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Pacific Region
401 - 1230 Government Street
Victoria, B.C.
V8W 3X4
Bid Fax: (250) 363-3344

Revision to a Request for a Standing Offer

Révision à une demande d'offre à commandes

National Individual Standing Offer (NISO)

Offre à commandes individuelle nationale (OCIN)

The referenced document is hereby revised; unless
otherwise indicated, all other terms and conditions of
the Offer remain the same.

Ce document est par la présente révisé; sauf
indication contraire, les modalités de l'offre demeurent
les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada -
Pacific Region
401 - 1230 Government Street
Victoria, B. C.
V8W 3X4

Title - Sujet Distance Measuring Equipment		
Solicitation No. - N° de l'invitation F1701-180056/A		Date 2019-04-17
Client Reference No. - N° de référence du client F1701-180056		Amendment No. - N° modif. 001
File No. - N° de dossier XLV-8-41151 (591)	CCC No./N° CCC - FMS No./N° VME	
GETS Reference No. - N° de référence de SEAG PW-\$XLV-591-7700		
Date of Original Request for Standing Offer Date de la demande de l'offre à commandes originale		2019-03-14
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-05-08		Time Zone Fuseau horaire Pacific Daylight Saving Time PDT
Address Enquiries to: - Adresser toutes questions à: Zwarich, Eric		Buyer Id - Id de l'acheteur xlv591
Telephone No. - N° de téléphone (250) 661-2347 ()		FAX No. - N° de FAX () -
Delivery Required - Livraison exigée		
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:		
Security - Sécurité This revision does not change the security requirements of the Offer. Cette révision ne change pas les besoins en matière de sécurité de la présente offre.		

Instructions: See Herein

Instructions: Voir aux présentes

Acknowledgement copy required Accusé de réception requis	Yes - Oui <input type="checkbox"/>	No - Non <input type="checkbox"/>
The Offeror hereby acknowledges this revision to its Offer. Le proposant constate, par la présente, cette révision à son offre.		
Signature	Date	
Name and title of person authorized to sign on behalf of offeror. (type or print) Nom et titre de la personne autorisée à signer au nom du proposant. (taper ou écrire en caractères d'imprimerie)		
For the Minister - Pour le Ministre		

Sollicitation No. - N° de l'invitation

F1701-180056/A

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Amd. No. - N° de la modif.

001

File No. - N° du dossier

XLV-8-41151

Buyer ID - Id de l'acheteur

XLV591

CCC No./N° CCC - FMS No./N° VME

This Solicitation amendment is to conduct the following:

1. Extend the Bid Submission Date by 2 weeks.
2. Incorporate Questions and Answers received to date.
3. Adjustments to Evaluation Plan as a result of item 2.
4. Adjustments to Appendix C of Annex A as a result of item 2.

1. Extend Bid Submission Date

The Bid submission date will now be 2:00pm PDT on May 8, 2019.

2. Incorporate Questions and Answers received to date:

UNDER ANNEX A:

INSERT AT END (Following Page)

APPENDIX 1 to ANNEX A – Questions and Answers

F1701-180056 - DME - Questions and Answers			
#	Date Received	Question	Answer
1	15/04/2019	<p>1) MR 18, MR 34 both state "must be capable of being powered by either of the following power sources:</p> <p>a. 115 VAC...,</p> <p>b. 24 VDC..., or</p> <p>c. 12 VDC..."</p> <p>To clarify, is the requirement either of the listed power sources or should the line say "any of the listed sources"</p>	<p>Section 4.2.3 Electrical</p> <p>MR. 18. The electronics associated with the DME Core must be capable of being powered by any combination of the listed sources:</p> <p>a. 115 VAC \pm 10% circuit,</p> <p>b. 24 VDC \pm 15%, two wire ungrounded, or</p> <p>c. 12 VDC \pm 15%, two wire negative ground.</p> <p>Section 4.4.3 Electrical</p> <p>MR. 34. The electronics associated with the DME Bridge Controller must be capable of being powered by any combination of the listed sources:</p> <p>a. 115 VAC \pm 10% circuit,</p> <p>b. 24 VDC \pm 15%, two wire ungrounded, or</p> <p>c. 12 VDC \pm 15%, two wire negative ground.</p>
			16/04/2019

