



**RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des
soumissions - TPSGC**

11 Laurier St. / 11, rue Laurier

Place du Portage , Phase III

Core 0B2 / Noyau 0B2

Gatineau

Québec

K1A 0S5

Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government
Services Canada**

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

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du

fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Ship Construction, Refit and Related Services/Construction navale, Radoubs et services connexes

11 Laurier St. / 11, rue Laurier

6C2, Place du Portage

Gatineau

Québec

K1A 0S5

| | |
|---|---|
| Title - Sujet MULTI ROLE BOAT (MRB) SYSTEM | |
| Solicitation No. - N° de l'invitation W8472-155557/C | Date 2018-12-11 |
| Client Reference No. - N° de référence du client W8472-155557 | |
| GETS Reference No. - N° de référence de SEAG PW-\$\$MC-031-27100 | |
| File No. - N° de dossier 031mc.W8472-155557 | CCC No./N° CCC - FMS No./N° VME |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-02-19 | Time Zone Fuseau horaire Eastern Standard Time EST |
| F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/> | |
| Address Enquiries to: - Adresser toutes questions à: Langdon(031mc), Jeremy | Buyer Id - Id de l'acheteur 031mc |
| Telephone No. - N° de téléphone (819) 420-2890 () | FAX No. - N° de FAX () - |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Specified Herein Précisé dans les présentes | |

Instructions: See Herein

Instructions: Voir aux présentes

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

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W8472-155557/C
Client Ref. No. - N° de réf. du client
W8472-155557

Amd. No. - N° de la modif.
File No. - N° du dossier
031mc.W8472-155557

Buyer ID - Id de l'acheteur
031mc
CCC No./N° CCC - FMS No./N° VME

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PART 1 - GENERAL INFORMATION

All contract awards are subject to Canada's internal approval process, which includes a requirement to approve funding in the amount of any proposed contract. Notwithstanding that a Bidder may have been recommended for contract award, issuance of any contract will be contingent upon internal approval in accordance with Canada's policies, including approval by Treasury Board in its absolute discretion. Canada makes no representation that any such approval will be sought or given. If such approval is not sought or given, no contract will be awarded. The Bidder will have no claim for damages, compensation, loss of profit, or allowance arising out of the preparation of its bid or the internal approval process conducted by Canada

1.1 Introduction

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

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

The Annexes include the Statement of Work / System Requirements Document, Basis of Payment, Subcontractors, Bidders Questions and Canada's Responses, Insurance Requirements, Inspection / Quality Assurance / Quality Control, Evaluation Matrix, the Federal Contractors Program for Employment Equity - Certification, and any other annexes.

1.2 Summary

- 1.2.1 The Department of National Defence has a requirement to purchase 30 Multi-Role Boats (MRB), 24 cradles, a minimum of 16 electro-optical/infrared (EO/IR) cameras, with options for up to 14 additional EO/IR cameras, technical data package and cadre training and 2 year operational spares in accordance with Annex A - Statement of Work and its Appendix 1 System Requirements Document (SRD).
- 1.2.2 This procurement falls under the small vessel construction component of the National Shipbuilding Strategy (NSS), whereby the requirement will be competed to Canadian Industry.
- 1.2.3 Canada respects all Government of Canada policies as they may apply to this requirement, including the Shipbuilding Policy Framework: "A New Policy Framework for the Canadian Shipbuilding and Industrial Marine Industry – Focusing on Opportunities 2001".

[https://www.ic.gc.ca/eic/site/sim-cnmi.nsf/vwapj/framework-cadre01_eng.pdf/\\$file/framework-cadre01_eng.pdf](https://www.ic.gc.ca/eic/site/sim-cnmi.nsf/vwapj/framework-cadre01_eng.pdf/$file/framework-cadre01_eng.pdf)

- 1.2.4 The Federal Contractors Program (FCP) for employment equity applies to this procurement; refer to Part 5 – Certifications and Additional Information, Part 7 - Resulting Contract Clauses and Annex G - Federal Contractors Program for Employment Equity - Certification.
- 1.2.5 Phased Bid Compliance Process – The Phased Bid Compliance Process applies to this requirement.
- 1.2.6 This procurement includes a mandatory Aboriginal Participation Component (APC) under the Procurement Strategy for Aboriginal Business (PSAB) program.

1.3 Provisional Acceptance, Acceptance and Delivery Schedule

1.3.1 30 Multi-Role Boats (MRB)

The successful Bidder must deliver 30 MRBs. The MRBs must be ready for Acceptance by Canada at the delivery points named in this RFP, having achieved Provisional Acceptance at the Contractor's shipyard prior thereto. Provisional Acceptance means, successful Provisional Acceptance at the Contractor's facility, that is, complete in all respects ready for shipping with all respective tests and trials and demonstrations and certifications successfully completed to the satisfaction of the Inspection Authority (IA), Contracting Authority (CA) and Technical Authority (TA) and in accordance with the Contract. The Contractor must deliver for Acceptance by Canada, (Provisional Acceptance having been achieved prior thereto) as follows:

- (a) 13 MRBs delivered to the Department of National Defence, CFB Esquimalt, Esquimalt, British Columbia.
- (b) 17 MRBs delivered to the Department of National Defence, CFB Halifax, Halifax, Nova Scotia.
- (c) All MRBs must be delivered within 42 months of Contract Award.
- (d) The vessels must be delivered with no more than 250 hours on the main engines.
- (e) The vessels must not be wet towed from the shipyard to the delivery points listed above.

1.4 Communications Notification

As a courtesy, the Government of Canada requests that successful bidders notify the Contracting Authority in advance of their intention to make public an announcement related to the award of a contract.

1.5 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2018-05-22) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 180 days

2.1.1 SACC Manual Clauses

B1000T (2014-06-26), Condition of Material – Bid
B3000T (2006-06-16), Equivalent Products

2.2 Submission of Bids

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

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

2.3 Enquiries - Bid Solicitation

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

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

2.4 Applicable Laws

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

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

2.5 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least 20 days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

2.6 Aboriginal Participation Component (APC)

(a) The APC is a mechanism designed to meet the Government of Canada's objectives of encouraging Aboriginal socio-economic development through federal contracting opportunities. The APC is also designed to encourage Industry Respondents to contribute to creating long-term sustainable and meaningful socio-economic benefits for Aboriginal people, businesses and communities.

(b) Example of acceptable APCs

(i) The APC's main goal consists of **Aboriginal Business Development** and encourages prime contractors to contribute and invest in building and developing viable Aboriginal business capacity by procuring goods and services from Aboriginal firms qualified under the Procurement Strategy for Aboriginal Business (PSAB). Prime contractors or its subcontractor(s) are also encouraged to demonstrate how they intend to maximize the use of Aboriginal firms such as identify the work intended to be carried out by Aboriginal firms including contract and supply chain management. Bidders should refer to Annex K, Form 1 and Form 2 for information that can help identify Aboriginal business capacity, for contracting and sub-contracting purposes.

(ii) The APC also encourages the use of **Aboriginal Employment**; prime contractors are encouraged to demonstrate how Aboriginal employment will be maximized and include details pertaining to Aboriginal recruitment and retention strategies and related job activities such as the work to be carried out by each position. Bidders may wish to contact Employment and Social Development Canada (ESDC) to find out about Aboriginal Labour Programs.

(iii) The APC also consists of **Aboriginal Training and Skills Development**; prime contractors are encouraged to demonstrate how training opportunities and skills development will be maximized for Aboriginal persons such as how they intend to provide on-the job training, in-house training as well as succession plans.

(iv) When there is a lack of Aboriginal business capacity, the prime contractor may consider **other relevant measures (indirect benefits)** such as, but not limited to specialized training, career development, scholarships and community outreach to help Aboriginal communities in meeting their

economic development needs. In support of the APC, bidders are encouraged to reach out to Aboriginal businesses and communities.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

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

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

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

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

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper where feasible and with technical drawings, use 11 x 17 inch (279 mm x 432 mm) paper to ensure legibility;
- (b) use a numbering system that corresponds to the bid solicitation.

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

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

3.1.1 Section I: Technical Bid

In their Technical Bid, Bidders must demonstrate their understanding of the technical requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders must demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The Technical Bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings.

In order to substantiate their compliance to each criterion, the Bidder must refer to the supporting documents within their Technical Bid, with the exact page number(s) and paragraph number(s) where the required substantiation can be found using Annex M, Appendix 1, Table 5 – Bidder Mandatory Experience Matrix.

3.1.2 Section II: Management Bid

In their Management Bid, Bidders must describe their capability and experience, the project management team and provide client contact(s) in a thorough, concise and clear manner.

In order to substantiate their compliance to each criterion, the Bidder must refer to the supporting documents within their Management Bid, with the exact page number(s) and paragraph number(s) where the required substantiation can be found using Annex M, Appendix 1, Table 6 – Project Management Requirements.

3.1.3 Section III: Financial Bid

The Financial Bid must not be attached to or combined within any other part of the bid and prices must not appear in any other area of the proposal other than the Financial Bid.

3.1.3.1 Bidders must submit their **Financial bid** in accordance with Annex B - Basis of Payment.

3.1.4 Exchange Rate Fluctuation

C3010T (2014-11-27), Exchange Rate Fluctuation Risk Mitigation

3.1.5 Section IV: Certifications Bid and Other Requirements

Bidders must submit the certifications and additional information required under Part 5 and part 6.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Phased Bid Compliance Process (PBCP)

4.1.1 Canada will use the Phased Bid Compliance Process described below.

4.1.1.1 General

- (a) Canada is conducting the PBCP described below for this requirement.
- (b) Notwithstanding any review by Canada at Phase I or II of the PBCP, Bidders are and will remain solely responsible for the accuracy, consistency and completeness of their Bids and Canada does not undertake, by reason of this review, any obligations or responsibility for identifying any or all errors or omissions in Bids or in responses by a Bidder to any communication from Canada.

THE BIDDER ACKNOWLEDGES THAT THE REVIEWS IN PHASE I AND II OF THIS PBCP ARE PRELIMINARY AND DO NOT PRECLUDE A FINDING IN PHASE III THAT THE BID IS NON-RESPONSIVE, EVEN FOR MANDATORY REQUIREMENTS WHICH WERE SUBJECT TO REVIEW IN PHASE I OR II AND NOTWITHSTANDING THAT THE BID HAD BEEN FOUND RESPONSIVE.

IN SUCH EARLIER PHASES. CANADA MAY DEEM A BID TO BE NON-RESPONSIVE TO A

MANDATORY REQUIREMENT AT ANY PHASE.

THE BIDDER ALSO ACKNOWLEDGES THAT ITS RESPONSE TO A NOTICE OR A COMPLIANCE ASSESSMENT REPORT (CAR) (EACH DEFINED BELOW) IN PHASE I OR II MAY NOT BE SUCCESSFUL IN RENDERING ITS BID RESPONSIVE TO THE MANDATORY REQUIREMENTS THAT ARE THE SUBJECT OF THE NOTICE OR CAR, AND MAY RENDER ITS BID NON-RESPONSIVE TO OTHER MANDATORY REQUIREMENTS.

- (c) Canada may, in its discretion, request and accept at any time from a Bidder and consider as part of the Bid, any information to correct errors or deficiencies in the Bid that are clerical or administrative, such as, without limitation, failure to sign the Bid or any part or to checkmark a box in a form, or other failure of format or form or failure to acknowledge; failure to provide a procurement business number or contact information such as names, addresses and telephone numbers; inadvertent errors in numbers or calculations that do not change the amount the Bidder has specified as the price or of any component thereof that is subject to evaluation. This shall not limit Canada's right to request or accept any information after the bid solicitation closing in circumstances where the bid solicitation expressly provides for this right. The Bidder will have the time period specified in writing by Canada to provide the necessary documentation. Failure to meet this deadline will result in the Bid being declared non-responsive.
- (d) The PBCP does not limit Canada's rights under Standard Acquisition Clauses and Conditions (SACC) 2003 (2017-04-27) Standard Instructions – Goods or Services – Competitive Requirements nor Canada's right to request or accept any information during the solicitation period or after bid solicitation closing in circumstances where the bid solicitation expressly provides for this right, or in the circumstances described in subsection (c).
- (e) Canada will send any Notice or CAR by any method Canada chooses, in its absolute discretion. The Bidder must submit its response by the method stipulated in the Notice or CAR. Responses are deemed to be received by Canada at the date and time they are delivered to Canada by the method and at the address specified in the Notice or CAR. An email response permitted by the Notice or CAR is deemed received by Canada on the date and time it is received in Canada's email inbox at Canada's email address specified in the Notice or CAR. A Notice or CAR sent by Canada to the Bidder at any address provided by the Bidder in or pursuant to the Bid is deemed received by the Bidder on the date it is sent by Canada. Canada is not responsible for late receipt by Canada of a response, however caused.

4.1.1.2 Phase I: Financial Bid

- (a) After the closing date and time of this bid solicitation, Canada will examine the Bid to determine whether it includes a Financial Bid and whether any Financial Bid includes all information required by the solicitation. Canada's review in Phase I will be limited to identifying whether any information that is required under the bid solicitation to be included in the Financial Bid is missing from the Financial Bid. This review will not assess whether the Financial Bid meets any standard or is responsive to all solicitation requirements.
- (b) Canada's review in Phase I will be performed by officials of the Department of Public Works and Government Services.
- (c) If Canada determines, in its absolute discretion that there is no Financial Bid or that the Financial Bid is missing all of the information required by the bid solicitation to be included in the Financial Bid, then the Bid will be considered non-responsive and will be given no further consideration.

- (d) For Bids other than those described in c), Canada will send a written notice to the Bidder ("Notice") identifying where the Financial Bid is missing information. A Bidder, whose Financial Bid has been found responsive to the requirements that are reviewed at Phase I, will not receive a Notice. Such Bidders shall not be entitled to submit any additional information in respect of their Financial Bid.
- (e) The Bidders who have been sent a Notice shall have the time period specified in the Notice (the "Remedy Period") to remedy the matters identified in the Notice by providing to Canada, in writing, additional information or clarification in response to the Notice. Responses received after the end of the Remedy Period will not be considered by Canada, except in circumstances and on terms expressly provided for in the Notice.
- (f) In its response to the Notice, the Bidder will be entitled to remedy only that part of its Financial Bid which is identified in the Notice. For instance, where the Notice states that a required line item has been left blank, only the missing information may be added to the Financial Bid, except that, in those instances where the addition of such information will necessarily result in a change to other calculations previously submitted in its Financial Bid, (for example, the calculation to determine a total price), such necessary adjustments shall be identified by the Bidder and only these adjustments shall be made. All submitted information must comply with the requirements of this solicitation.
- (g) Any other changes to the Financial Bid submitted by the Bidder will be considered to be new information and will be disregarded. There will be no change permitted to any other Section of the Bidder's Bid. Information submitted in accordance with the requirements of this solicitation in response to the Notice will replace, in full, **only** that part of the original Financial Bid as is permitted above, and will be used for the remainder of the bid evaluation process.
- (h) Canada will determine whether the Financial Bid is responsive to the requirements reviewed at Phase I, considering such additional information or clarification as may have been provided by the Bidder in accordance with this Section. If the Financial Bid is not found responsive for the requirements reviewed at Phase I to the satisfaction of Canada, then the Bid shall be considered non-responsive and will receive no further consideration.
- (i) Only Bids found responsive to the requirements reviewed in Phase I to the satisfaction of Canada, will receive a Phase II review.

4.1.1.3 Phase II: Technical Bid and Management Bid

- (a) Canada's review at Phase II will be limited to a review of the Technical Bid and Management Bid to identify any instances where the Bidder has failed to meet any Eligible Mandatory Evaluation Criteria. This review will not assess whether the Technical Bid meets any standard or is responsive to all solicitation requirements. Eligible Mandatory Evaluation Criteria are all mandatory criteria that are identified in this solicitation as being subject to the PBCP. Mandatory Evaluation Criteria that are not identified in the solicitation as being subject to the PBCP, will not be evaluated until Phase III.
- (b) Canada will send a written notice to the Bidder (Compliance Assessment Report or "CAR") identifying any Eligible Mandatory Evaluation Criteria that the Bid has failed to meet. A Bidder whose Bid has been found responsive to the requirements that are reviewed at Phase II will receive a CAR that states that its Bid has been found responsive to the requirements reviewed at Phase II. Such Bidder shall not be entitled to submit any response to the CAR.
- (c) A Bidder shall have the period specified in the CAR (the "Remedy Period") to remedy the

failure to meet any Eligible Mandatory Evaluation Criteria identified in the CAR by providing to Canada in writing additional or different information or clarification in response to the CAR. Responses received after the end of the Remedy Period will not be considered by Canada, except in circumstances and on terms expressly provided for in the CAR.

- (d) The Bidder's response must address only the Eligible Mandatory Evaluation Criteria listed in the CAR as not having been achieved, and must include only such information as is necessary to achieve such compliance. Any additional information provided by the Bidder which is not necessary to achieve such compliance will not be considered by Canada, except that, in those instances where such a response to the Eligible Mandatory Evaluation Criteria specified in the CAR will necessarily result in a consequential change to other parts of the Bid, the Bidder shall identify such additional changes, provided that its response must not include any change to the Financial Bid.
- (e) The Bidder's response to the CAR should identify in each case the Eligible Mandatory Evaluation Criteria in the CAR to which it is responding, including identifying in the corresponding section of the original Bid, the wording of the proposed change to that section, and the wording and location in the Bid of any other consequential changes that necessarily result from such change. In respect of any such consequential change, the Bidder must include a rationale explaining why such consequential change is a necessary result of the change proposed to meet the Eligible Mandatory Evaluation Criteria. It is not up to Canada to revise the Bidder's Bid, and failure of the Bidder to do so in accordance with this subparagraph is at the Bidder's own risk. All submitted information must comply with the requirements of this solicitation.
- (f) Any changes to the Bid submitted by the Bidder other than as permitted in this solicitation, will be considered to be new information and will be disregarded. Information submitted in accordance with the requirements of this solicitation in response to the CAR will replace, in full, **only** that part of the original Bid as is permitted in this Section.
- (g) Additional or different information submitted during Phase II permitted by this section will be considered as included in the Bid, but will be considered by Canada in the evaluation of the Bid at Phase II only for the purpose of determining whether the Bid meets the Eligible Mandatory Evaluation Criteria. It will not be used at any Phase of the evaluation to increase or decrease any score that the original Bid would achieve without the benefit of such additional or different information. For instance, an Eligible Mandatory Evaluation Criteria that requires a mandatory minimum number of points to achieve compliance will be assessed at Phase II to determine whether such mandatory minimum score would be achieved with such additional or different information submitted by the Bidder in response to the CAR. If so, the Bid will be considered responsive in respect of such Eligible Mandatory Evaluation Criteria and the additional or different information submitted by the Bidder shall bind the Bidder as part of its Bid, but the Bidder's original score, which was less than the mandatory minimum for such Eligible Mandatory Evaluation Criteria, will not change, and it will be that original score that is used to calculate any score for the Bid.
- (h) Canada will determine whether the Bid is responsive for the requirements reviewed at Phase II, considering such additional or different information or clarification as may have been provided by the Bidder in accordance with this Section. If the Bid is not found responsive for the requirements reviewed at Phase II to the satisfaction of Canada, then the Bid shall be considered non-responsive and will receive no further consideration.

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

4.1.1.4 Phase III: Final Evaluation of the Bid

- (a) In Phase III, Canada will complete the evaluation of all Bids found responsive to the requirements reviewed at Phase II. Bids will be assessed in accordance with the entire requirement of the bid solicitation including the Technical Point Rated Evaluation Criteria and Financial Evaluation Criteria.
- (b) A Bid is non-responsive and will receive no further consideration if it does not meet all Mandatory Evaluation Criteria.

4.1.2 Eligible Mandatory Evaluation Criteria

The Phased Bid Compliance Process will apply to all Technical Mandatory Criteria outlined in:

- a) Annex M, Appendix 1, Table 5, Bidder Mandatory Experience Matrix; and
- b) Annex M, Appendix 1, Table 6, Project Management Requirements

4.2 Evaluation Procedures

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

4.2.1 Technical & Management Bid Evaluation

In order to ensure that Bidders provide all the required information, matrices have been provided to guide the Bidder in the completion of the section. Bidders must complete the matrices and include them with their bids.

Canada intends to use the completed matrices to verify the required technical information has been provided and meets the requirements. In order to substantiate their compliance to each criterion, the Bidder must refer to the supporting documents within their Technical Bid, with the exact page number(s) and paragraph number(s) where the required substantiation can be found.

4.2.1.1. Mandatory Technical & Management Criteria

To be declared responsive, the Bidder's proposal must meet all of the Technical Mandatory Criteria which are located in Annex M as follows:

Appendix 1 – Technical Mandatory Evaluation Criteria – Technical (Section I) and Management (Section II)
Table 5 – Bidder Mandatory Experience Matrix; and
Table 6 – Project Management Requirements

4.2.1.2 Point Rated Technical Criteria

The Point Rated Technical Criteria are located in Annex M as follows:

Appendix 2 – Technical Point Rated Evaluation Criteria – Experience (Section I)
Category (1) Table 7 – Experience Related to Vessel Technical Requirements
Category (2) Table 8 – Experience with Marine Construction Standards

Appendix 2 – Technical Point Rated Evaluation Criteria – Management (Section II)
Category (3) Table 9 – Project Management Team
Category (4) Table 10 – Project Management Plan
Category (5) Table 11 – Master Plan and Schedule
Category (6) Table 12 – Quality Plan

4.2.3 Financial Evaluation

In order to be compliant the Bidder's proposal must meet all the requirements and provide all the information required by Part 3, Section III Financial Bid. The price of the bid will be evaluated in Canadian dollars, applicable taxes excluded, Incoterms 2000 (Delivery Duty Paid – DDP), Canadian customs duties and excise taxes included.

4.3 Basis of Selection

A bid must comply with all requirements of the bid solicitation to be declared responsive.

A mandatory requirement is described using the words “shall”, “must”, “will”, “is required”, “is to”, “is responsible”, “requires” or “is Mandatory”.

To be declared responsive, a bid must:

- a) Comply with all the requirements of the bid solicitation, including the requirements of Part 5 and Part 6 of this solicitation;
- b) Meet all the mandatory criteria, including, Mandatory Technical Criteria, Mandatory Management Criteria, and Mandatory Financial Criteria.

The rating is performed on a Total Points Score of 1000 points.

Bids not meeting "(a) or (b)" will be declared non-responsive.

The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 30% for the technical merit and 70% for the price.

To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 30%.

To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 70%.

For each responsive bid, the technical merit score and the pricing score will be added to determine the combined rating.

Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

EXAMPLE ONLY:

The table below illustrates **an example** where all three bids are responsive and the selection of the contractor is determined by a 30/70 ratio of technical merit and price, respectively. The total available points equals 222 and the lowest evaluated price is \$45,000.00.

Basis of Selection - Highest Combined Rating of Technical Merit (30%) and Price (70%)

| | Bidder 1 | Bidder 2 | Bidder 3 |
|------------------------------------|-----------------------------|----------------------------|----------------------------|
| Overall Technical Score | 115/222 | 89/222 | 92/222 |
| Bid Evaluated Price | \$55,000.00 | \$50,000.00 | \$45,000.00 |
| Calculations Technical Merit Score | $115/222 \times 30 = 15.54$ | $89/222 \times 30 = 12.03$ | $92/222 \times 30 = 12.43$ |
| Pricing Score | $45/55 \times 70 = 57.27$ | $45/50 \times 70 = 63.00$ | $45/45 \times 70 = 70.00$ |
| Combined Rating | 72.81 | 75.03 | 96.23 |
| Overall Rating | 3 rd | 2 nd | 1 st |

4.3.1 Calculation of Total Bid Price

The calculation of the total bid price for the purposes of evaluation is shown in Annex B - Basis of Payment.

4.3.2 Contract Award

Bidders should note that all Contract Awards are subject to Canada's internal approval process, which includes a requirement to approve funding in the amount of any proposed Contract. Notwithstanding that a Bidder may have been recommended for award of Contract, issuance of any Contract will be contingent upon internal approval in accordance with Canada's policies. If such approval is not given, no Contract will be awarded.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

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

5.2 Aboriginal Participation Component – Certification Form

By submitting a bid, the Bidder certifies that it will meet the Aboriginal Participation Component (APC). Therefore, at time of bid closing, the Bidder must provide the Contracting Authority with the completed APC Certification forms provided at Annex I – APC Certification Forms Part 1 and Part 2. The Bidder should indicate where completed APC Certification forms can be found in their proposal.

5.3 Certifications Precedent to Contract Award and Additional Information

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

5.3.1 Integrity Provisions – Required Documentation

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

5.3.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social](#)

Development Canada (ESDC) - Labour's website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid list at the time of contract award.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex titled Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

5.3.3 Workers Compensation Certification – Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

5.3.4 Certification of Welding

1. Welding must be performed by a welder certified by the Canadian Welding Bureau and in accordance with the requirements of the following Canadian Standards Association (CSA) standards:
 - a. CSA W47.2-11, Certification of Companies for Fusion Welding of Aluminum 2.1
2. Before contract award and within 5 calendar days of the written request by the Contracting Authority, the successful Bidder must submit evidence demonstrating its certification to the welding standards.

5.3.5 Valid Labour Agreement

Where the Bidder has a labour agreement, or other suitable instrument, in place with its unionized labour, and where such labour agreement or instrument is scheduled to expire during the period of the Contract, the Bidder represents that negotiations and good faith bargaining have commenced at least 6 months in advance of the labour agreement expiry. The Bidder further represents and warrants that it will take all appropriate actions to ensure a continuous valid labour agreement, with all its workers, for the duration of the Contract.

The Bidder hereby provides the following documentation as part of its bid:

- a) List of all labour unions at Bidder's facilities; and
- b) List the number of labour agreements in force with these unions and provide copies of all labour agreements in force; or
- c) Statement that there are no labour unions at the bidder's facility.

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

6.1 Security Requirements

There is no security requirement associated with this bid solicitation.

6.2 Financial Capability

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

6.3 Insurance Requirements

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in Annex E – Insurance Requirements.

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

PART 7 - RESULTING CONTRACT CLAUSES

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

7.1 Requirement

The Contractor must perform the Work in accordance with the Contract. The Work includes the construction, the outfit, tests, trials, demonstration, certification, acceptance and delivery of 30 Multi Role Boats (MRBs), 24 cradles, 16 electro-optical/infrared (EO/IR) cameras, with options for up to 14 additional EO/IR cameras, and the associated technical data, training and 2 year operational spares as specified herein.

The Contractor must deliver 30 MRBs. The MRBs must be ready for Acceptance by Canada at the delivery points named in this Contract, having achieved Provisional Acceptance at the Contractor's shipyard prior thereto. Provisional Acceptance means, successful Provisional Acceptance at the Contractor's facility, that is, complete in all respects ready for shipping with all respective tests and trials and demonstrations and certifications successfully completed to the satisfaction of the Inspection Authority (IA), Contracting Authority (CA) and Technical Authority (TA) and in accordance with the Contract. The Contractor must deliver for Acceptance by Canada, (Provisional Acceptance having been achieved prior thereto) as follows:

- a. 13 MRBs delivered to the Department of National Defence, CFB Esquimalt, Esquimalt, British Columbia.
- b. 17 MRBs delivered to the Department of National Defence, CFB Halifax, Halifax, Nova Scotia.
- c. The vessels must be delivered with no more than 250 hours on the main engines.
- d. The vessels shall not be towed from the shipyard to the delivery points listed above.

7.1.1 Communications Notification

Canada has no specific requirements for any ceremonies or events in addition to those that the Contractor may hold for their own purposes, however the Contractor should allow for one ceremony early in the Work schedule for the purposes of Canada.

The Contractor must notify Canada of any planned ceremonies or events that concern any of the Work for this contract and provide Canada with the opportunity to have up to 20 guests attend each planned ceremony or event. Examples of such ceremonies or events include first steel cutting, 'keel' laying, and launching. The Contractor must inform Canada of any planned ceremony or event as early as is reasonably possible to allow Canada to coordinate attendance. If the Contractor wishes to have Senior Executives (e.g. Deputy Minister level or higher) from Canada attend any ceremony or event, then Canada must receive notice of the planned date at least 90 days in advance of the ceremony or event.

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

7.2.1 General Conditions

[2030](#) (2018-06-21), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

7.2.2 Supplemental General Conditions

7.2.2.1 [1028](#) (2010-08-16), Ship Construction – Firm Price, apply to and form part of the Contract.

7.2.2.2 [4006](#) (2010-08-16) Contractor to Own Intellectual Property Rights in Foreground Information

7.2.3 Contract Cost Principles

[1031-2](#) (2012-07-16) Contract Cost Principles, apply to and form part of the Contract.

7.3 Security Requirements

There is no security requirement applicable to the Contract.

7.4 Term of Contract

7.4.1 Period of the Contract

The period of the Contract is from the Contract Award date to 1 year after delivery and acceptance of the final MRB.

7.4.2 Delivery Date

All deliverables including 30 MRBs, 24 cradles, 16 EO/IR cameras, TDP, 2 year operational spares and training must be received on or before 42 months following completion of Milestone 2 – Critical Design Review.

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W8472-155557

Amd. No. - N° de la modif.
File No. - N° du dossier
031mc.W8472-155557

Buyer ID - Id de l'acheteur
031mc
CCC No./N° CCC - FMS No./N° VME

7.4.5 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at article 7.1 of the Contract.

7.5 Authorities

7.5.1 Contracting Authority

Name: Jeremy Langdon
Title: Supply Team Leader
Public Services and Procurement Canada,
Marine Services & Small Vessels Sector,
Small Vessel Construction Division
Address: 6C2, Place du Portage, Phase III
11 Laurier Street
Gatineau, QC. K1A 0S5 CANADA
Telephone: 819-420-2890
E-mail: jeremy.langdon@tpsgc-pwgsc.gc.ca

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

7.5.2 Technical Authority *(information will be provided at contract award)*

The Technical Authority for the Contract is:

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: ____ - ____ - ____
E-mail address: _____

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

7.5.3 Inspection Authority *(information will be provided at contract award)*

The Inspection Authority for the Contract is:

Name:
Title:
Address:

Telephone:

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File No. - N° du dossier
031mc.W8472-155557

Buyer ID - Id de l'acheteur
031mc
CCC No./N° CCC - FMS No./N° VME

E-mail address:

The Inspection Authority is the representative of the department or agency for whom the Work is being performed under the Contract and is responsible for inspection of the Work and acceptance of the finished work. The Inspection Authority may be represented on-site by a designated inspector and any other Government of Canada inspector who may from time to time be assigned in support of the designated Inspector.

7.5.4 Procurement Authority *(information will be provided at contract award)*

The Procurement Authority for the Contract is:

Name:

Title:

Address:

Telephone:

E-mail address:

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

7.5.5 Aboriginal Participation Component Authority *(information will be provided at contract award)*

The Aboriginal Participation Component (APC) Authority for the Contract is:

Name: _____

Title: _____

Organization: Department of Crown-Indigenous Relations and Northern Affairs (CIRNA)/Department of Indigenous Services Canada (DISC)

Address: 10 Wellington Street,
11th Floor. Room 1105,
GATINEAU, Quebec K1A 0H4

Telephone: _____

Facsimile: _____

E-mail address: _____

The APC Authority (or their delegated representative), as designated Department of Crown-Indigenous Relations and Northern Affairs (CIRNA)/Department of Indigenous Services Canada (DISC) is the person who is responsible for issues relating to the APC requirements under this Contract.

7.5.6 Contractor's Representative

Name:

Title:

Telephone:

E-mail address:

7.5.7 Delegation

Each of the Authorities referred to above may from time to time delegate its responsibilities in whole or in part under this Contract and may act through its authorized representative. To be effective, such delegation shall be in writing specifying the nature and extent of the authority given, the name of the representative, with a copy delivered to the Contractor by the Contracting Authority, it being understood that a person to whom responsibilities have been delegated cannot further delegate such responsibilities.

7.5.8 Contractor Project Manager / Representative

The Contractor shall, by written notice to the Contracting Authority, designate the person or persons who may act on behalf of and with the authority of the Contractor under this Contract. The Contractor's designated person or persons shall have the right to delegate their authority and to act through their duly appointed representative. To be effective, such delegation shall be in writing specifying the nature and extent of the authority given, the name of the representative, with a copy delivered to Canada through the Contracting Authority, it being understood that a person to whom responsibilities have been delegated cannot further delegate such responsibilities.

7.6 Payment

7.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid *firm unit prices, as specified in Annex B for a cost of \$ _____ (Canadian Dollars Only)(to be inserted at contract award)*. Customs duties are included and Applicable Taxes are extra.

7.6.1.1 Milestone Payments

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract at Annex B and the payment provisions of the Contract if:

- a. an accurate and complete claim for payment using [PWGSC-TPSGC 1111](#), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all the certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives;
- c. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.6.2 Limitation of Price

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

7.6.3 Payment for Fuels, Oils and Lubricants

The Contractor must supply all fuel, lubricating oil, hydraulic oil and other lubricants sufficient for fully charging all systems as required for operating the machinery and other equipment and for performing all tests and trials at the cost of the contractor.

7.6.4 Field Engineering and Supervisory Services

If Field Service Representatives (FSR) and/or Supervisory Services are required for the Work, the cost of all such services must be included in the price for the Work.

7.7 Invoicing Instructions

1. The Contractor must submit a claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment.
2. Each claim must show:
 - a. all information required on form [PWGSC-TPSGC 1111](#);
 - b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions; and
 - c. the description and value of the milestone claimed as detailed in the Contract.
 - d. Quality assurance documentation when applicable and/or as requested by the Contracting Authority.
3. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
4. The Contractor must prepare and certify one original and two (2) copies of the claim on form [PWGSC-TPSGC 1111](#), and forward it to Canada, identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place. Canada will then forward the original and two (2) copies of the claim certification and onward submission to the Payment Office for the remaining certification and payment action.
5. The Contractor must not submit claims until all work identified in the claim is completed.

7.8 Certifications and Additional Information

7.8.1 Compliance

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

7.8.2 Welding Certification

1. The Contractor must ensure that welding is performed by a welder certified by the Canadian Welding Bureau (CWB) in accordance with the requirements of the following Canadian Standards Association (CSA) standards:

(a) CSA W47.2-11, Certification of Companies for Fusion Welding of Aluminum 2.1.

2. In addition, welding must be done in accordance with the requirements of the applicable drawings and specifications.

3. Before the commencement of any fabrication work, and upon request from the Inspection Authority, the Contractor must provide approved welding procedures and/or a list of welding personnel he intends to use in the performance of the Work. The list must identify the CWB welding procedure qualifications attained by each of the personnel listed and must be accompanied by a copy of each person's current CWB welding certification.

7.8.3 Workers Compensation

The Contractor must maintain its account in good standing with the applicable provincial or territorial Workers' Compensation Board for the duration of the Contract.

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

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

7.9 Project Schedule

1. The Contractor must provide a detailed project schedule in accordance with Annex A – Statement of Work, CDRL-M-002, DID-M-002 Master Plan and Schedule.
2. The schedule is to be regularly updated and available from the Contractor's office for review by Canada's authorities to determine the progress of the Work.

7.10 Applicable Laws

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

7.11 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 1028 (2010-08-16), Ship Construction – Firm Price;
- (c) the supplemental general conditions 4006 (2010-08-16), Contractor to own Intellectual Property Rights in Foreground Information;
- (d) the general conditions 2030 (2018-06-21), General Conditions - Higher Complexity - Goods;
- (e) the 1031-2 (2012-07-16), Contract Cost Principles;
- (f) Annex A, Statement of Work;
- (g) Annex B, Basis of Payment;
- (h) Annex C, Subcontractors;
- (i) Annex D, Bidders Questions and Canada's Responses;
- (j) Annex E, Insurance Requirement;
- (k) Annex F, Inspection / Quality Assurance / Quality Control;

- (l) Annex G, FCP-EE
- (m) Annex H, General Information on Aboriginal Participation Component (APC);
- (n) Annex I, Aboriginal Participation Component (APC) Certification Forms;
- (o) Annex J, Aboriginal Participation Component (APC) Plan
- (p) Annex K, Aboriginal Participation Component (APC) Certification Requirements;
- (q) Annex L, Aboriginal Participation Component (APC) Reports; and
- (r) the Contractor's bid dated _____ .

7.12 Defence Contract

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

7.13 Trade Qualifications

The Contractor must use qualified, certified (where applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Contracting Authority may request to view and record details of the certification and/or qualifications held by the Contractor's tradespeople.

7.14 Quality Management Systems

1. The Contractor must have in place during the performance of the work, a Quality Assurance Program developed in accordance with Annex A – Statement of Work, CDRL-M-011, DID-M-011 Quality Management Plan and approved by Canada during the performance of the Work in accordance with DID-M-011.

2. The Contractor's facilities may be audited by Canada, or its authorized representative, during the performance of the Work to ensure that the approved quality system is in place and in accordance with the foregoing requirement.

3. The Contractor will be required to submit completed quality assurance documentation with each claim for payment as applicable.

7.15 Contract Kick-off Meeting

Within **5 working days** of the receipt of the contract, the Contractor must contact the Contracting Authority to confirm the scheduling of the Contract Kick-off meeting. The meeting shall be in accordance with the Annex A – Statement of Work, CDRL-M-008, DID-M-008 Meetings. The meeting will be held at the Contractor's facility. Cost of holding the meeting must be included in the price of the bid. Please note that the travel and living expenses for Government Personnel will be arranged and paid for by Canada.

7.16 Technical Data Package and Technical Data Management Plan

1. The Contractor must develop and deliver to the Technical Authority for acceptance a Technical Data Management Plan in accordance with Annex A – Statement of Work , CDRL M-004, DID-M-004. The contractor must develop and deliver to the Technical Authority for acceptance a Technical Data Package in accordance with Annex A – Statement of Work, CDRL ILS-003, DID-ILS-003. All drawings, reports, Data Books, Operating Instruction Books, Maintenance Manuals and Spare Parts Lists (including part numbers and ordering instructions) for all machinery and equipment fitted on the vessel(s) as required in Annex A – Statement of Work must be submitted to Canada for review and acceptance. Once approved by the TA, the Contractor will provide copies in accordance with and as specified in Annex A – Statement of Work .

2. Where manuals are examined by Canada, such examination does not relieve the Contractor of any responsibility under the Contract for ensuring the correctness of all details and adequacy of performance of the vessel(s), nor does it obligate Canada to accept, in part or in whole, an item of work completed in accordance with such manual, nor does it mean such an item of work meets the requirements of Annex A – Statement of Work.

