

**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 0A1 / Noyau 0A1**  
**Gatineau, Québec K1A 0S5**  
**Bid Fax: (819) 997-9776**

## **SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION**

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

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

### **Comments - Commentaires**

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

**Issuing Office - Bureau de distribution**  
Ship Refits and Conversions / Radoubss et  
modifications de navires and / et  
11 Laurier St. / 11, rue Laurier  
6C2, Place du Portage  
Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> CCGS Samuel Risley refit 2014	
<b>Solicitation No. - N° de l'invitation</b> F2599-145028/A	<b>Amendment No. - N° modif.</b> 009
<b>Client Reference No. - N° de référence du client</b> F2599-145028	<b>Date</b> 2014-06-16
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$MD-018-24496	
<b>File No. - N° de dossier</b> 018md.F2599-145028	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2014-07-03</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Vandal, Paul	<b>Buyer Id - Id de l'acheteur</b> 018md
<b>Telephone No. - N° de téléphone</b> (819) 956-0645 ( )	<b>FAX No. - N° de FAX</b> (819) 956-0897
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

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## QUESTIONS AND ANSWERS

### Q.25

For those bidders who will be using Government facilities i.e. Docks for this requirement, what will the Government's charge out rate be to ensure equitable treatment with bidders who have invested in and will be using their own facility?

### A.25

Government Dock in Sarnia user rates can be determined by contacting Transport Canada Marine safety directly.

### Q.26

During the Vessels Unmanned Refit time from August 13 until September 10<sup>th</sup> 2014 is the contractor to have security personal on the vessel when no workers are present after working hours each day? If security is needed what is the requirements of qualification for the security personal?

### A.26

Qualified security personals

### Q.27

On Amendment Number 6 Answer to 14A reads CCG has revised the drawing No. CMS30-236-PL Sheets 1 / 2 and 2 / 2 (Rev 1) (Updated Pipe Dimensions), which shows the dimensions added.

Where will the contractor locate these revised drawings?

### A.27

Please see Amendment #7 with the revised Drawings.

### Q.28

On the Amendment # 7 which was received on Buy & Sell June 10 2014 regarding Question 15 reads that the contractor shall use schedule 80 galvanized seamless pipe. On the revised drawing CMS30-236-PL Rev 1 the pipe size has been wrote as schedule 80 but on the "NOTES" Note # 3 reads pipes shall be galvanized schedule 40.

What is the correct schedule of all piping?

A.28

The correct scheduling of pipe to be – schedule 80.

Q.29

Item 8: Main Deck Grey Water Drains and Black Water Pipe Replacement at section 8.4.4.7.1 is in regards to the HVAC unit located on the port side hallway on the main deck . PWGSC is asking for the contractor to install a new deck drain forward of HVAC compartment bulkhead, which will connect into the existing drain below the HVAC unit via a coupling .

What is the size and schedule of this new 316L stainless steel pipe?

A.29

1-1/2” Sch. 10 316SS Pipe.

Q.30

Further to Q.7. on Amendment#6; Reference Specification, 5.4.1 - Requires the FSR to oversee all work on the main engine &. 5.4.13.1 – Requires Wartsila to complete the engine rebuild and connection driveline (Pages 24 & 28). Is Wartsila to oversee the Engine work or to oversee contractor’s staff in conducting the work? A.7 Wartsila certified technicians to complete the assembly of the #1 Main Engine. Wartsila FSR to oversee all other work in section 5.0 where an FSR is specified. What specific work is the contractor to perform in support of Wartsila as it is reassembling the #1 main engine?

A.30

With respect to Specs Sec 5.0, the intent is to have certified Wartsila FSR on site carrying out the installation and assembly of ME#1. The Yard is NOT providing workers to perform the assembly of the engine under Wartsila supervision. Wartsila must supply labour for assembly with the yard assisting with the removal of the old block and installation of the new short block.

## Q.31

Further to Q.9. on Amendment#6; Reference, Specification 14.3.1 (page 79 of 81) - This item has Wartsila and ship's crew performing work on the #2 main Engine. Does the contractor have a role beyond contracting for the Wartsila FSR? A.9. Assist FSR with dismantling, cleaning and assembly of parts listed under 14.3.6.

What specific work is the contractor to perform in assisting the Wartsila FSR to dismantle, clean and assemble #2 main engine?

## A.31

- A) The Contractor to quote labor for 80 HRs, to assist the Wartsila FSR listed under Sec 14.3.6.  
 B) The Contractor shall supply the services of Wartsial FSR listed under Sec 14.3.5, starting Aug 18 to Sep 10, 2014

## Q.32

Further to Q10 on Amendment #6; Reference, ITT Annex "A", Specification 2.1.1.3. – "...each of the services noted...shall be separately priced in the Contractors bid..." (page 11 of 81). Would the Crown please clarify where these services are priced in the financial bid sheet? A10. Each of the services noted are 2.1.6.5, 2.1.7.8 & 2.1.10, and those Unit Rate items are for adjustment up or down. The current ITT's pricing data sheet does not contain entries where the services are to be bid. Canada is requested to provide a revised pricing data sheet to bidders. (As an example, please refer to CCG Louis St. Laurent Bid Solicitation #F6855-133110/A, Annex "G" – Appendix 1 on page 67)

## A.32

See Annex "H" - Appendix 1 - 2.0 Services, 2.1.6.5, 2.1.7.8 & 2.1.10 which contains entries where the services noted are to be bid.

## Q.33

Further to Q12 on Amendment#6; Reference ITT, Part 4 & ITT Cover Page (page 13 of 71). Can Canada confirm if there will be a public opening of this bid on June 26<sup>th</sup>? A.12. Canada confirm there will not be a public opening of this bid on June 26<sup>th</sup>.

Q.33a)

If this is an ITT, can the Crown please explain why there is no public opening?

A.33a)

Not necessary

Q.33b)

As this is not a public opening, can the Crown please advise when the contract award is anticipated?

A.33b)

If there is no issue with the lowest responsive bid after the bid evaluation process, Canada will advise the successful bidder approximately one week after the bid closing.

Q.34

Further to Q.16. on Amendment#6; Specification Item 9 Ballast, Sewage and Void Tanks Inspections (Survey Item) Section 9.3.1.7 reads the contractor shall Hydrostatically test all tanks to a 2.44meter head of water with the final test level being maintained for 1 hour. Can the contractor perform a pneumatic test by using a manometer on all tanks that require testing? A.16 The Contractor will coordinate with TCMS ahead of the testing, if this arrangement is acceptable to TCMS. Canada is requested to advise whether testing must be pneumatic or hydrostatic. As the response will have an impact on pricing, TCMS should advise now as to what is acceptable and bidders will price their proposals accordingly.

A.34

Hydrostatic testing to be carried out.

### Q.35

Further to Q.19 on Amendment #7; Reference, ITT Resulting Contract Clauses 7.3.2 Would the Crown please provide details of the work to be conducted by the Ship's crew to ensure details of the work to be performed by the ship's crew is required to ensure this work does not contravene any union agreement.

### A.19

Emergency air compressor\*

Emergency fire pump\*

Annual load line inspection

#2 Main Engine overhaul\* - **Aug 13th to Sept 10th**

Annual inspections on crane and davits\*

Change HVAC controls for bridge and thermal fluid heating system in engine room\*

Stack compartment damper actuator change

Electronics system maintenance:

a) Corrective maintenance requests

b) Win7 upgrade on the desktop computers

c) Preventative maintenance tasks

Exterior paint on the house and decks\*

Hydraulic hoses change on mooring winches

Replacement of the 3rd mate's cabin furniture

Fire door gaskets replacement \*

Annual life raft exchange

Removal of main engines load dependant system \*

National Marine & Fire – Annual fire Inspection

### Q.35a)

The indicated (\*) work items are normally performed by shipyard workers and for those yards which are unionized, this creates expectations. Please advise why in this case Canada is having the work performed by Ship's Crew?