2	15/04/2019	<p>2) OUTPUT POWER: Typical DMEs are low power, nominally 100W, or high power, nominally 1000W. A continuously adjustable output from 100 to 500W is feasible but may be a unique design from some suppliers for this procurement. Is there a functional requirement, such as minimum slant range distance coverage required, that could be specified to achieve the desired result? Is there a functional requirement on board the ship that requires the 100 – 500W output power range?</p>	<p>Section 4.2.3 Electrical MR. 17. The DME Core must be user configurable to transmit at either 100 watts or 500 watts.</p> <p>A one hundred (100) watt transmit power has been tested by CCG and proven to be insufficient for some of the environments that the vessels operate in. Five hundred (500) watts is the transmit power of the existing DME and has been deemed acceptable. At a transmit power of one thousand (1000) watts there is an unacceptable risk of damaging the sensitive marine receivers on the vessel.</p>	16/04/2019
3	15/04/2019	<p>3) DME operation is for an aircraft interrogator to send an interrogation, receive the response from the DME ground (or in this case, shipboard) system, and calculate the slant range distance. The distance measurement is fed to the various avionics on the aircraft. Therefore the distance information is at the aircraft side of the system and is not available to the DME itself. Is there a datalink from the helicopter to the ship that can feed the identification of the aircraft and slant range to the controller? Or, is this a requirement that can be removed from the specification?</p>	<p>After further review, in Section 4.4.1 General, MR. 30 and MR. 31 are outside of the Distance Measuring Equipment operational scope and will be removed from the Statement of Requirements.</p>	16/04/2019

4	15/04/2019	4) Bridge Controller Trial #20 – DME bridge controller must provide users with the ability to determine the number of ADF equipped helicopters that are currently connected to the DME system. a. Will the CCG provide this data on the ship to allow for such tracking?	After further review and with the removal of requirement MR. 30 in Section 4.4.1 General , trial #20 can be removed from Appendix C.	16/04/2019
5	15/04/2019	5) Trial #21 – this requirement is to display the distance of two (or more) helicopters. a. Will the CCG provide this data on the ship from radar or via data links to allow for display to the controller?	After further review and with the removal of requirement MR. 31 in Section 4.4.1 General , trial #21 can be removed from Appendix C.	16/04/2019
6	15/04/2019	6) In additions to the listed questions we would hereby like to request and extension to the closing date to enable us to prepare for the responses to the above questions. Therefore requesting to extend the closing date from current April 24,2019 to May 8th , 2019.	I approve of this extension. The RFP closing date can be moved to May 8, 2019.	16/04/2019

7	15/04/2019	Could you please clarify if installation on the ships is to be included in the offer?	<p>Installation onboard Canadian Coast Guard vessels will be performed by CCG personnel.</p> <p>The Contractor will be required to set up a DME Antenna, DME Core, and DME Bridge Controller for the Acceptance Trials detailed in Appendix C only.</p> <p>Acceptance Trials will be conducted on shore at the Canadian Coast Guard base at 25 Huron Street, Victoria, BC. Assistance for the acceptance trial period can be provided by CCG personnel upon written request from the Contractor.</p>	16/04/2019
8	15/04/2019	Will Cables and Cabling installation on the ships need to be included in the offer?	<p>Cabling installation on board Canadian Coast Guard vessels is outside the scope of this Request For Proposal.</p> <p>Any cabling that is not commercially available and is specialized in nature that it's use is particular to the item procured must be included in accordance with the Contractor's offer.</p>	16/04/2019

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3. Adjustments to Evaluation Plan as a result of item 2.

UNDER Annex D – TECHNICAL EVALUATION

DELETE ALL

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ANNEX D – TECHNICAL EVALUATION

D-1 GENERAL

D-1.1 The general requirement for the Offeror's Technical Offer is stated at Part 3 of the Request for Standing Offer (RFSO).