7.17 Insurance Requirements

1. The Contractor must comply with the insurance requirements specified in Annex E. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.
2. The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.
3. The Contractor must forward to the Contracting Authority within 10 days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

7.18 SACC Manual Clauses

A9047C – Title to Property – Vessel, 2008-05-12
B4075C - Welding Certification – Contract, 2016-01-28
B9035C - Progress Meetings, 2008-05-12
D3015C - Dangerous Goods/Hazardous Products – Labelling and Packaging Compliance, 2014-09-25
D0018C - Delivery and Unloading, 2007-11-30
C0711C - Time Verification, 2008-05-12
H4500C - Lien - Section 427 of the Bank Act, 2010-01-11
C2801C 2014-11-27, Priority Rating - Canadian-based Contractors
D2000C 2007-11-30, Marking
D2001C 2007-11-30, Labelling
D5510C – Quality Assurance Authority (Department of National Defence) – Canadian-based Contractor – 2014-06-26
D5606C – Release Documents (Department of National Defence) – Canadian – based Contractor, 2012-07-16
D2025C – Wood Packaging Material – 2017-08-17
D6010C – Palletization – 2007-11-30

7.19 Release Documents – Distribution

The Contractor must prepare the release documents in a current electronic format and distribute them as follows:

- a. One (1) copy mailed to consignee marked: "Attention: Receipts Officer";
- b. Two (2) copies with shipment (in a waterproof envelope) to the consignee;
- c. One (1) copy to the Contracting Authority;
- d. One (1) copy to:

*National Defence Headquarters
Mgen George R. Pearkes Building
101 Colonel By Drive
Ottawa, ON K1A 0K2
Attention: _____*

- e. One (1) copy to the Quality Assurance Representative;
- f. One (1) copy to the Contractor; and
- g. For all non-Canadian contractors, one (1) copy to:

*DQA/Contract Administration
National Defence Headquarters
Mgen George R. Pearkes Building
101 Colonel By Drive
Ottawa, ON K1A 0K2*

E-mail: ContractAdmin.DQA@forces.gc.ca.

7.20 Provisional Acceptance, Acceptance and Delivery Schedule

7.20.1 Multi-Role Boat

The Contractor must deliver the MRBs. The MRBs must be upright, stable, seaworthy and ready for Acceptance by Canada at the delivery points named in this Contract, having achieved Provisional Acceptance at the Contractor's shipyard prior thereto.

7.20.2 Provisional Acceptance

Provisional Acceptance means, successful Provisional Acceptance at the Contractor's facility, that is, complete in all respects ready for shipping with all respective tests and trials and demonstrations and certifications successfully completed to the satisfaction of the Inspection Authority (IA), Contracting Authority (CA) and Technical Authority (TA) and in accordance with the Contract.

Upon completion of all tests and trials specified in Annex A - Statement of Work, the Contractor shall submit a certificate of Provisional Acceptance in a format specified by Canada, to be signed by the authorized representative of the Contractor, the Inspection Authority and the Contracting Authority. In addition, the Inspection Authority will prepare a final list of all outstanding Work items (including non-conformance reports) for review at the Provisional Acceptance Conference and attached to the Provisional Acceptance certificate as an appendix. The list of outstanding Work shall be reviewed to determine if the Vessel is fully operational for their intended service to the satisfaction of Canada. Upon receipt of a signed copy of the Provisional Acceptance certificate by the Contracting Authority, the Contractor shall proceed with delivery of the boat to the specified location for Acceptance by Canada.

After successful Provisional Acceptance at the Contractor's shipyard, the Contractor shall deliver for Acceptance by Canada:

- a) Thirteen (13) MRBs delivered to the Department of National Defence, CFB Esquimalt, Esquimalt, British Columbia on or before 24 months following completion of Milestone 2 Critical Design Review.
- b) Seventeen (17) MRBs delivered to the Department of National Defence, CFB Halifax, Halifax, Nova Scotia on or before 42 months following completion of Milestone 2 – Critical Design Review.

7.20.3 Each outstanding Work item on the Acceptance list referred above shall have a price determined in accordance with the following: the higher of twice the cost for the outstanding Work to be completed by the Contractor, or twice the cost for the outstanding Work to be completed as quoted by a third party, and that amount shall be deducted from any payment otherwise due.

7.20.4 It is understood and agreed that where the Work has been substantially completed and the parties have agreed upon the terms and conditions for the Contractor to make good all deficiencies, the certificate may be executed with a statement attached concerning the making good of the deficiencies.

7.20.5 Acceptance of the vessels by the Minister shall occur with a written execution of a certificate in accordance with form PWGSC-TPSGC 1105, with evidence satisfactory to Canada that the Vessels has successfully completed all Tests and Trials and Demonstrations and Certification. The execution of the Certificate shall in no way relieve the Contractor of its obligations under the Contract.

7.21 Work Site Access

- a) Authorized representatives of Canada must have access to any site where any part of the Work is being carried out at any time during working hours to make examinations and such tests of the Work as they may deem fit.

7.22 Drawings and Purchase Orders during Construction Phase

7.22.1 All drawings and purchase orders shall be submitted to Canada for review and comment.

7.22.2 Any examination of any Contractor's drawings or purchase orders by or on behalf of Canada shall not relieve the Contractor of any responsibility under this Contract and shall not relieve any Subcontractor of any responsibility under any subcontract. In particular, examination or approval of drawings or purchase orders shall not:

- (a) Relieve the Contractor of its obligation to ensure that all details are correct;
- (b) Obligate Canada to accept an item that does not meet the Contract requirements;
- (c) Confirm that an item complies with the Contract requirements; and
- (d) Relieve the Contractor of the responsibility for any omissions and the consequences resulting therefrom.

7.23 Additional Work Including Design Change

7.23.1 The Contractor hereby acknowledges that Canada may require the Contractor to perform additional Work at any time and from time to time, during this Contract over and above the Work identified at Annex A - Statement of Work. The additional Work could include but not be limited to:

- (a) Additions or variations to the Work including Design Changes; and
- (b) Dispensing with or change to any portion of the Work.

7.23.2 If any additional Work is required, the procedure for processing the "Additional Work" shall be as set out in clause B5007C dated 2010-01-11 and at article 7.38. All negotiations must be completed and the additional Work authorized on form PWGSC - TPSGC 1686 prior to the commencement of the Work, unless and until the Contracting Authority specifically authorizes commencement of the additional Work, in writing, prior to completion of negotiations and completion of form PWGSC - TPSGC 1686.

7.23.3 The Contractor shall perform the additional Work under the same terms and conditions of the Contract. The additional Work will be negotiated using the labor rates and markups contained in the Contract.

7.23.4 The Contractor may request a change to the Work for Canada's consideration by submission of a request for change proposal to the Contracting Authority.

7.23.5 Extensions in the delivery date as a result of the approved additional (unscheduled) Work must be presented at the time of the proposal and to the satisfaction of the Contracting Authority, otherwise extensions to the delivery date will not be considered.

7.23.6 No cost additional Work: Notwithstanding the foregoing, should Canada deem it advisable to make any reasonable change in the Work during the course of the Work, provided the change is ordered before that particular part of the Work to which Canada refers is commenced and involves no extra cost to the Contractor, such changes shall be made by the Contractor without extra cost to Canada.

7.23.7 Incorporation of Additional Work or Design Changes: Where additional Work including Design Changes has been agreed to by the Parties, the resulting change shall be incorporated into the Work, and:

(a) Be subject to all of the provisions of the Contract;

(b) Not relieve the Contractor of its obligation to ensure that the Vessel meets all of the performance requirements set out in the Systems Requirements Document and shall not affect the delivery date unless otherwise provided for in form PWGSC - TPSGC 1686 relating to such additional work or design change.

7.24 Inspection

7.24.1 All reports, deliverables, documents, goods and all services rendered under this Contract shall be subject to inspection by the Inspection Authority. Should any report, document, good or service not be in accordance with the requirements of the Contract, the Inspection Authority shall have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment. Any communication with a Contractor regarding the quality of Work performed pursuant to this Contract shall be undertaken by official correspondence through the Contracting Authority.

7.24.2 The Contractor shall be responsible for properly setting up, preparing, providing access to and presenting Work for inspection and for giving adequate notice to the Inspection Authority and the Regulatory Body that the Work is complete, and having been pre-tested or inspected by the Contractor, is ready for formal inspection.

7.24.3 Inspection will be done by the Inspection Authority at the most appropriate location:

(a) For the Vessels, at Contractor's facilities during the construction of the Boat, up to and including Provisional Acceptance of the Boat; and at Canada's facilities for Acceptance; and

(b) For Documentation, unless otherwise specified at Canada's facilities.

7.24.4 Inspection requirements shall be in accordance with the provisions of this Contract including 2030 General Conditions - Higher Complexity - Goods (2018-06-21) and 1028 Ship Construction - Firm Price (2010-08-16) and the following procedures:

(a) Design Drawings

(i) Construction drawings and calculations: Upon receipt of each drawing and the associated technical data by the Inspection Authority and Technical Authority they will be reviewed for their content against the provisions of the Contract. Canada will notify the Contractor in writing of any discrepancies or concerns within ten (10) working days of the receipt of the document.

(ii) Upon receipt of each construction drawing and purchase order by the Inspection Authority and Technical Authority, they will be reviewed against the Contract. Canada will notify the Contractor in writing of any discrepancies or concerns within ten (10) working days of the receipt of the document.

(b) Inspection during the Construction Phase as carried out by the Inspection Authority will consist of the audit of the Contractor's Quality Control System and records, a series of inspections and the witnessing of tests, trials and demonstrations deemed necessary by the Inspection Authority to verify that the Work has been performed in compliance with the provisions of Annex A Statement of Work .

(c) Non-conformance Report (NCR): A NCR will be issued for each Non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the Non-conformance.

(d) When the Non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the NCR by adding an appropriate signed and dated notation.

(e) When Acceptance Sea Trials have been successfully completed and the Contractor has corrected and addressed items on the Non-conformance list, an Acceptance Inspection of the boat shall be carried out by the Inspection Authority. Three (3) working days prior to the scheduled Acceptance Date, the content of all Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Delivery Document prior to the Inspection Authority certification of such document. A final Deficiencies Database shall be prepared for signature if necessary. Acceptance Certificate of Ship into the Department of National Defence shall be prepared for signature.

(f) The Contractor shall correct all outstanding deficiencies during the warranty period at a time and place agreed to by the Contractor and the Technical Authority and the Contract Authority.

(g) Notwithstanding the above and the inspection by the Inspection Authority, the discrepancy notices, the Non-conformance reports, or absences thereof, or corrections thereto, or acceptance thereof, do not relieve the Contractor of its obligations to satisfy the requirements of this Contract. As such, the Contractor shall correct any and all defects or deficiencies discovered at no additional cost to Canada.

7.25 Tests and Trials

7.25.1 Launching of the Vessels

The Contractor shall be responsible for the safe and satisfactory launching of the Vessels at a time and in a manner agreed upon between the Contractor and Canada. If at any time prior to Acceptance of the Vessel there is reason to believe the Vessel has been seriously impaired, the Contractor shall adequately inspect, repair, clean, and paint (as appropriate) the damaged areas at its own expense and to the satisfaction of Canada.

7.25.2 Tests, Trials and Demonstrations

(a) All tests, trials and demonstrations must be performed in accordance with Annex A – Statement of Work and Annex F - Inspection/Quality Assurance/Quality Control.

(b) The Contractor shall in all respects be responsible for the conduct of all Tests and Trials and Demonstrations in accordance with the requirements of this Contract.

(c) The Contractor must keep written records of all tests, trials, and demonstrations conducted as required by the QA System.

(d) Canada reserves the right to defer starting or, continuing with any Sea Trials for any reasonable cause including but not limited to adverse weather visibility, equipment failure or degradation, lack of qualified personnel and inadequate safety standards.

(e) The Contractor shall remove the MRBs from the water and prepare them for delivery on successful completion of Acceptance Trials and final approval by the Inspection Authority and Technical Authority prior to acceptance of each boat. On completion of the Work, the MRBs must be upright, stable, seaworthy, and secured for dry transport at the Contractor's facility.

7.26 Certificates

7.26.1 The Contractor must obtain and deliver to Canada in the name of the Owner all the usual and all the relevant certificates for the proper and safe operation of the Boat in accordance with Annex A - Statement of Work.

7.26.2 All costs associated with obtaining certificates referred to in sub-clause 7.26.1 above are included in the "Contract Price".

7.27 Government Furnished Equipment

All Government Property must be used by the Contractor solely for the purpose of the Contract and remains the property of Canada. The Contractor must maintain adequate accounting records of all Government Property and, whenever feasible, mark it as being the property of Canada.

The Contractor must take reasonable and proper care of all Government Property while it is in its possession or subject to its control. The Contractor is responsible for any loss or damage resulting from its failure to do so other than loss or damage caused by ordinary wear and tear.

All Government Property, unless it is installed or incorporated in the Work, must be returned to Canada on demand. All scrap and all waste materials, articles or things that are Government Property must, unless provided otherwise in the Contract, remain the property of Canada and must be disposed of only as directed by Canada.

At the time of completion of the Contract, and if requested by the Contracting Authority, the Contractor must provide to Canada an inventory of all Government Property relating to the Contract.

The following items will be supplied as Government Furnished Equipment:

a) Naval Boarding Party equipment provided as GFE must be fit as follows;

- i. Quantity 3 Pole Telescopic, Swimmer;
- ii. Quantity 2 SKED rescue stretcher;
- iii. Quantity 1 Grappling Hook, Rappelling;
- iv. Quantity 2 Wheel, Cable;
- v. Quantity 1 Hand Pole Stabilizer;
- vi. Quantity 1 Hook Grapple;
- vii. Quantity 1 Hook Grapple;
- viii. Quantity 2 Ladder Wire Compact;

- ix. Quantity 1 Base, Pole, Quick Release, Flexible;
- x. Quantity 1 Deployment Reel, Ladder; and
- xi. Quantity 1 Marine Grapnel.

b) Multiband V/UHF Radios as GFE to be used to fit for but not with on each DND MRB, as follows:

- i. Quantity one (1) Multiband V/UHF radios;
- ii. Quantity one (1) Multiband Inter/Intra Team Radio; and
- iii. Quantity two radio headsets.

7.28 Failure to Deliver

Time is of the essence of this Contract. Failure to deliver by the date(s) specified in the Contract will prejudice Canada.

Delivery is an essential part of this contract. Except for excusable delays notified in accordance with Section 11 of 2030 General Conditions - Higher Complexity - Goods, failure to deliver by the date(s) specified in this Contract will prejudice the Government of Canada and will, at the Government of Canada's discretion, entail either:

- a. Contract Termination in accordance with 2030 General Conditions Sections 10 (Time of the Essence) and 31 (Default by the Contractor); or
- b. Consideration for Contract Amendment. Delivery date(s) will not be extended without consideration being provided by the Contractor in the form of adjustment to the price, warranty, quantity and / or service to be provided.

7.29 Total System Responsibility

The Contractor shall have Total System Responsibility (TSR) for the work performed by and on behalf of the Contractor under the Contract. TSR includes but is not limited to:

(a) system design and total system integration which includes the task of aggregating, interconnecting, setting-to-work, testing, trials and making compatible all the Systems and Deliverables, including their associated software, so as to fulfill the performance and other requirements described in Annex A - Statement of Work; and

(b) placement and management of sub-contractors; and

(c) ensuring that documentation and publications are sufficient to permit operation and maintenance of the systems and the equipment which they depict; and

(d) all other work required to ensure the Vessels are fully functional and meets the requirements of the Contract.

7.30 Welding Personnel

Prior to the commencement of the Work, the Contractor must provide to the Inspection Authority a list of welding personnel intended to be used in the boat construction. The list is to identify the Canadian Standard Association (CSA), or equivalent welding qualifications attained by each of the personnel listed and is to be accompanied by each person's current CSA, or equivalent welding ticket.

7.31 Maintenance and Operator's Manual

The Contractor shall supply maintenance and operator's manual, with the Vessels in accordance with the requirements of Annex A - Statement of Work. The Price of all operator's manuals shall be included with the Contract Price.

7.32 Preliminary Design Review and Critical Design Review

- 7.32.1 The Contractor shall conduct a Preliminary Design Review (PDR) and Critical Design Review (CDR) in accordance with Annex A - Statement of Work to ensure that the Vessels upon completion of the Work will meet fully the performance and other requirements and that the space established in the design is sufficient for all equipment, stores, crew, liquids, etc.
- 7.32.2 Upon completion of the PDR and CDR, the Contractor shall:
- (a) Provide the Contracting Authority with a written statement in which the Contractor shall provide its acceptance and guarantee that the design is sufficient to allow the Vessel when completed to perform fully in accordance with the Contract including Annex A - Statement of Work; or
 - (b) advise the Contracting Authority in writing that the design is defective or deficient and the reasons therefor.
- 7.32.3 No later than ten (10) working days after having received any statements mentioned in sub-article 7.32.2 (a) or (b), Canada shall notify the Contractor of the acceptance of the statements.
- 7.32.4 Upon provision of the statement at 7.32.2 (a), the Contractor shall be liable for all additional costs which may be required to complete the Work.
- 7.32.5 Where Canada alleges during a design review that the design is defective or deficient, and the Contractor does not agree, Canada may by written notice to the Contractor terminate the Contract. Upon such termination Canada shall be liable to the Contractor only for its costs of conducting the PDR and CDR. Such costs shall be determined in accordance with PWGSC - TPSGC Contract Cost Principles 1031-2 up to the maximum amount of the associated milestone.
- 7.32.6 Where the parties to the Contract can reach agreement on correcting the design, changes to the MRBs, and to all other contracted items affected, and all cost thereof, the Contractor shall be responsible for completing the Work in accordance with the Contract.
- 7.32.7 After reaching agreement as referred to in sub-clause 7.32.6 above, the Contractor shall provide a written statement as described in sub-clause 7.32.2 (a) above.
- 7.32.8 The Contractor shall not incur Material and Labour Costs until a written statement, as set out in sub-clause 7.32.2 (a) above, has been provided and this statement has been accepted as valid by the Contracting Authority.

7.33 Canada Shipping Act, 2001

The Contractor shall co-operate with Canada in the recording and registration procedures set in the *Canada Shipping Act, 2001*. All certificates and necessary exemptions for a boat of this type and Voyage Class shall be provided.

7.34 Boat – Access by Canada

Canada reserves the right to carry out limited work by its personnel on equipment on board the Vessel. Such work will be carried out at times mutually acceptable to Canada and to the Contractor.

7.35 Limitation of Liability

1. This section applies despite any other provision of the Contract and replaces the section of the general conditions entitled "Liability". Any reference in this section to damages caused by the Contractor also includes damages caused by its employees, as well as its subcontractors, agents, and representatives, and any of their employees.

2. Whether the claim is based in contract, tort, or another cause of action, the Contractor's liability for all damages suffered by Canada caused by the Contractor's performance of or failure to perform the Contract is limited to \$10 million per incident or occurrence to an annual aggregate of \$20 million for losses or damage caused in any one year of carrying out the Contract, each year starting on the date of coming into force of the Contract or its anniversary. This limitation of the Contractor's liability does not apply to nor include:

- (a) Any infringement of intellectual property rights;
- (b) Any breach of warranty obligations;
- (c) Any liability of Canada to a third party arising from any act or omission of the Contractor in performing the Contract; or
- (d) Any loss for which the policies of insurance specified in the Contract or any other policies of insurance held by the Contractor would provide insurance coverage.

3. Each Party agrees that it is fully liable for any damages that it causes to any third party in connection with the Contract, regardless of whether the third party makes its claim against Canada or the Contractor. If Canada is required, as a result of joint and several liability, to pay a third party in respect of damages caused by the Contractor, the Contractor must reimburse Canada for that amount.

4. The Parties agree that nothing herein is intended to limit any insurable interest of the Contractor nor to limit the amounts otherwise recoverable under any insurance policy. The Parties agree that to the extent that the insurance coverage required to be maintained by the Contractor under this Contract or any additional insurance coverage maintained by the Contractor, whichever is greater, is more than the limitations of liability described in sub article (2), the limitations provided herein are increased accordingly and the Contractor shall be liable for the higher amount to the full extent of the insurance proceeds recovered.

5. Nothing shall limit Canada's other remedies, including Canada's right to terminate the Contract for default for breach by the Contractor of any of its obligations under this Contract, notwithstanding that the Contractor may have rea

7.36 Aboriginal Participation Component

(a) The Contractor must comply with the Aboriginal Participation Component (APC) as detailed in Annex H, I (Part 1 & Part 2), J, K (Forms 1 and 2) and L.

(b) The Contractor warrants that the certification of compliance with the definition of an Aboriginal business set out in the Requirements for the Set-aside Program for Aboriginal Business submitted by the Contractor is accurate and complete, as detailed in Annex K, Form 1 and Form 2.


(c) The Contractor must keep proper records and documentation relating to the accuracy of the certification provided to Canada. The Contractor must not, without obtaining prior written consent of the Contracting Authority, dispose of any such records or documentation supporting the accuracy of the certification until the expiration of six years after final payment under the Contract, or until settlement of all outstanding claims and disputes, resulting from a dispute under the Contract, whichever is later. All such records and documentation must at all times during the retention period be open to audit, inspection and examination by representatives of Canada, who may make copies and take extracts. The Contractor must provide all facilities for such audits, inspections and examinations, and must furnish all such information as the representatives of Canada may from time to time require with respect to such records and documentation.

(d) Nothing in this clause must be interpreted as limiting the rights and remedies which Canada may otherwise have pursuant to the Contract.

7.37 Procedures for Design Change or Additional Work

These procedures must be followed for any design change or additional work.

1. When Canada requests design change or additional work:

- a. The Procurement Authority will provide the Contracting Authority with a description of the design change or additional work in sufficient detail to allow the Contractor to provide the following information:
 - i. any impact of the design change or additional work on the requirement of the Contract;
 - ii. a price breakdown of the cost (increase or decrease) associated with the implementation of the design change or the performance of the additional work using either the form [PWGSC-TPSGC 1686](#), Quotation for Design Change or Additional Work, or the form [PWGSC-TPSGC 1379](#)  (PDF 56KB) - ([Help on File Formats](#)) Work Arising or New Work.
 - iii. a schedule to implement the design change or to perform the additional work and the impact on the contract delivery schedule.
- b. The Contracting Authority will then forward this information to the Contractor.
- c. The Contractor will return the completed form to the Contracting Authority for evaluation and negotiation. Once agreement has been reached, the form must be signed by all parties in the appropriate signature blocks. This constitutes the written authorization for the Contractor to proceed with the work, and the Contract will be amended accordingly.

2. When the Contractor requests design change or additional work:

- a. The Contractor must provide the Contracting Authority with a request for design change or additional work in sufficient detail for review by Canada.

-
- b. The Contracting Authority will forward the request to the Procurement Authority for review.
 - c. If Canada agrees that a design change or additional work is required, then the procedures detailed in paragraph 1 are to be followed.
 - d. The Contracting Authority will inform the Contractor in writing if Canada determines that the design change or additional work is not required.
3. Approval

The Contractor must not proceed with any design change or additional work without the written authorization of the Contracting Authority. Any work performed without the Contracting Authority's written authorization will be considered outside the scope of the Contract and no payment will be made for such work.

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W8472-155557

Amd. No. - N° de la modif.
File No. - N° du dossier
031mc.W8472-155557

Buyer ID - Id de l'acheteur
031mc
CCC No./N° CCC - FMS No./N° VME

ANNEX A

STATEMENT OF WORK

Attached as a separate document

ANNEX B

BASIS OF PAYMENT

Price Evaluation

All firm prices and hourly rates must be in Canadian dollars, Canadian customs duty and excise tax included, Incoterms 2000 Delivered Duty Paid (DDP) to the delivery points identified, GST and HST extra, as applicable.

Price Table 1

| | | Column A | Column B | Column C (=A X B) |
|--------|---|---------------------|----------|-------------------------|
| Item # | Description | Unit Price CDN\$ | Quantity | Total per Item CDN\$ |
| 1 | Multi-Role Boats, with 2 years of spares & special tools, built in accordance with Annex A. | \$ | 30 | \$ |
| 2 | Cradles built in accordance with Annex A. | \$ | 24 | \$ |
| 3 | EO/IR cameras | \$ | 16 | \$ |
| 4 | Delivery of Multi-Role Boats to CFB Halifax | \$ | 17 | \$ |
| | Delivery of Multi-Role Boats to CFB Esquimalt | \$ | 13 | \$ |
| 6 | Delivery of Cradles to CFB Halifax | \$ | 14 | \$ |
| 7 | Delivery of Cradles to CFB Esquimalt | \$ | 10 | \$ |
| 8 | Project Management DID M-001 to M-011 inclusive | \$ | 1 | \$ |
| 9 | Compliance Verification DID CM-001 | \$ | 1 | \$ |
| 10 | Engineering DID E-001 to DID E-009 inclusive | \$ | 1 | \$ |
| 11 | Test and Trials DID TT-001 to DID TT-002 | \$ | 1 | \$ |
| 12 | Integrated Logistics Support DID ILS-001 to DID ILS-005 inclusive | \$ | 1 | \$ |
| 13 | Training DID T-001 and SOW 2.1.7 | \$ | 1 | \$ |

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031mc.W8472-155557

Buyer ID - Id de l'acheteur
031mc
CCC No./N° CCC - FMS No./N° VME

| | | | | |
|--------------------|--|------------------------------|-------------------------|---------------------------------|
| 14 | First Article Shock Testing of MRB and Cradle. (SOW 6.3.1) | \$ | 1 | \$ |
| Subtotal A | Total Contract Price (sum column C item #1-#14) | | | \$ _____ |
| | The contract includes an option to purchase up to 14 additional EO/IR cameras. The price will be used for financial evaluation purposes. The price will be included in the contract should the option(s) be exercised. | | | |
| 13 | EO/IR cameras – Options | \$ | 14 | |
| Subtotal B | Total EO/IR Cameras | | | \$ _____ |
| | The indicated number # of hours for items 14, 15, 16 and 17 below are for financial evaluation purposes. The Hourly Rate is a firm rate for the duration of the contract. | | | |
| Item # | Description | Hourly Rate CDN\$ | Quantity hrs | Total per Item CDN\$ |
| 14 | Project Manager | \$ | 100 | \$ |
| 15 | Engineering Manager | \$ | 100 | \$ |
| 16 | Drafts Person/Technologist | \$ | 100 | \$ |
| 17 | General Labour | \$ | 100 | \$ |
| Subtotal C | Total Evaluated Price (Sum of subtotal C plus items #14-#17) | | | \$ _____ |
| Total A+B+C | Total Evaluated Price | | | \$ _____ |

Total Estimated Cost for 2 Years of Spares and Special Tools

The Bidder must provide the total estimated cost for spare parts and special tools required to fully support the MRBs over a 2 year period. As this cost is to be included in Price Table 1, Item #1, the breakout of this information is for informational purposes only and will not be reevaluated.

While the Bidder must be prepared to supply all recommended spares as part of their bid package, Canada reserves the right to negotiate which spares are delivered.

Price Table 2

| Description | Quantity | Total Estimated Cost |
|---|----------|----------------------|
| 2 Years of MRB Spare Parts & Special Tools. | 30 | \$ _____ |

1. Optional EO/IR Cameras

The following price is included in the Basis of Payment and must remain valid for the duration of the contract.

| Description | Quantity | Unit Price CDN\$ |
|--------------|----------|---------------------|
| EO/IR Camera | Up to 14 | \$ _____ |

2. Charge-out Rate / Material Mark-up

The following rates are included in the Basis of Payment and must remain valid for the duration of the contract:

The Charge-out Rates specified below include; Project Manager, Engineering Manager, Drafts Person/Technologist, General Labour and must be inclusive of all overheads and profit. The Charge-out Rates will be used for pricing unscheduled work that results in an increase or decrease during the Work Period, except as noted in the clause entitled "Overtime."

Rates as per Price Table 1

| Description | Hourly Rate CDN\$ (A) |
|----------------------------|--------------------------|
| Project Manager | \$ _____ |
| Engineering Manager | \$ _____ |
| Drafts Person/Technologist | \$ _____ |
| General Labour | \$ _____ |

The cost of material must be the net laid-down cost of the material to which must be added a mark-up of 10% of the net laid-down cost of the material. For the purposes of pricing, Unscheduled Work and material must be deemed to include subcontracts.

3. Overtime:

In the event Canada authorizes overtime for **Unscheduled Work**, the applicable overtime rates as defined below shall be applied to the hourly rates found in section 2. Charge-out Rate / Material Mark-up , GST/HST extra, as applicable.

Overtime is defined as:

Regular time is defined as an 8 hour work day or in accordance with current employment contract;
Overtime Time and One-Half Rate (1.5x the hourly rate (A) found in section 1 above is defined as time in excess of the regular time; and
Overtime Double Time Rate (2.0 x the hourly rate (A) found in section 1 above if applicable under current employment contract.

4. Labor Rates for Additional Work including Design Change

For the performance of the Work as a result of approved additional Work including Design, or Engineering Change, Foreperson, General Labour, Supervision, Administrator or change in the scope of Work, the Contractor shall be paid the firm hourly charge-out rate as detailed in section 2. Charge-out Rate / Material Mark-up, GST/HST extra, as applicable.

The firm hourly charge-out labour rates will remain firm for the term of the Contract and any subsequent amendments.

5. Material for Additional Work including Design Change

For the performance of the Work to procure additional Material as a result of approved additional Work including Design Change or change in the scope of Work, the Contractor shall be paid the Direct Material Cost as defined in Contract Cost Principles 1031-2 plus a firm mark-up of 10% GST/HST extra, as applicable. Other than the 10% mark-up, no additional charges relating to material procurement, insurance, handling, store keeping and activities of this nature, or any other charge whatsoever, will be accepted as part of the additional Work prices.

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

The material mark-up rate will remain firm for the term of the Contract and any subsequent amendments.

6. Payment for Additional Work including Design Change

The Contractor may claim payment for Additional Work including Design Change where the Work involved in the additional Work or Design Change has been initiated, fully in accordance with the provisions of the Contract. Each additional Work package or Design Change is to be divided over the entire Contract period proportionately to each payment set out in the Contract. Payment for Additional Work or Design Change shall be subject to the same conditions herein.

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MILESTONE PAYMENT SCHEDULE

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

The percentage payments in Milestone No. 1 and 2 will be applied to the Contract Total Per Item (Subtotal A Column C) from Price Table 1. All other Milestones 2.1 to 16.2 are to be applied to (Subtotal A Column A) of Price Table 1. *(Example...The acceptance of Milestones 3.1 to 3.30. will result in a payment equal to 12% of the price at Subtotal A from Column A of Price Table 1)*

Contract Total as per Pricing Table 1 Subtotal A Column C: \$_____

| Milestone No. | Description or deliverable(s) | % | Firm Unit Price (Applicable Taxes Extra) | Total Firm Price (Applicable Taxes Extra) |
|----------------------|---|----------|---|--|
| 1 | Preliminary Design Review completed and accepted by Canada | 2% | | |
| 2 | Critical Design Review completed and accepted by Canada | 4% | | |
| 3.1 to 3.30 | Hull Materials delivered to Contractor | 12%/30 | | |
| 4.1 to 4.30 | Main Propulsion System Equipment delivered to Contractor | 7%/30 | | |
| 5.1 to 5.16 | EO/IR cameras delivered to the Contractor | 17%/16 | | |
| 6.1 to 6.30 | 100% boat completion | 11%/30 | | |
| 7.1 to 7.24 | Cradle Materials delivered to Contractor | 3%/24 | | |
| 8.1 to 8.30 | Provisional Acceptance complete and accepted by Canada | 12%/30 | | |
| 9.1 to 9.30 | Delivery and Acceptance of MRBs at respective CFB bases | 12%/30 | | |
| 10.1 to 10.24 | Delivery and Acceptance of Cradles at respective CFB bases | 4%/24 | | |
| 11.1 to 11.4 | All Technical Data Package elements delivered and accepted by Canada | 8% | | |
| 12.1 to 12.4 | All Training completed and accepted by Canada. | 3%/4 | | |
| 13.1.to 13.30 | Completion of the 12 month warranty period | 3%/30 | | |
| 14 | First Article Shock Testing completed and accepted by Canada | 1% | | |
| 15.1 | Completion of Aboriginal Voluntary Set A-side report which demonstrates 0.5% of the Contract Price which has been met and the reports are accepted by Canada | 0.50% | | |
| 15.2 | Completion of Aboriginal Voluntary Set A-side report which demonstrates a full 1.0% of the Contract Price which has been met and the reports are accepted by Canada | 0.50% | | |

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The Milestones shown above will be included and identified in all production schedules. Milestone Payment Claims may be submitted per ship if all requirements for the milestone payment have been completed and accepted by Canada.

The respective payments for the vessels delivered, **Milestones 9.1 to 9.30** will be payable by Canada upon delivery and acceptance of the Vessel by Canada, minus the holdback for double the total estimated value of any outstanding Work items as explained at section 7.20.3.

The Holdback for outstanding Work will be payable by Canada upon completion of the outstanding Work and when the Work is accepted by Canada.

The respective payments for completion of the 12 month warranty period, **Milestones 13.1 to 13.30** will be payable by Canada upon completion of the warranty period of each Vessel, minus the total cost of any Work undertaken by Canada to repair any defects subject to warranty.

Note: Technical Manuals will not be returned once approved.

6. Expenditure, Limitation - Contract

Canada's total liability under this Contract shall not exceed \$_____, Goods and Services Tax or Harmonized Sales Tax (GST/HST) extra, as appropriate.

No increase in the total liability of Canada or in the price of Work resulting from any design changes, modifications or interpretations of Annex A SRD and SOW, made by the Contractor, will be authorized or paid to the Contractor unless such changes, modifications or interpretations, have been approved, in writing, by the Contracting Authority, prior to their incorporation into the Work. The Contractor shall not be obliged to perform any Work or provide any service that would cause the total liability of Canada to be exceeded without the prior written approval of the Contracting Authority.

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ANNEX D

BIDDER'S QUESTIONS AND CANADA'S RESPONSES

Completed and updated during the solicitation process.

ANNEX E

INSURANCE REQUIREMENTS

Ship Builders Risk Insurance

The Contractor shall enter into a contract of insurance issued in the joint names of the Contractor and Canada as their respective interests may appear in the standard form of Marine Builder's Risk Policy to provide full indemnification to Canada for any loss or damage to the vessel or any other materials which are the property of Canada for installation in the vessel in the custody of the Contractor or any claim or expenses to Canada as aforesaid for which the Contractor assumes responsibility hereunder, and the premium or cost of such insurance coverage shall be incorporated into and form part of the purchase price.

Notice of Cancellation: The insurer shall provide to the Contracting Authority at least thirty (30) days prior written notice of any policy cancellation or any adverse material changes in the policy coverage.

Settlement of Claims: Insurance proceeds from any loss or damage to government property must be payable to the appropriate party, as directed by the Contracting Authority.

Marine Liability Insurance, G5003C (2017-08-17)

1. The Contractor must obtain protection and indemnity insurance that must include excess collision liability and pollution liability. The insurance must be placed with a member of the International Group of Protection and Indemnity Associations or with a fixed market in an amount of not less than the limits determined by the [Marine Liability Act](#), S.C. 2001, c. 6. Coverage must include crew liability, if it is not covered by Worker's Compensation as detailed in paragraph (2.) below.
2. The Contractor must obtain worker's compensation insurance covering all employees engaged in the Work in accordance with the statutory requirements of the territory or province or state of nationality, domicile, employment, having jurisdiction over such employees. If the Contractor is subject to an additional contravention, as a result of an accident causing injury or death to an employee of the Contractor or subcontractor, or due to unsafe working conditions, then such levy or assessment must be paid by the Contractor at its sole cost.
3. The protection and indemnity insurance policy must include the following:
 - a. Additional insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.
 - b. Waiver of subrogation rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Department of National Defence and Public Works and Government Services Canada for any and all loss of or damage to the watercraft however caused.
 - c. Notice of cancellation: The insurer will endeavour to provide the Contracting Authority with a 30 calendar days prior written notice of cancellation.
 - d. Cross liability and separation of insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

- e. Litigation rights: Pursuant to subsection 5(d) of the [Department of Justice Act](#), R.S.C. 1985, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

*Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8*

For other provinces and territories, send to:

*Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8*

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

Commercial General Liability Insurance G2001C (2014-06-26)

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.
2. The Commercial General Liability policy must include the following:
 - a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.
 - b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.
 - c. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.

-
- d. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.
 - e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.
 - f. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.
 - g. Employees and, if applicable, Volunteers must be included as Additional Insured.
 - h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)
 - i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.
 - j. Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.
 - k. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
 - l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.
 - m. Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.
 - n. Advertising Injury: While not limited to, the endorsement must include coverage piracy or misappropriation of ideas, or infringement of copyright, trademark, title or slogan.
 - o. All Risks Tenants Legal Liability - to protect the Contractor for liabilities arising out of its occupancy of leased premises.
 - p. Amendment to the Watercraft Exclusion to extend to incidental repair operations on board watercraft.
 - q. Sudden and Accidental Pollution Liability (minimum 120 hours): To protect the Contractor for liabilities arising from damages caused by accidental pollution incidents.
 - r. Litigation Rights: Pursuant to subsection 5(d) of the [Department of Justice Act](#), S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

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For the province of Quebec, send to:

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A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

ANNEX F

INSPECTION / QUALITY ASSURANCE / QUALITY CONTROL

1. Conduct of Inspection

(a) Inspections will be conducted in accordance with Annex A, and the Test and Trials Plans and accepted by the Inspection Authority and as detailed in this Annex.

(b) The Contractor must provide its own staff or subcontractors to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in Annex "A" SRD and SOW, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.

(c) As applicable, the Contractor must ensure that the required conditions stated in the Annex "A" SRD and SOW and Test and Trials Plans prevail at the commencement of, and for the duration of, each inspection/test/trial.

(d) The Contractor must ensure that their personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.

(e) The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

2. Inspection Records and Reports

(a) The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records.

(b) The Contractor's Quality Control (QC) representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.

(c) Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.

(d) Corrective action to remove cause of unsatisfactory inspections must be submitted to the Contracting Authority and to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Contracting Authority and to the Inspection Authority.

(e) The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.

(f) The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.

(g) Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Contracting Authority and to the Inspection Authority upon request.

3. Inspection and Trials Process

3.1 Drawings and Purchase Orders

(a) Upon receipt of one (1) copy of each drawing or purchase order, the designated Inspection Authority will review its content against the provisions of Annex A SRD and SOW. Where discrepancies are noted, the Inspection Authority will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Government of Canada Authorities.

