Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

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

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

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

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

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

Comments - Commentaires

Title - Sujet Navtex Transmitters Equipment

Solicitation No. - N° de l'invitation F7048-160040/A	**Date** 2023-06-21
Client Reference No. - N° de référence du client F7048-160040	
GETS Reference No. - N° de référence de SEAG PW-$$QF-120-29101	
File No. - N° de dossier 120qf.F7048-160040	**CCC No./N° CCC - FMS No./N° VME**

Solicitation Closes - L'invitation prend fin

at - à 02:00 PM Eastern Daylight Saving Time EDT
on - le 2023-08-03 Heure Avancée de l'Est HAE

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☐ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à: Johnston, Charlene	**Buyer Id - Id de l'acheteur** 120qf
Telephone No. - N° de téléphone (873) 354-9869 ( )	**FAX No. - N° de FAX** ( ) -

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:

Specified Herein
Précisé dans les présentes

Instructions: See Herein

Instructions: Voir aux présentes

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

Delivery Required - Livraison exigée See Herein – Voir ci-inclus	**Delivery Offered - Livraison proposée**

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

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Issuing Office - Bureau de distribution

Electronics, Simulators and Defence Systems Div. /Division des systèmes électroniques et des systèmes de simulation et de défense
11 Laurier St. / 11, rue Laurier
8C2, Place du Portage
Gatineau
Québec
K1A 0S5

Canada

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List of Attachments:

PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into five 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;

Part 5 Security, Financial and Other Requirements: includes specific requirements that must be addressed by Bidders; and

Part 6 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

1.2 Requirement

The Canadian Coast Guard has a requirement for the procurement and deployment of NAVTEX Transmitter equipment to replace aging equipment operating at eight (8) CCG remote sites across Canada, and the CCG College. The Work to be performed is detailed in the Statement of Work, Annex “A” and the Technical Statement of Requirements, Annex “B”.

1.3 Security Requirement

There are security requirements associated with this requirement. For additional information, consult Security, Financial and Other Requirements, and at Annex “F” -, Security Requirement Check List-Resulting Contract Clauses. For more information on personnel and organization security screening or security clauses, Bidders should refer to the Contract Security Program of Public Works and Government Services Canada (http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) website”.

1.4 Trade Agreements

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

The requirement is exempt from the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), Annex 4, item 38; the North American Free Trade Agreement (NAFTA), Chapter 10, Annex 1001, 2b, paragraph 1(e); and the Canadian and European Union Comprehensive Economic and Trade Agreement (CETA), Article 19.3, 2.c.

1.5 epost Connect Service

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidders Instructions and Part 3 entitled Bidder Preparation Instructions, of the bid solicitation for further instructions.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) 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 (2023-06-08) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) using epost Connect by the date, time and place indicated in the bid solicitation.

Note: For bids closing at the Bid Receiving Unit in the National Capital Region (NCR) Bidder must contact epost Connect at the email address below to set up an account:

tpsgc.dgareceptiondessoumissions-abbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open a CPC Connect conversation, as detailed in Standard Instructions 2003, or to send bids through a CPC Connect message if the bidder is using its own licensing agreement for CPC Connect service.

Offers must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated in the RFP.

2.3 Enquiries - Bid Solicitation

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

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

2.4 Applicable Laws

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

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

2.5 Bid Challenge and Recourse Mechanisms

(a) Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.

(b) Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's Buy and Sell website, under the heading "Bid Challenge and Recourse Mechanisms" contains information on potential complaint bodies such as:

- Office of the Procurement Ombudsman (OPO)
- Canadian International Trade Tribunal (CITT)

(c) Suppliers should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

If the Bidder chooses to submit its bid electronically, Canada requests that the Bidder submits its bid in accordance with section 08 of the 2003 standard instructions. The CPC Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

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

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

The bid must be gathered per section and separated as follows:

Section I: Technical Bid
Section II: Financial Bid
Section III: Certifications
Section IV: Additional Information

Section I: Technical Bid

In their technical bid, Bidders should demonstrate their understanding of the requirements contained in the bid solicitation at Annex "A" Statement of Work and explain how they will meet these requirements.

Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

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.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Evaluation Table, Annex “E”.

Pricing must be provided in the Financial Bid Only.

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, Delivered Duty Paid (DDP), Canadian customs duties and excise taxes included

3.2 Electronic Payment of Invoices

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Electronic Payment Instruments, Annex “G”, to identify which ones are accepted.

If Electronic Payment Instruments, Annex “G” is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.3 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.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

(a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including Technical and Financial evaluation criteria.

(b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

Mandatory Technical Criteria

Mandatory Technical Criteria are outlined in the SOW Evaluation Matrix Annex “C’ and the TSOR Evaluation Matrix Annex “D”.

To be declared responsive, a bid must meet all the Mandatory Technical Criteria outlined in the SOW Evaluation Matrix Annex “C” and the TSOR Evaluation Matrix Annex “D”.

4.1.2 Financial Evaluation

1. The price of the bid will be evaluated as follows:

    a. Canadian-based bidders must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded.

    b. foreign-based bidders must submit firm prices, Canadian customs duties, excise taxes and Applicable Taxes excluded. Canadian customs duties and excise taxes payable by Canada will be added, for evaluation purposes only, to the prices submitted by foreign-based bidders.

2. Unless the bid solicitation specifically requires bids to be submitted in Canadian currency, bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes. The rate given by the Bank of Canada in effect on the bid solicitation closing date, or on another date specified in the bid solicitation, will be applied as a conversion factor to the bids submitted in foreign currency.

3. Although Canada reserves the right to award the Contract either on an FOB plant or FOB destination, Canada requests that bidders provide prices FOB their plant or shipping point and FOB destination. Bids will be assessed on an FOB destination basis.

4. For the purpose of the bid solicitation, bidders with an address in Canada are considered Canadian-based bidders and bidders with an address outside of Canada are considered foreign-based bidders.

4.2 Phased Bid Compliance Process

Canada will use the Phased Bid Compliance Process described below:

4.2.1 Phased Bid Compliance Process

4.2.1.1 General

(a) Canada is conducting the PBCP described below for this requirement.

(b) Notwithstanding any review by Canada at Phase I or II of the PBCP, Bidders are and will remain solely responsible for the accuracy, consistency and completeness of their Bids and Canada does not undertake, by reason of this review, any obligations or responsibility for identifying any or all errors or omissions in Bids or in responses by a Bidder to any communication from Canada. THE BIDDER ACKNOWLEDGES THAT THE REVIEWS IN PHASE I AND II OF THIS PBCP ARE PRELIMINARY AND DO NOT PRECLUDE A FINDING IN PHASE III THAT THE BID IS NON-RESPONSIVE, EVEN FOR MANDATORY REQUIREMENTS WHICH WERE SUBJECT TO REVIEW IN PHASE I OR II AND NOTWITHSTANDING THAT THE BID HAD BEEN FOUND RESPONSIVE IN SUCH EARLIER PHASE. CANADA MAY DEEM A BID TO BE NON-RESPONSIVE TO A MANDATORY REQUIREMENT AT ANY PHASE. THE BIDDER ALSO ACKNOWLEDGES THAT ITS RESPONSE TO A NOTICE OR A COMPLIANCE ASSESSMENT REPORT (CAR) (EACH DEFINED BELOW) IN PHASE I OR II MAY NOT BE SUCCESSFUL IN RENDERING ITS BID RESPONSIVE TO THE MANDATORY REQUIREMENTS THAT ARE THE SUBJECT OF THE NOTICE OR CAR, AND MAY RENDER ITS BID NON-RESPONSIVE TO OTHER MANDATORY REQUIREMENTS.

(c) Canada may, in its discretion, request and accept at any time from a Bidder and consider as part of the Bid, any information to correct errors or deficiencies in the Bid that are clerical or administrative, such as, without limitation, failure to sign the Bid or any part or to checkmark a box in a form, or other failure of format or form or failure to acknowledge; failure to provide a procurement business number or contact information such as names, addresses and telephone numbers; inadvertent errors in numbers or calculations that do not change the amount the Bidder has specified as the price or of any component thereof that is subject to evaluation. This shall not limit Canada's right to request or accept any information after the bid solicitation closing in circumstances where the bid solicitation expressly provides for this right. The Bidder will have the time period specified in writing by Canada to provide the necessary documentation. Failure to meet this deadline will result in the Bid being declared non-responsive.

(d) The PBCP does not limit Canada's rights under Standard Acquisition Clauses and Conditions (SACC) 2003 (2019-03-04) Standard Instructions – Goods or Services – Competitive Requirements nor Canada's right to request or accept any information during the solicitation period or after bid solicitation closing in circumstances where the bid solicitation expressly provides for this right, or in the circumstances described in subsection (c).

(e) Canada will send any Notice or CAR by any method Canada chooses, in its absolute discretion. The Bidder must submit its response by the method stipulated in the Notice or CAR. Responses are deemed to be received by Canada at the date and time they are delivered to Canada by the method and at the address specified in the Notice or CAR. An email response permitted by the Notice or CAR is deemed received by Canada on the date and time it is received in Canada's email inbox at Canada's email address specified in the Notice or CAR. A Notice or CAR sent by Canada to the Bidder at any address provided by the Bidder in or pursuant to the Bid is deemed received by the Bidder on the date it is sent by Canada. Canada is not responsible for late receipt by Canada of a response, however caused.

4.2.1.2 Phase I: Financial Bid

(a) After the closing date and time of this bid solicitation, Canada will examine the Bid to determine whether it includes a Financial Bid and whether any Financial Bid includes all information required by the solicitation. Canada's review in Phase I will be limited to identifying whether any information that is required under the bid solicitation to be included in the Financial Bid is missing from the Financial Bid. This review will not assess whether the Financial Bid meets any standard or is responsive to all solicitation requirements.

(b) Canada's review in Phase I will be performed by officials of the Department of Public Works and Government Services.

(c) If Canada determines, in its absolute discretion that there is no Financial Bid or that the Financial Bid is missing all of the information required by the bid solicitation to be included in the Financial Bid, then the Bid will be considered non-responsive and will be given no further consideration.

(d) For Bids other than those described in c), Canada will send a written notice to the Bidder ("Notice") identifying where the Financial Bid is missing information. A Bidder, whose Financial Bid has been found responsive to the requirements that

are reviewed at Phase I, will not receive a Notice. Such Bidders shall not be entitled to submit any additional information in respect of their Financial Bid.

(e) The Bidders who have been sent a Notice shall have the time period specified in the Notice (the "Remedy Period") to remedy the matters identified in the Notice by providing to Canada, in writing, additional information or clarification in response to the Notice. Responses received after the end of the Remedy Period will not be considered by Canada, except in circumstances and on terms expressly provided for in the Notice.

(f) In its response to the Notice, the Bidder will be entitled to remedy only that part of its Financial Bid which is identified in the Notice. For instance, where the Notice states that a required line item has been left blank, only the missing information may be added to the Financial Bid, except that, in those instances where the addition of such information will necessarily result in a change to other calculations previously submitted in its Financial Bid, (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. All submitted information must comply with the requirements of this solicitation.

(g) Any other changes to the Financial Bid submitted by the Bidder will be considered to be new information and will be disregarded. There will be no change permitted to any other Section of the Bidder's Bid. Information submitted in accordance with the requirements of this solicitation in response to the Notice will replace, in full, only that part of the original Financial Bid as is permitted above, and will be used for the remainder of the bid evaluation process.

(h) Canada will determine whether the Financial Bid is responsive to the requirements reviewed at Phase I, considering such additional information or clarification as may have been provided by the Bidder in accordance with this Section. If the Financial Bid is not found responsive for the requirements reviewed at Phase I to the satisfaction of Canada, then the Bid shall be considered non-responsive and will receive no further consideration.

(i) Only Bids found responsive to the requirements reviewed in Phase I to the satisfaction of Canada, will receive a Phase II review.

4.2.1.3 Phase II: Technical Bid

(a) Canada's review at Phase II will be limited to a review of the Technical Bid to identify any instances where the Bidder has failed to meet any Eligible Criterion. This review will not assess whether the Technical Bid meets any standard or is responsive to all solicitation requirements. Eligible Criteria are all technical criteria that are identified in this solicitation as being subject to the PBCP. Mandatory technical criteria that are not identified in the solicitation as being subject to the PBCP, will not be evaluated until Phase III.

(b) Canada will send a written notice to the Bidder (Compliance Assessment Report or "CAR") identifying any Eligible Mandatory Criteria that the Bid has failed to meet. A Bidder whose Bid has been found responsive to the requirements that are reviewed at Phase II will receive a CAR that states that its Bid has been found responsive to the requirements reviewed at Phase II. Such Bidder shall not be entitled to submit any response to the CAR.

(c) A Bidder shall have the period specified in the CAR (the “Remedy Period”) to remedy the failure to meet any Eligible Mandatory Criterion identified in the CAR by providing to Canada in writing additional or different information or clarification in response to the CAR. Responses received after the end of the Remedy Period will not be considered by Canada, except in circumstances and on terms expressly provided for in the CAR.

(d) The Bidder’s response must address only the Eligible Mandatory Criteria listed in the CAR as not having been achieved, and must include only such information as is necessary to achieve such compliance. Any additional information provided by the Bidder which is not necessary to achieve such compliance will not be considered by Canada, except that, in those instances where such a response to the Eligible Mandatory Criteria specified in the CAR will necessarily result in a consequential change to other parts of the Bid, the Bidder shall identify such additional changes, provided that its response must not include any change to the Financial Bid.

(e) The Bidder’s response to the CAR should identify in each case the Eligible Mandatory Criterion in the CAR to which it is responding, including identifying in the corresponding section of the original Bid, the wording of the proposed change to that section, and the wording and location in the Bid of any other consequential changes that necessarily result from such change. In respect of any such consequential change, the Bidder must include a rationale explaining why such consequential change is a necessary result of the change proposed to meet the Eligible Mandatory Criterion. It is not up to Canada to revise the Bidder’s Bid, and failure of the Bidder to do so in accordance with this subparagraph is at the Bidder’s own risk. All submitted information must comply with the requirements of this solicitation.

(f) Any changes to the Bid submitted by the Bidder other than as permitted in this solicitation, will be considered to be new information and will be disregarded. Information submitted in accordance with the requirements of this solicitation in response to the CAR will replace, in full, only that part of the original Bid as is permitted in this Section.

(g) Additional or different information submitted during Phase II permitted by this section will be considered as included in the Bid, but will be considered by Canada in the evaluation of the Bid at Phase II only for the purpose of determining whether the Bid meets the Eligible Mandatory Criteria. It will not be used at any Phase of the evaluation to increase any score that the original Bid would achieve without the benefit of such additional or different information.

(h) Canada will determine whether the Bid is responsive for the requirements reviewed at Phase II, considering such additional or different information or clarification as may have been provided by the Bidder in accordance with this Section. If the Bid is not found responsive for the requirements reviewed at Phase II to the satisfaction of Canada, then the Bid shall be considered nonresponsive and will receive no further consideration.

(i) Only Bids found responsive to the requirements reviewed in Phase II to the satisfaction of Canada, will receive a Phase III evaluation.

4.2.1.4 Phase III: Final Evaluation of the Bid

(a) In accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.

(b) A Bid is non-responsive and will receive no further consideration if it does not meet all mandatory evaluation criteria of the solicitation.

4.3 Bid Solicitations – Proof of Compliance Testing Top Ranked Responsive Bid

(a) Canada will require that the top-ranked responsive Bidder (identified after analysis of mandatory technical requirements verification, confirmation and a financial evaluation) to conduct a Proof of Bid (PoB). Through the PoB test, Canada will test the NAVTEX Transmitter proposed in the top-ranked bid to confirm both that it will function as described in the bid and validate and test mandatory requirements described in the Statement of Requirement. The PoB test will take place at CCG's Test Lab in Quebec City. Canada expects the bidder will pay its own travel and salary costs associated with any PoB test.

(b) After being notified by Canada, the Canada authorized representatives will contact the bidder within 7 working days to start the installation of the proposed NAVTEX Transmitter. The installation must be completed and functional within 2 working days of the started installation (7.5 hours per day). CCG will then conduct the PoB test. A single representative of the Bidder shall be present during the PoB test to serve as a witness. A technical representative named in the bid to provide technical support during the PoB test should be available by telephone for technical advice and clarification during the PoB test; however, Canada is not required to delay the PoB test if an individual is unavailable. Once the PoB test has begun, it must be completed within three (3)working days (7.5 hours per day). If there is an issue with satisfying one of the mandatory requirements or constraints the vendor will be notified as soon as possible to address the issue or add clarification during the 3 working days of the PoB tests.

(c) Canada will document the results of the PoB test in accordance with Annex "D". If Canada determines that the proposed NAVTEX Transmitter does not meet any mandatory requirement or constraints of the bid solicitation, the bid will fail the PoB Test and the bid will be disqualified.

(d) If, during the initial installation of the NAVTEX Transmitter for the PoB test, the Canada authorized representatives discover that there are missing or malfunctioning components , including software, identified in the technical bid, the Canada authorized representatives must cease the installation process and inform the Contracting Authority named in the solicitation.

(e) If Canada determines that the missing or malfunctioning components are identified in the technical bid, Canada will permit the Bidder to submit the missing components and replacements for the malfunctioning components. These components must have been commercially available to the public before the bid closing date. Upon receiving the components, Canada will verify that (i) the components were commercially available to the public before the bid closing date; (ii) the components do not include new releases or versions of the hardware or software; (iii) the components were identified in the technical bid . Canada will have the sole discretion to decide if the additional components may be installed for the PoB test. Under no circumstance will new components or software required to correct flaws or meet mandatory requirements be permitted.

(f) If a bidder fails the PoB testing, Canada will repeat the process of the PoB testing for the next top-ranked responsive bidder starting at section (b). This process may repeat itself several times until a clear winner is identified.

(g) In connection with the PoB testing, the Bidder grants to Canada a limited license to use the Bidder's proposed Software for testing and evaluation purposes.

4.4 Basis of Selection

A bid must comply meet all of the mandatory requirements of the bid solicitation to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 – SECURITY, FINANCIAL AND OTHER REQUIREMENTS

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

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In accordance with the *Ineligibility and Suspension Policy* (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide with their bid, the required documentation, as applicable, to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – Required Documentation

In accordance with the *Ineligibility and Suspension Policy* (http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide with their bid, the required documentation, as applicable, to be given further consideration in the procurement process.

5.3 Security Requirements

5.3.1 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 6 Resulting Contract Clauses;

(b) The Bidder's proposed individuals requiring access to classified or protected information, assets or sensitive work sites must meet the security requirements as indicated in Part 6 - Resulting Contract Clauses;

(c) The Bidder must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites;

(d) The Bidder's proposed location of work performance and document safeguarding must meet the security requirements as indicated in Part 6 Resulting Contract Clauses;

(e) The Bidder must provide the addresses of proposed sites or premises of work performance and document safeguarding as indicated in Part 3 - Section IV Additional Information.

5.3.2 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.

5.3.3 For additional information on security requirements, Bidders should refer to the Contract Security Program of Public Works and Government Services Canada (http://www.tpsgc-pwgsc.gc.ca/esc-src/introduction-eng.html) website.

5.4 Price Certification

5.4.1 Rate or Price Certification

The Bidder certifies that the price proposed is based on costs computed in accordance with *Contract Cost Principles* 1031-2.

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirement

The following security requirements apply and form part of the Contract.

SECURITY REQUIREMENT FOR CANADIAN SUPPLIER

1. The Contractor must, at all times during the performance of the Contract, hold a Designated Organization Screening (DOS), issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).

2. The Contractor personnel requiring access to PROTECTED information, assets or sensitive work site(s) must EACH hold a valid **RELIABILITY STATUS**, granted or approved by CISD/PWGSC. Until the security screening of the Contractor personnel required by this Contract has been

completed satisfactorily by the Canadian Industrial Security Directorate, Public Works and Government Services Canada, the contractor personnel MAY NOT HAVE ACCESS to (CLASSIFIED/PROTECTED) INFORMATION OR ASSETS, AND MAY NOT ENTER sites where such information or assets are kept, without an escort.

3. The Contractor MUST NOT remove any PROTECTED information or assets from the identified work site(s), and the Contractor must ensure that its personnel are made aware of and comply with this restriction.

4. Subcontracts which contain security requirements are NOT to be awarded without the prior written permission of CISD/PWGSC.

5. 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).

6.2 Statement of Work

The Contractor must perform the work in accordance with the Statement of Work, Annex “A” and the Contractor’s technical bid.

6.3 Task Authorization

The work will be on an “as and when requested basis” using a PWGSC 572 Task Authorization (TA). The work described in the TA must be in accordance of the scope of the contract.

For administrative purposes, the formal Task Authorization process has been provided at Annex

H. 6.3.1 Task Authorization Limit

The Technical Authority may authorize individual Task Authorizations up to a limit of $ 25,000, applicable taxes included, inclusive of any revisions.

Any Task Authorization to be issued in excess of that limit must be authorized by the Contracting Authority before issuance.

6.4 Work Authorization Process

The Task Authorization Form # 572 will be used to authorize tasks under this contract using the following administrative process:

The Technical Authority prepares a TA form describing the task prior to the commencement of the Work;

The Technical Authority submits the TA form to the Contractor;

The Contractor reviews the request and provides a quotation on the level of effort (LOE) to complete the task, to the Technical Authority using the rates established in the Contract. The Contractor shall submit a quote detailing all applicable elements of cost including labour hours by category, per diems, travel requirements outlining the number of trips and duration, personnel and other associated travel costs, other direct costs and material cost.

The Technical Authority reviews the quotation and, if the work scope, schedule and budget are acceptable will proceed. If the quote is not acceptable, the Technical Authority is to discuss further with the Contractor and the Contracting Authority, as applicable, to find an acceptable solution to the tasking.

The Technical Authority may authorize individual Task Authorizations up to a limit of $ 25,000, applicable taxes included, inclusive of any revisions.

Any Task Authorization to be issued in excess of that limit must be authorized by the Contracting Authority before issuance.

The Contractor may not begin work before receiving the approved Task Authorization form as applicable. Canada shall not be liable for any work performed without a written and approved Task Authorization Form.

6.5 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) issued by Public Works and Government Services Canada.

