                                                                                                                                                                                                                                                      |                            |          |
| 9    | 2.2.2     | RTOC Design. The RTOC design must take into account Human Factors Engineering (HFE) and Computer Human Interfacing (CHI) considerations in accordance with MILSTD 1472G (or latest version). The Contractor must present how the RTOC layout addresses the HFE and CHI for DND approval.                                                                    |                            |          |
| 10   | 2.2.4     | Transition Plan. The Contractor must submit a Transition Plan in accordance with CDRL C-TP-001. The Transition Plan must include the work effort and requirements to accomplish each phase of transition for the installation. The Transition Plan must include a cutover plan to ensure that communication connectivity during installation is maintained. |                            |          |
| 11   | 2.2.5     | Patch Panels. The Contractor must install jackfields/patch panels ‘in-circuit’ for the radio and landline VCS circuits. These patch panels must be labelled to identify all connected functions. The Contractor must supply a minimum of 10 Test cord.                                                                                                      |                            |          |
| 12   | 2.2.6     | Operator Positions. The RTOC in 42 Rdr must have a total of six (6) VCS positions installed. Operator positions at must be identical. The Contractor must provide a physically stable mount for each Operator position that allows the operator to easily access the touchscreen; the                                                                       |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                             | Compliant or Non-Compliant | Comments |
|------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
|      |           | Contractor must supply the table/stand. All keyboards and peripheral equipment in the RTOC must be retractable and storable.                                                                                                                                                                                                                                                                                            |                            |          |
| 13   | 2.2.7     | Maintenance Position. The Maintenance Position must be co-located with the VCS rack(s). The VCS must not be co-located with the consoles located in the RTOC but in the adjacent maintenance room. The Maintenance position must either be installed in the VCS rack or an adjacent rack depending on rack design. The Maintenance position must be a one (1) Rack Unit (RU), retractable keyboard, screen combination. |                            |          |
| 14   | 2.2.8     | Racks. The Contractor must supply standard equipment rack(s). The rack spacing must be the standard 1-3/4 inch for one (1) rack unit. Blank/unused spaces must be fitted with blank panels. Protection (360°) of cable entry ports must be installed to protect incoming/outgoing power, ground and control cables from chafing/rubbing. The rack(s) must be levelled, attached to the floor, powered and grounded.     |                            |          |
| 15   | 2.2.9     | RTOC Cabling. Unless otherwise approved by DND, all RTOC cabling must be, at a minimum:<br>a. FT 4 Rated;<br>b. Double shielded                                                                                                                                                                                                                                                                                         |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliant or Non-Compliant | Comments |
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|      |           | c. Category 6; and<br>d. Adhere to industry standard colour codes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |          |
| 16   | 2.2.10    | Demarcation. Each existing DND facility has a wall-mounted demarcation point, Main Distribution Frame (MDF), for cable connection and signal routing. Cross connect sheets for existing equipment are available on request. All cabling must terminate, and cross connect, in the building equipment room on the “Bix” interconnect terminals. The Contractor must provide DND with the proposed standards that will be used for this installation; these standards must be approved by DND. DND will provide the cable records of the present configuration as well as a template for new cable installations in Microsoft Excel; the Contractor must provide updated cable records for the completed installation. As a minimum, the Contractor must provide a draft/red-line copy of all installation cable records as part of SAT. |                            |          |
| 17   | 2.2.11    | Wiring Requirements. At a minimum:<br>a. All cabling must be dressed in accordance with the installation standards listed in para 1.3.2 and routed utilizing existing cable tray systems;<br>b. All cabling must be labelled at both ends in a manner agreed upon by both DND and the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Compliant or Non-Compliant | Comments |
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|      |           | <p>Contractor;</p> <p>c. All cabling from the operations room in the RTOC to the RTOC demarcation point at the Main MDF at 42 Rdr must be supplied by the Contractor. The final layout of the MDF will be approved by DND prior to installation. The Contractor must supply, at a minimum, connectors, cables, crimping tools, pins, back shells, cable ties, cross-connect wire, and termination tool(s). The Contractor must supply replacement termination blocks for the existing MDF terminals;</p> <p>d. The Contractor must ensure that all Bix blocks used throughout the installation are labelled using the appropriate Bix colour label as per the DND standard listed below: and</p> <p>i. Blue – Bix to Bix located in another Bix field such as a cabinet or Intermediate Distribution Frame (IDF);</p> <p>ii. Yellow – Bix to equipment harness in a cabinet or rack;</p> <p>iii. Red – Multiplier Bix block;</p> <p>iv. Green - Incoming cable from the MDF and indicate the Bix block position on the Bix field; and</p> <p>v. White – Spare.</p> <p>e. The blocks in a Bix terminal must be identified with the alpha-numeric designation for the Bix position in that Bix field. (I.e. T3/2D where 'T'</p> |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliant or Non-Compliant | Comments |
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|      |           | is terminal, '3' is the terminal number, '2' is the Bix mount location and 'D' is the Bix block location on the mount).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |
| 18   | 2.2.12    | <p>Existing Facilities.</p> <p>a. There are a total of two (2) C7999 Remote Control heads (for use with AN/GRC171 UHF A/G/A Transceivers) installed in a console at 42 Rdr. The Contractor must ensure these devices remain in any console design and maintain connectivity.</p> <p>b. The Contractor must integrate the current Commlog Voice Recorder (CVDS DL2410), installed at the RTOC, to record all Ground/Air/Ground (G/A/G) radios and designated Ground/Ground (G/G) signals. This recorder provides channelized Voice Recording. Connection to this recorder is at the RTOC MDF.</p> <p>There is a separate console in the RTOC control room, at 42 Radar, which includes up to eight (8) hard drives, a keyboard, modems, a terminal and a Proconnect 8 Station CPU switch. These components comprise the remote control system for the current low-level communication (LLC) system at Primrose Lake Evaluation Range (PLER). This equipment does not form part of the VCS contract and therefore, this equipment must remain operational.</p> |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Compliant or Non-Compliant | Comments |
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| 19   | 2.2.13    | <p>Operational Test &amp; Evaluation (OT&amp;E)</p> <p>a. The Contractor must support the Operational Test and Evaluation (OT&amp;E) of the VCS, which is a prerequisite to acceptance of the system by operations staff. The Contractor must, at a minimum, provide:</p> <ul style="list-style-type: none"> <li>i. Direct support including planning and conducting OT&amp;E;</li> <li>ii. Applicable manuals, supporting plans and documentation defined during planning; and</li> <li>iii. Investigation and resolution of system/equipment deficiencies</li> </ul> <p>b. The VCS must satisfy all 1 Canadian Air Division Operational Test and Evaluation requirements. There is an operational requirement to obtain Operational Airworthiness (OA).</p> |                            |          |
| 20   | 2.3       | Project Management. The Contractor must assign a Project Manager, who must be the single point of contact with DND for the duration of the contract. The Contractor's Project Manager must manage all technical performance and data delivery requirements of the contract.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |          |
| 21   | 2.4       | Human Factor Engineering. The Contractor must apply personnel hazard and safety criteria in a manner equivalent to MIL-STD-1472G to the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliant or Non-Compliant | Comments |
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|      |           | equipment and system design (hardware and software) to ensure safety of personnel responsible for the testing, installation, implementation, training, operation and maintenance of all sub-systems.                                                                                                                                                                                                                                                                                                                                                                                         |                            |          |
| 22   | 2.5       | Language Requirements. All meetings and correspondence are to be conducted in English. Publications must be produced in English and French using Microsoft Word (contractor format is acceptable). The bilingual documentation must be in accordance with A-LM-505-010/IS-001 Official Languages Requirements for Technical Documentation. The VCS system user interfaces must be available in French and English.<br><br>All soft copies of documentation to support the VCS must be in Microsoft Word, Microsoft Excel and Microsoft Visio Professional or a TA approved alternate format. |                            |          |
| 23   | 2.6       | Maintenance. The Contractor must provide recommended Preventive maintenance schedules and corrective maintenance plans and procedures as described in the Maintenance Plan CDRL C-II.S-002.                                                                                                                                                                                                                                                                                                                                                                                                  |                            |          |
| 24   | 2.7       | Quality Assurance (QA) Safety and Health. The VCS must comply with applicable Canadian Standard Association (CSA) standards for safety and health, or equivalent standard approved by the TA.                                                                                                                                                                                                                                                                                                                                                                                                |                            |          |

| Item | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Compliant or Non-Compliant | Comments |
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|      | <b>2.8</b> | <b>INTEGRATED LOGISTIC SUPPORT (ILS)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>N/A</b>                 |          |
| 25   | 2.8.1      | General. The VCS supplier must demonstrate supportability for a minimum of ten (10) years. Each ILS package must include all the items listed in CDRL C-ILS-001. The ILS documentation must be prepared in accordance with CDRL C-PUB-001 & C-PUB-002.                                                                                                                                                                                                                                                                                        |                            |          |
| 26   | 2.8.2      | Spare and Repair Parts List (SRPL). The Contractor must provide a recommended Spare and Repair Parts Lists for the VCS per CDRL C-ILS-004.                                                                                                                                                                                                                                                                                                                                                                                                    |                            |          |
| 27   | 2.8.3      | Supplementary Provisioning Technical Documentation (SPTD). The SPTD, as prepared by the actual manufacturer of the item and is required for the codification and cataloguing of all items listed in the SRPL. At a minimum, the Contractor must provide:<br>a. Name and Description of the Item;<br>b. Unit Price;<br>c. NATO Stock Number (NSN), if applicable;<br>d. Original Equipment Manufacturer (OEM) NATO Commercial and Government Entity Code (NCAGE) Number, from Original Equipment Manufacturer; and<br>e. OEM Item Part Number. |                            |          |
| 28   | 2.8.4      | <b>Drawings.</b> The Contractor must provide Level 2 Engineering Drawings, Associated Lists and                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |          |



| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliant or Non-Compliant | Comments |
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|      |           | Schematic or Block diagrams as specified in D-01-400-002/SF-000 paragraph 3.3.2, and the guidelines specified in CDRL C-PUB-002. This documentation package must provide a high-level parts breakdown and general description of all the proposed VCS components and sub-components. These diagrams and descriptions must serve to place the components in an understandable and logical framework, and for the precise makeup of each individual system, a site specific Configuration Manual must be provided. |                            |          |
| 29   | 2.8.5     | Support Equipment and Requirements List (SERL). The Contractor must provide an SERL as per CDRL C-ILS-003 and must include all software / documentation that is required to operate the equipment.                                                                                                                                                                                                                                                                                                               |                            |          |
| 30   | 2.8.6     | Special Support Equipment. The Contractor must provide, if any, a list of all special support test equipment (e.g. specific meter made for the VCS that is required to maintain the VCS) as per CDRL C-ILS-003 and the equipment listed must be delivered at the Site Acceptance Test (SAT).                                                                                                                                                                                                                     |                            |          |
| 31   | 2.8.7     | Special Tools. The Contractor must provide, if any, a list of all special tools that are required to perform maintenance (e.g. specific key/tool to open the cabinets) and these tools must be delivered at the SAT.                                                                                                                                                                                                                                                                                             |                            |          |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
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| 32          | 2.8.8            | Identification Plate. The Contractor must provide the VCS with an identification plate with the following data at a minimum:<br>a. VCS Model Number;<br>b. VCS Item Name;<br>c. VCS Serial Number;<br>d. Manufacturer Name; and<br>e. Special Characteristics, if applicable (e.g. 110 VAC 60 Hz).                                                                                                                                                                                 |                                   |                 |
| 33          | 2.8.9            | Physical Installation Configuration Audit (PCIA). The Contractor must conduct a formal PCIA which includes a detailed audit of engineering drawings, specifications, technical data and manuals for sub-systems. The DND TA must be advised 30 days prior to the PCIA. The review must also include an audit of the released engineering documentation and quality control records to make sure the as-built configuration is reflected in the documentation as per MIL-STD-1521B. |                                   |                 |
| 34          | 2.8.10           | Packaging, Handling & Storage (PHS). The Contractor must individually pack and label each VCS in accordance with CDRL C-ILS-005 and must include, at a minimum, the following information:<br>a. Item Model Number;<br>b. Item Name;<br>c. Serial Number (when applicable); and<br>d. Special Characteristics, if applicable.                                                                                                                                                      |                                   |                 |