3.2 Inspection

(a) Upon receipt and acceptance of the Contractor's Test and Trials Plans, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspection Authority to permit him to certify that the work has been performed in compliance with the provisions of Annex "A" SRD and SOW. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.

(b) The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the Annex A SRD and SOW and, where non-conformances are noted, will issue appropriate INSPECTION NON-CONFORMANCE REPORTS.

(c) The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections must be required before the Work is inspected by the Inspection Authority.

(d) The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.

(e) Before carrying out any inspection, the Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.

3.3 Inspection Non-conformance report

(a) An Inspection Non-conformance report will be issued for each non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the non-conformance.

(b) When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the Report by adding an applicable signed and dated notation.

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(c) At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance documents before the Inspection Authority's certification of such documents.

3.4 Tests, Trials, and Demonstrations

(a) The Contractor must keep written records of all tests, trials, and demonstrations conducted required by the QA System.

(b) The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.

(c) The Contracting Authority and the Inspection/Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.

ANNEX G

FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – CERTIFICATION

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit [Employment and Social Development Canada \(ESDC\) – Labour's](#) website.

Date: _____ (YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

- ☐ A1. The Bidder certifies having no work force in Canada.
- ☐ A2. The Bidder certifies being a public sector employer.
- ☐ A3. The Bidder certifies being a [federally regulated employer](#) being subject to the [Employment Equity Act](#).
- ☐ A4. The Bidder certifies having a combined work force in Canada of less than 100 permanent full-time and/or permanent part-time employees.

A5. The Bidder has a combined workforce in Canada of 100 or more employees; and

- ☐ A5.1. The Bidder certifies already having a valid and current [Agreement to Implement Employment Equity](#) (AIEE) in place with ESDC-Labour.

OR

- ☐ A5.2. The Bidder certifies having submitted the [Agreement to Implement Employment Equity \(LAB1168\)](#) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

- ☐ B1. The Bidder is not a Joint Venture.

OR

- ☐ B2. The Bidder is a Joint venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)

ANNEX H

GENERAL INFORMATION ON ABORIGINAL PARTICIPATION COMPONENT

An Aboriginal Participation Component (APC) is an activity which produces long-term benefits for Aboriginal business, and which results from a particular procurement. APCs must be categorized as either direct or indirect.

Benefit Objectives

The Contractor must seek and secure Aboriginal business involvement primarily through subcontracting opportunities. The business activities proposed in support of this objective must be in the form of quantifiable transactions.

The purchase of goods and services from Aboriginal businesses not directly related to the Multi Role Boats, will be considered as indirect APC. This objective must be in the form of quantifiable transactions.

Direct APCs are preferable to indirect APCs.

Direct benefits result from any part of the Work pertaining to the Multi Role Boats. Direct APCs must include, but are not be limited to:

- (a) subcontracting for goods, services and materials;
- (b) direct employment of Aboriginal labour by the Contractor; and
- (c) Aboriginal business involvement.

Direct benefits are preferable to indirect benefits, however in the context of APC activities, "indirect" benefits may include contract opportunities not related to the Multi Role Boats. For an example of "indirect benefits" please refer to 2.7 b) point i.v.

DEFINITIONS:

The following definitions apply to the APC Requirement of the Contract:

(i) Direct Benefits:

Direct Benefits are transactions incurred by the Contractor during performance of the Work that include:

- a. Aboriginal Business Subcontracting:
Subcontracting a portion of the Work, or goods or services required by the Contractor to deliver the Work, to a qualified Aboriginal Business.
- b. Aboriginal Employment:
Full-time, Part-time and Casual employment of Aboriginal persons.
- c. Aboriginal Training and Skills Development:
Training opportunities and skills development for Aboriginal persons, such as on-the job training, or in-house training.

(ii) Indirect Benefits:

Indirect Benefits are relevant socio-economic measures, other than Direct Benefits, such as, but not limited to, specialized training, career development, scholarships, and community outreach programs to help local Indigenous communities meet their economic development needs.

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(iii) APC Transactions:

The total value of all transactions incurred by the Contractor on Direct and Indirect Benefits.

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ANNEX I

ABORIGINAL PARTICIPATION COMPONENT CERTIFICATION FORMS

Part 1 – ABORIGINAL PARTICIPATION COMPONENT (APC) CERTIFICATION

The Bidder agrees that no less than 1% of the Total Estimated Cost of the Contract must be subcontracted to Aboriginal business(es). Refer to Example of acceptable Aboriginal Participation Components under 2.7(b) and Annex K for definitions.

In respect of the Contract, no less than 1% of the Total Estimated Cost of the Contract must be performed by the Aboriginal business, the Aboriginal component(s) of a joint venture, an Aboriginal subcontractor, or Aboriginal individuals, and the Contractor must be able to demonstrate, at the time of audit, that it meets this requirement.

An Aboriginal business can be a Band as defined by the Indian Act, or a sole proprietorship, a limited company, a cooperative, a partnership or a not-for-profit organization in which Aboriginal persons have at least 51% ownership and control.

An Aboriginal business could also consist of a joint venture made up of two or more Aboriginal businesses, or an Aboriginal business and a non-Aboriginal business(es), provided that the Aboriginal business(es) has at least 51% ownership and control of the joint venture.

The Bidder agrees that it will comply with the requirements above, and will meet all of its obligations under the Aboriginal Participation Component and that this will be subject to audit by Canada.

If the Bidder fails to meet these requirements, the associated Milestones described in Annex "B" will not be released.

This Certification is executed and signed by duly authorized representatives of the Bidder.

DATE

NAME OF COMPANY

NAME AND TITLE OF PERSON SIGNING THE CERTIFICATION

SIGNATURE

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File No. - N° du dossier
031mc.W8472-155557

Buyer ID - Id de l'acheteur
031mc
CCC No./N° CCC - FMS No./N° VME

Part 2 - ABORIGINAL PARTICIPATION COMPONENT PLAN CERTIFICATION

The Bidder acknowledges and agrees that it will submit an Aboriginal Participation Component Plan within 2 Months after Contract Award.

The Aboriginal Participation Component Plan must be submitted as a self-contained document and must provide the information described in Annex L of the Contract.

The Bidder agrees that it will comply with the requirements above, and will meet all of its obligations under the Aboriginal Participation Component Plan and that this will be subject to audit by Canada.

This Certification is executed and signed by duly authorized representatives of the Bidder.

DATE

NAME OF COMPANY

NAME AND TITLE OF PERSON SIGNING THE CERTIFICATION

SIGNATURE

ANNEX J

THE ABORIGINAL PARTICIPATION COMPONENT (APC) PLAN

No later than 2 months after Contract award, an Aboriginal Participation Component (APC) Plan must be provided to both the Contracting Authority and the APC Authority. The plan must include the following factors:

APC Format

The APC Plan must address the following four areas:

- (a) Executive Summary;
- (b) Small Business Plan;
- (c) APCs Management Plan; and
- (d) Detailed Transaction Sheets

Executive Summary

The executive summary must contain an integrated overview of the Contractor's total APCs commitment. It must clearly demonstrate how the Contractor's APCs commitments address the APCs objectives, and how the objectives will be achieved through the proposed commitments.

The Contractor must provide a tabular presentation of the APC. The presentation must include a summary of Direct APCs Transactions.

Small Business Plan

The APC Plan must include, in narrative format:

- (a) Small Business Subcontracting Plan - The Contractor must identify Aboriginal business subcontractors that will be participating in the Contract, and describe in as much detail as possible, the Work to be performed by that company, including the dollar value which will correspond to the totals as noted within the detailed transaction sheets.
- (b) Supplier Development Plan - The Contractor must submit an Aboriginal business supplier development plan that will identify opportunities, encouragement and assistance that the Bidder will provide to promote Aboriginal business in areas such as technology transfer, investment, marketing assistance or management assistance. The objective should be to enable these firms to become ongoing suppliers.

The Contractor must include completed copies of the forms located in Annex K for each Aboriginal business referenced in the APC Plan.

Compliance with the certifications provided to Canada is subject to verification by Canada at any time. The Contracting Authority has the right to ask for additional information to verify the compliance with any certifications.

APCs Management Plan

The APC Plan must describe the methods by which the Contractor will implement, manage, monitor and report progress on its APC activities, leading to the achievement of the proposed APC commitments.

The Contractor must provide Aboriginal Participation Component Reports describing the goals achieved as set forth in its APC when it seeks milestone payments for the Aboriginal Participation Component.

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Detailed Transaction Sheets

The APC Plan must include examples of the Detailed Transaction Sheets that will be used to report the progress of the Contractor on its APC activities in the Aboriginal Participation Component Reports. Suggested formats are provided in Annex L Aboriginal Participation Component Reports.

ANNEX K

ABORIGINAL CERTIFICATION REQUIREMENTS

FORM 1

CERTIFICATION REQUIREMENTS FOR ABORIGINAL BUSINESS

NOTE TO CONTRACTOR: The following certification requirements apply to this contract. The Contractor is REQUESTED to have these certifications completed by the Aboriginal Participant by having them complete the appropriate spaces below and the contractor is to provide the certifications to the Contracting Authority.

1. i) I, (**Name of duly authorized representative or owner of the business**) hereby certify that (**Name of business**) meets, and will continue to meet throughout the duration of the contract, the requirements for this program as set out in the attached document entitled "Requirements for the Set-Aside Program for Aboriginal Business", which can be found under Appendix B of the following website: http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/contpolnotices/cpn_96-6-eng.asp, which document I have read and understand.

ii) The aforementioned business agrees to ensure that any subcontractor it engages with respect to the contract will, if required, satisfy the requirements set out in "Requirements for the Set-Aside Program for Aboriginal Business"

iii) The aforementioned business agrees to provide to Canada, information to substantiate a subcontractor's compliance with this program.

PLEASE CHECK THE APPLICABLE BOXES IN 2 AND 3 BELOW

2. i) The aforementioned business is an Aboriginal business which is a sole proprietorship, band, limited company, cooperative, partnership or not-for-profit organization, []

OR

ii) The aforementioned business is a joint venture between two or more Aboriginal businesses or an Aboriginal business and a non-Aboriginal business. []

3. The Aboriginal business or businesses have:

i) fewer than six full-time employees []

OR

ii) six or more full-time employees []

4. The aforementioned business agrees to immediately furnish to Canada, such evidence as may be requested by Canada from time to time, corroborating this certification. Such evidence must be open to audit during normal business hours by a representative of Canada, who may make copies and take extracts from the evidence. The aforementioned business agrees to provide all facilities for audits and to furnish information requested by Canada with respect to the certification.

5. It is understood that the civil consequences of making an untrue statement, or of not complying with the requirements of the Program or failing to produce satisfactory evidence to Canada regarding the requirements of the Program, may include: disqualification of the business from participating in future

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contracts under the Program; and/or termination of the contract. In the event that the contract is terminated because of an untrue statement or non-compliance with the requirements of the Program, Canada may engage another contractor to complete the performance of the contract and any additional costs incurred by Canada shall, upon the request of Canada be borne by the aforementioned business.

6. Date: _____ Signature: _____
(Duly authorized representative of business)

Place: _____ Title: _____

For:

Name of Business

FORM 2

ABORIGINAL OWNER/ABORIGINAL EMPLOYEE OR ABORIGINAL SUBCONTRACTOR CERTIFICATION

1. I, _____, am an
(Name)

owner and/or full-time employee or subcontractor of _____,
(Name of business)

and an Aboriginal person, as described in Annex I Part 1 entitled " Aboriginal Participation
CERTIFICATION REQUIREMENTS FOR ABORIGINAL BUSINESS".

2. I certify that the above statement is true and consent to its verification upon the request of Canada.

(Date)

(Place)

(Signature of owner and/or employee)

ANNEX L

ABORIGINAL PARTICIPATION COMPONENT REPORTS

When seeking the Aboriginal Participation Components milestones as described in Annex B the Contractor must deliver the following to the Aboriginal Participation Component's (APC) Authority, the Contracting Authority, and the Technical Authority for review:

- i) An APC Report, with supporting calculations, that detail the following for that milestone:
 - a) A breakdown of the APC Transactions and their total value; and,
 - b) A detailed breakdown of the Direct Benefits and Indirect Benefits incurred as described in the table below.
- ii) Supporting documentation certifying that the Aboriginal firms stated in the APC Report meet the definition of an Aboriginal Business, and that Aboriginal employees stated in the APC Report meet the definition of Aboriginal Persons as defined in the respective forms in Annex K.
- iii) Invoices, pay stubs, receipts, and/or any other documentation that provides evidence that the Transactions claimed in the APC Report were made in the amount claimed.

Detailed Transaction Sheets

The Detailed Transaction Sheet must be used to show each Direct APC transaction completed. Other transactions that do not fit into the Direct APC category must also be shown. In the context of APC activities, "indirect" APC Transactions are contractual business activities that are not associated with the Naval Large Tugs, but contribute significantly to the goals and objectives of the APC.

| Transaction Number Contract | Company Name and Location of Work | Description of Work | Canadian Person Years | Value \$ CDN |
|---|-----------------------------------|--|--------------------------------------|------------------------|
| Would be transaction # such as contract # | Name of Company or Individual | Detail of what the work is: Operator, Supplier, etc. | Number of People hired as an example | Value + taxes achieved |
| | | | | |
| | | | | |
| Totals | | | | |

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ANNEX M

EVALUATION MATRIX

Attached as a separate document

STATEMENT OF WORK (SOW)

for the
Design and Construction
of
Multi-Role Boats

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Preface

This Statement of Work (SOW) for the Multi-Role Boats (MRB) has been organized in general in accordance with the Work Breakdown Structure (WBS) for Canadian Forces Ships and Submarines (Canadian Forces Technical Order (CFTO) D-03-003-024/SG-001). The numbers included in the heading titles in this SOW correspond to the element numbering system in this CFTO.

List of Acronyms and Abbreviations

| | |
|------|---|
| AIL | Action Item List |
| AIS | Automatic Identification System |
| ANSI | American Nation Standards Institute |
| AR | Acceptance Review |
| ASME | American Society of Mechanical Engineers |
| CA | Contract Authority |
| CDP | Critical Design Phase |
| CDR | Critical Design Review |
| CDRL | Contract Data Requirements List |
| CFB | Canadian Forces Base |
| CFTO | Canadian Forces Technical Order |
| CoG | Centre of Gravity |
| COTS | Commercial Off The Shelf |
| DIDs | Data Item Descriptions |
| DND | Department of National Defence |
| DSIP | Delegated Statutory Inspection Program |
| DVD | Digital Versatile Disc |
| ELA | Electrical Load Analysis |
| EMI | Electro-Magnetic Interference |
| EO | Electro-Optical |
| EXIF | Exchangeable Image File Format |
| FMEA | Failure Mode and Effects Analysis |
| FMF | Fleet Maintenance Facility |
| GFE | Government Furnished Equipment |
| HR | Human Resources |
| ICT | Initial Cadre Training |
| ID | Identification |
| ILS | Integrated Logistics Support |
| IPC | Initial Provisioning Conference |
| IR | Infra-Red |
| ISO | International Standards Organization |
| IT | Information Technology |
| ITAR | International Traffic in Arms Regulations |
| JPEG | Joint Photographic Experts Group |
| KG | Kilograms |
| KVA | KiloVolt Amps |
| Kw | Kilowatt |
| LARS | Launch And Recovery System |
| MACA | Month(s) after contract approval |
| MEL | Master Equipment List |

| | |
|---------|---|
| MIL-STD | Military Standard |
| MoTS | Military off The Shelf |
| MPR | Monthly Progress Report |
| MPRM | Monthly Progress Review Meeting |
| MRB | Multi-Role Boat |
| MS | Microsoft |
| MSDS | Material Safety Data Sheets |
| MTBF | Mean Time Between Failure |
| OEM | Original Equipment Manufacturer |
| OPI | Office of Primary Interest |
| PCB | Polychlorinated Biphenyls |
| PDF | Portable Document Format |
| PDP | Preliminary Design Phase |
| PDR | Preliminary Design Review |
| PIV | Pressure Inflation Valve |
| PMP | Project Management Plan |
| PNG | Portable Network Graphics |
| PRM | Progress Review Meeting |
| PRV | Pressure Relief Valve |
| QA | Quality Assurance |
| QMS | Quality Management System |
| RCN | Royal Canadian Navy |
| RFI | Radio Frequency Interference |
| RFP | Request for Proposal |
| RHIB | Rigid Hull Inflatable Boat |
| RSPL | Recommended Spare Parts List |
| SAT | Sea Acceptance Trials |
| SMS | Shock Mitigation Seating |
| SOW | Statement of Work |
| SRD | System Requirements Document |
| SS | Sea State |
| TA | Technical Authority |
| TBT | Tributyltin |
| TCMS | Transport Canada Marine Systems |
| TDAN | Technical Data Action Notice |
| TDP | Technical Data Package |
| TDMP | Technical Data Management Plan |
| TIFF | Tagged Image File Format |
| TPRM | Technical Progress Review Meeting |
| WBS | Work Breakdown Structure |
| WHMIS | Workplace Hazardous Material Information System |

List of Reference Documents

- a) CSA C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats"
- b) D-01-400-001/SG-000 Standard Engineering Drawing Practices
- c) D-01-400-002/SF-000 Specification for Levels of Engineering Drawings and Associated Lists
- d) D-01-100-214/SF-000 Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment
- e) D-01-100-215/SF-000 Preparation of Materiel Change Notices
- f) D-03-003-007/SG-000 Issue 4 - Specification For Design And Test Criteria For Shock Resistant Equipment In Naval Ships (16 Aug 1978)
- g) D-03-003-024/SG-001 Work Breakdown Structure for Canadian Forces Ships and Submarines
- h) ISO 9001:2015 Quality Management Systems - Requirements
- i) ISO 10005 - Guidelines for Quality Plans
- j) ISO/DIS 12217-1:2013 Stability and Buoyancy assessment and Categorization – Part 1: Non-sailing boats of Hull Length Greater than 6 m
- k) TP 1332 Construction Standards for Spall Vessels (2010)
- l) [MIL-DTL-901E] - Shock Tests HI (High Impact) Shipboard Machinery, Equipment and Systems, Requirements For
- m) International Conference on Load Lines, 1966.

Glossary of Terms

Action Item List (AIL): A chronological listing of all Contractor and DND action items resulting from reviews, meetings, and correspondence between Canada and the Contractor.

C4ISR Suite: A high level title for all equipment, systems, subsystems, and components related to navigation, communication, marine systems and situational awareness that are integrated in the MRB platform.

Calendar Days: All days in a month, including weekends and holidays.

Contractor: The Company that undertakes the contract and obligation to provide the work as per Annex A.

Class Rules: Class Rules are the technical standards governing the design, construction, and operation of marine vessels and structures developed by Classification Societies.

Class Society: A classification society is a non-governmental organization that establishes and maintains technical standards for the design, construction and operation of marine vessels and offshore structures.

Contractor Facilities: The production area where the Contractor is fabricating the MRB including any production area where sub-assemblies of the MRB are being produced under sub-contract.

Contract Data Requirements List (CDRL): This list details all of the data products that are to be formally delivered to the government by the Contractor as an integral part of the procurement of the MRBs. For each data product the CDRL outlines the purpose of the deliverable and the schedule for the initial, and all subsequent, deliveries.

Data Item Descriptions (DID): Each DID defines the individual data products that the Contractor will provide to Canada, at the time(s) and period(s) specified in the CDRL, in order to satisfy the Contract. Each DID defines the data content, format, and intended use of the data for the individual deliverable they refer to.

Deviation: An acceptance by Canada and the Contractor that a stated requirement can be changed to a mutually acceptable alternative.

Exit Criteria: It is a set of criteria defined by the Compliance Verification Matrix and the corresponding Objective Evidence that is provided and accepted before transition to the next phase can begin.

There will be three (3) sets of Exit Criteria that include: Preliminary Design Review (PDR), Critical Design Review (CDR) and Acceptance Review (AR).

If any identified Objective Evidence is not provided and accepted, transition to the next phase will not be permitted.

Emergency Loading Condition: Is the Full Load Condition minus nine (9) Naval Boarding Party members, each weighing 125kg. The Emergency Loading Condition has reduced personnel onboard, including two (2) 100kg crew members, and one (1) 125kg Naval Boarding Party Member.

Final Acceptance: Confirmation that each boat, and its supporting documentation, spares cradles, etc., have been delivered to their final destination in a new and undamaged condition.

First Article: The first completed and fully functional MRB compliant with the requirements of this Contract.

Full Load Condition: Is the final maximum weight of the vessel (MRB) including: lightship weight, all variable loads, fitted and miscellaneous equipment, and through life growth margins.

First Line Maintenance: Maintenance that is completed by the *Halifax*-class staff on board that *Halifax*-class from the spares in the ship's stores using a repair by replacement and maintenance by exchange philosophy.

Mean Time Between Failures: The predicted elapsed time between inherent failures of a mechanical system, during normal system operation.

Navigation System: All systems on board that help make the vessel safe to operate at sea including navigation lights and shapes, navigation radars, Automatic Identification Systems (AIS), electronic charting, compasses, speed logs and depth sounders.

Objective Evidence: Evidence that is measurable and quantitative, it is not subjective or open to interpretation. Objective evidence is evidence that if tested by a 3rd party would produce the

same results as the contractor; IE objective evidence is repeatable and applies scientific processes where applicable.

Product Model: Is a virtual 3D representation, of all or any part, of a final product which will be used as a precise tool to prove that the final to-be-built design is an optimal, buildable solution. A product model has been through several design iterations, tested for feasibility and has converged at a mature design. It is not a high level design or concept, and therefore it has all the expected design details. It is a system by system vetted computer model.

A product model is used to de-risk the design and production of complex assemblies. A product model allows for efficient and rapid design iterations without incurring great cost due to full scale prototyping and the discovery of design flaws during a production process.

Proven Design: A Military Off The Shelf (MOTS) or Commercial Off The Shelf (COTS) vessel that is in service, or about to come into service, with the Royal Canadian Navy (RCN), with a Canadian Government Agency or with another allied military, paramilitary or civilian organization.

Provisional Acceptance: Confirmation that the boat has met all of its design requirements as specified in the System Requirements Document Appendix 1 to Annex A but has not yet been delivered to the customer at its final destination for final acceptance.

Quality Conformance Inspections: The inspections that are mandated by the Contractors approved quality control procedures.

Quality Conformance Inspector: The Contractors designated person responsible for maintaining and auditing the Contractors Quality Control system.

Second Line Maintenance: Maintenance that is accomplished using Department of National Defence (DND) resources, such as Fleet Maintenance Facilities (FMF), in DND onshore facilities with ship and FMF staff.

Sea State: The Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea or on land. Its full name is the Beaufort wind force scale.

Special Tools: Any piece of equipment needed install, remove, repair, maintain, or diagnose, any part or component of the MRB that cannot reasonably be assumed to be part of the tools already on board the Halifax class.

Technical Baseline: The configuration of the MRB as established at the Critical Design Review (CDR).

Trials Plans and Procedures: A document that defines the procedures that the Contractor intends to follow to prepare and conduct all regulatory and conformational trials on the vessel prior to MRB delivery and acceptance by Canada.

Third Line Maintenance: Maintenance that is provided in Halifax and Dartmouth area and Esquimalt and Victoria area by an In-Service Support Contractor at Contractor facilities and by Contractor personnel. The third line support is also available world-wide.

Training Needs Analysis: A determination made between the Contractor and DND on the type, duration and level of detail required for operator and maintainer training.

Trials Data Booklet: A consolidated document that contains the signed data sheets for all trials carried out on all MRBs.

Waiver: An acceptance by Canada that a stated requirement need not be met.

Working Days: Monday through Friday but not including statutory holidays

1 000 General Guidance and Administration

1.1 Purpose

- 1) The purpose of this Statement of Work (SOW) is to define the full extent of the work that the Contractor must perform.

1.2 Background

- 1) The Department of National Defence (DND) currently deploy 7.2 meter Rigid Hull Inflatable Boats (RHIB) on their *Halifax*-class Frigates. These boats were originally intended as shipboard rescue boats but their use has significantly increased over the years. This is due to the Frigates role expanding from being primarily an anti-submarine platform to one that must operate effectively in littoral areas, be able to interdict suspect vessels and deploy large boarding and landing parties. The current RHIBs have been in service since 1991 and are now approaching the end of their serviceable life. This combined with the changing role of the platform from which they operate has led to the requirement for new, much larger and more sophisticated Multi-Role Boats (MRBs). These MRBs must still be able to function as a ship's rescue boat but must now also be capable of operating independently from their parent ship, in nearly all weather conditions while transporting personnel or cargo over long distances.

1.3 Objective

- 1) The objective of the work specified herein is to carry out the engineering and shipbuilding effort to construct the MRBs. The Contractor must:
 - a. Develop an MRB design, compliant with this SOW and System Requirements Document Appendix 1 to Annex A;
 - b. Construct the MRBs to appropriate regulatory requirements;
 - c. Conduct all trials in accordance with Trials Plans and Procedures;
 - d. Deliver the MRBs and the required technical documents;
 - e. Provide Initial Cadre Training compliant with this SOW; and
 - f. Provide spare parts as identified in the Recommended Spare Parts List and associated Special Tools to support the operational readiness of the MRBs for a period of two (2) years post-delivery.
- 2) The MRB Project must include the following phases: Preliminary Design Phase (PDP), Critical Design Phase (CDP), construction, trials, certification, provisional acceptance, delivery, final acceptance and warranty.
- 3) The Contractor must have total system responsibility for the development of the MRB in accordance with the Contract.
- 4) The Contractor must provide initial Integrated Logistic Support (ILS) defined herein.

1.4 Scope

- 1) The Contractor must be responsible for the scope of work included in this SOW and all requirements identified in Appendix 2, Contract Data Requirements List (CDRL), and Appendix 3, Data Item Descriptions (DIDs).

1.4.1 Deliverables

- 1) The contract deliverables must include:
 - a. Data, plans, analysis and reports as required by the CDRLs at Appendix 2 to this SOW and their associated DIDs at Appendix 3 to this SOW;
 - b. Trials Plans and Procedures in accordance with Section 2.1.6 of this SOW;
 - c. Training Plan in accordance with Section 2.1.7 of this SOW;

- d. 30 MRBs, 17 going to Halifax and 13 going to Esquimalt;
 - e. 24 Cradles; 14 going to Halifax and 10 going to Esquimalt;
 - f. 16 EO/IR cameras; Canada may request, through a Contract amendment, to exercise an option to acquire up to 14 additional EO/IR cameras. If the option is exercised the additional cameras must be delivered as per the terms of this Contract;
 - g. All models identified in Section 5.4.2 of this SOW respectively; and
 - h. Two (2) year's supply of initial spares and Special Tools as detailed in Section 5.4.3.1 and 6.7.3 of this SOW.
- 2) The Contractor must provide Canada with each DID as one (1) complete package as outlined in the deliverables Section of each DID.
 - 3) If the data deliverables required by the chosen Classification (Class) Society meet all requirements for any individual DID, Canada may accept the class submission in lieu of the contract DID. Any data deliverables replaced with a Class Society submission must be identified, discussed and agreed to with Canada prior to the submission.
 - 4) The provision of Class Society deliverables is meant to increase efficiency and reduce duplication.

1.5 Assembly Facility

- 1) The Contractor must assemble all 30 MRBs in Canada at the same Contractor facility. For this purpose the Contractor's facility is taken to be all Contractor and Sub-Contractor resources used to support a final single assembly location.
- 2) The Contractor must provide the necessary assembly facility, along with all necessary tools, jigs, engineering, labour, and material to design, build, outfit, launch, conduct trials (with the exception of shock trials which are addressed separately in Section 6.2.1) and deliver the MRBs complete and ready for service.

1.6 Applicable Documents

- 1) If any referenced standard or regulation has been superseded by a new version prior to contract award then the Contractor must use the new version of the standard or regulation.
- 2) If any referenced standard or regulation has become obsolete prior to contract award and has been replaced by a new standard then the Contractor must use the replacement standard or regulation.
- 3) If any referenced standard or regulation has become obsolete prior to contract award and has not been replaced then the Contractor must use an equivalent standard or regulation as agreed to by Canada.

1.6.1 Canadian Government Documents

- 1) Where government standards or regulations are referenced in this document, the whole standard or regulation must apply unless specifically directed otherwise.
- 2) The SRD Appendix 1 to Annex A indicates what modifications, if any, is required by the Technical Authority (TA).

1.6.2 Non-Government Documents

- 1) Where non-government standards are referenced in this document, the whole standard must apply unless specifically directed otherwise.
- 2) The SRD Appendix 1 to Annex A indicates what modifications, if any, is required by the TA.
- 3) All references to 'Government' in the MIL-STD specifications or other foreign government standards must be understood as Canadian Government and Organizations, in place of United States Government and Organizations or others.

2 040 Ship System Management

2.1 041 Project Management

- 1) Once accepted by Canada, all of the developed plans must be used by the Contractor to manage the activities of this Contract.
- 2) Throughout the duration of the Contract, the Contractor must inform Canada of any changes that affect the execution of any of the identified plans and submit a revised version for Canada's acceptance.

2.1.1 Project Management Plan

- 1) The Contractor must prepare and submit a Project Management Plan (PMP) for Canada's review and acceptance in accordance with CDRL-M-001 and DID-M-001.
- 2) The PMP must identify how the Contractor intends to manage the Work and fulfill the project management requirements of this SOW.
- 3) Once accepted, the Contractor must deliver the Work in accordance with the PMP throughout the duration of the Contract.

2.1.2 Master Plan and Schedule

- 1) The Contractor must prepare, submit and maintain a Master Plan and Schedule to identify when the Contractor intends to fulfill the requirements of this SOW, in accordance with CDRL-M-002 and DID-M-002 for Canada's review.

2.1.3 Risk and Opportunity Management Plan

- 1) The Contractor must prepare and submit a Risk and Opportunity Management Plan in accordance with CDRL-M-003 and DID M-003 for Canada's review and acceptance.
- 2) The Contractor must identify, manage, record, and track risks, in a Risk Register, and opportunities in an Opportunity Register, until completion of the contract in accordance with the Risk and Opportunity Management Plan. The Contractor's Risk and Opportunity Register(s) must be updated monthly and be included in the Monthly Progress Review Report and discussed, as an agenda item, at all Monthly Progress Review Meetings (MPRM).

2.1.4 Technical Data Management

- 1) The Contractor must prepare and submit their process for tracking, managing and labeling the technical and other data produced, or received, during execution of this Contract. The Contractor must prepare this Technical Data Management Plan (TDMP) in accordance with CDRL-M-004 and DID-M-004 for review and acceptance. The Contractor's register, index or equivalent used for recording technical information must be maintained current and submitted to the TA on request.

2.1.5 Change Management

- 1) In order to formalize the process for initiating any changes to the MRB design the Contractor must develop a standard Change Request Form.
- 2) The Contractor must prepare and submit this Change Request Form in accordance with CDRL-M-005 and DID-M-005 for Canada's review and acceptance.
- 3) The Contractor must utilize the Change Request Form in order to initiate any change request to the design that requires the acceptance of the proposed change by both the Contractor and Canada.

2.1.6 Trials Plans and Procedures

- 1) The Contractor must prepare and submit Trials Plans and Procedures that will be used to demonstrate that the MRBs have met the configuration and performance requirements

specified in the SRD Appendix 1 to Annex A to this Contract as well as any regulatory requirements that are only demonstrable by trials.

- 2) The Contractor must prepare and submit two (2) Trials Plans and Procedures for review and acceptance by Canada:
 - a. The first is for the Dock Trial Plan and Procedure, in accordance with CDRL-TT-001 and DID-TT-001;
 - b. The second is for Sea Acceptance Trial Plan and Procedure, in accordance with CDRL-TT-002 and DID-TT-002.
- 3) The Contractor must carry out a full set of trials in accordance with the Trials Plans and Procedures for the first MRB (First Article).
- 4) Abridged Trials Plans and Procedures can be proposed by the Contractor to expedite trials only if a full set of trials have been successfully completed on the previous boats that required no corrective actions, of any kind, to pass the full set of Trials Plans and Procedures or Acceptance Review Exit Criteria.
- 5) The Contractor must obtain Canada's agreement to use abridged Trials Plans and Procedures before they replace the full set Trials Plans and Procedures.
- 6) While abridged Trials Plans and Procedures are used, if any deficiencies are discovered or design changes are made to subsequent MRBs that may have an impact on configuration or performance, the Contractor must revert back to the full Trials Plans and Procedures until the Contractor can demonstrate configuration and performance compliance for future vessels using abridged Trials Plans and Procedures.
- 7) The Contractor must ensure the master schedule remains up-to-date with respect to trials dates for each MRB. Any changes to these dates must be agreed to with Canada before changes are made.
- 8) Once agreed, any changes required to the Trials Plans and Procedures must be made via the Change Request Form, CDRL-M-005 and DID-M-005.
- 9) The Contractor must schedule and co-ordinate MRB trials in accordance with the schedule developed as part of the Trials Plans and Procedures including coordinating the attendance of all necessary inspectors, surveyors and Original Equipment Manufacturers (OEMs).
- 10) The Contractor must, at their cost, hire, organize and accommodate all inspectors, surveyors and OEMs required to witness trials and to pay any related fees; any such fees must be included in the Contractors bid price.
- 11) The Contractor must ensure all systems and subsystems are, to the best of their knowledge, correctly installed according to OEM specifications, calibrated, and compliant with the requirements of the SRD Appendix 1 to Annex A before trials begin.
- 12) The Contractor must ensure that during test and trials equipment and components are not operated in a condition that voids the OEM's warranty.
- 13) The Contractor must provide all instrumentation and data collection equipment necessary to obtain and record the data required to assess the performance of the system undergoing the trials.
- 14) The Contractor must ensure that all Instrumentation used in testing machinery and equipment has been calibrated no more than 90 days before trials.
- 15) The Contractor must submit calibration records for all equipment to the TA along with the Trials Reports for each MRB.
- 16) During construction of the vessel(s), the Contractor must arrange for all inspections.
- 17) All inspections must be agreed upon by Canada, the Class Society and the Contractor.
- 18) Upon completion of the construction of the vessel(s), the Contractor must arrange trials according to the Trials Plans and Procedures.

- 19) All trials performed must demonstrate compliance with the SRD Appendix 1 to Annex A to the Contract.
- 20) The Contractor must ensure that the MRB design is approved by the Class Society of choice and delivered with the appropriate Class notations.
- 21) Revised Trials Plans and Procedures must be provided if any modifications are made.
- 22) Once the Trials Plans and Procedures are accepted, any modification to the Trials Plans and Procedure must be accepted by Canada.
- 23) If the MRB fails to meet requirements set forth in the SRD Appendix 1 to Annex A to the Contract, and any regulatory requirements, the Contractor must correct the deficiencies and repeat all failed trials. Deficiencies must be corrected prior to the scheduling of additional trials.

2.1.7 Training Plan

- 1) The Contractor must prepare and submit a Training Plan in accordance with CDRL-T-001 and DID-T-001 for review and acceptance.
- 2) The Contractor must include initial operator and maintainer training in the Training Plan.
- 3) The Contractor must include initial operator instructors and maintainer instructors training in the Training Plan.
- 4) The MRB maintenance training must include first line maintenance routines, second line maintenance routine, common repairs and replacements, troubleshooting, preventative maintenance, stowage, and winterization requirements.
- 5) The MRB maintenance instructor training must include all maintenance training as well as basic operator instruction and training course manual instructions.
- 6) The MRB operator instructor training must include all operation training as well as basic maintenance instruction and training course manual instructions.
- 7) There must be Initial Cadre Training (ICT) courses for the following groups:
 - a. Operators;
 - b. Operation instructors (i.e. Naval Fleet School and Training Development Centre staff);
 - c. Maintenance instructors (i.e. Naval Fleet School and Training Development Centre staff);
 - d. First Line maintainers (i.e. ship's staff); and
 - e. Second Line maintainers (i.e. Fleet Maintenance Facility personnel).
- 8) The shore based training must consist of the following:
 - a. Operators: 1 group of 20 people, on each coast, for a period of 40 hours of training time for each group, (with the option of 2 more rounds of training on each coast to be determined after contract award);
 - b. Maintainers: 1 group of 20 people, on each coast, for a period of 80 hours of training time for each group, (with the option of 2 more rounds of training on each coast);
 - c. Operator Instructors: 1 group of 10 people, on each coast, for a period of 60 hours of training time for each group, (with the option of 2 more rounds of training on each coast);
 - d. Maintenance Instructors: 1 group of 10 people, on each coast, for a period of 90 hours of training time for each group, (with the option of 2 more rounds of training on each coast);
- 9) The implementation of the options will be decided at a later time based on Canada's needs and will be initiated by the Additional Work Requirement process. Confirmation of personnel and levels of instruction will be validated through the Training Needs Analysis process.
- 10) Follow-on training in the use and maintenance of the system will be conducted by Canada, using training documentation supplied by the Contractor.
- 11) In addition to shore based training, the Contractor must provide 16 hours of formal underway familiarization for 10 vessel crews on each coast. Each crew will consist of a Coxswain and a Navigator.

- 12) The Contractor must ensure that there is access to an MRB during the training period for the purpose of equipment familiarization and that any equipment or system on which training is provided must be in a state of functionality that allows practical demonstrations to occur.
- 13) The Contractor must provide lunch and refreshments for two (2) health breaks each day, during the shore based training if held at the Contractor's facility.
- 14) All personnel will be from the RCN or Naval Reserves and can be assumed to have appropriate at sea experience.
- 15) The MRB crew must be trained in the use of the MRBs C4ISR Suite that will include communications and navigation systems.
- 16) Subject matter experts for complex systems such as the communications equipment and EO/IR camera must conduct the equipment portion of the training.
- 17) The Contractor must conduct the majority of the MRB equipment portion of the training, as agreed to between Canada and the Contractor.
- 18) The Contractor must provide combined operation, First Line Maintenance and troubleshooting manuals. Each ICT student must receive this combined operation and maintenance manual.
- 19) In addition, one (1) manual must be supplied and delivered with each MRB for retention onboard.
- 20) Electronic copies of these manuals must be provided. Canada must have the rights to reproduce and translate all training methods including manuals.
- 21) Intellectual property rights for training courseware must permit reproduction, translation, use and distribution by Canada and its representatives for as long as DND retains the MRB.