### A.35a)

Due to the extended period of time required to perform the scheduled contracted work, CCG had to combined the contractual refit period with the crew refit period to limit the impact on the services provided to the shipping industry. The items listed above are all work that is performed at Crew scheduled refit by Ships crew.

Q.35b)

Please confirm that the work the ship's crew will perform in support of the TCMS Inspections will include: dismantling, cleaning and reassembling components.

A.35b)

Ship's crew to perform inspections and testing to satisfy TCMS requirements.

Q.35c)

Please confirm the second last item is really "Removal of main engines load **management** system"?

A.35c)

This item has been removed from the list of crew scheduled refit.

Q.36

Further to Q.22 Reference, ITT Instructions to Bidders Paragraph 2.7.1 & Annex "A" 7.3.2 Given the conflicting requirement to move ballast, fuel and other fluids for both elements of the work specification and also to maintain vessel stability (whilst removing and installing various weights during the refit). What analysis has the Crown undertaken to assure itself that an alongside refit is more suitable and safe than a dry-docking?

A.22

An analysis has been done.

The original question posed asked "what analysis has the Crown undertaken" not if an analysis had been done. Given there are potentially safety issues involved then we again request what specific analysis was conducted to ensure that an alongside refit is appropriate?

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**A.36**

A stability analysis was completed by our in-house naval architect to determine a new GM and areas under the GZ curve given the removal of ballast, fuel and equipment. These items were determined to be within TCMS limits by a good margin (Minimum GM required  $>.2m$  / Actual GM(fluid) =  $1.20m$ ). The the weight removed for decking or ME #1 represent less than 0.5% change in lightship deadweight. We found in a alongside condition with less than 10% fuel in main fuel tanks No.4, all ballast tanks empty, Fuel settling and day tank empty, main deck flooring removed and ME #1 removed we still maintain a better intact stability then in our buoy handling arrival condition with max deck load and minimum in tanks (GM (fluid)=  $0.89m$ ). Therefore CCG is fully satisfied with completing an alongside refit of this vessel.

**Q.37**

General Question on Contracting with sub-contractors selected by Canada. For those sub-contractors imposed by Canada as sole source i.e. Wartsila and Detroit Diesel, and who do not accept flow down of terms and conditions from the prime contract, is Canada going to accept their terms and conditions?

**A.37**

spec item number 11 Emergency Generator (Diesel Engine) (Survey Item) Specification item 11.1.1 states----- The Contractor shall perform a run test under full load for the attending TCMS surveyor.

**Q.37a)**

Will this test require the use of a load bank or can the ship's electrical load be used to perform this test?

**A.37a)**

Ships electrical load will be used for this purpose.



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Q.37b)

How long must the diesel be operated at full load for this test?

A.37b)

Duration of operation to be as per current TCMS regulations and attending inspector satisfaction.

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**Original Requirement Amended to insert the option to purchase the  
(Installation of a Radar System)**

**Delete 1.2 - Summary 1a) and insert the following:**

**1.2 Summary**

1. The Requirement is:

- a) To carry out the docking, maintenance and alterations of the Canadian Coast Guard Vessel CCGS Samuel Risley in accordance with the associated Technical Specifications detailed in Annex "A".

In addition to the Requirement above, Canada shall have the irrevocable option to purchase the installation of the Radar System (See Attached Spec. Item 15 - Annex "A-1"), under the same terms and conditions stated in the Contract, and at the firm unit price provided for in Annex "H1".

The option(s) may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

## Delete 6.2 - Vessel Transfer Costs and insert the following:

### 6.2 Vessel Transfer Costs

Vessel Transfer Costs will apply to the evaluation price of this solicitation.

1. The evaluation price must include the cost for transferring the vessel from its home port to the shipyard/ship repair facility where the Work will be performed and the cost of transferring the vessel to its home port following completion of the Work, in accordance with the following:

(a) The Bidder must provide the location of the shipyard/ship repair facility where it proposes to perform the Work together with the applicable vessel transfer cost from the list provided under paragraph 2 of this clause shall be entered into Table H1 (D):

(b) If the list in paragraph 2 of this clause does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, then the Bidder must advise the Contracting Authority, in writing, at least **10 calendar days** before the bid closing date, of its proposed location for performing the Work. The Contracting Authority will confirm to the Bidder, in writing, at least **5 calendar days** before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

A bid that specifies a location for executing the Work which is not on the list of paragraph 2 of this clause, and for which a notification in writing has not been received by the Contracting Authority as required above, will be considered non-responsive.

2. List of shipyard/ship repair facilities and applicable vessel transfer costs

Vessel: CCGS Samuel Risley  
Home port: Parry Sound, Ontario

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility. Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

Transfer costs in the case of vessels transferred unmanned by either commercial towing, railway, highway or other suitable means of transportation must be:

(i) included as part of the Bidder's financial bid in the case where the Bidder is responsible for the transfer; or

(ii) identified as the applicable vessel transfer cost, as given in the list below, in the case when Canada is responsible for the transfer.

Solicitation No. - N° de l'invitation

F2599-145028/A

Client Ref. No. - N° de réf. du client

F2599-145028

Amd. No. - N° de la modif.

009

File No. - N° du dossier

018mdF2599-145028

Buyer ID - Id de l'acheteur

018md

CCC No./N° CCC - FMS No/ N° VME

**Shipyard/ship repair facility****Applicable vessel transfer cost**

<b>Company</b>	<b>City</b>	<b>Transfer Cost Manned</b>
New Dock, St. John's Dockyard Ltd.	St. John's	C\$188,370.00
Halifax Shipyards Ltd.	Halifax	C\$169,784.00
Group Verreault Navigation Inc.	Les Mechins	C\$113,500.00
Davie Canada Yard Inc.	Levis	C\$95,441.00
Heddle Marine Service Inc.	Hamilton	C\$56,360.00
Pictou Shipyard	Pictou	C\$156,222.00
Ocean Industries Inc.	Saint-Bernard-Sur-Mer	C\$99,058.00
Allied Marine and Industrial	Port Colborne	C\$48,323.00
Central Machine & Marine	Sarnia	C\$21,745.00
Shelburne Ship Repair	Shelburne	C\$181,137.00
Réparations navales et industrielles Océan Inc.	Québec City	C\$95,441.00

**Proposed Drydocking Location :** \_\_\_\_\_**Refer to Annex "J1" for Deliverables/Certifications.****Delete 7.1 - Requirement 7a) and insert the following:****7.1 Requirement**

The Contractor must:

- a) To carry out the docking, maintenance and alterations of the Canadian Coast Guard Vessel CCGS Samuel Risley in accordance with the associated Technical Specifications detailed in Annex "A".

In addition to the Requirement above, Canada shall have the irrevocable option to purchase the installation of the Radar System (See Attached Spec. Item 15 - Annex "A-1"), under the same terms and conditions stated in the Contract, and at the firm unit price provided for in Annex "B1-1".

**Delete Annex B - Basis of Payment and Insert the following:**

**ANNEX**

**B**

**BASIS OF PAYMENT PRICE**

Annex "B" will form the Basis of Payment for the resulting Contract and should not be filled in at the bid submission stage.