| Item | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliant or Non-Compliant | Comments |
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|      | <b>3</b>   | <b>OPTIONAL REQUIREMENTS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>N/A</b>                 |          |
|      | <b>3.1</b> | <b>TRAINING</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>N/A</b>                 |          |
| 35   | 3.1.1      | The Contractor must provide the following optional training courses, in accordance with Appendix AD, on an “as and when requested” basis at the site specified by the Technical Authority (TA):<br>a. Technical Maintenance Course;<br>b. Operator Training Course.                                                                                                                                                                                                                                                                                                                                                 |                            |          |
|      | <b>3.2</b> | <b>SERVICE SUPPORT</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>N/A</b>                 |          |
| 36   | 3.2.1      | The Contractor must provide the following service support, using the DND 626 “Task Authorization” form, on an “as and when requested” basis. The tasking process, administration, procedures are identified in the resultant contract.<br><br>a. On Site Corrective Maintenance<br><br>i. <u>Scheduled Mobile Repair Parties (MRP)</u> .<br>The Contractor may use the scheduled MRP to perform the Work defined in the Task SOW via a DND 626 Task Authorization and/or to affect repairs or modifications to the installations. The scheduled MRP may also be used to perform in depth system performance checks. |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Compliant or Non-Compliant | Comments |
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|      |           | <p>ii. <u>Unscheduled MRP</u>. When an operational mission is endangered and an immediate response is required, the Contractor must provide the requested MRP within 48 hours.</p> <p>b. Off Site Corrective Maintenance</p> <p>The Contractor must provide telephone technical support during core working hours (7am to 5 pm Monday to Friday) to the Technical Authority (TA) (or the TA's designated representative) in order to troubleshoot Voice Switch system faults.</p> <p>c. Repairs</p> <p>i. The Contractor must monitor the cost of each repair to ensure that total repair costs remain within approved limits.</p> <p>Appropriate management control procedures must be in place and records maintained. These control procedures and records shall be available for review and audit on request.</p> <p>ii. Unless specifically identified within the contract, equipment Turn-Around Time to a serviceable state must be achieved in no more than 90 Calendar days.</p> |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                         | Compliant or Non-Compliant | Comments |
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|      |           | <p>iii. The Contractor must maintain the capability to provide replacement parts or suggest “form, fit, function” replacements for all Voice Switch components.</p> <p>iv. The repair process will be via the TA/LCMM. The unit will indicate to the TA/LCMM that there is a part in need of repair; the PA will initiate a DND 626 Task Authorization and supply shipping instructions to the repair facility.</p> |                            |          |
|      | 3.3       | <b>OPTIONAL VOICE COMMUNICATION SYSTEM FOR 12 ESCADRON DE RADAR (ER), 3ere, BAGOTVILLE, QUEBEC</b>                                                                                                                                                                                                                                                                                                                  | N/A                        |          |
| 37   | 3.3.1     | The Contractor must provide DND the option to procure an additional VCS with four (4) operator positions to be deployed at 12 escadron de radar (ER), 3ere, Bagotville, Quebec.                                                                                                                                                                                                                                     |                            |          |
| 38   | 3.3.2     | The Contractor must perform the work specified in this Statement of Work (SOW) should DND exercise the option to purchase this additional VCS.                                                                                                                                                                                                                                                                      |                            |          |
| 39   | 3.3.3     | The Contractor must provide a recommended spares kit for this optional VCS.                                                                                                                                                                                                                                                                                                                                         |                            |          |
| 40   | 3.3.4     | The Contractor must meet or exceed all the technical requirements specified in Appendix AA – Technical Specifications.                                                                                                                                                                                                                                                                                              |                            |          |

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|      | <b>4</b>  | <b>TEST AND ACCEPTANCE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>N/A</b>                 |          |
| 41   | 4.1       | Verification Matrix Summary Report (VMSR). The Contractor must provide a VMSR in accordance with CDRL C-TEST-001 indicating how each technical and operational requirements will be verified, the stage of testing (Factory Acceptance Test, Site Acceptance Test), and when the verification will take place. This matrix must also be used to record the status and subsequently close the verification effort for each individual requirement. Every test must be assessed by the Contractor on a pass/fail basis, with the pass/fail criteria documented in the test procedures. |                            |          |
| 42   | 4.2       | The existing test data/results, where the required performance has already been demonstrated and documented in the same equipment configuration and test environment, proposed to be used by the Contractor must be submitted to Canada no later than 30 calendar days prior to conduct of the planned tests. Should Canada consider that the existing test data is not sufficient to prove compliance, the Contractor must conduct full or partial retesting as required.                                                                                                           |                            |          |
| 43   | 4.3       | Types of Tests. The Contractor must plan, develop and conduct functional level tests to include the following:                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |          |

| Item | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                                                          | Compliant or Non-Compliant | Comments |
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|      |            | a. Hardware integration tests;<br>b. System-level and sub-system software integration tests;<br>c. Internal interface tests (sub-system level);<br>d. External interface tests;<br>e. Environmental tests;<br>f. System verification and acceptance tests to demonstrate operational performance; and<br>g. Regression tests and re-tests as necessitated by changes/modifications to the hardware or software and by test failures. |                            |          |
| 44   | 4.4        | Test Conduct. At least one Government representative, or designate, must be present to witness the Factory Acceptance Test (FAT) and the Site Acceptance Test (SAT). The Contractor must notify the TA via email at least 30 days prior to the conduct of each formal test (FAT, SAT).                                                                                                                                               |                            |          |
|      | <b>4.5</b> | <b>FACTORY ACCEPTANCE TEST (FAT)</b>                                                                                                                                                                                                                                                                                                                                                                                                 | <b>N/A</b>                 |          |
| 45   | 4.5.1      | The Contractor must plan and conduct a FAT before the delivery of the VCS to fully demonstrate that the VCS and subsystem equipment provides the required functionality and performance.                                                                                                                                                                                                                                             |                            |          |
| 46   | 4.5.2      | Prior to any FAT, the Contractor must prepare and deliver a Factory Acceptance Test Plan (FATP) and a Factory Acceptance Test Procedures (FATPR) in accordance with CDRL                                                                                                                                                                                                                                                             |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliant or Non-Compliant | Comments |
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| 47   | 4.5.3     | C-TEST-002 and C-TEST-004 respectively.<br>The Test Readiness Review (TRR) must be held after FATPR are approved by Canada but prior to commencement of the FAT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |          |
| 48   | 4.5.4     | The Contractor must conduct the FAT on all equipment as follows:<br>a. FAT must include interface tests (for internal and external interfaces) using simulated inputs or live feeds if available. All interfaces must be tested live unless DND approval of factory simulations in lieu of testing is received; and<br>b. Any deviations in the parameters to be tested or measured must be approved by the TA.<br>Formal acceptance testing for the FAT must be part of the Factory Acceptance Test Plan (FATP). The FATP must address how, who, what and where the Contractor proposes to demonstrate proof of performance and compliance with the SOW requirements. Those performance/requirements that can't be tested in the FAT must be identified to DND. |                            |          |
| 49   | 4.5.5     | Upon completion of FAT, the Contractor must prepare and deliver the Acceptance Test Report (ATR) in accordance with CDRL C-TEST-006.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |          |
| 50   | 4.5.6     | Failure to Comply. In the event that the VCS fails to meet any of the FAT performance requirements, the Contractor must take corrective action to remedy the problem at no additional cost                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |          |



| Item | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                  | Compliant or Non-Compliant | Comments |
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|      |            | to DND. Upon review of the cause of the deficiency, and following corrective action being taken by the Contractor, the Contractor must again verify the performance of the unit to ensure that it meets the requirements using the agreed FATP.                                                                                                                                              |                            |          |
|      | <b>4.6</b> | <b>SITE ACCEPTANCE TEST (SAT)</b>                                                                                                                                                                                                                                                                                                                                                            | <b>N/A</b>                 |          |
| 51   | 4.6.1      | The Contractor must plan and conduct formal SAT at 4 Wing, 42 Radar Squadron, Cold Lake, Alberta (and at 12 escadron de radar (er), 3 ere, Bagotville, Québec, if applicable) to demonstrate compliance to the requirements of this SOW. The SAT must verify system functionality and performance in Air Defence environments and must be conducted on a non-disruptive basis to operations. |                            |          |
| 52   | 4.6.2      | Prior to the SAT, the Contractor must prepare and deliver a Site Acceptance Test Plan (SATP) and Site Acceptance Test Procedure (SATPR) in accordance with CDRL C-TEST-003 and C-TEST-005 respectively.                                                                                                                                                                                      |                            |          |
| 53   | 4.6.3      | The Contractor must deliver the special support equipment (para 2.10.6) and special tools (para 2.10.7) to the SAT site for the performance of the SAT.                                                                                                                                                                                                                                      |                            |          |
| 54   | 4.6.4      | At a minimum, the Contractor must provide a draft/red-line copy of all installation cable records as part of SAT (para 2.3.10 Demarcation).                                                                                                                                                                                                                                                  |                            |          |
| 55   | 4.6.5      | The Test Readiness Review (TRR) must be held                                                                                                                                                                                                                                                                                                                                                 |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                         | Compliant or Non-Compliant | Comments |
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|      |           | after SATPR are approved by Canada but prior to commencement of the SAT.                                                                                                                                                                                                                            |                            |          |
| 56   | 4.6.6     | The Contractor must coordinate closely with Canada in scheduling of the SAT to ensure proper coordination with supporting agencies. (If applicable, the Contractor must allow a minimum of two weeks between the completion of SAT at Cold Lake, AB and the commencement of SAT at Bagotville, QC). |                            |          |
| 57   | 4.6.7     | The Contractor must provide Canada with at least 30 day notice prior to the formal commencement of SAT.                                                                                                                                                                                             |                            |          |
| 58   | 4.6.8     | Tests that are physically not possible or practical to conduct in a factory/plant environment must be performed by the Contractor during the SAT.                                                                                                                                                   |                            |          |
| 59   | 4.6.9     | The Contractor must also repeat tests already performed during the FAT for those parameters that can potentially behave differently from the factory to the field. All internal and external interfaces must be tested at the SAT, using live feeds.                                                |                            |          |
| 60   | 4.6.10    | The Contractor must correct all site deficiencies prior to formal site acceptance by Canada.                                                                                                                                                                                                        |                            |          |
| 61   | 4.6.11    | Upon completion of SAT, the Contractor must prepare and deliver the Acceptance Test Report (ATR) in accordance with CDRL C-TEST-006.                                                                                                                                                                |                            |          |
| 62   | 4.6.12    | Failure to Comply. In the event that the VCS fails to meet any of the SAT performance                                                                                                                                                                                                               |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                              | Compliant or Non-Compliant | Comments |
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|      |           | requirements, the Contractor must take corrective action to remedy the problem at no additional cost to DND. Upon review of the cause of the deficiency, and following corrective action being taken by the Contractor, the Contractor must again verify the performance of the unit to ensure that it meets the requirements using the agreed SATP.                                                                     |                            |          |
|      | <b>5.</b> | <b>DELIVERABLES</b>                                                                                                                                                                                                                                                                                                                                                                                                      | <b>N/A</b>                 |          |
| 63   | 5.1       | Six (6) fully tested and operational operator console positions installed at 42 Radar Squadron Cold Lake.                                                                                                                                                                                                                                                                                                                |                            |          |
| 64   | 5.2       | Software licences for the VCS prior to the system acceptance. Any software upgrades must be provided at no additional cost to DND during the warranty period.                                                                                                                                                                                                                                                            |                            |          |
| 65   | 5.3       | All Maintenance and Operator Manuals delivered to the site prior to SAT. All manuals must adhere to the standards specified in CDRL C-PUB-001 and must be delivered in an MS Word format compatible with Word 2010 or a TA approved alternate format. The final version of these manuals must be as follows:<br>a. Hard copy – 2 copies, one copy to the site and one copy to the TA.<br>b. Soft copy – 1 copy to the TA |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                               | Compliant or Non-Compliant | Comments |
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| 66   | 5.4       | As-built drawings required by the project to be delivered to the site prior to SAT. All drawings must adhere to the standards detailed in the SOW and must be delivered in an MS Visio format compatible with Visio 2010 or a TA approved alternate format. The final version of drawings must be as follows:<br>a. Hard copy – 2 copies, one copy to the site and one copy to the TA.<br>b. Soft copy – 1 copy to the TA |                            |          |
| 67   | 5.5       | All cross connectivity tables must be delivered to the site prior to SAT. All tables must adhere to the standards detailed in the SOW and must be delivered in an MS Excel format compatible to Excel 2010 or a TA approved alternate format. The final version of these manuals must be as follows:<br>a. Hard copy – 2 copies, one copy to the site and one copy to the TA.<br>b. Soft copy – 1 copy to the TA          |                            |          |
| 68   | 5.6       | Recommended Spares List as approved by the TA.                                                                                                                                                                                                                                                                                                                                                                            |                            |          |
| 69   | 5.7       | Recommended Spares to be supplied “as and                                                                                                                                                                                                                                                                                                                                                                                 |                            |          |