6.5.1 General Conditions

1031-2 (2012-07-16), Contract Cost Principles

2030A (2022-12-01) General Conditions: Goods (Higher Complexity)

6.6 Authorities

6.6.1 Contracting Authority

The **Contracting Authority** for the Contract is:

Name:	Charlene Johnston
Title:	Supply Specialist
Branch	Electronics, Munitions and Tactical Systems Procurement Directorate Acquisitions Branch
Department:	Public Services and Procurement Canada
Address:	11 Laurier Street, PDP, 8C2 Gatineau, Quebec K1A 0S5
Telephone:	873-354-9869
E-mail Address:	Charlene.Johnston@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.

6.6.2 Technical Authority

The **Technical Authority** for the Contract is:

Name:
Title:
Organization:
Address:
Telephone:
E-Mail Address:

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

6.6.3 Contractor's Representative

The **Contractor's Representative** for the Contract is:

Name:

Contractor : .
Address :
Telephone:
Email:

6.7 Payment

6.7.1 Multiple Payments

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

a. an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

b. all such documents have been verified by Canada;

c. the Work delivered has been accepted by Canada.

6.7.2 Task Authorization

6.7.2.1 Firm Price Task Authorizations

In consideration of the Contractor satisfactorily complete all of its obligations under the Task Authorization, the Contractor will be paid the firm price stipulated in the applicable Task Authorization document without any adjustment.

6.7.2.2 Ceiling Price Task Authorization

The Contractor will be paid its costs, reasonably and properly incurred in the performance of the Work under the Task Authorization, to the ceiling price specified in the applicable Task Authorization document.

The ceiling price is subject to downward adjustment so as not to exceed the actual charges and costs reasonably incurred in the performance of the Work and computed in accordance with the Basis of Payment specified in the Task Authorization document.

6.7.2.3 Firm Hourly Rates – Task Authorizations

In consideration of the Contractor satisfactorily completing all of its obligations under the Task Authorization, the Contractor will be paid firm fixed hourly rates as specified in The Basis of Payment Annex “B”.

6.7.2.4 Subcontract (s)

All subcontracts cost must be pre-approved by the Contracting Authority. For subcontracts, the Contractor will be paid the laid down cost of the subcontracted work plus a mark-up in accordance with The Basis of Payment, Annex “B”. Customs Duties are included and Goods and Services Tax or Harmonized Sales Tax (GST/HST) is extra if applicable.

6.7.2.5 Material and Replacement Parts

Material and replacement parts from other supplies shall be supplied at the Contractor’s laid-down cost of acquiring same, plus a mark-up in accordance with the Basis of Payment, Annex “B”. All prices for parts and material are Incoterms 2010 – DDP Customs Duties are included and Goods and Services Tax or Harmonized Sales Tax (GST/HST) is extra, if applicable.

6.8 Invoicing Instructions

Invoices must be distributed as follows:

a. The original and one (1) copy must be emailed to:

   Project Manager

b. One copy of the invoice must be emailed to:

   Contracting Authority
   Charlene Johnston
   Charlene.Johnston@tpsgc-pwgsc.gc.ca

6.9 Insurance – Contractor's Responsibility

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

6.10 Electronic Payment of Invoices

See Electronic Payment Instruments, Annex "G"

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

a. Visa Acquisition Card;
b. MasterCard Acquisition Card;
c. Direct Deposit (Domestic and International);

6.11 Certifications and Additional Information

6.11.1 Compliance

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

6.12 Applicable Laws

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

6.13 Delivery

6.13.1 Shipping Instructions – Delivery at Destination

Goods must be consigned to the destination specified in Statement of Work, Deliverables List, Appendix B.

Delivered Duty Paid (DDP), (destination address to be included in each DCM), Incoterms 2010 for shipments from a commercial contractor.

The Contractor must ship the goods prepaid, including all delivery charges to (destination and address to be included in the Call-Up). Prepaid transportation costs must be shown as a separate item on the invoice, supported by a certified copy of the prepaid transportation bill of lading.

NOTE: "Prepaid transportation" costs are to be shown as a separate line item on the invoice, but not a separate shipping charge. The Contractor is to be clear and transparent about their shipping charges by making it a separate line item. It is not meant to be a line item billed separately.

6.13.2 Preparation for Delivery

Preservation, packaging, packing and marking shall be in accordance with the Contractor's standard domestic commercial practice to ensure safe delivery at destination.

6.14 Priority of Documents

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

(a) the Articles of Agreement;
(b) the Contract Cost Principles,1031-2;
(c) the General Conditions – Goods 2030A (2022-12-01) High Complexity;
(d) Annex "A", Statement of Work;
(e) Annex "B", Basis of Payment;
(f) Annex "C" ,Security Requirements Check List;
(g) Annex "D", Electronic Payment Instruments;
(h) The Contractor's Bid, dated _____ .

6.15 Inspection and Acceptance

The Technical Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or services not be in accordance with the requirements of the Statement of Work and to the satisfaction of the inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

6.16 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 "travelers", rather than those referring to "employees".

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

All payments are subject to government audit.

ANNEX “A”

STATEMENT OF WORK

(See attached)

ANNEX “B”

TECHNICAL STATEMENT OF REQUIRMENTS
(See attached)

ANNEX "C"
SOW EVALUATION MATRIX
(See attached)

ANNEX ‘D’
TSOR EVALUTION MATRIX
(See attached)

ANNEX "E"
FINANCIAL EVALUATION TABLE
(See attached)

ANNEX “F”

SECURITY REQUIREMENTS CHECK LIST

(See attached)

ANNEX "G"

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts to be paid by any of the following Electronic Payment Instrument(s):

( ) VISA Acquisition Card;

( ) MasterCard Acquisition Card;

( ) Direct Deposit (Domestic and International);

( ) Electronic Data Interchange (EDI);

ANNEX "**H**"

TASK AUTHORIZATION FORM

PWGSC # 572

(See attached)

Fisheries and Oceans Canada | Pêches et Océans Canada
Coast Guard | Garde côtière

GCDOCS# 25589309

NAVTEX Transmitter Equipment Replacements

SALUTI PRIMUM AUXILIO SEMPER

Canadian Coast Guard

Statement of Work

Published under the Authority of:
Integrated Technical Services Directorate
Fisheries and Oceans Canada
Canadian Coast Guard
Ottawa, Ontario
K1A 0E6

GCDOCS DOCUMENT NO. 25589309
STATEMENT OF WORK

NAVTEX TRANSMITTER EQUIPMENT REPLACEMENTS

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Approvals

Office of Primary Interest (OPI) National Project Manager (PM)	Thomas Lane	APPROVED:	
		DATE:	
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		DATE:	
Portfolio Manager, Integrated Technical Services (ITS) E&I	Atif Suhail	APPROVED:	
		DATE:	
Senior Director, ITS E&I	Tom Montor	APPROVED:	
		DATE:	

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TABLE OF CONTENTS

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1 DOCUMENT MANAGEMENT

1.1 AUTHORITY

1.1.1 This document is issued by Integrated Technical Services (ITS) Electronics and Informatics (E&I) Engineering Services, Canadian Coast Guard's (CCG's) National Technical Authority (TA).

1.2 RESPONSIBILITY

1.2.1 The National Project Manager for the procurement of NAVTEX Equipment, who resides in ITS E&I Engineering Services, is responsible for:

- Creation and promulgation of this document;
- Validity and accuracy of the content;
- Availability of this information;
- Updates as needed;
- Periodic revision; and
- Follow-up of all requests, comments and/or suggestions received to the originator.

1.3 INQUIRIES AND/OR REVISION REQUESTS

1.3.1 All inquiries regarding this document, including suggestions for revision and requests for interpretation must be address to the Officer of Primary Interest (OPI):

Position Title:	National Project Manager
Address:	Canadian Coast Guard, Department of Fisheries and Oceans, 200 Kent Street, 11th Floor, Ottawa, Ontario K1A 0E6

1.3.2 All requests should:

- Be clear and concise.
- Reference the specific Chapter, Section, Figure, Table and/or Appendices.

2 SCOPE

2.1 PURPOSE

2.1.1 The purpose of this Statement of Work (SOW) is to define the work that will be performed by the Contractor for the CCG requirement which is to acquire and deploy NAVTEX Transmitter equipment to replace aging equipment operating at eight (8) CCG remote sites across Canada, and the CCG College.

2.1.2 This equipment includes NAVTEX communication transmitters (in dual redundant configuration) and automatic antenna tuning units (AATUs), which will hereinafter be referred to collectively as "Transmitter Equipment".

2.1.3 The Transmitter Equipment deliverables must be capable of operating with the CCG's Communications Control System (CCS). The Communications Control System (CCS) enables Marine Communication and Traffic Services (MCTS) officers to control all radio communications at local and remote sites from their workstations.

2.1.4 This SOW details the requirements for the provision of new Transmitter Equipment, to be located at various CCG sites across Canada, and the associated tasks to be performed by the Contractor, including, but not limited to acquisition of equipment and/or equipment sparing, acceptance testing, packaging and delivery, training, installation and interface support, commissioning and documentation.

2.1.5 This SOW is organized into the following sections:

a. Document Management (Section 1)
b. Scope (Section 2)
c. Applicable Documentation (Section 3)
d. Deliverables (Section 4)
e. Optional Items (Section 5)
f. Appendices

2.1.6 The assembly of the Transmitter Equipment and the Government Furnished Equipment (GFE) at each site will then be referred to as a 'Transmitter System'.

2.2 GENERAL OPERATIONAL CONCEPT AND INTENDED USE OF THE EQUIPMENT

2.2.1 To support the CCG's MCTS mission, the CCG operates a national coastal voice and data communication network of Transmitters that helps provide radio communications for mission critical safety services to the marine community. The Transmitter Equipment is located at remote shore-based sites and is operated and controlled by CCG MCTS operators at the MCTS Centres through the CCS. Because they are used to support maritime safety and distress, the Transmitter Equipment has the requirement to operate on a continuous 24/7 basis, 365 days a year.

2.3 TERMINOLOGY

2.3.1 The following terms are used in this SOW and in the associated specifications. Their meaning must be defined as below:

a. Commercial Off The Shelf (COTS): Transmitter Equipment that is currently in production and which can be delivered without changing the original design or manufacturing environment.

b. Operator Control Position (OCP): The GFE workstation console with which the MCTS Operators monitor and communicate with mariners, and to which the Transmitter Equipment must be interfaced.

c. Maintenance Control Position (MCP): The GFE workstation console with which Technologists monitor and perform maintenance and repair functions on MCTS communication systems and equipment, and to which the Transmitter Equipment must be interfaced.

d. Communications Control System (CCS): The system that carries MCTS communications with mariners, and enables the control and readback of remote site equipment at the OCPs and MCPs.

e. The CCS Interface Test (CIT) is a test that is performed to demonstrate that the Transmitter Equipment operates fully with CCS communication control functions.

3 APPLICABLE DOCUMENTATION

3.1 The Contractor must use the following documents to stipulate the work to be performed.

3.1.1 NAVTEX Transmitter Equipment Replacements Statement of Work. GCDOCS Document No. 25589309 (English).

3.1.2 1kW NAVTEX Transmitter Technical Statement of Requirements, GCDOCS Document No. 28305016 (English).

3.1.3 Quality Management – 1) Guidelines for Configuration Management, ISO 10007:2017. **http://www.iso.org/standard/70400.html**. 2) Consensus Standard for Configuration Management, ANSI/EIA-649 c **http://standards.sae.org/eia649c/** 3) Test Equipment Calibration Requirements, ISO 9001:2008 c. 7.6 or ISO 9001:2015 c.7.1.5 **http://www.iso.org/standard/62085.html.**

4 DELIVERABLES

The Contractor must provide the following deliverables, as per the attached Deliverables List, Appendix B.

4.1 EQUIPMENT DELIVERY

4.1.1 Transmitter Equipment Delivery in General

4.1.1.1 The equipment provided by the Contractor must be Commercial-Off-The Shelf (COTS), field-proven Transmitter Equipment.

4.1.1.2 The Contractor must deliver Transmitter Equipment to the CCG Regional Workshops across Canada and the CCG College over an anticipated time period of not more than five (5) years.

4.1.1.3 Transmitter Equipment Delivery Locations.

REGION	Delivery Workshop
Atlantic Region	St. John's
	Dartmouth
Central Region	Québec City
Arctic Region	Iqaluit
Western Region	Richmond
CCG College	College
Spares	assorted locations

4.1.2 Transmitter Equipment Quantities

4.1.2.1 The Contractor must supply twenty four (24) NAVTEX transmitters, complete with all of the hardware and software specification(s)/version description document(s), factory and site acceptance test reports, installation instructions, service manuals, materials, and parts and assemblies necessary for installation, integration and operation.

4.1.2.2 The Contractor must supply twenty-one (21) NAVTEX AATUs complete with all of the hardware and software specification(s)/version description document(s), factory and site acceptance test reports, installation instructions, service manuals, materials, and parts and

assemblies necessary for installation, integration and operation.

4.1.3 Transmitter Equipment Maintenance, Sparing and Spares

4.1.3.1 The Contractor must provide a Recommended Spares Parts List (RSPL) in accordance with the Supply Plan, Appendix E.

4.1.3.2 The Contractor must supply Transmitter Equipment that is repairable by CCG staff using plug-in/modular assemblies and parts using common tools.

4.1.3.3 The Contractor must provide a system availability and equipment reliability analysis in accordance with DID SE-09 – *Reliability Data*, taking into consideration the configuration of the Transmitter Equipment within the NAVTEX Transmission System, including the NAVTEX Transmitter, AATU, and ancillary equipment provided by the Contractor.

4.1.3.4 The Contractor must provide a maintenance plan, national sparing strategy and spares list, based on projected equipment outages over a twenty (20) year operational life span taking into consideration the RSPL data elements, Supply Plan, Appendix E.

4.1.4 Preservation, Packaging, Packing, Marking

4.1.4.1 The Contractor must deliver all equipment according to the Supply Plan, Appendix E.

4.1.5 Asset Management System Data

4.1.5.1 The Contractor must supply the required information specified in the Supply Plan, Appendix E, in accordance with the following:

a. Data down to the Line-Replaceable Unit (LRU);

b. Data submitted in electronic format (Microsoft Excel®);

c. Data supplied using the conventions and standards for descriptions of the Asset Management System (AMS), in accordance with the Supply Plan, Appendix E.

4.2 INTEGRATION AND INSTALLATION

4.2.1 Integration with Existing Equipment

4.2.1.1 The Contractor must supply with the bid, COTS versions of all interface control documents, installation drawings and instructions, service manuals, materials, parts and assemblies necessary for equipment installation and interfacing.

4.2.2 Installations

4.2.2.1 The CCG will complete the equipment installations.

4.2.2.2 The Contractor must provide remote service support for equipment installations for all of the sites.

4.3 DOCUMENTATION AND DATA

4.3.1 General

4.3.1.1 The Contractor must provide all project and technical documentation as specified in this SOW.

4.3.1.2 The Contractor must provide all documentation in a format as outlined in *the Data and Documentation Formats*, Appendix C.

4.3.1.3 The Contractor must provide the documentation identified in the *Contract Data Requirements List* (CDRL), Appendix D, in accordance with the corresponding *Data Item Description* (DID), Appendix D.

4.3.1.4 The Contractor must submit documentation as a draft for review prior to submitting final documents, unless specified differently in the sections that follow.

4.3.1.5 The Contractor must submit electronically one (1) soft copy of all draft documents to CCG Headquarters, Appendix C.5.

4.3.1.6 The CCG will review all draft documentation after receipt from the Contractor and verify its contents, identifying errors and required changes.

4.3.1.7 The Contractor must submit electronically one (1) draft soft copy of all documentation in French after CCG has accepted the English versions, unless specified differently.

4.3.1.8 The CCG will review the French version and identify errors/changes.

4.3.1.9 The Contractor must provide one (1) final soft copy of all documentation in both English and French.

4.3.2 Configuration Management Plan

4.3.2.1 The Contractor must maintain a Configuration Management Plan (CMP) in accordance with DID CM-01 – *Configuration Management Plan*.

4.3.2.2 The Contractor must provide with the bid the CMP.

4.3.2.3 The Contractor must ensure that a Change Request(CR) is submitted and tracked to completion in accordance with DID CM-04 – *Change Request*.

4.3.2.4 In the event that there is concern with the wording of any contractual/project document, the Contractor must submit a request for clarification in accordance with DID CM-03 – *Request for Clarification*.

4.3.3 Project Progress Reports

4.3.3.1 The Contractor must provide the CCG PM with written Project Progress Reports (PPRs) in accordance with DID PM-02 – *Contractor Progress and Status Report* for each of the project progress meetings.

4.3.4 Technical Publications

4.3.4.1 The Contractor must provide with the bid the supplier's COTS technical publications required for the description and operation, including software user instructions, interface control documents, installation instruction drawings and instructions, troubleshooting, and maintenance and repair of the Transmitter Equipment including sub-systems, equipment manuals and systems manuals.

4.3.4.2 The Contractor must provide one (1) soft copy in either English/French with the bid the manufacturer's Transmitter Equipment interface control document in accordance with the TSOR Section 5.2.

4.3.4.3 The Contractor must provide a manual in accordance with DID TDM-08 – *Software User Manual* for the operational software and firmware used in the system including instructions for upgrading or installing patches.

4.3.4.4 The Contractor must provide a manual in accordance with DID TDM-07 – *Software Version Description Document* for the operational software and firmware used in the system for the control of the software and firmware versions.

4.3.4.5 The Contractor must provide an Equipment Manual in accordance with DID TDM-06 – *Equipment Manuals,* to be used by CCG Technical Services for the commissioning, preventive and corrective maintenance, firmware and software updates, version control, and quality assurance audits of new Transmitter Equipment installations.

4.3.4.6 The Contractor must provide a Systems Manual in accordance with DID TDM-05 – *Systems Manuals,* to be used by CCG Operations to provide a basic description of the functions of each sub-system, and identify and describe the controls that are used to control the operation of the Transmitter Equipment.

4.3.5 Training Plan

4.3.5.1 The Contractor must provide a Training Plan to train CCG technical staff to configure, maintain and repair the equipment to the LRU.

4.3.5.2 The Contractor must provide a draft Training Plan no later than twenty (20) days after the Project Kick-Off Meeting.

4.3.5.3 The Contractor must provide to the CCG the Training Plan draft, including outlines of the training courseware and instructor package in accordance with DID TT-03 – *Training Manuals* and the list of equipment required for training in accordance with DID TT-02 – *Training Devices Requirements List*.

4.3.5.4 Following approval by the CCG of the Training Plan, the Contractor must also:

a. Develop the final training courseware and instructor packages;

b. Supply Training Packages for each of the courses;

c. Provide draft Training Packages (in English and French) within forty (40) days of the Training Plan approval; and,

d. Provide one (1) hard copy of each of the CCG approved Training Packages to each student at the beginning of each course.

4.3.5.5 The Contractor must provide English and French training packages in accordance with the *Deliverables List*, Appendix B, and supply one (1) spare, for each of the training courses.

4.3.6 Training Course Material

4.3.6.1 The Contractor must provide Training documentation in accordance with DID TT-03 – *Training Manuals.*

4.3.6.2 The Training Packages must be approved by the CCG prior to the start of the first training course.

4.3.6.3 The Contractor must include/address the following objectives in the Training Package:

a. Basic use of the Transmitter Equipment
b. General Transmitter Theory
c. Operational use of the Transmitter Equipment
d. Description of purpose of software and services related to Transmitter Equipment functionalities and/or part of the Transmitter Equipment design, which functionalities of the Transmitter Equipment are provided by which software/services
e. Description and demonstration with exercise (hands-on) upon stop and start/restart of essential services (including Main & Backup and status indicators)
f. Procedures to upload/upgrade firmware/software in the Transmitter Equipment
g. Installation of the Transmitter Equipment
h. Calibration and performance optimization of the Transmitter Equipment
i. Maintenance of the Transmitter Equipment to the manufacturer's specifications
j. Troubleshoot and diagnose problems with the Transmitter Equipment:
    i. Diagnose equipment problems to the LRU
    ii. Remove and replace LRU with relevant spares
k. Use of remote capabilities for provisioning, monitoring, reporting and performing health and security status checks, diagnostics, version updates and resets.
l. Support roles and responsibilities, warranty process, LRU list, Return Material Authorization (RMA) procedure, support related information
m. Components remote monitoring functionalities
n. Monitoring of backup processes and restores

4.3.7 Test Plans and Procedures

4.3.7.1 The Contractor must develop Test Plans, in accordance with DID TE-02 – *Test Plan and Report*, which details the methodology for the equipment level FATs and SATs.

4.3.7.2 The Contractor must develop Test Procedures for the FAT and SATs in accordance with DID TE-03 – *Acceptance Test Procedures*.

4.3.7.3 The Test Procedures must be designed to demonstrate that the Transmitter Equipment meets or exceeds all requirements of the TSOR, and this SOW.

4.3.7.4 The FAT Configuration document and the FAT Test Plan and Procedures must be provided to the CCG for review as part of the FAT Readiness Review (FRR).

4.3.7.5 The SAT Test Plan and Procedures must be provided to the CCG for review prior to the first SAT.

4.3.8 Maintenance Plan

4.3.8.1 The Contractor must provide drafts of the Maintenance Plan in accordance with DID MM-04 – *Maintenance Plan*, DID MM-05 – *Preventative Maintenance Program* and DID MM-06 – *Calibration Requirements Report*, one (1) soft copy in English and French fifteen (15) days prior to the Spares Provisioning Meeting (SPM).

4.3.8.2 The Contractor must supply a Maintenance Plan that identifies all necessary corrective and preventive maintenance tasks based on the Contractor's Transmitter Equipment maintenance and repair procedures, and the Transmitter Equipment Mean Time Between Failures (MTBF) calculations and reliability records, as per the technical specifications.

4.3.8.3 The Maintenance Plan must be of sufficient detail to ensure that CCG-trained Technologists are able to troubleshoot, diagnose and replace any defective Transmitter Equipment, to the LRU level and restore the transmitter to its working condition.

4.3.8.4 The Maintenance Plan must identify the technical publications, spares, tools and special test equipment needed to perform the appropriate maintenance tasks in alignment with the Supply Plan, Appendix E.

4.3.8.5 The Maintenance Plan must include a section on sparing including equipment reliability and system availability analysis as specified in the TSOR in alignment with DID SE-09 – *Reliability Data* and Supply Plan, Appendix E.