**B1 Contract Firm Price**

<b>A)</b>	<b>Known Work</b> For work as stated in Article 7. 1, Specified in Annex "A-1" and detailed in the attached Pricing Data Sheets, for a FIRM PRICE of:	<b>\$</b>
<b>B)</b>	<b>Applicable Taxes of line a) only</b>	<b>\$</b>
<b>C)</b>	<b>Total Firm Price Applicable Taxes Included:</b>	<b>\$</b>

**B1.1 Contract Firm Price - Known Work & Option Work (Radar System Installation) if exercised**

<b>D)</b>	<b>Known Work &amp; Option Work (Radar System Installation)</b> For work as stated in Article 7. 1, Specified in Annex "A-1", for a FIRM PRICE of:	<b>\$</b>
<b>E)</b>	<b>Applicable Taxes of line d) only</b>	<b>\$</b>
<b>F)</b>	<b>Total Firm Price Applicable Taxes Included:</b>	<b>\$</b>

**B2 Unscheduled Work**

The Contractor will be paid for unscheduled work arising, as authorized by Canada. The authorized unscheduled work will be calculated as follows:

"Number of hours (to be negotiated) X \$\_\_\_\_\_, being the Contractor's firm hourly charge-out labour rate which includes overhead, consumables, and profit, plus net laid-down cost of materials to which will be added a mark-up of 10%, plus applicable taxes, of the total cost of material and labour. The firm hourly charge-out labour rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

**B2.1:** Notwithstanding definitions or useage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating hours for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in B2.2 below, will not be negotiated, but will be compensated for in accordance with B2.2.

**B2.2:** Allowance for Related Labour Costs such as: Management, all Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Certification Inspecting and Reporting, Estimating, and Preparing Unscheduled Work Submissions will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered in line B2 above.

**B2.3:** The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Chargeout Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

### **Pro-rated Prices Unscheduled Work**

Hours and prices for unscheduled work shall be based on comparable historical data applicable to similar work at the same facility, or shall be determined by pro-rating the quoted Work costs in the Contract when in similar areas of the vessel.

### **B3 Overtime**

The Contractor must not perform any overtime under the Contract unless authorized in advance and in writing by the Contracting Authority. There will be no overtime payment for Known Work. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing the overtime performed pursuant to the written authorization. Payment for authorized overtime will be calculated as follows:

For unscheduled work, the Contractor will be paid the authorized overtime hours at the quoted charge-out labour rate plus the following premium rates:

For Time and one half: \$ \_\_\_\_\_ per hour; or,

For Double time \$ \_\_\_\_\_ per hour

The above premiums will be calculated by taking the average hourly direct labour rate premiums, plus certified fringe benefit, plus profit on labour premium and fringe benefits. These rates will remain firm for the duration of the Contract, including all amendments and are subject to audit if considered necessary by Canada.

### **B4 Daily Services Fee**

In the event of a delay in the performance of the Work that lengthens the Work period beyond the date specified in this Contract, and if such delay is recognized and agreed upon by the Contracting Authority as being attributable to Canada, Canada agrees to pay the Contractor the daily services fee, described below, for each day of such delay. This fee shall be the sole liability of Canada to the Contractor for the delay.

The firm daily services fee is:

(a) For a working day: \$ \_\_\_\_\_

(b) For a non-working day: \$ \_\_\_\_\_

The above fees shall include but not be limited to, all aspects of the following costs: Project Management Services, Administrative Support, Production Services, Quality Assurance, Material Support, Planned Maintenance and Ship Services, and all other resources and direct costs needed to maintain the Vessel at the Contractor's facility. These fees are firm and not subject to any additional charges for mark-up or profit.

## **B5 Vessel, Refit, Repair or Docking Cost**

The following costs must be included in the price:

1. Ship Services: include all costs for ship services such as water, steam, electricity, etc., required for vessel maintenance for the duration of the Contract.
2. Docking and Undocking include:
  - (a) all costs resulting from drydocking, wharfage, security, shoring, shifting and/or moving of the vessel within the successful Bidder's facility;
  - (b) the cost of services to tie up the vessel alongside and to cast off.

Unless specified otherwise, the vessel will be delivered by Canada to the successful Bidder's facility alongside a mutually agreed safe transfer point, afloat and upright, and the successful Bidder will do the same when the Work is completed. The cost of services to tie up the vessel alongside and to cast off must be included in the evaluation price.

3. Field Service Representatives/Supervisory Services: include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc. The Contractor is responsible for the performance of all subcontractors and FSRs.

These services must not be an extra charge except where unscheduled work requiring these services is added to the Contract.

4. Removals: include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.
5. Sheltering, Staging, Cranage and Transportation: include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

The Contractor will be responsible for the cost of any necessary modification of these facilities to meet applicable safety regulations.

## **B6 Pricing Data Sheets**

Parameters from the Pricing Data Sheets will be used at Canada's sole discretion in the determination of unscheduled work price.

**Delete Annex H - Financial Bid Presentation Sheet and Insert the following:****ANNEX****H****Financial Bid Presentation Sheet****H1 Price for Evaluation**

<b>A)</b>	<b>Known Work</b> For work as stated in Part 1 Clause 1.2, Specified in Annex "A" and detailed in the attached Pricing Data Sheets Appendix 1 of Annex "H", for a FIRM PRICE of:	\$ _____
<b>B)</b>	<b>Option Work (Radar System Installation) if exercised</b> For work as stated in Part 1 Clause 1.2, Specified in Annex "A-1" and detailed in the attached Pricing Data Sheets Appendix 1 of Annex "H", for a FIRM PRICE of:	\$ _____
<b>C)</b>	<p>Unscheduled Work Contractor Labour Cost: Estimated labour hours at a firm Charge-out Labour Rate, including overhead and profit for evaluation purpose only: 1,000 person hours X \$ _____ per hour for a PRICE of: See Article H2.1 and H2.2 below.</p> <p>Overtime premium for time and one half: Estimated hours for evaluation purposes only: 100 person hours X \$ _____ per hour for a PRICE of: See Article H3 Below.</p> <p>Overtime premium for double time: Estimated hours for evaluation purposes only: 100 person hours X \$ _____ per hour for a PRICE of: See Article H3 below.</p>	<p>\$ _____</p> <p>\$ _____</p> <p>\$ _____</p>
<b>D)</b>	<p>Daily Service Fees for evaluation purpose only As per Clause H4</p> <p>i) Ten (10) working days X \$ _____ firm daily service fee = \$ _____</p> <p>ii) Four (4) non-working days X \$ _____ firm daily service fee = \$ _____</p>	<p>\$ _____</p> <p>\$ _____</p>
<b>E)</b>	<p>Vessel Transfer Cost as Per Clause H7</p> <p>Proposed shipyard/ship repair facility: _____</p>	\$ _____
<b>F)</b>	<p>EVALUATION PRICE Applicable Taxes Excluded, [A + B + C+ D+ E]</p> <p>For an EVALUATION PRICE of (Applicable Taxes excluded):</p>	\$ _____



## H2      **Unscheduled Work**

The Contractor will be paid for unscheduled work arising, as authorized by Canada. The authorized unscheduled work will be calculated as follows:

"Number of hours (to be negotiated) X \$ \_\_\_\_\_, being the Contractor's firm hourly charge-out labour rate which includes overhead, consumables, and profit, plus net laid-down cost of materials to which will be added a mark-up of 10 percent, plus Applicable Taxes, if applicable, of the total cost of material and labour. The firm hourly charge-out labour rate and the material mark-up will remain firm for the duration of the Contract and any subsequent amendments."

**H2.1:** Notwithstanding definitions or usage elsewhere in this document, or in the Contractor's Cost Management System, when negotiating Hours for unscheduled work, PWGSC will consider only those hours of labour directly involved in the production of the subject work package.