| Item | Reference | Description                                                         | Compliant or Non-Compliant | Comments |
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|      |           | when” requested by the CA.                                          |                            |          |
| 70   | 5.8       | Optional training                                                   |                            |          |
| 71   | 5.9       | Optional service support                                            |                            |          |
| 72   | 5.10      | Optional VCS for 12 escadron de radar (er) 3ere, Bagotville, Québec |                            |          |
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**VOICE COMMUNICATION SYSTEM**  
**TECHNICAL SPECIFICATIONS EVALUATION MATRIX**  
**TACTICAL CONTROL RADAR**  
**42 RADAR COLD LAKE, ALBERTA**

## VOICE COMMUNICATION SYSTEM (VCS) TECHNICAL SPECIFICATIONS COMPLIANCE TABLE

| Item     | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliant or Non-Compliant | Comments |
|----------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
|          | <b>1.1</b> | <b>VCS SPECIFICATIONS</b>                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>N/A</b>                 |          |
| 1        | 1.1.1a     | VCS Specifications. The Contractor must ensure that. The VCS must operate on 110 VAC, 15 A +/- 10 % at 60 Hz.                                                                                                                                                                                                                                                                                                                                      |                            |          |
| 2        | 1.1.1bi    | The VCS must have an operating temperature from 0°C to +50°C.                                                                                                                                                                                                                                                                                                                                                                                      |                            |          |
| 3        | 1.1.1bii   | The VCS must have a storage temperature from – 40°C to +50°C (excluding the Touch Screen which must range from –10°C to +50°C).                                                                                                                                                                                                                                                                                                                    |                            |          |
| 4        | 1.1.1biii  | The VCS must operate in conditions where absolute humidity is 0 to 95% non-condensing.                                                                                                                                                                                                                                                                                                                                                             |                            |          |
| <b>5</b> | 1.1.1c     | Software. The Contractor must provide two (2) serial numbered copies of the system software for the VCS at each site upon delivery. After delivery, if software updates or revision are required, the new software version must be approved by the DND TA in writing and must be properly identified, showing the portion that has been revised, authority for change if applicable, date of revision, revision number and necessary instructions. |                            |          |
| 6        | 1.1.2      | Circuits. The Contractor must ensure that the exact number and type of circuit is configurable and depend upon site requirements. The number and type of audio interface modules must also be                                                                                                                                                                                                                                                      |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliant or Non-Compliant | Comments |
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|      |           | <p>configurable. The VCS must be capable of integrating/interfaces with the following at each of the six ( ) console positions at each site:</p> <ul style="list-style-type: none"> <li>a. Eight (8) PABX circuits connected to a Public Switched Telephone Network (PSTN);</li> <li>b. Four (4) "Ring Down" and two 4 Wire E&amp;M analog circuits;</li> <li>c. Canadian Switched Network (CSN);</li> <li>d. Access to a minimum of thirty-six (36) G/A/G Radios (4 Wire E&amp;M); which includes expansion positions;</li> <li>e. Tactical Satellite communications data/voice relay to North Bay; and</li> <li>f. Satellite Voice Radios (C2, time critical targeting, combat SAR).</li> </ul> |                            |          |
| 7    | 1.1.3     | <p>Console Positions. The Contractor must ensure each operator position utilizes touchscreen technology. Each console position must have the following characteristics:</p> <ul style="list-style-type: none"> <li>a. The VCS must allow any operator position to monitor, but not override, the voice communications of any other position;</li> <li>b. Each operator position must be equipped with two (2) user Jacks; one (1) for the operator and one (1) for the "supervisor" monitor and over-ride capability. The supervisor jack must have the additional functionality to override the voice</li> </ul>                                                                                 |                            |          |



| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Compliant or Non-Compliant | Comments |
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|      |           | <p>communications of the user jack;</p> <p>c. At a minimum, there must be two (2) loudspeakers (radios and landline) per operator position, with a volume control for each;</p> <p>d. Each operator position must be equipped with a Push To Talk (PTT) footswitch jack and footswitch;</p> <p>e. The VCS must have intercom capabilities between all operator positions at the RTOC; and</p> <p>f. Each operator position must have a visual “in-use” indication. Each operator position must have a visual and audible call indicator (ringer) that can be turned on or off. The operator must be able to answer calls (hear ringer) with or without the headset and from anywhere in the RTOC Ops area.</p> |                            |          |
| 8    | 1.1.4     | Maintenance Position. The Contractor must ensure that the VCS includes a maintenance position separate from the six (6) operator positions at each site.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |          |
| 9    | 1.1.5     | VCS Architecture and Reliability. The Contractor must ensure that the VCS is a distributed system made up of independent switching nodes and operator position equipment; and the reliability of each VCS must be of 99.5% availability with a Mean Time Between Failure (MTBF) of 10,000 hours and a Mean Time To Repair (MTTR) of no                                                                                                                                                                                                                                                                                                                                                                         |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Compliant or Non-Compliant | Comments |
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|      |           | more than thirty (30) minutes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            |          |
| 10   | 1.1.6     | Common Equipment. The Contractor must ensure that the common equipment rack of the VCS must be located in the adjacent equipment room and must contain all the electronics necessary to interface with the external communication resources, and the operator positions, (i.e. Radios, Landlines and 4 Wire circuits etc.) in the RTOC Operations room. The common equipment rack must also house the maintenance position.                                                                                                           |                            |          |
| 11   | 1.1.7     | Operator Touch Screen. The Contractor must ensure that all operator Touch Screens are identical and must consist of high resolution color video display with a resistive type touch-sensitive overlay (meeting as a minimum SVGA Standards). Each touch screen must be a minimum of 10 inches (25.4 cm) diagonal workable area. A keyboard must not be required to operate the touch screen operator panel. The operator Touch Screens must have the capability of displaying textual elements such as on-screen labels and commands. |                            |          |
| 12   | 1.1.8     | Supervisory Control and Maintenance Configuration. The Contractor must ensure that the VCS is capable of providing reconfiguration capabilities (including supervisory, maintenance, language and administrative capability) from one central computer console.                                                                                                                                                                                                                                                                       |                            |          |
| 13   | 1.1.9     | The Contractor must ensure that the Supervisory Control function is password protected                                                                                                                                                                                                                                                                                                                                                                                                                                                |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliant or Non-Compliant | Comments |
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| 14   | 1.1.1.10  | <p>The Contractor must provide a portable plug-in Audio Splitting device for each console (total 6). The device should plug into the Supervisory jack at each console. The device must maintain the supervisory functions (Transmit, Receive and PTT) as detailed in 1.1.2 b. and should provide one or two positions that are for headset monitor only (i.e. no PTT/over-ride capability).</p> <p>For example, the standard configuration at the RTOC will be six (6) consoles with a Operator jack and Supervisory jack; total twelve (12) jacks. During training or exercise conditions one or all of the consoles can plug in an Audio Splitting device allowing for a full function supervisory position and an additional 1 or 2 monitor positions per console; the total number of users could be 18-24.</p> |                            |          |
| 15   | 1.1.1.11  | <p>Supervisory Control Capability. The Contractor must ensure that the supervisory control capability allows personnel to configure touch screen and touch-button layouts, name them, and map them to users. The supervisory control capabilities must include:</p> <ol style="list-style-type: none"> <li>Create operator panel configurations (screen layouts);</li> <li>Configure users;</li> <li>Create user profiles;</li> <li>Add consoles;</li> <li>Set supervisor console communication</li> </ol>                                                                                                                                                                                                                                                                                                          |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Compliant or Non-Compliant | Comments |
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|      |           | <p>parameters;</p> <p>f. Use "Mission" capabilities (view currently active users, configurations, and consoles. Change current configurations for specific operators.);</p> <p>g. Gain access to the operator panel portion of the supervisor console; and</p> <p>h. Lock the supervisor console.</p>                                                                                                                                                                                                                                                                                                                                                |                            |          |
| 16   | 1.1.1.12  | <p>Maintenance Capability. The Contractor must ensure that the Maintenance capability allows technical personnel to maintain, observe, and program VCS hardware. Operations must not be affected by maintenance procedures. Maintenance capabilities must include:</p> <p>a. Upload the VCS database and software files to the system;</p> <p>b. Download the VCS database file from the system;</p> <p>c. Add positions;</p> <p>d. Add interface modules;</p> <p>e. Add radio channels, interphones, Input and Output (I/O) circuits to the appropriate modules; and</p> <p>f. Configure radio channel, interphone, and I/O circuit parameters.</p> |                            |          |
| 17   | 1.1.1.13  | <p>Reconfiguration Software. The Contractor must ensure that in the event that the network encounters communication difficulties, each console must have a copy of the database that resides on the Common Equipment. Thus, even</p>                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |          |