4.4 PROJECT MANAGEMENT

4.4.1 General

4.4.1.1 The Contractor must utilize a formal organization of project management disciplines in accordance with Project Management Institute's Project Management Body of Knowledge (PMBOK®) Guide or equivalent practices, including methods and procedures for directing, coordinating and controlling all contract efforts necessary to produce, test, deliver and support

training and installation of the Transmitter Equipment, and to provide all other work, material, services and data as detailed in this SOW.

4.4.2 Project Meetings

4.4.2.1 The following meetings and reviews must be conducted by the Contractor:

a. Project Kick-Off Meeting;

b. Project Progress Review Meetings (PRM);

c. Spares Provisioning Meeting (SPM);

d. Factory Acceptance Test Readiness Review (FRR);

e. Factory Acceptance Test (FAT);

f. Training Readiness Review (TRR);

g. Site Acceptance Test Readiness Review (SRR); and

h. Final Project Review.

4.4.2.2 The Contractor must be responsible for the following in preparing for, and conduct of, these reviews and meetings:

a. Host and convene the reviews and meetings unless otherwise agreed by PSPC and the CCG;

b. Co-ordinate, with PSPC and the CCG, the agenda;

c. Ensure appropriate participation by Subcontractors, suppliers, and subject matter experts;

d. Organize and present briefings as necessary;

e. Provide appropriate facilities and administrative services;

f. Provide test data and analysis supporting the review;

g. Record, publish, and distribute minutes with Action Items and due dates documented in the reviews and meetings; and

h. Maintain files of records, Action Item database, and documentation from all reviews and meetings.

4.4.3 Project Kick-Off Meeting

4.4.3.1 A Project Kick-Off Meeting must take place between the Contractor, PSPC and the CCG within thirty (30) days after Contract Award at the mutual agreement of the Contractor and the CCG, to:

a. Introduce the CCG, PSPC and Contractor teams(including management and technical);

b. Review the work processes, the project schedule, milestones, and deliverables;

c. Discuss project risks and any other issues that may affect the project or equipment performance or delivery;

d. Clarify any outstanding questions related to the requirements, contract and Contractor's proposal;

e. Review the Contractor's configuration management plan and processes; and

f. Discuss any other business.

4.4.4 Project Progress Review Meetings

4.4.4.1 The Contractor must conduct monthly Project Progress Review Meetings (PRMs) with the CCG Project Team members to:

a. Review the work processes, the project schedule, milestones, and deliverables;

b. Discuss project risks and identify, explain and resolve any other issues that may affect the project or equipment performance or delivery.

4.4.5 Spares Provisioning Meeting

4.4.5.1 The Contractor must conduct a Spares Provisioning Meeting (SPM) to review the reliability and availability analysis, sparing strategy, maintenance plan and recommended spares.

4.4.5.2 Fifteen (15) days prior to this review, the Contractor must supply to the CCG one (1) electronic copy of all relevant materials, SPM Package - reliability and availability analysis, sparing strategy, maintenance plan and recommended spares in accordance with the TSOR, DID SE-09 – *Reliability Data* and Recommended Spare Parts List (RSPL) data elements, as in the Supply Plan, Appendix E.

4.4.6 Factory Acceptance Test Readiness Review

4.4.6.1 The Contractor must conduct a FAT Readiness Review (FRR) meeting within forty-five (45) days after Contract Kick-Off at the mutual agreement of the Contractor and the CCG.

4.4.6.2 Prior to this review, the Contractor must supply to the CCG one (1) soft copy of all relevant materials (FAT Test Plans and Procedures drafts) in English in accordance with DID TE-02 – *Test Plan and Report* and DID TE-03 – *Acceptance Test Procedures*, in French and English for the St. Lawrence sector, and in English for the remainder of the sites.

4.4.7 Training Readiness Review

4.4.7.1 The Contractor must conduct a Training Readiness Review (TRR) to ensure that all plans, materials, and resources are ready for training.

4.4.7.2 Prior to this review, the Contractor must supply to the CCG one (1) electronic copy of all relevant training materials (TRR Package) in accordance with DID TT-03 – *Training Manuals* and

DID TT-02 – *Training Devices Requirements List* for TRR preparation purposes.

4.4.8 Site Acceptance Test Readiness Reviews

4.4.8.1 The Contractor must conduct a SAT Readiness Review (SRR) prior to SAT to ensure that all plans, materials, equipment, installation and resources are ready for the SAT.

4.4.8.2 Prior to the reviews, the Contractor must provide SAT Test Plans and Procedures drafts in accordance with DID TE-02 – *Test Plan and Report*, and DID TE-03 – *Acceptance Test Procedures* in French and English for the St. Lawrence sector, and in English for the remainder of the sites.

4.4.9 Final Project Review

4.4.9.1 The Contractor must conduct a Final Project Review to address all remaining issues.

4.4.9.2 The Final Project Review must confirm that the following are complete:

a. All training is complete;

b. All installations are complete;

c. The SATs are complete and all tests results are accepted;

d. All documentation and deliverables have been delivered and accepted;

e. All outstanding project issues have been dealt with; and

f. All milestones are met including all scope changes.

4.5 TESTING, ACCEPTANCE AND CONFIGURATION MANAGEMENT

4.5.1 Testing General

4.5.1.1 The CCG reserves the right to waive the requirement for any test called up by the Contractor's Test Plan or to call up additional tests to demonstrate that the Transmitter Equipment is compliant with contract requirements.

4.5.1.2 The CCG or its representative, at its discretion, reserves the right to witness any or all tests.

4.5.2 Test Failures

4.5.2.1 The Contractor must be responsible for the resolution of all failures reported during all test phases, which include, but are not limited to, equipment repair or re-design necessary to correct the failures and perform partial or complete system re-tests subject to the CCG TA's discretion and approval.

4.5.3 Factory Acceptance Test

4.5.3.1 The Contractor must prove, through test and evaluation, that all Transmitter Equipment meets all requirements as defined in the TSOR, as follows:

a. The Contractor must provide a draft FAT Plan (DID TE-02 – *Test Plan and Report*) and Procedures (DID TE-03 – *Acceptance Test Procedures*), including FAT Configuration Document prior to the FRR.

b. The Contractor must develop a FAT Configuration Document to detail the configuration of the equipment that will be used during the FAT to execute the test plan and procedures.

c. The FAT Configuration Document must include software parameters used, a diagram of the transmitter equipment configuration and the list of assumptions made to simulate the GFE in the Contractor's environment.

d. The FAT Configuration Document must be referenced in the FAT plan and procedures and included as an appendix to the FAT Procedures.

e. The FAT Plan and Procedures must be approved by the CCG TA before any FAT is performed.

f. The FAT must be conducted at the Contractor's manufacturing facility with calibrated test equipment in accordance with ISO 9001:2015 or equivalent.

g. The Contractor must conduct a burn-in test of the electronics equipment as part of the FAT.

h. The burn-in test method must be 48 hours continuous, failure free, at a minimum elevated ambient temperature of +40° C, or 24 hours continuous, if the temperature is cycled from -10° C to +40° C, or only at the acceptance by CCG an equivalent burn-in test may be used. If an existing equivalent burn-in test is planned, the contractor must provide a detailed description of the planned burn-in test with the bid.

i. The Contractor must provide a FAT Report, in a format that correlates with the previously submitted detailed FAT Procedure(s) and clearly demonstrates how the equipment configurations have met the contract requirements.

j. The completed FAT Report must be approved before the equipment can be shipped to the CCG.

k. Configuration control process must be followed for the Transmitter Equipment that has completed FAT.

4.5.4 Site Acceptance Test

4.5.4.1 The Contractor must allow up to one (1) day for Site Acceptance Tests (SATs) at each of the following regional locations: Atlantic (North) – Cartwright (53° 42' 29" N, 57° 1' 17" W) ; Atlantic (South) – Port Caledonia (46°11'08" N, 59° 53' 37" W); Central – Moisie (50° 11'43"N, 66° 06' 40" W; Arctic – Iqaluit (63° 43' 51" N, 68° 32' 34" W); Western – Amphitrite Pt.

(48° 55’ 16” N, 125° 32’ 28” W)

4.5.4.2 The SAT must be conducted within five (5) working days after the equipment has been installed by CCG.

4.5.4.3 The Contractor must develop test methods and procedures in order to demonstrate that the Transmitter Equipment meets all of the operational and technical requirements in accordance with the Specifications, as follows:

a. The SAT procedure must include a set of operational tests that demonstrate to Operations that the Transmitter Equipment is service ready.

b. Each SAT must include operational and system verification locally at the remote equipment site and via CCS remote equipment control at the associated MCTS Centre.

c. The Contractor must provide a draft SAT Plan (DID TE-02 – *Test Plan and Report*) and Procedure (DID TE-03 – *Acceptance Test Procedures*) one (1) soft copy in English to the CCG TA within ten (10) working days after successful FAT.

d. The SAT Plan and Procedures must be accepted by the CCG TA and PM before any SAT is performed.

e. The Contractor must provide a SAT report for each of the five (5) installations/systems identified in section 4.2.4 within five (5) working days after the completion of each SAT.

f. The SAT report must contain the test conditions and results.

4.5.5 Configuration Management

4.5.5.1 The following must be implemented as part of the Contractor’s configuration management procedures:

a. The Contractor must maintain an established configuration management program in accordance with ISO 10007:2017, Quality Management – Guidelines for Configuration Management, or equivalent.

b. The Contractor must follow approved configuration control processes as per the Contractor’s configuration management program for any changes made to the hardware, firmware, software or supplied items that take place after final documentation has been accepted by CCG.

c. The Contractor must implement the configuration management plan of the Transmitter Equipment commencing with the successful completion and sign-off of the Factory Acceptance Test (FAT) and continue through-out the manufacturer’s product support life cycle.

d. The Contractor must notify the CCG PM of any changes to the CCG Transmitter Equipment baseline, (established during the initial FAT), in accordance with the contract Design Change/Deviation procedure DID CM-04 – *Change Requests*.

e. The Contractor must assume all costs associated with any modification to the Transmitter Equipment baseline that is required to ensure the Transmitter Equipment’s safety or fitness for intended use or rectify the Transmitter Equipment’s failure to perform

according to the Technical Specifications.

f. All Configuration Control Notices must identify all affected documentation.

g. A soft copy of all modified documentation must be distributed to the CCG PM in English and French where applicable.

4.6 TRAINING

4.6.1 Training Courses

4.6.1.1 The Contractor must provide course materials for the training of Technologists and CCG College Instructors.

4.6.1.2 The Contractor must prepare training materials and courseware that identifies all necessary data and procedures in sufficient detail for normal operation and maintenance of the Transmitter Equipment in accordance with DID TT-03 – *Training Manuals*.

4.6.1.3 The Contractor must assume that all CCG Maintenance Technologists: are graduate Electronic Technologists with backgrounds in electronics theory; have related field experience; and, possess comprehensive knowledge of the theories and principles of electronics, communication, informatics and basic electronic engineering techniques.

4.6.1.4 Technologists training must be instructor led training delivered by the Contractor.

4.6.1.5 The training must include nine (9) Technical courses conducted in English and two (2) Technical course conducted in French. These courses are summarized as follows:

a. Eleven (11) - Technical courses (estimated 11 courses x 1 business day duration)

   i. One (1) course in English, to be held at the CCG College.

   ii. Eight (8) courses in English, two (2) for each location at: Atlantic (North sector) – St. John's – Newfoundland; Atlantic (South sector) – Dartmouth – Nova Scotia; Central (Great Lakes sector) – Prescott – Ontario; and Western – Richmond – British Columbia.

   iii. Two (2) courses in French, to be held at Central (St. Lawrence sector) – Québec City – Québec.

4.6.1.6 Each of the Technical training courses must accommodate up to eight (8) students (Technologists and College Instructors).

4.6.1.7 The Contractor is responsible for providing the Transmitter Equipment to be used during the training courses.

4.6.1.8 The Contractor must ensure that at least one (1) Transmitter is available for each pair of students during the training.

4.7 WARRANTY

4.7.1 Warranty Repairs

4.7.1.1 The Contractor must provide an equipment warranty of at least one (1) year on all Transmitter Equipment procured under this contract starting after the successful completion of SAT as described in Section 4.5.4, and following the installation of equipment, which ever is later, for the remaining sites.

4.7.1.2 During the warranty period the Contractor must be responsible for the following:

a. Provide a single point of contact to handle all defective equipment returns;

b. Maintain a telephone support access line Monday-Friday (non-holiday) working hours (8:00 am to 5:00 pm Eastern Standard Time (EST)) for call-ups for Transmitter Equipment engineering support;

c. Maintain an established Transmitter Equipment repair facility(s) and technical support resources capable of supporting all equipment procured under this contract;

d. The Contractor must establish and provide the procedures for handling and returning defective Transmitter Equipment.

e. Provide software and firmware upgrades as they become available;

f. Provide for and communicate configuration control for any changes made to the hardware, firmware, software or supplied items and related documentation;

g. Return to the CCG originating location any repaired or replaced equipment within four (4) weeks of receipt, and include a detailed failure and repair report.

h. When requested by CCG, the Contractor must provide reports of all records for any delivered or repaired Transmitter Equipment.

4.7.2 Non-Warranty Repairs

4.7.2.1 If the repair or replacement of any piece of defective equipment returned by the CCG is not covered under warranty, the Contractor must obtain the authorization of the CCG or authorized representative and the PSPC CA before performing the repair or replacement.

4.7.2.2 Non-warranty equipment repair or replacement work must be requested using a PSPC-SPAC 572 – Task Authorization Form.

5 OPTIONAL ITEMS

5.1 The Contractor must provide the optional items identified below if ordered by CCG.

5.1.1 Optional Training

5.1.1.1 The Contractor must provide an option for Technical training in addition to the training specified in Section 4.6.

5.1.1.2 The additional training must include up to eight (8) Technical Courses conducted in English; and two (2) Technical Courses conducted in French. The Contractor will provide training within each of the sectors. These additional courses are summarized as follows

a. Ten (10) - Technical courses (estimated 10 courses x 1 business day duration)

   i. Eight (8) courses in English, two (2) for each location at Atlantic (North sector) – St. John's – Newfoundland; Atlantic (South sector) – Dartmouth – Nova Scotia; Arctic– Prescott – Ontario; and Western – Richmond – British Columbia.

   ii. Two (2) courses in French, to be held at Central (St. Lawrence sector) – Québec City – Quebec.

5.1.2 Optional Transmitter Equipment

5.1.2.1 The Contractor must provide an option for CCG to procure up to five (5) additional units inclusive of Transmitters and AATUs, if requested by CCG, complete with all instructions, materials, parts and assemblies, and applications necessary for its installation, optimization, SAT, operation and sparing as per the other sites and in accordance with the Supply Plan, Appendix E.

5.1.3 Optional CCS Integration Service Support

5.1.3.1 The Contractor must provide with the bid a per diem rate for CCS integration support.

5.1.3.2 The integration service support for the CCS interface development must consist of, but not be limited to the following:

a. Provide Transmitter Equipment interface and communication control specifications, and user guide to a CCG designated 3rd party CCS Interface Developer;

b. Respond to queries by the CCS Interface Developer to support interface development;

c. Prepare a test plan in coordination with the CCS Interface Developer and perform tests to demonstrate that the Transmitter Equipment operates fully with the CCS communication control functions prior to installation;

d. Conduct and prepare documentation in accordance with DID SE-10 –*Technical Review Preparation*;

e. During the CCS Interface Test (CIT) and the Site Acceptance Tests (SATs) at the MCTS and associated remotes sites, verify that the Transmitter Equipment is operating correctly with the CCS driver and control commands; and,

f. Prepare a test report identifying results and any issues raised during the tests.

5.1.4 Optional Warranty

5.1.4.1 In addition to the Warranty period specified in the Contract for each Transmitter Equipment unit, the Contractor must provide an option for nine (9) years of additional warranty with the same level of coverage as per Section 4.7 in one (1) year increments.

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APPENDIX A LIST OF ACRONYMS

AATU	Automatic antenna tuning units
AMS	Asset Management System
BIST	Built-In Self-Test
CA	Contract Authority
CCG	Canadian Coast Guard
CCS	Communications Control System
CDRL	Contract Data Requirements List
CD-ROM	Compact Disc, Read Only Memory
CIT	CCS Interface Test
CM	Configuration Management
CMP	Configuration Management Plan
COTS	Commercial-Off-The-Shelf
CSA	Canadian Standards Association
DFO	Department of Fisheries and Oceans
DID	Data Item Description
E&I	Electronics and Informatics
EMS	Environmental Management System
EST	Eastern Standard Time
FAT	Factory Acceptance Test
FRR	FAT Readiness Review
FY	Fiscal Year
GCDOCS	Government of Canada Documentation System
GFE	Government Furnished Equipment
GOC	Government of Canada
ITS	Integrated Technical Services
LCM	Life Cycle Manager
LLRU	Lower Line Replaceable Unit
LRU	Line Replaceable Unit
MCP	Maintenance Control Position
MCTS	Marine Communications and Traffic Services
MM	Maintenance Management
MMET	Marine Maintenance Equipment Training
MSDS	Material Safety Data Sheets
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair

NAVTEX	Navigational Telex
NSM	National Spares Management
NTP	Network Time Protocol
OCP	Operator Control Position
OEM	Original Equipment Manufacturer
OPI	Office of Primary Interest
PDF	Portable Document Format
PM	Project Manager
PMBOK®	Project Management Body of Knowledge Guide
PMP	Project Management Plan
PPR	Project Progress Report
PRINCE2®	Projects in a Controlled Environment
PRM	Progress Review Meeting
PSPC	Public Services and Procurement Canada
RMA	Return Material Authorization
RML	Recommended Material List
ROI	Return on Investment
RSPL	Recommended Spare Parts List
SAT	Site Acceptance Test
SE	Safety Engineering
SOR	Statement of Operational Requirements
SOW	Statement of Work
SPM	Spares Provisioning Meeting
SRCL	Security Requirements Check List
STTEL	Special Tools and Test Equipment List
TA	Technical Authority
TDM	Technical Data Management
TE	Test Engineering
TIFF	Tagged Image File Format
TRR	Training Readiness Review
TSOR	Technical Statement of Requirements
TT	Technical Training
TxE	Transmitter Equipment
WBS	Work Breakdown Structure

APPENDIX B DELIVERABLE LIST

Deliverables List for NAVTEX Transmitters:

Language Requirements	REGION	HEADQUARTERS	CCG COLLEGE	ATLANTIC REGION		CENTRAL REGION	ARCTIC REGION	WESTERN REGION
	SECTOR / DELIVERABLES	Canadian Coast Guard 200 Kent Street, 11th Floor Ottawa, ON K1A 0E6	Electronics and Informatics Technical Training 1190 Westmount Road Sydney, NS	Sector North Canadian Coast Guard c/o Technical Stores 280 Southside Road St. John's, NL A1C 5X1	Sector South Canadian Coast Guard Telecom Engineering Workshop 13 Akerly Blvd., Door 2 Dartmouth, NS B3B 1S6	St. Lawrence Garde Cotiere Canadienne 101 Blvd Champlain Quebec, QC G1K 7Y7	Arctic Canadian Coast Guard Integrated Technical Services P.O. Box 189 1063 Niuraivik Lane Iqaluit, Nunavit X0A 0H0	DFO Coast Guard Richmond Electronics Workshop 5980 No. 6 Road Richmond, BC V6V 1Z1
		QUANTITIES						
	EQUIPMENT							
	Operational Transmitters (Dual Redundant Config.) (NAVTEX)			4	4	2	2	4
	Training Transmitters		2					
	Test lab Transmitters					1		
	Transmitter National Spares (Estimated)			1	1	1	1	1
	Operational AATUs			4	4	1	1	3
	Training AATUs		2					
	Test lab AATUs					1		
	AATU National Spares (Estimated)			1	1	1	1	1
ENGLISH	**DOCUMENTATION* (S = SOFT COPY, H = HARD COPY)**							
	Monthly Project Progress Reports	Due at the end of each calendar month						
	Supplier COTS - as is technical documentation supplied with bid.							
	Drawings and Technical Data (NOTE 1)	S						
	Equipment Technical Publications (NOTE 2)	S						
	Operation Manuals	S						
	Equipment Manuals	S						
	Software User Manual	S						
	Equipment/System Interface Specifications and Communications Command Set	S						
	Equipment Installation Drawings and Instructions	S						
	Equipment Manual (Tailored for CCG)	S						
	Operation Manual (Tailored for CCG)	S						
	Software Documentation (Tailored for CCG)	S						
	Maintenance Plan	S						

Language Requirements	REGION	HEADQUARTERS	CCG COLLEGE	ATLANTIC REGION		CENTRAL REGION	ARCTIC REGION	WESTERN REGION
	SECTOR / DELIVERABLES	Canadian Coast Guard 200 Kent Street, 11th Floor Ottawa, ON K1A 0E6	Electronics and Informatics Technical Training 1190 Westmount Road Sydney, NS	Sector North Canadian Coast Guard c/o Technical Stores 280 Southside Road St. John's, NL A1C 5X1	Sector South Canadian Coast Guard Telecom Engineering Workshop 13 Akerly Blvd., Door 2 Dartmouth, NS B3B 1S6	St. Lawrence Garde Cotiere Canadienne 101 Blvd Champlain Quebec, QC G1K 7Y7	Arctic Canadian Coast Guard Integrated Technical Services P.O. Box 189 1063 Niuraivik Lane Iqaluit, Nunavit X0A 0H0	DFO Coast Guard Richmond Electronics Workshop 5980 No. 6 Road Richmond, BC V6V 1Z1
	Special Tools and Test Equipment (STTE)	S						
	Recommended Spares, Tools and Test Equipment List	S						
	FAT Plan and Procedures	S						
	Factory Acceptance Testing (FAT)	Conduct as per Section 4.5.3						
	First Article FAT	S						
	Factory Acceptance Reports	S for each unit						
	AMS (Complete MAXIMO Data List)		Electronic Data as per section 4.1.5					
	Training Plan	S	S					
	Training Package	S	S					
	Objectives	S	S					
	Course Syllabus	S	S					
	Training Aids	S	S					
	Instructor Manual	S	S					
	Technical Student Manual	S	S	S for each student	S for each student	S for each student	S for each student	S for each student
	Evaluation Guide	S	S					
	SAT Plans and Procedures	S per site X 5 sites		S	S	S	S	S
	Site Acceptance Test (SAT)	Conducted at identified Regional Installation Sites						
	SAT Results Reports							
	SAT #1	S		S				
	SAT #2	S			S			
	SAT #3	S					S	
	SAT #4	S						S
	SERVICES							
	Project Management	As per Section 4.4						
	Training	As per Section 4.6						
	Technical Training Course (Instructor Led)		1 for the College	2 for each regional Sector	2 for each regional Sector	2 for each regional Sector	2 for each regional Sector(Prescott)	2 for each regional Sector
	Installation Service Support	As per Section 4.2.2.2 - Estimated 20 days total						
	Warranty 1 year Including RMA costs	As per Section 4.7						
	OPTIONAL ITEMS							