2.1.8 Compliance Verification Plan

2.1.8.1 General

- 1) A Compliance Verification Matrix (CVM), in accordance with CDRL-CM-001 and DID-CM-001, must be developed which documents what verification is required at each point in the MRB review process;
- 2) During the verification process, the Contractor must conduct three (3) formal reviews with Canada to present the predicted and validated performance, MRB arrangement, and design details of the MRB:
 - a. A Preliminary Design Review (PDR) with a PDR Data Package in accordance with CDRL-E-005 and DID-E-005;
 - b. A Critical Design Review (CDR) with a CDR Data Package in accordance with CDRL-E-006 and DID-E-006; and
 - c. An Acceptance Review (AR) with an AR Data Package in accordance with CDRL-E-007 and DID-E-007.
- 3) The Contractor must perform the required engineering and calculations to demonstrate that the resulting MRB design and construction is in full compliance with the requirements as specified in the SRD Appendix 1 to Annex A.
- 4) Should the Contractor own and propose a mature Proven Design which is sufficiently close to the configuration and performance specified in the SRD Appendix 1 to Annex A which satisfies the Exit Criteria of the PDP, then, as agreed by Canada, the Contractor can proceed directly to the PDR immediately following Contract Award.
- 5) The Contractor must provide and follow all PDR deliverables in accordance with CDRL-E-005 and DID-E-005 to qualify a Proven Design for the CDP.
- 6) Upon PDR approval by the TA, the Contractor can move into the CDP of the project.
- 7) The Contractor must demonstrate its progress, to Canada, towards fulfilling the Exit Criteria during the Technical Progress Review Meetings (TPRMs).
- 8) Post construction of each MRB, the Contractor must conduct a formal design and construction compliance review and Acceptance Review (AR).

- 9) Where the final Objective Evidence must be provided and demonstrated to show SRD Appendix 1 to Annex A compliance, all Objective Evidence identified in the CVM must be accepted by Canada.
- 10) Canada reserves the right to seek 3rd party hull performance analysis if the Contractor provided verification (objective evidence) fails to give Canada sufficient confidence that the final design will deliver the required performance.
- 11) The Contractor must engage with the chosen Class Society to determine when Class is to be involved in the design approval process.

2.1.8.2 Compliance Verification Matrix

- 1) The Contractor must prepare, complete and deliver a CVM in accordance with CDRL-CM-001 and DID-CM-001 for review and acceptance.
- 2) The CVM represents the minimum expected Objective Evidence, or equivalent, which must be provided by the Contractor to demonstrate SRD Appendix 1 to Annex A compliance, Canada will provide a draft CVM in advance of the kick-off meeting.
- 3) The Contractor must be prepared to discuss the CVM Objective Evidence at the Kick-off Meeting. Considering the MRB design is not yet finalized it is anticipated the Contractor will suggest alternative Objective Evidence for the CVM to indicate requirement compliance.
- 4) The final CVM must be reviewed and agreed upon with Canada within five (5) Working Days after Kick-off.
- 5) The Contractor must demonstrate that all requirements contained in the SRD Appendix 1 to Annex A have been met by providing the Objective Evidence as defined by the Exit Criteria in the CVM.
- 6) The CVM must lists three (3) sets of Exit Criteria for the PDP, CDP and Acceptance Reviews (AR) that must be met before the TA and Contract Authority (CA) will give approval to the Contractor to proceed to the next phase of the project.
- 7) The Objective Evidence presented at PDR will evolve and mature as the design matures. As such, the Objective Evidence presented at CDR and AR will be of increasing fidelity, detail and maturity than PDR. Objective Evidence presented in PDR must also be presented through the follow on phases to illustrate the design evolution.
- 8) At any time, Canada reserves the right to request and have access to any data developed and delivered related to the MRB project, by the Contractor as well as any such data developed and delivered to the Contractor from 3rd party persons, for the purposes of verification and validation of requirements compliance. The Contractor must provide the requested information to Canada within 3 calendar days.

2.1.8.3 Preliminary Design Review (PDR)

- 1) During the PDP, the Contractor must examine every aspect of the design, construction and outfitting of the MRB and carry out the necessary preliminary design and engineering work in order to meet the requirements of Canada as set out in the SRD Appendix 1 to Annex A.
- 2) On completion of the PDP, the Contractor must deliver the PDR Data Package to Canada in accordance with CDRL-E-005 and DID-E-005.
- 3) The PDR Data Package must bring to the attention of Canada all the design recommendations necessary to meet the SRD Appendix 1 to Annex A.
- 4) The Contractor must ensure that the PDR Data Package satisfies the Exit Criteria established in the CVM for the PDR.
- 5) Canada will determine whether the provided Objective Evidence satisfies the Exit Criteria in order to proceed to CDP. Canada reserves the right to allow the Contractor to proceed to the CDP with only partial completion of the Exit Criteria.

- 6) Following the submission of the PDR Data Package, the Contractor must conduct a formal PDR with Canada.
- 7) The PDR must take place no later than 50 Working Days after contract award.
- 8) It is recommended that the PDR be conducted on a system-by-system basis and be conducted prior to submitting plans and data to the Class Society for review.
- 9) The PDR may be scheduled to coincide with a Monthly Progress Review Meeting (MPRM) or a Technical Progress Review Meeting (TPRM).

2.1.8.4 Critical Design Review (CDR)

- 1) During the CDP, the Contractor must carry out the necessary detailed design and engineering work necessary, including the production of the Objective Evidence expected in the CVM, to finalize the configuration, confirm performance and support construction of the MRB.
- 2) On completion of the CDP, the Contractor must deliver the CDR Data Package to Canada in accordance with CDRL-E-006 and DID-E-006.
- 3) The Contractor must ensure that the CDR Data Package satisfies the Exit Criteria established in the CVM for the CDR.
- 4) Canada will determine whether the provided Objective Evidence satisfies the Exit Criteria in order to proceed to production design. Canada reserves the right to allow the Contractor to proceed to production design with only partial completion of the Exit Criteria.
- 5) Following the submission of the CDR Data Package, the Contractor must conduct a CDR with Canada prior to the start of production design.
- 6) The CDR must take place no later than 90 Working Days after contract award.
- 7) It is recommended that the CDR be conducted on a system-by-system basis.
- 8) The CDR may be scheduled to coincide with a MPRM or TPRM.
- 9) Upon submission of the CDR Exit Criteria and acceptance by Canada, the Contractor must formally establish the resulting MRB design as the Technical Baseline for production.

2.1.8.5 Acceptance Review (AR)

- 1) An AR must be conducted in accordance with CDRL-E-007 and DID-E-007.
- 2) During the AR, the Contractor must present evidence to Canada that all data deliverables and contractual requirements for the MRBs have been fully satisfied, with the exception of final delivery of the MRB itself to Canada.
- 3) The Contractor must plan, coordinate, and make all necessary arrangements to present final Objective Evidence to Canada demonstrating that all contractual requirements identified in the CVM and Exit Criteria are fulfilled.
- 4) The AR meeting should be scheduled to coincide with a MPRM or TPRM and must be identified in the Master Plan and Schedule.
- 5) The Contractor must submit the CVM with the Objective Evidence of compliance to be used as the AR Data Package for the AR.
- 6) All inspections, trials, and corrective actions for identified deficiencies must be completed by the Contractor prior to conducting the AR.
- 7) Any updates to the TDP as a result of identified deficiencies must be corrected and delivered by the Contractor prior to conducting the AR.
- 8) Following the submission of the AR Data Package, the Contractor must conduct an AR with Canada prior to delivery of each MRB.
- 9) As part of the AR, the Contractor must conduct a complete boat inspection witnessed by Canada.
- 10) Following the AR, and with Canada's agreement that all data deliverables have been reviewed and technical requirements have been complied with, Canada will award the Contractor with Provisional Acceptance for an MRB as specified in the Contract and SOW Section 6.7.2.

- 11) Once Provisional Acceptance has been awarded, the Contractor must have the MRB stored and suitably protected, or proceed with final delivery as per the Contract.
- 12) Upon delivery of all MRBs to their destinations, acceptance of the vessels will occur with written certificates (see PWGSC-TPSGC-1105) in accordance with the Contract, and SOW Section 6.7.2.

2.1.8.6 Classification Society

- 1) The Contractor must engage and select a Class Society, qualified under the Delegated Statutory Inspection Program (DSIP), to conduct and plan inspections, and review and approve the MRB design to meet the requirements of the Contract and Class Society notations.
- 2) The Class Society notations must cover the following:
 - a. Construction and/or manufacturing of the vessel's machinery and components and any associated required testing, as applicable, are carried out under a Class Society;
 - b. Compliance with the Hull requirements of the Class Rules or their equivalent for unrestricted ocean service and survey by the Class Society during construction of the vessel;
 - c. The vessel's machinery and systems have been constructed and installed under Class Society surveys in accordance with the requirements of the Class Rules;
 - d. The vessel's structure which has been reviewed based on the limitations given in a particular operational envelope which is to be part of the Operations Manual for the MRB; and
 - e. Naval Vessels that are intended to operate on a coastal voyage with a maximum distance from safe harbor of 300 nautical miles (nm) and a maximum voyage of 150 nm from a safe harbor when operating in the Winter Seasonal Zones as indicated in Annex II of the International Conference on Load Lines, 1966. It is noted that the vessel from which the MRB is launched becomes the "safe harbor".
- 3) The MRB must be built in accordance with Class Society approved drawings, using materials and type approved products that are tested, inspected and certified by a Class Society or similar body with delegated authority acceptable to Canada.

2.2 042 General Administrative Requirements

2.2.1 Monthly Progress Reports

- 1) The Contractor must monitor progress and provide Monthly Progress Reports in accordance with CDRL-M-006 and DID-M-006.

2.2.2 Contract Meetings

2.2.2.1 General

- 1) The Contractor must convene and co-chair, with Canada, a Kick-off Meeting, MPRMs, TPRMs, and any other meetings that may occur, in consultation with, and as agreed with, Canada.
- 2) The Contractor must prepare and submit meeting agendas for all meetings in accordance with CDRL-M-008 and DID-M-008.
- 3) The Contractor must record the minutes of all meetings required under this SOW summarizing the discussions and decisions reached. The minutes must be forwarded to Canada for acceptance and created in accordance with CDRL-M-008 and DID-M-008.
- 4) Action items identified during meetings must be included in the Action Item List (AIL) and managed in accordance with CDRL-M-009 and DID-M-009.
- 5) The Contractor must provide the facilities, materials and services required to conduct all meetings. The cost for all facilities, materials and services must be borne by the Contractor.
- 6) All meetings must ideally be held at the Contractor's premises, however, these may be held via teleconference or other means as agreed to by Canada.

- 7) Urgent matters arising outside of normally scheduled meetings and requiring the immediate attention of Canada must be raised to the TA and CA by the Contractor in a reasonable and timely manner.
 - 8) The Contractor must ensure that the OEM or vendor are represented when appropriate.
- 2.2.2.2 Meeting Arrangements**
- 1) For each scheduled meeting, the Contractor must prepare and submit supporting documents required, in native file format, and the agenda, at least five (5) Working Days in advance.
 - 2) For unscheduled meetings, the Contractor must submit supporting documents and the agenda, as far in advance as possible and not less than 24 hours prior to the meeting.
- 2.2.2.2.1 Meeting Cancellations**
- 1) Rescheduling of meetings must be done only through mutual consent between Canada and the Contractor.
- 2.2.2.3 Meeting Minutes**
- 1) The Contractor must record, produce, deliver and revise, as required, minutes for all meetings.
 - 2) The Contractor must create meeting minutes in accordance with CDRL-M-008 and DID-M-008.
 - 3) The final agreed to minutes between the parties must be prepared by the Contractor and signed by the Contractor, the TA and the CA after all comments have been satisfactorily incorporated.
 - 4) Meeting minutes are accepted once signed by the CA.
- 2.2.2.4 Action Item List (AIL)**
- 1) The Contractor must maintain a historical, chronological and up-to-date AIL resulting from reviews, meetings, and correspondence between Canada and the Contractor.
 - 2) The Contractor must develop and manage the AIL in accordance with CDRL-M-009 and DID-M-009.
 - 3) Actions must only be added to the AIL with the concurrence of those responsible for completing the listed action.
 - 4) Actions can be added to the AIL at any time
- 2.2.2.5 Contract Kick-off Meeting**
- 1) Within ten (10) Working Days of contract award the Contractor must convene a Contract line-by-line review with Canada. The purpose of the kick-off is to; review this SoW; review the SRD and CVM; and to discuss any other overarching issues that Canada or the Contractor believe may impact successful implementation of the Contract.
- 2.2.2.6 Technical Progress Review Meetings (TPRM)**
- 1) The Contractor must coordinate, convene, and conduct TPRMs with Canada on a monthly basis to discuss and resolve any issues with the design, construction, trials, training, Integrated Logistic Support (ILS) or any other technical issues that affect the progress of the work. The TPRM must also be used to progress work in which Canada's participation is required.
 - 2) The Contractor must develop and manage meeting deliverables in accordance with CDRL-M-008 and DID-M-008.
 - 3) The MPRM and the TPRM may be held together. In this instance the process for the agenda and minutes of the combined meeting must be as described herein.
- 2.2.2.7 Monthly Progress Review Meeting (MPRM)**
- 1) The Contractor must coordinate, convene, and conduct MPRMs with Canada on a monthly basis to discuss cost, schedule, progress, risks, issues and any other topics that affect the conduct of the work. MPRMs must encompass total contract status as of the review date.
 - 2) The Contractor must develop and manage meeting deliverables in accordance with CDRL-M-008 and DID-M-008.
 - 3) The MPRM and the TPRM may be held together. In this instance the process for the agenda and minutes of the combined meeting must be as described herein.

2.2.2.8 Initial Provisioning Conference

- 1) The Contractor must convene an Initial Provisioning Conference (IPC) with Canada in order to explain and validate the proposed Initial Provisioning Strategy (IPS) (see CDRL-ILS-004 and DID-ILS-004),
- 2) The IPC must occur within 15 Working Days prior to the start of the construction of the first vessel.
- 3) The IPC must be the culmination of the Contractors work carried out in the Maintenance Configuration working groups. See section 6.5.2.
- 4) The Contractor must develop and manage IPC meeting deliverables in accordance with CDRL-M-008 and DID-M-008.

2.2.2.9 Other Scheduled Meetings

- 1) The Contractor or Canada may identify the necessity to schedule other meetings.
- 2) The Contractor must include any such meetings in the Master Plan and Schedule.
- 3) Canada's approval of the Master Plan and Schedule will confirm Canada's intention to attend such meetings.

2.2.2.10 Unscheduled Meetings

- 1) Upon the request of Canada or the Contractor, the Contractor must arrange meetings to discuss the status of a particular issue with the Contract or Work.
- 2) The Contractor must ensure that Canada has copies of all material necessary for any such meetings as far in advance as possible.

2.2.3 Access to Facilities

- 1) Canada and any of its authorized agents must be granted access to the Contractor's Facilities for the purpose of verifying any of the deliverables during the completion of the Work.
- 2) A list of authorized Canadian representatives will be developed after contract award.
- 3) The Contractor must grant authorized representatives of Canada access to any site where any part of the work is being carried out at any time during working hours to make examinations and such tests of the work as they may deem fit.
- 4) Canada will confirm personnel requiring access, and the purpose of the visit, at least two (2) Working Days prior to arriving.
- 5) Upon commencement of MRB construction, the Contractor must provide a furnished office space for the exclusive use of Canada's personnel while at the Contractor's Facilities.
- 6) The Contractor must ensure the office area contains:
 - a. Two (2) desks with a chair each;
 - b. Waste/recycling container(s);
- 7) The Contractor must ensure the office area is to the same standard as those typically used in the Contractors facility, be regularly cleaned and supplied with ventilation, heating, air-conditioning, electrical power and lighting in accordance with the Contractors current practices.
- 8) The Contractor must ensure the office area includes access to the Contractor's washrooms facilities.
- 9) The Contractor must provide two (2) parking spaces at the Contractor's facility for Canada's personnel or within reasonable walking distance.

2.2.4 Contractual Issue Reporting

- 1) The Contractor must advise the CA by email within three (3) Working Days of the date the Contractor determines that there is a schedule alteration or contractual issue.
- 2) Upon such notification Canada will advise whether an unscheduled meeting or other action is required. It is through this communication that it will be determined if an official Change Request Form must be submitted.

2.2.5 Documentation Deliverables

- 1) Unless otherwise specified in individual DIDs, the Contractor must deliver electronic copies of deliverables in the native file format of the following software as appropriate for the nature of the deliverable:
 - a. Microsoft Office Suite 2013 including Word, Excel, Project Professional, PowerPoint and Access;
 - b. AutoDesk AutoCAD 2015;
 - c. Adobe Portable Document Format (PDF). All PDF deliverables must be searchable.
- 2) The Contractor must obtain permission from Canada before delivering electronic copies in any other file formats, unless specified in individual DIDs.
- 3) The Contractor must ensure that electronic copies of deliverables are fully readable and editable unless the deliverable file cannot be provided (e.g., for third party user manuals).
- 4) The Contractor must submit all deliverable data in draft form for Canada's review, or review and acceptance, in accordance with the applicable CDRL.
- 5) The Contractor must ensure that the draft document is complete, is compliant with the requirements of this SOW and addresses the applicable CDRL and DID.
- 6) Draft document deliverables will be reviewed by Canada. The individual DIDs and CDRLs will specify the time Canada requires for review and comment on any deliverables and to return them to the Contractor for the Contractor to address the comments.
- 7) Comments by Canada on draft deliverables must not be construed as acceptance of the data deliverable until Canada expressly indicates satisfaction and the comments have been addressed by, or incorporated into, a submitted final deliverable version.
- 8) A document will only be considered accepted when Canada indicates as such.
- 9) Canada will require 10 Working Days to comment on deliverables where no time is indicated in CDRLs and DIDs.
- 10) Unless otherwise noted, the Contractor must address Canada's comments on the deliverable and resubmit as the final version within 10 Working Days of receipt of the observations.
- 11) The Contractor must ensure that final documents consist of the draft document modified to include contractor suggested changes as reviewed and accepted by Canada.
- 12) The Contractor must carry out all work using the International System of Units (commonly known as the Metric System) and must use them consistently throughout the work. This must include all fastenings with the exception of equipment and machinery supplied by third parties where the Imperial fastening system is standard for the manufacturer.

2.2.6 Language

- 1) Commercial publications and documentation such as operating manuals supplied by a third party for commercial-off-the-shelf items must be provided to Canada in both Official Languages if commercially available, at time of vessel delivery.
- 2) The Contractor must provide written authorization for Canada to translate any documentation produced by the Contractor to the other Official Language of Canada.
- 3) If bilingual documentation is not provided from the supplier or OEM, the Contractor must obtain a written authorization from the supplier or OEM in question to grant Canada the rights to translate it into the other official language.

2.3 045 Care of Ship during Construction

2.3.1 General

- 1) The MRBs must be built under cover and protected from extreme environmental conditions that may impact the quality of the work or the performance of the boats various systems.

- 2) The Contractor must ensure that, during the entire period the MRBs are in the Contractor's possession, all parts of the MRBs are maintained in an undamaged condition.
- 3) The Contractor must take all necessary actions to prevent wear and damage incidents during construction.
- 4) The Contractor must prevent corrosion or other environmental deterioration of the MRB until Final Delivery.
- 5) The Contractor must ensure that all piping, machinery, and equipment subject to freezing must be protected to prevent freeze damage.
- 6) The Contractor must ensure all equipment is protected against grit and sand blast from entering the equipment during construction.
- 7) The Contractor's facilities and all building contents must be insured and safeguarded from all damages including fire or flooding through the implementation of appropriate policies and procedures in accordance with the Contract.
- 8) The Contractor must ensure that all equipment, machinery, electrical and electronic components, prefabricated parts, seating, and all other items are stored indoors at the Contractors' facilities during the construction period, are kept clean and stored in accordance with OEM instructions.
- 9) The Contractor must ensure that all materials for MRB construction are stored in an enclosed covered shelter protected from the elements.
- 10) The Contractor must ensure that temporary covers as recommended by the OEM be supplied to protect all equipment requiring protection from the environment.

2.3.2 Care of Machinery and Equipment

- 1) The Contractor must be responsible for the care of all MRB machinery and equipment in accordance with the OEM's recommendations, whether furnished by the Contractor or Canada.
- 2) In storing and installing machinery and equipment, the Contractor must ensure that no OEM's warranties are voided.
- 3) If a warranty is voided prior to delivery and acceptance by Canada, the Contractor must replace, deliver and install a new system with all warranties intact.
- 4) The Contractor must ensure that all parts, especially those having working surfaces or passages of piping for lubricating oil, fuel oil, or water are kept clean and protected during storing, assembly, and after installation.
- 5) The Contractor must ensure that all electric and electronic equipment and machinery are at all times protected against dust, moisture, or other foreign matter.
- 6) The Contractor must ensure that no MRB equipment is subjected to rapid temperature changes or extremes in temperature.
- 7) The Contractor must ensure that, if at any time, machinery or equipment is allowed to deteriorate due to lack of care in storage as indicated above, as determined by the TA, it must be subjected to tests, at Contractor expense, to determine its condition and, if necessary, must be repaired or replaced at Contractor expense.
- 8) The Contractor must ensure all preservatives applied by the OEM are left intact, if possible, until installation of machinery or equipment on the MRB.
- 9) If removal of the preservative is necessary for testing the machinery or equipment prior to installation, the Contractor must preserve and protect the machinery or equipment following testing until installed.
- 10) The Contractor must ensure that all preservatives on working parts are thoroughly removed prior to operation of the machinery or equipment.
- 11) The Contractor must ensure that under no circumstances do personnel use engine projections or any other machinery parts as steps.

- 12) The Contractor must ensure all damages resulting from failure to observe the preceding precautions are rectified at the Contractor's expense.
- 13) The Contractor must ensure that all cooling systems must be installed and maintained in accordance with the OEM's instructions prior to engine operation.

2.3.3 Onboard Equipment

- 1) The Contractor must ensure the MRBs are completely finished, equipped and outfitted, and made ready for service before delivery.
- 2) The Contractor must ensure all material necessary for the safety of the MRB, as specified in the SRD Appendix 1 to Annex A, is provided with each vessel.
- 3) The Contractor must install the digital nautical charts requested by the TA prior to the delivery of each MRB.
- 4) The Contractor must ensure that all software for the MRB is installed and up-to-date prior to the delivery of each MRB.

2.3.4 Environmental Considerations

- 1) The Contractor must manage all activities and materials associated with the work so as to meet all applicable Federal, Provincial and Municipal environmental legislation and regulations.
- 2) The Contractor must put in place the necessary precautions and systems to mitigate potential negative environmental impacts associated with work during the construction, trials, and delivery of the MRBs.
- 3) The Contractor must ensure that any substances identified as Prohibited Materials are not used during the Work.
- 4) The Contractor must ensure that asbestos, Polychlorinated Biphenyls (PCBs), Ozone Depleting Substances (including Halon) and Tributyltin (TBT) based anti-fouling paints are not used in the completion of the Work.
- 5) The Contractor must, to the greatest extent reasonably possible, ensure that materials used to construct the MRBs, and the materiel specified to conduct routine maintenance support of the MRBs and its subsystems, do not pose environmental, health and safety hazards at any point during their life cycle, including repair and disposal.
- 6) The Contractor must obtain approval in writing from the CA, via the Change Request Form, before including any hazardous material or materiel, as defined in Federal and Provincial legislation and regulations, in the construction of the MRBs or required in their routine maintenance support.
- 7) The Contractor must dispose of any hazardous material and waste in accordance with all applicable Federal, Provincial and Municipal legislation and regulations.

3 Other Design Deliverables

3.1 061 Hull Structure

- 1) The Contractor must prepare the Structural Adequacy Report in accordance with CDRL-E-008 and DID-E-008 for Canada's review and acceptance

3.2 063 Electric Plant

- 1) The Contractor must prepare the Electrical Load Analysis and Report in accordance with CDRL-E-002 and DID-E-002 for Canada's review and acceptance.

3.3 064 Command and Surveillance

- 1) The Contractor must prepare the Console Arrangement in accordance with CDRL-E-004 and DID-E-004 for Canada's review and acceptance.

- 2) The Contractor must prepare the C4ISR Suite Arrangement in accordance with CDRL-E-003 and DID-E-003 for Canada's review and acceptance.
- 3) The Contractor must select, design, and integrate all of the systems, subsystems, and components necessary to meet the expected performance and ergonomics of the C4ISR Suite as defined in SRD Appendix 1 to Annex A.
- 4) The Contractor must possess, arrange or coordinate the required expertise in order ensure compliance with the SRD Appendix 1 to Annex A.
- 5) The Contractor must assume responsibility to ensure the performance of the C4ISR Suite meets the requirements of the SRD Appendix 1 to Annex A.
- 6) The Contractor for the C4ISR Suite must gain access to all required information regarding the Government Furnished Equipment (GFE) equipment from the OEM(s) to integrate the C4ISR Suite.
- 7) The Contractor must have in place any necessary agreements, including but not limited to, non-disclosure agreements, technical assistance agreements and licensing, to work with any OEM(s) GFE information and property.
- 8) Canada will provide the secure radios and required supporting equipment under GFE, forming a portion of the C4ISR Suite. The Contractor must determine and provide all other aspects of the C4ISR Suite systems and components.
- 9) The Contractor will use GFE, some of which are goods are Controlled Goods. The Contractor will also use a number of systems which have International Traffic in Regulations (ITAR) and other security constraints. The Contractor must have the necessary security clearance and screening to handle goods with controlled status.

3.4 068 Integration and Engineering

- 1) The Contractor must prepare the Weight and Center of Gravity Report in accordance with CDRL-E-001 and DID-E-001 for Canada's review and acceptance.
- 2) The Contractor must show that the MRB meets the requirements of ISO/DIS 12217-1 by submitting the necessary calculations and documentation for all operating and loaded conditions.
- 3) The Contractor must integrate all GFE to meet the performance as defined in the SRD Appendix 1 to Annex A.
- 4) The Contractor must identify in the TPRM, PDR, and CDR any areas where the MRB design does not comply with SRD technical requirements and the Contractor must propose solutions to bring the design into compliance. .
- 5) The Contractor must address any identified ergonomic issues during PDP and CDP.

3.4.1 Cradles

- 1) The Contractor must deliver cradles in compliance with the requirements of the SRD Appendix 1 to Annex A.
- 2) Upon finalizing the MRB Technical Baseline design (i.e. satisfied Exit Criteria at the CDR), the Contractor must provide Canada with all MRB technical information required to facilitate trailer procurement, design and construction in accordance with CDRL-E-009 and DID-E-009.
- 3) The cradle design has three (3) dominant expectations. This section has been included in the SOW to draw the Contractor's attention to the unique cradle requirements.
 - a. First, the cradle must be designed to be removable from the deck of the *Halifax*-class Frigate via a quick installation and release system.
 - b. The Contractor must propose a quick-release design as agreed to by Canada. Details, designs, and acceptance of the releasing mechanism will be processed through the PDP and the CDP.

- c. Second, the cradle must be designed and delivered to receive a variety of hull forms inclusive of the MRB.
- d. Third, the cradle must be designed to mitigate shock (see Section 6.3.1 for details) to ensure the MRB is operational after an explosive event (underwater explosion).
- e. The Contractor must be responsible for the design, construction and testing of the shock mitigation incorporated into the cradle.
- f. The shock requirements only apply to MRB in the cradle and not to the other possible vessels or vehicles.

4 070 General Requirements for Design and Construction

4.1 076 Reliability and Availability

- 1) The Contractor must select and demonstrate machinery and equipment for the MRB, and design its systems, such that the MRB system has the operational and mission availability, reliability and maintainability as specified in the SRD Appendix 1 to Annex A.

4.2 078 Materials and Workmanship

- 1) The Contractor must ensure that the materials, workmanship and procedures used in the construction of the MRBs and its subsystems meet the requirements of the Contract and selected Class Society.
- 2) The Contractor must supply, install, integrate and commission all MRB equipment in accordance with the recommendations and guide lines specified by respective OEMs and the SRD Appendix 1 to Annex A.
- 3) The Contractor must install, integrate and commission all GFE.
- 4) The Contractor must ensure that all welders are certified in accordance with a national recognized welding regulatory body (i.e. Canadian Welding Bureau) or acceptable to the selected Class Society for the materials and processes used in the construction of the MRB.
- 5) The Contractor must ensure that all welding procedures are acceptable to the selected Class Society.

5 080 Integrated Logistics Support Requirements

5.1 General

- 1) Integrated Logistics Support (ILS) is comprised of the activities required to ensure the support and operation of the MRBs throughout their service life.

5.2 081 Maintenance

- 1) The Contractor must prepare and submit a Maintenance Plan in accordance with CDRL-ILS-005 and DID-ILS-005 for Canada's review and acceptance.

5.3 085 Design Drawings / Diagrams

- 1) The Contractor must prepare and submit to Canada all Design Drawings / Diagrams and associated lists in accordance with CDRL-M-007 and DID-M-007. Note that this DID defines only the process and format of the engineering drawings and associated lists; other DIDs describe the content that will be required for various deliverables.
- 2) The Contractor must provide Canada with digital access to all production drawings, in native format, for viewing and information purposes. Drawings that must be delivered to Canada for review and approval are identified in the respective DIDs.

- 3) The Contractor must provide to Canada copies of all drawings submitted to the selected Class Society and copies of the all Class Society stamped drawings when completed.

5.4 086 Technical Manuals and Other Data

5.4.1 Technical Data Package (TDP)

- 1) The Contractor must prepare and submit a TDP that contains all of the Technical Data and Documentation required to operate, maintain, modify, dispose of, and manage the configuration of the MRBs in accordance with CDRL-ILS-003 and DID-ILS-003 for Canada's review and acceptance.
- 2) The Contractor must ensure that the details of the TDP are correct.
- 3) Canada may conduct verification of any operating instructions, troubleshooting and maintenance procedures and spare part references contained in the publications.
- 4) The Contractor must address all identified deficiencies in the TDP until Canada is satisfied with the final TDP content.
- 5) If any technical changes occur during the production of any MRBs and cradles the Contractor must update the TDP to reflect the final as-built cradle and MRB.
- 6) Technical changes to the MRB design that occur after the submission of the Trailer TDP which can impact the trailer design must be communicated to Canada immediately.

5.4.2 Product Modelling, Computer Aided Drafting and Design Software

- 1) If the Contractor makes use of any Product Modelling software, any computer aided drafting software, any computer aided modelling software, any 3D modelling software, or any other modelling and drafting software to design the MRB and produce components of the TDP, the Contractor must provide the latest and final versions of the native files to Canada.
- 2) Any native modelling and drafting files must be delivered to Canada before the last MRB and cradle are delivered.

5.4.3 Maker's List (Master Equipment List)

- 1) The Contractor must prepare and submit to Canada a Master Equipment List (MEL) that identifies all the equipment fitted on the MRBs in accordance with CDRL-ILS-001 and DID-ILS-001 for Canada's review.

5.4.3.1 Special Tools

- 1) Any Special Tools must be delivered with each MRB.
- 2) The Contractor must notify Canada if any Special Tool identified has a unit price of more than \$500 CAD. Canada will decide how many of each Special Tool over \$500 CAD that Canada will purchase; for special tools less than \$500 one copy of the tool must be supplied with each MRB.
- 3) The Contractor must provide to Canada an exhaustive list of Special Tools with prices per unit they suggest are required to perform 1st, 2nd, and 3rd line maintenance on the MRBs through life for Canada's review and acceptance. The Contractor must identify which tools and Special Tools will be required onboard the *Halifax*-class ships in order to carry out first line maintenance for Canada's review and acceptance.

5.4.4 Hazardous Materials Database

- 1) The Contractor must prepare and submit the Hazardous Material Database in accordance with CDRL-ILS-002 and DID-ILS-002 for Canada's review and acceptance.
- 2) The Contractor must manage, track and verify the existence of any hazardous materials on the MRBs.
- 3) Each controlled product (defined under the Controlled Product Regulations issued under the Hazardous Products Act) used or installed in the vessel must have a label. The label must disclose prescribed information and display on it all applicable hazard symbols.

- 4) The Contractor must provide proper labelling at appropriate locations to alert workers of hazardous substances and provide precautionary measures instructions needed in accordance with the requirements of Workplace Hazardous Material Information System (WHMIS).

5.4.5 Recommended Spare Parts List (RSPL)

- 1) The Contractor must compile a RSPL in accordance with CDRL-ILS-004 and DID-ILS-004 for Canada's review and acceptance.

5.4.6 Initial Provisioning Strategy

- 1) The Contractor must prepare and deliver an Initial Provisioning Strategy (IPS) for acceptance by Canada, consisting of the information specified in CDRL-ILS-004 and DID-ILS-004.
- 2) The Contractor must incorporate all changes to the IPS made by Canada in the IPC.
- 3) The Contractor must deliver the Initial Provisioning materiel as agreed upon with Canada, following acceptance of the IPC Minutes and IPS.

5.4.7 Certificates

- 1) The Contractor must obtain and deliver the MRBs with all necessary Class and regulatory body design, construction and operational certificates at the time of the AR.
- 2) The MRBs must be certified and prepared for registration and licensing, as appropriate, for operations in Canada.
- 3) Where the SRD Appendix 1 to Annex A refers to the rules or requirements of a regulatory body, the Contractor must provide proof of compliance for the deliverable. The selected Class Society must verify that the MRB meets all referenced Transport Canada standards in SRD Appendix 1 to Annex A.

6 090 Quality Assurance Requirements

6.1 Quality Assurance (QA) Program

- 1) The Contractor must have in place, or implement and maintain a Quality Management System (QMS) that ensures conformance to contractual requirements and is consistent with the 2015 version of the ISO 9001:2015 Quality Management Systems - Guidelines for Quality Plans standard.
- 2) The Contractor must ensure that all Subcontractors and Suppliers comply with appropriate quality management requirements.
- 3) The Contractor must deliver and maintain a Quality Plan that describes how the Contractor will implement the QMS throughout the work in accordance with CDRL-M-011 and DID-M-011 for Canada's review.
- 4) On acceptance of the Quality Plan by Canada, the Contractor must implement the Quality Plan in the conduct of the work.
- 5) The Contractor must make appropriate amendments to the Quality Plan throughout the term of the Contract to reflect any changes to current and planned quality management activities.
- 6) Amendments to the Quality Plan must be reviewed and accepted by Canada before they come into force.
- 7) The Contractor must make available to Canada any documents referenced in the Quality Plan when requested by Canada.
- 8) The Contractor must conduct performance evaluation and improvement as described in ISO 9001:2015 during manufacturing in accordance with the Contractor's Quality Plan.

6.2 091 Ship Inspection

- 1) The Contractor must support and facilitate the selected Class Society in the conduct of plan review and design approval, as well as any Class Society required construction surveys and the

witnessing of first of class trials of the MRB as required by the rules specified in the SRD Appendix 1 to Annex A.

- 2) The Class Society may also conduct periodic surveys on subsequent MRBs, and the production facilities, to confirm that subsequent vessels are meeting the same standards as the first of class, as such, the Contractor must support and facilitate the selected Class Society's requested inspections, surveys, trials, and reviews.
- 3) The Contractor must schedule and coordinate inspections and trials with the Class Society, Canada and any other necessary organizations. All required inspections must be integrated into the Contractor's build schedule.
- 4) The Contractor must resolve any problems, deficiencies or defects identified during the inspections or as raised by any of the above authorities at any time prior to delivery.
- 5) As part of the inspection of the vessel, the Contractor must ensure that the vessel is built in accordance with the Technical Baseline and must confirm, through a physical configuration audit that the as-built configuration reflects the Technical Baseline. The TA will be present for all configuration audit inspections. The physical configuration audit must take place during AR.

6.3 092 Ship Tests and Trials

- 1) The Contractor must conduct all trials as identified in the Trials Plans and Procedures.
- 2) The Contractor must prepare and submit to Canada a Trials Report for all trials performed including, but not limited to Dock Trials, Sea Acceptance Trials and First Article and Shock Testing.

6.3.1 First Article Shock Testing

- 1) The MRB is a life raft marshalling craft for a warship, as such, the MRB must be able to perform this life saving function after a significant shock event is experienced by the parent vessel.
- 2) The Contractor must provide evidence that the as-built cradle and MRB is designed, constructed, and delivered in compliance with the specified shock standards in SRD Appendix 1 to Annex A.
- 3) The Contractor must shock test the first cradle and MRB following construction and initial systems test.
- 4) During PDP the Contractor and Canada must determine which equipment, systems, and performance are required to be functional before and after the shock testing; to the final acceptance of Canada.
- 5) The MRB must be shock tested at Hi-Test Labs located in Arvon, Virginia, or an equivalently capable testing establishment.
- 6) The Contractor must account for adequate preparation lead time with the selected shock test facility to allow for scheduling, planning, and any other form of logistic coordination necessary to efficiently and promptly carry out the first article cradle and MRB shock tests. Shock test facilities typically requires a lead time of a minimum of four (4) months for test preparation.
- 7) The Contractor must ensure that the appropriate paperwork, visas, and authorizations are in place to transport the cradle and MRB outside of Canada to the test facility location.
- 8) The Contractor must be responsible for all costs to obtain the appropriate paperwork, visas, and authorizations for export and re-entry into Canada.
- 9) The Contractor must ship the cradle and MRB with all appropriate tools and equipment to the selected shock test facility and ship all materiel back to the Contractor's facility after completion of the shock testing.
- 10) The Contractor must be responsible for all shipping costs.
- 11) The Contractor must ensure that the MRB and cradle can be properly handled at the shock test facility.

- 12) The Contractor must make the appropriate arrangements for handling, which may include but is not limited to, site transportation, rigging, installation, welding, set-up, and any other shock test preparations.
- 13) The Contractor must be responsible for all handling costs.
- 14) Canada will be responsible for all remuneration to the shock testing facility for shock testing of the MRB and cradle.
- 15) Canada reserves the right to add instrumentation to the cradle and MRB for the purpose of recording shock test data.
- 16) Any shock related deficiencies must be corrected by the Contractor on both First Articles (cradle and MRB) and all follow-on cradles and MRBs. Knowledge of any deficiencies must be addressed as soon as possible to minimize project delays.
- 17) The Contractor must conduct tests of the operational capability of the cradle and MRB after each shock shot. As such, the Contractor must arrange for the appropriate technician(s) and/or operator(s) as required to test the operational capabilities to attend shock tests.