D-1.2 The Evaluation Procedure is stated at Part 4 of the RFSO. The evaluation procedure indicates the composition of the evaluation team. This Annex gives the detailed Evaluation Criteria and Scoring Procedure.

D-1.3 In order that a complete technical evaluation of the Offer can be conducted, the Offer must be compliant with all of the Offer deliverable requirements, which are summarized under Part 3 of the RFSO. It is the Offeror's responsibility to clearly demonstrate their capabilities and capacity to all the requirements stated in the RFSO, Requirement and other attachments. Offeror's should describe their capabilities, how they will comply with mandatory requirements, and how they will deliver any other requested goods and/or services.

D-1.4 It is requested that the Offeror present topics in the order of these evaluation criteria and under the same headings and numbering scheme. Alternatively, the Offeror should include in their Technical Offer an applicability matrix wherein they identify, by page number, where each of the criteria is addressed in their Offer.

TABLE D1 – TECHNICAL EVALUATION - MANDATORY REQUIREMENTS

Mandatory Requirements Evaluation				
The Offeror must respond to each of the criteria below. The Offeror must provide proof of compliance in the column labeled Offeror Reference through supporting technical documentation such as technical brochures, equipment manuals, technical drawings, certificates of qualifications, and letters of authenticity from industry associations, as applicable. Responses to the mandatory requirements set forth in this section will be evaluated on a stringent pass/fail. Offers not meeting all of the mandatory requirements identified in the table below will be considered non-compliant and given no further consideration.				
#	SOR Reference	Description of Requirement	Offeror Reference	Pass/Fail
The Offeror must supply a reference from <i>Technical Documentation and/or industry recognized certificate that proves each of the following requirements:</i>				
R1	Subsection 3.2, MR. 5	The commercial documentation supplied with the equipment must identify all necessary corrective and preventative maintenance task or procedures.		
R2	Subsection 4.1, MR. 9	The DME system must be compliant with International Civil Aviation Organization (ICAO) Annex 10.		

R3	Subsection 4.1, MR. 10	The DME system must be compliant with USA Federal Aviation Administration (FAA) requirement FAA-E-2996: <i>Performance Specification for Distance Measuring Equipment</i> .		
R4	Subsection 4.2, MR. 12	The DME Core must provide DME transponder functionality, as defined per ICAO Annex 10, which is capable of successfully communicating with the industry standard aircraft DME units used by CCG aircraft.		
R5	Subsection 4.2.1, MR. 13	The DME Core must be capable of providing a helicopter, equipped with a standard DME transceiver, such as the BendixKing KN-62A (50 watt power output, unity gain antenna), with the ability to provide distance measurements at operating ranges of at least 50 nautical miles (ground range) under ideal weather conditions and clear line of sight.		
R6	Subsection 4.2.1, MR. 14	The transmitter and receiver function of the DME Core must have the capability to be configured to operate on any of the one-hundred-twenty-six (126) X and Y channels identified in ICAO Annex 10.		
R7	Subsection 4.2.2, MR. 16	The DME Core must not exceed 48" H x 24" W x 24" D.		
R8	Subsection 4.2.3, MR. 17	The DME Core must be capable of being configured to transmit at any power level between 100 watts and 500 watts. The DME Core must be user configurable to transmit at either 100 watts or 500 watts.		
R9	Subsection 4.2.3, MR. 18	The electronics associated with the DME Core must be capable of being powered by either of the following power sources: The electronics associated with the DME Core must be capable of being powered by any combination of the listed sources: <ul style="list-style-type: none"> a. 115 VAC ±10% circuit, b. 24 VDC ±15%, two wire ungrounded, or c. 12 VDC ±15%, two wire negative ground. 		