Elements of Related Labour Costs identified in H2.2 below, will not be negotiated, but will be compensated for in accordance with Note H2.2. It is therefore incumbent upon the bidder to have bid appropriately which will result in fair compensation, regardless of their Cost Management System.

**H2.2:** Allowance for Related Labour Costs such as: Management, all Supervision, Purchasing and Material Handling, Quality Assurance and Reporting, First Aid, Gas Free Certification Inspecting and Reporting, and Estimating and preparing unscheduled work Submissions will be included as Overhead for the purposes of determining the Charge-out Labour Rate entered in line H2 above.

**H2.3:** The 10% mark-up rate for materials will also apply to subcontracted costs. The mark-up rate includes any allowance for material and subcontract management not allowed for in the Chargeout Labour Rate. The Contractor will not be entitled to a separate labour component for the purchase and handling of materials or subcontract administration.

## H3      **Overtime**

The Contractor must not perform any overtime under the Contract unless authorized in advance and in writing by the Contracting Authority. There will be no overtime payment for Known Work. Any request for payment must be accompanied by a copy of the overtime authorization and a report containing the overtime performed pursuant to the written authorization. Payment for authorized overtime will be calculated as follows:

For unscheduled work, the Contractor will be paid the authorized overtime hours at the quoted charge-out labour rate plus the following premium rates:

For Time and one half:                      \$ \_\_\_\_\_ per hour; or,

For Double time                                      \$ \_\_\_\_\_ per hour

The above premiums will be calculated by taking the average hourly direct labour rate premiums, plus certified fringe benefit, plus profit on labour premium and fringe benefits. These rates will remain firm for the duration of the Contract, including all amendments and are subject to audit if considered necessary by Canada.

#### H4 Daily Services Fee

In the event of a delay in the performance of the Work, and if such delay is recognized and agreed upon by the Contracting Authority as being attributable to Canada, Canada agrees to pay the Contractor the daily services fee, described below, for each day of such delay. This fee shall be the sole liability of Canada to the Contractor for the delay.

The firm daily services fee is:

- (a) For a working day: \$\_\_\_\_\_
- (b) For a non-working day: \$\_\_\_\_\_

The above fees shall include but not be limited to, all aspects of the following costs: Project Management Services, Administrative Support, Production Services, Quality Assurance, Material Support, Planned Maintenance and Ship Services, and all other resources and direct costs needed to maintain the Vessel at the Contractor's facility. These fees are firm and not subject to any additional charges for mark-up or profit.

#### H5 Vessel, Refit, Repair or Docking Cost

The following costs must be included in the price:

1. Ship Services: include all costs for ship services such as water, steam, electricity, etc., required for vessel maintenance for the duration of the Contract.
2. Docking and Undocking include:
  - (a) all costs resulting from drydocking, wharfage, security, shoring, shifting and/or moving of the vessel within the successful Bidder's facility;
  - (b) the cost of services to tie up the vessel alongside and to cast off.

Unless specified otherwise, the vessel will be delivered by Canada to the successful Bidder's facility alongside a mutually agreed safe transfer point, afloat and upright, and the successful Bidder will do the same when the Work is completed. The cost of services to tie up the vessel alongside and to cast off must be included in the evaluation price.

3. Field Service Representatives/Supervisory Services: include all costs for field service representatives/supervisory services including manufacturers' representatives, engineers, etc.

These services must not be an extra charge except where unscheduled work requiring these services is added to the Contract.

4. Removals: include all costs for removals necessary to carry out the Work and will be the responsibility of the successful Bidder whether or not they are identified in the specifications, except those removals not apparent when viewing the vessel or examining the drawings. The successful Bidder will also be responsible for safe storage of removed items and reinstalling them on completion of the Work. The successful Bidder will be responsible for renewal of components damaged during removal.

5. Sheltering, Staging, Cranage and Transportation: include the cost of all sheltering, staging including handrails, cranage and transportation to carry out the Work as specified.

The successful Bidder will be responsible for the cost of any necessary modification of these facilities to meet applicable safety regulations.

## H6 Vessel Transfer Costs

1. The evaluation price must include the cost for transferring the vessel from its home port to the shipyard/ship repair facility where the Work will be performed and the cost of transferring the vessel to its home port following completion of the Work, in accordance with the following:

(a) The Bidder must provide the location of the shipyard/ship repair facility where it proposes to perform the Work together with the applicable vessel transfer cost from the list provided under paragraph 2 of this clause shall be entered into Table H1:

(b) If the list in paragraph 2 of this clause does not provide the shipyard/ship repair location where the Bidder intends to perform the Work, then the Bidder must advise the Contracting Authority, in writing, at least 5 calendar days before the bid closing date, of its proposed location for performing the Work. The Contracting Authority will confirm to the Bidder, in writing, at least 3 calendar days before the bid closing date, the location of the shipyard/ship repair and the applicable vessel transfer cost.

A bid that specifies a location for executing the Work which is not on the list of paragraph 2 of this clause, and for which a notification in writing has not been received by the Contracting Authority as required above, will be considered non-responsive.

2. List of shipyard/ship repair facilities and applicable vessel transfer costs

Vessel: CCGS Samuel Risley  
Home port: Parry Sound, On

Transfer costs in the case of vessels transferred using a government delivery crew include the fuel cost at the vessel's most economical speed of transit and for unmanned refits only, crew transportation costs for the delivery crew based on the location of the vessel's home port and the shipyard/ship repair facility. Crew transportation costs do not include any members of the delivery crew who remain at the shipyard/ship repair facility in order to discharge project responsibilities related to the vessel being transferred.

Transfer costs in the case of vessels transferred unmanned by either commercial towing, railway, highway or other suitable means of transportation must be:

(i) included as part of the Bidder's financial bid in the case where the Bidder is responsible for the transfer; or

(iii) identified as the applicable vessel transfer cost, as given in the list below, in the case when

Solicitation No. - N° de l'invitation

F2599-145028/A

Amd. No. - N° de la modif.

009

Buyer ID - Id de l'acheteur

018md

Client Ref. No. - N° de réf. du client

F2599-145028

File No. - N° du dossier

018mdF2599-145028

CCC No./N° CCC - FMS No/ N° VME

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Canada is responsible for the transfer.

Solicitation No. - N° de l'invitation

F2599-145028/A

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009

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F2599-145028

File No. - N° du dossier

018mdF2599-145028

CCC No./N° CCC - FMS No/ N° VME

**Shipyard/ship repair facility  
cost****Applicable vessel transfer  
cost**

<b>Company</b>	<b>City</b>	<b>Transfer Cost Manned</b>
New Dock, St. John's Dockyard Ltd.	St. John's	C\$188,370.00
Halifax Shipyards Ltd.	Halifax	C\$169,784.00
Group Verreault Navigation Inc.	Les Mechins	C\$113,500.00
Davie Canada Yard Inc.	Levis	C\$95,441.00
Heddle Marine Service Inc.	Hamilton	C\$56,360.00
Pictou Shipyard	Pictou	C\$156,222.00
Ocean Industries Inc.	Saint-Bernard-Sur-Mer	C\$99,058.00
Allied Marine and Industrial	Port Colborne	C\$48,323.00
Central Machine & Marine	Sarnia	C\$21,745.00
Shelburne Ship Repair	Shelburne	C\$181,137.00
Réparations navales et industrielles Océan Inc.	Québec City	C\$95,441.00

Delete Annex H - Appendix 1 - Pricing Data Sheets and Insert the following:

**ANNEX H - APPENDIX 1**

**PRICING DATA SHEETS**

Ref #	Spec. #	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR& Sub-Contractors Cost	Total Firm Price	Unit Cost
<b>2.0</b>		<b>SERVICES</b>		\$	\$	\$	\$	
	2.1.6.5	Unit Rate/Kw.Hr for Consumption						\$
	2.1.7.8	Unit Rate/Cubic Meter for Potable Water						\$
	2.1.10	Unit Rate/Hr for Crane Supply						\$
<b>4.0</b>		<b>BILGE CLEANING</b>		\$	\$	\$	\$	
	4.2.1.4	Unit Rate/Cubic Meter for Removing Oily Waste and Dispose						\$
<b>5.0</b>		<b>MAIN ENGINE #1 BLOCK REMOVAL AND INSTALLATION</b>		\$	\$	\$	\$	
<b>6.0</b>		<b>GALLEY READY USE FRIDGE REPLACEMENT</b>		\$	\$	\$	\$	
<b>7.0</b>		<b>MAIN DECK COVERING REPLACEMENT</b>		\$	\$	\$	\$	
	7.2.7.2	Unit Rate/M2 Removal and Install Carpet						\$
	7.2.7.3	Unit Rate/M2 Removal and Install Tiles						\$
<b>8.0</b>		<b>MAIN DECK GREY WATER DRAINS &amp; BLACK WATER PIPE REPLACEMENT</b>		\$	\$	\$	\$	
<b>9.0</b>		<b>BALLAST, SEWAGE AND VOID TANKS INSPECTIONS (SURVEY ITEM)</b>		\$	\$	\$	\$	
	9.3.1.5	Unit Rate/Cubic Meter for removing and dispose of solid debris						\$
	9.4.1.3	Unit Rate/Cubic Meter for Disposal of Ballast Water						\$
<b>10.0</b>		<b>BRIDGE WIPER INSTALLATION</b>		\$	\$	\$	\$	\$

Solicitation No. - N° de l'invitation

F2599-145028/A

Client Ref. No. - N° de réf. du client

F2599-145028

Amd. No. - N° de la modif.

009

File No. - N° du dossier

018mdF2599-145028

Buyer ID - Id de l'acheteur

018md

CCC No./N° CCC - FMS No/ N° VME

Ref #	Spec. #	Description	Total Hours	Total Labour Cost	Total Material Cost	Total FSR& Sub-Contractors Cost	Total Firm Price	Unit Cost
11.0		<b>EMERGENCY GENERATOR (DIESEL ENGINE) (SURVEY ITEM)</b>		\$	\$	\$	\$	\$
12.0		<b>MEGGER TEST (SURVEY ITEM)</b>		\$	\$	\$	\$	
13.0		<b>SEWAGE TREATMENT SYSTEM PUPOUT AND CLEANING (OPTIONAL)</b>		\$	\$	\$	\$	
14.0		<b>MAIN ENGING #2 &amp; 1 FRS SERVICE</b>		\$	\$	\$	\$	
		<b>TOTAL (KNOWN WORK ONLY)</b>		\$	\$	\$	\$	
15.0		<b>RADAR SYSTEM INSTALLATION (OPTION ITEM)</b>		\$	\$	\$	\$	
		<b>TOTAL (KNOWN WORK &amp; OPTION IF EXERCISED)</b>		\$	\$	\$	\$	

## 15.0 RADAR SYSTEM INSTALLATION (OPTION ITEM)

### 15.1 Identification

15.1.1 The Contractor *shall* remove the current S-band (1) and X-band (2) radars including Turning Units (3), Antennas (3), Display Consoles (3), Interswitch (1), secondary displays (2), all interconnecting cable systems, except the transmission lines and waveguides. The Contractor shall then install three (3) radars including all radar subsystems. If required, the Contractor shall employ an FSR to assist with the installations. The Contractor shall bring in an FSR for system commissioning and to demonstrate the functionality of the new radars for the TA and the TI.

### 15.2 References:

Drawings #	Drawing Name
CM706-001-IN	CCGS Samuel Risley Racal Decca Radar Interconnection
CM706-002-WI	CCGS Samuel Risley Racal Decca Radar S-Band Scanner Control Unit Connections
CM706-007-AL	CCGS Samuel Risley Antenna Arrangement
CM706-007-BD	CCGS Samuel Risley Radar Monitors Block Diagram
CMS30-110-DE	CCGS Samuel Risley Main Mast



### 15.3 Standards:

Applicable regulations and documentation:

<b>FSSM Procedures</b>	<b>Title</b>	<b>Location</b>
7. B.2.	Fall Protection	CD Folder 1.0
7.A.1	Hazard Prevention Program	CD Folder 1.0
7.B.3	Entry Into Confined Spaces	CD Folder 1.0
7.B.4	Hot work	CD Folder 1.0
7.B.5	Lockout and Tag out	CD Folder 1.0
7.E.5	Handling, Storage & Disposal of Hazardous Material	CD Folder 1.0
10.A.6	Paint and Other Coatings	CD Folder 1.0
7.E.8	Controlling Halocarbon Use Aboard Ships	CD Folder 1.0
7.A.12	Potable Water Quality	CD Folder 1.0
10.A.7	Contractor Safety and Security	CD Folder 1.0
Ship Specific	Vessel Specific - Asbestos Management Plan	CD Folder 1.0
<b>Publications</b>		
TP3177E	Standard for the Control of Gas Hazards in Vessels to be Repaired or Altered	
T127E	Transport Canada Marine Safety Electrical Standard	
IEEE 45	Recommended Practice for Electrical Installation on Ships	
70-000-000-EU-JA-001	Specification for the Installation of Shipboard Electronic Equipment	
CSA W47.1	Certification of Companies for Fusion Welding of Steel Structures Division 2 Certification	
CSA W47.2	Certification of Companies for Fusion Welding of Aluminum	
CSA W59	Welded Steel Construction – Metal Arc Welding	
CSA W59.2	Welded Aluminum Construction	
<b>Acts</b>		
CSA	Canada Shipping Act	
CLC	Canada Labour Code	
<b>Regulations</b>		
MOHS	Maritime Occupational Health and Safety	

## **15.4 Government Furnished Equipment (GFE)**

15.4.1 The following is a list of GFE which the CCG is intending to procure and furnish for installation:

15.4.1.1 S-band Turning Unit, S-Band 12 ft. Antenna, S-band down-mast transceiver, and all associated interconnecting cables, connectors, bolts, washers, and torque nuts;

15.4.1.2 X-band Turning Unit, X-Band 8 ft. Antenna, X-band down-mast transceiver, and all associated interconnecting cables, connectors, bolts, washers, and torque nuts;

15.4.1.3 X-band Turning Unit, X-Band 4 ft. Antenna, X-band up-mast transceiver, and all associated interconnecting cables, connectors, bolts, washers, and torque nuts;

15.4.1.4 Radar Interswitch (or equivalent technology), and all associated interconnecting cables, connectors, bolts, washers, and nuts;

15.4.1.5 One (1) desktop, and two (2) deck-mounted radar display consoles, and all associated interconnecting cables, connectors, brackets, console plinths, bolts washers, and nuts; and

15.4.1.6 Two (2) bulkhead mounted secondary display units, and all associated interconnecting cables, and connectors. CCG intends to use MarineNav Ltd. CG Elite 19 inch displays for this purpose.

15.4.2 The Contractor shall supply all materials, equipment, labour and parts required to perform the specified work unless otherwise stated.

## **15.5 Technical**

15.5.1 For any work requiring the application of fusion welding for steel structures the Contractor and/or the sub-contractor companies and operators shall be certified by the Canadian Welding Bureau in accordance with CSA Standards W47.1-03, latest revision – Certification of Companies for Fusion Welding of Steel Division 2 Certification as a minimum. Current copies of certification (including those of the welders) shall be provided to the TA.