	REGION	HEADQUARTERS	CCG COLLEGE	ATLANTIC REGION		CENTRAL REGION	ARCTIC REGION	WESTERN REGION
Language Requirements	SECTOR / DELIVERABLES	Canadian Coast Guard 200 Kent Street, 11th Floor Ottawa, ON K1A 0E6	Electronics and Informatics Technical Training 1190 Westmount Road Sydney, NS	Sector North Canadian Coast Guard c/o Technical Stores 280 Southside Road St. John's, NL A1C 5X1	Sector South Canadian Coast Guard Telecom Engineering Workshop 13 Akerly Blvd., Door 2 Dartmouth, NS B3B 1S6	St. Lawrence Garde Cotiere Canadienne 101 Blvd Champlain Quebec, QC G1K 7Y7	Arctic Canadian Coast Guard Integrated Technical Services P.O. Box 189 1063 Niuraivik Lane Iqaluit, Nunavit X0A 0H0	DFO Coast Guard Richmond Electronics Workshop 5980 No. 6 Road Richmond, BC V6V 1Z1
	Technical and Operational Training	As per Section 5.1.1						
	Transmitter Equipment	As per Section 5.1.2						
	CCS Integration Services Support	As per Section 5.1.3						
	Warranty 9 years – Including RMA costs	As per Section 5.1.4						
	NOTES							
	NOTE 1: Drawings and Technical Data includes but is not limited to: Equipment technical specifications, asset drawings, & Installation Drawings.							
	NOTE 2: Equipment Technical Publications includes but is not limited to: equipment description, installation instructions, operating instructions, preventative maintenance, corrective maintenance, illustrated parts list, software user instructions, & software maintenance manual.							
	* Unlimited Reproduction Licence for internal distribution only (E-version)							

Language Requirements	REGION	HEADQUARTERS	CCG COLLEGE	ATLANTIC REGION		CENTRAL REGION	ARCTIC REGION	WESTERN REGION
	SECTOR / DELIVERABLES	Canadian Coast Guard 200 Kent Street, 11th Floor Ottawa, ON K1A 0E6	Electronics and Informatics Technical Training 1190 Westmount Road Sydney, NS	Sector North Canadian Coast Guard c/o Technical Stores 280 Southside Road St. John's, NL A1C 5X1	Sector South Canadian Coast Guard Telecom Engineering Workshop 13 Akerly Blvd., Door 2 Dartmouth, NS B3B 1S6	St. Lawrence Garde Cotiere Canadienne 101 Blvd Champlain Quebec, QC G1K 7Y7	Arctic Canadian Coast Guard Integrated Technical Services P.O. Box 189 1063 Niuraivik Lane Iqaluit, Nunavit X0A 0H0	DFO Coast Guard Richmond Electronics Workshop 5980 No. 6 Road Richmond, BC V6V 1Z1
		QUANTITIES						
FRENCH	**DOCUMENTATION* (S = SOFT COPY, H = HARD COPY)**							
	Equipment Manual (Tailored for CCG)	S						
	Operation Manual (Tailored for CCG)	S						
	Software Documentation (Tailored for CCG)	S						
	Maintenance Plan	S						
	Special Tools and Test Equipment (STTE)	S						
	Recommended Spares, Tools and Test Equipment List	S						
	FAT Plan and Procedures	S						
	Factory Acceptance Testing (FAT)							
	Factory Acceptance Reports	S for each unit				S		
	Training Plan	S	S					
	Training Package	S	S					
	Technical Student Manual	S	S			S for each student		
	SAT Plans and Procedures	S				S		
	Site Acceptance Test (SAT)							
	SAT Results Reports							
	SAT #5	S per site				S		
	SERVICES							
	Technical Training	As per Section 4.6						
	Services Support	Estimated 20 days total as per Section 4.2.2						
	OPTIONAL ITEMS							
	Technical and Operational Training	As per Section 5.1.1						

Language Requirements	REGION	HEADQUARTERS	CCG COLLEGE	ATLANTIC REGION		CENTRAL REGION	ARCTIC REGION	WESTERN REGION
	SECTOR / DELIVERABLES			Sector North	Sector South	St. Lawrence	Arctic	
		Canadian Coast Guard 200 Kent Street, 11th Floor Ottawa, ON K1A 0E6	Electronics and Informatics Technical Training 1190 Westmount Road Sydney, NS	Canadian Coast Guard c/o Technical Stores 280 Southside Road St. John's, NL A1C 5X1	Canadian Coast Guard Telecom Engineering Workshop 13 Akerly Blvd., Door 2 Dartmouth, NS B3B 1S6	Garde Cotiere Canadienne 101 Blvd Champlain Quebec, QC G1K 7Y7	Canadian Coast Guard Integrated Technical Services P.O. Box 189 1063 Niuraivik Lane Iqaluit, Nunavit X0A 0H0	DFO Coast Guard Richmond Electronics Workshop 5980 No. 6 Road Richmond, BC V6V 1Z1
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APPENDIX C DATA & DOCUMENTATION FORMATS

C.1 LANGUAGE

All technical publications pertaining to the asset, its equipment and systems must be provided in English and in French, with the possible exception of Original Equipment Manufacturer (OEM) publications. The Contractor must be responsible for all required translation. The Contractor must certify that qualified personnel, other than the original translator, have checked the accuracy and adequacy of translation(s) attesting that the English and French publications are correct and consistent with the original so that they can be used to perform all functions described.

C.2 PUBLICATION ACCEPTANCE

The use of existing commercial publications and lists is acceptable providing they meet the requirements herein, and that the existing documents are complete and in evidence at the time of the contract signing. Existing publications and lists must be subject to review and acceptance by the TA. If a publications or list cannot be accepted for reasons of legibility, technical content or format, the Contractor will be required to resubmit hardcopy documentation sets with the necessary changes, or create additional documentation to be deemed acceptable.

C.3 DATA RIGHTS

The Government of Canada (GOC) must have unlimited rights to use, duplicate, translate, revise, disclose, produce and distribute additional copies (hard or digital formats), including over a network service, of any operational or technical data or documentation, in whole or in part, in any manner, and for any purpose whatsoever, as required, without any limitations or notice to the Contractor or any other relevant 3rd Party, provided the copies are used exclusively for CCG operations and support requirements.

C.4 ACCEPTANCE AND QUALITY ASSURANCE

C.4.1 In Process Reviews

All data deliverables will be reviewed for acceptance by the TA.

C.4.2 Quality Assurance

Acceptance of the data by the government will in no way relieve the Contractor of its responsibility for data quality, and the correction of data should deficiencies be detected within the warranty period.

C.5 MAIL DELIVERY

Deliverables must be forwarded to:

Canadian Coast Guard
200 Kent Street, 11th Floor,
Ottawa, Ontario
K1A OE6

Attention: CCG Project Manager – NAVTEX Transmitter Equipment Replacements Project

C.6 MEDIUM

The Contractor must submit data in soft copy form, and in the languages and quantities specified in the Deliverables List, Appendix B.

The Contractor must provide the soft copy in accordance with the following requirements.

C.6.1 Master Document Files

The Master Document files are the electronic master of the completed publication and lists. Master document files must be delivered in their native file format (e.g., Microsoft Word, Microsoft Excel, and Microsoft Project). All blank pages, figures, illustrations and foldouts must be imbedded within the file(s). These files are considered the "Master Document" files for present and future revision, changes and/or re-use. The Master Document files may be broken down into a number of folders and sub-files in order to ensure the file sizes can be managed on a normal office word processor. Files should be broken at logical page locations to ensure future ease of use. This would normally occur at the end of a part/chapter or section.

C.6.2 Master Image Files

All illustrations (Figures) must be delivered as separate individual Tagged Image File Format (TIFF) images. Files must be wholly raster (hybrid files must not be delivered).

Image sizes, as outlined in C.8.10, are provided as a guide and sizes may vary slightly but no more than plus or minus one inch (25 mm) in either width or length.

C.6.3 Master Read Only Files

Using the completed Master Document file(s), the Contractor must generate and provide a Portable Document Format (PDF) file that must contain the complete publication. This file(s) is considered the "Master Read Only" file for printing/reproduction/viewing purposes. All pages contained in the PDF file must be oriented such that they do not require rotation when viewing. This file must contain "thumbnails" of each of the pages. The Master Read Only File is not a replacement for the Master Document files or the Master Image files. The Contractor must ensure that a quality check is done on the Read Only (PDF) file to verify that the content reflects the same

content/formatting as the Master Document file and the reproducible copy. As a minimum, the Table of Contents must be hyperlinked to the applicable section, paragraph or subparagraph, as applicable. All PDF files must be searchable for content searches.

C.6.4 Metadata (Capture of Related Information)

Metadata (the data that describes data objects) must be provided for all publication and list deliverables. Sample Metadata record entries are shown in C.8.8 and C.8.11.

C.6.5 Media of Delivery

The media form for final delivery of electronic data (soft-copy) must be agreed to between CCG and the Contractor.

C.6.6 Format of Data

Each delivered technical document, diagram or parts list must have a corresponding Metadata database record. All records must be entered into a single Microsoft Excel workbook. Fields without corresponding information must remain blank. The Microsoft Excel database file must be named "CCG NAVTEX Transmitter documentation metadata.xlsx".

C.6.7 Index Fields for Document Data Records

Order	Field Name	Field Definition / Description	Example Entry
1	**File Name**	Name of electronic file - unique filename for uploading in database.	**MZ000235.PDF**
2	**Document No**	This field must contain the document number.	**MZ235**
3	**Page Number**	This field is used when documents have multiple Pages that are stored as separate files (e.g. multi-page illustrated parts list). Page number x of y. Enter the value of x.	**1**
4	**Number of Pages**	The total number of pages	**25**
5	**Revision**	Letter or number indicating the revision level. If there is no rev, indicate with dash ("-").	**B**
6	**Publication Date/Date of Issue**	This field is used to capture version information when version or revision identifiers are not recorded on the document (DD/MM/YYYY)	**22/02/2012**

7	**NSCM**	This field *must* contain the NATO Supply Code for Manufacturers (NSCM) of the Owner of the data. (Also known as FSCM, CAGE or NCAGE code.)	**36219**
8	**Data Rights**	The data rights as specified in the contract. "L" for “LIMITED” or “U" for "UNLIMITED”	**U**
9	**Document Name or Title (English)**	English Title of document.	**Transmitter Installation and Repair Manual**
10	**Document Name or Title (French)**	French Title of document	

C.6.8 Sample Record Entries

(The following table is shown on two lines to suit page width.)

Metadata (in database table)

FILE NAME	DOCUMENT NO	Page Number	Number of Pages	Revision	Publication Date/Date of Issue
MZ000235.PDF	MZ235	1	25	B	22/02/2012

NSCM	DATA RIGHTS	Document Name or Title (English)	Document Name or Title (French)
36219	U	Transmitter Installation and Repair Manual	

APPENDIX D CONTRACT DATA REQUIREMENTS LIST AND DATA ITEM DESCRIPTION DELIVERABLES

Contractor (after contract award):	**RFP/Contract:**	**Original/Amendment:** Original
CCG Project / Technical Authority:	**Asset:**	**Dated:**

DID #	Title	SOW Ref.	How Often	Lang	Submissions		R or I	Remarks
					Draft	Final		
Project Management								
PM-02	Contractor Progress and Status Report	4.3.3.1	M	Eng			I or R	Submitted five (5) days prior to Monthly Project Progress Review meeting
Technical Data Management								
As Is Format	Drawings and Associated Lists - Supplier COTS	4.3.4.1	Once	Eng	With bid			
As Is Format	Equipment Installation Data Package - Supplier COTS	4.3.4.1	Once	Eng	With bid			
As Is Format	System Manuals	4.3.4.1	Once	Eng	With bid			

	- Supplier COTS							
TDM-05	- CCG Tailored	4.3.4.6	Twice	B	TRR -15 days	Installation -30 days	R	
As Is Format	Equipment Manuals - Supplier COTS	4.3.4.1	Once	Eng	With bid			
TDM-06	- CCG Tailored	4.3.4.5	Twice	B	TRR -15 days	Installation -30 days	R	
As Is Format	Software Version Description Document - Supplier COTS	4.3.4.1	Once	Eng	With bid			
TDM-07	- CCG Tailored	4.3.4.4	Twice	B	TRR -15 days	TRR +15 days	R	
As Is Format	Software User Manual - Supplier COTS	4.3.4.1	Once	Eng	With bid			
TDM-08	- CCG Tailored	4.3.4.3	Twice	B	Eng at TRR -15 days	TRR +15 days	R	
Configuration Management								
CM-01	Configuration Management Plan	4.3.2.1	Twice	B	E with bid	Kick-Off +10 days	R or I	
CM-03	Request for Clarification	4.3.2.4	AR	Eng			R or	

							I	
CM-04	Change Request	4.3.2.3 4.5.5.1	AR	Eng			R or I	
Engineering								
SE-09	Reliability Data	4.1.3.3 4.3.8.5 4.4.5.2	Twice	B	SPM -15 days	SPM +15 days	R	Data set for each different system configuration.
SE-10	Technical Review Preparations	5.1.3.2	Once	B	TRR -15 days		R	
Test and Evaluation								
TE-02	Test Plan and Reports (FATs)	4.3.7.1 4.4.6.2 4.5.3.1 a.	Twice	Eng & Fre	FRR -15 days	FRR +15 days	R	FAT Test Reports are due Test +15 days, French for equipment going to St. Lawrence sector
	Test Plan and Reports (SATs)	4.3.7.1 4.4.8.2 4.5.4.3 c.	Twice	Eng & Fre	SRR – 15 days	SRR + 15 days	R	SATs Test Reports are due Test/ea. +15 days, French for St. Lawrence Sector
TE-03	Acceptance Test Procedures (FAT)	4.3.7.2 4.4.6.2 4.5.3.1 a.	Twice	Eng & Fre	FRR -15 days	FRR + 15 days	R	French for St. Lawrence Sector
	Acceptance Test Procedures (SAT)	4.3.7.2 4.4.8.2 4.5.4.3 c.	Twice	Eng & Fre	SRR – 15 days	SRR + 15 days	R	French for St. Lawrence Sector

Maintenance Management								
MM-04	Maintenance Plans	4.3.8.1	Twice	B	SPM -15 days	SPM + 15 days	R	
MM-05	Preventive Maintenance Program	4.3.8.1	Twice	B	SPM -15 days	SPM + 15 days	I or R	
MM-06	Calibration Requirements Report	4.3.8.1	Once	B	SPM -15 days		I or R	
Training								
TT-02	Training Devices Requirements List	4.3.5.3 4.4.7.2	Twice	B	TRR -15 days	TRR +40 days	R	
TT-03	Training Manuals	4.3.5.3 4.3.6.1 4.4.7.2 4.6.1.2	Thrice	B	Initial Draft TRR -15 days	Working copy TRR +40 days	R	3rd finalized version following first round of training in each sector.

A = Annually	COTS = Commercial Off-the-Shelf	M = Monthly
AR = As Required	FAT = Factory Acceptance Test	R = Review and Acceptance Required
B = Final version must be provided in both English and French language	FRR = FAT Readiness Review	SAT = Site Acceptance Test
	I = Submitted for Information	SRR = SAT Readiness Review
CA = Contract Award	Lang. = Language	SPM = Spares Provisioning Meeting
		TRR = Training Readiness Review

NOTE: Submission requirements in this table do not include the revised submissions that may be required after submissions have been reviewed.

PM-02 CONTRACTOR PROGRESS AND STATUS REPORT

DATA ITEM DESCRIPTION	
1. TITLE Contractor Progress and Status Report	**2. IDENTIFICATION NUMBER** PM-02

3. PURPOSE

To evaluate progress and remain cognizant of the project's status. This report must be used as an input to regular Project Progress Review meetings.

4. DATA PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive and, with prior written agreement from the CCG TA named in the Contract, may be tailored by the Contractor.

4.2 The resulting document may be prepared in a format acceptable to the CCG and must contain sufficient detail to fully address the information requirements. Any parts that are not relevant to the current reporting period may be left blank.

4.3 The report must include the following information:

4.3.1 Report Identification

4.3.1.1 Report title, sequence number, date, Contractor

4.3.2 Project Status

4.3.2.1 Period covered

4.3.2.2 Status with respect to schedule

4.3.2.3 Significant events during the reporting period

4.3.2.4 Reporting period Project Risk Update (attach current Risk Matrix)

4.3.3 Project Changes

4.3.3.1 Changes (if any) in project scope (since the previous report)

4.3.3.2 Authorized changes (if any) to agreed schedule, technical objectives or deliverables

4.3.3.3 Significant changes (if any) to the Contractor's organization or method of operation

DATA ITEM DESCRIPTION	
1. TITLE Contractor Progress and Status Report	**2. IDENTIFICATION NUMBER** PM-02

Note: Change Requests and status must be tracked in the Issue Log/Action Items List

4.3.4 Planned Next Period Activities

4.3.4.1 Plans for activities during the following period (review Master Schedule)

Note: If the Master Schedule has been amended since last report it must be attached to this report

4.3.5 Issue Log/Action Items List (Spreadsheet)

4.3.5.1 Significant problems encountered, including recommendations (if any) for CCG action

4.3.5.2 Status of previously identified problems (not previously reported resolved)

4.3.5.3 Any other action items arising from reviews, meetings, or correspondence between the CCG, CA, and the Contractor

4.3.5.3 Change Request Tracking

Note: This list must retain any closed items as an ongoing historical record. Action responsibility and due date are to be included as appropriate

TDM-05 SYSTEM MANUALS

DATA ITEM DESCRIPTION	
1. TITLE System Manuals	**2. IDENTIFICATION NUMBER** TDM-05

3. PURPOSE

To provide manuals at the system level that provides an overview, performance characteristics, and operations and maintenance instructions.

4. PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG TA named in the Contract, may be tailored by the Contractor.

4.2 The data submission may be prepared in the Contractor's format, and must contain sufficient detail to fully address the information requirements. The System Operations Manual and System Maintenance Manual may be included in a single publication.

4.3 The System Maintenance Manual must be augmented with OEM equipment manuals.

4.4 System Operations and System Maintenance Manuals must not be generic in nature, but be specifically written for the NAVTEX Equipment.

4.5 The System Manual must include the following information:

4.5.1 GENERAL INFORMATION

- **About This Manual**, including its purpose and structure.
- **System Overview**, including a description of the overall system with supporting diagrams.
- **Performance Characteristics**, including system capabilities and characteristics.

4.5.2 Provide a separate chapter for each system including:

- **System Description**. including narrative description, system block diagram, equipment breakdown structure, and supporting data (for example, line drawings, photographs, data tables, etc.),

DATA ITEM DESCRIPTION	
1. TITLE System Manuals	**2. IDENTIFICATION NUMBER** TDM-05

as well as the theory of operation for the system.

- **System Operation information** must be provided for each piece of equipment that requires MCTS Officer action.
- Describe control layouts and menus and how the performance can be changed and optimized through the use of operator controls and the actions to be taken when an error has been detected by the System or an operator.
- **System Maintenance information** must be provided for all equipment units and sub-systems and must, ***as a minimum***:

  a) Include equipment-level OEM manuals with direct reference to the applicable section. Conceptually the Maintenance Manual and OEM manuals are to be used in tandem with direct references from the Maintenance Manual;

  b) Describe the theory of operation of each type of equipment to the level needed for the maintenance and troubleshooting of the equipment by technical staff;

  c) Provide functional block diagrams, mechanical drawings, and electrical schematics;

  d) Include equipment rack layouts, system interconnect diagrams, wire lists and cable layouts;

  e) Contain maintenance instructions and fault diagnostic information, including:

     - Fault trees and diagnostic data, including possible malfunctions, causes, effects, fault isolation techniques and solutions.
     - Safety considerations.
     - Disassembling, repairing/replacing sub-assemblies and re-assembling the equipment.
     - Use of special tools and test equipment.
     - Preventive maintenance schedules.
     - Test and adjustment (including test sheets, as applicable).
     - Allowable service limits, wear limits for replacement, end play limits, balance data, torque values, cleaning information, etc.

  f) Include illustrated Parts List:

     - Line drawing of the system/equipment (schematic or exploded view), with parts assigned sequence numbers to provide a link to the parts list.

DATA ITEM DESCRIPTION	
1. TITLE System Manuals	**2. IDENTIFICATION NUMBER** TDM-05

- Indented parts list, identifying every component which may be replaced, in accordance with the planned depth of maintenance.

g) Describe how the performance of the equipment can be changed and optimized through the use of all controls and describe, in detail, the procedures for the maintenance and repair of the equipment; and

h) Include a section in which all changes to original equipment manufacturer manuals are identified and documented.

TDM-06 EQUIPMENT MANUALS

DATA ITEM DESCRIPTION	
1. TITLE Equipment Manuals	**2. IDENTIFICATION NUMBER** TDM-06
3. PURPOSE To provide system/equipment level operation, maintenance and repair instructions, and an illustrated parts list.	

4. PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG Technical Authority (TA) named in the Contract, may be tailored by the contractor.

4.2 The data submission may be prepared in the contractor's format, and must contain sufficient detail to fully address the information requirements.

4.3 The Original Equipment Manufacturer (OEM) Manual must be provided in electronic PDF form.

4.4 If the OEM Manual discusses several different models of equipment, then a Difference Data Sheet must be provided to help the user understand which instructions apply to the model provided to the CCG, or preferably, the OEM Manual must be edited so that it contains only relevant data.