6.3.2 Tests and Trials Conduct

- 1) The Contractor must complete any prerequisites which must be met prior to conducting each trial as set out in the Trials Plans and Procedures.
- 2) The Contractor must ensure that the OEM's representatives have made all final checks and calibrations prior to any trial.
- 3) The Contractor must ensure that the OEM's representatives are in attendance for all equipment trials as required and as agreed to by Canada.
- 4) The Contractor must ensure all required trials are completed on individual components of a system and all defects and deficiencies corrected to the satisfaction of the Contractor, TA and OEM, prior to the commencement of any trials on that system.
- 5) The Contractor must ensure all required individual component trials are completed to the satisfaction of the OEM and the TA prior to the commencement of MRB Trials.
- 6) The Contractor must ensure that the MRBs are prepared for Trials to the satisfaction of the Class Society.
- 7) Canada reserves the right to send personnel to witness any and all trials.
- 8) The Contractor must ensure that during the conduct of the Trials, no alignment or adjustment is permitted unless specifically required in the Trials Plans and Procedures.
- 9) Prior to the delivery of the MRB, the Contractor must correct and repair any damages to components or systems that occurs during or after any testing and arrange for the MRB to be tested again and to be witnessed and accepted by the applicable TA, Class Society and OEMs.
- 10) The Contractor must gain the engine OEM's approval for engine start up after an OEM inspection is completed.
- 11) Upon completion of all trials, the Contractor must transcribe all Trials data recorded into a report, containing all relevant data and conclusions gathered during the Trials program.
- 12) The Trials Reports must identify any changes to the trials conditions or procedures from those described in the Trial Plans and Procedures, especially any factors which could have influenced the conduct or results of the trial.
- 13) The Contractor must provide the Trials Reports in accordance with CDRL-E-007 and DID-E-007.
- 14) The Contractor must ensure that the original trials data sheets are signed and dated by the Class Society, the TA and the Contractor.
- 15) The Contractor must provide to Canada one (1) Trials Data Booklet in accordance with CDRL-E-007 and DID-E-007.
- 16) Unusual resources for particular trials scenarios which are required, such as a 5000 tonne ship, may be provided by Canada. Negotiation of such resources will take place after contract award and the Trials Plans and Procedures are finalized.

6.4 094 Regular Ship Trials

6.4.1 Dock Trials

- 1) The Contractor must ensure the Dock Trials are conducted upon completion of all installation procedures and verification of such installation to the satisfaction of Canada, and, if required, by the Class Society.
- 2) The Contractor must ensure the Dock Trials are conducted to verify the proper functioning of all items of the MRB's equipment, machinery and systems for which it would be necessary, prudent or advantageous to perform whilst docked prior to Sea Trials.
- 3) The Contractor must ensure the Dock Trials include the trials necessary to ensure that the vessel is safe and seaworthy in all respects.
- 4) The Contractor must demonstrate proper operation and function of all systems and components to the satisfaction of the Class Society and the TA prior to the start of any Sea Trials.
- 5) The Contractor must perform Dock Trials which include, but are not limited to, the satisfactory installation and operation of the following:
 - a. Propulsion Control, Monitoring and Alarm System;
 - b. Propulsion Starting System;
 - c. Emergency Engine Shut-Offs;
 - d. Ventilation Systems;
 - e. Bilge Pumps and Bilge Pumping System;
 - f. Fuel Supply System;
 - g. Fire Detection and Suppression Systems;
 - h. Electrical Generation, Battery Charging and Electrical Distribution System;
 - i. Shore Power Connection;
 - j. Navigational Lights;
 - k. Navigation Electronics;
 - l. C4ISR Suite;
 - m. Mooring and Towing Fittings;
 - n. Gauges and Alarm Systems;
 - o. Lighting; and
 - p. Steering Systems.
 - q. Shock Seating (installation, reconfiguration, and removal only)

6.4.2 Sea Trials

- 1) The Contractor must ensure the Sea Trials are conducted in a body of water in Canada that is suitable for trials. The suitable body of water must be agreed upon with Canada.
- 2) The Contractor must ensure the Sea Trials are conducted when the first of class MRB is considered ready for Sea Trials by Canada and the Class Society.
- 3) The Contractor must ensure the Sea Trials demonstrate to Canada that the MRB meets the operational performance requirements as specified in the SRD Appendix 1 to Annex A, in all respects, and is ready for acceptance by Canada.
- 4) The Contractor must ensure the Sea Trials are undertaken only upon satisfactory completion of all Dock Trials and rectification of all deficiencies arising from the Dock Trials.
- 5) Before proceeding on Sea Trials, the Contractor must ensure the compass is adjusted by a certified compass adjuster. The Contractor must provide completed deviation card to Canada before Sea Trials.
- 6) If the Contractor completes the Sea Trials but fails to meet any of the individual requirements, the Contractor must correct the deficiency, reschedule the failed trial, and redo those portions of the trial that failed.

- 7) With respect to Sea Trials of the First Article, if it is determined that some aspect of MRB's performance is not in accordance with Canada's expectations, Canada reserves the right to have the Contractor, or a third party, investigate the performance issue(s) and evaluate potential modifications to rectify the issue(s).
- 8) If Canada should decide to conduct design work and modifications to the First Article in order to rectify any observed performance issues, this work will be exercised as an arising as stipulated in this Contract. Modifications that are made to the First Article must also to be made to subsequent follow-on vessels.
- 9) On the successful conclusion of Sea Trials, an inspection of the MRB will be made by Canada. The Contractor must rectify all defects and deficiencies noted during the Sea Trials and follow-on inspections.

6.5 099 Photographs

- 1) The Contractor must deliver photographs in accordance with CDRL-M-010 and DID-M-010.

6.6 811 Configuration Management

6.6.1 Information Management

- 1) The Contractor must maintain and control the configuration of all engineering drawings and associated lists throughout the contract and until the conclusion of the warranty period for the last delivered MRB.
- 2) When revisions and amendments have been made to data deliverables required under this SOW, the Contractor must submit the revisions and amendments to Canada for review and acceptance as indicated in the CDRL for that deliverable. Once Canada agrees to the changes, the data deliverable will be accepted by Canada in writing by the CA.
- 3) The Contractor must be responsible for configuration management control of the Technical Baseline for the MRB design.
- 4) The Contractor must obtain written approval from Canada to deviate from the Technical Baseline via the Change Request Form (CDRL M-005 and DID-M-005).

6.6.2 Maintenance Configuration

- 1) The Contractor must hold a working group with up to 12 DND participants and the requisite OEM and Contractor representatives to be held over 3 consecutive days to determine the maintenance plans and sparing management for the MRB.
- 2) The Contractor must conduct the working group during the CDP in preparation for the IPC, as defined in Section 2.2.2.8.
- 3) The Contractor must conduct the working group in accordance with the CDRL-M-008 and DID-M-008 and all the guidelines of outlined in Section 2.2.2.
- 4) The working group will provide Canada with the opportunity to express the RCNs current maintenance practices and capabilities to the Contractor and OEMs in order to assist them in identifying 1st, 2nd and 3rd line maintenance plans and procedures for the MRB systems, equipment, and parts, based on the ships staff capabilities. This working group will ensure that the MRBs design, maintenance and sparing philosophy will reflect RCN practices and capabilities.
- 5) The working group is a preliminary IPC intended to incorporate ILS considerations during the design phase rather than during construction.
- 6) The Contractor must provide the technical information needed to accurately define 1st, 2nd, and 3rd line maintenance plans and suggested provisioning strategies, such as, fatigue analysis,

failure modes and effects, mean time between failures, parts descriptions, equipment, and components.

- 7) The Contractor must use the information in this meeting to assist in the creation of the Maintenance Plan in accordance with CDRL-ILS-005 and DID-ILS-005.
- 8) The Contractor must use the information in this meeting to assist in the creation of the IPS in accordance with CDRL-ILS-004 and DID-ILS-004.

6.7 983 Delivery

6.7.1 General

- 1) The Contractor must deliver the MRBs, various data deliverables (i.e., reports, user manuals, models, drawings, etc.), cradles, support equipment, Special Tools, spare parts for two (2) years of operation (as identified by the IPC) and ICT as defined in this SOW.
- 2) Unless otherwise indicated, the Contractor must ensure that all material, equipment, and machinery be supplied, installed, set to work, calibrated, integrated, trialed, and stowed, as applicable, such that the MRBs are ready for unrestricted operations, in accordance with SRD Appendix 1 to Annex A upon delivery.

6.7.2 Delivery and Final Acceptance

- 1) The MRBs, cradles and spares must be delivered, at the Contractor's expense, to Canadian Forces Base (CFB) Esquimalt, British Columbia and CFB Halifax, Nova Scotia in the numbers as indicated in Section 1.3 of this SOW.
- 2) The MRBs can be delivered individually on completion, or in batches, based on the build schedule, availability, and cost of transportation.
- 3) The Contractor must pre-arrange a delivery schedule with Canada as part of the Master Plan and Schedule in accordance with CDRL-M-002 and DID-M-002.
- 4) Prior to the Final Acceptance of each MRB the Contractor must:
 - a. Rectify all defects to an as-new condition;
 - b. Clean the MRB internally and externally to an as-new condition; machinery, components and paint touched-up as required, and all compartments brought to as-new condition;
 - c. Ensure all machinery sumps, gear boxes, and system tanks (except fuel tanks) are filled to their OEM recommended operating levels;
 - d. Ensure all bilges are clean, empty and dry; and
 - e. Turn the keys over to the Canada.
- 5) Following receipt of Provisional Acceptance and delivery, Canada will formally acknowledge Final Acceptance of each platform, when all technical and programmatic requirements are verified as being met.
- 6) Any damage sustained during storage or delivery, up until Final Acceptance by Canada, must be repaired by the Contractor at the Contractor's expense within an agreed period of time between Canada and the Contractor.

6.7.3 Spares Delivery

- 1) Upon delivery of each MRB, the Contractor must supply to Canada the spares, repair parts, Special Tools and other materiel specified in the RSPL to support the delivered MRBs for a period of two (2) years from delivery.
- 2) Spares that are not carried onboard the MRBs at time of delivery must be delivered to the destination stipulated in the Contract for the MRB in question.
- 3) Upon delivery of the first MRB, to each coast, the Contractor must supply the long lead spares and Special Tools for shore based stock to the respective coast.
- 4) All spares and repair parts supplied by the Contractor must be packaged and clearly marked and identified with manufacturer's name, item name and description, and part number on the

packaging. Spare parts required for specific equipment or assemblies must be kitted, separately packaged, and identified accordingly.

- 5) The Contractor must properly preserve and package the parts for long-term storage by ensuring they are coated with an approved preservative and sealed in an approved wrapping or packaging as determined by the OEM.
- 6) Suitable boxes must be used to package an item in accordance with standard commercial practice. If a box is used, each one must contain a non-fading content list that must be protected against damage and staining. Spare parts weighing in excess of 20 kg must be packed in strong boxes with lifting handles and the total loaded weight clearly marked in Kilograms (Kg) on the box.
- 7) In determining packaging the Contractor must take into consideration the nature of the item, known logistics requirements, and quantity. The selection of packaging materials must include consideration of disposability, reuse, recycling, and conservation.
- 8) The Contractor must provide reusable packaging containers for Contractor supplied spares and materiel that will be routinely returned to third party facilities for rebuilding or servicing.
- 9) The Contractor must package and mark hazardous materials in accordance with applicable Federal, Provincial and international regulations.
- 10) The Contractor must determine the quantity for each unit package for all materiel based upon the nature of the item, known logistics requirements, and normal usage factors.
- 11) The Contractor must provide packaging that is designed to withstand normal logistics conditions and is of quality to ensure the protection and preservation for the safe delivery of the item to its destination. In this case, safe delivery is deemed to mean no damage to the contents of the package.
- 12) Packing lists that accompany shipments to identify contents must also identify Contract or purchase order numbers.

7 Appendix 1 – System Requirements Document (SRD)

*** Attached as a separate document ***

8 Appendix 2 – Contract Data Requirements List (CDRL)

| CDRL No. | DID No. | Title | Purpose | Accept / Review | Initial Submission | Time for Canada to review and Comment | Subsequent Submission | Frequency | Remarks |
|---------------------------|-----------|--------------------------------------|---|-----------------|--|---------------------------------------|--|---|--|
| Project Management | | | | | | | | | |
| CDRL-M-001 | DID-M-001 | Project Management Plan | To define the required content of the plan that the Contractor must follow for managing the design and construction of the MRBs. | B/A | Bid Proposal | 10 WD after submission | 10 WD after Contract Award | As Required | The initial submission will be used for Bid Evaluation purposes. Subsequent submissions are subject to review and accept by Canada. |
| CDRL-M-002 | DID-M-002 | Master Plan and Schedule | To define the required content of the plan that the Contractor must follow for sequencing and scheduling the work associated with the design, construction and delivery of the MRBs. | B/R | Bid Proposal | 10 WD after submission | 10 WD after Contract Award | Monthly | The initial submission will be reviewed as part of the for Bid Evaluation purposes. Subsequent submissions to be presented, updated, and discussed, as required, at Monthly Progress Review Meetings (MPRM). |
| CDRL-M-003 | DID-M-003 | Risk and Opportunity Management Plan | To define the required content of the plan that the Contractor must follow to identify and record technical risks and opportunities for improvement. | A | 15 WD after contract award | 10 WD after submission | Monthly | As Required | The Risk and Opportunity Management Plan is to be a one-time deliverable. The Risk Register, which results from the Plan, is to be presented monthly at the Program and Progress Review Meetings. |
| CDRL-M-004 | DID-M-004 | Technical Data Management Plan | To define the required content of the plan that the Contractor must follow to track and manage the configuration of technical and other data produced during the MRB's design and construction process. | A | 1 MACA | 10 WD after submission | As Required | | Update as Required. |
| CDRL-M-005 | DID-M-005 | Change Request Form | To define the required content of the form that the Contractor must use to initiate a change request to the Contract. | A | 1 MACA | 10 WD after submission | As Required | As Required | Agenda to be submitted no later than 5 Working Days before the Kick-off Meeting. Minutes to be submitted no later than 5 Working Days after the Kick-off Meeting. |
| CDRL-M-006 | DID-M-006 | Monthly Progress Report | To define the content of the report that the Contractor must produce on a monthly basis that will present, at a high level, an overview of the status of the project. | A | 1 MACA | 10 WD after submission | Monthly | Monthly | Must be delivered no later than 1 week after the end of the reporting period. |
| CDRL-M-007 | DID-M-007 | Design Drawings/Diagrams | To define how the Contractor must prepare and submit Design Drawings. | R | As Required by Other DIDs | 10 WD after submission | | As Required | This is a template for DID Drawings. |
| CDRL-M-008 | DID-M-008 | Meetings | To define how and what the Contractor must prepare and include in meeting minutes and agendas to be presented at each meeting of the MRB Project. | A | Agendas: 5 WD prior to meetings Minutes: 5 WD post meetings | 2 WD after submission | 2 WD after Canada's return | As Required | |
| CDRL-M-009 | DID-M-009 | Action Items List (AIL) | To define the content of the Action Items List that the Contractor must prepare, submit, manage, and maintain. | A | 5 WD prior to meetings | 2 WD after submission | 2 WD after Canada's return | As Required | |
| CDRL-M-010 | DID-M-010 | Photographs | To define the size, quality, quantity and format of photographs the Contractor must produce and deliver. | A | As Required | 10 WD after submission | Provisional Acceptance of first MRB +15 WD | As Required during construction process | |

| CDRL No. | DID No. | Title | Purpose | Accept / Review | Initial Submission | Time for Canada to review and Comment | Subsequent Submission | Frequency | Remarks |
|--------------------------------|------------|--|---|-----------------|----------------------------|---------------------------------------|-------------------------------------|-------------|--|
| CDRL-M-011 | DID-M-011 | Quality Plans | To define the required content of the plan that the Contractor must follow for controlling the quality of the various major work processes and where there will be opportune points to witness key quality program process points on either an occasional or continuing bases as part of the quality program verification activities. | R | 25 WD after contract award | 10 WD after submission | As Required | As Required | The initial submission will be 25 Working Days after contract award. Subsequent submissions are subject to review by Canada. |
| Compliance Verification | | | | | | | | | |
| CDRL-CM-001 | DID-CM-001 | Compliance Verification Matrix | To define how the Contractor must demonstrate that all aspects of the design comply with the requirements contained in the SRD Appendix 1 to Annex A. | A | Kick Off (-)5 WD | 10 WD after submission | PDR (-)10WD , CDR-10wd and Delivery | As Required | |
| Engineering | | | | | | | | | |
| CDRL-E-001 | DID-E-001 | Weight and Centre of Gravity Report | To define the content of the report that the Contractor must prepare and submit for the Weight and Centre of Gravity estimates. | A | PDR (-)10WD | 10 WD after submission | CDR-10WD and Delivery | | Must be provided 10 Working Days before delivery of the first vessel of the Class. |
| CDRL-E-002 | DID-E-002 | Electrical Load Analysis and Report | To define the content of the report, and associated drawings, that the Contractor must prepare and submit to show the aggregate power demands of all electrical loads on the MRB under various operating conditions. | R | PDR (-)10WD | 10 WD after submission | CDR-10WD | As Required | |
| CDRL-E-003 | DID-E-003 | C4ISR Suite Arrangement | To define the details that the Contractor must provide to demonstrate that the proposed C4ISR Suite Arrangement will be able to operate without physical or electromagnetic interference. | A | CDR (-)10WD | 10 WD after submission | | Once | |
| CDRL-E-004 | DID-E-004 | Console Arrangement | To define the details that the Contractor must provide that will demonstrate that the Console Arrangement meets all of the requirements specified in the SRD Appendix 1 to Annex A to the Contract as well as the associated standards. | A | PDR (-)10WD | 10 WD after submission | CDR-10WD | As Required | |
| CDRL-E-005 | DID-E-005 | Preliminary Design Review Data Package | To define the content of the data package that the Contractor must prepare, submit and present at the PDR for consideration, discussion, agreement and further development during the Detailed Design Phase. | R | PDR (-) 10WD | 10 WD after PDR | | Once | PDR must be scheduled no more than 50 Working Days after contract award |
| CDRL-E-006 | DID-E-006 | Critical Design Review Data Package | To define the contents of the data package that the Contractor must prepare, submit and present at the CDR for consideration, discussion and, agreement before the Production Engineering Package is finalized. | R | CDR (-) 10WD | 10 WD after CDR | | Once | CDR must be scheduled no more than 90 Working Days after contract award |

| CDRL No. | DID No. | Title | Purpose | Accept / Review | Initial Submission | Time for Canada to review and Comment | Subsequent Submission | Frequency | Remarks |
|-------------------------------------|-------------|--------------------------------|---|-----------------|--|---------------------------------------|--|-------------------------|---|
| CDRL-E-007 | DID-E-007 | Acceptance Review Data Package | To define the contents of the data package that the Contractor must develop, deliver and present at the AR for consideration, discussion and, agreement following Provisional Acceptance, after Tests and Trials. | AR | AR (-) 10 WD | 10 WD after submission | | Delivery of each Vessel | |
| CDRL-E-008 | DID-E-008 | Structural Adequacy Report | To define the contents of the report that the Contractor must prepare to demonstrate that the structure of the MRB's hull meets the SRD Appendix 1 to Annex A. | R | CDR (-) 10WD | 10 WD after submission | | Once | |
| CDRL-E-009 | DID-E-009 | Trailer TDP | To define the technical information required to design and build the trailers for MRB. | R | Successful First Article Trials (+) 10WD | 10 WD after submission | | As Required | Discuss with Canada |
| Test and Trials | | | | | | | | | |
| CDRL-TT-001 | DID-TT-001 | Dock Trial Plan and Procedure | To define the required content of define the plan and procedures that the Contractor must produce in preparing for the conduct of the Dock Trials for the Multi-Role Boat and its various equipment's and components. | A | PDR (-) 10WD | 10 WD after submission | CDR - 10 WD | | Any changes to the Dock Trial Plan and Procedure must be provided no later than 30 Working Days prior to the planned start date of each test or trial. Test and Trials Record Sheet(s) must be appended to each plan and procedure prior to the commencement of the test or trial. |
| CDRL-TT-002 | DID-TT-002 | Sea Trial Plan and Procedure | To define the required content of the plan and procedures that the Contractor must produce in preparing for the conduct of the Sea Trials for the MRB and its various equipment's and components. | A | PDR (-) 10WD | 10 WD after submission | CDR - 10WD | | Any changes to the Sea Trials and Procedures must be provided no later than 30 Working Days prior to the planned start date of each test or trial. Test and Trials Record Sheet(s) must be appended to each plan and procedure prior to the commencement of the test or trial. |
| Integrated Logistics Support | | | | | | | | | |
| CDRL-ILS-001 | DID-ILS-001 | Master Equipment List | To define the required content of the list that the Contractor must produce that will identify to Canada the equipment that has been selected in the design and construction of the MRBs and which will subsequently be used as an integral part of their in service support. To define the required content of the database that the Contractor must provide that will demonstrate to Canada that the MRBs complies with the requirements for an Inventory of Hazardous Material. | R | CDR (-) 10WD | 10 WD after submission | Updated copies on delivery of first vessel | | |
| CDRL-ILS-002 | DID-ILS-002 | Hazardous Material Database | | A | CDR (-) 10WD | 10 WD after submission | Updated copies on delivery of first vessel | | |

| CDRL No. | DID No. | Title | Purpose | Accept / Review | Initial Submission | Time for Canada to review and Comment | Subsequent Submission | Frequency | Remarks |
|-----------------|-------------|-------------------------------|---|-----------------|--|--|---|-----------|---------|
| CDRL-ILS-003 | DID-ILS-003 | Technical Data Package | To define the required content of the package of information (technical data, drawings, manuals and other supporting documentation) that the Contractor must provide to support the MRBs during their operational life cycle. | A | Manuals 2 Months before delivery of each vessel Drawings 15 Working Days before delivery of each vessel | 20 WD after initial first article submission | Once | Once | |
| CDRL-ILS-004 | DID-ILS-004 | Initial Provisioning Strategy | To define the contents of a strategy that the Contractor must provide that will establish the recommended initial provisions that will be provided for the MRBs to support their ongoing regular maintenance in view of RCN practices and capabilities. | A | CDR (-) 10WD | 10 WD after submission | IPC (-) 10 WD Updated copies on delivery of first vessel | | |
| CDRL-ILS-005 | DID-ILS-005 | Maintenance Plan | To define the contents of the manual that the Contractor must produce to establish maintenance cycles, list maintenance activities and related support requirements for the MRBs | A | CDR (-) 10WD | 10 WD after submission | Updated copies on delivery of first vessel | | |
| Training | | | | | | | | | |
| CDRL-T-001 | DID-T-001 | Training Plan | To define the required content of the plan that the Contractor must develop for the content and conduct of the Crew Familiarization, Operator and Maintenance Personnel Training. | A | CDR (-) 10WD | 10 WD after submission | | | |

9 Appendix 3 – Data Item Descriptions (DIDs)

| DATA ITEM DESCRIPTION (DID) | |
|--|---------------------------------------|
| TITLE: DID-M-001 Project Management Plan | DATA ITEM NUMBER: DID-M-001 |
| DESCRIPTION/PURPOSE: To define the required content of the plan that the Contractor must follow for managing the design and construction of the Multi-Role Boats (MRB). | |
| RELATED DIDS: DID-M-002 Master Plan and Schedule DID-M-003 Risk and Opportunity Management Plan DID-M-004 Technical Data Management Plan DID-M-005 Change Request Form DID-CM-001 Compliance Verification Matrix | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The PMP must be prepared in the Contractor's open source format. Requirements: 2.0 The PMP must demonstrate how the Contractor will balance scope, schedule and cost during the design, construction, outfit, test, trial, certification, and delivery to Canada of the MRB. 3.0 The PMP must establish the baseline for the measurement of progress and performance, based on the Master Plan and Schedule. 4.0 The PMP must address the following topics as a minimum: <ol style="list-style-type: none"> An overview of the Contractor's organization involved in the work including a description to show the reporting relationships, responsibilities, resource allocation authorities, lines of communication and project control.. The overview should include the Contractor's Organization for design and engineering, material procurement, construction, and test and trials together with Résumés of key personnel; An overview of the assumptions, constraints, applicable to the project. An overview of the Contractors' quality management certificates, qualifications, processes, and plan that will be applied to managing the quality of construction, materials, etc. in the MRB. An overview of the Human Resources (HR) plan and strategy to illustrate how the Contractor will obtain, if necessary, the HR capacity with the right education, experience and qualifications to successfully manage and complete the work; A Communication plan, which describes the communications workflow within the Contractors Organization and how communications will be handled with Canada; A description of the design, engineering and drafting capabilities that will be used for the project; | |

- g. A description of how the Contractor will handle the Logistics Support requirements of the contract including sparing, publications, translation, as necessary, and how warranty issues will be dealt with;
- h. A description of the planning, scheduling and production control systems in effect at the Contractor's facility;
- i. A description of the Cost Accounting and Budget Control system used by the Contractor;
- j. A description of how the Contractor Manages Sub-Contractors;
- k. Details of infrastructure including facilities and equipment, cranes, workshops and assembly areas for construction and outfitting, office space, IT tools and software necessary to complete the work;
- l. An overview of the information management including details of the reporting requirements for deliverables, software, formats, delivery instructions,
- m. An overview of security details.
- n. An overview of the process for task closing.
- o. A description of the Change Control Processes which will detail how the Contractor expects to make official changes to the contract or the design and how the Change Request Form will be implemented.
- p. A description of the management process that will describe problem resolution procedures.
- q. The proposed format for the WBS to at least two (2) levels;
- a. An Overview of the Environmental, Health and Safety Issues Management;
- r. Requirements management strategy defining the Contractor's methodology for managing project requirements and the process to request and approve changes to project requirements; and
- s. The Boat Construction Plan.

Deliverables:

- 5.0 One (1) electronic copy of the Contractor's PMP must be provided to Canada as part of the bid proposal, updated within 10 Working Days after contract award and thereafter as required.

| DATA ITEM DESCRIPTION (DID) | |
|---|---------------------------------------|
| TITLE: DID-M-002 Master Plan and Schedule | DATA ITEM NUMBER: DID-M-002 |
| DESCRIPTION/PURPOSE: To define the required content of the plan that the Contractor must follow for sequencing and scheduling the work associated with the design, construction and delivery of the MRBs. | |
| RELATED DIDS: DID-M-001 Project Management Plan DID-M-006 Monthly Progress Report DID-TT-001 Dock Trial Plan and Procedure DID-TT-002 Sea Trial Plan and Procedure | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Master Plan and Schedule must be prepared in MS Project, presented as a Gantt chart with dependencies included. Requirements: 2.0 The Master Plan and Schedule must identify all activities associated with the Contract in accordance with a recognized Work Breakdown Structure (WBS) with a critical path including details of any activities that affect the critical path and impact successor activities. 3.0 The Master Plan and Schedule must include, and identify the planned sequence of, all aspects and activities of design and construction, studies, analyses, Quality Conformance Inspections, testing and trials programs and associated dates that the Contractor has identified in its bid submission, and that are required to perform the work. 4.0 The Master Plan and Schedule must also include, but not limited to, all major milestones and key events such as the Preliminary and Critical Design Review, Dock and Sea Trials and Vessel Delivery. 5.0 The Master Plan and Schedule must allow time for Canada to review and respond to submitted deliverables in accordance with the SOW but may be less if mutually agreeable to by both Canada and the Contractor. 6.0 Each update to the schedule must detail, in chronological sequence, the actions and events that have taken place over the reporting period with corresponding planned start and completion dates and actual start and completion dates. 7.0 The Master Plan and Schedule must include the following: <ol style="list-style-type: none"> Design Schedule: Must identify the design activities during the design of the vessels including drawing delivery milestones; Construction Schedule: Must identify the building activities during the construction of the vessels including major material and equipment procurement activities; Major Milestones and Key Events Schedule: Must identify the milestones and Key Events; and | |

- d. Test and Trial Schedule: Must detail the scheduled sequence of all major tests and trial events leading to vessel delivery. Must clearly display the relationship of each prerequisite event for each test or trial.

Deliverables:

- 8.0 One (1) electronic copy of the Draft Master Plan and Schedule, to the extent of the information available at time of bid, must be provided to Canada as part of the bid proposal.
- 9.0 One (1) electronic copy of the Contractor's Master Plan and Schedule within 10 Working Days after contract award.
- 10.0 Status (and if necessary, updating) of the Master Plan and Schedule must be a standing item on the agenda for the Monthly Progress Review Meeting.

| | |
|---|---------------------------------------|
| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-M-003 Risk and Opportunity Management Plan | DATA ITEM NUMBER: DID-M-003 |
| DESCRIPTION/PURPOSE: To define the required content of the plan that the Contractor must follow to identify and record technical risks and opportunities for improvement. | |
| RELATED DIDS: DID-M-001 Project Management Plan DID-M-006 Monthly Progress Report | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Risk and Opportunity Management Plan must be prepared in the Contractor's open source format. Requirements: <ol style="list-style-type: none"> 2.0 The Contractor must have a plan and a process to manage risks, and implement opportunities for improvement, in accordance with industry best practices. 3.0 The Risk and Opportunity Management Plan must include the Contractor's strategy to identify, describe, assess, manage and mitigate risk, and implement opportunities for improvement, which could impact on achievement of project objectives. The plan must contain the following as a minimum: <ol style="list-style-type: none"> a. Risk management planning including the concept for management and continuing review of risk and opportunity; b. Risk and opportunity identification methodology including a description of the Risk and Opportunity Register; c. Qualitative and quantitative risk analysis and opportunity methodology; d. The development of the Risk and Opportunity Register; e. Risk and opportunity response planning methodology; and f. Risk and opportunity monitoring and control including reporting methodology to corporate management and Canada. 4.0 The Contractor's Risk Register, the template for which is to be created as part of the Risk and Opportunity Management Plan, must record project risks and be updated throughout the Contract and contain as a minimum: <ol style="list-style-type: none"> a. Risks or potential risks; b. The level of the risk; c. Potential impact of the risk; d. Date the risk was raised; e. Originator of the risk; f. Status of the risk; g. The Contractors work around plan / mitigation options and strategy; and h. Date the risk was resolved or is projected to be resolved. | |

- 5.0 The Contractor's Opportunity Register, the template for which is to be created as part of the Risk and Opportunity Management Plan, must record project opportunities and be updated throughout the Contract and contain as a minimum:
- a. Opportunity or potential opportunity;
 - b. Potential impact of the opportunity;
 - c. Date the opportunity was raised;
 - d. Originator of the opportunity;
 - e. Status of the opportunity;
 - f. The Contractors plan for implementing the opportunity; and
 - g. Date the opportunity was implemented.

Deliverables:

- 6.0 One (1) electronic copy of the Contractor's Risk and Opportunity Management Plan must be provided to Canada within 15 WD after contract award.
- 7.0 The Contractor's Risk and Opportunity Register must be updated monthly and included in the Monthly Progress Review Report and discussed, as an agenda item, at all MPRM.

| DATA ITEM DESCRIPTION (DID) | |
|---|---------------------------------------|
| TITLE: DID-M-004 Technical Data Management Plan | DATA ITEM NUMBER: DID-M-004 |
| DESCRIPTION/PURPOSE: To define the required content of the plan that the Contractor must follow to track and manage the configuration of technical and other data produced during the MRB's design and construction process. | |
| RELATED DIDS: DID-M-001 Project Management Plan DID-M-005 Change Request Form | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Technical Data Management Plan must be prepared in the Contractor's open source format. Requirements: 2.0 The Technical Data Management Plan must define the system by which the Contractor identifies tracks and manages the configuration of technical and other data produced as part of this Contract. Technical data must include reports, drawings, books and booklets, design data and other documentation. 3.0 As a minimum the Technical Data Management Plan must define the Contractor's system for: <ol style="list-style-type: none"> Identifying and numbering technical data. Note that all technical data must include the WBS code as one of the identifiers; Managing and controlling versions of data; Notifying Canada of version changes; Using a register, index or equivalent system to track in a logically organized, single instance all of the data developed; and The register, index or equivalent system must be maintained current by the Contractor throughout the work and version controlled. The register must include, but not be limited to, the following information for each document listed: <ol style="list-style-type: none"> Revision level of document (e.g. Draft, Original Issue, 1, 2, 3, etc.); Revision date of document; Revision description (if revision is as a result of a Change Request this Change Request number must be noted here; and Record of OPI for each item in the register; and Deliverables: 4.0 One (1) electronic copy of the Contractor's Technical Data Management Plan must be provided to Canada within one (1) month of contract award and updated as required. 5.0 The Contractor's register, index or equivalent used for recording technical information must be maintained current by the Contractor and submitted to the TA on request. | |

| DATA ITEM DESCRIPTION (DID) | |
|---|--|
| TITLE: DID-M-005 Change Request Forms | DATA ITEM NUMBER: DID-M-005 |
| DESCRIPTION/PURPOSE: To supplement the required content of the Design Change (1686) or Additional Work (1379) forms that the Contractor must use to initiate a change request or work arising to the Contract. | |
| RELATED DIDS: DID-M-001 Project Management Plan DID-M-002 Master Plan and Schedule DID-M-003 Risk and Opportunity Management Plan DID-M-004 Technical Data Management Plan DID-CM-001 Compliance Verification Matrix | REFERENCES: Contract Terms and Conditions – SACC Manual Clause, B5007C |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Design Change or Additional Work forms must be completed by the Contractor using the appropriate PWGSC 1686 or 1379 forms.. Requirements: <ol style="list-style-type: none"> 2.0 As a minimum, the Design Change or Additional Work forms must contain the following: <ol style="list-style-type: none"> a. Design Change or Additional Work number (which must not be duplicated or changed); b. Title of Design Change or Additional Work; c. Requirement affected; d. Proposed change, Waiver, Deviation or new work; e. Reason for the proposed change, Waiver, Deviation or new work; f. Detailed impact assessment if the Design Change or Additional Work is approved to include impact on the following: <ol style="list-style-type: none"> I. Project schedule; II. Technical data; III. Vessel capability; IV. Other areas of the design that may be affected by the change or new work; and V. Breakdown of all costs. 3.0 All Design Change or Additional Work Requests to the Technical Baseline or SRD Appendix 1 to Annex A must be accepted by Canada. | |

| DATA ITEM DESCRIPTION (DID) | |
|---|---------------------------------------|
| TITLE: DID-M-006 Monthly Progress Report | DATA ITEM NUMBER: DID-M-006 |
| DESCRIPTION/PURPOSE: To define the content of the report that the Contractor must produce on a monthly basis that must present, at a high level, an overview of the status of the project. | |
| RELATED DIDS: DID-M-002 Master Plan and Schedule DID-M-003 Risk and Opportunity Management Plan DID-E-001 Weight and Centre of Gravity Report | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The specific format of the MPR must be developed by the Contractor and agreed to by Canada. 2.0 Each MPR must be signed as complete and accurate by the designated senior officer for the Contractor who must be responsible for its content and accuracy. Requirements: <ol style="list-style-type: none"> 3.0 Each MPR must contain the following as a minimum: <ol style="list-style-type: none"> a. A qualitative and quantitative explanation of the progress of the work since the last MPR including work planned vs. actual work completed to allow Canada to evaluate the progress of the work; b. An assessment of the current status of the project including a forecast of milestones to come in the next three (3) months; c. A list of unresolved technical and materiel issues; d. An AIL identifying the status of all Action Items; e. Risk Register showing new risks, updated risk status, work around plans and areas of concerns which may require assistance or guidance from Canada; f. The Opportunity Register showing new opportunities and updated opportunity status; g. Key accomplishments/milestones to date; h. Major tasks in progress during the reporting period and reasons for any deviation; i. Any issues concerning cost, schedule and/or scope with explanations on any variations ; and j. A summary of Milestones / Progress Claim payments. 4.0 The MPR must also include identification of any work being performed under sub-contract. Deliverables: <ol style="list-style-type: none"> 5.0 One (1) electronic copy of the MPRs, including attachments, must be delivered to Canada by the Contractor no later than one (1) week after completion of the reporting period. | |

| DATA ITEM DESCRIPTION (DID) | |
|---|--|
| TITLE: DID-M-007 Design Drawings / Diagrams | DATA ITEM NUMBER: DID-M-007 |
| DESCRIPTION/PURPOSE: To define how the Contractor must prepare and submit Design Drawings / Diagrams. This DID does not cover the technical content of drawings. | |
| RELATED DIDS: | REFERENCES: CFTO D-01-400-002/SF-000 – Specification for Levels of Engineering Drawings and Associated Lists CFTO D-01-400-001/SG-000 – Standard Engineering Drawing Practices: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 All vector based Design Drawings / Diagrams must be provided in an Autodesk AutoCAD 2013 DWG format. DWG files must be monotone (black and white) unless special requirements necessitate the use of colours (e.g. safety plans). 2.0 All Design Drawings / Diagrams must include a border and title block. 3.0 Multi-sheet Design Drawings / Diagrams contained within a single file are preferred over single file per sheet methodology. 4.0 Design Drawings / Diagrams must be arranged such that their printed versions are sized in accordance with one of the options in CFTO D-01-400-001/SG-000 – Standard Engineering Drawing Practices. Requirements: <ol style="list-style-type: none"> 5.0 Design Drawing / Diagrams must be prepared in accordance with Canadian Forces Tactical Orders (CFTO) D-01-400-002/SF-000 – Specification for Levels of Engineering Drawings and Associated Lists and CFTO D-01-400-001/SG-000 – Standard Engineering Drawing Practices. 6.0 If the Contractor wishes to use alternate drawing practices, or if existing Contractor Drawings / Diagrams that are being provided as part of the Design Drawing Package do not meet these standards, then the Contractor must submit documentation describing these practices to Canada for review and acceptance. 7.0 Parts lists must be prepared integral with the drawings. On multi-sheet drawings, the parts list must be placed on sheet 1. 8.0 The Contractor must prepare a family tree drawing that depicts, in a top-down breakdown block diagram, the parent child relationships of the items in the drawing package. 9.0 The Contractor must be fully responsible for the integration of the new and existing drawings to form a complete Engineering Drawing Package. 10.0 The Government of Canada must have rights in data as detailed in the Terms and Conditions of the contract. | |

- 11.0 The Contractor must mark all Foreground & Background Engineering Drawings / Diagrams delivered under the Contract with a complete notation as detailed at “Intellectual Property Rights” and/or “Data Rights” clause(s) of the Contract.
- 12.0 The Contractor must mark all Foreground & Background Engineering Drawings / Diagrams delivered under the Contract with a complete notation as detailed at “Intellectual Property Rights” and/or “Data Rights” clause(s) of the Contract.
- 13.0 Layout and arrangement drawings must have anthropomorphically correct humans to explicitly indicate that the correct ergonomic position is accounted for. Attention must be paid to areas where human-equipment interference and impingement is possible.

Deliverables:

- 14.0 Design Drawings must be provided as per this SOW, CRDLs, and DIDs.