R10	Subsection 4.2.4, MR. 19	The DME Core must have a temperature rating of -10°C to +50°C with a humidity rating of 5% to 90%.		
R11	Subsection 4.3.2, MR. 22	The length of the antenna must not exceed 48 inches.		
R12	Subsection 4.3.4, MR. 25	The antenna must be rated at a temperature rating of -40°C to +50°C.		
R13	Subsection 4.3.4, MR. 26	The antenna must be capable of operating in an outside marine environment which can experience humidity, strong winds, rain, snow, and ice loading conditions as specified in the FAA-G-2100H: <i>Federal Aviation Administration Application Handbook for Electronic Equipment, General Requirements</i> .		
		The DME Bridge Controller must feature a menu driven, graphical user interface that provides users with the following functionality:		
R14		a. Turn on and off the transmitted signal,		
R15		b. Perform basic functions required for operating the equipment,		
R16	Subsection 4.4.1, MR. 28	c. Configure the operating parameters associated with the equipment,		
R17		d. Execute diagnostic routines,		
R18		e. Display the details pertaining to any warnings or alarms, and		
R19		f. Display the status of the equipment.		
		The DME Bridge Controller must have an audio alarm feature that supports the following functionality:		
R20	Subsection 4.4.1, MR. 29	a. Can be turned on or off by the user,		
R21		b. Can be configured by the user such that any combination of alarms/warnings can trigger an audio sound, and		

R22		c. Emits an audio sound when the pre-set condition is realized.		
R23	Subsection 4.4.1, MR. 30	The DME Bridge Controller must provide users with the ability to determine the number of Automatic Direction Finder (ADF) equipped helicopters that are currently connected to the DME system.		
R24	Subsection 4.4.1, MR. 31	The DME Bridge Controller user interface must have the capability to display the user and the slant range distance associated with each helicopter.		
R25	Subsection 4.4.1, MR. 32	All user configurable settings must be stored in non-volatile memory and must persist across power cycles.		
R26	Subsection 4.4.3, MR. 34	The electronics associated with the DME Bridge Controller must be capable of being powered by either of the following power sources: The electronics associated with the DME Bridge Controller must be capable of being powered by any combination of the listed sources: <ul style="list-style-type: none"> a. 115 VAC ±10% circuit, b. 24 VDC ±15%, two wire ungrounded, or c. 12 VDC ±15%, two wire negative ground. 		
R27	Subsection 4.4.4, MR. 35	The DME Bridge Controller must have a temperature rating of -10°C to +50°C with a humidity rating of 5% to 90%.		
The Offeror must supply a reference from Technical Documentation and/or a technical drawing that proves each of the following requirements:				
R28	Subsection 4.2.2, MR. 15	The DME Core must be capable of being installed in an equipment room that physically differs from the location of the antenna and DME bridge control unit.		
R29	Subsection 4.4.1, MR. 27	The cable connecting the DME Core to the DME Bridge Controller electronics must support installation distances up to 250 feet.		

R30	Subsection 4.3.2, MR. 21	The cable connecting the antenna to the DME Core electronics must support installation distances up to 250 feet.		
R31	Subsection 4.4.2, MR. 33	The DME Bridge Controller must be cable of being installed on the bridge of a ship that physically differs from the location of the antenna and DME core unit.		
The Offeror must supply a reference from Technical Documentation and/or a radiation pattern that proves each of the following requirements:				
R32	Subsection 5.3.3, MR. 23	The antenna must feature an omnidirectional radiation pattern that transmits the desired signal with equal power in all directions.		
		The antenna gain must:		
R33	Subsection 5.3.3, MR. 24	a. Feature a minimum gain of 6 dB on the main beam,		
R34		b. Feature a minimum gain of 3 dB at the horizon, and		
The Offeror must supply a reference from Technical Documentation or a statement from the Original Equipment Manufacturer that proves each of the following requirements:				
R35	Subsection 3.1, MR. 2	The Contractor must provide all documentation developed or supplied for this procurement in Canadian English.		
R36	Subsection 3.2, MR. 6	The commercial documentation supplied with the equipment must identify any recommended spare parts, including Lowest Replaceable Unit (LRU) components which will be required to maintain the DME.		
R37	Subsection 4.1, MR. 7	All software and hardware must be COTS and the equipment must be in use by a minimum of five (5) organizations.		