4.5 The OEM Manual must include the following information:

- System/Equipment Data and Description
- Theory of Operation (supported by system block diagrams)
- Installation Instructions (if applicable)
- Operating Instructions
- Maintenance Instructions
  - Preventive maintenance schedules
  - Disassembling, repairing/replacing and re-assembling the equipment
  - Use of special tools and test equipment

DATA ITEM DESCRIPTION	
1. TITLE Equipment Manuals	**2. IDENTIFICATION NUMBER** TDM-06

- Test, adjustment, check-out data (including test sheets, as applicable)
- Allowable service limits, wear limits for replacement, end play limits, balance data, torque values, cleaning information, etc.

– Diagnostic Data

- Possible malfunctions, causes, affects, fault isolation techniques and solutions, electrical schematics

– Illustrated Parts List

- Line drawing of the system/equipment (schematic or exploded view), with parts assigned sequence numbers to provide a link to the parts list
- Indented parts list, identifying every component which may be replaced (in accordance with the planned depth of maintenance)

TDM-07 SOFTWARE VERSION DESCRIPTION DOCUMENT

DATA ITEM DESCRIPTION	
1. TITLE Software Version Description Document	**2. IDENTIFICATION NUMBER** TDM-07

3. PURPOSE

To describe the software installed initially and to enable the release, tracking and control of software upgrades over the asset life cycle. It also describes any site-specific variants of the software.

4. PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG Technical Authority (TA) named in the Contract, may be tailored by the contractor.

4.2 The data submission may be prepared in the contractor's format, and must contain sufficient detail to fully address the information requirements.

4.3 The Software Version Description Document must include the following information:

4.3.1 IDENTIFICATION

- **Software System Title and Version**
- **Variant ID** – If this is a variant (for example site specific), identify the software variant
- **Release Number or Block Change** – Identify the software release number (or block change)
- **Release Date**
- **Replaces** – Fully identify the software being replaced

4.3.2 APPLICABILITY – Identify the system to which the software version applies.

- **Applicable System**
- **Target Platform** – Identify the specific computing platform to which the relevant version (or block change) is applicable

4.3.3 VERSION DESCRIPTION

- **Inventory of Materials Released** – List all physical distribution media and

DATA ITEM DESCRIPTION	
1. TITLE Software Version Description Document	**2. IDENTIFICATION NUMBER** TDM-07

associated documentation for the software being released. Use titles, identifying numbers, dates, version numbers, and release numbers, as applicable. Indicate any applicable restrictions regarding licensing, duplication, and security considerations.

– **Inventory of Software Contents** – For each physical distribution medium, list the computer files contained thereon. Include the file names, versions, dates, and any other pertinent information.

– **Target Platform Configuration** – Specify the required configuration of the target platform before this software version can be installed and executed, or attach a hardware specification document

– **Adaptation Data** – For the initial software release, describe the site-specific data or customizations featured in this version of the software, corresponding to the target platform above. For subsequent releases, describe any changes to the site-specific data.

– **Installation and Check-out Instructions** – Give detailed instructions on:

- How to install this software release on the target platform
- Test procedure to ensure that the installed software is working properly
- Point-of-contact in case difficulties are encountered with the software installation
- Applicable security, privacy or safety precautions

– **Disposal Instructions** – If applicable, what to do with the previously released software version after this version has been successfully installed. (Include security considerations if applicable.)

– **Changes Installed** – If applicable, describe the changes, which have been implemented in the current software version, as compared to the previous one. This may include both enhancements as well as fault fixes. This paragraph is not applicable to the initial release of software.

– **Possible Problems and Known Errors** – Identify any possible problems or known errors in the software version including:

- How to avoid the relevant errors
- How to recognize and recover from the consequences of the errors
- What is being done to correct the problems permanently, and when a

DATA ITEM DESCRIPTION	
1. TITLE Software Version Description Document	**2. IDENTIFICATION NUMBER** TDM-07

resolution can be expected

– **Related Documents** – List any other documents, which are applicable to the software version being released, but which are physically not included in this release. Indicate the document titles, document numbers, version numbers, version dates, and publication source.

4.3.4 SUPPLEMENTARY NOTES – Any additional information about the software version, which may facilitate installer or user understanding (e.g. acronyms, definitions, background information, and rationale).

TDM-08 SOFTWARE USER MANUAL

DATA ITEM DESCRIPTION	
1. TITLE Software User Manual	**2. IDENTIFICATION NUMBER** TDM-08

3. PURPOSE

To explain how to install computer system software and to properly operate a software-based system.

4. PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG Technical Authority (TA) named in the Contract, may be tailored by the contractor.

4.2 The data submission may be prepared in the contractor's format, and must contain sufficient detail to fully address the information requirements.

4.3 The Software User Manual must include the following information:

4.3.1 **SYSTEM OVERVIEW** – Present a high-level overview of the system – its purpose, required hardware and software architecture.

4.3.2 **APPLICABLE DOCUMENTS** – List all applicable product support documents pertaining to the system.

4.3.3 **TARGET COMPUTER SYSTEM HARDWARE**

- **Hardware Overview** – Describe the target computer system hardware, including peripherals
- **Hardware Configuration** – Describe how the hardware should be configured for operation. Discuss the following topics:
- **Installation Requirements** – List the prerequisites such as physical installation space (e.g. 19" rack mount), electrical power type and capacity, air conditioning or special cooling provisions, etc.
- **Environmental Considerations** – Discuss any environmental conditions, which must be satisfied for the system to operate properly. Some examples are: office or computer room environment only, isolation from shock and vibration.
- **Nominal Configuration** – Describe the baseline system hardware configuration
- **Special Variants** – Describe any site or application-specific variants in hardware

DATA ITEM DESCRIPTION	
1. TITLE Software User Manual	**2. IDENTIFICATION NUMBER** TDM-08

configuration, which may have an impact on the system software

- **Hardware Operating Procedures** – Describe how the hardware should be properly operated.
- **Start-up** – Describe how to start up the system from a power-off state
- **Normal Operation** – Describe all of the routine operating procedures (e.g. Swap-out of storage media, sanitization of the system after use)
- **Forbidden Actions** – List and describe operator hardware-related actions, which can result in undesirable consequences such as computer hardware damage, loss of data, or improper operation of other equipment
- **Diagnostics** – Describe any automatic built-in test functions and user-initiated diagnostics
- **Shut-Down** – Describe how to properly shut down the system hardware
- **Emergency Procedures** – Describe any applicable emergency procedures

4.3.4 COMPUTER SYSTEM SOFTWARE

- **Software Overview** – Describe the architecture of the computer system software and explain the purpose and functionality of all of the elements.
- **Software Installation** – Describe how to install or reinstall the computer system software on the target computer addressing issues such as:
  - Hardware prerequisites – List the baseline hardware requirements that are prerequisites for the execution of the software
  - Software prerequisites – List any dependencies of the computer system software on other software. For example: the host platform's operating system (including version), embedded firmware, software tools such as a database management system, or terminal emulator software
  - Site Adaptations – Describe any computer system hardware variants and the corresponding site adaptations of the computer system software. Describe how the software must be configured to operate at these sites
  - Installation procedure – Describe the step-by-step procedure for the initial installation or reinstallation of the computer system software
  - Installation check-out – Describe how the user can ascertain whether the

DATA ITEM DESCRIPTION	
1. TITLE Software User Manual	**2. IDENTIFICATION NUMBER** TDM-08

installed computer system software is operating correctly on the target hardware

– **Software Operating Procedures – Describe how the software should be properly operated including:**

- Start-up – Describe how to initiate software execution
- Normal Operation – Describe all of the routine operating procedures (e.g. system initialization, operator task sequences, data back up and recovery, etc.). Show the relevant operator-machine interactions, data entry screens, hard and soft copy reports generated, etc.
- Shut-Down – Describe how to properly terminate software execution prior to powering off the computer system hardware
- Forbidden Actions – List and describe operator software-related actions, which can result in undesirable consequences such as computer hardware damage, loss of data, or improper operation of other equipment
- Back up and Recovery – Describe routine procedures to back-up system data, and in the event of data loss, how to recover and resume operations using the back up media
- Emergency Procedures – Describe any software-related procedures, which must be performed in case of specific emergencies.

– **Messages** – List and describe the meaning of all messages generated by the system software. This includes:

- Operating status messages
- Diagnostic messages
- Error messages

– **Quick Reference Guide** – Provide a succinct summary of operator software commands.

4.3.5 SECURITY AND PRIVACY – Identify any security or information privacy issues which may exist in the system, and describe how they should be addressed during system operation. This should include such things as user log-in procedures, user privileges, and physical security.

4.3.6 SUPPORT – Identify sources of support available to the system users in the event that they experience difficulties that are beyond their capabilities. The topics may include:

DATA ITEM DESCRIPTION	
1. TITLE Software User Manual	**2. IDENTIFICATION NUMBER** TDM-08

- **Hardware Support** – Indicate how to contact extended hardware support for problems, which are beyond the capabilities of local resources
- **Network Support** – For network-based systems, indicate how to contact communications network support for problems, which are beyond the capabilities of local resources
- **Software Support** – Indicate how to contact software support for problems, which are beyond the capabilities of local resources
- **Reporting Problems** – Describe the procedure for documenting and reporting system problems, and for suggesting system enhancements

CM-01 CONFIGURATION MANAGEMENT PLAN

DATA ITEM DESCRIPTION	
1. TITLE Configuration Management Plan	**2. IDENTIFICATION NUMBER** CM-01

3. PURPOSE

To describe the contractor's Configuration Management Program, which describes how the configuration baseline(s) will be documented and addresses both CCG directed and contractor initiated configuration changes.

4. DATA PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG Technical Authority (TA) named in the Contract, may be tailored by the contractor.

4.2 The resulting document may be prepared in the contractor's format and must contain sufficient detail to fully address the information requirements.

4.3 The Configuration Management Plan must include the following information:

4.3.1 **Introduction** – purpose, scope, related plans, standards, definitions, acronyms

4.3.2 **Organization and Management** – project CM organization, Configuration Manager, the contractor's Configuration Management Control Board

4.3.3 **Interfaces** – with other disciplines/functions, especially engineering, procurement, integrated logistic support, production/construction, tests and trials, quality assurance, planning and scheduling

4.3.4 **Flow Down of Configuration Management requirements** – to subcontractors and suppliers

4.3.5 **Conduct of Configuration Management:**

- Configuration Identification
- Configuration Identification Function
- Selection of Configuration Items
- Drawings and Parts List
- Master Equipment List

DATA ITEM DESCRIPTION	
1. TITLE Configuration Management Plan	**2. IDENTIFICATION NUMBER** CM-01

- System Block Diagrams
- Baseline Management
- Configuration Control
- Configuration Control Function
- Design Change Request Procedure
- Drawing Revision Notice Procedure
- Software Change Request Procedure
- Request for Variance Procedure
- Configuration Status Accounting
- Tracking Configuration Changes
- CSA Reports
- Configuration Audits
- Functional Configuration Audit
- Physical Configuration Audit

4.3.6 Transfer of Configuration Data to the CCG

CM-03 REQUEST FOR CLARIFICATION

DATA ITEM DESCRIPTION	
1. TITLE Request for Clarification	**2. IDENTIFICATION NUMBER** CM-03
3. PURPOSE To recommend clarification in the wording of project documentation including TSOR or SOW.	
4. DATA PREPARATION INSTRUCTIONS **4.1** The Request for Clarification may be prepared in the Contractor's format and must contain sufficient detail to fully address the following information requirements: **4.1.1** Identification of affected document **4.1.2** Identification of affected Configuration Item **4.1.3** Existing Wording **4.1.4** Proposed Wording **4.1.5** Reason For Change **4.1.6** Record of Decision (to be completed by the CCG)	

CM-04 CHANGE REQUEST

DATA ITEM DESCRIPTION	
1. TITLE Change Request	**2. IDENTIFICATION NUMBER** CM-04

3. PURPOSE

To seek a change to the TSOR, scope of deliverables, design change or any other significant change (e.g. a schedule change that impacts the overall project), which is typically desired by the Contractor.

4. DATA PREPARATION INSTRUCTIONS

4.1 The Change Request may be prepared in the Contractor's format.

4.2 The data provided in the Change Request must be adequate to establish that the contemplated change is justified, is a good technical solution to the problem being addressed, and that the risk, engineering, and logistic support implications have been adequately assessed.

4.3 Change Requests must include the following elements as applicable:

4.3.1 Project Title;

4.3.2 Requested By;

4.3.3 Date;

4.3.4 Change Title;

4.3.5 Description of the proposed change;

4.3.6 Justification for the proposed change;

4.3.7 Type of Change: Arising or New Work. Minor or Major;

4.3.8 Change Priority: (Medium/Low/High);

4.3.9 Cost to the CCG for the proposed change;

4.3.10 Impact(s) to:

- Project baseline;
- TSOR;
- System performance;

DATA ITEM DESCRIPTION	
1. TITLE Change Request	**2. IDENTIFICATION NUMBER** CM-04

- Schedule;
- Delivered equipment, software, documentation or training;
- Guarantees or warranties;

4.3.11 Signature and name of the Contractor's authorized official;

4.3.12 A block for the CCG TA to indicate recommendation or non-recommendation of the Change Request;

4.3.13 A block for the PSPC CA to indicate approval or disapproval of the Change Request; and

4.3.14 Supporting data necessary to understand and evaluate the complete scope of the change and its impact.

4.4 A block for Change Complete Certification (see note)

Note: If the Change Request is approved, then the Contractor will implement the change (normally on the basis of a contract amendment) and bring the technical data, Quality Management inspection requirements, test and trial requirements, and logistic support into line with the change. The Change Request form must include a section to confirm to the CCG that this has been accomplished. In addition the PMP and Master Schedule must be amended as required within five (5) days.

SE-09 RELIABILITY DATA

DATA ITEM DESCRIPTION	
1. TITLE Reliability Data	**2. IDENTIFICATION NUMBER** SE-09
3. PURPOSE To describe the Contractor's approach to achieving TSOR requirements and ensuring adequate asset reliability and availability.	

4. DATA PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG TA, may be tailored by the Contractor.

4.2 The data submission may be prepared in Contractor's format, and must contain sufficient detail to fully address the information requirements.

4.3 The Reliability Data must include the following information:

4.3.1 **General Guidance**

4.3.1.1 The reliability analysis must be to the module level, showing how the System Availability and Mean-time-between-Failures is derived.

4.3.1.2 A detailed availability and reliability model must be developed for the complete System including the remote site sub-systems.

4.3.1.3 The model must identify critical items or paths whose failure will cause System or sub-system failure, major performance degradation or marginal operation.

4.3.1.4 The model must be included in the availability and reliability predictions.

4.3.1.5 The Mean-time-between-Failures and the Mean-time-to-Repair for each module in the System must be presented with the analysis.

4.3.1.6 Reliability and Maintainability Data must be provided.

4.3.1.7 Design Implications of the CCG-provided Data.

4.3.1.8 This will include gathering and Assessment of Sub-Contractor /

DATA ITEM DESCRIPTION	
1. TITLE Reliability Data	**2. IDENTIFICATION NUMBER** SE-09
Supplier R&M Data.	

SE-10 TECHNICAL REVIEW PREPARATIONS

DATA ITEM DESCRIPTION	
1. TITLE Technical Review Preparations	**2. IDENTIFICATION NUMBER** SE-10

3. PURPOSE

To plan for technical reviews, provide the technical data required for each review, and document the reviews.

4. DATA PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG Technical Authority (TA) named in the Contract, may be tailored by the contractor.

4.2 Each data submission may be prepared in contractor's format, and must contain sufficient detail to fully address the information requirements.

4.3 The required information may be delivered progressively:

- The 'Technical Review Plan and Arrangements' is required with the first submission
- The 'Technical Review Preparations' is required at least one month prior to each review
- The 'Technical Review Data Package" is required at least two weeks prior to each review
- The 'Technical Review Minutes' must be prepared during the Technical Review

4.4 The Technical Review Preparations, Data and Minutes submissions must include the following information:

4.4.1 Technical Review Plan and Arrangements

4.4.1.1 Project Phases, Baselines and Technical Reviews

4.4.1.2 Technical Review Schedule

4.4.1.3 Location of Each Technical Review

4.4.1.3 Overview of Technical Review Roles and Responsibilities

4.4.2 Technical Review Preparations – provide the required information for each

DATA ITEM DESCRIPTION	
1. TITLE Technical Review Preparations	**2. IDENTIFICATION NUMBER** SE-10

Technical Review

4.4.2.1 Technical Review Objective

4.4.2.2 Technical Review Pre-requisites – what work must have been accomplished prior to the review

4.4.2.3 Technical Documents to be Reviewed – list of documents and whether outline, draft or final

4.4.2.4 Organizations and Individuals Involved in the Review – and their specific review responsibilities

4.4.2.5 Detailed Arrangements – transportation, accommodation, conference room booking, equipment displays, access to work site

4.4.3 Technical Review Data Package

4.4.3.1 Status of Action Items from Previous Reviews – applicable from the 2nd review onwards

4.4.3.2 Presentation Material – including status of primary technical objectives

4.4.3.3 Configuration Status – list of active Design Change Requests, Drawing Revision Notices and Requests for Variance

4.4.3.4 Technical Documentation – a copy of each document (not previously delivered) needed to show that the objectives of the completed phase of work have been accomplished

4.4.4 Technical Review Minutes

Note: The minutes must be prepared by the Contractor, signed by both the Contractor and the CCG Technical Authority, and provided to participants at the conclusion of the Technical Review

4.4.4.1 Technical Review Conclusions

4.4.4.2 Action Items – and assigned responsibility and due date

4.4.4.3 Technical Review Status – acceptance, conditional acceptance, rejection

TE-02 TEST PLAN AND REPORT

DATA ITEM DESCRIPTION	
1. TITLE Test Plan and Report	**2. IDENTIFICATION NUMBER** TE-02
3. PURPOSE To provide a plan for system testing.	

4. DATA PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG TA named in the Contract, may be tailored by the Contractor.

4.2 The data submission may be prepared in Contractor's format, and must contain sufficient detail to fully address the information requirements.

4.3 The Test Plan must include, but not be limited to, the following information:

4.3.1 Introduction, including purpose, scope, references, definitions, and acronyms.

4.3.2 Organization and Management

4.3.2.1 Organization, including key personnel.

4.3.2.2 Terms of Reference, including responsibilities for preparation, internal/external test permissions, development of acceptance tests, conduct of the tests, witnessing, report preparation, and results follow-up.

4.3.2.3 Methodology for the equipment and system level FATs and SATs.

4.3.3 Test Report

4.3.3.1 The report must include a complete overview of the results covering ***as a minimum***:

4.3.3.2 Problems Encountered, including problems and action taken

4.3.3.3 Test Results, including details of all of the test data and summary of the data reduction and analysis. Reference in this section can be made to attached annexes (which must include

DATA ITEM DESCRIPTION	
1. TITLE Test Plan and Report	**2. IDENTIFICATION NUMBER** TE-02
TE-03). 4.3.3.4 Conclusions, including: • Identify the pass/fail result and provide a brief analysis of the test results in narrative form; and • Identify the action plan to resolve any outstanding issues.	

TE-03 ACCEPTANCE TEST PROCEDURES

DATA ITEM DESCRIPTION	
1. TITLE Acceptance Test Procedures	**2. IDENTIFICATION NUMBER** TE-03

3. PURPOSE

To provide the procedures to be followed for the Factory Acceptance Test and Site Acceptance Test.

4. DATA PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive and, with prior written agreement from the CCG TA named in the Contract, may be tailored by the Contractor.

4.2 The data submission may be prepared in Contractor's format, and must contain sufficient detail to fully address the information requirements. The Tests must capture all requirements in the TSOR and SOW, and must provide the appropriate contract reference (see example Test Sheet below)

4.3 The Test Procedure must include the following information as applicable:

4.3.1 Test Purpose

- Asset / item to be tested
- Test objective
- Test witnessing
- Schedule of Events

4.3.2 Testing Conditions

- Test Facility
- Environmental Conditions
- Test Equipment, Recording Equipment
- Set-up, Calibration, Pre-test Checks
- Operating Conditions of Test Item
- Safety Precautions and Warnings

4.3.3 Test Procedure

- Description of requirement to be tested;
- Reference to the section(s) in TSOR, SOW and/or other applicable

DATA ITEM DESCRIPTION	
1. TITLE Acceptance Test Procedures	**2. IDENTIFICATION NUMBER** TE-03

documents;

- Test Configuration;
- Test method to be used to test the requirement;
- Expected result;
- Obtained result; and
- Pass/Fail Condition(s).

4.3.4 Recording and Reporting

- Format for Recording Test Results (see example Test Sheet below)
- Data Collection and Analysis
- Quality Assurance Certification

4.3.5 Signature of Participating Organizations on Test Results

4.7.3 TE-03 Example Test Sheet

Test #	Ref	Aim/Description	VM	Procedure/Pass-Fail Criteria	Result	Init
1	T 3.1.6.2.1	All the transmitters must be configured such that in the event of a failure of any one transmitter, the standby transmitter can take the place of the failed unit.	D	Step: Two transmitters transmitting, introduce fault into one Expected result: the warm-standby transmitter is immediately available	P/F	

Test Completion Signatures	
CCG Signatory Name: Signature: Date:	**Contractor Engineering Signatory** Name: Signature: Date:

Verification Method (VM): I – Inspection, D – Demonstration, A – Analysis, T – Test

Reference: T – TSOR, S – Statement of Work

MM-04 MAINTENANCE PLANS

DATA ITEM DESCRIPTION	
1. TITLE Maintenance Plans	**2. IDENTIFICATION NUMBER** MM-04

3. PURPOSE

To provide a complete set of maintenance plans that identify the required maintenance tasks, indicate organizational responsibility for the tasks, and identify the logistics support resources needed to perform the tasks.

4. DATA PREPARATION INSTRUCTIONS

4.1 The data submission may be prepared in contractor's format, and must contain sufficient detail to fully address the information requirements

4.2 The submission must include a maintenance plan for each system/equipment. These must be consolidated into one document.

4.3 **Asset Breakdown Structure** – The Maintenance Plan must include the Asset Breakdown Structure (in a separate section), which will be used to index/number the individual maintenance task data sheets.