15.5.2 For any work requiring the application of fusion welding for aluminum structures the Contractor and/or the sub-contractor companies and operators shall be certified by the Canadian Welding Bureau in accordance with CSA Standards W47.2-11, latest revision – Certification of Companies for Fusion Welding of Aluminum Certification as a minimum. Current copies of certification (including those of the welders) shall be provided to the TA.

15.5.3 The Contractor shall ensure that all employees working aloft are certified for Fall Arrest under the Provincial Health and Safety Standards.

- 15.5.4 The Contractor shall supply all necessary safety equipment, tools, materials and labour to complete the work outlined under this specification. Exclusions from this include the GFE supplied radar system components. These items shall be supplied by the CCG.
- 15.5.5 All fasteners used to locate the radar system components to the ship shall be type 316 Stainless steel. Fasteners not supplied with the Radar package shall be supplied by the CCG.
- 15.5.6 The Contractor is to ensure that all wiring and cables used in the new Radar system meet regulatory requirements and are in accordance with all relevant regulations in effect. All electrical installations and repairs shall be carried out in accordance with the latest revisions of Transport Canada Marine Safety Electrical Standard TP127E and IEEE Standard 45 Recommended Practice for Electrical Installation on Ships.
- 15.5.7 The Contractor shall supply and install all electrical cable required. Wire size to be 14 AWG (2.5mm<sup>2</sup>) maximum. All Cable shall be certified for marine use and conductors shall be multi strand, solid core wire is unacceptable.
- 15.5.8 All wire runs and terminations shall be identified with wire labels. Wire labels shall be correct and consistent with the Original Manufacturer's Equipment (OEM) specification.
- 15.5.9 Wires shall be protected from mechanical and ultraviolet damage where they are exposed to the elements.
- 15.5.10 All wires and cables removed as a result of this work shall be disposed of by the Contractor in an appropriate and environmental manner.
- 15.5.11 Bulkhead glands required for penetrations shall be of 316 stainless steel construction and of water tight integrity.
- 15.5.12 Where old cables have been removed and existing penetrations are being re-used to run new cables, the old glands shall be replaced with new ones.
- 15.5.13 Any unused deck or bulkhead penetrations resulting from this work shall be identified as surplus and with the approval of the Chief Engineer shall be removed and/or adequately sealed or capped.
- 15.5.14 The Contractor shall perform Voltage Standing Wave Ratio (VSWR) tests on the X-band waveguide, and S-Band transmission line to establish the baseline performance standard for the waveguides and transmission lines. A hard copy of the test results shall be provided to CCG.
- 15.5.15 The Contractor shall isolate and lock out all power to the radar subsystems during the removal and installation process. It is the Contractors responsibility to place lock outs on all breakers and electrical connections as deemed necessary to perform the work.
- 15.5.16 The Breaker Panel M4-2 is located in the Wheel House:
- M4-2-4 Port Radar Display
  - M4-2-4 X-Band Transceiver
  - M4-2-4 X-Band Turning Unit

15.5.17The Breaker Panel E1-3 is located in the Wheel House:

- E1-3-19 Starboard Radar Display
- E1-3-19 S-Band Transceiver
- E1-3-19 S-Band Turning Unit

15.5.18The Breaker Panel M4-3 is located in the Wheel House:

- M4-3-13 Aft Radar Display
- M4-3-13 Aft Facing X-Band Transceiver and Turning Unit
- M4-3-4 Radar Buffer

15.5.19The Contractor shall survey all the above described power feeds to the parent equipment (paragraphs 1.5.16, 1.5.17, and 1.5.18) and ensure that each electrical feed is kept intact and clearly labeled and tagged for re-use. Additionally, the Radar Buffer feed (115Vac from breaker M4-3-4) shall be disconnected from its parent equipment and re-terminated into a duplex electrical outlet/box and mounted in-situ, and in proximity ( $\leq 24$  inches) to the existing Radar Interswitch located on the starboard, aft bulkhead of the wheelhouse.

15.5.20The Contractor shall use the Manufacturer's Installation specification as the governing guideline ensuring proper installation.

15.5.21In determining the exact location of equipment, the representative of CCG E&I Engineering Services (CCG) shall be consulted.

15.5.22All affected surfaces by the removal of old equipment and installation of new shall have 2 coats primer and 2 coats finish paint as per existing by the contractor.

15.5.23All staging / rigging / cranes, etc, necessary to complete this item shall be the responsibility of the Contractor.

15.5.24Equipment Removals:

15.5.24.1 The Contractor shall consult with the Chief Engineer before starting this item. The breakers for the radar equipment shall be locked out.

15.5.24.2 The Contractor shall remove the deck head materials in way of the wire runs on the interior of the wheel house. The deck head panels shall be carefully removed, protected from damage and identified for re-fitting after work has completed.

15.5.24.3 The Contractor shall carefully remove the insulation in way of the wire runs, transmission lines, and waveguides, and where any hot work is required.

15.5.24.4 The Contractor shall protect all areas on the interior and exterior of the wheel house where hot work will be carried out. The Contractor shall ensure that all combustibles have been removed from the local area.

15.5.24.5 All removed equipment shall be placed in Triple Walled Containers (Tri-Walls) and stored at Contractor's Facility and protected from the weather until such time that CCG can take delivery of the Tri-Walls at end of contract.

15.5.24.6 The Contractor shall remove all the cabinetry enclosing the X/S-Band down-mast Radar Transceivers, Interswitch, Radar Buffer and sink located in the starboard-aft area of the wheelhouse. The cabinetry materials shall be carefully removed, protected from damage and identified for re-fitting after work has completed (See figure 1, below)



Figure 1

15.5.24.7 The Contractor shall remove the S-Band (1) & X-Band (2) turning units from their existing pedestals on the vessels mast and bridge-top. The contractor shall retain the Waveguide Line flange screws so they can be reused when connecting the waveguide to the new units. The existing X-Band Waveguide and S-Band Transmission Line shall not be damaged as they shall be connected to the new units.

- 15.5.24.8 The Contractor shall seal the ends of the X-Band Waveguide and S-Band Transmission Line after removal of exterior equipment, to prevent ingress of water unless the new units are installed immediately.
- 15.5.24.9 The Contractor shall consult with the FSR to determine if existing S-Band and X-Band turning unit mounting plates are compatible with the footprint of the new equipment. If it is determined that any of the existing mounting plates are incompatible, the Contractor shall remove the incompatible mounting plate by cutting the plate from the pedestal.
- 15.5.24.10 The Contractor shall remove all associated cabling leading from the Radar Turning Units to where they terminate inside the wheelhouse. Cable trays, and bulkhead/deck penetrations may be kept open and accessible if installation of new cables take place immediately following the removal.
- 15.5.24.11 The Contractor shall remove the Forward Radar Display along with its Deck-Mounted Console, Plinth and all interconnecting cables leading from the display to the Radar Interswitch. The Contractor shall consult with the CCG E&I Engineering Representative to identify all external sensor input/output cables connected to the Forward Radar Display. These shall be clearly labeled and tagged for re-use (See figure 2, below).



Figure 2

15.5.24.12 Following the removal of the Forward Radar Display in the preceding paragraph, the Contractor shall.

- a) Budget materials and labour in the amount of 40 hours to modify, strengthen, treat and prepare the existing deck structure to fit a new Plinth for the new Forward Radar Display Console;
- b) Install a new GFE supplied Console Plinth/Platform with the goal to position the front facing side of the new Forward Radar Console at an angle of  $115^{\circ}$ , referenced to the port side edge of the main navigation console; and
- c) Consult with the Chief Engineer or CCG E&I Engineering Representative to determine the exact positioning of the Console Plinth/Platform.