| Item | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliant or Non-Compliant | Comments |
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|      |            | in the absence of a network, each position must remain fully functional (with the exception of configuration capabilities). The reconfiguration software must be configurable such that: <ul style="list-style-type: none"> <li>a. All reconfiguration capabilities are available on each console; or</li> <li>b. Supervisory control, maintenance, and administrative capabilities are divided onto separate consoles.</li> </ul> |                            |          |
|      | <b>1.2</b> | <b>VCS OPERATION</b>                                                                                                                                                                                                                                                                                                                                                                                                               | <b>N/A</b>                 |          |
| 18   | 1.2.1      | Ground/Air/Ground Operation - Frequency Add and Delete. <ul style="list-style-type: none"> <li>a. At each site the VCS must permit operators to add or drop frequencies to their position up to the limit of available frequencies at each site; and</li> <li>b. The VCS must not permit frequency add and delete operations at one position to affect operations at other positions.</li> </ul>                                   |                            |          |
| 19   | 1.2.2      | Select/De-select Transmitter and Receiver. The Contractor must ensure that: <ul style="list-style-type: none"> <li>a. For each frequency at each position, the VCS must permit the operator to select and deselect the transmitter and receiver associated with a frequency;</li> <li>b. The VCS must permit selection and de-selection to be accomplished with a single touch action of a latching selector;</li> </ul>           |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Compliant or Non-Compliant | Comments |
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|      |           | <p>c. At each position, the VCS must allow simultaneous selection in any combination of transmitters and receivers assigned to the position;</p> <p>d. Upon selection of a transmitter, the VCS must furnish all future PTT commands to the on-line (either main or standby) G/A/G frequency transmitter interface;</p> <p>e. Upon de-selection of a transmitter, the VCS must withhold future PTT commands from the on-line transmitter;</p> <p>f. At each position, the VCS must allow simultaneous selection in any combination of the non-emergency frequency transmitters assigned to the position; and</p> <p>g. For selected receivers the VCS must furnish incoming audio to the selected position headset (HS) or loudspeaker (LS).</p> |                            |          |
| 20   | 1.2.3     | <p>Main/Standby (M/S) Transmitter /Receiver Transfer</p> <p>The Contractor must ensure that:</p> <p>a. At each position, and for each frequency assigned to the position, the VCS must permit the operator to transfer between main and standby transmitters or receivers;</p> <p>b. The VCS must permit main/standby</p>                                                                                                                                                                                                                                                                                                                                                                                                                        |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliant or Non-Compliant | Comments |
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|      |           | <p>switchover to be initiated via a single touch action of an assigned latching selector;</p> <p>c. The VCS must make each successive transfer effective at all positions to which the affected frequency is assigned;</p> <p>d. During active PTT, the VCS must inhibit M/S transfer of active transmitters; and</p> <p>e. If an M/S selector is provided (i.e., as part of a standard selector set) by the VCS for frequencies not having standby equipment, operation of this selector must have no effect (i.e., not take transmitter or receiver off-line.</p> |                            |          |
| 21   | 1.2.4     | <p>G/A/G Push To Talk (PTT) Activation. The Contractor must ensure that:</p> <p>a. The VCS must provide a PTT activation signal to the transmit G/A/G frequency interface to activate the selected on-line transmitters. The Contractor must provide 4 Wire E&amp;M ground keying;</p> <p>b. The VCS must connect the operator microphone audio at the transmitting position to the selected transmitters;</p> <p>c. The VCS must provide a continuous visual indication of transmitter-in-use for each active transmitter to all</p>                               |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliant or Non-Compliant | Comments |
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|      |           | positions to which the frequency has been assigned; and<br>d. The VCS must resolve simultaneous PTT actuations for a frequency transmitter such that only one position must be connected to a transmitter and all other positions must be locked out.                                                                                                                                                                                                  |                            |          |
| 22   | 1.2.5     | Squelch Break. The Contractor must ensure that:<br>The VCS must provide a unique visual indication of the presence of audio on each G/A/G receiver circuit;<br>The squelch break indication must be derived from either of the following two sources:<br>a. Receipt of an appropriate squelch break signal from the remote radio control system; or<br>b. Audio detection by the VCS.                                                                  |                            |          |
| 23   | 1.2.6     | G/G Call Placement. The Contractor must ensure that<br>a. The VCS permits the operator to place a G/G call by either of the following means:<br>i. Activation of a Direct Access DA selector (if supplied) assigned to the call or circuit; or<br>ii. Entry of a code assigned to the Interphone circuit (or intercom (IC) call) via the Keypad.<br>b. Upon placement of a call of any type identified below, the VCS must take the indicated steps to |                            |          |



| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Compliant or Non-Compliant | Comments |
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|      |           | <p>connect the call to its destination:</p> <ul style="list-style-type: none"> <li>i. For an IC call, indicate a call at the called position; and</li> <li>ii. For non-IC calls, provide outgoing call signaling to the trunk or circuit interface appropriate to the type of trunk or circuit and the type of call.</li> </ul> <p>c. The VCS must permit the operator to enter prefix and suffix digits, as required, at the Keypad; and provide such digits to the circuit interface in the format appropriate to the circuit.</p> <p>d. Whenever the operator seizes a circuit of a type that permits hook flash signaling for the operation of special functions on external networks and systems, the VCS must permit the operator to operate the hook flash selector.</p> |                            |          |
| 24   | 1.2.7     | Conference Call. The Contractor must ensure that the intercom function is equipped with an “all-call” feature. The operator must be able to connect to one or all of the six (6) consoles in addition to the Maintenance console.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |          |
| 25   | 1.2.8     | Intercom (IC) Call To initiate or receive an Intercom Call the VCS must: <ul style="list-style-type: none"> <li>i. Provide incoming call chime at the called position when chime control has been activated;</li> <li>ii. Provide visual indication of incoming call at the DA selector assigned to the calling party or to the Call Access (CA) selector if no DA selector is provided;</li> </ul>                                                                                                                                                                                                                                                                                                                                                                             |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliant or Non-Compliant | Comments |
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|      |           | <ul style="list-style-type: none"> <li>and</li> <li>iii. Provide ring back tone to the calling party;</li> <li>iv. Discontinue the audio and visual indications established in (i) and (ii) above when the call is answered by the called party or is abandoned by the calling party; and</li> <li>v. Not remove the incoming chime until the last incoming G/G call to the position has been either answered or abandoned.</li> </ul>                                                                                                                                                                                                                                                                       |                            |          |
| 26   | 1.2.9     | <p>Voice Call (VC).</p> <ul style="list-style-type: none"> <li>a. Upon detection of incoming audio on a voice call circuit interface, and at each position to which a DA selector has been assigned for the circuit, the VCS must: <ul style="list-style-type: none"> <li>i. Provide a visual indication of incoming call at the DA selector assigned for the circuit; and</li> <li>ii. Direct the incoming audio from the circuit to the position Loudspeaker (LS) at each position designated for incoming voice alert on the circuit.</li> </ul> </li> <li>b. If the voice call has not been answered in less than 20 seconds, the VCS must remove the visual indication and audio connection.</li> </ul> |                            |          |
| 27   | 1.2.10    | Selective Interphone Calls. Upon detection of incoming call address signaling from an Interphone circuit interface configured for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Compliant or Non-Compliant | Comments |
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|      |           | <p>selective calling, the VCS must:</p> <ul style="list-style-type: none"> <li>i. Accept and decode the call address;</li> <li>ii. Determine whether the address information refers to any local VCS positions or groups of positions;</li> <li>iii. Provide visual indication of incoming call at each position to which the call address refers,;</li> <li>iv. Activate incoming call chime at each position to which the call address refers,; and</li> <li>v. Discontinue the chime and visual indication established in (iii) and (iv) above when either the call has been answered or the call has not been answered by any position after 30 seconds.</li> </ul> |                            |          |
| 28   | 1.2.1.1   | <p>Interphone Inward Dial Calls. The Contractor must ensure that:</p> <ul style="list-style-type: none"> <li>a. Upon detection of incoming call address signaling from an Interphone circuit configured for incoming dial, the VCS must: <ul style="list-style-type: none"> <li>i. Determine whether the address information refers to any local VCS positions or groups of positions;</li> <li>ii. Provide visual indication of incoming call at each position to which the call address refers;</li> <li>iii. Activate incoming call chime at each position to which the call address</li> </ul> </li> </ul>                                                          |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Compliant or Non-Compliant | Comments |
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|      |           | <ul style="list-style-type: none"> <li>iv. refers; and<br/>Provide ring back tone to the Interphone circuit.</li> <li>b. Discontinue the visual indication in (ii.) and ring back tone in (iv.) when:               <ul style="list-style-type: none"> <li>i. The call is answered by position; or</li> <li>ii. The call is abandoned by the calling party.</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            |          |
| 29   | 1.2.12    | <p>Interphone Non-Selective Call. The Contractor must ensure that</p> <ul style="list-style-type: none"> <li>a. Upon detection of incoming signalling from the Interphone circuit designated for non-selective service, including automatic or manual ring (re-ring), the VCS must:               <ul style="list-style-type: none"> <li>i. Provide visual indication of incoming call at each position to which the call refers;</li> <li>ii. Activate incoming call chime at each position to which the call refers; and</li> <li>iii. Provide ring back tone to the Interphone circuit.</li> </ul> </li> <li>b. The VCS must discontinue the visual indication, chime, and ring back tone established in a) above when:               <ul style="list-style-type: none"> <li>i. The call is answered by a position; or</li> <li>ii. The call is abandoned by the calling party.</li> </ul> </li> </ul> |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Compliant or Non-Compliant | Comments |
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| 30   | 1.2.13    | <p>Incoming G/G Call Answering.. The Contractor must ensure that</p> <p>a. The VCS must permit the operator to answer incoming G/G calls by all of the following means:</p> <ul style="list-style-type: none"> <li>i. Activation of the DA selector assigned to the circuit (or IC call) if any; and</li> <li>ii. Entry of a code assigned to the circuit or call via the Keypad.</li> </ul> <p>b. When answering an incoming non-hotline call, the VCS must:</p> <ul style="list-style-type: none"> <li>i. Connect the answering operator with the calling position (for IC calls) or the trunk/circuit interface bearing the incoming call (for non-IC calls);</li> <li>ii. Discontinue incoming call chime or voice alert, if any, for the current call;</li> <li>iii. At the answering position (and the calling position for IC calls), provide visual indication of an active call at the DA selectors assigned to the call (if any) or to the CA selector if the call does not have a DA assigned to the other party; and</li> <li>iv. For all Interphone G/G calls, at all positions having a DA selector assigned to the circuit, provide visual indication of busy call at the DA selectors.</li> </ul> |                            |          |
| 31   | 1.2.14    | G/G Call Release and Termination. The Contractor must ensure that                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Compliant or Non-Compliant | Comments |
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|      |           | <p>a. The VCS must permit the operator to release G/G calls in progress (i.e., not on hold), except for hotline calls in which the operator is the called party, by all of the following methods:</p> <ul style="list-style-type: none"> <li>i. Placement of another call via Indirect Access (IA) or Direct Access (DA) (except during progressive conferences);</li> <li>ii. De-selection of the DA selector assigned to the call if the call appears as a DA call; and</li> <li>iii. Selection of a designated call release DA selector.</li> </ul> <p>b. Discontinue visual indications of an active call at the called and/or calling positions and a busy call at all other positions having a DA assigned.</p> |                            |          |
| 32   | 1.2.15    | Use of PTT in G/G Communications. The VCS must allow operators to transmit on G/G calls without activating PTT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |          |
| 33   | 1.2.16    | <p>Call Hold. The Contractor must ensure that:</p> <ul style="list-style-type: none"> <li>a. At each position, the VCS must permit the operator to put the active G/G call on hold upon activation of a designated DA selector;</li> <li>b. During call hold, the VCS must permit the operator initiating the hold to place G/A/G calls and other G/G calls as if no G/G call were active;</li> <li>c. For each call on hold, the VCS must provide a</li> </ul>                                                                                                                                                                                                                                                       |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Compliant or Non-Compliant | Comments |
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|      |           | <p>visual indication of call-on-hold;</p> <p>d. The VCS must permit the operator at any position to retrieve any non-IC call on hold by seizing the circuit via IA (or DA, if assigned) regardless of which VCS operator originally placed the call on hold;</p> <p>e. Upon retrieval of a call on hold, the VCS must restore the call audio and the visual indication of active call (to be provided at the retrieving position) and busy call (to be provide at all other positions having a DA selector assigned to the call); and</p> <p>f. The VCS must maintain calls on hold until they are retrieved or released, whichever comes first.</p> |                            |          |
| 34   | 1.2.17    | <p>Call Forwarding. The Contractor must ensure that:</p> <p>a. The VCS must provide a call forwarding function that, upon activation and selection of a forwarded-to position, causes all subsequent G/G calls destined for the forwarding position to be forwarded to the selected position;</p> <p>b. The VCS must permit the call forwarding function to be activated by entry of an IA code and by activation of a DA assigned for the purpose;</p> <p>c. The VCS must provide a visual indication at the forwarding position whenever call forwarding is in effect;</p> <p>d. While call forwarding is in effect at any</p>                     |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Compliant or Non-Compliant | Comments |
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|      |           | <p>position, the VCS must prevent audio distortion or oscillation due to such connectivity by either of the following means:</p> <ul style="list-style-type: none"> <li>i. Blocking such connectivity; or</li> <li>ii. Conditioning or regulating the audio resulting from such connectivity so that distortion and oscillation are not present.</li> </ul> <p>e. The VCS must permit only the forwarding position operator to release call forwarding;</p> <p>f. The VCS must discontinue the attempt and provide an error indication to the position attempting to forward calls whenever the attempt cannot be completed due to any of the following:</p> <ul style="list-style-type: none"> <li>i. Error in entry; and</li> <li>ii. Call forwarding in effect already</li> </ul> <p>g. The VCS must permit any position to forward its own calls while it has calls forwarded to it from any other position; and</p> <p>h. During call forwarding at any position, the VCS must permit operators to place outgoing calls from the forwarding position (e.g., for coordination to terminate call forwarding).</p> |                            |          |
| 35   | 1.2.18    | <p>Incoming Call Chime. The Contractor must ensure that</p> <ul style="list-style-type: none"> <li>a. The VCS must provide an audible chime device with each position (sounded at the position equipment) to alert the operator of incoming G/G calls;</li> <li>b. The VCS must provide a choice of chime tone</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            |          |



| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Compliant or Non-Compliant | Comments |
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|      |           | <p>character, selectable by the operator, or by the supervisory control via mission configuration, such that each position may have an identifiably different chime tone from those of other positions in the vicinity;</p> <p>c. The VCS must permit the operator to turn the chime on and off at each position;</p> <p>d. The VCS must provide visual indication at the position whenever the chime has been turned off, independent of the visual indications provided for incoming calls;</p> <p>e. The VCS must provide means for the operator at each position to adjust individually the volume of the chime, independent of other volume levels;</p> <p>f. The VCS must not sound chime through the HS; and</p> <p>g. The VCS must not record chime on the voice-logging recorder.</p> |                            |          |
| 36   | 1.2.19    | Hook Flash. The Contractor must ensure that as designated by the system administrator/supervisor during mission reconfiguration, the VCS must provide a non-latching DA selector for hook flash to access to special features of an external telephone exchange.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                            |          |
| 37   | 1.2.20    | Manual Ring Down. The Contractor must ensure that as designated by the system administrator/supervisor during mission reconfiguration, the VCS must provide a non-latching DA selector for manual ring down which,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                            |          |

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|      |           | when activated, provides a signal to the trunk/circuit interface bearing the G/G call in progress.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                            |          |
| 38   | 1.2.21    | Public Address. The VCS must connect to the public address system as required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |          |
| 39   | 1.2.22    | Simultaneous G/G and G/A/G Calls. The Contractor must ensure that: <ol style="list-style-type: none"> <li>Under facility PTT parameters, the VCS must permit each operator to place and receive G/A/G calls at any time during any G/G call without interrupting the G/G call; and</li> <li>The VCS must not furnish audio received from G/A/G frequencies to the external party of the G/G call in progress.</li> </ol>                                                                                                                                                                                                                                                 |                            |          |
| 40   | 1.2.23    | Operator Position Headset/Handset Jacks. The Contractor must ensure that <ol style="list-style-type: none"> <li>At each position, the VCS must provide a jack module wired to industry standard and to accommodate a standard connector type ADC PJ-7;</li> <li>This jack module must accommodate two headsets or handsets (two operators) or a combination of both;</li> <li>One jack must be identified and marked as the “Supervisor” jack, and the other identified and marked as the “Operator” jack;</li> <li>The supervisor and operator jacks must be juxtaposed;</li> <li>The VCS must allow either jack to be used for all communications features;</li> </ol> |                            |          |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
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|             |                  | <p>f. Upon insertion of HS devices into both jacks of the dual jack set, the VCS must route all HS audio transmitted to the position to both HS devices;</p> <p>g. The VCS must route operator transmit audio to the supervisor HS device for monitoring;</p> <p>h. The VCS must permit a HS device connected to the supervisor jack to pre-empt G/A/G communications at the operator jack by activation of PTT;</p> <p>i. During pre-emption, the VCS must provide the pre-empting supervisor jack transmit audio to the operator HS device for monitoring purposes, and</p> <p>j. For each G/G call when PTT parameters are in effect, the VCS must make both HS devices audible on the call and furnish call audio, including side tone, to both HS devices.</p> |                                   |                 |
| 41          | 1.2.24           | <p>Headset Jack Volume. The Contractor must ensure that</p> <p>a. The VCS must provide a separate volume control for each HS jack, located in a convenient location for use by the position operator; and</p> <p>b. The HS volume control must adjust the audio output level relative to the transmission level defined for the HS output jack.</p>                                                                                                                                                                                                                                                                                                                                                                                                                 |                                   |                 |
| 42          | 1.2.25           | <p>Headset (HS) Jack Volume Limiter. The Contractor must ensure that:</p> <p>As a means to protect operators' hearing, the</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                   |                 |

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|      |           | VCS must implement an audio compression function after any tone elimination function and volume control.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                            |          |
| 43   | 1.2.26    | Side Tone. The Contractor must ensure that<br>a. The VCS must provide individual side tone to each HS earpiece jack only during active G/G calls and outgoing G/A/G calls;<br>b. Side tone must not be audible in the LS; and<br>c. Side tone must contain the operator outgoing call audio only .                                                                                                                                                                                                                                                                                        |                            |          |
| 44   | 1.2.27    | Position Loudspeakers. The Contractor must ensure that:<br>a. The VCS must provide each position with two separate loudspeakers (one for G/A/G and one for L/L);<br>b. The VCS must provide each LS with a separate volume control, adjacent to the LS, or in another convenient location for use by the position operator; and<br>c. At the maximum setting of the volume control, when driven by input signals encountered in normal use, the VCS must be audible within at least eight feet of the position, and not overdrive the LS so as to produce audible distortion or clipping. |                            |          |
| 45   | 1.2.28    | Foot Switch Operation. The Contractor must ensure that<br>a. Each operational position must be provided with a removable pedal-type footswitch for activation of PTT;                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |          |

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|      |           | <p>b. When only one HS device is plugged into the operational position (either operator or supervisor jack), the VCS must permit the footswitch to be used as an alternate PTT device, i.e., in parallel with the HS PTT device; and</p> <p>c. When one HS device is plugged into the supervisor jack of the operational position, and one other HS device is plugged into the operator jack at the position, the VCS must permit the footswitch to be used as an alternate PTT device for the operator only, i.e., in parallel with the operator jack HS PTT device only (with supervisor jack operator retaining pre-emption capability).</p> |                            |          |
| 46   | 1.2.29    | <p>Facility PTT Operating Parameters. The Contractor must ensure that:</p> <p>a. The PTT must be capable of providing the following methods of keying radios:</p> <ul style="list-style-type: none"> <li>i. Phantom keying;</li> <li>ii. Tone keying;</li> <li>iii. Ground Keying;</li> <li>iv. Loop back keying; and</li> <li>v. Voltage keying.</li> </ul>                                                                                                                                                                                                                                                                                    |                            |          |
| 47   | 1.2.30    | <p>PTT Release and Activation. The following actions must take place upon PTT activation:</p> <ul style="list-style-type: none"> <li>i. Connect the operator to the selected G/A/G transmitters while maintaining position audio to any G/G calls in process;</li> <li>ii. Key those transmitters; and</li> </ul>                                                                                                                                                                                                                                                                                                                               |                            |          |

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|      |           | iii. Transfer all incoming G/G audio to the position LS except for incoming override calls.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |          |
| 48   | 1.2.31    | PTT Release. The Contractor must ensure that:<br>a. Un-keys the selected G/A/G transmitters;<br>b. Disconnects the operator from these transmitters; and<br>c. Resumes all incoming G/G call audio.                                                                                                                                                                                                                                                                                                                                                                                                             |                            |          |
| 49   | 1.2.32    | Position Confidence Test. The Contractor must ensure that:<br>a. The VCS must provide each operational position with a position confidence-testing feature that can be invoked on demand by the operator by activation of an IA sequence;<br>b. The confidence-testing feature must:<br>i. Verify that the functioning of all controls and displays is according to system configuration;<br>ii. Verify proper audio transmission as per system configuration;<br>iii. Affect the position under test; and<br>iv. Not change the position's configuration, nor any settings or selections made by the operator. |                            |          |
| 50   | 1.2.33    | Voice Recording of Position Activity. The Contractor must ensure that:<br>The VCS must provide connectivity to the site installed voice-logging recorder to record all audio traffic activities at each operational position in an analog format.                                                                                                                                                                                                                                                                                                                                                               |                            |          |

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| 51   | 1.2.34    | Headset/Loudspeaker (HS/LS) Selectors. The Contractor must ensure that:<br>a. For each frequency at each position, the VCS must provide a selector to direct incoming G/A/G calls either to the HS or to the LS; and<br>b. Each per-frequency HS/LS selector must provide a continuous display of the actual routing in effect, which may vary due to precedence of other selectors described below.                                                                                  |                            |          |
| 52   | 1.2.35    | G/G HS/LS Selector The Contractor must ensure that:<br>a. The VCS must allow the system administrator/supervisor to assign a non-latching selector to direct incoming G/G call audio (other than from incoming hotline calls) either to the HS or to the LS at each position during mission reconfiguration; and<br>b. The G/G HS/LS selector must provide a continuous display of the actual routing in effect, which may vary due to precedence of other selectors described below. |                            |          |
| 53   | 1.2.36    | Incoming Hotline HS/LS Selector The Contractor must ensure that:<br>a. The VCS must allow the system administrator/supervisor to assign a latching selector to direct incoming audio from incoming hotline calls either to the HS or to the LS at each position during mission reconfiguration; and<br>b. The incoming hotline HS/LS selector must                                                                                                                                    |                            |          |

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|      |           | provide a continuous display of the actual routing in effect, which may vary due to precedence of other selectors described below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                            |          |
| 54   | 1.2.37    | <p>Master LS Transfer for All Audio. The Contractor must ensure that:</p> <p>a. The VCS must allow the system administrator/supervisor to assign a latching selector to direct all incoming audio from all G/A/G frequencies and all G/G calls (including hotline calls) at the position to the LS regardless of the state of the subordinate HS/LS routing selectors, at each position during mission reconfiguration; and</p> <p>b. The master LS transfer selector must provide a continuous display of its state (which may not represent the actual routing in effect, due to precedence of other selectors described below).</p> |                            |          |
| 55   | 1.2.38    | <p>LS Routing for Unattended Positions. The Contractor must ensure that:</p> <p>a. Immediately upon the removal of all instruments from the HS jacks of any position, that position must be considered unattended and the VCS must transfer all incoming audio from G/A/G and G/G calls (including incoming hotline calls) to the LS;</p> <p>b. If a HS is reinserted into any jack within the first thirty seconds after a position has become unattended, the VCS must restore incoming audio, including calls in progress, to the HS/LS routing previously selected by the operator</p>                                             |                            |          |



| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Compliant or Non-Compliant | Comments |
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|      |           | <p>before the position became unattended;</p> <p>c. After any position has remained unattended for more than thirty seconds consecutively, the VCS must:</p> <ul style="list-style-type: none"> <li>i. Release any incoming G/G calls in progress at the position (including IC hotline calls);</li> <li>ii. Route any subsequent incoming G/A/G calls on selected frequencies to the position LS;</li> <li>iii. Route any subsequent incoming hotline calls to the position LS; and</li> <li>iv. Continue to provide call alert signals (chimes, voice alerts, and visual indications) for all incoming G/G calls.</li> </ul> <p>d. The thirty-second pause is to permit operators to change jacks or headsets without having to reactivate control functions.</p> <p>e. Upon reinsertion of the first HS instrument plug into the jacks of a position that has been unattended for more than thirty seconds resulting in the conditions of (c) above, the VCS must:</p> <ul style="list-style-type: none"> <li>i. Route subsequent incoming G/A/G and G/G calls, and G/A/G calls in progress, in accordance with the HS/LS routing selected by the operator before the position became unattended; and</li> </ul> |                            |          |

| Item | Reference | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Compliant or Non-Compliant | Comments |
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|      |           | ii. Restore the ability to place and answer calls and to perform all other control actions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                            |          |
| 56   | 1.2.39    | <p>Precedence of Routing Features. The Contractor must ensure that:</p> <p>a. Selectors and features that control HS/LS routing of G/A/G communications must follow the following order of precedence:</p> <ul style="list-style-type: none"> <li>i. Unattended position transfer to LS (highest precedence);</li> <li>ii. Master LS transfer (if assigned);</li> <li>iii. Group G/A/G LS transfer (if assigned);</li> <li>iv. Automatic G/A/G transfer to LS during G/G call (if enabled); and</li> <li>v. Per-frequency HS/LS routing.</li> </ul> <p>b. Selectors and features that control HS/LS routing of non-hotline G/G communications must follow the following order of precedence:</p> <ul style="list-style-type: none"> <li>i. Unattended position transfer to LS (highest precedence);</li> <li>ii. Master LS transfer (if assigned); and</li> <li>iii. G/G LS transfer.</li> </ul> <p>c. Selectors and features that control HS/LS routing of hotline G/G communications must follow the following order of precedence:</p> <ul style="list-style-type: none"> <li>i. Unattended position transfer to LS (highest precedence);</li> <li>ii. Master LS transfer (if assigned);</li> </ul> |                            | (i)      |