TABLE D2 – TECHNICAL EVALUATION - POINT RATED REQUIREMENTS

Desired Requirements Evaluation					
The Offeror must provide references to the items specified below in order to be evaluated. The rating is performed on a scale of 600 points.					
#	SOR Reference	Description of Requirement	Points	Maximum Score	Offeror Reference
			Points Break		
R37	Subsection 3.1, DR. 1	Documents developed or supplied for this procurement, not including technical drawings, should be supplied in equally accurate Canadian English and French. This includes but is not limited to installation, service, and operator manuals.	80 points if the installation, service, and operator manuals are provided in Canadian English and French for Offer evaluation.	80	
			Documents provided will be reviewed for quality assurance.		
			20 points if a written guarantee that the installation, service, and operator manuals will be provided in Canadian English and French within 4 months from contract award.		
			0 points if indicated that the documents cannot be provided in Canadian English and French or a reference is not provided for Offer evaluation.		

R38	Subsection 4.1, DR. 2	The DME should be compliant with International Electro technical Commission (IEC) 60945-2002 Ed. 4: <i>Maritime navigation and radio communication equipment and systems – General requirements – Methods of testing and required test results.</i>	<p>30 points if proof of compliance is provided for Offer evaluation.</p> <p>0 points if indicated that equipment is non-compliant with IEC 60945-2002 Ed. 4 or a reference is not provided for Offer evaluation.</p>	30		
R39	Subsection 4.4.1, DR. 3	<p>For the DME Bridge Controller software, Canada has preferences in the following order, however, the software will be supplied in accordance with the Contractor's Offer:</p> <p>a. Freeware software capable of being installed on a CCG supplied PC.</p> <p>b. Cost-per-license software capable of being installed on a CCG supplied PC.</p>	<p>50 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.</p> <p>20 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.</p> <p>0 points if a reference is not provided for Offer evaluation.</p>	50		

R40	Subsection 4.4.1, DR. 4	The Contractor supplied DME Bridge Controller runs on Microsoft Windows 10.	<p>50 points if the software runs on Microsoft Windows 10 operating system.</p> <p>20 points if the software runs on a Linux/Unix operating system.</p> <p>0 points if the software must run on any other operating system or a reference is not provided for Offer evaluation.</p>	50		
R41	Subsection 4.4.1, DR. 5	The Contractor provides updates to the DME Bridge Controller software free of charge.	<p>60 points if provided for greater than or equal to five (5) years.</p> <p>40 points if provided for greater than or equal to three (3) but less than five (5) years.</p> <p>20 points if provided for greater than zero (0) years but less than three (3) years.</p> <p>0 points if not provided free of charge or a reference is not provided for Offer evaluation.</p>	60		
R42	Subsection 4.5.1, DR. 6	The primary function of the maintenance port should be to provide maintenance technicians with the ability to connect to the DME over an Ethernet based network in order to perform maintenance and diagnostic tasks.	<p>30 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.</p> <p>0 points if the maintenance port does not use Ethernet based network technology or a reference is not provided for Offer evaluation.</p>	30		

R43	Subsection 4.5.1, DR. 7	The DME system should ensure that only authorized users are permitted to connect to the DME system. This should be achieved by means of a username and password.	<div> <div>30 points if a written reference from a manufacturer manual or datasheet is provided demonstrating access control by means of a username and password.</div> <div>15 points if user access is control by other means.</div> <div>0 points if software specific user access security does not exist or a reference is not provided for Offer evaluation.</div> </div>	30		
		The maintenance port should provide the user with the ability to perform the following functions:				
R44	Subsection 4.5.1, DR. 8	a. Configure/set the operating parameters associated with the equipment,	<div>30 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.</div> <div>0 points if a reference is not provided for Offer evaluation.</div>	30		
R45		b. Execute diagnostic routines,	<div>30 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.</div> <div>0 points if a reference is not provided for Offer evaluation.</div>	30		