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-M-008 Meetings | DATA ITEM NUMBER: DID-M-008 |
| DESCRIPTION/PURPOSE: To define how and what the Contractor must prepare and include in meeting minutes and agendas to be presented at each meeting of the MRB Project. | |
| RELATED DIDS: DID-M-009 Action Items List (AIL) | REFERENCES: Section 2.2.2 |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 Meeting minutes and agendas must be formatted to a template that is agreed upon by the Contractor and Canada. 2.0 Drawings and Diagrams must be presented in accordance with DID-M-007 Design Drawings / Diagrams. Requirements: <ol style="list-style-type: none"> 3.0 Meeting minutes must include the following, as a minimum: <ol style="list-style-type: none"> a. The scope, purpose and objective of the meeting; b. Time, date and meeting duration; c. Government attendees; d. Contractor attendees; e. Status of items discussed at the meeting; f. List of decisions made at the meeting; g. Addressees of any action items; h. Target dates for the completion of action items; i. Suggested agenda items for the next meetings; and j. The date, time and location of the next meeting. 4.0 The Agenda must include the following: <ol style="list-style-type: none"> a. List of expected attendees (Contractor and Canada); b. Meeting reference number; c. Time, date, location and expected duration of the meeting; d. Facilities and equipment to be provided for attending personnel; e. Reference previous meeting minutes; f. For TPRMs; i. List of data items and documents, presentations, reports, deliverables to be reviewed / discussed or provided to support the meeting. Copies of all such data and documentation must be provided; ii. List of new subject items to be reviewed / discussed by the Contractor and / or Canada iii. List of any outstanding action items from previous meetings where appropriate. Work planned vs. actual work completed; and | |

- iv. List Contractor's progress towards fulfilling the Exit Criteria.
- g. For MPRMs;
 - i. Work planned vs. actual work completed;
 - ii. Current status of the project including a forecast of milestones to come;
 - iii. Risk Register showing updated risk status and work around plans; and
 - iv. Key accomplishments/milestones to date.

5.0 Canada and the Contractor must mutually agree to the contents of the agendas.

Deliverables:

- 6.0 The Contractor must prepare and distribute an electronic copy of the minutes and agendas of each meeting to Canada's attendees in accordance with the CDRL direction. Canada will advise the Contractor of any issues within two (2) Working Days of receiving the minutes and agenda at which point the Contractor will be responsible for revision and resubmission within two (2) Working Days.
- 7.0 Canada will inform the Contractor of the number of attendees that will be representing Canada for each meeting, within one (1) Working Day of receipt of the agenda.

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| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-M-009 Action Items List | DATA ITEM NUMBER: DID-M-009 |
| DESCRIPTION/PURPOSE: To define the content of the Action Items List that the Contractor must prepare, submit, manage, and maintain. | |
| RELATED DIDS: DID-M-008 Monthly Progress Report DID-M-008 Meetings | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ul style="list-style-type: none"> 1.0 The specific format of the Action Item List (AIL) must be developed by the Contractor and agreed to by Canada. Remarks: <ul style="list-style-type: none"> 2.0 The AIL must contain the following, as a minimum: <ul style="list-style-type: none"> a. identification number; b. title or description; c. date opened; d. action required; e. priority; f. organization responsible for taking action; g. brief statement of results in sufficient detail to clearly identify and track the action taken; h. date closed; and i. status (open/closed). 3.0 The Contractor must ensure that, once entered, no entry is deleted. 4.0 The Contractor must review the AIL at each Progress Review Meeting. 5.0 The Contractor must include a subset of the list containing all open action items as an attachment to the Monthly Progress Reports. Deliverables: <ul style="list-style-type: none"> 6.0 The Contractor must make an electronic copy of the most current AIL or any portion thereof available to Canada in accordance with CDRL, or when requested by Canada. | |

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| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-M-010 Photographs | DATA ITEM NUMBER: DID-M-010 |
| DESCRIPTION/PURPOSE: To define the size, quality, quantity and format of photographs the Contractor must produce and deliver. | |
| RELATED DIDS: | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 All photographs must be delivered at the native resolution they were taken. 2.0 Progress photographs must be at least 2240 x 1680 pixels (4 megapixel). 3.0 Display photographs must be at least 3264 x 2448 pixels (8 megapixel). 4.0 Interior and exterior photographs must be at least 2240 x 1680 pixels (4 megapixels). 5.0 All photographs must be delivered in either JPEG (Joint Photographic Experts Group) or PNG (Portable Network Graphics) format with no special requirements required to view the photographs. 6.0 All photographs must be delivered with the original Exchangeable Image File Format (EXIF) tags for date and time unmodified. 7.0 All photographs must be delivered digitally, in full color with a file name format that provides a clear indication of the subject of the photograph (including location), the date the photograph was taken and the deliverable it is related to. 8.0 All Hard copy photographs delivered must be in full color with a description, printed on or attached to the photo, that indicates date, location, hull number, digital file number and photograph contents; on 8x10 photograph paper. Requirements: <ol style="list-style-type: none"> 9.0 The photographs must include individual photographs of the following views: <ol style="list-style-type: none"> a. Close-up of the MRB at sea in motion; b. MRB moving on an angle towards the left-hand side of the photo; c. MRB moving on an angle towards the right-hand side of the photo; d. Side view profiles, both port and starboard; e. View dead ahead; f. View dead astern; and g. Interior and exterior spaces 10.0 The display photographs must include hard copies of, individual photographs of, the following views: <ol style="list-style-type: none"> a. Close-up of the MRB at sea in motion; b. MRB moving on an angle towards the left-hand or right-hand side of the photo; | |

- c. Side view profile, port or starboard;
- d. View dead ahead;
- e. View dead astern;
- f. Overall interior space;
- g. Engine space and;
- h. Console space.

Deliverables:

- 11.0 The Contractor must provide relevant and as requested progress photographs any time during the MRB production in digital format.
- 12.0 The Contractor must deliver to Canada, within 15 Working Days of Provisional Acceptance of the first of class, one (1) set of digital Photographs of the MRB.
- 13.0 The Contractor must deliver to Canada, within 15 Working Days of Provisional Acceptance of the first of class one (1) set of display photographs in hard copy.

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-M-011 Quality Plans | DATA ITEM NUMBER: DID-M-011 |
| DESCRIPTION/PURPOSE: To define the required content of the plan that the Contractor must follow for controlling the quality of the various major work processes and where there will be opportune points to witness key quality program process points on either an occasional or continuing bases as part of the quality program verification activities. | |
| RELATED DIDS: DID-M-001 Project Management Plan | REFERENCES: ISO 10005:2005 Quality Management Systems – Guidelines for Quality Plans ISO 9001:2015 Quality Management Systems - Requirements |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Quality Plans must be prepared in the Contractor’s format and delivered as a Microsoft Office Word 2013 document. Requirements: 2.0 The Quality Plan must be consistent with and subordinate to the PMP and prepared in accordance with the 2005 version of ISO 10005:2005 Quality Management Systems - Guidelines for Quality Plans, and describe, depict and define the Quality Program inspection and test activities. 3.0 The Quality Plan must address the following elements from ISO 9001:2015 Quality Management Systems - Requirements, as a minimum: a. 4.3 Determining the scope of the quality management system; b. 5.2 Policy; c. 5.3 Organizational roles, responsibilities and authorities; d. 6.2 Quality objectives and planning to achieve them; e. 7 Support; f. 8 Operation; g. 9 Performance Evaluation; and h. 10 Improvement. 4.0 A Quality Plan for each of the following major work processes must be detailed to ensure product conformity with the System Requirements Document: a. Initial hull preparation, cutting and forming; b. Pre-construction fabrication of hull components; c. Module construction, outfitting and final preparation; d. Hull assembly and fitting; e. Major equipment acceptance inspections and tests; f. Major equipment installation; and g. Installed equipment inspections and tests. 5.0 The Quality Plans may reference other documents. Where referenced documents do not already exist, but are required by the Quality Plan, the plan must identify them and also identify when, | |

how and by whom they must be prepared and approved. The documents referenced in the Quality Plans must be made available if requested.

- 6.0 The Quality Plans must describe how the Contractor will conform to the specified quality requirements of the contract and specify how the required quality activities are to be carried out including quality assurance of subcontractors.

Deliverables:

- 7.0 One (1) electronic copy of the Quality Plans must be provided to Canada within 25 Working Days of contract award and thereafter as required.

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| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-CM-001 Compliance Verification Matrix | DATA ITEM NUMBER: DID-CM-001 |
| DESCRIPTION/PURPOSE: To define how the Contractor must demonstrate that all aspects of the design comply with the requirements contained in the SRD Appendix 1 to Annex A. | |
| RELATED DIDS: DID-M-001 Project Management Plan DID-E-005 Preliminary Design Review Data Package DID-E-006 Critical Design Review Data Package | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Compliance Matrix must be in Microsoft Excel or compatible file format and in three (3) explicit columns, one (1) each for PDR, CDR and AR of the MRB. Requirements: 2.0 For each specific requirement within the MRB's SRD Appendix 1 to Annex A to the Contract, the Contractor must identify their Objective Evidence, in the form of a deliverable, which they must provide to demonstrate that the requirement has been met by the design. 3.0 In addition to the specific requirements within the SRD Appendix 1 to Annex A of the RFP, the Contractor must also demonstrate compliance with the rules, standards, and regulatory requirements, by delivering the Objective Evidence identified in the CVM. 4.0 Objective Evidence may take the form of, but not limited to, a drawing, diagram, analysis, report or trial. Where Objective Evidence provided by the Contractor is considered insufficient to meet Exit Criteria, the Contractor must deliver additional evidence, in an appropriate format, to satisfy the Canada. 5.0 It is expected that the CVM Objective Evidence will develop progressively as the design matures. Not all requirements need to be verified at each phase due to the fact that as the project matures more of the requirements will be able to be shown to have been met, through the delivery of Objective Evidence. 6.0 Each row of the CVM must describe the individual requirements that are to be met at each design phase, and each column must describe the Objective Evidence the Contractor must provide to demonstrate respective requirement compliance before approval will be given to move to next phase of the project. 7.0 For the final column of the CVM "Acceptance Review," the Contractor must also identify inspections, trials and Objective Evidence that is to be carried out to demonstrate that the requirements in the SRD Appendix 1 to Annex A have been met during build and vessel acceptance. Deliverables: | |

- 8.0 One (1) electronic copy of the draft CVM must be provided by the Contractor at the Kick Off Meeting.
- 9.0 One (1) electronic copy of the final CVM must be provided by the Contractor Five (5) Working Days after Kick Off Meeting.
- 10.0 One (1) electronic copy of the draft CVM Objective Evidence, if not included in the PDR Data Package, must be provided by the Contractor 10 Working Days prior to the PDR.
- 11.0 One (1) electronic copy of the final CVM Objective Evidence, if not included in the PDR Data Package, must be provided by the Contractor two (2) Working Days prior to the PDR as well as a list of changes from the draft CVM.
- 12.0 One (1) electronic copy of the draft CVM Objective Evidence, if not included in the CDR Data Package, must be provided by the Contractor 10 Working Days prior to the CDR.
- 13.0 One (1) electronic copy of the final CVM Objective Evidence, if not included in the CDR Data Package, must be provided by the Contractor two (2) Working Days prior to the CDR as well as a list of changes from the draft CVM.
- 14.0 One (1) copy of Draft CVM at provisional Acceptance.
- 15.0 One (1) electronic copy of the final CVM must be provided by the Contractor on delivery of each vessel of the class showing that all requirements from the SRD Appendix 1 to Annex A have been met.

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-E-001 Weight and Centre of Gravity Report | DATA ITEM NUMBER: DID-E-001 |
| DESCRIPTION/PURPOSE: To define the content of the report that the Contractor must prepare and submit for the Weight and Centre of Gravity estimates. | |
| RELATED DIDS: DID-M-006 Monthly Progress Report | REFERENCES: D-03-003-024/SG-001 Work Breakdown Structure for Canadian Forces Ships and Submarines |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Weight and Centre of Gravity Report and data must be in book form and in Microsoft Excel or compatible spreadsheet file format. Requirements: 2.0 The Weight and Centre of Gravity report must be presented in accordance with the WBS for Canadian Forces Ships and Submarines. 3.0 The Contractor must create a Trim and Stability booklet for the MRB in accordance with ISO/DIS 12217-1. 4.0 The Weight and Centre of Gravity Report must include the following: <ul style="list-style-type: none"> a. Executive Summary describing current weight and centres of gravity; b. Summary Table of the current weight estimate; c. Table indicating differences between the current and previous weight estimate for each WBS group; d. Assessment of current design and construction margins remaining in the weight estimate, and recommendations on changes, if applicable; e. Impact of updates on the design, including the vessels floatation characteristics in its various loading conditions; f. Lightship Weight Summary; g. Loading Conditions, at the variable loads specified in the SRD Appendix 1 to Annex A, for Performance Analysis; and h. Detailed Lightship Weight estimate (to an equipment and component level of detail). 5.0 Each element in the detailed Lightship Weight estimate must include: <ul style="list-style-type: none"> a. A WBS Identifier; b. A brief description of the item including make and model number; c. The weight in kilograms to one decimal place; d. The identity of the source of the weight (estimated, calculated, vendor supplied or weighed); and e. Longitudinal, transverse and vertical centre of gravity coordinates in meters to two decimal places. | |

- 6.0 The Contractor must include in the weight estimates, for both the PDR and the CDR, the remaining design margin and the weight and centre of gravity allocation of the construction margin.
- 7.0 On first of class completion, and following the formal weighing of the vessel, and a certified determination of its centre of gravity, the Weight and Centre of Gravity Report must be updated to reflect the as-built lightship and centre of gravity.
- 8.0 The Contractor must use the as-built weights and centre of gravity to determine the through life margin available for the MRBs and document the resulting margins in the Trim and Stability Book for Canada and the chosen Class Society.
- 9.0 For all subsequent vessels, provided that the lightship displacement is within 1% of the first of class, the first of class Weight and Centre of Gravity Report can be used as is.

Deliverables:

- 10.0 Until the first of class MRB is accepted by Canada, the Contractor must monitor its weight and include this update as part of the Monthly Progress Report (DID-M-006),
- 11.0 One (1) electronic copy of the Weight and Centre of Gravity Report must be provided by the Contractor 10 Working Days prior to the PDR.
- 12.0 One (1) electronic copy of the Weight and Centre of Gravity Report must be provided by the Contractor 10 Working Days prior to the CDR.
- 13.0 One (1) electronic copy of the Weight and Centre of Gravity Report must be provided by the Contractor 10 Working Days prior to the delivery of the first and all subsequent vessels.

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-E-002 Electrical Load Analysis and Report | DATA ITEM NUMBER: DID-E-002 |
| DESCRIPTION/PURPOSE: To define the content of the report, and associated drawings, that the Contractor must prepare and submit to present the aggregate power demands of all electrical loads on the MRB under various operating conditions. | |
| RELATED DIDS: DID-M-007 Design Drawings / Diagrams DID-E-001 Weights and Centre of Gravity Report | REFERENCES: D-03-003-024/SG-001 Work Breakdown Structure for Canadian Forces Ships and Submarines CSA C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats" TP1332 Construction Standards for Small Vessels |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Electrical Load Analysis (ELA) and Report must be in book form and in Microsoft Excel or compatible file format. 2.0 The results must be presented using the same WBS as used in the Weight and Centre of Gravity Report (DID-E-001). 3.0 The ELA and Report must include text, graphs and supporting calculations. 4.0 Supporting drawings must be presented in a format as indicated in DID-M-007 Design Drawings / Diagrams. Requirements: <ol style="list-style-type: none"> 5.0 The ELA must consist of a complete tabulation, by WBS Group, of all user equipment, their connected power and the estimated power required under various operating states of the vessel. 6.0 The operating states to be considered must include: <ol style="list-style-type: none"> a. Vessel on board parent ship, on ship power, heating engine fuel tanks and charging batteries; b. Vessel starting; c. Running on engine driven alternators with all electrical and electronic equipment operational; d. Vessel engine stopped, all electrical and electronic equipment operational and running on vessel batteries. 7.0 Calculations must be tabulated and totals provided to confirm the sizing of the alternators, chargers and batteries. 8.0 Estimated demand and diversity factors must be applied for all conditions. 9.0 The ELA must include the kW, kVA and power factor ratings of the selected equipment to be installed and the quantities and usage factors for all electrical consumers. In the ELA the Contractor must categorized loads as estimated, measured or vendor specific equipment values. 10.0 Design, Construction and the specified through life margins must be incorporated into the ELA as appropriate to each design phase. 11.0 The Contractor must provide a summary of the aggregate loads with estimated demand with margins and factors are required for each of the WBS Groups presented. 12.0 The Contractor must identify margins. | |

- 13.0 A single line diagram must be provided by the Contractor to illustrate the proposed electrical system configurations. These drawings must include generation equipment, capacity levels, points of transfer or switching, distribution arrangements and significant loads.
- 14.0 Preliminary equipment ratings, such as generator ratings and circuit breaker sizes must be indicated.
- 15.0 The ELA Report must include a description of the electrical distribution system and its component types and sizes.
- 16.0 The ELA Report must also describe how the design complies with the SRD Appendix 1 to Annex A to the Contract and statutory regulations.

Deliverables:

- 17.0 One (1) electronic copy of the ELA and Report must be provided by the Contractor 10 Working Days prior to the PDR.
- 18.0 One (1) electronic copy of the ELA and Report must be provided by the Contractor 10 Working Days prior to the CDR.

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-E-003 C4ISR Suite Equipment Arrangement | DATA ITEM NUMBER: DID-E-003 |
| DESCRIPTION/PURPOSE: To define the details that the Contractor must provide to demonstrate that the proposed C4ISR Suite Arrangement will be able to operate without physical or electromagnetic interference. | |
| RELATED DIDS: DID-M-007 Design Drawings / Diagrams | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The narrative and any calculations associated with the C4ISR Suite Arrangement must be presented in Contractor developed open source format. 2.0 Supporting drawings must be presented in a format as indicated in DID-M-007 Design Drawings / Diagrams. Requirements: <ol style="list-style-type: none"> 3.0 The C4ISR Suite Arrangement must contain: <ol style="list-style-type: none"> a. A listing of all antennas, cables and equipment that are part of the proposed antennas configuration, as well as their basic electrical and physical parameters and vendor furnished information; b. A C4ISR Suite Arrangement drawing showing the location, orientation and required clearances of all antennas, sensors and other electronic equipment on the MRB; c. A sectional view through the MRB at the mast location and including a notional ship's hull demonstrating that with reasonable MRB heel, and notional ship's hull flare, that the navigational and communications antenna are <u>not</u> likely to be damaged. d. A plan view of the MRB, at the mast equipment height, must also be provided demonstrating that the MRB's antenna are clear of being damaged during normal operations. e. A narrative, indicating all factors considered for the proposed antennae arrangement, and the impact of each factor on the selection of the proposed configuration; and f. The results of all analyses, calculations, simulation and modeling undertaken by the Contractor to verify that the Electro-Magnetic Interference (EMI) and Radio Frequency Interference (RFI) are within acceptable limits. Deliverables: <ol style="list-style-type: none"> 4.0 One (1) electronic copy of the C4ISR Suite Arrangement including text, drawings and tabulated results must be provided by the Contractor 10 Working Days prior to the CDR. | |

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-E-004 Console Arrangement | DATA ITEM NUMBER: DID-E-004 |
| DESCRIPTION/PURPOSE: To define the details that the Contractor must provide that will demonstrate that the Console Arrangement meets all of the requirements specified in the SRD Appendix 1 to Annex A to the Contract, as well as the associated standards. | |
| RELATED DIDS: DID-M-007 Design Drawings / Diagrams | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Console Arrangement drawing must be presented in a format as indicated in DID-M-007 Design Drawings / Diagrams. 2.0 Supporting documentation must be presented in Contractor developed open source format. 3.0 Sightlines must be demonstrated by 3D modeling or physical mock-up. Requirements: <ol style="list-style-type: none"> 4.0 The Console Arrangement drawing must provide annotated plan, profile and sectional views through the console showing the location, and name of all fitted equipment, in relation to the Coxswain's and Navigator's seating location. 5.0 Supporting documentation must demonstrate that the proposed Console Arrangement meets the SRD Appendix 1 to Annex A to the Contract. 6.0 The supporting documentation must describe the methodology used to optimize the layout and the functional and operational factors considered during development of the layout. 7.0 The supporting documentation must include a copy of the drawings and computer graphics used to provide a perspective of equipment locations, sightlines and the ergonomics to be encountered by the Coxswain and Navigator. Deliverables: <ol style="list-style-type: none"> 8.0 One (1) electronic copy of the Console Arrangement and supporting documentation must be provided by the Contractor 10 WD prior to the PDR. 9.0 One (1) electronic copy of the Console Arrangement and supporting documentation must be provided by the Contractor 10 WD prior to the CDR. 10.0 10 Working Days for Canada's response | |

| DATA ITEM DESCRIPTION (DID) | |
|---|---------------------------------------|
| TITLE: DID-E-005 Preliminary Design Review Data Package | DATA ITEM NUMBER: DID-E-005 |
| DESCRIPTION/PURPOSE: To define the content of the data package that the Contractor must prepare, submit and present at the PDR for consideration, discussion, agreement and further development during the Detailed Design Phase. | |
| RELATED DIDS: DID-M-007 Design Drawings / Diagrams DID-E-001 Weight and Centre of Gravity Report DID-E-002 Electrical Load Analysis and Report DID-E-003 C4ISR Suite Arrangement DID-E-004 Console Arrangement DID-TT-001 Dock Trial Plan and Procedure DID-TT-002 Sea Trial Plan and Procedure | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Preliminary Design Data Package must consist of drawings, reports and analysis. Reports and analysis can be in Contractor Developed open source formats. Drawings must be produced in accordance with DID-M-007 Design Drawings / Diagrams. Requirements: 2.0 The Contractor must provide, as a minimum, the following (as applicable to the vessel type) information, drawings and background material for the PDR in addition to those required by other DIDs: <ol style="list-style-type: none"> a. General: <ol style="list-style-type: none"> I. General Arrangement – Including outboard profile, centre line profile, main deck and mast; II. Ergonomic Interference - Including all identified areas of personnel and MRB interference III. Working Deck Layout – Detailed arrangement demonstrating functionality of equipment and layout for required operations and maintenance; IV. Engine Compartment - Detailed arrangement demonstrating functionality of equipment and layout for required operations and maintenance; and V. Lines Plan and Table of Offsets. b. Structural Drawings including arrangements for all cable penetrations in decks and bulkheads: <ol style="list-style-type: none"> I. Structural Profile and Decks; II. Mid-Ship Section; III. Shell Plating and Framing Expansion; IV. Transverse and Longitudinal Bulkheads; V. Structural and Non Structural Tanks; VI. Mast Structure; and VII. Lifting and Towing Arrangements and Details. | |

- c. Outfit Drawings:
 - I. Collar Arrangement;
 - II. Towing Arrangement and Fittings;
 - III. Stowage and Securing Arrangements; and
 - IV. Anchors and Mooring Arrangement.
- d. Schedules Lists and Plans:
 - I. Hatches Schedule; and
 - II. Safety Plan showing Fire Protection and Emergency Equipment.
- e. Electrical and Electronic Drawings:
 - I. Electronic Equipment Arrangement; and
 - II. Electrical Single Line Diagram for all Systems;
- f. Calculations and Analysis:
 - I. Tank Capacity Plan;
 - II. Speed, Power, Range and Endurance Report;
 - III. Anode requirements and location;
 - IV. Weight and Centre of Gravity Report (DID-E-001);
 - V. Electrical Load Analysis and Report (DID-E-002);
 - VI. C4ISR Suite Arrangement (DID-E-003);
 - VII. Console Arrangement (DID-E-004);
 - VIII. Dock Trial Plan and Procedure (DID-TT-001); and
 - IX. Sea Trial Plan and Procedure (DID-TT-002).

Deliverables:

- 3.0 One (1) electronic copy of the draft PDR Data Package must be provided by the Contractor 10 Working Days prior to the PDR.
- 4.0 One (1) electronic copy of the final PDR Data Package must be provided by the Contractor two (2) Working Days prior to the PDR as well as list of changes from the draft PDR.

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| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-E-006 Critical Design Review Data Package | DATA ITEM NUMBER: DID-E-006 |
| DESCRIPTION/PURPOSE: To define the contents of the data package that the Contractor must prepare, submit and present at the CDR for consideration, discussion and, agreement before the Production Engineering Package is finalized. | |
| RELATED DIDS: DID-M-007 Design Drawings / Diagrams DID-E-001 Weight and Centre of Gravity Report DID-E-002 Electrical Load Analysis and Report DID-E-003 C4ISR Suite Arrangement DID-E-004 Console Arrangement DID-E-007 Structural Adequacy Report DID-TT-001 Dock Trial Plan and Procedure DID-TT-002 Sea Trial Plan and Procedure DID-ILS-001 Master Equipment List DID-ILS-002 Hazardous Material Database DID-ILS-004 Initial Provisioning Strategy DID-ILS-005 Maintenance Plans DID-T-001 Training Plan | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The CDR Data Package must consist of drawings, reports and analysis. Reports and analysis can be in Contractor Developed open source formats. Drawings must be produced in accordance with DID-M-007 Design Drawings / Diagrams. Requirements: <ol style="list-style-type: none"> 2.0 The Contractor must provide, as a minimum, the following (as applicable to the vessel type) information, drawings and background material for the CDR in addition to those required by other DIDs: <ol style="list-style-type: none"> a. General: <ol style="list-style-type: none"> I. General Arrangement – Including outboard profile, centre line profile, main deck and mast; II. Ergonomic Interference – Including all identified areas of personnel and MRB interference. III. Working Deck Layout – Detailed arrangement demonstrating functionality of equipment and personnel, layouts and clearances for required operations and maintenance, including Naval Boarding Party deployment, Rescue Boat configuration with stocks litter, Diving operation configuration, and arrangement for carrying cargo; IV. Engine Compartment - Detailed arrangement demonstrating functionality of equipment and layout for required operations and maintenance; V. Lines Plan and Table of Offsets; VI. Tank Capacity Plan; and; | |

- VII. Lifting Points.
- b. Structural Drawings including arrangements for all cable penetrations of deck and bulkhead:
 - I. Structural Profile and Decks;
 - II. Mid-Ship Section;
 - III. Shell Plating and Framing Expansion;
 - IV. Transverse and Longitudinal Bulkheads;
 - V. Machinery and Equipment Foundations. Where resilient mountings are installed, the type and quantity of the mounting must be listed;
 - VI. Structural and Non Structural Tanks;
 - VII. Lifting and Towing Arrangements and Details; and
 - VIII. Welding Schedule (if applicable).
- c. Outfit Drawings:
 - I. Guard Rails, Handrails and Railings;
 - II. Ladders;
 - III. Collar Arrangement;
 - IV. Anchor and Mooring Arrangement;
 - V. Stowage and Securing Arrangements;
 - VI. Corrosion Protection System; and
 - VII. Firefighting and Lifesaving Arrangement.
- d. Schedules Lists and Plans:
 - I. Paint Schedule;
 - II. Insulation Schedule;
 - III. Deck Covering Schedule;
 - IV. Hatches Schedule; and
 - V. Safety Plan showing Fire Protection, Fire Fighting and Emergency Equipment.
- e. Piping and Instrumentation Diagrams:
 - I. Engine Air Intake and Exhaust Arrangement;
 - II. Fixed Fire Extinguishing/Suppression System;
 - III. Bilge System;
 - IV. Diesel Fuel Oil System;
 - V. Cooling Water System;
 - VI. Scuppers and Deck Drains; and
 - VII. Compressed Air System.
- f. Steering System;
- g. Control , Monitoring and Alarm Systems;
- h. Propulsion Control , Monitoring and Alarm Systems;
- i. Electrical and Electronic Drawings:
 - I. Electrical Distribution Panels including Wiring Diagrams;
 - II. Electronic Equipment Interconnect Diagrams;
 - III. Interior Communication Diagram;
 - IV. Exterior Communication Diagram;
 - V. Lighting Key Plan;
 - VI. Electronic Equipment Arrangement;
 - VII. Electrical Single Line Diagram;
 - VIII. Electrical Termination details for all Electrical Systems;

- IX. Electrical Cable Schedule listing type, voltage and temperature rating, number and size of conductors, current rating, identification number, and weight per metre; and
- X. 12 Volt Receptacles.
- j. Calculations and Analysis:
 - I. Speed, Power, Range and Endurance Report;
 - II. Weights and Centre of Gravity Report (DID-E-001);
 - III. Electrical Load Analysis and Report (DID-E-002);
 - IV. C4ISR Suite Arrangement (DID-E-003);
 - V. Console Arrangement (DID-E-004);
 - VI. Structural Adequacy Report (DID-E-007);
 - VII. Dock Trial Plan and Procedure (DID-TT-001);
 - VIII. Sea Trial Plan and Procedure (DID-TT-002);
 - IX. Master Equipment List (DID-ILS-001);
 - X. Hazardous Material Database (DID-ILS-002);
 - XI. Initial Provisioning Strategy (DID-ILS-004);
 - XII. Maintenance Plan (DID-ILS-005); and
 - XIII. Training Plan (DID-T-001).

Deliverables:

- 3.0 One (1) electronic copy of the draft CDR Design Data Package must be provided by the Contractor 10 Working Days prior to the CDR.
- 4.0 One (1) electronic copy of the final CDR Design Data Package must be provided by the Contractor two (2) Working Days prior to the CDR as well as the list of changes from the draft CDR.

| DATA ITEM DESCRIPTION (DID) | |
|---|---------------------------------------|
| TITLE: DID-E-007 Acceptance Review Data Package | DATA ITEM NUMBER: DID-E-007 |
| DESCRIPTION/PURPOSE: To define the contents of the data package that the Contractor must develop, deliver and present at the AR for consideration, discussion and, agreement following Provisional Acceptance, after Tests and Trials. | |
| RELATED DIDS: DID-M-011 Design Drawings DID-E-001 Weight and Centre of Gravity Report DID-E-002 Electrical Load Analysis and Report DID-E-003 C4ISR Suite Arrangement DID-E-004 Console Arrangement DID-E-007 Structural Adequacy Report DID-TT-001 Dock Trial Plan and Procedure DID-TT-002 Sea Acceptance Trials and Procedure DID-ILS-001 Master Equipment List DID-ILS-002 Hazardous Materials Database DID-ILS-005 Maintenance Plan DID-ILS-004 Initial Provisioning Strategy DID-T-001 Training Plan | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The AR Data Package must consist of drawings, reports and analysis. Reports and analysis can be in Contractor Developed formats. Drawings must be produced in accordance with DID-M-011 Design Drawings. Requirements: 2.0 The Contractor must provide the CVM with all completed Objective Evidence from the Exit Criteria for the first article MRB. For subsequent MRBs Objective Evidence must be provided if it is unique to a specific MRB hull or if an update to the Objective Evidence has been completed. 3.0 The Contractor must provide final Class and Regulatory approvals, notations and certificates for each MRB. 4.0 The Contractor must provide updated versions of any documents that have changed in the CDR Data Package, in accordance with CDRL-E-006 and DID-E-006. 5.0 The Contractor must provide the Trials Reports for each MRB. 6.0 The Trials Report must: <ol style="list-style-type: none"> provide a purpose for the trial; provide a reference to the SRD Appendix 1 to Annex A requirement the trial pertains to; provide a scanned copy of all Record Sheets; provide a summary of the trial outcome; | |

- e. identify by name and position, all personnel involved in the conduct, supervision and witnessing of the trial;
- f. identify any problems encountered during the trial and the actions taken;
- g. provide details for any missed steps, defects or deficiencies discovered during the conduct of the test or trial; and
- h. specify the actions the Contractor proposes to rectify those deficiencies.

Deliverables:

- 7.0 One (1) hard copy and one (1) electronic copy of the Trials Data Booklet containing the original, signed trials data sheets must be provided by the Contractor upon completion of the trials program on the first of class.
- 8.0 One (1) electronic copy of the AR Data Package must be provided by the Contractor 10 working days before final AR.

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| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-E-008 Structural Adequacy Report | DATA ITEM NUMBER: DID-E-008 |
| DESCRIPTION/PURPOSE: To define the contents of the report that the Contractor must prepare to demonstrate that the structure of the MRB's hull, mast and lifting arrangements meet chosen Class Society regulations and the System Requirements. | |
| RELATED DIDS: | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Structural Adequacy Report can be presented in Contractor developed open source format but must include text, all supporting calculations and drawings. Requirements: 2.0 The Contractor must evaluate the performance of any primary, secondary and tertiary structure in accordance with chosen Class Society for this type of vessel to ensure that there are no adverse impacts with respect to the vessel's operation. 3.0 The Contractor must analyze foundations which includes, but not be limited to, main engines, stern drives, hydraulic system, gun pedestals, mast or arch, tow points, launching, and lifting and securing hard points and any other components deemed necessary to be assessed by the chosen Class Society. 4.0 Where adverse performance is found, the Contractor must demonstrate the mitigating action taken. In the event that the analysis identifies excessive stresses within normal operational speeds, alternative configurations must be provided to bring the results to acceptable values. 5.0 The Contractor must clearly identify all methodologies, assumptions and limiting states used in the structural analysis. Deliverables: 6.0 One (1) electronic copy of the draft Structural Adequacy Report must be provided by the Contractor 10 Working Days before the CDR. 7.0 One (1) electronic copy of the final Structural Adequacy Report must be provided by the Contractor two (2) Working Days before the CDR as well as the list of changes from the draft Structural Adequacy Report. | |

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| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-E-009 Trailer TDP | DATA ITEM NUMBER: DID-E-009 |
| DESCRIPTION/PURPOSE To define the technical information required to design and build the trailers for MRB. | |
| RELATED DIDS: | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The Trailer TDP can be presented in Contractor developed open source format but must include text and drawings. Requirements: 2.0 The Trailer TDP must include, but is not limited to, the following information <ul style="list-style-type: none"> a. Maximum point load pressure on the hull; b. Length Over All; c. Beam with collars and without collars attached; d. Depth from below the collars to keel; e. Over all height when mast is collapsed; f. Any locations on the hull where pressure or trailer contact would be excluded, including but not limited to, through hull transducer location, strakes, drains, and propulsion system location; g. Distance between transvers framing; h. Maximum force on tie down points; i. Lines Plan; j. Deep Departure weight; k. Center of Gravity; and l. Shell Expansion (or equivalent) with hull material thickness at all locations. Deliverables: 3.0 One (1) electronic copy of the Trailer TDP must be provided by the Contractor 10 Working Days after the successful first article trials. | |

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-TT-001 Dock Trial Plan and Procedure | DATA ITEM NUMBER: DID-TT-001 |
| DESCRIPTION/PURPOSE: To define the required content of the plan and procedures that the Contractor must produce in preparing for the conduct of the Dock Trials for the MRB and its various equipment's and components. | |
| RELATED DIDS: DID-M-002 Master Plan and Schedule | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Dock Trial Plan and Procedure can be presented in Contractor developed open source format. 2.0 The Dock Trial Plan and Procedure schedule must be developed in MS Project format. Requirements: <ol style="list-style-type: none"> 3.0 The Dock Trial Plan and Procedure must outline the Contractor's test and trial policy, describing, in general, how tests and trials will be sequenced so that the end result is a vessel which has had every component and system proven as properly installed and functional. 4.0 The Dock Trial Plan and Procedure must give a detailed description of all test and trial stages and which tests and trials will be conducted in those stages, outlining the logic behind the trial and sequencing. 5.0 The Dock Trial Plan and Procedure must describe the structure of the test and trial organization and any responsibility and reporting lines within that structure. 6.0 Each Dock Trial Plan and Procedure must provide a purpose for each test or trial, along with the SRD Annex A requirement/reference it pertains to. 7.0 The Dock Trial Plan and Procedure must provide any prerequisites which must be met prior to conducting each test or trial. 8.0 The Dock Trial Plan and Procedure must outline the conditions or parameters under which each test or trial is to be conducted, including any safety precautions peculiar to that particular test or trial. 9.0 The Dock Trial Plan and Procedure must give details of applicable statutory regulatory requirements to be met for each test or trial. 10.0 The Dock Trial Plan and Procedure must give a detailed description of the steps required to conduct each test or trial. 11.0 The Dock Trial Plan and Procedure must provide a Record Sheet for each test or trial which must include check-off lists for readings and observations that must be taken during the test or trial and space for recording the readings, observations and data that are collected. The Record Sheet must be appended to each plan and procedure prior to the commencement of the test or trial. 12.0 The Dock Trial Plan and Procedures must include the following as a minimum for each trial: | |

- a. The list of prerequisite mandatory inspection reports required in order to proceed with the Dock Trial;
 - b. The detailed list of supplies and systems required including as applicable:
 - I. Electrical power supply;
 - II. Air, fuel, oil and water supplies;
 - III. Communication systems required; and
 - IV. Alarm & monitoring system communications required.
 - c. The list of the personnel required for:
 - I. Vessel operation; and
 - II. The readings and data collection.
 - d. The safety requirements onboard and on the pier;
 - e. The list of accepted test and data sheets to be filled during the trial;
 - f. The sequential order and type of trials to be conducted on the equipment and their respective performances to be obtained.
- 13.0 A schedule must be incorporated into the Dock Trial Plan and Procedures and provide an estimated duration for each of the main activities described.