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| 57   | 1.2.40    | <p>iii. Hotline LS transfer (if assigned). and<br/>Acceptance of Mission Reconfiguration The Contractor must ensure that:</p> <p>a. At each position the VCS must provide a non-latching DA selector for reconfiguration acceptance that, when activated, must reconfigure the position subject to requirements; and</p> <p>b. The reconfigure acceptance selector must have no effect if activated while no reconfiguration is pending at that position.</p>                                                                                                                                                                                                                                                                                                                              |                            |          |
| 58   | 1.2.41    | <p>Access Restriction and Password Management<br/>The Contractor must ensure that:</p> <p>a. The VCS must segregate any on-line (e.g., terminal-based) functions performed at the maintenance console and the supervisory console from each other and from those performed at the operational position;</p> <p>b. The VCS must require password entry to gain access to supervisory and maintenance functions;</p> <p>c. The VCS must provide facilities to permit authorized users and only such users, to view, originate, assign, modify permissions of, and delete passwords;</p> <p>d. Each VCS password must be associated with the name of the password owner, as well as the permissions currently granted to that owner;</p> <p>e. The permissions associated with a password</p> |                            |          |

| Item | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliant or Non-Compliant | Comments |
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|      |            | define what a user is able to do when he or she logs on using the password. For example, only supervisors would be permitted to define and execute mission reconfiguration over resources currently in the physical configuration file; and<br>f. Passwords must be encrypted if they pass over a network that is not entirely inside a protected area.                                                                                                                                                                                                                                                                                                                                                            |                            |          |
|      | <b>1.3</b> | <b>MAINTENANCE AND TESTING FUNCTIONS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>N/A</b>                 |          |
| 59   | 1.3.1      | General:<br>a. The VCS must provide maintenance and testing functions for maintenance technicians;<br>b. The VCS must automatically detect system faults;<br>c. When commercially available off the shelf items are used as Line Replaceable Units (LRU) in the VCS, those items are exempt from automatic fault detection;<br>d. The fault detection must operate continually and must not interfere with Air Defence communications;<br>e. The VCS must automatically localize faults to the level of LRU when the LRU has inherent fault detection; and<br>f. The VCS must report all fault localizing results to the maintenance console, to the supervisory console, and to the maintenance logging function. |                            |          |
| 60   | 1.3.2      | Automatic Fault Diagnosis and Recovery. The                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                            |          |

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|      |           | <p>Contractor must ensure that:</p> <ul style="list-style-type: none"> <li>a. The VCS must possess physical redundancy of all critical circuits, automatic and manual fault diagnosis, automatic reconfiguration;</li> <li>b. Core VCS processors (core modules) must possess numerous built-in circuit tests, and due to the nature of the VCS architecture, must effect recovery procedures that isolate faulty modules and activate backups. The VCS must resort to the back-up strategy and continue to operate without loss of function;</li> <li>c. Radio interface and/or landline modules must be duplicated. Redundancy must be extended to audio interface modules with respect to their function and control; and</li> <li>d. In addition to self-recovery, the VCS must have a comprehensive set of diagnostic indicators. When appropriate, clear diagnostic messages must be sent to the appropriate consoles, audible alarms must be generated, and indicators (i.e. Light Emitting Diodes (LED) or other display methods) must reflect the current state of the VCS.</li> </ul> |                            |          |
| 61   | 1.3.3     | <p>Automatic Tests on Core Modules The Contractor must ensure that:</p> <ul style="list-style-type: none"> <li>a. VCS circuits must undergo automatic test routines at various levels. Audio interface modules must perform periodic loop-back tests on all idle ports. If a loop-back test fails a message must be sent to the maintenance</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |          |

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|      |           | <p>console. If a fault occurs in the Central Processing Unit (CPU) of a VCS module, an autonomous "watch-dog" circuit, must cause it to reset;</p> <p>b. Each core system module must monitor the operation of each audio interface module under its control through the use of "hand shaking" routines. If an audio module does not respond to a handshaking message from the core module, the core module must reset the audio module, a switchover to a backup audio module must occur, and a message must be displayed at the maintenance console;</p> <p>c. Idle position circuits (positions in which the headset is not inserted) must automatically undergo loop-back tests. During this sort of test, tones should be sent from the core module to the earpiece amplifier of the operator (and supervisor), and then "looped-back" into the microphone amplifier and returned to the core module; and</p> <p>d. Mission communications must not be affected at any time during the above test routines.</p> |                            |          |
| 62   | 1.3.4     | <p>Automatic Tests on Positions The Contractor must ensure that:</p> <p>a. Position audio circuits must be continually tested during the VCS operation. A significant failure on the primary link must cause the position to automatically switch its operation to the secondary link;</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                            |          |

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|      |           | <p>b. The data link between core module and position must be continually verified to ensure operation. The data links should be separately and automatically tested about every half a second;</p> <p>c. All failed automatic tests must result in the initiation of recovery procedures (if required), and the transmission of diagnostics to the maintenance console; and</p> <p>d. The position electronics must contain power supply sensors and temperature sensors. All of these devices must be continually scanned for any abnormalities, which must be reported to the maintenance position.</p> |                            |          |
| 63   | 1.3.5     | <p>Automatic Tests on Audio Interface Modules The Contractor must ensure that:</p> <p>Core modules that control audio interface modules must test all audio ports located on those interface modules. These automatic tests must be carried out when the ports are idle. Any abnormalities must be reported to the maintenance position.</p>                                                                                                                                                                                                                                                              |                            |          |
| 64   | 1.3.6     | <p>Manual "Position" Tests The Contractor must ensure that in addition to the automatic system tests, a variety of manual tests must be available to maintenance personnel. These manual tests must be entered via password from the operator panel keypad. The tests must allow personnel to:</p> <p>i. View the position name;</p> <p>ii. View the VCS software version number;</p>                                                                                                                                                                                                                     |                            |          |

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|      |           | <ul style="list-style-type: none"> <li>iii. Verify selector assignments;</li> <li>iv. Verify volume controls;</li> <li>v. Verify operator and supervisor headset jack operation;</li> <li>vi. Adjust the time and date;</li> <li>vii. Verify speaker and headset operation;</li> <li>viii. Verify the microphone operation;</li> <li>ix. Verify the PTT operation;</li> <li>x. Adjust chime volume;</li> <li>xi. Substitute the MIC audio with an internally generated tone and</li> <li>xii. reset the position without turning OFF the power.</li> </ul>                                                                                                                                                                                                                                                                   |                            |          |
| 65   | 1.3.7     | <p>Visual and Auditory Indicators. The Contractor must ensure that:</p> <ul style="list-style-type: none"> <li>a. VCS modules must have indicator devices (i.e. LEDs or other type of displays) on their front panels indicating status. Red LEDs must not be used to indicate normal operation;</li> <li>b. When a fault is detected, a diagnostic message must be sent to the maintenance position and an auditory alarm must be generated; and</li> <li>c. Indicator devices must indicate the following: <ul style="list-style-type: none"> <li>i. CPU operation on module. Indicates the operational status of hardware and software;</li> <li>ii. Power status. Indicates the operational status of power supplies;</li> <li>iii. Data exchange. Indicates the operational status data channel;</li> </ul> </li> </ul> |                            |          |



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|      |           | <ul style="list-style-type: none"> <li>iv. Audio exchange. Indicates the operational status audio channels; and</li> <li>v. Audio port operation. Indicates the operational status of all audio ports.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |          |
| 66   | 1.3.8     | <p>Maintenance Position. The Contractor must ensure that:</p> <ul style="list-style-type: none"> <li>a. The maintenance position must provide any displays, etc. required for fault detection and fault localizing; and</li> <li>b. The maintenance console must permit the user to: <ul style="list-style-type: none"> <li>i. Monitor fault detection and fault localizing routines;</li> <li>ii. Modify mission reconfiguration items and initiate mission reconfiguration actions involving resources excluded from the physical configuration file; and</li> <li>iii. Access to the maintenance-logging feature to view and update maintenance log data.</li> </ul> </li> </ul> |                            |          |
| 67   | 1.3.9     | <p>VCS Audio Alignment and Test Point Access The Contractor must ensure that:</p> <ul style="list-style-type: none"> <li>a. The VCS must provide access for connecting test equipment to external G/A/G and G/G circuits for local testing;</li> <li>b. The VCS must provide access for connecting test equipment to the inputs and outputs of position equipment;</li> <li>c. The VCS must provide means to monitor the output of position equipment;</li> </ul>                                                                                                                                                                                                                   |                            |          |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | <p>d. The VCS must provide means to monitor the input from external lines;</p> <p>e. The VCS must provide means to align the system for use with external lines; and</p> <p>f. All test points and alignment controls must be readily accessible without disassembly of equipment.</p>                                                                                                                                                                                                                                                 |                                   |                 |
| 68          | 1.3.10           | <p>Maintenance Logging Function The Contractor must ensure that:</p> <p>a. The VCS must provide a maintenance logging function to allow users of the maintenance position to access information on the recent maintenance history of the system;</p> <p>b. The VCS must permit users to annotate the maintenance logging function by adding their own information or updating the information already present; and</p> <p>c. The VCS must provide a hard copy of the maintenance log upon request through the maintenance console.</p> |                                   |                 |
| 69          | 1.3.11           | Remote Alarms. The Contractor must ensure that the VCS must be capable of providing additional remote audible and visible alarms outputs to signal the detection of system faults.                                                                                                                                                                                                                                                                                                                                                     |                                   |                 |
| 70          | 1.3.12           | <p>Default Configuration The Contractor must ensure that:</p> <p>a. The VCS must continually retain the most recent configuration indefinitely in non-volatile memory; and</p> <p>b. The VCS must use the most recent</p>                                                                                                                                                                                                                                                                                                              |                                   |                 |

| Item | Reference | Description                                                                                           | Compliant or Non-Compliant | Comments |
|------|-----------|-------------------------------------------------------------------------------------------------------|----------------------------|----------|
|      |           | configuration when restarting the system (e.g., for unattended restart after extended power failure). |                            |          |
|      |           |                                                                                                       |                            |          |
|      |           |                                                                                                       |                            |          |

**VOICE COMMUNICATION SYSTEM  
TRAINING OPTION EVALUATION MATRIX  
TACTICAL CONTROL RADAR  
42 RADAR COLD LAKE, ALBERTA**