R46	Subsection 4.5.1, DR. 8	c. Display the details pertaining to any warnings or alarms, and	25 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation. 0 points if a reference is not provided for Offer evaluation.	25		
R47		d. Display the status of the equipment.	25 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation. 0 points if a reference is not provided for Offer evaluation.	25		
R48	Subsection 4.5.1, DR. 9	For the DME maintenance software, Canada has preferences in the following order, however, the software will be supplied in accordance with the Contractor's Offer:		60		
		a. Freeware software capable of being installed on a CCG supplied PC.	60 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.			
		b. Cost-per-license software capable of being installed on a CCG supplied PC.	30 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.			
		c. Cost-per-license software with lease of hardware.	10 points if a written reference from a manufacturer manual or datasheet is provided for Offer evaluation.			
			0 points if a reference is not provided for Offer evaluation.			

R49	Subsection 4.5.1, DR. 10	The Contractor supplied DME maintenance port software operates on Microsoft Windows 10.	50 points if the software runs on Microsoft Windows 10 operating system.	50		
			20 points if the software runs on a Linux/Unix operating system.			
			0 points if the software must run on any other operating system or a reference is not provided for Offer evaluation.			
R50	Subsection 4.5.1, DR. 11	The contractor provides updates to the DME maintenance port software free of charge.	50 points if provided for greater than or equal to five (5) years.	50		
			30 points if provided for greater than or equal to three (3) but less than five (5) years.			
			10 points if provided for greater than zero (0) years but less than three (3) years.			
			0 points if not provided free of charge or a reference is not provided for Offer evaluation.			

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4. Adjustments to Appendix C of Annex A as a result of item 2

UNDER APPENDIX C to ANNEX A

~~DELETE ALL~~

INSERT

APPENDIX C - DME SYSTEMS ACCEPTANCE TRIAL

Acceptance Trial				
Acceptance trials will be evaluated on a stringent pass/fail. The Contractor will have one (1) attempt to demonstrate each of the requirements below.				
For the acceptance trials, a DME core, DME bridge controller, and DME antenna must be setup by the Contractor at 25 Huron Street, Victoria, BC. CCG may assist with the setup as requested in writing by the Contractor and dependant upon CCG manpower and time. CCG involvement will be managed by the Technical Authority (TA) and documented as per the Contractor's written requirements. The Contractor must provide their installation drawings and standards, as well as their preferred date for the installation, setup, and commissioning of the DME equipment, a minimum of fourteen (14) calendar days prior to the Contractor's arrival in Victoria, BC. All reasonable attempts will be made to schedule the Acceptance Trial on the Contractor's preferred date; a final decision on the Acceptance Trial date will be at the TA's discretion.				
All cabling must be installed in exposed cable trays, provided by CCG, for inspection by the TA and Contractor prior to beginning the trials. All cabling used in the system must be installed and provided by the Contractor. At no cost to the Contractor and at the Contractor's written request, dependent upon CCG manpower and time, CCG may install marine standard, low loss, shielded coax and data cabling, commonly used on CCG vessels, for the acceptance trials prior to the Contractor's arrival in Victoria, BC. Unless specified in writing by the Contractor, materials installed by CCG will follow the material manufacturer's recommendations for installation, for example bend radius, connectors, etc. Where possible, end to end testing of all cabling will be performed and documented for review by the Contractor and TA.				
The antenna must be mounted to a temporary stand on the roof of the electronics/shops building. The DME core and DME bridge controller must be mounted in the interior of the electronics/shops building at 25 Huron Street, Victoria, British Columbia. The location of the DME core and DME bridge controller is at the discretion of the TA. A single, CCG helicopter will be provide for the acceptance trails. If and when needed, CCG will arrange two helicopters to test specific requirements.				
Acceptance testing will be dependent upon helicopter availability and weather. Any delays due to helicopter availability or the weather causing incurred travel costs to the Contractor will be compensated as per the Treasury Board Secretariat Guidelines.				
#	SOR Reference	Definition	Test	Pass/Fail
1	Subsection 5.2.1, MR. 12	The DME Core must provide the pilot of the helicopter equipped with a DME transmitter unit with the ability to continuously and accurately display the slant range distance between the DME equipped vessel and the helicopter.	A single CCG helicopter will fly to a Race Rocks Lighthouse (British Columbia, Canada) and hover one-half (0.5) nautical miles, approximately one (1) kilometer, above sea level. The ground range is approximately 9.37 nautical miles from Race Rocks Lighthouse to 25 Huron Street, Victoria, British Columbia. The value reported by the DME transponder must be within ±10% of 9.37 nautical miles.	