4.4 **Technical Data** – It must also include a section listing all manuals, drawings, regulations and other technical data used in the development of the maintenance plans.

4.5 **Maintenance Tasks** – The Maintenance Plan must include a section presenting maintenance task data sheets that contain the following information for each maintenance task:

- Task identification
- Task organizational responsibility
- Task origin
- Task interval or frequency
- Reference technical documents
- Task precautions and comments
- Instructions in manuals (if applicable)
- Safety considerations

DATA ITEM DESCRIPTION	
1. TITLE Maintenance Plans	**2. IDENTIFICATION NUMBER** MM-04

– Job plan steps

– Work allocation – occupations and estimated hours

– Material Safety Data Sheet – if any applicable to task

– Required maintenance resources – material, parts, tools and test equipment

4.6 **Parts Summary** – The required spares and repair parts needed for each task must be aggregated and rationalized and presented in a Parts Summary Report. This report must relate the parts requirements to the equipment and maintenance task(s) being supported.

4.7 **Material Summary** – The required material (lubricants, glues, paints, etc.) needed for each task must be aggregated and rationalized and presented in a Material Summary Report. This report must relate the material requirements to the equipment and maintenance task(s) being supported.

4.8 **Tools and Test Equipment Summary** – The required tools and test equipment needed for each task must be aggregated and rationalized and presented in a Parts Summary Report. This report must relate the tools and test equipment to the equipment and maintenance task(s) being supported.

MM-05 PREVENTIVE MAINTENANCE PROGRAM

DATA ITEM DESCRIPTION

1. TITLE	2. IDENTIFICATION NUMBER
Preventive Maintenance Program	MM-05

3. PURPOSE

To provide a complete list of preventive maintenance tasks organized in various ways that will be helpful during the in-service phase in scheduling the work.

4. DATA PREPARATION INSTRUCTIONS

4.1 The data submission may be prepared in contractor's format, and must contain sufficient detail to fully address the information requirements

4.2 The submission must identify the required preventive maintenance for each system/equipment. The data must be consolidated into one document.

4.3 The timing of the preventive maintenance tasks must be as expressed in the maintenance plans.

4.4 The data must be grouped into tables listing routine, calendar based and operating hour based tasks. An example breakout is shown below. Each interval within a category will be a column in its respective table.

Scheduled Task	Interval
Routine Technologist Tasks	Daily or Weekly
Monthly Preventive Maintenance Tasks	e.g. 1, 3, 4, 6, 12, 18, 24, 36, 48 or 60 months
Usage-Based Preventive Maintenance Tasks	e.g. 100, 200, 250, 400, 500, 800, 1000, 2000, 3000, 4000, 5000 or 6000 hours

4.5 The data must also be organized by the Asset Structure, so that the required preventive maintenance for any system/equipment can be easily determined.

MM-06 CALIBRATION REQUIREMENTS REPORT

DATA ITEM DESCRIPTION	
1. TITLE Calibration Requirements Report	**2. IDENTIFICATION NUMBER** MM-06

3. PURPOSE

To identify special tools and test equipment that require calibration and to specify the calibration requirement.

4. DATA PREPARATION INSTRUCTIONS

4.1 The data submission may be prepared in contractor's format, and must contain sufficient detail to fully address the information requirements

4.2 The Calibration Requirements Report must provide the following information for each item requiring calibration.

- Item Sequence Number
- Item Description
- Manufacturer
- Manufacturer's Part Number
- CAGE Code (Manufacturer) – see 4.3
- Calibration Interval (months)
- Calibration Procedure (attach if necessary)
- Calibration Standard (the standard against which the item must be calibrated)

4.3 **Company Contact Data** – If the plant where the item is made does not have a CAGE code, then provide the company address, telephone number and email address in a separate Manufacturer Contact Data list.

Note: The CAGE Code is known by several acronyms: CAGE, NCAGE, FSCM, NSCM

TT-02 TRAINING DEVICES REQUIREMENTS LIST

DATA ITEM DESCRIPTION	
1. TITLE Training Devices Requirements List	**2. IDENTIFICATION NUMBER** TT-02
3. PURPOSE To provide a list of training devices needed to conduct training.	

4. DATA PREPARATION INSTRUCTIONS

4.1 The data submission may be prepared in contractor's format, and must contain sufficient detail to fully address the information requirements

4.2 A separate Training Devices Requirements List (TDRL) must be prepared for each course.

4.3 **Item Data** – The TDRL must provide the following data for each recommended item:

- Item Sequence Number
- Item Description
- Manufacturer
- Manufacturer's Part Number
- CAGE Code (Manufacturer) – see 4.4
- NATO Stock Number (if assigned)
- Local Commercial Purchase (Y/N) – see 4.5
- Unit Price – see 4.6
- Recommended Buy Quantity

4.4 **Manufacturer Contact Data** – If the plant where the item is made does not have a CAGE code, then provide the manufacturer's address, telephone number and e-mail address in an associated Manufacturer Contact Data list.

Note: The CAGE Code is known by several acronyms: CAGE, NCAGE, FSCM, NSCM.

4.5 **Local Commercial Purchase** – If the item is best obtained through Local Commercial Purchase then indicate yes (Y) in the indicated data field, and leave the Manufacturer and CAGE Code fields blank.

4.6 **Unit Price** – is the price in effect when the TDRL was submitted, consistent with the Recommended Buy Quantity. This data will be used for budgeting and inventory management purposes. It is understood that a future price quote for the item will reflect

circumstances at the time.

TT-03 TRAINING MANUALS

DATA ITEM DESCRIPTION	
1. TITLE Training Manuals	**2. IDENTIFICATION NUMBER** TT-03

3. PURPOSE

To provide manuals to be used in training the CCG personnel. These include student manuals and instructor manuals.

4. PREPARATION INSTRUCTIONS

4.1 This DID is not meant to be restrictive, and with prior written agreement from the CCG TA named in the Contract, may be tailored by the Contractor.

4.2 The data submission may be prepared in the Contractor's format, and must contain sufficient detail to fully address the information requirements.

4.3 The Technical Student Manual must, ***as a minimum***, include the following information:

a) Theory of operation of overall system and all sub-systems;

b) Installation of the system;

c) Fault locating and diagnostic techniques, both remotely and locally, using fault trees, built-in testing features and/or the use of external test and measurement equipment;

d) Removal and replacement any LRUs with relevant spares;

e) Complete assembly and disassembly procedures applicable to level of maintenance, including any adjustments or set-up procedures required to establish full operational performance of the equipment;

f) Optimization of the Transmitter System, including remote transmitter site optimization;

g) Remote provisioning, monitoring, technical parameter performance checks and reports, version updates, resets;

h) All Preventive/Periodic Maintenance routines, such as cleaning, health testing or component replacement such as filters or batteries;

i) Procedures to back-up and restore the Transmitter Equipment software using external non-volatile storage media, including saved presets and configuration data; and

j) Procedures to load and configure new updates to the Transmitter Equipment software and firmware.

4.4 The Operational Student Manual must, ***as a minimum***, include the following information:

a) The purpose, functions and capabilities of each device and sub-system comprising the overall system;

b) The ability to demonstrate the correct operation of each system function;

c) The ability to recognize equipment faults and take appropriate action to protect the equipment involved and to reconfigure remaining equipment to minimize the effect on overall System availability; and

d) A quick reference fault finding check list must be provided as part of the training package.

4.4.1 The operational controls and functions which should be emphasized in the course include the Workstation display, menus, graphics, controls, alarms, as well as information logging, storage, retrieval, processing and printing.

4.5 **Training Documentation**: A standardized approach for the development of key training documentation to support formal technical training is essential to ensure effective and efficient Technical Training Management. Key documents required to conduct formal training are outlined below.

4.5.1 Training Objectives: set tasks in context and describe learning outcomes in observable and measurable terms. It is a behavioural statement of the task to be performed in the operational environment, the standard or performance desired, and the constraints or conditions under which the student is expected to complete the activity. Each training objective should include the following components:

a) The skill or activity to be learned;

b) The constraints or conditions under which the learner is expected to complete the activity;

c) The standard or performance desired; and

d) Related references.

4.5.1.1 Training Objectives are further broken down into terminal and enabling objectives:

a) **Terminal Objectives**, the action, knowledge, or skills the learner is expected to have acquired at the end of instruction;

b) **Enabling Objectives**, the experiences, ways and means of achieving the Terminal Objective.

4.5.2 **Course Syllabus**: an outline or summary of the details of a course for

students including training objectives, target and enabling objectives, course duration, language of training, course schedule, classroom facilities, course material and student evaluation. A course syllabus should be divided into three parts:

4.5.2.1 Task Analysis. A list of all duties and tasks that make up the training requirement.

4.5.2.2 Course Information, including the following:

a) General information;
b) Scope of training;
c) Course management;
d) Prerequisites;
e) Student evaluations;
f) Course reports; and
g) Training objectives.

4.5.2.3 Course Training Plan, identifying the following for each terminal objective:

a) Enabling objective;
b) Level of learning – knowledge and skill;
c) Time required for each enabling objective;
d) Points to be covered for each enabling objective;
e) Type of training – knowledge or skill;
f) Required training aids and references; and
g) Evaluation process.

4.5.3 Lesson Plans: the development and use of a lesson plan will assist the instructor in providing an effective learning experience. The lesson plan ensures that the instructor follows a specific, training objective plan. Each lesson will begin on a new page and follow the same format:

a) Lesson number and title;
b) Date prepared;
c) Total training time;
d) Methodology;
e) Terminal and enabling objectives;
f) Relevance;

g) Aim;
h) Lesson content;
i) Equipment and training aids; and
j) References.

4.5.4 **Training Aids**: provide a list of all training equipment that must be supplied to support the training, including reference material, training simulators, training systems or test equipment. These aids also include the installation, maintenance, and training plan for the equipment. Training aids and equipment for the entire course (and where they can be found) are the following:

a) Projectors;
b) Videos;
c) Block diagrams;
d) Flipcharts;
e) Whiteboards;
f) Simulators;
g) Tools;
h) Computers;
i) Test equipment; and
j) Laboratory or workshop equipment

4.5.5 **Instructor Manual:** provides the instructor all the information required to teach the course, including general course information, lesson plans, a description of training aids, a student manual and an evaluation guide. The Instructor Manual ***should*** contain three sections:

4.5.5.1 General Information:

a) Title;
b) Description;
c) Duration;
d) Target group;
e) Number of students;
f) Prerequisite knowledge;
g) Instructor requirements;
h) Course location;

i) Student evaluations; and

j) Course reporting.

4.5.5.2 Master Lesson Plans divided into a series of lessons, each of which will begin on a new page and will follow the same format:

a) Lesson number, title and date prepared;

b) Total training time;

c) Methodology;

d) Terminal and enabling objectives;

e) Relevance;

f) Aim;

g) Lesson content;

h) Equipment and training aids; and

i) References.

4.5.6 Student Manual: provides the student with all the information required for the course, including general course information, lesson plans, and evaluation guides. The student manual will include the following sections:

4.5.6.1 Administration

a) Course information;

b) Course timetable;

c) Course materials; and

d) Course objectives.

4.5.6.2 Equipment safety procedures

4.5.6.3 Lesson Plans (same format as instructor manual)

4.5.6.5 References

4.5.7 Evaluation Guide: explains the testing process used for the course. The evaluation guide will contain the evaluation methodology and the tests and evaluations for the course, including:

a) Blank student copy; and

b) Instructor's copy with the correct answers.

APPENDIX E SUPPLY PLAN

E.1 PACKAGING AND PRESERVATION

E.1.1 All spares and repair parts supplied by Contractor must be packaged and clearly marked and identified with manufacturer's name, item name and description, and part number on the package. Spare parts required for specific equipment or assemblies must be kitted, separately packaged, and identified accordingly.

E.1.2 The Contractor must be responsible (if applicable) for proper preservation and packaging of the parts for long-term storage by ensuring they are coated with an approved preservative and sealed in an approved wrapping or pack as determined by the equipment or item manufacturer. Suitable boxes may be used to package an item in accordance with standard commercial practice; however, if a box is used, each one must contain a non-fading content list that must be protected against damage and staining. Spare parts weighing in excess of 20 kgs must be packed in wooden crates with lifting handles.

E.1.3 In determining packaging the Contractor must take into consideration the nature of the item, known logistics requirements, and quantity. The selection of packaging materials must include consideration of disposability, reuse, recycling, and conservation. The Contractor must also outline all special storage requirements, conditions and maintenance that may apply to spares and repair parts while in storage.

E.1.4 The Contractor must provide reusable packaging containers for materiel that will be routinely returned for rebuilding or servicing.

E.1.5 The Contractor must package and mark hazardous materials in accordance with applicable Federal, Provincial and international regulations.

E.1.6 The Contractor must provide packaging that is designed to withstand logistics conditions and is of quality to ensure the protection and preservation for the safe delivery of the item to its destination. Safe delivery must be deemed to mean no damage to the contents of the package.

E.1.7 The Contractor must provide a Packing List that clearly identifies the contents of each shipment including the applicable Contract or Purchase Order number.

E.2 CATALOGING AND PROVISIONING DATA

E.2.1 All information associated with the RSPL, STTEL and RML must be submitted and formatted in accordance with the corresponding Cataloguing & Provisioning Data Template field headers are described as follows:

New Assets and Materiel - Cataloguing & Provisioning Data Template

*Note: Minimum data fields required from Contractor are marked with an Asterix.

- Recommended Spares
    - CATALOGUING / MATERIEL IDENTIFICATION DATA

- Unique Line Item
- NATO Stock Number (13 Digit)
- UNSPSC Code
- *MFG. Name
- *MFG. Part Number
- MFG. Model Number
- *MFG. Part Name (Short Description)
- MFG. Part Name (Long Description)
- *OnLine Manual Weblink
- Authorized Vendor(s)
- Vendor Part Reference Number
- Repairable / Rotating Item (yes / no)

o PROVISIONING DATA

- Asset (equipment) Breakdown Structure Code
- Source, Maintenance & Recoverability Code (if applicable)
- Unit Weight (kg)
- Size (L,W, H in mm)
- Fitted Quantity (number installed)
- Anticipated Demands Per Year
- Lead Time
- Unit of Purchase
- Price Per Unit of Purchase
- Recommended Quantity - On Board
- Recommended Quantity - Shore Based
- Recommended Buy Quantity

o CCG INTERNAL USE

- Provisioning Decision

        - Spares Mgmt (national / regional)
        - Maximo Item Number
        - Next Higher Assembly (if applicable)

- Recommended Materiel (Consumables & Parts)
    - CATALOGUING / MATERIEL IDENTIFICATION DATA
        - Unique Line Item
        - NATO Stock Number (13 Digit)
        - UNSPSC Code
        - *MFG. Name
        - *MFG. Part Number
        - MFG. Model Number
        - *MFG. Part Name (Short Description)
        - MFG. Part Name (Long Description)
        - *OnLine Manual Weblink
        - Authorized Vendor(s)
        - Vendor Part Reference Number
    - PROVISIONING DATA
        - Unit Weight (kg)
        - Size (L,W,H in mm)
        - Shelf Life (in months) If Applicable
        - Storage Characteristic Handling Code
        - Hazardous Material / Dangerous Goods Code
        - MSDS Required
        - Anticipated Demands Per Year
        - Lifetime Buy (of items facing obsolescence)
        - Lead Time
        - Unit of Purchase

        - Price Per Unit of Purchase
        - Recommended Quantity - On Board
        - Recommended Quantity - Shore Based
        - Recommended Buy Quantity
    - CCG INTERNAL USE
        - Provisioning Decision
        - Spares Mgmt (national / regional)
        - Maximo Item Number
        - Next Higher Assembly (if applicable)
- Recommended Special Tools & Test Equipment
    - CATALOGUING / MATERIEL IDENTIFICATION DATA
        - Unique Line Item
        - NATO Stock Number (13 Digit)
        - UNSPSC Code
        - *MFG. Name
        - *MFG. Part Number
        - MFG. Model Number
        - *MFG. Part Name (Short Description)
        - MFG. Part Name (Long Description)
        - *OnLine Manual Weblink
        - Authorized Vendor(s)
        - Vendor Part Reference Number
    - PROVISIONING DATA
        - Unit Weight (kg)
        - Size (L,W,H in mm)
        - Calibration Required Yes / No
        - Recommended Quantity - On Board

        - Recommended Quantity - Shore Based
        - Unit Price
        - Recommended Buy Quantity
    - CCG INTERNAL USE
        - Provisioning Decision
        - Maximo Item Number
- Manufacturer Information
    - This section to be completed by Contractor
        - Match to RSPL Unique Line Item
        - *Manufacturer Name
        - CAGE Code
        - *Address
        - *Website
        - Phone
        - Fax
        - Email
    - To be completed by MICOE
        - Maximo Mfg #
- Vendor Information
    - This section to be completed by Contractor
        - Match to RSPL Unique Line Item
        - *Vendor Name
        - CAGE Code
        - *Address
        - *Website
        - Phone
        - Fax

        - Email
    - To be completed by MICOE
        - Maximo Mfg #

E.3 RECOMMENDED SPARE PARTS LIST (RSPL)

E.3.1 The Contractor must prepare and submit to CCG a Recommended Spare Parts List (RSPL) in accordance with requirements identified in the maintenance plans and rationalized to indicate appropriate quantities.

E.4 SPECIAL TOOLS AND TEST EQUIPMENT LIST (STTEL)

E.4.1 The Contractor must prepare and submit to CCG a Recommended Special Tools and Test Equipment List (STTEL) in accordance with requirements identified in the maintenance plans and rationalized to indicate appropriate quantities.

E.5 RECOMMENDED MATERIAL LIST (RML)

E.5.1 The Contractor must prepare and submit to CCG a Recommended Material List of consumable and bulk materiel in accordance with requirements identified in the maintenance plans. The RML must be rationalized to indicate appropriate quantities required to support the system for 20 years.

Fisheries and Oceans Canada | Pêches et Océans Canada

Canadian Coast Guard | Garde côtière canadienne

1kW NAVTEX Transmitter

Canadian Coast Guard

Technical Statement of Requirements

Canada

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Table of Contents

1 Document Management

1.1 Authority

1.1.1 This document is issued by the Senior Director, Electronics and Informatics, Canadian Coast Guard (CCG), under delegation by the Deputy Minister Fisheries and Oceans and the Commissioner of the Canadian Coast Guard, hereinafter known as "Canada".

1.2 Responsibility

1.2.1 The Senior Director of Electronics and Informatics is responsible for the following:

- creation and promulgation of the document; and
- identification of an Office of Primary Interest (OPI), who is responsible for the coordination and the content of the document.

1.2.2 The OPI is responsible for the following:

- validity and accuracy of the content;
- availability of this information;
- updates as needed;
- periodic revision; and
- follow-up of all requests, comments, and suggestions.

1.3 Inquiries and Revision Requests

1.3.1 All inquiries regarding this document, including suggestions for revision and requests for interpretation, are to be addressed to the OPI:

Position Title:	National Project Manager
Address:	Canadian Coast Guard Integrated Technical Services 200 Kent Street, 11th Floor, Ottawa, Ontario K1A 0E6

All revision requests should:

- be clear and concise; and
- reference the specific Chapter, Section, Figure, or Table.

2 List of Acronyms and Initialisms

AATU	Automatic Antenna Tuning Unit
AC	Alternating Current
BIST	Built-in Self-Test
°C	Degrees Celsius
CCG	Canadian Coast Guard
cm	centimetres
COTS	Commercial of the Shelf
CSA	Canadian Standards Association
dB	Decibel
dBc	Decibels relative to peak carrier level
dBm	Decibel power ratio relative to one milliwatt
DC	Direct Current
ESA	Electrical Safety Authority
F1B	The modulation mode used for NAVTEX transmissions
FSK	Frequency Shift Keying
GHz	Gigahertz (1 x 10^9 Hz)
GMDSS	Global Maritime Distress and Safety System
Hz	Hertz
IMO	International Maritime Organization
ISED	Innovation, Science, and Economic Development
ITU	International Telecommunications Union
in	Inches
kHz	kilohertz
kW	kilowatt
LRU	Line Replaceable Unit
m	Metres
MF	Medium Frequency
min.	Minutes
ms	Milliseconds

MCTS	Marine Communications and Traffic Services
MTBF	Mean Time Between Failures
MTTR	Mean Time To Repair
NAVTEX	Navigational Telex
N	North
NEMA	National Electrical Manufactures Association
NM	Nautical Miles
OPI	Office of Primary Interest
PA	Power Amplifier
pf	Picofarads (1 x 10^{-12} farads)
PEP	Peak Envelope Power
PPM	Parts Per Million
PTT	Press-To-Talk
RMS	Root Mean Square
ULC	Underwriters Laboratory of Canada
µs	microseconds
V	Volts
VA	Volt ampere
VAC	Volts AC (Alternating Current)
VSWR	Voltage Standing Wave Ratio
W	West

3 Introduction

3.1 BACKGROUND

3.1.1 NAVTEX forms part of the Global Maritime Distress and Safety System (GMDSS) Maritime Safety Information and provides shipping with navigational and meteorological warnings and urgent information by automatic printout or display from a dedicated receiver. The service is delivered from ten (10) NAVTEX transmitting stations located in the four (4) CCG regions of Atlantic Region, Central Region, Arctic Region and Western Region. (See Table 1)

3.2 PURPOSE

3.2.1 This document details the technical requirements for NAVTEX Transmitters and AATUs to replace the existing MCTS NAVTEX Transmitter equipment.

3.3 SCOPE

3.3.1 This Specification identifies and describes the technical requirements for the NAVTEX Transmitter Systems to be replaced. For the purposes of this procurement, a NAVTEX Transmitter System includes dual (i.e., main and back-up) transmitters, and one or two Automatic Antenna Tuning Units (AATU).

3.4 DEFINITION

3.4.1 The NAVTEX Transmitter and AATU will be referred to as “the Transmitter Equipment” in these specifications.

3.5 BASIC OPERATIONAL CRITERIA AND LEVEL OF SERVICE

3.5.1 System Overview

3.5.1.1 The NAVTEX Transmitter Systems are operated continuously. Each site transmits at a scheduled time, and other unscheduled times as necessary. The transmitters are located at remote shore-based sites, and are operated and controlled by CCG MCTS Centres.