## VOICE COMMUNICATION SYSTEM (VCS) TRAINING OPTION COMPLIANCE TABLE

| Item | Reference  | Description                                                                                                                                                                                                                                                                                                                                                                                                             | Compliant or Non-Compliant | Comments |
|------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
|      | <b>1.1</b> | <b>OPTIONAL TRAINING</b>                                                                                                                                                                                                                                                                                                                                                                                                | <b>N/A</b>                 |          |
|      | 1.1.1      | TRAINING<br>Optional Technical Maintenance Training. If Canada exercises this option:                                                                                                                                                                                                                                                                                                                                   |                            |          |
| 1    | 1.1.1 a    | The Contractor must provide one technical maintenance course at 42 Radar Cold Lake.                                                                                                                                                                                                                                                                                                                                     |                            |          |
| 2    | 1.1.1 b    | The Contractor must also provide one "Train the Trainer" type program that will focus on TCR site-specific applications. The training course must cover both operations and technical maintenance. Technical training must also cover the operation, set-up and capabilities of the VCS. The training must support troubleshooting and repair to the LRU level or as further defined in the DND 626 Task Authorization. |                            |          |
| 3    | 1.1.1 d    | A technical maintenance manual and an operator manual must be provided to each student as per CDRL C-PUB-001.                                                                                                                                                                                                                                                                                                           |                            |          |
| 4    | 1.1.1 e    | Upon completion of this course, the Contractor must provide all course training material, including Instructors notes, Lesson Plan, Slides (Power Point Format), Student guide, Training                                                                                                                                                                                                                                |                            |          |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                            | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | Material, and Test and Verification questions sufficient for DND to conduct follow-on technical training.                                                                                                                                                                                                                                                                                                     |                                   |                 |
|             | <b>1.1.2</b>     | <b>Optional Operator Training</b><br>If Canada exercises the option:                                                                                                                                                                                                                                                                                                                                          | <b>N/A</b>                        |                 |
| 5           | 1.1.2 a i        | The operator-training course will not exceed eight students. The course content must include the following:<br>A “Train the Trainer” course for the Operators. This course must contain all the operating functions of the VCS. The operator-training course must be complete enough for the Operators to be able to train additional students.                                                               |                                   |                 |
| 6           | 1.1.2 a ii       | The operator-training course will not exceed eight students with the following content:<br>Upon completion of the course the Contractor must provide all of the operator’s course training material, including Instructors notes, Lesson Plans, Slides (Power Point Format), Student guide, Training Material, and Test and Verification questions sufficient for DND to conduct follow-on operator training. |                                   |                 |
| 7           | 1.1.2 a iii      | The operator-training course will not exceed eight students with the following content:<br>An operator manual must be provided to each student as per CDRL C-PUB-001.                                                                                                                                                                                                                                         |                                   |                 |
|             | <b>1.1.3</b>     | <b>Course Training Plan (CTP) and Course Training Schedule (CTS)</b>                                                                                                                                                                                                                                                                                                                                          | <b>N/A</b>                        |                 |
| 8           | 1.1.3 a          | The CTP and CTS will only be required if the                                                                                                                                                                                                                                                                                                                                                                  |                                   |                 |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                  | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | option for training is exercised by Canada. The purpose of the Training Plan is to describe the Contractor's methodology to train technicians and operators on the new VCS system. The training plan must be a "Train the Trainer" type program that covers both operations and technical maintenance requirements. |                                   |                 |
| 9           | 1.1.3 b          | The DRAFT submission of the Training Plan for both operator and technician training is due 45 days after the option is exercised. The DRAFT is subject to review and approval by Canada.                                                                                                                            |                                   |                 |
| 10          | 1.1.3 c          | The FINAL copy will be delivered with the agreed changes within 60 days after the training option has been exercised.                                                                                                                                                                                               |                                   |                 |
| 11          | 1.1.3 d i        | The CTP and CTS must be provided to DND in Microsoft Word format on a CD-ROM. These documents must include:<br>An overview of the training;                                                                                                                                                                         |                                   |                 |
| 12          | 1.1.3 d ii       | The CTP and CTS must be provided to DND in Microsoft Word format on a CD-ROM. These documents must include:<br>A training schedule in matrix format that must cover each of the training days and must indicate the length of the lessons;                                                                          |                                   |                 |
| 13          | 1.1.3 d iii      | The CTP and CTS must be provided to DND in                                                                                                                                                                                                                                                                          |                                   |                 |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | Microsoft Word format on a CD-ROM. These documents must include:<br>The proposed evaluation process by which all aspects of training must be evaluated                                                                                                                                                                                                                                                                                        |                                   |                 |
| 14          | 1.1.3 d iv       | The CTP and CTS must be provided to DND in Microsoft Word format on a CD-ROM. These documents must include:<br>Facility requirements to run the courses.                                                                                                                                                                                                                                                                                      |                                   |                 |
|             | <b>1.1.4</b>     | <b>Format and Content</b>                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>N/A</b>                        |                 |
| 15          | 1.1.4 a          | The format and content preparation instructions for the Training documentation are as follows:<br>This document is to be submitted in typewritten form on plain 8-1/2 by 11 inch bond paper and in electronic media (CD or DVD) in a format which is compatible with Microsoft Office Suite.                                                                                                                                                  |                                   |                 |
| 16          | 1.1.4 b          | The format and content preparation instructions for the Training documentation are as follows:<br>Production of this document using automated techniques is encouraged. Best commercial practices are to be used for charts, tables, matrices, page numbering, document control numbering. Specific content and format instructions for this document are specified below. The Training Plan must consist of the following:<br>i. Title Page; |                                   |                 |



| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | ii. Table of Contents;<br>iii. Document Control Log;<br>iv. Revision Record;<br>v. Purpose;<br>vi. References;<br>vii. Technical Maintenance Training;<br>iii. Operator Maintenance Trainings;<br>ix. Training Material Requirements<br>x. Notes; and<br>xi. Appendices.                                                                                                                                                                                                                  |                                   |                 |
| 17          | 1.1.4 c          | The format and content preparation instructions for the Training documentation are as follows:<br>The Title Page must contain the following information:<br>i. Training Plan for the VCS Project (DAEPM/R&CS 4-4);<br>ii. Contract No.;<br>iii. CDRL Sequence No.;<br>iv. Prepared for: National Defence, for Directorate Aerospace Engineering and Project Management / Radar and Communications Systems Project (DAEPM/R&CS 4-4); and<br>v. Prepared by: Contractor's name and address. |                                   |                 |
| 18          | 1.1.4 d          | The format and content preparation instructions for the Training documentation are as follows:<br>The Table of Contents must list the title and                                                                                                                                                                                                                                                                                                                                           |                                   |                 |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                     | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | page number of each titled paragraph and subparagraph, figure, table, and appendix.                                                                                                                                                                                                                                    |                                   |                 |
| 19          | 1.1.4 e          | The format and content preparation instructions for the Training documentation are as follows:<br>The Document Control Log must contain three columns: Revision, Date, and Reason for Change.                                                                                                                          |                                   |                 |
| 20          | 1.1.4 f          | The format and content preparation instructions for the Training documentation are as follows:<br>The Revision Record must contain a listing of pages and their revision status.                                                                                                                                       |                                   |                 |
| 21          | 1.1.4 g          | The format and content preparation instructions for the Training documentation are as follows:<br>The Purpose section must describe the purpose of the Training Plan.                                                                                                                                                  |                                   |                 |
| 22          | 1.1.4 h          | The format and content preparation instructions for the Training documentation are as follows:<br>The References section must list all references used in the Training Plan.                                                                                                                                           |                                   |                 |
| 23          | 1.1.4 i          | The format and content preparation instructions for the Training documentation are as follows:<br>Technical Maintenance Training. This section must define the technical course content of the VCS. The technical course must include as a minimum the following elements:<br>i. System configuration, diagnostics and |                                   |                 |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | functions;<br>ii. All programmable features and adjustments; and<br>iii. Safety Instructions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                   |                 |
| 24          | 1.1.4 j          | The format and content preparation instructions for the Training documentation are as follows:<br>Operator Maintenance Training. This section must define the optional operator course content of the VCS. The operator course must include as a minimum the following elements:<br>i. System configuration and functions;<br>ii. All programmable features; and<br>iii. Safety Instructions.                                                                                                                                                                                                       |                                   |                 |
| 25          | 1.1.4 k          | The format and content preparation instructions for the Training documentation are as follows:<br>Training Material Requirements. This section must identify the requirements for the Training Plan and the Training Schedule. The training plan must address the following:<br>i. An overview of the training;<br>ii. A training schedule in matrix format that must cover each of the training days and must indicate the length of the lessons;<br>iii. The proposed evaluation process by which all aspects of training must be evaluated; and<br>iv. Facility requirements to run the courses. |                                   |                 |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                                                                                                                                                                                            | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
| 26          | 1.1.4 l          | Notes. This section must be the last section in the document and must contain any general information that aids in understanding this document (e.g., background information, and glossary). This section must include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document.                                   |                                   |                 |
| 27          | 1.1.4 m          | Appendices. Appendices may be used to provide information published separately for convenience in document maintenance (e.g., charts, graphical data). As applicable, each appendix must be referenced in the main body of the document where the data would normally have been provided. Appendices may be bound as separate documents for ease in handling. |                                   |                 |
|             |                  |                                                                                                                                                                                                                                                                                                                                                               |                                   |                 |

**VOICE COMMUNICATION SYSTEM (VCS)  
SECOND VCS OPTION EVALUATION MATRIX  
TACTICAL CONTROL RADAR  
12<sup>er</sup> BAGOTVILLE, QUEBEC**

## SECOND VOICE COMMUNICATION SYSTEM (VCS) OPTION 12 ER BAGOTVILLE COMPLIANCE TABLE

| Item | Reference  | Description                                                                                                                                                                                                                                                     | Compliant or Non-Compliant | Comments |
|------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
|      | <b>1.1</b> | <b>Option for a second Voice Communications System for 3ere,12er Bagotville Quebec</b>                                                                                                                                                                          | N/A                        |          |
| 1    | 1.1.1      | This VCS must be identical to the VCS for 42 Radar Squadron Cold Lake with the exception that there is only a requirement for four (4) console positions and a difference in some of the quantities outlined in para 1.1.2. Appendix AA paragraph 1.1.2 refers. |                            |          |
| 2    | 1.1.2a     | The Contractor must ensure access, at each console to the following functions:<br>a. Five (5) PABX circuits connected to a Public Switched Telephone Network (PSTN);                                                                                            |                            |          |
| 3    | 1.1.2b     | The Contractor must ensure access, at each console to the following functions:<br>b. Four (4) “Ring Down” and two 4 Wire E&M analog circuits;                                                                                                                   |                            |          |
| 4    | 1.1.2c     | The Contractor must ensure access, at each console to the following functions:<br>c. Canadian Switched Network (CSN);                                                                                                                                           |                            |          |
| 5    | 1.1.2d     | The Contractor must ensure access, at each console to the following functions:<br>d. Access to a minimum of twenty eight (28) G/A/G Radios (4 Wire E&M); which includes expansion positions;                                                                    |                            |          |
| 6    | 1.1.2e     | The Contractor must ensure access, at each console                                                                                                                                                                                                              |                            |          |

| <b>Item</b> | <b>Reference</b> | <b>Description</b>                                                                                                                                                                      | <b>Compliant or Non-Compliant</b> | <b>Comments</b> |
|-------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------|
|             |                  | to the following functions:<br>e. Tactical Satellite communications data/voice relay to North Bay; and                                                                                  |                                   |                 |
| 7           | 1.1.2f           | The Contractor must ensure access, at each console to the following functions:<br>f. Satellite Voice Radios (C2, time critical targeting, combat SAR).                                  |                                   |                 |
| 8           | 1.1.3a           | As with the 42 Radar VCS the Contractor must provide the following:<br>a. A Maintenance position located in close proximity to the Voice equipment;                                     |                                   |                 |
| 9           | 1.1.3b.          | As with the 42 Radar VCS the Contractor must provide the following:<br>b. A Recommended Spare Parts kit;                                                                                |                                   |                 |
| 10          | 1.1.3c           | As with the 42 Radar VCS the Contractor shall provide the following:<br>c. An option for a Maintenance training Course;                                                                 |                                   |                 |
| 11          | 1.1.3d           | As with the 42 Radar VCS the Contractor must provide the following:<br>d. An option for an Operators training course                                                                    |                                   |                 |
| 12          | 1.1.3e           | As with the 42 Radar VCS the Contractor must provide the following:<br>e. An option for service support, using DND 626 “Task Authorization” form, on an “as and when requested “ basis. |                                   |                 |
| 13          | 1.1.4            | In the event Canada exercises this option the Contractor must attend a site visit to 3 ere, 12 er Bagotville.                                                                           |                                   |                 |
| 14          | 1.1.5            | The Contractor must follow the Installation criteria as detailed in the 42 Radar VCS Statement of Work                                                                                  |                                   |                 |

| Item | Reference | Description                                                                                                                                                      | Compliant or Non-Compliant | Comments |
|------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|----------|
|      |           | (SOW).                                                                                                                                                           |                            |          |
| 15   | 1.1.6     | The Contractor must use the same equipment requirements as detailed in the 42 Radar VCS Statement of Work (SOW).                                                 |                            |          |
| 16   | 1.1.7     | The Contractor must utilize the same equipment specifications as detailed in Appendix AA – Technical Specifications of the 42 Radar VCS Statement of Work (SOW). |                            |          |
|      |           |                                                                                                                                                                  |                            |          |