15.5.24.13 The Contractor shall remove the Starboard Radar Display along with its Deck-Mounted Console (wood construction) and all interconnecting cables leading from the display to the Radar Interswitch. The Contractor shall consult with the CCG E&I Engineering Representative to identify all external sensor input/output cables connected to the Forward Radar Display. These shall be clearly labeled and tagged for re-use. The wooden console shall be disposed of in an appropriate environmental manner (See figure 3, below)



Figure 3

15.5.24.14 Following the removal of the Starboard Radar Display Console in the preceding paragraph, the Contractor shall:

- a) Consult with the CCG E&I Representative to identify existing electrical cables located under the Starboard Radar Display Console. The goal is to identify cables for subsequent re-routing, if necessary (See figure 4, below);
- b) Budget labour in the amount of 20 hours to reroute/move electrical cable, outlets, and junction box located directly beneath the old Starboard Radar Display Console. Wire size to be 14 AWG (2.5mm<sup>2</sup>) maximum;
- c) Budget materials and labour in the amount of 40 hours to modify, strengthen, treat and prepare the existing deck structure to fit a new Plinth for the Starboard Radar Display Console; and
- d) Install a new GFE supplied Console Plinth/Platform with the goal of providing a solid base for the new Starboard Radar Display Console. The new Console Plinth/Platform shall be aligned fore and aft.

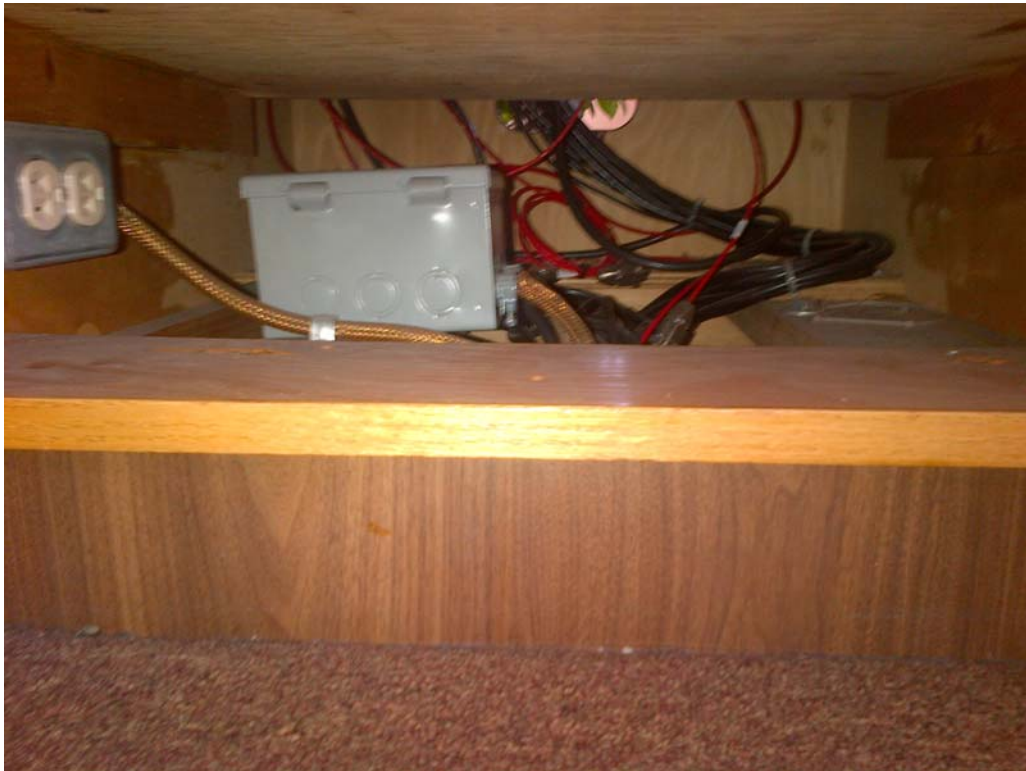


Figure 4



- 15.5.24.15 The Contractor shall remove the Aft Radar Display Console and all interconnecting cables leading from the Display to the X-Band Turning Unit located on the bridge-top as well as the interconnecting cables leading from the Display to the two (2) deck-head mounted Secondary Displays. The Contractor shall consult with the CCG E&I Engineering Representative to identify all external sensor input/output cables connected to the Aft Display. These shall be clearly labeled and tagged for re-use (See figure 5, below)



Figure 5

- 15.5.24.16 Following the removal of the display in the preceding paragraph, the Contractor shall:
- a) consult with the Chief Engineer or CCG E&I Engineering Representative to determine if the existing platform can be re-used or modified to fit the new console, or removed entirely;
  - b) Budget materials and labour in the amount of 20 hours to either modify the existing platform, or fabricate a new one. The goal is to provide a suitable platform for a new Aft Radar Display (desktop mount) similar to the existing platform, taking care not to obstruct or in any way interfere with the machinery controls and indicators located directly underneath.

15.5.24.17 The Contractor shall remove the two (2) deck head mounted 13 inch secondary displays. The 115Vac supplies shall be kept intact, and clearly identified and labelled for re-use. Following the removal of the displays, the existing mounting brackets and hardware shall be re-assembled and re-mounted in the same location for later use.



Figure 6



Figure 7

- 15.5.24.18 The Contractor shall remove the existing Radar Interswitch and associated cables (See figure 1).
- 15.5.24.19 The Contractor shall remove the existing Radar Buffer and associated cables (See figure 1).
- 15.5.24.20 The Contractor shall remove the existing down-mast X-Band Transceiver. The contractor shall retain the Waveguide flange screws so they can be reused when connecting the waveguide to the new unit. The existing X-Band Waveguide, Pressure Gauge Unit, and Directional Coupler shall not be damaged as they shall be connected to the new unit (See figure 1).
- 15.5.24.21 The Contractor shall remove the existing down-mast S-Band Transceiver. The S-Band RF Transmission Line, Directional Coupler and the existing coaxial RF feeder cable connecting the transceiver to the Directional Coupler shall not be damaged as they shall be connected to the new unit (See figure 1).
- 15.5.24.22 The Contractor shall remove the existing S-Band Control Unit (SCU) and associated cables except for the main 115Vac electrical supply supplied from breaker E1-3-19 (See figure 1).

#### 15.5.25 Equipment Installations:

15.5.25.1 Procurement of the new equipment is ongoing as this document is being prepared, and so the dimensions and foot prints of the new turning units are not yet known. Should the task described in paragraph 1.5.24.9 determine that the existing mounting plates are incompatible, the Contractor shall:

- a) Fabricate and weld new mounting plates to the radar pedestals, as required and as per the manufacturer's specification; and
- b) Exercise care to ensure the mounting plates remain un-distorted during and after the welding process is complete. It is critical that the plate fore and aft mounting holes remain parallel to the lubber line of the ship. Note: A cut away section of the mounting plate may be required for cable and waveguide entry.

15.5.25.2 The Contractor shall install the new S-Band & X-Band turning units and antennas on the appropriate pedestal mounting plates as per the manufacturer's specification. The turning units shall be bolted directly to the mounting platform using GFE supplied bolts, washers and torque nuts. If these materials are not supplied with GFE, they will be supplied by the CCG.

15.5.25.3 The Contractor shall install the forward deck-mounted, free-standing Radar Display Console in the location previously described and prepared at paragraph 1.5.24.12. The console shall be fitted to the new Plinth and installed in accordance with the manufacturer's specification.

15.5.25.4 The Contractor shall install the starboard deck-mounted, free-standing Radar Display Console in the location previously described and prepared at paragraph 1.5.24.14. The console shall be fitted to the new Plinth and installed in accordance with the manufacturer's specification.