2	Subsection 5.2.1, MR. 14	The DME Core must be capable of providing a helicopter, equipped with a standard DME transceiver, such as the BendixKing KN-62A (50 watt power output, unity gain antenna), with the ability to provide distance measurements at operating ranges of at least 50 nautical miles (ground range) under ideal weather conditions and clear line of sight.	A single CCG helicopter, using a BendixKing KN-62A DME interrogator, will fly fifty (50) nautical miles, ground range, towards Port Renfrew, British Columbia. Hovering between a height of one-half (0.5) to one (1) nautical mile, the helicopter DME interrogator will be switched on. The DME interrogator must connect and correctly display the slant range to the DME transponder being used for the Acceptance Trials, located at 25 Huron Street. A similar slant range must be displayed on both the DME interrogator and transponder.	
3	Subsection 5.2.1, MR. 15	The transmitter and receiver function of the DME Core must have the capability to be configured to operate on any of the one-hundred-twenty-six (126) X and Y channels identified in ICAO Annex 10.	A single helicopter DME interrogator will switch to five (5) different channels, selected by CCG and not revealed to the Contractor until the day of testing. The DME transponder being used for Acceptance Trials must change to the correct channel and successfully connect with the helicopter DME interrogator for all five (5) tests.	
4	Subsection 5.2.2, MR. 16	The DME Core must be capable of being installed in an equipment room that physically differs from the location of the antenna and DME bridge control unit.	Will be observed during setup of equipment for acceptance trials.	
5	Subsection 5.2.2, MR. 17	The DME Core must not exceed 48" H x 24" W x 24" D.	Measurements of the unit will be taken on site.	
6	Subsection 5.2.3, MR. 18	The DME Core must be capable of being configured to transmit at any power level between 100 watts and 500 watts.	DME transmit power will be varied and monitored using a Bird 43 power meter, inline between the DME core and antenna. The Bird 43 power meter and slugs will have been calibrated within the last year at the DND Calibration Centre in Victoria, BC.	
7	Subsection 5.2.3, MR. 19	The electronics associated with the DME Core must be capable of being powered by either of the following power sources: a. 115 VAC ±10% circuit, b. 24 VDC ±15%, two wire ungrounded, or c. 12 VDC ±15%, two wire negative ground.	Will be observed during setup of equipment for acceptance trials.	
8	Subsection 5.3.1, MR. 21	The Transmitter signal must not interfere with the normal operation of other marine based communication systems when installed on the exterior of the ship. Other marine based communication systems may include but not limited to the following: radar, X-Band and S-Band; VHF radio; Automatic Identification System (AIS), INMARSAT C, Iridium Satellite Communication, Differential Global Position System (DGPS), etc.	The DME Antenna will be placed on the roof of the building within the CCG Electronics Department antenna farm. The DME antenna will be standing approximately one (1) meter off of roof, inline with the other antennas of concern. The DME antenna will be no more than three (3) meters away from any VHF, AIS, GPS, satellite dish, radar turning unit, or MF-HF antenna. Receivers will be monitored for total loss of connectivity.	
9	Subsection 5.3.2, MR. 23	The length of the antenna must not exceed 48 inches.	Will be observed during setup of equipment for acceptance trials.	