Deliverables

- 14.0 One (1) electronic copy of the Draft Dock Trial Plan and Procedure must be provided by the Contractor 10 Working Days prior to the PDR.
- 15.0 One (1) electronic copy of the Final Dock Trial Plan and Procedure must be provided by the Contractor 10 Working Days prior to the CDR.
- 16.0 Any changes to the Dock Trial Plan and Procedure must be provided not later than 30 Working Days prior to the planned start date of each test or trial.

| DATA ITEM DESCRIPTION (DID) | |
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| TITLE: DID-TT-002 Sea Trial Plan and Procedure | DATA ITEM NUMBER: DID-TT-002 |
| DESCRIPTION/PURPOSE: To define the required content of the plan and procedures that the Contractor must produce in preparing for the conduct of the Sea Trials for the MRB and its various equipment's and components. | |
| RELATED DIDS: DID-M-002 Master Plan and Schedule | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Sea Trial Plan and Procedure must be presented in Contractor developed open source format. 2.0 The Sea Trial Plan and Procedure schedule must be developed in MS Project format. Requirements: <ol style="list-style-type: none"> 3.0 The Sea Trial Plan and Procedure must outline the Contractor's trial policy, describing, in general, how trials will be sequenced so that the end result is a vessel which has had every component and system proven as properly installed and functional. 4.0 The Sea Trial Plan and Procedure must give a detailed description of all trial stages and which trials will be conducted in those stages, outlining the logic behind the trial and sequencing. 5.0 The Sea Trial Plan and Procedure must describe the structure of the trial organization and any responsibility and reporting lines within that structure. 6.0 The Sea Trial Plan and Procedure must provide a purpose for each trial, along with the SRD Appendix 1 to Annex A requirement/reference it pertains to. 7.0 The Sea Trial Plan and Procedure must provide any prerequisites which must be met prior to conducting each trial. 8.0 The Sea Trial Plan and Procedure must outline the conditions or parameters under which each trial is to be conducted, including any safety precautions peculiar to that particular trial. 9.0 The Sea Trial Plan and Procedure must give details of applicable statutory regulatory requirements to be met for each trial. 10.0 The Sea Trials Plan and Procedure must give a detailed description of the steps required to conduct each trial. 11.0 The Sea Trial Plan and Procedures must provide a Record Sheet for each trial which must include check-off lists for readings and observations that must be taken during the trial and space for recording the readings, observations and data that are to be collected. The Record Sheet must be appended to each plan and procedure prior to the commencement of the trial. 12.0 The Sea Trial Plan and Procedure must include the following as a minimum: <ol style="list-style-type: none"> a. The list of prerequisite mandatory inspection reports required in order to proceed with the Sea Trial; b. The detailed list of supplies and systems required including as applicable: <ol style="list-style-type: none"> i. Electrical power supply; | |

- II. Air, fuel, oil and water supplies;
 - III. Communication systems required; and
 - IV. Alarm & monitoring system communications required.
 - c. The list of the personnel required for:
 - I. The readings and data collection; and
 - II. The vessel's operations.
 - d. The security and safety requirements onboard;
 - e. The list of accepted test and data sheets to be filled during the trial;
 - f. The sequential order and type of trials to be conducted on the equipment and their respective performances to be obtained.
- 13.0 Based on the Vessel's Sea Trial and Procedures, the Contractor must develop and deliver a Sea Trial schedule. The schedule must provide an estimated duration of each of the main activities described in the SAT Plan and Procedures.

Deliverables:

- 14.0 One (1) electronic copy of the Draft Sea Trial Plan and Procedure must be provided by the Contractor 10 Working Days prior to the PDR.
- 15.0 One (1) electronic copy of the Final Sea Trial Plan and Procedure must be provided by the Contractor 10 Working Days prior to the CDR.
- 16.0 Any changes to the Sea Trial Plan and Procedure must be provided not later than 30 Working Days prior to the planned start date of each test or trial.

| DATA ITEM DESCRIPTION (DID) | |
|---|---|
| TITLE: DID-ILS-001 Master Equipment List | DATA ITEM NUMBER: DID-ILS-001 |
| DESCRIPTION/PURPOSE: To define the required content of the list that the Contractor must produce that will identify to Canada the equipment that has been selected in the design and construction of the MRB and which will subsequently be used as an integral part of their in service support. | |
| RELATED DIDS: DID-E-001 Weight and Centre of Gravity Report DID-ILS-004 Initial Provisioning Strategy DID-ILS-005 Maintenance Plan | REFERENCES: D-01-100-214/SF-000 Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment |
| PREPARATION INSTRUCTIONS: Format: 1.0 The specific format of the Master Equipment List (MEL) must be developed by the Contractor and agreed to by Canada. Requirements: 2.0 The MEL should be structured in accordance with the WBS used for the MRB's Weight and Centre of Gravity Report (DID-E-001) and must identify for each piece of machinery or equipment: <ol style="list-style-type: none"> a. Unique ID Number; b. Manufacturers Name and NCAGE (if applicable); c. NATO Stock Number (NSN) (if applicable) d. Production lead time; e. Procurement lead time; f. Shelf Life; g. Delivery packaging dimensions (LxWxH) and weight; h. Maintenance Level (if applicable); i. Special Tool and Test Equipment; j. Unit of Issue; k. Unit Price; l. Equipment Nomenclature, description; m. Work Breakdown Structure number; n. Make; o. Model; p. Capacity and / or rating; q. Quantity; r. Serial Number; s. Nameplate Data; t. OEM part numbers; u. Manufacturer's Name and Address; and v. The Regulatory Body Certificates (if applicable). | |

- 3.0 The following OEM Warranty information must be provided:
- a. Coverage;
 - b. Terms; and
 - c. Start and End Date.
- 4.0 The MEL must identify the equipment forming components of the systems listed below:
- a. Main propulsion system, including:
 - I. Engines and associated systems;
 - II. Shaft line and components; and
 - III. Gearbox.
 - b. Electrical power generation and distribution system, including:
 - I. Generators;
 - II. Batteries;
 - III. Battery Charging System;
 - IV. Fuse Panels, and;
 - V. Distribution Systems;
 - c. Auxiliary systems, including:
 - I. Bilge System;
 - II. Fuel Oil Handling System;
 - III. Firefighting system; and
 - IV. Ventilation Systems.
 - d. Navigation System;
 - e. Steering system;
 - f. C4ISR Equipment;
 - g. Machinery control system, including:
 - I. Propulsion Machinery Control and Monitoring System;
 - II. Electrical Power Generation Control and Monitoring System;
 - III. Console Controls.
 - h. External Communication system; and
 - i. Internal Communication Systems.

5.0 The MEL must identify all components, sub-assemblies and parts down to the lowest repairable level as identified in the Maintenance Plan (DID-ILS-005) and one level below that.

Deliverables:

- 6.0 One (1) electronic copy of the proposed content of the MEL, in terms of systems/equipment to be included, must be delivered 10 Working Days before the CDR.
- 7.0 One (1) electronic copy of the final updated MEL must be provided on delivery of the first vessel of the class.

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| DATA ITEM DESCRIPTION (DID) | |
| TITLE: DID-ILS-002 Hazardous Material Database | DATA ITEM NUMBER: DID-ILS-002 |
| DESCRIPTION/PURPOSE: To define the required content of the database that the Contractor must provide that will demonstrate to Canada that the MRB's comply with the requirements for an Inventory of Hazardous Material. | |
| RELATED DIDS: | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Hazardous Material Database must be provided by the Contractor as an electronic spreadsheet or database. 2.0 The Contractor must provide a Digital Versatile Disc (DVD) containing current copies of the Material Safety Data Sheets (MSDS) for all material/controlled products used on the vessels. The MSDS must be provided in both official languages. Requirements: <ol style="list-style-type: none"> 3.0 The Hazardous Material Database must contain the following information: <ol style="list-style-type: none"> a. Where there are no acceptable alternatives to mercury, the application, location and detailed information on the product where it is used; b. Where regulated Halocarbons are used, the application, location and detailed information on the products and where they are used; c. Where radioisotopes are incorporated into or used on the vessel; and d. Where the antifouling coating used on the underwater hull is regulated by Health Canada under the Pest Management Review Agency, the antifouling coating product name, quantity used, and its registration number. 4.0 The Hazardous Material Database must contain the following statements: <ol style="list-style-type: none"> a. A statement of the known hazardous material condition in the vessel; b. Polychlorinated Biphenyls (PCB) Statement - certification that the vessels do not contain PCBs; c. Asbestos Statement - certification that the vessels do not contain asbestos; d. Cadmium Statement - certification that the vessels do not contain cadmium; and e. Ozone Depleting Substances Statement - certification that the vessels do not contain Ozone Depleting Substances. Deliverables: <ol style="list-style-type: none"> 5.0 One (1) electronic copy of the Hazardous Material Database must be delivered 10 Working Days before the CDR. 6.0 One (1) electronic copy of the Hazardous Material Database and the MSDS must be provided on delivery of the first vessel of the class. | |

| DATA ITEM DESCRIPTION (DID) | |
|---|---|
| TITLE: DID-ILS-003 Technical Data Package | DATA ITEM NUMBER: DID-ILS-003 |
| DESCRIPTION/PURPOSE: To define the required content of the package of information (technical data, drawings, manuals and other supporting documentation) that the Contractor must provide to support the MRBs during their operational life cycle. | |
| RELATED DIDS: DID-M-007 Design Drawings / Diagrams DID-E-006 Critical Design Review Data Package DID-ILS-001 Master Equipment List DID-ILS-004 Initial Provisioning Strategy DID-ILS-005 Maintenance Plan | REFERENCES: D-01-100-214/SF-000 Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The TDP must be delivered in the native file format and in PDF. 2.0 Drawings must be in accordance with industry standards, and must be produced in accordance with DID-M-007 Design Drawings / Diagrams. 3.0 The operational, maintenance and repair manuals must be developed in both official languages. 4.0 Manuals provided by the OEM for commercial-off the-shelf equipment, machinery and appliances installed on the vessels must be indexed by the Contractor and be preferably in both official languages. 5.0 The operational, maintenance and repair manuals must be presented in book form, including text, figures and illustrations. 6.0 The TDP must include any certificate of approval by the appropriate authority for all the equipment, machinery and appliances installed on the vessels including certificates for the lights, shapes, and sound signals required by the Collision Regulations. Requirements: <ol style="list-style-type: none"> 7.0 The TDP must consist of MRB specific as-fitted drawings as well as operational, maintenance and repair manuals. As Fitted Drawings <ol style="list-style-type: none"> 8.0 The TDP drawings must be those listed in DID-E-006 Critical Design Review Data Package but updated to reflect the actual configuration of the first of class vessel at Final Acceptance. The as-fitted drawing package must be sufficiently detailed so as to allow DND to operate, maintain, repair, overhaul, refit, support, and control the configuration of the MRB, its systems, equipment, seating and tube sets throughout the MRB's in-service life. 9.0 The As-Fitted Drawing Package must be sufficiently detailed so as to allow DND to fabricate for repair, or to purchase, items that are equivalent to those being delivered. It must include: <ol style="list-style-type: none"> a. Details of special processes essential to procurement and/or installation; b. Performance ratings; | |

- c. Dimensional and tolerance data;
 - d. Input and output parameter tolerances;
 - e. Diagrams;
 - f. Mechanical and electrical connections;
 - g. Physical characteristics including fit, form and finish;
 - h. Details of material identification, inspection, test and evaluation criteria; and
 - i. Necessary calibration information and quality control data.
- 10.0 An index must be provided for the as-fitted drawings, including the drawing title, drawing number and designator indicating the WBS group. The index must be cross referenced by drawing title, WBS group, and drawing number.
- 11.0 If Class approvals are required, they must be stamped on the drawing.
- 12.0 Each as-fitted drawing in the as-fitted drawing list must be created to represent the entire class of vessels (e.g. one (1) general arrangement drawing representing all vessels within that class). Any authorized exceptions to, or departures from, the class Technical Baseline will be annotated as an exception to the baseline. In this way, a baseline for the class will be established and any changes pertaining to individual vessels will be identified.

Operating Manual

- 13.0 The operating manual must describe the vessel, the general layout and the vessel's design and performance characteristics. Subsequent chapters must provide details regarding each of the major systems, including but not limited to:
- a. General Information and ship layout;
 - b. Main Propulsion System;
 - c. Key Safety Features;
 - d. Lifesaving Equipment;
 - e. Seat Track System;
 - f. Hatches,
 - g. Lifting points;
 - h. Shock Mitigation Seating (SMS);
 - i. Tube Set (Chambers, Pressure Relief Valve (PRV) and Pressure Inflation Valve (PIV));
 - j. Life Lines;
 - k. Electrical Generation and Distribution System;
 - l. Fuel Storage and Transfer System;
 - m. Inflation System;
 - n. Steering System;
 - o. Propulsion and Machinery Control System;
 - p. Fire Fighting System;
 - q. Bilge Suction System;
 - r. Navigation Systems;
 - s. Internal Communications System;
 - t. External Communications System;
 - u. Hull Structure and Fittings;
 - v. Trailering; and
 - w. Auxiliary equipment and control.
- 14.0 Each system or component must have a detailed description with illustrations. System descriptions, as necessary, must include a narrative description, system block diagram, equipment breakdown structure, and supporting data (for example, line drawings, photographs, data tables, etc.).

- 15.0 System operating procedures must include both normal operations and emergency procedures. System operation must include initial adjustments, pre-start checks, starting procedures, normal operating procedures, special and emergency procedures, shut down procedures and lay-up instructions as applicable;

Maintenance Manual

- 16.0 The maintenance manual must provide a summary of all preventative maintenance instructions and maintenance actions to be performed by the operating crew including ship system lay-up (hot and cold), with particular emphasis on winterization and season start up, Troubleshooting data including possible malfunctions, causes, effects and solutions.
- 17.0 The maintenance manual must provide overhaul instructions that include recommended routine and planned maintenance schedule, maintenance periodicity, special instructions for disassembly and assembly with illustrations, clearances and alignments to be checked, troubleshooting procedures, use of Special Tools and test equipment required for servicing.
- 18.0 The maintenance manual must provide scheduling information such as: schedule type (i.e. calendar, hours, cycles); task frequency or interval; time required; maintenance window (i.e. related tasks, resource consolidation) and seasonal considerations.
- 19.0 Instructions or steps required to accomplish the maintenance task including reference to applicable technical data (i.e. assembly instructions, drawings) identified by name and OEM reference number, must include the estimated required level of effort in hours. Details such as equipment removal routes and lifting points must also be provided where applicable.
- 20.0 In preparing instructions, the Contractor must:
- Identify all parts and consumables required to perform the maintenance task;
 - Identify tools, Special Tools and test equipment required along with all task specific instructions if applicable;
 - Identify any environmental issues related to the maintenance task;
 - Identify diagnostic data that includes symptoms, possible causes, fault isolation techniques at the system level (equipment level diagnostic data must be provided in OEM manuals); and
 - Identify basic operating characteristics (temperatures, pressures, air flow rate, etc.).

Repair Manuals

- 21.0 The Contractor must provide repair manuals that are separately compiled, indexed, and bound under Propulsion, Electrical/Electronic, and Auxiliary/Outfit headings.
- 22.0 The repair manuals must consist of commercial equipment manuals, primary OEM drawings, service parts lists, and supplemental data for each equipment installed on the MRB including the Tube Set.
- 23.0 The information must include:
- Complete illustrated parts lists;
 - Assembly and disassembly instructions with comprehensive illustrations showing each step;
 - Identification of all parts and consumables required to perform the repair;
 - Identification of any environmental issues related to the repair;
 - Complete troubleshooting procedures;
 - Basic operating characteristics (such as temperatures, pressures, and flow rates); and
 - Installation criteria and drawings.

Deliverables

- 24.0 One (1) electronic copy of the TDP Manuals must be provided two (2) months before delivery of the first vessel of the class and drawings three (3) weeks before delivery of the first vessel of the class. The TDP shall be provided on CD-ROM.

| DATA ITEM DESCRIPTION (DID) | |
|--|---|
| TITLE: DID-ILS-004 Initial Provision Strategy | DATA ITEM NUMBER: DID-ILS-004 |
| DESCRIPTION/PURPOSE: To define the contents of a strategy that the Contractor must provide that will establish the recommended initial provisions that will be provided for the MRBs to support their ongoing regular maintenance in view of RCN practices and capabilities. | |
| RELATED DIDS: | REFERENCES: D-01-100-214/SF-000 Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment D-01-100-215/SF-000 Specification for Preparation of Materiel Change Notices |
| PREPARATION INSTRUCTIONS: Format: 1.0 The specific format of the IPS and RSPL must be developed by the Contractor in tabular format and agreed to by Canada. Requirements: 2.0 The IPS must be created in accordance with D-01-100-214/SF-000. 3.0 The Contractor must compile a list of spare parts, including on-board spares, shore based spares, long lead spares, Special Tools and test equipment based on the requirements of the Regulatory Body and equipment manufacturer's recommendations. 4.0 The Contractor must provide a complete list of all recommended spares, called a RSPL, both repairable and consumable, and must include those recommended to be procured at the time of equipment purchase. 5.0 IPS and RSPL must be categorised as to which spares are for 1 st , 2 nd or 3 rd level maintenance. Maintenance levels must be determined in collaboration with the Navy operators in the maintenance configuration working groups (see section 6.6.2). 6.0 All on board spares required by regulatory body or the OEM, complete with a rationalized quantity of shore based spares sufficient to support the first, second and third levels maintenance for a sixty (60) month operation cycle for all systems and equipment including all Special Tools and test equipment must be listed in the RSPL. The RSPL must indicate which spares, required by regulatory body or OEM, are considered long lead spares. 7.0 The IPS must outline all special packaging and storage requirements, conditions and maintenance that may apply to spares and repair parts stored on-board and shore based. 8.0 The RSPL must indicate spares required for a 200 calendar day cycle sufficient to support preventative maintenance by 1 st line personnel. 9.0 A complete list of all tools, test and support equipment, interconnect devices, handling equipment, maintenance stands, and other unique items that are required to conduct maintenance for each item on the RSPL must be provided and include the following: a. Tool/equipment description, name and unique item identification if applicable; | |

- b. Maintenance action associated with the stated tool/equipment;
 - c. Applicable system, subsystem and equipment; and
 - d. Unit price.
- 10.0 The RSPL, and the associated tools, test and support equipment required, must indicate the quantity recommended onboard and ashore to support the MRB maintenance profile.
- 11.0 The Contractor must include a Failure Mode and Effects Analysis (FMEA) and decision logic used to arrive at suggested maintenance cycles and other failure management strategies for the MRB, including task frequencies and who should carry out those actions (e.g. ship or shore based personnel) (as applicable). This information must be considered in the creation of Maintenance Plan (DID-ILS-005).

Deliverables:

- 12.0 One (1) electronic copy of the draft IPS and RSPL must be provided by the Contractor 10 Working Days prior to the CDR.
- 13.0 One (1) electronic copy of the draft final ISP and RSPL must be provided 10 Working Days prior to the ICP.
- 14.0 One (1) electronic copy of the final ISP and RSPL must be provided on delivery of the first vessel of the class.

| DATA ITEM DESCRIPTION (DID) | |
|---|---|
| TITLE: DID-ILS-005 Maintenance Plan | DATA ITEM NUMBER: DID-ILS-005 |
| DESCRIPTION/PURPOSE: To define the contents of the manual that the Contractor must produce to establish maintenance cycles and periodicity, and list maintenance activities with related support requirements for the MRBs. | |
| RELATED DIDS: DID ILS-003 Technical Data Package DID-ILS-004 Initial Provisioning Strategy | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: 1.0 The specific format of the Maintenance Plan can be developed in Contractor open source format. Requirements: 2.0 The MRB must be delivered with a maintenance plan that defines the required maintenance routines for the vessel and the schedule on which each maintenance activity is to take place (daily, weekly, monthly yearly, etc.). 3.0 The Maintenance Plan must be sufficiently detailed so as to allow DND to maintain, repair, overhaul, refit, support, and control the configuration of the MRB, its systems, equipment, seating and tube set throughout the MRB's in-service life. 4.0 The Maintenance Plan must be structured to indicate which maintenance routines are: 5.0 First level maintenance (can be completed by ship staff); 6.0 Second level maintenance (must be completed by DND shore side facilities at FMF's; and 7.0 Third level maintenance (must be completed by commercial support via an in-service-support arrangement). 8.0 The Maintenance Plan must include the estimated required level of effort in hours, required parts and consumables required to perform the maintenance task and any Special Tools or test equipment. 9.0 The Contractor must include a Failure Mode and Effects Analysis (FMEA) and decision logic used to arrive at suggested maintenance cycles and other failure management strategies for the MRB, including proactive and corrective actions, task frequencies and who should carry out those actions (e.g. ship or shore based personnel) (as applicable). This information must be considered in the creation of Initial Provisioning Strategy (DID-ILS-004). Deliverables: 10.0 One (1) electronic copy of the Maintenance Plan must be provided by the Contractor 10 Working Days prior to the CDR. 11.0 One (1) electronic copy of the Maintenance Plan must be provided on delivery of the first vessel of the class. | |

| DATA ITEM DESCRIPTION (DID) | |
|---|---------------------------------------|
| TITLE: DID-T-001 Training Plan | DATA ITEM NUMBER: DID-T-001 |
| DESCRIPTION/PURPOSE: To define the required content of the plan that the Contractor must develop for the content and conduct of the Crew Familiarization, Operator and Maintenance Personnel Training. | |
| RELATED DIDS: DID-ILS-001 Master Equipment List DID-ILS-005 Maintenance Plan | REFERENCES: |
| PREPARATION INSTRUCTIONS: Format: <ol style="list-style-type: none"> 1.0 The Training Plan can be in a Contractor developed open source format. 2.0 All Contractor supplied training and the training material must be provided in English and French. Requirements: <ol style="list-style-type: none"> 3.0 The Training Plan must meet both the system operation and system maintenance requirements to a level suitable for operators, on board maintenance performed by the ship's crew and shore based maintenance that may require the presence of a Field Service Representative. 4.0 The Contractor must prepare and produce a Training Plan for the courses in accordance with best current industrial practices and details in the (SOW. 5.0 The Training Plan must define and describe in appropriate detail all aspects of how the Contractor will effectively deliver training. 6.0 The Training Plan must be developed with input from Canada in terms of scheduling and preferred topics and be consistent with the Technical Manuals. Canada will identify personnel for this activity. 7.0 The Training Plan must, at a minimum, include: <ol style="list-style-type: none"> a. Training topics; b. Training location(s) for each training topic; c. Training duration for each training topic; d. Intended audience for each specific training topic; e. Lesson plan(s) for each training topic; f. Identification of the instructor(s) for each training topic; and g. A Trainee Guide for each topic. The trainee guide must include, as a minimum: <ol style="list-style-type: none"> I. Applicable sections of accepted technical manuals; II. Selected vessel construction/equipment drawings, where relevant; III. A copy of presentations, narrative descriptions, diagrams, sketches, charts, graphs, pictures, and other material utilized to support the information presented in the course; IV. Launch and recovery procedures including lifting point locations, order of hook up and release; V. Start-up check lists and shutdown procedures; VI. operation, including maneuvering, coming alongside, reversing at high speed, etc; and | |

| | |
|----------------------|---|
| | <p>VII. Basic daily maintenance, operation and troubleshooting for primary equipment and systems in and out of the water.</p> |
| 8.0 | <p>The Training Plan must provide an agenda and proposed schedule for the proposed training.</p> |
| 9.0 | <p>The Training Plan must include, as a minimum, the following specific items including operations, constraints and recommended practice as applicable:</p> <ul style="list-style-type: none"> a. Overview of the vessel and its systems including key design features and key safety features; b. Propulsion system; c. Machinery control system; d. Electrical generating system and distribution system including emergency operations; e. Auxiliary equipment and control; f. Shock mitigating seating; g. Control console; h. Steering system; i. Navigation electronics; j. Communication electronics (internal and external); k. Towing operations; l. Stability including loading conditions; m. Lifesaving equipment; n. Fuelling systems and equipment; o. Trailing; p. Cradles; q. Winterization; r. Stowage; and s. Environmental protection features. |
| <p>Deliverables:</p> | |
| 10.0 | <p>One (1) electronic copy of the Training Plan must be provided to Canada 10 Working Days before the CDR for review and acceptance.</p> |

Appendix 1
To: W8472-155557

Appendix 1 to Annex A

SYSTEM REQUIREMENTS DOCUMENT

FOR THE

MULTI-ROLE BOAT PROJECT

Appendix 1
To: W8472-155557

Table of Contents

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1. List of Referenced Documents

Canada Shipping Act 2001
Canadian Collision Regulations- C.R.C., c. 1416
Classification Society Rules
CSA C22.2 NO. 183.2-M1983 (R1999) "Standards for D.C. Electrical Installations on Boats"
CFTO D-03-003-024/SG-001 Work Breakdown Structure for Canadian Forces Ships and Submarines
CFTO D-03-003-023/SF-001 General Hull Standard
CFTO D-23-003-005/SF-002 Specification for Maintenance Painting of HMC Ships
CSA Safe Working Practices Regulations
D-01-400-001/SG-000 Standard Engineering Drawing Practices
D-01-400-002/SF-000 Specification for Levels of Engineering Drawings and Associated Lists
D-01-100-214/SF-000 Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment
D-01-100-215/SF-000
D-03-003-007/SG-000 Issue 4 - Specification For Design And Test Criteria For Shock Resistant Equipment In Naval Ships (16 Aug 1978)
D-03-003-024/SG-001 Work Breakdown Structure for Canadian Forces Ships and Submarines
FED-STD-595C Standard Paint Colours
Hull Construction Regulations- C.R.C., c. 1431
IMO International Convention for the Safety of Life at Sea (SOLAS), 1974
IMO International Regulations for Preventing Collisions at Sea (COLREGS)
International Conference on Load Lines, 1966.
ISO 10005 - Guidelines for Quality Plans
ISO/DIS 12217-1:2013 Stability and Buoyancy assessment and Categorization – Part 1: Non-sailing boats of Hull Length Greater than 6 m
SOR/86-304 Maritime Occupational Health and Safety Regulations
SOR/90-264 Marine Machinery Regulations
SOR/2005-134 Navigation Safety Regulations
TP 127E Ship Safety Electrical Standards
TP 1332 Construction Standards for Small Vessels (2010)
TP 1861 Standards for Navigation Lights, Shapes, Sound Signal Appliances and Radar Reflectors
TP 3668E Standards for Navigating Appliances and Equipment, 1983
TP 11469 Guide to Structural Fire Protection
TP 14475E - Canadian Life Saving Appliance Standard
[MIL-DTL-901E] - Shock Tests HI (High Impact) Shipboard Machinery, Equipment and Systems, Requirements For

2. System Requirements

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-001 | General |
| MRB-002 | General Instructions |
| MRB-003 | This SRD provides the technical requirements necessary to satisfy the operational requirements for the Multi-Role Boat (MRB) and the integrated sub-systems onboard the vessel. |
| MRB-004 | The primary purpose of this SRD is to establish the requirements for the MRB system for the <i>Halifax</i> -class frigates. |
| MRB-005 | The key assumption for this project is that Canadian companies can provide MRB systems that will meet the operational requirements defined within this SRD and meet the Defence Procurement Strategy (DPS) requirement for Canadian content in the contract. |
| MRB-006 | The MRB refers to the boat and includes the integrated sub-systems onboard the boat. |
| MRB-007 | The requirement statements in this SRD are either designated as Essential or Desirable. |
| MRB-008 | The MRB system must meet all the Essential Requirements contained within this SRD to ensure that all capability objectives are met. |
| MRB-009 | An Essential requirement is one that must be met so that capability objectives can be met. The word “must” is synonymous with essential. |
| MRB-010 | A Desirable requirement is used to provide some flexibility (but only betterments) with regards to the required system performance and permits a more detailed evaluation of contending systems that meet all essential requirements. A desirable requirement is one where performance better than the stated minimum essential level has operational value, or where a performance characteristic is deemed less significant than an essential requirement. The word “should” is to be considered synonymous with desirable. |
| MRB-011 | Operability General |
| MRB-012 | Operability General |
| MRB-013 | The MRB (excluding the collar), must have a design service life of not less than 20 years. |

| SRD Line Number | MRB Requirement |
|-----------------|---|
| MRB-014 | <p>The MRB will operate independently of the ship in varying sea, weather and light conditions in support of conducting, deploying and supporting:</p> <ul style="list-style-type: none"> a) Naval Boarding Party (NBP) operations with a fully equipped ten man NBP team and two crew members embarked; B) General surveillance, including contact analysis and reporting; c) Force protection operations; d) Divers and supporting diving operations; e) Humanitarian Operations & Disaster Relief (HODR) operations f) Marshalling and towing lifeboats, life rafts and other boats and craft; g) Inshore and offshore Search And Rescue (SAR) operations; h) Man overboard rescue operations; i) Transporting personnel and cargo (ship to ship and ship to shore); and j) Miscellaneous sea boat duties. |
| MRB-015 | The MRB and its sub-systems must function (float, move and carry out its mission) following a drop of 3 m to the water. |
| MRB-016 | Dimensional Restrictions |
| MRB-017 | The MRB must have an overall length that does not exceed 9.2 m, measured from the forward-most extremity to the aft-most extremity, including the propulsion units, stern bumpers, any platform at the transom, inflated structures and fixed fenders. |
| MRB-018 | The MRB must have an overall beam that does not exceed 3.25 m, measured from the outer most extremities, including collar, fixed fenders and all appendages and fittings. |
| MRB-019 | The MRB must have an overall height that does not exceed 3.50 m, measured from the deck of the <i>Halifax-class</i> , to the highest extremity of the MRB, including mast or radar arch, including all fitted equipment (except foldable whip antennas), when secured in its cradle on deck. |
| MRB-020 | Environmental Conditions |
| MRB-021 | The MRB critical systems must operate continuously in ambient air temperatures from -40 degrees Celsius to +48 degrees Celsius. |
| MRB-022 | The MRB and its installed equipment must operate continuously in Sea Water temperatures from -2 degrees Celsius to +35 degrees Celsius. |
| MRB-023 | The MRB and its installed equipment must operate continuously in fog, snow, heavy rain and humidity levels up to 100 percent. |
| MRB-024 | The MRB and its installed equipment must operate in salt, fresh and brackish water. |
| MRB-025 | The MRB system including structure and installed equipment must operate in wind speeds of up to 50 knots; |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-026 | The MRB must have a means to provide heat to installed equipment and spaces, as required in the specified environmental conditions, to keep the operating parameters within OEM recommendations. |
| MRB-027 | The MRB must have a means to provide heat to installed equipment and spaces, as required in the specified environmental conditions, while in its cradle on the <i>Halifax</i> -class ship, to keep the systems within OEM recommendations. |
| MRB-028 | The MRB must have all equipment onboard that the OEM deems necessary for winterization. |
| MRB-029 | Seaworthiness |
| MRB-030 | The MRB operational capability must not be decreased by the removal of the dive doors. |
| MRB-031 | Watertight Integrity |
| MRB-032 | The MRB hull, deck, fuel tanks, enclosed storages and voids must meet the requirements for watertight integrity in accordance with "TP-1332E - Construction Standards for Small Vessels (2010) - Watertight Integrity". |
| MRB-033 | All MRB electrical and electronic equipment not located within watertight enclosures must be waterproof with an ingress protection rating in accordance with "IEC 60529, Degrees of Protection Provided by Enclosures (IP Code)" of not less than IP67 or is proven marine grade quality. |
| MRB-034 | Rules and Regulations |
| MRB-035 | The MRB must be design approved and built in accordance with a recognized Classification Society as qualified under Transport Canada's Delegated Statutory Inspection Program (DSIP). |
| MRB-036 | The MRB design must be approved with the following Class notations, or equivalent: +A1, HSC Coastal, +AMS, OE |
| MRB-037 | The MRB must comply with the applicable Transport Canada's statutory regulations as overseen by a Classification Society under Delegated Statutory Inspection Program (DSIP). |
| MRB-038 | The MRB design and construction must comply with the required reviews, inspections, oversight and approvals as set out by the chosen Classification Society. |
| MRB-039 | The navigation suite must be certified by a recognized marine regulatory body. |
| MRB-040 | The MRB must comply with the relevant requirements of Transport Canada: "TP-1332E - Construction Standards for Small Vessels". |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-041 | Canada reserves the right to invoke specific exceptions from TP 1332. Exemptions will be finalized during the design phases. |
| MRB-042 | Each MRB must include all equipment required by the "Canada Shipping Act- Small Vessel Regulations" for a boat of this size. Canada reserves the right to invoke specific Military exceptions. Exemptions will be finalized during the design phases. |
| MRB-043 | Military Standards |
| MRB-044 | The MRB must comply with the latest Canadian marine environmental protection regulations applicable and appropriate for a vessel of this class at the commencement of first article construction. |
| MRB-045 | Reliability and Maintainability |
| MRB-046 | The MRB and fitted equipment must be designed to minimize the requirement for routine inspections, testing and maintenance. |
| MRB-047 | The MRB must be designed to facilitate the routine inspections, testing and maintenance required to ensure adequate reliability and to meet the availability requirements. |
| MRB-048 | The MRB must have an average annual operational availability of not less than 90 percent. |
| MRB-049 | Operational availability is defined as Operational Time/Total Time. "Operational Time" includes time available for operations but excludes maintenance time (preventive and corrective), logistical delay time and administrative delay time. |
| MRB-050 | The MRB must support a 200 consecutive day deployment with less than 5 percent (ten days) down time, with only the support of first line maintenance (preventive and corrective). |
| MRB-051 | All MRB sub-systems must have a proven record of capability, durability, reliability and maintainability in the operating environment and climatic conditions described in this SRD. |
| MRB-052 | All materials, sub-systems, equipment and machinery supplied and fitted to the MRB must be installed in accordance with the Original Equipment Manufacturer (OEM) recommendations. |
| MRB-053 | All MRB propulsion system components exposed to seawater must be fitted with sacrificial anodes for cathodic protection in accordance with the recommendations and guidance of the respective OEM. |
| MRB-054 | The MRB propulsion system must operate with a mean time between Overhauls and Major Service of at least 3,600 hours. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-055 | All performance requirements must be met with the weight growth margin applied. |
| MRB-056 | The MRB will be maintained in accordance with a three tiered maintenance system; a) First line maintenance; b) Second line maintenance; c) Third line maintenance. |
| MRB-057 | First line maintenance of the MRB, its associated equipment and outfit must be repair by replacement or maintenance by exchange performed by ship staff. |
| MRB-058 | First line maintenance items must be installed and integrated in a manner to permit rapid and efficient repair in-situ, or repair by replacement when the MRB is alongside or stowed in its cradle or trailer. |
| MRB-059 | The spares required for first line maintenance and to achieve defined availability and reliability levels, must align with the defined sparing strategy. |
| MRB-060 | MRB first line repair and maintenance must be achievable in less than 2 hours by one person. |
| MRB-061 | The MRB first line repair and maintenance components (i.e. those that can be repair or replaced during deployment); must have a calculated Mean Time Between Failure (MTBF) of not less than 500 hours. |
| MRB-062 | Safety |
| MRB-063 | The MRB must comply with the requirements for Rescue Boat stated in "International Life-Saving Appliance (LSA) Code, Chapter V - Rescue Boats - 5.1 Rescue boats". Canada reserves the right to invoke specific Military exceptions. Exemptions will be finalized during the design phases. |
| MRB-064 | Any safety equipment supplied with the MRB must have an expiration date of not less than one year after delivery. |
| MRB-065 | The MRB must meet all requirements relating to marshalling craft by <i>C-01-002-000/SG-002 Naval Evacuation, Escape and Rescue</i> . |
| MRB-066 | The MRB must comply with "Health Canada Safety Code 6: Health Canada's Radiofrequency Exposure Guidelines". |
| MRB-067 | The MRB must comply with "CFTO C-55-040-001/TS-002, Radio Frequency Safety Standards and Requirements". |
| MRB-068 | Transportation and Handling |
| MRB-069 | Transportation |