**ANNEX F - BID EVALUATION CRITERIA**  
**FIRM DELIVERABLES - HARDWARE AND INSTALLATION WORK**

| Item                                                           | Description                                                                                                                                                                                   | Quantity | Firm Unit Price (see Note 2) | Extended Price |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------|----------------|
| 001                                                            | Voice Communication System (VCS) delivered at 4 Wing, 42 Radar Squadron, Cold Lake, Alberta. See Annex A – SOW Section 2.1 for details.                                                       | 1        |                              | 0.00           |
| 002                                                            | Installation, engineering, integration, test and evaluation, plan and report, integrated logistics support and other requirements outlined in Annex A – SOW Section 2.2 to 2.8 and Section 4. | 1        |                              | 0.00           |
| Total Price of Hardware and Installation Work (Item 001 + 002) |                                                                                                                                                                                               |          |                              | 0.00           |

**NOTE:**

1. For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.
2. Firm Unit Price MUST include Shipping, Custom Duties, Travel & Living Expenses and exclude Applicable Taxes.

**ANNEX F - BID EVALUATION CRITERIA**  
**OPTIONAL HARDWARE & Installation**

| Item                                                           | Description                                                                                                                                                                                   | Quantity | Average Firm Unit Price for 2017 and 2018 Delivery (see Note 2) | Extended Price |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------|----------------|
| 001                                                            | Voice Communication System (VCS) delivered at 12 escadron de radar, 3ere, Bagotville, Quebec. See Annex A – SOW Section 3.3 and Appendix AE for details.                                      | 1        |                                                                 | 0.00           |
| 002                                                            | Installation, engineering, integration, test and evaluation, plan and report, integrated logistics support and other requirements outlined in Annex A – SOW Section 2.2 to 2.8 and Section 4. | 1        |                                                                 | 0.00           |
| Total Price of Hardware and Installation Work (Item 001 + 002) |                                                                                                                                                                                               |          |                                                                 | 0.00           |

**NOTE:**

1. For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.
2. Firm Unit Price MUST include Shipping, Custom Duties, Travel & Living Expenses and exclude Applicable Taxes.

**ANNEX F - BID EVALUATION CRITERIA**  
**OPTIONAL TRAINING AT COLD LAKE, ALBERTA**

| Item                                             | Description                  | Firm Unit Price (see Note 2) |
|--------------------------------------------------|------------------------------|------------------------------|
| 001                                              | Technical Maintenance Course | 0.00                         |
| 002                                              | Operator Training Course     | 0.00                         |
| Total Price of Training Courses (Item 001 + 002) |                              | 0.00                         |

**NOTE:**

1. For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.
2. Firm Unit Price **MUST** include Travel & Living Expenses and exclude Applicable Taxes.

**ANNEX F - BID EVALUATION CRITERIA**  
**OPTIONAL TRAINING AT BATGOVILLE, QUEBEC**

| Item                                             | Description                  | Firm Unit Price (See Note 2) |
|--------------------------------------------------|------------------------------|------------------------------|
| 001                                              | Technical Maintenance Course | 0.00                         |
| 002                                              | Operator Training Course     | 0.00                         |
| Total Price of Training Courses (Item 001 + 002) |                              | 0.00                         |

**NOTE:**

1. For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.
2. Firm Unit Price **MUST NOT** include Travel & Living Expenses and exclude Applicable Taxes.

**ANNEX F - BID EVALUATION CRITERIA**  
**OPTIONAL SERVICE SUPPORT - MAINTENANCE AND REPAIR**

| RESOURCE CATEGORY                                                                   | FIRM HOURLY<br>LABOUR RATES | ESTIMATED LEVEL<br>OF EFFORT (LOE) | TOTAL |
|-------------------------------------------------------------------------------------|-----------------------------|------------------------------------|-------|
|                                                                                     | A                           | B                                  | C=AxB |
| <b>Initial Contract Period – One Year From Contract Award</b>                       |                             |                                    |       |
| Junior Trainer                                                                      |                             | 150                                | 0.00  |
| Senior Trainer                                                                      |                             | 75                                 | 0.00  |
| Junior Technologist                                                                 |                             | 150                                | 0.00  |
| Senior Technologist                                                                 |                             | 75                                 | 0.00  |
| Junior Technician                                                                   |                             | 225                                | 0.00  |
| Senior Technician                                                                   |                             | 120                                | 0.00  |
| Junior Project Manager                                                              |                             | 75                                 | 0.00  |
| Senior Project Manager                                                              |                             | 75                                 | 0.00  |
| Junior Software Programmer                                                          |                             | 40                                 | 0.00  |
| Senior Software Programmer                                                          |                             | 75                                 | 0.00  |
| ILS Manager                                                                         |                             | 60                                 | 0.00  |
| Quality Assurance Inspector                                                         |                             | 75                                 | 0.00  |
| Administrator                                                                       |                             | 40                                 | 0.00  |
| <b>Total Contract Period</b>                                                        |                             |                                    | 0.00  |
| <b>Option Year 1 - One year from end of Initial Contract Period</b>                 |                             |                                    |       |
| Junior Trainer                                                                      |                             | 10                                 | 0.00  |
| Senior Trainer                                                                      |                             | 10                                 | 0.00  |
| Junior Technologist                                                                 |                             | 25                                 | 0.00  |
| Senior Technologist                                                                 |                             | 10                                 | 0.00  |
| Junior Technician                                                                   |                             | 80                                 | 0.00  |
| Senior Technician                                                                   |                             | 40                                 | 0.00  |
| Junior Project Manager                                                              |                             | 20                                 | 0.00  |
| Senior Project Manager                                                              |                             | 75                                 | 0.00  |
| Junior Software Programmer                                                          |                             | 25                                 | 0.00  |
| Senior Software Programmer                                                          |                             | 10                                 | 0.00  |
| ILS Manager                                                                         |                             | 20                                 | 0.00  |
| Quality Assurance Inspector                                                         |                             | 10                                 | 0.00  |
| Administrator                                                                       |                             | 40                                 | 0.00  |
| <b>Total Option Year 1</b>                                                          |                             |                                    | 0.00  |
| <b>Option Year 2 - One year from end of Option Year 1</b>                           |                             |                                    |       |
| Junior Trainer                                                                      |                             | 10                                 | 0.00  |
| Senior Trainer                                                                      |                             | 10                                 | 0.00  |
| Junior Technologist                                                                 |                             | 25                                 | 0.00  |
| Senior Technologist                                                                 |                             | 10                                 | 0.00  |
| Junior Technician                                                                   |                             | 80                                 | 0.00  |
| Senior Technician                                                                   |                             | 40                                 | 0.00  |
| Junior Project Manager                                                              |                             | 20                                 | 0.00  |
| Senior Project Manager                                                              |                             | 75                                 | 0.00  |
| Junior Software Programmer                                                          |                             | 25                                 | 0.00  |
| Senior Software Programmer                                                          |                             | 10                                 | 0.00  |
| ILS Manager                                                                         |                             | 20                                 | 0.00  |
| Quality Assurance Inspector                                                         |                             | 10                                 | 0.00  |
| Administrator                                                                       |                             | 40                                 | 0.00  |
| <b>Total Option Year 2</b>                                                          |                             |                                    | 0.00  |
| <b>Total Labour Rates (Initial Contract Period + Option Year 1 + Option Year 2)</b> |                             |                                    | 0.00  |

**Note: For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.**

**ANNEX F - BID EVALUATION CRITERIA**  
**Mark-up Rate for Material**

| Description                                               | Mark-up Rate (%) | Mark-up Cost (A X B) |
|-----------------------------------------------------------|------------------|----------------------|
| Material Cost \$10,000 - For Bid Evaluation Purposes Only |                  | 0.00                 |

**Note: For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.**

**ANNEX F - BID EVALUATION CRITERIA**  
**Mark-up Rate for Sub-contract Work**

| Description                                                   | Mark-up Rate (%) | Mark-up Cost (A X B) |
|---------------------------------------------------------------|------------------|----------------------|
| Sub-contract Work \$10,000 - For Bid Evaluation Purposes Only |                  | 0.00                 |

**Note: For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.**

**ANNEX F - BID EVALUATION CRITERIA**  
**TOTAL EVALUATED CONTRACT COSTS**

| ITEM No.                              | Description                                           | Compliant (Y/N) | Total Firm Hardware and Installation Work at Cold Lake, AB | Total Firm Hardware and Installation Work at Bagotville, QC | Total Optional Training at Cold Lake, AB | Total Optional Training at Bagotville, QC | Total Labour Rates | Total Matreial Mark-up Cost | Total Sub-contract Work Mark-up Cost | Total Evaluated Contract Costs |
|---------------------------------------|-------------------------------------------------------|-----------------|------------------------------------------------------------|-------------------------------------------------------------|------------------------------------------|-------------------------------------------|--------------------|-----------------------------|--------------------------------------|--------------------------------|
| 1                                     | Technical Compliance                                  |                 |                                                            |                                                             |                                          |                                           |                    |                             |                                      |                                |
| 2                                     | Firm Hardware and Installation Work at Cold Lake, AB  |                 | 0.00                                                       |                                                             |                                          |                                           |                    |                             |                                      |                                |
| 3                                     | Firm Hardware and Installation Work at Bagotville, QC |                 |                                                            | 0.00                                                        |                                          |                                           |                    |                             |                                      |                                |
| 4                                     | Optional Training at Cold Lake, AB                    |                 |                                                            |                                                             | 0.00                                     |                                           |                    |                             |                                      |                                |
| 5                                     | Optional Training at Bagotville, QC                   |                 |                                                            |                                                             |                                          | 0.00                                      |                    |                             |                                      |                                |
| 6                                     | Labour Rates                                          |                 |                                                            |                                                             |                                          |                                           | 0.00               |                             |                                      |                                |
| 7                                     | Matreial Mark-up Cost                                 |                 |                                                            |                                                             |                                          |                                           |                    | 0.00                        |                                      |                                |
| 8                                     | Sub-contract Work Mark-up Cost                        |                 |                                                            |                                                             |                                          |                                           |                    |                             | 0.00                                 |                                |
| <b>Total Evaluated Contract Costs</b> |                                                       |                 |                                                            |                                                             |                                          |                                           |                    |                             |                                      | <b>0.00</b>                    |

**Note: For PWGSC Use. Do not use this spreadsheet. This example spreadsheet is included to demonstrate the evaluation methodology.**