10	Subsection 5.3.3, MR. 25	c. Be sufficient strength to ensure that the operating distance prescribed in this specification is successfully achieved.	Will be observed during Acceptance Trial #2 (Subsection 5.2.1, MR. 14) using antenna specified in bid.
11	Subsection 5.4.1, MR. 29	The DME Bridge Controller must feature a menu driven, graphical user interface that provides users with the following functionality:	
12		a. Turn on and off the transmitted signal,	Demo by contractor.
13		b. Perform basic functions required for operating the equipment,	Demo by contractor.
14		c. Configure the operating parameters associated with the equipment,	Demo by contractor.
15		d. Execute diagnostic routines,	Demo by contractor.
16		e. Display the details pertaining to any warnings or alarms, and	Demo by contractor.
17	Subsection 5.4.1, MR. 30	f. Display the status of the equipment.	Demo by contractor.
18		The DME Bridge Controller must have an audio alarm feature that supports the following functionality:	
19		a. Can be turned on or off by the user,	Demo by contractor.
20	Subsection 5.4.1, MR. 31	b. Can be configured by the user such that any combination of alarms/warnings can trigger an audio sound, and	Demo by contractor.
21	Subsection 5.4.1, MR. 32	c. Emits an audio sound when the pre-set condition is realized.	Demo by contractor.
22	Subsection 5.4.1, MR. 33	The DME Bridge Controller must provide users with the ability to determine the number of Automatic Direction Finder (ADF) equipped helicopters that are currently connected to the DME system.	Two helicopters will fly away from the CCG base in different directions—one to Trial Island, one to Race Rocks. Both helicopters will be monitored on the DME Bridge Controller supplied for the Acceptance Trial.
23	Subsection 5.4.2, MR. 34	The DME Bridge Controller user interface must have the capability to display the user and the slant range distance associated with each helicopter.	Two helicopters will fly away from the CCG base in different directions—one to Trial Island, one to Race Rocks. The slant range of both helicopters will be monitored on the DME Bridge Controller supplied for the Acceptance Trial.
24	Subsection 5.4.3, MR. 35	All user configurable settings must be stored in non-volatile memory and must persist across power cycles.	The DME core will be powered down (power source physically removed) for 5 minutes. Power will be returned to the DME Core and settings will be verified. The test will be repeated a second time with both the DME core and DME Bridge Controller powered down for 5 minutes together (power physically removed). Power will be returned to the DME Core and DME Bridge Controller and settings will be verified.
25	Subsection 5.4.3, MR. 35	The DME Bridge Controller must be capable of being installed on the bridge of a ship that physically differs from the location of the antenna and DME core unit.	Will be observed during setup of equipment for acceptance trials.
26	Subsection 5.4.3, MR. 35	The electronics associated with the DME Bridge Controller must be capable of being powered by either of the following power sources: a. 115 VAC ±10% circuit,	Will be observed during setup of equipment for acceptance trials.

		b. 24 VDC ±15%, two wire ungrounded, or c. 12 VDC ±15%, two wire negative ground.		
25	Subsection 5.5.1, DR. 3 (if applicable)	The primary function of the maintenance port should be to provide maintenance technicians with the ability to connect to the DME over an Ethernet based network in order to perform maintenance and diagnostic tasks.	A CCG provided laptop will be used to interface with the maintenance port.	
26	Subsection 5.5.1, DR. 4 (if applicable)	The DME system should ensure that only authorized users are permitted to connect to the DME system. This should be achieved by means of a username and password.	A CCG provided laptop will be used to interface with the maintenance port.	
27	Subsection 5.5.1, DR. 5 (if applicable)	The maintenance port should provide the user with the ability to perform the following functions:	A CCG provided laptop will be used to interface with the maintenance port.	
28		a. Configure/set the operating parameters associated with the equipment;	A CCG provided laptop will be used to interface with the maintenance port.	
29		b. Execute diagnostic routines;	A CCG provided laptop will be used to interface with the maintenance port.	
30		c. Display the details pertaining to any warnings or alarms, and d. Display the status of the equipment.	A CCG provided laptop will be used to interface with the maintenance port.	