3.5.2 System Configuration

3.5.2.1 In a typical transmitting system located at a peripheral site, there are three (3) components. These are the NAVTEX MF (Medium Frequency) main and back-up transmitters, the associated AATU, and the transmitting antenna.

3.5.2.2 There are two system configurations:

<u>Configuration 1:</u> The Transmitters are configured such that one transmitter (designated as the main transmitter) is connected through a remotely controlled antenna switching relay and an AATU to the antenna. The relay

is used to switch the AATU and antenna to a second transmitter (designated as the back-up transmitter) in the event of a failure of the main transmitter;

Configuration 2: Each transmitter (main and backup) is connected to its own transmitting antenna and AATU.

3.5.3 Transmitters

3.5.3.1 The CCG uses NAVTEX transmitters that are designed to provide a nominal output power of 1 kW. The transmitters broadcast text information on the assigned MF frequencies of 518 kHz and 490 kHz, using F1B-FSK modulation. Broadcast time slots and frequencies have been established in accordance with publications of the International Maritime Organization (IMO).

3.6 NAVTEX Transmitter Site Locations

3.6.1 Table 1*

NAVTEX SITE DATA					
Site Name	**Region**	**MCTS Centre**	**Frequency**	**Latitude**	**Longitude**
Cartwright	Atlantic North	Goose Bay MCTS	518kHz	53°42'29"N	057°01'24"W
Robin Hood Bay		Placentia Bay MCTS	518kHz	47°36'41"N	052°40'11"W
Chebogue	Atlantic South	Halifax MCTS	490/518kHz	43°44'40"N	066°07'18"W
Port Caledonia		Sydney MCTS	490/518kHz	46°11'08"N	059°53'37"W
Iqaluit	Arctic	Iqaluit MCTS	490/518kHz	63°43'51"N	068°32'34"W
Moisie	Central	Les Escoumins MCTS	490/518kHz	50°11'43"N	066°06'40"W
Ferndale		Prescott MCTS	518kHz	44°56'13"N	081°14'00"W
Pass Lake		Sarnia MCTS	518kHz	48°33'49"N	088°39'22"W
Digby Island	Western	Prince Rupert MCTS	518kHz	54°18'03" N	130°24'10" W
Amphitrite Point			518kHz	48°55'28"N	125°32'31"W

*Note: These latitudes and longitudes refer to the approximate location of the transmitting sites.

4 General Requirements

4.1 Type of Equipment

4.1.1 1 kW NAVTEX Transmitter

4.1.1.1 The Transmitter supplied must be Commercial off the Shelf (COTS) equipment.

4.1.1.2 The Transmitter must be of modular construction that will permit replacement of faulty sub-assemblies down to the Line Replaceable Unit (LRU).

4.1.1.3 The LRU must be replaceable and transportable by one technician.

4.1.1.4 The Transmitter must be designed and fabricated using all solid-state devices.

4.1.1.5 Built-In Self-Test (BIST): BIST capabilities that identify faulty modules and display test results must be provided and made accessible both locally and remotely. BIST functions should run at power-on, on an ongoing basis, and on demand from Operations or Maintenance personnel.

4.1.2 Automatic Antenna Tuning Unit

4.1.2.1 The automatic antenna tuning unit (AATU) must be designed as an “All Weather” automatic tuner to provide a nominal 50 Ω load to the transmitter in all weather conditions.

4.1.3 Remote Control Software

4.1.3.1 The Contractor must provide the command set of instructions, with documentation, that would permit CCG to remotely control a single transmitter via IEEE 802.3 Ethernet data interface.

4.1.4 Simple Network Management Protocol

4.1.4.1 The BIST (Section 4.1.1.5) must be available using SNMP v2 over an Ethernet interface.

4.1.4.2 The corresponding Management Information Base (MIB) information file must be provided to interface the SNMP output to the CCG support management console.

4.2 Applicable Documents

4.2.1 The following documents are applicable to this specification to the extent specified herein. In the case of a conflict between this specification and the applicable documents, this specification takes precedence, but in all cases, applicable legal requirements must be met.

a. International Maritime Organization (IMO), NAVTEX MANUAL, 2017 Edition, KA948E

b. IALA GUIDELINE 1111, PREPARATION OF OPERATIONAL AND TECHNICAL PERFORMANCE REQUIREMENTS FOR VTS SYSTEMS

c. ITU, Rec. ITU-R M.476-5, DIRECT-PRINTING TELEGRAPH EQUIPMENT IN THE MARITIME MOBILE SERVICE

d. ITU, Rec. ITU-R M.540-2, OPERATIONAL AND TECHNICAL CHARACTERISTICS FOR AN AUTOMATED DIRECT-PRINTING TELEGRAPH SYSTEM FOR PROMULGATION OF NAVIGATIONAL AND METEOROLOGICAL WARNINGS AND URGENT INFORMATION TO SHIPS

e. ITU, Rec. ITU-R M.625-3, DIRECT-PRINTING TELEGRAPH EQUIPMENT EMPLOYING AUTOMATIC IDENTIFICATION IN THE MARITIME MOBILE SERVICE

f. ITU, Rec. ITU-R SM.328-11, SPECTRA AND BANDWIDTH OF EMISSIONS

g. ITU, Rec. ITU-R SM.329-12, UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

h. ITU, Rec. ITU-R SM.1541-6, UNWANTED EMISSIONS IN THE OUT-OF-BAND DOMAIN

i. ITU, Rec. ITU-R M.2010-1 CHARACTERISTICS OF A DIGITAL SYSTEM, NAMED NAVIGATIONAL DATA FOR BROADCASTING MARITIME SAFETY AND SECURITY RELATED INFORMATION FROM SHORE-TO-SHIP IN THE 500 kHz BAND

j. Health Canada – Safety Code 6 (2015) "Limits of Human Exposure to Radio Frequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz." This document is available at: http://www.hc-sc.gc.ca/ewh-semt/pubs/radiation/radio_guide-lignes_direct-eng.php

k. Innovation, Science and Economic Development (ISED) – "RSS-Gen — General Requirements for Compliance of Radio Apparatus". This document is available at: https://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08449.html

l. US Department of Defense – MIL-HDBK-217F "Reliability Prediction of Electronic Equipment", This document is available at: https://www.weibull.com/knowledge/milhdbk.htm

4.3 Electrical Safety

4.3.1 Electrical equipment being sold for use in Canada must meet the requirements of the Canadian Electrical Code (2021), and bear a mark by a certifying organization accredited by the Standards Council of Canada.

4.3.2 Certification Marks

4.3.2.1 All equipment delivered must bear the appropriate certifying organization's mark at the time of delivery.

4.3.2.2 All equipment for sale or use in Canada must bear a certification mark. The certification mark must be from a company accredited by the Safety Council of Canada to certify electrical equipment.

4.3.2.3 Electrical safety is a provincial and territorial jurisdiction, and the authorities in those provinces and territories recognize certification marks.

4.3.2.4 A list of the electrical code authorities for each province and territory can be found at: http://canada.ul.com/codeauthorities/codeauthoritiesincanada/.

4.3.2.5 An example of the certification marks accepted by the Ontario Electrical Safety Authority can be found at: https://esasafe.com/electrical-products/recognized-certification-marks/

4.3.3 Personnel Safety Requirements

4.3.3.1 The Transmitter Equipment must incorporate the requirements specified above to provide for the safety of personnel engaged in installing, operating, and maintaining the equipment. It is recognized that equipment may include hazards. It is imperative that hazards be clearly identified and that measures be provided to protect personnel. In addition, the equipment must incorporate the following safety measures:

a. Electrical: The Transmitter Equipment must be designed to protect personnel from accidental contact with voltages in excess of 30 Volts, RMS or DC, during equipment operation.

b. Ground Potential: The Transmitter Equipment must be designed such that all external parts, surfaces and shields are at ground potential during normal operation.

c. Grounding: The Transmitter Equipment grounding requirements must be supplied in accordance with the Canadian Electrical Code and associated references, prior to delivery.

d. Guards and Barriers: The Transmitter Equipment contacts, terminals, and similar devices having voltages in excess of 70 Volts RMS or DC, with respect to ground, must have barrier guards to minimize accidental contact by personnel.

e. The Transmitter Equipment assemblies operating at potentials in excess of 300 Volts RMS or DC must be completely enclosed.

f. Interlock Switches: Interlock switches must be used in Transmitter Equipment cabinets that employ doors or cover plates to protect areas where lethal voltages, in excess of 300 Volts RMS or DC, are used or where the risk of exposure to high levels of non-ionizing radiation is present.

4.3.4 Non-Ionizing Radiation

4.3.4.1 Prior to equipment delivery, the Contractor must provide test results demonstrating that non-ionizing radiation emissions for the transmitting equipment do not exceed the levels specified in the Health Canada Safety Code 6 (2015), Section 2.2.1:

a. Table 3, "Electric Field Strength Reference Levels", Controlled Environment; and
b. Table 4, "Magnetic Field Strength Reference Levels", Controlled Environment.

4.3.5 Environmental Conditions (Indoor Heated and Cooled)

4.3.5.1 The transmitter equipment must be able to withstand the following environmental conditions (per IALA GUIDELINE G1111, Tables 6 and 7):

a. Operational
   i. Ambient Temperature: 0° C to +45° C
   ii. Relative Humidity: ≤ 95% at 45°C
   iii. Altitude: ≤ 1,500 m
b. Storage and Transportation
   i. Ambient Temperature: -40° C to +55° C
   ii. Relative Humidity: 40 – 90% (non-condensing)
   iii. Altitude: ≤ 3,000 m

4.3.6 Power Transients and Interruptions

4.3.6.1 Overvoltage: The equipment must withstand over-voltage transients of up to 30% of nominal line voltage for a duration of 500 ms.

4.3.6.2 Voltage spikes: The equipment must withstand voltage spikes of 1,000 Volts for 10 µs.

4.3.6.3 Power Interruption: Upon AC power restoration, all Transmitters must return within three (3) minutes to the configurations and modes of operation in which they were operating immediately prior to the power interruption.

4.3.7 Equipment Identification

4.3.7.1 Manufacturers' nameplates must include the following items as a minimum:

a. Manufacturer's name;
b. Model number or part number;

c. A unique serial number;

d. Regulatory and certification logos as applicable (e.g., ULC, CSA, etc.);

e. Operating voltage, frequency, phase, current (power consumption).

4.4 Reliability and Maintainability

4.4.1 CCG defines reliability as: The probability that an item will perform its intended function for a specified interval under stated conditions.

4.4.2 CCG defines Mean Time Between Failures (MTBF) as: for a particular interval, the total functioning life of a population of an item divided by the total number of failures within the population during the measurement interval.

4.4.3 The Contractor must provide a NAVTEX transmitter that has an overall MTBF of at least 10,000 hours.

4.4.4 The Contractor must provide MTBF calculations in accordance with MIL-HDBK-217F for a Ground Benign Environment of 25°C. An explanation, (such as; empirical failure data, stress analysis, reliability test data, prediction calculation), of how the MTBF values were determined must be included.

4.4.5 As an alternative to using MIL-HDBK-217F, MTBF calculations based on field failure rates may be submitted. For calculations based on empirical data, the Contractor must state the number of units used in the calculation, the number of hours of reliable service, the number of different types of failures recorded, the total number of failures, and any other information which can be used to evaluate the reliability claim of the equipment being offered.

4.4.6 The Mean Time to Repair (MTTR) for any equipment must be less than or equal to 60 minutes.

4.5 NAVDAT Compatibility

4.5.1 Canada may decide at a later date to use the NAVDAT system, so the Transmitter and AATU must be capable of transmitting NAVDAT signals at a frequency of 500 kHz, according to ITU Rec. ITU-R M.2010-2

A NAVDAT modulator may be used to attain compliance with this section, but the NAVDAT modulator is not part of this requirement.

4.6 Electromagnetic Requirements

4.6.1 The transmitter must meet the requirements of ISED "RSS-Gen — General Requirements for Compliance of Radio Apparatus"

5 Technical and Functional Specifications

5.1 NAVTEX Transmitter Specifications

5.1.1 The solid state transmitters must meet or exceed the following specifications:

a)	Frequency Range:	490 and 518 kHz synthesized;
b)	Frequency Resolution:	≤ 100 Hz;
c)	Frequency Temperature Stability:	≤ 10 ppm over operating temperature range;
d)	Frequency Time Stability:	≤ 2 ppm per year;
e)	Emission Mode:	F1B-FSK with ± 85 Hz shift;
f)	Keying Rate:	100 baud in F1B mode;
g)	Channel Memory:	≥ 2 channels;
h)	Power Output:	Nominal 1 kW PEP and Average power; Adjustable up to 1 kW; Power reduction to approximately 400 Watts; Full power into a 1.5:1 VSWR load; Reduced power for VSWR >1.5:1; Failure of a single PA module must not reduce output power by more than 3 dB;
i)	Harmonic Suppression:	Better than -60 dBc for a single tone at rated power;
j)	Hum and Noise:	60 dB below rated output;
k)	RF Output Connector:	50 Ω nominal, Type N-female;
l)	VSWR Protection:	Full protection for any VSWR;
m)	Remote/Local Interface:	IEEE 802.3 Ethernet data capability;
n)	Control Software:	Supplied with detailed documentation of protocols and command set;
o)	Transmitter local control/readback:	Selection of the following parameters: • Transmitter On/Off/Standby/Ready selections • mode selections • frequency/channel selections • transmitter power level selections • low-power transmission • BIST for module testing and display results

	• Keyline • FSK shift mode • Local microphone with PTT • local and remote control mode selection, with lockout to prevent remote location from changing mode • reflected power or VSWR • fault alarm indicators/fault messages;
p) Transmitter remote control/readback:	Selection of the following parameters: • Transmitter On/Off/Standby/Ready selections • mode selections • frequency/channel selections • transmitter power level selections; • BIST for module testing and display results • Press-To-Talk (PTT) and keyline • FSK shift mode • reflected power or VSWR • fault alarm indicators/fault messages • transmitter reset • local control interlock status;
q) Processor	Non-volatile storage of all control configuration parameters and display settings;
r) Maintainability:	MTTR 60 min. maximum;
s) Transmitter Mounting:	Transmitter supplied in an enclosed cabinet: Rack mountable in a standard 19” rack.
t) Mean Time Between Failures:	≥ 10,000 hours in Ground Benign Environment at 25˚C per MIL-HDBK-217F;
u) AATU Controls:	For each channel, a separate external control port is provided with a +V when channel is selected and 0 V (ground) when not selected;
v) Interlock:	External interlock relay provided for switching “off” transmitter;
w) Supply Voltage:	120/240 VAC (-15 % to +10 %) single phase at 60 Hz, (47 Hz to 63 Hz) for some

sites, and 120/208 VAC (-15 % to +10 %) single phase at 60 Hz (47 to 63 Hz) at other sites.

x) Power Failure Recovery: Upon restoration of AC power the transmitter must automatically return to its previous state of operation.

5.2 Interface to the Communications Control Systems

To be compatible with the Communication Control System (CCS) of the CCG, the Transmitter must support one of the two hardware interfaces defined in the tables below. The Contractor must specify which of Interface A or Interface B the transmitter supports.

5.2.1 INTERFACE A

	LINE NAME	TYPE	LOGIC	DESCRIPTION
5.2.1.1	Transmitter Ready	Output	Active High	Indicates that the transmitter is on and ready to transmit.
5.2.1.2	Transmitter On	Input	Active Low	Enables the transmitter.
5.2.1.3	Transmitter Keying	Input	High= ON or FSK High frequency Low= OFF or FSK Low Frequency	Transmitter ON/OFF or FSK modulation, depending on the F1 Mode signal (see below). While in F1 Mode, this line controls FSK modulation.
5.2.1.4	Channel 1 Selected	Input	Active High	Selects Channel 1 = 518 kHz
5.2.1.5	Channel 2 Selected	Input	Active High	Selects Channel 2 = 490 kHz
5.2.1.6	Reduced Output Power	Input	Active High	Reduces RF Output Power.
5.2.1.7	F1 Mode	Input	Active High	Selects FSK mode. When high, begins transmission and sets keying line to frequency shift (see above)
5.2.1.8	Reset	Input	Active High	The transmitter resets on the rising front of the reset line.
5.2.1.9	Ground	Ground	-	-

5.2.2 INTERFACE B

	LINE NAME	TYPE	LOGIC	DESCRIPTION
5.2.2.1	Transmitter Ready	Output	Active High	Indicates that the transmitter is on and ready to transmit.
5.2.2.2	Transmitter On	Input	Active High	Enables the transmitter.
5.2.2.3	Transmitter Keying	Input	High= ON or FSK High frequency Low= OFF or FSK Low Frequency	Transmitter ON/OFF or FSK modulation, depending on the F1 Mode signal (see below). While in F1 Mode, this line controls FSK modulation.
5.2.2.4	Channel 1 Selected	Input	Active High	Selects Channel 1 = 518 kHz
5.2.2.5	Channel 2 Selected	Input	Active High	Selects Channel 2 = 490 kHz
5.2.2.6	F1 Mode Low Power	Input	Active High	Selects FSK mode with low RF output power. When high, begins low RF output power transmission and sets keying line to frequency shift (see above)
5.2.2.7	F1 Mode High Power	Input	Active High	Selects FSK mode with high RF output power. When high, begins high RF output power transmission and sets keying line to frequency shift (see above)
5.2.2.8	Reset	Input	Active High	The transmitter resets on the rising front of the reset line.
5.2.2.9	Ground	Ground	-	-

5.2.3 Electrical

5.2.3.1 The logic lines of the transmitter must be compatible with at least one of the following reference voltages: 5 V, 12 V or 24 V. The Contractor must specify which one(s) of those reference voltages the transmitter interface is compatible with.

5.2.3.2 Every input of the transmitter must function in both of these configurations:

5.2.3.2.1 With an applied reference voltage for the high state and an open circuit for the low state; and

5.2.3.2.2 With an applied reference voltage for the high state and grounded for the low state (0V).

5.2.3.3 Every output of the transmitter must be set to the reference voltage for the high state and grounded (0V) for the low state.

5.3 AUTOMATIC ANTENNA TUNING UNIT SPECIFICATIONS

5.3.1 The automatic antenna tuner must be designed as an "All Weather" automatic tuner to provide a constant 50 Ω load to the transmitter in all weather conditions.

5.3.2 A National Electrical Manufacturers Association (NEMA) type 4X, or equivalent, enclosure is required for weatherproofing and corrosion protection.

5.3.3 It is mandatory that the AATU meets or exceeds the following specifications:

a)	Operating Frequency Range:	490 and 518 kHz;
b)	Channels:	Two minimum;
c)	Antenna Input Characteristics:	Capacitance: 600 to 3,300 pf Series Resistance: 3 to 25 ohms;
d)	Automatic Tuning Range:	No less than: ±5 % of the antenna system capacitance and no less than ±50 % of the antenna resistance;
e)	Input Impedance:	50 Ω nominal;
f)	VSWR:	Less than 1.5:1 with Auto tune;
g)	Power Rating:	Sufficient to withstand all foreseen power levels;
h)	Controls (Minimum):	AATU on/off Transmitter Inhibit/Enable;
i)	Environmental (Operating):	Outdoors: -40° C to + 55° C Humidity: 0-100% (Condensing);
j)	MTBF:	≥ 50,000 hours per MIL-HDBK-217F;
k)	Power Requirements:	Nominal 120 VAC, Single Phase 100 VA Maximum;
l)	Channel Change Time:	Less than 6 seconds;
m)	Metering:	Forward / Reverse Power Antenna Current;
n)	Dimensions	Dimensions Not to Exceed: Height: 122 cm (48 in) Width: 152 cm (60 in) Depth: 91 cm (36 in)

NAVTEX TRANSMITTER PROCUREMENTS STATEMENT OF WORK

All Bidders must submit a completed NAVTEX Equipment Procurements Bid Evaluation Matrix.

This Matrix provides a list of items (headings and subheadings) contained in the specified documents. Each requirement is listed. All proposals shall be reviewed using this Matrix. Bidders must annotate if Mandatory compliance items are COMPLIANT OR NON-COMPLIANT. Bidders must annotate if Desirable compliance items are COMPLIANT, PARTIALLY-COMPLIANT OR NON-COMPLIANT.

It is the Bidders' responsibility to provide in their proposals clear references to the proof of compliance for mandatory and desirable requirements (e.g. section and page number, where the information can be located in their documentation). For INFORMATION compliance items, no response is required. This does not remove the obligation of the bidder to understand and comply with the requirement when performing the work under any resultant contract. If only a heading or subheading is used, the Bidders' proposals must comply with all requirements detailed under this heading including all sub headings and sub-sub headings etc. Any additional details for a particular section included under the COMMENTS is intended to specify particular details that must be included over and above general information to support bidders' statement of compliance.

The column titled "Compliance Demonstration Method" indicates the minimum required for demonstrating Bid compliance with a mandatory or desirable requirement. Only the Compliance Demonstration Methods (indicated in the Compliance Matrix by the following letter codes) are acceptable for supporting a Bidder's claim of compliancy for each of the requirements. For some requirements, two or more Compliance Demonstration Methods can be used, in these cases, the "or" means that it is the Bidder's decision which method they choose to demonstrate compliance but only one method will be used to evaluate the compliance and not a partial evaluation of the two methods.

Letter	Compliance Demonstration Method
"A"	The Bidder must provide a compliance statement to agree that the stated work will be completed, or that the stated requirement will be met.
"D"	The Bidder must provide details as to how the work will be undertaken, or how the stated requirement will be met.
"W"	The Bidder must include the requested information with the Bid.
"S"	The Bidder must provide product specifications, manuals, or other published documentation that demonstrates that the solution(s) proposed fully complies with the requirement.
"M"	The Bidder must provide analysis or simulation predicting the performance of solution(s) proposed, that demonstrates full compliance with the requirement.

"T"	The Bidder must provide test results or documented performance of existing equipment proposed, that demonstrates full compliance with the requirement.
"N/A"	Compliance Demonstration not applicable or not required.