15.5.25.5 The Contractor shall install the aft desktop Radar Display Console in the location previously described and prepared at paragraph 1.5.24.16. The console shall be installed in accordance with the manufacturer's specification taking care not to obstruct or in any way interfere with the controls and indicators located directly underneath.

15.5.25.6 The Contractor shall install the Radar Interswitch or equivalent technology such as an Ethernet Switch or another network device in the location previously occupied by the old interswitch.

15.5.25.7 The Contractor shall install the two (2) deck-head mounted secondary displays in the locations previously occupied by the old secondary displays. The Contractor shall design and fabricate or supply a suitable mounting bracket to accommodate the new secondary flat panel displays, as follows:

- a) The new mounting brackets shall be solidly constructed to carry a minimum load of 30 lbs. (14 kg) and shall be directly adapted/attached to the existing display brackets;
- b) The mounting brackets shall comply with the VESA MIS-D, 100/75, C Standard for displays equipped with either a 100 x 100 mm or 75 x 75 mm mounting hole pattern, using M4 screws;
- c) The mounting bracket shall accommodate a MarineNav Ltd. CG Elite 19 inch display; and
- d) The mounting brackets shall facilitate disassembly and removal of the displays for maintenance purposes.

15.5.25.8 The Contractor shall install all GFE supplied cabling as per the Manufacturer's Installation Specification, and in accordance with 70-000-000-EU-JA-001, Specification for the Installation of Shipboard Electronic Equipment. If one is in disagreement with the other, then the Manufacturer's Specification shall take precedence.

## **15.6 Technical Data Package (TDP)**

### **15.6.1 General**

- 15.6.1.1 The Contractor shall develop and deliver an As-Built or As-Fitted Technical Data Package (TDP) in hard (2 copies) and soft copy form. The soft copy form shall be delivered on CD-ROM.
- 15.6.1.2 The Contractor's design disclosure obligations for the As-Built or As-Fitted TDP shall be sufficiently detailed so as to allow CCG to use and have use of the TDP for the operation, maintenance, repair, overhaul, refit, support, and configuration control of each Radar system and its sub-systems and equipment throughout its service life.
- 15.6.1.3 The TDP shall be sufficiently detailed so as to allow CCG to repair to an as-new condition or provide specification details for purchase of replacement items throughout the life of the radars in support of the radars.
- 15.6.1.4 In addition, the TDP specification details shall include all software licensing keys, as well as the Administration and Maintenance Level passwords for all workstations so as to allow CCG access to all system commissioning, maintenance and configuration menus and to permit installation and control of 3rd party software and software updates.
- 15.6.1.5 The Contractor shall maintain and control the configuration of the TDP until it is delivered to the CA and is accepted by Canada.

## 15.6.2 TDP Documentation Deliverables

15.6.2.1 The technical drawings, manuals, books, plans, lists, and certificates shall be delivered in hard and soft copy form as outlined below:

### Hard Copy Deliverables Excluding Drawings

15.6.2.2 All commercial and Contractor-developed hard copy documents shall be original prints or first generation printed copies generated from the master document files.

15.6.2.3 Documents shall be bound using standard Canadian commercial practices (spiral bound or Three-D-ring binders).

15.6.2.4 Covers shall clearly indicate the Document Number, Revision, Date of Issue and Title.

### Soft Copy Deliverables Excluding Drawings

15.6.2.5 For each document the following files shall be provided:

- (a) Master Document Files;
- (b) Master Image Files; and
- (c) Master Read-only files.

### Master Document Files

- e) The Master Document Files are the electronic master of the completed documents and lists;
- f) Master Document Files shall be delivered in the MS Word 2010 file format. In the event that existing publications are not available in MS Word 2010 format, there will be no requirement to convert the file;
- g) All blank pages, figures, illustrations and foldouts shall be imbedded within the file(s). These files are considered the “Master Document” files for present and future revision, changes and re-use; and
- h) Where master documents are not available in any soft copy form, the Contractor remains responsible to provide soft copy versions acceptable to Canada for present and future revision and/or reproduction by Canada.

### Master Image Files

- i) All illustrations and figures that are inserted into the Manuals and which were created using software other than MS Word 2002 shall be delivered in their native file format and as separate individual TIFF images in accordance with Adobe Systems Inc. specification “TIFF Revision 6”, compressed to CCITT Group 4; and
- j) Files shall be UNTILED and shall be wholly raster. Hybrid files will not be accepted.

### Master Read Only Files

- k) Using the completed Master Document(s) or file(s), the Contractor shall generate and provide a PDF file that shall contain the complete document. This file is considered the “Master Read Only” file for printing/reproduction/viewing purposes.
- l) All pages contained in the PDF file shall be oriented such that they do not require rotation when viewing. This file shall contain “thumbnails” of each page.
- m) The Contractor shall ensure that a quality check is done on the Master Read Only (PDF) file to verify that the content reflects the same content and formatting as the Master Document file.
- n) The table of contents in the Master Document file shall be hyperlinked to the applicable section, paragraph, sub-paragraph, list, table, or figure.

### Media of Delivery

- o) The media form for final delivery of electronic data shall be CD-ROM, written in accordance with ISO 9660. File compression software shall not be used.
- p) Each CD-ROM and its case shall be labelled or marked in a method of the Contractor's choosing. Marking on each CD label and case shall include the name and a brief description of the deliverable, the Document number, the Disk Number, a statement describing any restrictions on the use of the data contained within the CD and the date the CD-ROM was created.



- q) Each CD shall include an index of all files on the CD indicating title, revision and filename.
- r) Other delivery media may be proposed by the Contractor for consideration by Canada of its acceptability.

#### Drawing Format

- s) Drawings shall be prepared as AutoCAD 2010 version 18.0 or above.
- t) Drawing practices shall be in accordance with ASME Y14.100-2004. Use of alternate drawing practices shall be submitted to the CA for consideration by Canada of its acceptability. In the event that alternate drawing practices are used to produce the drawings, the Contractor shall provide a copy of the documented drawing practices with the submitted drawings.
- u) The mono-detail drawing system shall be used to the as-fitted detail level with additional views with the detail necessary for maintenance and removal.
- v) The Contractor shall additionally provide all other types of configuration documentation information necessary to satisfy the design disclosure and content requirements identified in Section 1.7.1

### **15.7 Inspections, Tests and Trials**

- 15.7.1 The Contractor shall employ the services of the authorized Field Service Representative (FSR) to demonstrate the functionality of the new radars for the TA and the TI.
- 15.7.2 All radars and subsystems shall be demonstrated by the FSR to be functional and in proper adjustment, and aligned with the ship's head to within 1.0° error or less.
- 15.7.3 The FSR shall ensure that the blanking sectors are suitably adjusted according to the specifications established in the Installation manual, and that no mutual interference exists between adjacent radars operating in the same band.
- 15.7.4 The FSR shall perform Voltage Standing Wave Ratio (VSWR) and Minimum Discernable Signal (MDS) tests on all down-mast radars. A hard copy of the test results shall be provided to CCG E&I Engineering representative.

- 15.7.5 The FSR shall produce a backup copy of the system configuration files necessary to perform a complete restoration of the radar systems and workstations. The backup files shall be provided to the CCG on a Memory Stick.
- 15.7.6 The Contractor shall submit the cleaned spaces for inspection by the Coast Guard Representative and the TCMS Inspector.
- 15.7.7 Contractor shall identify and record any structural or material defects and report such defects to the Owners Representative and Transport Canada Marine Inspector (TCMS) before starting any repairs or modifications.

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