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
1	I					
2	Title					
2.1	Title					
2.1.1	I					
2.1.2	I					
2.1.3	M					This will be verified in the bid proof of performance acceptance test.
2.1.4	I					
2.1.5	I					
2.1.6	I					
2.2	Title					
2.2.1	I					
2.3	Title					
2.3.1	I					

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
3	Title					
3.1	M	A				
3.1.1	M	A				
3.1.2	M	A				
3.1.3	M	A				
4	M	A				
4.1	Title					
4.1.1	Title					
4.1.1.1	M	A				
4.1.1.2	M	A				
4.1.1.3	I					
4.1.2	Title					
4.1.2.1	M	A				
4.1.2.2	M	A				
4.1.3	Title					
4.1.3.1	M	A				
4.1.3.2	M	A				
4.1.3.3	M	A				
4.1.3.4	M	A				

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.1.4	Title					
4.1.4.1	M	A				
4.1.5	Title					
4.1.5.1	M	A				
4.2	Title					
4.2.1	Title					
4.2.1.1	M	W				
4.2.2	Title					
4.2.2.1	I					
4.2.2.2	M	D				
4.3	Title					
4.3.1	Title					
4.3.1.1	M	A				
4.3.1.2	M	A				
4.3.1.3	M	A				
4.3.1.4	M	A				
4.3.1.5	M	A				
4.3.1.6	I					

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.3.1.7	M	A				
4.3.1.8	I					
4.3.1.9	M	A				
4.3.2	Title					
4.3.2.1	M	A				
4.3.2.2	M	W				
4.3.2.3	M	A				
4.3.2.4	M	A				
4.3.3	Title					
4.3.3.1	M	A				
4.3.4	Title					
4.3.4.1	M	W				
4.3.4.2	M	W				
4.3.4.3	M	A				
4.3.4.4	M	A				
4.3.4.5	M	A				
4.3.4.6	M	A				
4.3.5	Title					
4.3.5.1	M	A				

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.3.5.2	M	A				
4.3.5.3	M	A				
4.3.5.4	M	A				
4.3.5.5	M	A				
4.3.6	Title					
4.3.6.1	M	A				
4.3.6.2	M	A				
4.3.6.3	M	A				
4.3.7	Title					
4.3.7.1	M	A				
4.3.7.2	M	A				
4.3.7.3	M	A				
4.3.7.4	M	A				
4.3.7.5	M	A				
4.3.8	Title					
4.3.8.1	M	A				
4.3.8.2	M	A				
4.3.8.3	M	A				

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance** **M= Mandatory** **D= Desirable** **I= Information**	**Compliance Demonstration Method**	**Bidder Response** **For M indicate C = Compliant or N = Non-Compliant** **For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant** **Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.3.8.4	M	A				
4.3.8.5	M	A				
4.4	Title					
4.4.1	Title					
4.4.1.1	M	W				Bidder must identify what industry standard project management methodology they are using referring to which standard and version, and provide a description citing examples of where this has been applied and what percentage of it's work this methodology is applied to. If the Contractor is not using a formally recognized industry standard such as PMBOK®, PRINCE2® or PMI® Agile for managing it's work, then the Bidder must submit with the bid it's PM methodology and processes manuals.
4.4.2	Title					
4.4.2.1	M	A				
4.4.2.2	M	A				
4.4.3	Title					
4.4.3.1	M	A				
4.4.4	Title					
4.4.4.1	M	A				

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.4.5	Title					
4.4.5.1	M	A				
4.4.5.2	M	A				
4.4.6	Title					
4.4.6.1	M	A				
4.4.6.2	M	A				
4.4.7	Title					
4.4.7.1	M	A				
4.4.7.2	M	A				
4.4.8	Title					
4.4.8.1	M	A				
4.4.8.2	M	A				
4.4.9	Title					
4.4.9.1	M	A				
4.4.9.2	M	A				
4.5	Title					
4.5.1	Title					
4.5.1.1	M	A				

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.5.1.2	M	A				
4.5.2	Title					
4.5.2.1	M	A				
4.5.3	Title					
4.5.3.1	M	A				
4.5.3.1.a	M	A				
4.5.3.1.b	M	A				
4.5.3.1.c	M	A				
4.5.3.1.d	M	A				
4.5.3.1.e	M	A				
4.5.3.1.f	M	A				
4.5.3.1.g	M	A				
4.5.3.1.h	M	W				Provide test methodology with the bid.
4.5.3.1.i	M	A				
4.5.3.1.j	M	A				
4.5.3.1.k	M	A				
4.5.4	Title					
4.5.4.1	M	A				
4.5.4.2	M	A				

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.5.4.3	M	A				
4.5.4.3 a.	M	A				
4.5.4.3 b.	M	A				
4.5.4.3 c.	M	A				
4.5.4.3 d.	M	A				
4.5.4.3 e.	M	A				
4.5.4.3 f.	M	A				
4.5.5	Title					
4.5.5.1	M	A				
4.5.5.1 a.	M	A				
4.5.5.1 b.	M	A				
4.5.5.1 c.	M	A				
4.5.5.1 d.	M	A				
4.5.5.1 e.	M	A				
4.5.5.1 f.	M	A				
4.5.5.1 g.	M	A				
4.6	Title					
4.6.1	Title					

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.6.1.1	M	A				
4.6.1.2	M	A				
4.6.1.3	M	A				
4.6.1.4	M	A				
4.6.1.5	M	A				
4.6.1.6	M	A				
4.6.1.7	M	A				
4.6.1.8	M	A				
4.7	Title					
4.7.1	Title					
4.7.1.1	M	A				
4.7.1.2	M	A				
4.7.1.2 a.	M	A				
4.7.1.2 b.	M	A				
4.7.1.2 c.	M	A				
4.7.1.2 d.	M	A				
4.7.1.2 e.	M	A				
4.7.1.2 f.	M	A				
4.7.1.2 g.	M	A				

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance M= Mandatory D= Desirable I= Information**	**Compliance Demonstration Method**	**Bidder Response For M indicate C = Compliant or N = Non-Compliant For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
4.7.1.2 h.	M	A				
4.7.2	Title					
4.7.2.1	M	A				
4.7.2.2	M	A				
5	Title					
5.1	M	A				
5.1.1	Title					
5.1.1.1	M	A				
5.1.1.2	M	A				
5.1.2	Title					
5.1.2.1	M	A				
5.1.3	Title					
5.1.3.1	M	A				
5.1.3.2	M	A				
5.1.4	Title					
5.1.4.1	M	A				
Appendix A	I					
Appendix B	M					

	Bidder Name					
	Receiver name or identifier					
Section	**Compliance** **M= Mandatory** **D= Desirable** **I= Information**	**Compliance Demonstration Method**	**Bidder Response** **For M indicate C = Compliant or N = Non-Compliant** **For D indicate C = Compliant, P = Partially-Compliant or N = Non-Compliant** **Shaded indicates no response required.**	**Bidder Enter Contractor Reference (Bid Document, section # and Page)**	**For CCG Use (Met or Not Met)**	**For CCG Comments**
Appendix C	M					
Appendix D	M					
Appendix E	M					

NAVTEX TRANSMITTER PROCUREMENT TSOR BID EVALUATION MATRIX

All Bidders must submit a completed NAVTEX Equipment Procurement TSOR Bid Evaluation Matrix.

This Matrix provides a list of items (headings and subheadings) contained in the specified documents. Each requirement is listed. All proposals shall be reviewed using this Matrix. Bidders must annotate if Mandatory compliance items are COMPLIANT OR NON-COMPLIANT. If there is a choice to be made between different options, Bidders must annotate the choice made.

It is the Bidders' responsibility to provide in their proposals clear references to the proof of compliance for mandatory requirements (e.g. section and page number, where the information can be located in their documentation). For INFORMATION compliance items, no response is required. This does not remove the obligation of the Bidder to understand and comply with the requirement when performing the work under any resultant contract. If only a heading or subheading is used, the Bidders' proposals must comply with all requirements detailed under this heading including all sub headings and sub-sub headings etc. Any additional details for a particular section included under the COMMENTS is intended to specify particular details that must be included over and above general information to support bidders' statement of compliance.

The column titled "Compliance Demonstration Method" indicates the minimum required for demonstrating Bid compliance with a mandatory or desirable requirement. Only the Compliance Demonstration Methods (indicated in the Compliance Matrix by the following letter codes) are acceptable for supporting a Bidder's claim of compliancy for each of the requirements. For some requirements, two or more Compliance Demonstration Methods can be used, in these cases, the "or" means that it is the Bidder's decision which method they choose to demonstrate compliance but only one method will be used to evaluate the compliance and not a partial evaluation of the two methods.

The Canadian Coast Guard has a test environment in its laboratory that replicates the CCG operational system. CCG will be connecting the proposed NAVTEX Transmitter Equipment to this test environment and verifying that each requirement listed in the 'Proof of Bid' column is met.

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
		C – The Bidder must choose between available options. **I** – This is information, and no response is required. **M** – This requirement is mandatory. **T** – This is a title and no response is required.	Available options are listed.	**A** - The Bidder must provide a compliance statement to agree that the stated work will be completed, or that the stated requirement will be met. **S** - The Bidder must provide product specifications, manuals, or other published documentation that demonstrates that the solution(s) proposed fully complies with the requirement. **M** - The Bidder must provide analysis or simulation predicting the performance of solution(s) proposed, that demonstrates full compliance with the requirement. **T** - The Bidder must provide test results or documented performance of existing equipment proposed, that demonstrates full compliance with the requirement. **N/A** - Compliance Demonstration not applicable or not required.	**C** – Compliant with this requirement **N** – Non-compliant with this requirement **N/A** – This requirement is not applicable ***** In addition to Bidder Response, use this column to indicate Choice for applicable requirements.	P – This requirement will be tested as part of Proof of Bid Testing		

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
1	Document Management	I		N/A	N/A			
2	List of Acronyms and Initialisms	I		N/A	N/A			
3	Introduction	I		N/A	N/A			
3.1	Background	I		N/A	N/A			
3.2	Purpose	I		N/A	N/A			
3.3	Scope	I		N/A	N/A			
3.4	Definition	I		N/A	N/A			
3.5	Basic Operational Criteria and Level of Service	I		N/A	N/A			
3.6	NAVTEX Transmitter Site Locations	I		N/A	N/A			
4	General Requirements	T		N/A	N/A			
4.1	Type of Equipment	T		N/A	N/A			
4.1.1	1 kW NAVTEX Transmitter	T		N/A	N/A			
4.1.1.1	COTS Equipment	M		S				
4.1.1.2	Modular Construction to LRU	M		S				

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
4.1.1.3	Weight for One Technician	M		S				
4.1.1.4	Solid State	M		S				
4.1.1.5	BIST capabilities	M		S		P		
4.1.2	Automatic Antenna Tuning Unit	T		N/A	N/A			
4.1.2.1	All Weather	M		S				
4.1.3	Remote Control Software	T		N/A	N/A			
4.1.3.1	Provide command set and documentation	M		S				
4.1.4	Simple Network Management Protocol	T		N/A	N/A			
4.1.4.1	BIST on SNMP v2	M		S		P		
4.1.4.2	MIB	M		S				
4.2	Applicable Documents	I		N/A	N/A			
4.3	Electrical Safety	T		N/A	N/A			
4.3.1	Canadian Electrical Code - Certified	I		N/A	N/A			

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
4.3.2	Certification Marks	T		N/A	N/A			
4.3.2.1	Certification Mark at time of delivery	M		A				
4.3.2.2	Safety Council of Canada accredited company	I		N/A	N/A			
4.3.2.3	Provincial Authorities	I		N/A	N/A			
4.3.2.4	List of authorities	I		N/A	N/A			
4.3.2.5	Example	I		N/A	N/A			
4.3.3	Personnel Safety Requirements	T		N/A	N/A			
4.3.3.1	Incorporate safety requirements	I		N/A	N/A			
4.3.3.1.a	Protection from voltages over 30 volts	M		S				
4.3.3.1.b	Ground potential	M		S				
4.3.3.1.c	Grounding to CEC	M		A				
4.3.3.1.d	Guards and Barriers over 70 volts	M		S				

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
4.3.3.1.e	Enclosed in excess of 300 volts	M		S				
4.3.3.1.f	Interlock switches	M		S				
4.3.4	Non-Ionizing Radiation	T		N/A	N/A			
4.3.4.1	Non-Ionizing Radiation to Safety Code 6	M		A				
4.3.5	Environmental Conditions (Indoor Heated and Cooled)	T		N/A	N/A			
4.3.5.1	Environmental Conditions (Indoor Heated and Cooled)	I		N/A	N/A			
4.3.5.1.a	Operational	M		S				
4.3.5.1.b	Storage and Transportation	M		S				
4.3.6	Power Transients and Interruptions	T		N/A	N/A			
4.3.6.1	Overvoltage	M		S				
4.3.6.2	Voltage Spikes	M		S				

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
4.3.6.3	Power Interruption	M		S		P		
4.3.7	Equipment Identification	T		N/A	N/A			
4.3.7.1	Nameplate Information	M		A				
4.4	Reliability and Maintainability	T		N/A	N/A			
4.4.1	CCG defines reliability as: The probability that an item will perform its intended function for a specified interval under stated conditions.	I		N/A	N/A			
4.4.2	CCG defines Mean Time Between Failures (MTBF) as: for a particular interval, the total functioning life of a population of an item divided	I		N/A	N/A			

	Bidder Name:							
	Receiver Name or Identifier:							
Section	Description	Compliance Requirement	Options	Compliance Demonstration Method	Bidder Response	Proof of Bid	For CCG Use (Requirement Met/Not Met)	For CCG Comments
	by the total number of failures within the population during the measurement interval.							
4.4.3	The Contractor must provide a NAVTEX transmitter that has an overall MTBF of at least 10,000 hours.	M		S				
4.4.4	The Contractor must provide MTBF calculations in accordance with MIL-HDBK-217F.	M, C	Choose 4.4.4 or 4.4.5	M if 4.4.4 chosen; N/A if 4.4.5 chosen.				
4.4.5	As an alternative to using MIL-HDBK-217F, MTBF calculations based on field	M, C	Choose 4.4.5 or 4.4.4	T if 4.4.5 chosen; N/A if 4.4.4 chosen.				

	Bidder Name:							
	Receiver Name or Identifier:							
Section	Description	Compliance Requirement	Options	Compliance Demonstration Method	Bidder Response	Proof of Bid	For CCG Use (Requirement Met/Not Met)	For CCG Comments
	failure rates may be submitted.							
4.4.6	The Mean Time to Repair (MTTR) for any equipment must be less than or equal to 60 minutes.	M		S				
4.5	NAVDAT Compatibility	T		N/A	N/A			
4.5.1	Canada may decide at a later date to use the NAVDAT system, so the Transmitter and AATU must be capable of transmitting NAVDAT signals at a frequency of 500 kHz, according to ITU Rec. ITU-R M.2010-1. A	M		A or S				

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
	NAVDAT modulator may be used to attain compliance with this section, but the NAVDAT modulator is not part of this TSOR requirement.							
4.6	Electromagnetic Requirements	T		N/A	N/A			
4.6.1	The transmitter must meet the requirements of ISED "RSS-Gen — General Requirements for Compliance of Radio Apparatus"	M		A				
5	Technical and Functional Specifications	T		N/A	N/A			
5.1	NAVTEX Transmitter Specifications	T		N/A	N/A			

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
5.1.1	The solid state transmitters must meet or exceed the following specifications:	I		N/A	N/A			
5.1.1.a)	Frequency Range:	M		S		P		
5.1.1.b)	Frequency Resolution:	M		S		P		
5.1.1.c)	Frequency Temperature Stability:	M		S				
5.1.1.d)	Frequency Time Stability:	M		S				
5.1.1.e)	Emission Mode:	M		S		P		
5.1.1.f)	Keying Rate:	M		S		P		
5.1.1.g)	Channel Memory:	M		S		P		
5.1.1.h)	Power Output:	M		S		P		
5.1.1.i)	Harmonic Suppression:	M		S				
5.1.1.j)	Hum and Noise:	M		S				
5.1.1.k)	RF Output Connector:	M		S		P		
5.1.1.l)	VSWR Protection:	M		S		P		
5.1.1.m)	Remote/Local Interface:	M		S		P		

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
5.1.1.n)	Control Software:	M		S				
5.1.1.o)	Transmitter local control/readback:	M		S		P		
5.1.1.p)	Transmitter remote control/readback:	M		S		P		
5.1.1.q)	Processor	M		S		P		
5.1.1.r)	Maintainability:	M		S				
5.1.1.s)	Transmitter Mounting:	M		S				
5.1.1.t)	Mean Time Between Failures:	M		S				
5.1.1.u)	AATU Controls:	I		N/A				
5.1.1.v)	Interlock:	M		S				
5.1.1.w)	Supply Voltage:	M		S		P		
5.1.1.x)	Power Failure Recovery:	M		S		P		
5.2	Interface to the Communications Control Systems Choose one of Interface A or B.	T		N/A	N/A			
5.2.1	INTERFACE A	C	Choose Interface A (5.2.1) or	Indicate choice				

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
			Interface B (5.2.2)					
5.2.1.1	Transmitter Ready	M, C		S if Interface A chosen; N/A if Interface A chosen.		P		
5.2.1.2	Transmitter On	M, C				P		
5.2.1.3	Transmitter Keying	M, C				P		
5.2.1.4	Channel 1 Selected	M, C				P		
5.2.1.5	Channel 2 Selected	M, C				P		
5.2.1.6	Reduced Output Power	M, C				P		
5.2.1.7	F1 Mode	M, C				P		
5.2.1.8	Reset	M, C				P		
5.2.1.9	Ground	M, C				P		
5.2.2	INTERFACE B	C	Choose Interface A (5.2.1) or Interface B (5.2.2)	Indicate choice				
5.2.2.1	Transmitter Ready	M, C		S if Interface B chosen; N/A if Interface A chosen.		P		
5.2.2.2	Transmitter On	M, C				P		

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
5.2.2.3	Transmitter Keying	M, C				P		
5.2.2.4	Channel 1 Selected	M, C				P		
5.2.2.5	Channel 2 Selected	M, C				P		
5.2.2.6	F1 Mode Low Power	M, C				P		
5.2.2.7	F1 Mode High Power	M, C				P		
5.2.2.8	Reset	M, C				P		
5.2.2.9	Ground	M, C				P		
5.2.3	Electrical	T		N/A	N/A			
5.2.3.1	Logic line voltage	M, C	Choose one of: 5V, 12V, 24V	S		P		
5.2.3.2	Input Function	I		N/A	N/A			
5.2.3.2.1	Open Circuit Low State	M		S		P		
5.2.3.2.2	Grounded Low State	M		S		P		
5.2.3.3	Output Function	M		S		P		
5.3	Automatic Antenna Tuning	T		N/A	N/A			

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
	Unit Specifications							
5.3.1	All Weather	M		S		P		
5.3.2	Enclosure	M		S				
5.3.3	Specifications	I		N/A	N/A			
5.3.3.a)	Operating Frequency Range	M		S		P		
5.3.3.b)	Channels	M		S		P		
5.3.3.c)	Antenna Input Characteristics	I		N/A	N/A			
5.3.3.d)	Automatic Tuning Range	M		S				
5.3.3.e)	Input Impedance	M		S		P		
5.3.3.f)	VSWR	M		S		P		
5.3.3.g)	Power Rating	M		S		P		
5.3.3.h)	Controls (Minimum)	M		S		P		
5.3.3.i)	Environmental (Operating)	M		S				
5.3.3.j)	MTBF	M		S				
5.3.3.k)	Power Requirements	M		S		P		
5.3.3.l)	Channel Change Time	M		S		P		
5.3.3.m)	Metering	M		S		P		

	Bidder Name:							
	Receiver Name or Identifier:							
Section	**Description**	**Compliance Requirement**	**Options**	**Compliance Demonstration Method**	**Bidder Response**	**Proof of Bid**	**For CCG Use (Requirement Met/Not Met)**	**For CCG Comments**
5.3.3.n)	Dimensions	M		S				

FINANCIAL EVALUATION CHART ***OPTIONAL UNITS***

		2023-2024		2024-2025		2025-2026		2026-2027		2027-2028	
ITEM	DESCRIPTION	QTY	UNIT PRICE	QTY	UNIT PRICE	QTY	UNIT PRICE	QTY	UNIT PRICE	QTY	UNIT PRICE
1	NAVTEX Operational Transmitters	10		9		5		4		1	
2	Automatic Antenna Tuning Units	9		7		5		2		3	
3	Technologist Training Courses - English	9		9		9		8		8	
4	Technologist Training Courses - French	2		2		2		2		2	
5	Equipment Manual (tailored for CCG)	1		1		1		1		1	
6	Operation Manual (tailored for CCG)	1		1		1		1		1	
7	Software Documentation (tailored for CCG)	1		1		1		1		1	
8	Maintenance Plan	1		1		1		1		1	
9	Factory Acceptance Test Plan and Procedures	1		1		1		1		1	
10	Factory Acceptance Test Reports	1		1		1		1		1	
11	AMS (Complete MAXIMO Data List)	1		1		1		1		1	
12	Training Plan	1		1		1		1		1	
13	**Training Package**										
	Training Objectives	1		1		1		1		1	
	Course Syllabus	1		1		1		1		1	
	Training Aids	1		1		1		1		1	
	Instructor Manual	1		1		1		1		1	
	Technical Student Manual	1		1		1		1		1	
	Evaluation Guide	1		1		1		1		1	
14	SAT Plans and Procedures	1		1		1		1		1	
Site Acceptance Test (SAT) (Site acceptance test services provided by supplier at a daily rate (use of task authorization) include 1 day per SAT from a financial evaluation perspective.)											
15	SAT # 1	1		1		1		1		1	
16	SAT # 2	1		1		1		1		1	
17	SAT # 3	1		1		1		1		1	
18	SAT # 4	1		1		1		1		1	
19	SAT # 5 (French)	1		1		1		1		1	
20	Installation Service Support (List of installation support provided by supplier at a daily rate (use of task authorization) inlcude 50 days	1		1		1		1		1	
21	Optional CCS Integration Service Support (use of task authorization) include 100 days	1		1		1		1		1	
22	Optional Warranty	1		1		1		1		1	

ELECTRONIC COPIES OF DOCUMENTS WILL BE REPLICABLE BY CANADIAN COAST GUARD AS REQUIRED

DOCUMENTATION MUST BE DELIVERED IN ENGLISH AND FRENCH AS PER THE LIST OF DELIVERABLES, ANNEX 'B' IN TH

PRICES ARE IN CANADIAN FUNDS, TAXES EXTRA