| SRD Line Number | MRB Requirement |
|-----------------|---|
| MRB-070 | The MRBs protective cover must remain in place and undamaged when towed, on its trailer, by a standard commercial pattern vehicle at speeds up to 110 km/hr. |
| MRB-071 | Lifting and Hoisting |
| MRB-072 | The MRB must meet the minimum lifting requirements of "ANEP-89:2017, Design Criteria for Replenishment Aspects of New Construction Naval Vessels, Chapter 2". |
| MRB-073 | The MRB must meet the minimum requirements of "STANAG 1453, Hoisting Arrangements for Sea-Boats on Board Warships". |
| MRB-074 | The MRB lifting arrangements and cradle must designed to allow for the MRB to be installed and removed in the mounted cradle without interfering with the <i>Halifax-class</i> structure. |
| MRB-075 | The MRB must be provide with all hardware to perform the four point lift and the single point lift. |
| MRB-076 | The MRB must be launched and recovered using lifting straps of Dyneema or equivalent. |
| MRB-077 | The MRB lifting straps must be clearly marked or colour coded to ensure the crew connects the straps to the correct lifting lugs. |
| MRB-078 | The MRB lifting lugs must be located such that when the MRB is suspended the straps do not come into contact with any personnel or equipment in their normal operating position. |
| MRB-079 | The MRB must have lifting lugs located to allow the vessel to be launched and recovered by a four sling arrangement in all operational conditions. |
| MRB-080 | The MRB must have hard point(s) located to allow the vessel be launched and recovered by a single strap arrangement in all operational conditions. |
| MRB-081 | The MRB should have lifting lugs located to allow the vessel to be launched and recovered by a three sling arrangement in all operational conditions. |
| MRB-082 | The MRB should have lifting lugs located to allow the vessel to be launched and recovered by a two sling arrangement in all operational conditions. |
| MRB-083 | The MRB lifting lugs must each have a second eye hole for attaching back-up lifting straps in the event of a failure. |
| MRB-084 | The MRB must have an appropriately located stowage location for the lifting straps and bridle system which will facilitate rapid access and stowage. |
| MRB-085 | The MRB lifting strap and bridle system storage location must keep the straps clean, protected from UV light, spray and standing water. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-086 | The MRB lifting straps and bridle system storage location must be sized appropriately to store two complete sets of lifting straps and bridle systems. |
| MRB-087 | The MRB lifting straps must be as short as practical ensuring safety and stability while suspended. |
| MRB-088 | The MRB lifting straps must be deployed, activated, recovered and stowed by a single person. |
| MRB-089 | The MRB slings will not be used to lift both MRB and cradle at the same time. |
| MRB-090 | All MRB lifting arrangements must converge at a single point (i.e.. a master link) |
| MRB-091 | Each MRB sling system must weigh less than 17 kg. |
| MRB-092 | The MRB must be fitted with a single lifting point to receive a Cranston Eagle Hook, or an equivalent single automatic off-load hook on a swivel joint. |
| MRB-093 | The MRB lifting arrangements must maintain the trim between 0 and 10 degrees bow up in all loading condition when the MRB is being launched and recovered. |
| MRB-094 | The MRB must have boat lift points rated for lift of the Maximum Load Configuration with a minimum safety factor of 2 on SWL. |
| MRB-095 | The MRB hoisting system must include a lifting harness and all required hardware, supplied with each MRB with a certified Safe Working Load (SWL) of not less than the Fully Loaded condition with a minimum safety factor of 10. |
| MRB-096 | Human Systems Integration |
| MRB-097 | The MRB, its associated equipment, and outfit must be designed and constructed for safe and efficient operation, launching, hoisting, and maintenance in accordance with "ASTM F1166-07 Standard Practice for Human Engineering Design for Marine Systems, Equipment and Facilities". |
| MRB-098 | The MRB must be designed and constructed to accommodate the 5th percentile adult female to the 95th percentile adult male as defined in "DCIEM Report 98-Ch-15 Anthropometric Survey of the Land Forces". |
| MRB-099 | All MRB controls, displays, handles, handholds, footholds, latches and all other fittings must be operable by personnel wearing all types of weather clothing, including gloves, and Personal Protective Equipment (PPE). |
| MRB-100 | Launch and Recovery System (LARS) |
| MRB-101 | Vessel Performance |
| MRB-102 | Speed and Endurance |
| MRB-103 | The MRB must sustain a speed of at least 40 knots at 80 percent throttle in Sea State 1 (SS1, Beaufort Scale) in the Fully Loaded condition. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-104 | The MRB must sustain a speed of at least 35 knots in SS3 in the Fully Loaded condition. |
| MRB-105 | The MRB must have sufficient fuel storage for an endurance of not less than 150 nautical miles at 40 knots at 80 percent throttle in SS1 beginning in the Fully Loaded condition, and ending with a minimum of 10 percent usable fuel reserve remaining. |
| MRB-106 | The MRB must accelerate from a dead stop to planing speed within 10 seconds in SS1 in the Fully Loaded condition. |
| MRB-107 | Seakeeping & Maneuvering |
| MRB-108 | The MRB must complete a 90 degree turn to Port or Starboard at 75 percent throttle within a turning radius of 15 m. |
| MRB-109 | The MRB must complete a 360 degree turn at not less than 50 percent throttle within a turning radius of 15 m. |
| MRB-110 | The MRB must maintain a straight course heading, within 3 degrees with helm released for a period of not less than 10 seconds, while the vessel is heading into the wind, waves and current at 35 knots in SS1. |
| MRB-111 | The MRB must manoeuvre astern, at up to 30 percent throttle, on a straight course in SS1 without taking water onboard or damaging the steering mechanism. |
| MRB-112 | The MRB must manoeuvre astern, at up to 30 percent throttle while turning the helm hard over from port to starboard and back in SS1 without taking water onboard or damaging the steering mechanism. |
| MRB-113 | The MRB must maintain a position within 0.1 m or less lateral displacement and 1.0 m or less fore and aft displacement of a larger vessel (5000 tons or greater) with intermittent to continuous collar contact with the larger vessel in SS1 at speeds up to 25 knots. |
| MRB-114 | The MRB steering response must be directly proportional to the steering command. |
| MRB-115 | The MRB must stop within 15 seconds from the maximum attainable speed to no forward motion, in SS1, at deep departure condition, without taking wave wash over the transom. |
| MRB-116 | The MRB must transition from full ahead to half speed astern without hydro-locking. |
| MRB-117 | The MRB must stop without hydro-locking |
| MRB-118 | The MRB must maintain an inboard heel throughout turns at all speeds above 15 knots. |
| MRB-119 | The MRB must float upright with positive stability and maintain headway and control, in SS6, in Emergency Loading condition. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-120 | The MRB must survive and be functional, as a marshalling craft, following exposure to sustained SS9 in its cradle on-board the <i>Halifax</i> -class. |
| MRB-121 | The MRB must be launched and recovered in up to and including SS5, in Fully Loaded condition. |
| MRB-122 | The MRB must be launched and recovered in up to and including SS6, in Emergency Loading condition. |
| MRB-123 | The MRB must maintain stability allowing safe transit up to and including SS6, with an ice accumulation of up to 6.0 mm on exposed surfaces. |
| MRB-124 | Towing |
| MRB-125 | The MRB must be able to tow an MRB equivalent sized vessel in up to SS4 for the range of 1 tank of fuel. |
| MRB-126 | Weight |
| MRB-127 | The MRB design must incorporate a through life weight growth margin of 10 percent of lightship applied at light ship center of gravity. |
| MRB-128 | The MRB design must incorporate a through life electrical load margin of 150 percent applied to the electrical load for sensors and navigation equipment. |
| MRB-129 | The MRB in the Fully Loaded condition must not exceed 6,500 kg. The fully loaded weight includes: 1) Lightweight Tonnage + through life growth margin; 2) 2 person boat crew (200 kg); 3) 10 person NBP team or cargo (1,250 kg); 4) All fitted boat equipment; 5) Miscellaneous boat equipment (50 kg); 6) Variable Loads |
| MRB-130 | Trim and Stability |
| MRB-131 | The MRB must comply with stability and buoyancy criteria in accordance with "ISO 6185-4 Inflatable Boats -- Part 4: Boats with a hull length of between 8 m and 24 m with a motor power rating of 15 kW and greater" for all operating and loaded conditions. |
| MRB-132 | The MRB's deck edges at the base of the dive doors must not be submerged at any time during the recovery of a person (130 kg) from the water with two personnel reaching over the side of the MRB and hauling the person onboard, in the Fully Loaded condition. |
| MRB-133 | The MRB must not have a static trim by the bow in any loading condition. |
| MRB-134 | The MRB in the Fully Loaded condition, stopped in calm water must have a trim astern of less than five degrees in static condition. |
| MRB-135 | The MRB in the Fully Loaded condition, stopped in calm water must have a list of less than one degree in static condition. |
| MRB-136 | Machinery and Auxiliary Systems |
| MRB-137 | Propulsion System |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-138 | Propulsion System General |
| MRB-139 | The MRB must have a propulsion system which includes two marine diesel engines of same power, type and complimentary stern drives. |
| MRB-140 | The MRB propulsion system must be robust enough allow for 5 million speed adjustments per year for ten years while still meeting the availability requirements. |
| MRB-141 | The MRB propulsion system must operate continuously in SS3 at Fully Loaded condition at maximum engine power for not less than 5 hours. NOTE: This requirement is not to be used a fuel capacity restraint. |
| MRB-142 | The MRB propulsion system must operate from zero to max thrust without exceeding the OEM cavitation recommendations. |
| MRB-143 | The crew must have visibility of not less than 15m in front of the vessel while planning. |
| MRB-144 | The MRB propulsion system must maintain a loiter speed of not more than 5 knots for not less than 8 continuous hours while operating within the engine manufacturer's recommended parameters. |
| MRB-145 | The MRB propulsion system must operate continuously at idle for not less than 8 hours. |
| MRB-146 | The MRB propulsion system must run while in its cradle, with a separate water hook-up (e.g. such as intake ears) for not less than 8 hours. |
| MRB-147 | The MRB must operate in water depths of 1.5 m with stern drives lowered. |
| MRB-148 | The MRB must manoeuvre in water depths of 1.2 m with stern drives in a partially raised position. |
| MRB-149 | The MRB steering system must be robust enough allow for 5 million course adjustments per year for ten years while still meeting the availability requirements. |
| MRB-150 | The MRB throttle system must be robust enough allow for 5 million speed adjustments per year for ten years while still meeting the availability requirements. |
| MRB-151 | The MRB must have a system to prevent rope from entering the stern drives. |
| MRB-152 | Propulsion Engines |
| MRB-153 | Any MRB insulation must be fire retardant. |
| MRB-154 | The MRB A-weighted engine noise level must not exceed 85 decibels (db(A)) at the coxswain's position for every speed up to 40 knots in SS1. |
| MRB-155 | The MRB engines must use marine diesel fuels that are compatible with the fuels used in the RCN (i.e. NATO F76). |
| MRB-156 | The MRB diesel engines must not be seawater cooled. |
| MRB-157 | Each MRB diesel engine must have a wet exhaust system. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-158 | The MRB diesel engine must be fitted with lube oil change system that allows for a change in not more than 2 hours. |
| MRB-159 | The MRB diesel engine air intakes must be configured to prevent water ingress into the engines in the upright and capsized positions. |
| MRB-160 | The MRB Engine air intakes should be protected from water ingress if water is projected on to the boat from above (e.g. water projected on the boat from a fire hose). |
| MRB-161 | The MRB's diesel engines must comply with exhaust emission regulations of IMO Tier II NOx emission standards. |
| MRB-162 | Propulsion and Steering Control System |
| MRB-163 | The MRB must be fitted with a propulsion control system which integrates the monitoring of the propulsion system from the control console through either or both multi-function displays. |
| MRB-164 | The MRB propulsion control system must display engine RPM for each diesel engine, selectable on the control console multi-function displays. |
| MRB-165 | The MRB propulsion control system must display engine lube oil pressure for each diesel engine, selectable on the control console multi-function displays. |
| MRB-166 | The MRB propulsion control system must display engine cooling water temperature for each diesel engine, selectable on the control console multi-function displays. |
| MRB-167 | The MRB propulsion control system must display engine cooling water pressure for each diesel engine, selectable on the control console multi-function displays. |
| MRB-168 | The MRB propulsion control system must display alternator voltage for each alternator, selectable on the control console multi-function displays. |
| MRB-169 | The MRB propulsion control system must display fuel consumption rate, selectable on the control console multi-function displays. |
| MRB-170 | The MRB propulsion control system must display total fuel consumption since last reset, selectable on the control console multi-function displays. |
| MRB-171 | The MRB propulsion control system must display fuel tank fluid level, selectable on the control console multi-function displays. |
| MRB-172 | The MRB propulsion control system must display stern drive trim angle, selectable on the control console multi-function displays. |
| MRB-173 | The MRB propulsion control system must display engine running hours for each diesel engine, selectable on the control console multi-function displays. |
| MRB-174 | The MRB must be fitted with an engine kill switch system which automatically shuts-off both engines in the event that the MRB capsizes. |
| MRB-175 | Bilge Pumping System |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-176 | The MRB hull structure in the engine compartment below the engines must be arranged to form save-alls such that any oil leaking from the engines is contained and isolated from other areas of the bilge. |
| MRB-177 | The MRB save-all beneath the engines must be configured to hold 4 layers of oil absorbent material. |
| MRB-178 | The MRB must have save-alls installed at the fuel tank drain and fuel filters that are configured to hold 4 layers of oil absorbent material. |
| MRB-179 | The MRB must be fitted with an automatic electric bilge pumping system that pumps not less than 250 Litres per minute. |
| MRB-180 | The MRB automatic electric bilge system must have a manual operating switch. |
| MRB-181 | The MRB automatic electric bilge system must drain the entire bilge. |
| MRB-182 | The MRB automatic electric bilge pump system must have a minimum of two independent bilge pumps. |
| MRB-183 | The MRB automatic electric bilge pumping system must comply with "TP-1332E - Construction Standards for Small Vessels". |
| MRB-184 | The MRB bilge pumping system must take suction from the lowest point of the bilge area and pump directly overboard. |
| MRB-185 | The MRB overboard pipes must be fitted such that water does not flow down into the discharge line. |
| MRB-186 | The MRB bilge pumping system must comply with "ISO 8849 (2003) Small craft – Electrically operated direct-current bilge pumps". |
| MRB-187 | The MRB bilge pumping system water inlets must be designed and installed to minimize the ingestion of debris by the bilge pumps. |
| MRB-188 | The MRB bilge pumps must be accessible for cleaning without removal of the bilge pumps or any surrounding equipment. |
| MRB-189 | The MRB automatic electric bilge pumping system must activate when the water level is sufficient such that a calibrated floatation switch is triggered. |
| MRB-190 | The MRB must be permanently fitted with one manual bilge pump to supplement the automatic electric bilge pumping system in the event of failure. |
| MRB-191 | The MRB manual bilge pump must be openly accessible and operable in all seating and cargo configurations. |
| MRB-192 | The manually operated bilge pump must have a minimum capacity of 105 Liters per minute. |
| MRB-193 | Fuel System |
| MRB-194 | The MRB must be fitted with a fuel system which has a fixed fuel tank that complies with "TP-1332E - Construction Standards for Small Vessels". |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-195 | The MRB must be fitted with a permanently installed fuel distribution system that complies with "TP-1332E - Construction Standards for Small Vessels". |
| MRB-196 | The MRB high fuel pressure alarm must be calibrated to account for high speed turns. |
| MRB-197 | The MRB high fuel pressure alarm must not cause a corresponding programmed reaction to the boats performance. |
| MRB-198 | The MRB must be fitted with a single centerline lockable fuel fill receptacle. |
| MRB-199 | The MRB fuel fill receptacle must not present an obstruction to crew movement, NBP equipment or cargo stowage. |
| MRB-200 | The MRB engines must have independent fuel uptakes. |
| MRB-201 | The MRB fuel tank must be self-sealing and explosion proof. |
| MRB-202 | The MRB fuel tank must be removable. |
| MRB-203 | The MRB fuel filling system must be sized to provide a fuel filling rate of at least 35 Liters per minute. |
| MRB-204 | The MRB must be fitted with fuel hoses which comply with "ISO 7840 Small craft - Fire-resistant fuel hoses". |
| MRB-205 | The MRB fuel system must be labeled in accordance with "TP-1332E - Construction Standards for Small Vessels". |
| MRB-206 | Each MRB fuel line must have a readily accessible fuel shut-off valve installed near the exit of the fuel tank. |
| MRB-207 | Each MRB fuel line must be fitted with two parallel fuel filters that can be isolated from each other. |
| MRB-208 | The MRB fuel filter system must be designed so that the fuel filters can be replaced while the engine is still running. |
| MRB-209 | The MRB fuel water separator drain for the sediment bowl must be readily accessible. |
| MRB-210 | The MRB fuel water separator sediment bowl must be transparent. |
| MRB-211 | Fire Extinguishing System |
| MRB-212 | The MRB must comply with "ISO 9094:2015 Small craft – Fire protection". |
| MRB-213 | The MRB engine compartment must be fitted with a fixed fire suppression system. |
| MRB-214 | The MRB fixed fire suppression system must actuate manually from the control console. |
| MRB-215 | The MRB fixed fire suppression system must actuate manually from the exterior of the engine compartment. |
| MRB-216 | The MRB fire suppression system controls must be located to protect from accidental activation. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-217 | The MRB must be equipped with manual mechanical system to cut off air to a fire in the engine compartment |
| MRB-218 | The MRB must be equipped with manual mechanical system to cut off air to a fire in the console compartment. |
| MRB-219 | As a minimum, the MRB must be fitted with one readily accessible 2.3 kg dry chemical marine type fire extinguishers. |
| MRB-220 | As a minimum, the MRB must be fitted with one readily accessible 2.3 kg carbon dioxide marine type fire extinguishers. |
| MRB-221 | The MRB fire extinguishers must be mounted in readily accessible, quick-release, heavy duty marine stowage holders, located so as not to hinder personnel movement, cargo storage, or boat functions. |
| MRB-222 | Collar Inflation System |
| MRB-223 | If fitted with an inflatable collar, the MRB must be fitted with an onboard inflation system. |
| MRB-224 | If fitted, the MRB collar inflation system must be electrically powered. |
| MRB-225 | If fitted, the MRB collar inflation system must permit inflation of all tube chambers from one location. |
| MRB-226 | If fitted, the MRB collar inflation system must permit inflation of all tube chambers in not more than 30 minutes. |
| MRB-227 | If the MRB collar is inflatable, the dive door must be inflatable from the collar inflation system via a tube system connected to one of the other surrounding collar chambers. |
| MRB-228 | If fitted, the MRB collar inflation system must have centralized pressure controlled monitoring for each collar chamber. |
| MRB-229 | If the MRB collar is inflatable, each collar chamber inflation must be individually controlled. |
| MRB-230 | If the MRB collar is inflatable, the MRB must have redundant air compressors for the collar inflation system. |
| MRB-231 | If fitted, the MRB air compression system must have check valves. |
| MRB-232 | If fitted, the MRB air compression system must be automatically activated upon a pressure drop within the collar. |
| MRB-233 | If fitted, the MRB air compression system must have a manual override at the console unit. |
| MRB-234 | Machinery Space Ventilation Systems |
| MRB-235 | The MRB must be fitted with ventilation arrangements in accordance with "TP-1332E - Construction Standards for Small Vessels". |
| MRB-236 | The MRB ventilation arrangements must be fitted with an effective means to prevent the ingress of water. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-237 | The MRB ventilation arrangements must allow the engine to restart after a capsize and subsequent righting. |
| MRB-238 | Pipes and Hoses |
| MRB-239 | All MRB pipes, hoses and fittings must be accessible for maintenance and repair. |
| MRB-240 | All MRB pipes and hoses must be protected from crimping, abrasion and damage from other systems, or located to prevent such damage. |
| MRB-241 | All MRB pipes and hoses must be run as directly as practical while meeting the requirements for shock loading. |
| MRB-242 | Any penetrations through watertight boundaries must not compromise watertight integrity. |
| MRB-243 | Hull and Outfit |
| MRB-244 | Hull |
| MRB-245 | Structure |
| MRB-246 | The MRB hull construction must withstand impact from running up on beaches composed of any combination of sand, gravel, shingle, pebbles, cobble or mud up to a slope of 10 degrees when traversing at 5 knots in the Fully Loaded condition, without damaging the hull or degrading the operational capability of the boat. |
| MRB-247 | The MRB must be free from sharp edges and protruding objects capable of snagging clothing or impeding occupants moving in and around the vessel. |
| MRB-248 | The MRB hull must withstand impact, at any angle, at speeds of up to 5 knots without sustaining any structural damage. |
| MRB-249 | Shell Appendages |
| MRB-250 | The MRB must have a bow skirt. |
| MRB-251 | The MRB bow skirt must cover the forward section of the collar from the bow to aft of the console. |
| MRB-252 | The MRB strakes must not funnel air into the propeller race. |
| MRB-253 | The MRB propeller race must have an unimpeded and unobstructed water inflow. |
| MRB-254 | Access |
| MRB-255 | The MRB deck and hull must be configured to provide access to all bilge areas and voids. |
| MRB-256 | When the MRB deck plating is secured, fasteners must be flush to the deck. |
| MRB-257 | The MRB must be configured to provide access to the engine compartment for engine maintenance without requiring disassembly of the engines or other systems within the compartment. |
| MRB-258 | The MRB must permit removal of engine without requiring disassembly of the engine. |
| MRB-259 | The MRB engine compartment must be accessed through hinged hatch(es). |

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| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-260 | The MRB engine compartment hatch(es) must have flush mounted, tie-down points that are suitable to hold 250 kg of equipment when operating up to and including SS5. |
| MRB-261 | The MRB engine compartment hatch(es) must be fitted with mechanically assisted lift mechanisms. |
| MRB-262 | The MRB engine compartment hatch(es) must open to allow access from the boarding party area. |
| MRB-263 | The MRB engine compartment hatch(es) must lock automatically in the open position and unlock manually to close. |
| MRB-264 | The MRB engine compartment hatch(es) must have flush mounted latch(es). |
| MRB-265 | The MRB engine compartment hatches must open fully when the mast or arch is in its operational and stowed position. |
| MRB-266 | The MRB propulsion system components must be accessible for inspection, removal or maintenance without requiring the removal of any permanent hull structure. |
| MRB-267 | The MRB hatches, portable covers, inspection ports and other access arrangements must permit personnel wearing weather clothing and Personal Protective Equipment (PPE), and using the relevant tools and equipment required to carry out an inspection, maintenance, removal and replacement of the individual elements of equipment, fittings, components and outfit to be completed. |
| MRB-268 | Stowage |
| MRB-269 | The MRB below deck stowage compartments must be accessible through flush mounted watertight hatch covers. |
| MRB-270 | The MRB below deck stowage compartment hatch(es) must have flush mounted latches. |
| MRB-271 | The MRB stowage compartment in the deck must be provided with a mesh net, or similar system to retrieve gear, if the compartment is greater than the reach of a person. |
| MRB-272 | The MRB must be fitted with removable 'store-all' netting, or similar system, for securing loose equipment along the inboard length of the bulwarks. |
| MRB-273 | The MRB store-all net must be secured with quick-release mechanisms. |
| MRB-274 | The MRB store-all net must not pose a tripping hazard when empty. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-275 | Each MRB must provide secure storage for the following NBP Government Furnished Equipment (GFE); a) 1 Pole Telescopic, Swimmer; b) 1 Pole Telescopic; c) 1 Pole, Swimmers, Telescopic; d) 2 SKED; e) 1 Grappling Hook, Rap; f) 2 Wheel, Cable; g) 1 Hand Pole Stabilizer; h) 1 Hook Grapnel; i) 1 Hook Grapple; j) 2 Ladder Wire Compact; k) 1 Base, Pole, Quick Release, Flexible; l) 1 Deployment Reel, Ladder; m) 1 Marine Grapnel. |
| MRB-276 | The MRB boarding poles stowage must position the boarding pole horizontally. |
| MRB-277 | Each MRB must provide secure stowage for all rescue boat equipment specified in "Canadian Life-Saving Appliance Standard - TP 14475 E, Chapter V - Rescue Boats", without impeding operations. |
| MRB-278 | The MRB must be fitted with accessible, secure and watertight stowage forward of the console for stowing the anchor and anchor line. |
| MRB-279 | The MRB must have not less than 8 flush mounted, stainless steel lashing fittings, distributed in a regular pattern on the deck in the cockpit, for securing cargo. |
| MRB-280 | The MRB lashing fittings located on the deck in the cockpit must have a tie-down capacity of 230 kg axial load each. |
| MRB-281 | The MRB must be fitted with a secure, lockable, and watertight stowage for 2 standard boxes of small arms ammunition, each sized 300 mm x 150 mm x 200 mm and weighing 8 kg. |
| MRB-282 | Hull Markings |
| MRB-283 | The MRB must have no OEM or manufacturer branding or labelling visible. |
| MRB-284 | Stern Bumper |
| MRB-285 | The MRB must have a stern bumper or similar system to provide protection to the stern drives. |
| MRB-286 | The stern bumper or similar system must take a 5 knots impact from any angle without sustaining damage. |
| MRB-287 | The stern bumper or similar system must project out horizontally past the stern drives. |
| MRB-288 | Deck |
| MRB-289 | Deck Layout |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-290 | The MRB equipment storage arrangements must not negatively impact the OEM recommended positioning of a person in a shock mitigating seat. |
| MRB-291 | The MRB equipment storage arrangements must not negatively impact the ingress and egress to the boat. |
| MRB-292 | The MRB must have 8 diver handles, 4 port and 4 starboard, within 25 cm of the water surface. |
| MRB-293 | The MRB diver handles must be positioned as follows; 2 handles forward and 2 handles aft, outboard of each dive door. |
| MRB-294 | The MRB diver handles must be separated horizontally by 500mm on each side of the dive doors. |
| MRB-295 | The MRB must have an open cockpit from bow to the stern. |
| MRB-296 | The MRB must have a forward located control console with side-by-side shock mitigated seating for the coxswain and the navigator. |
| MRB-297 | The MRB must have a re-configurable area, aft of the coxswain and navigator's position. |
| MRB-298 | The MRB re-configurable area must be configurable to embarked 10 personnel in shock mitigating seats, in addition to the coxswain and navigator shock mitigating seats. |
| MRB-299 | The MRB reconfigurable area must be configurable to provide a, rectangular, Free Deck Area, with all 10 embarked personnel shock mitigating seats onboard the MRB, such that: a) 2.15 m transverse, minimum; b) 1.8 m longitudinal, minimum; c) a single continuous deck plane; d) unobstructed by the shock mitigating seating; e) located between the dive doors; and f) unobstructed by permanent fixed equipment. |
| MRB-300 | The MRB re-configurable area must be configurable to carry a diver plus a casualty on a Stokes litter, stored transversely on the deck in the boarding party area, with the 10 embarked personnel shock mitigating seats onboard (shock mitigating seats may be collapsed). |
| MRB-301 | The MRB re-configurable area must be sufficiently sized to embark 5 additional personnel seated on the collar or deck when all 10 embarked personnel in mitigating seating are filled. |
| MRB-302 | The MRB re-configurable area must have sufficient strength to support 1,250kg of cargo. |
| MRB-303 | The MRB re-configurable area must be configurable as a boarding area for embarkation into and disembarkation from a target vessel. |
| MRB-304 | The MRB must have a boarding pole base plate permanently attached, on the centerline, within the re-configurable area, Free Deck Area, and recessed into the deck. |

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| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-305 | The MRB boarding pole base plate must have a flush to the deck hatch cover, with anti-skid matting. |
| MRB-306 | The MRB must have a mounting location to mount a 7.62 mm C6 machine gun or a 5.56 mm C9 machine gun forward of the control console at the bow. |
| MRB-307 | The MRB must have mounting locations to mount two 7.62 mm C6 machine guns or two 5.56 mm C9 machine guns, one each port and starboard, forward of the dive doors. |
| MRB-308 | The gun mounts are Government Furnished Equipment (GFE) and mounting details will be provided only to the selected designer. |
| MRB-309 | The MRB must have an anti-skid walkway with a minimum width of 0.2 m, running fore and aft and to port and starboard of the control console. |
| MRB-310 | The MRB must be fitted with 2 removable dive doors, one port and one starboard. |
| MRB-311 | The MRB dive doors must have a width greater than 61 cm. |
| MRB-312 | Each MRB must be supplied with one removable, portable diving ladder, stowable on the MRB so as not to cause an obstruction. |
| MRB-313 | The MRB deck must be fitted with attachment arrangements for the portable diving ladder in way of the dive door locations. |
| MRB-314 | The MRB portable diving ladder attachment arrangements must not provide an obstruction hazard. |
| MRB-315 | The MRB dive doors, when installed, must act as a continuous piece of the collar. |
| MRB-316 | The MRB dive doors, when installed, must remain attached and secured in place through all MRB manoeuvres. |
| MRB-317 | The MRB dive doors must have anti-skid matting in line with collar anti-skid matting. |
| MRB-318 | The MRB dive doors must be removable by one person in no more than 30 seconds. |
| MRB-319 | When dive doors are removed, the MRB collar must not catch water during a high speed U-turn. |
| MRB-320 | The MRB must have a designated location for securing the dive doors, such that when removed the dive doors will not interfere with the port and starboard weapon mounts, reconfigurable deck area and the Free Deck Area. |
| MRB-321 | Deck Covering |
| MRB-322 | The MRB deck must be covered with waterproof, anti-skid matting, for shock absorption and for slip mitigation. |
| MRB-323 | All MRB matting must be secured to prevent movement during all operational conditions. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-324 | The MRB deck between the console and the coxswains and navigators shock mitigating seats, must have air cushioned shock mitigating Skydex®, or equivalent, in lieu of the anti-skid matting. |
| MRB-325 | All MRB hatch(es) and recess cover(s) must have anti-skid matting flush with the rest of the deck anti-skid matting. |
| MRB-326 | The MRB's collar must have an anti-skid matting attached to the top. |
| MRB-327 | The MRB engine compartment hatch(es) must have anti-skid matting. |
| MRB-328 | Scuppers and Deck Drains |
| MRB-329 | The MRB must be fitted with a self quick-draining cockpit in accordance with "ISO 11812 Small Craft – Watertight Cockpits and Quick-Draining Cockpits". |
| MRB-330 | The MRB must be fitted with high capacity deck drains. |
| MRB-331 | The MRB deck drains must direct water overboard and not require check valves. |
| MRB-332 | The MRB must be fitted with garboard drain plugs or a functionally equivalent means of draining all parts of the cockpit when the MRB is out of the water which comply with TP-1332E - Construction Standards for Small Vessels. |
| MRB-333 | The MRB sea water intakes, overboard discharges, other through-hull fittings and sea valves which must comply with "TP-1332E - Construction Standards for Small Vessels". |
| MRB-334 | Control Console |
| MRB-335 | The MRB console must be fitted with watertight hatch(es) that allow access for the installation and maintenance of all console-mounted equipment. |
| MRB-336 | The MRB control console must be positioned forward in the boat and have a position for the coxswain on the port side, and a position for the navigator on the starboard side, in a side-by-side arrangement. |
| MRB-337 | The MRB multi-function displays must be resistant to damage from hull and console torsion. |
| MRB-338 | The MRB multi-function displays seals around the MRB multi-function displays must prevent water ingress during all operations and console torsion. |
| MRB-339 | The MRB control console must be arranged so that the navigator can assist the coxswain in safe navigation and operating the radios and electronic navigation equipment as well as operate their own controls without interfering with the coxswain's ability to manoeuvre. |
| MRB-340 | The MRB steering wheel must be an impact absorbing steering wheel. |
| MRB-341 | The MRB steering wheel must be 4 turns lock to lock. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-342 | The MRB grab bars must be strong enough to support a 1.47 kN force generated in any combination of lateral, pulling, or pushing on the grab bars. |
| MRB-343 | The MRB control console must be fitted with one vertical grab bar on each of the port and starboard sides of the unit, respectively, and one horizontal grab bar in the front of the navigator's position at waist height. |
| MRB-344 | The MRB steering wheel connection must have the strength and full capacity of a grab bar. |
| MRB-345 | The MRB grab bars must be sized to allow a person wearing PPE to securely grip the grab bar. |
| MRB-346 | The MRB controls, and equipment must allow for personnel to operate while wearing all configurations of PPE. |
| MRB-347 | The MRB control console must incorporate the navigation equipment, communications equipment and the controls and monitors for the maneuvering, propulsion, electrical and lighting systems. |
| MRB-348 | The MRB control console should provide ballistic protection for the coxswain, navigator and the critical systems housed in the control console to protect against small arms fire up to 7.62 x 51 mm NATO ball perpendicular to the front of the boat. |
| MRB-349 | The MRB control console should be fitted with a shatter-proof, non-glaring windshield to provide ballistic protection for small arms fire up to 7.62 x 51 mm NATO ball. |
| MRB-350 | The MRB windshield must have an adjustable height with a range of over the heads of the operators to 15 cm above the console. |
| MRB-351 | The MRB console instrumentation must be at an angle that optimizes console control operability whilst maximizing field of view when the user is in either a standing or sitting position in accordance with "ABCD-TR-08-01 V1.0 High Speed Craft Human Factors Engineering Design Guide". |
| MRB-352 | The MRB console must be sized and positioned so that the coxswain has 360 degree horizontal view of the horizon from either a seated or standing position. |
| MRB-353 | All MRB controls and displays must be accessible, visible and operable from the respective seated and standing console positions. |
| MRB-354 | Mast or Arch |
| MRB-355 | The MRB must have mast(s) or arch(es). |
| MRB-356 | The MRB mast(s) or arch(es) must be lowered and stowed to meet Canadian road transport requirements. |
| MRB-357 | The MRB mast(s) or arch(es) must be mechanically secured in both operational and stowed positions. |
| MRB-358 | The MRB mast(s) or arch(es) must provide mounting for navigation lights and miscellaneous lights. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-359 | The MRB mast(s) or arch(es) and all fitted equipment must be arranged inboard of an angle of 15 degrees from vertical, starting from the tangent point on the collar. |
| MRB-360 | The MRB mast(s) or arch(es) must be lowered by 2 people in less than 15 minutes. |
| MRB-361 | The MRB aft most mast or arch must be fitted with mounting arrangements and fittings suitable for flying a 45 cm x 90 cm boat's ensign. |
| MRB-362 | All cabling for equipment mounted to MRB mast(s) or arch(es) must be contained interior to the mast or arch structure. |
| MRB-363 | The MRB mast(s) or arch(es) cabling runs must have appropriate weathertight integrity. |
| MRB-364 | The MRB mast(s) or arch(es) cable runs must have provisions to replace cables or install additional cabling. |
| MRB-365 | Collar |
| MRB-366 | The MRB must be fitted with a collar at the gunwale, along the full extent of both sides and at the bow. |
| MRB-367 | The MRB collar fabric must meet or exceed the criteria for strength, elasticity, resistance to wear and longevity as defined in "ISO 15085 - Material Specification for Coated Fabric Used in Inflatable Life rafts". |
| MRB-368 | The MRB collar must have a design service life of not less than 5 years. |
| MRB-369 | The MRB collar must be removable by 4 people in less than 8 hours with only hand tools. |
| MRB-370 | The MRB collar must not be fixed to the rigid hull with adhesives or welding. |
| MRB-371 | The MRB must not require an escort to transit on Canadian roadways. |
| MRB-372 | If the MRB is fitted with an inflatable collar, the MRB and collar must be provided with all necessary straps and hardware to secure the deflated collar to the MRB to satisfy the Canadian road regulations. |
| MRB-373 | The MRB collar must be supplied with a collar repair kit for repair at sea by the crew in response to a minimum of 10 punctures or leaks equivalent in size to a .50 calibre bullet hole. |
| MRB-374 | The MRB collar must not contact the water surface at any point during high speed maneuvering in SS1. |
| MRB-375 | The MRB must be equipped with a means to ensure the collar is installed and located correctly (e.g. Tensioner). |
| MRB-376 | If the MRB is fitted with an inflatable collar, the collar forward of the dive doors must consist of a multi-compartmental collar with a minimum of five separate chambers of approximately equal volume. |
| MRB-377 | If the MRB is fitted with an inflatable collar, each collar chamber must independently inflate via the collar inflation system. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-378 | If the MRB is fitted with an inflatable collar, the pressure in any individual chamber must not affect the pressure in any other chamber. |
| MRB-379 | If the MRB is fitted with an inflatable collar, each collar chamber must have a pressure relief valve. |
| MRB-380 | The MRB collar must consist of two removable sections (dive doors) located on the port and starboard side of the boat aft of the forward collar. |
| MRB-381 | The MRB collar must consist of two fixed stern collar sections located on the port and starboard side of the boat aft of the removable dive doors. |
| MRB-382 | The MRB must be fitted with heavy duty rubbing strakes, along the full length of the outboard side of the collar, including on the bow. |
| MRB-383 | The MRB must have inboard hand holds placed for crew seated on the collar that do not pose an obstruction to movement. |
| MRB-384 | If the MRB is fitted with an inflatable collar, the air valves on the collar must be prevented from over tightening. |
| MRB-385 | If the MRB is fitted with an inflatable collar, the collar air valves must resist corrosion. |
| MRB-386 | If the MRB is fitted with an inflatable collar, the collar air valves must protect from salt build-up. |
| MRB-387 | If rigid floatation material is used in the MRB, then it must be closed cell resilient foam that is readily removable without requiring it to be broken down. |
| MRB-388 | If the MRB is fitted with an inflatable collar, the collar must be constructed of material that meets or exceeds the strength, elastic, resistance to wear and longevity requirements as defined in "TP 1324 - Material Specification for Coated Fabric Used in Inflatable Life rafts". |
| MRB-389 | Outfit |
| MRB-390 | Outfit General |
| MRB-391 | The MRB's fitted equipment must be integrated with the Government Furnished Equipment (GFE). |
| MRB-392 | Materials and Fasteners |
| MRB-393 | The MRB materials must be corrosion resistant. |
| MRB-394 | The integrity of all MRB mechanical connections must withstand the expected loading. |
| MRB-395 | The construction of the MRB must not have interactions between dissimilar metals without measures to prevent galvanic corrosion. |
| MRB-396 | Where the fasteners will become inaccessible after assembly, the MRB fasteners must be prevented from backing off. |
| MRB-397 | Fasteners in deck traffic areas of the MRB must be flush-mounted. |
| MRB-398 | All components, equipment and material used in the construction of the MRB must be new material. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-399 | All components, equipment and material used in the construction of the MRB must resist degradation from ultraviolet radiation. |
| MRB-400 | The MRB hull must be constructed of materials which are suitable for a marine environment, in accordance with the applicable parts of "ISO 12215-1(2000) Small craft - Hull construction and scantlings". |
| MRB-401 | Seating |
| MRB-402 | The MRB must be fitted with shock mitigating-seats for the 2 crew and 10 embarked personnel. |
| MRB-403 | The MRB shock mitigating seats must be jockey type seating. |
| MRB-404 | The MRB shock mitigating seats must have a seat depth of no less than 46 cm. |
| MRB-405 | The MRB shock mitigating seats must support personnel in the seated position to withstand the impact-loading of 13 force of acceleration (g's). |
| MRB-406 | Each MRB shock mitigating seat must support persons up to 130 kg. |
| MRB-407 | Each MRB shock mitigating seat should be adjustable any personnel within the CAF anthropometric 5th percentile female to 95th percentile male. |
| MRB-408 | Each MRB shock mitigating seat must be installed in less than one minute by one person without requiring the use of tools. |
| MRB-409 | Each MRB shock mitigating seat must be removed in less than one minute by one person without requiring the use of tools. |
| MRB-410 | The MRB shock mitigating seat attachment mechanisms must be accessible in any installed seat configuration. |
| MRB-411 | Each MRB shock mitigating seat must have handles that are non-reflective. |
| MRB-412 | Each MRB shock mitigating seat must have handles that are rigid, fixed and sited such that in any seat configuration personnel can brace on the handles. |
| MRB-413 | Each MRB shock mitigating seat must be upholstered with marine grade material which is durable, waterproof, tear and puncture resistant and resistant to fading due to exposure to UV light and saltwater. |
| MRB-414 | The MRB shock mitigating seat deck mounting hardware must be flush with deck and anti-skid matting. |
| MRB-415 | Each MRB shock mitigating seating arrangement must be reconfigured, from the seating arrangement to the Free Deck Arrangement, in complete darkness, in not more than 3 minutes. |
| MRB-416 | Anchoring System |
| MRB-417 | The MRB forward towing point must be configured to function as the securing point for the bitter end of the anchor line. |

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| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-418 | The MRB must be supplied with a 13 kg high holding power anchor which can be dropped and weighed by hand. |
| MRB-419 | The MRB must be supplied a double braided nylon anchor line with a breaking strength not less than 1,500 kg and length not less than 50 m. |
| MRB-420 | Mooring and Towing Systems |
| MRB-421 | The MRB must have two corrosion resistant towing points, one bridle arrangement at or near the stern and one tow post on the centerline in the bow which comply with TP-1332E - Construction Standards for Small Vessels. |
| MRB-422 | The MRB towing points must sustain a minimum bollard pull of 1,500 kg. |
| MRB-423 | The MRB towing hard points and lines must be constructed with a minimum safety factor of 4 for static pull and breaking strength. |
| MRB-424 | The MRB towing points must be configured to function as mooring bitts. |
| MRB-425 | The MRB forward tow post must be configurable as the forward weapon pedestal. |
| MRB-426 | The MRB must have four 25 cm mooring cleats that meet the requirements of "TP-1332E - Construction Standards for Small Vessels". |
| MRB-427 | The MRB mooring cleats and cleat mounts must withstand the force applied by the propulsion system at 25 percent throttle in a bollard pull condition. |
| MRB-428 | Fittings |
| MRB-429 | The MRB must have a minimum of three fixed securing eyes for trailering, 2 on the stern and one on the bow. |
| MRB-430 | The MRB stern securing eyes must not be located at the same points as the aft tow point. |
| MRB-431 | The MRB securing eyes must be sited below the collar and above the fully loaded waterline. |
| MRB-432 | The MRB bow securing eye must be not less than 32 mm diameter. |
| MRB-433 | Rails, Stanchions and Lifelines |
| MRB-434 | The MRB must be fitted with grab bars on the outboard surfaces of the control console. |
| MRB-435 | The MRB must be fitted with lifelines laced onto 20 stainless steel D-rings (10 per side). |
| MRB-436 | The MRB lifelines D-rings must be secured to the collar (excluding the bow and dive door areas) on the outboard edge of the anti-skid matting and sited to be within reach of a person in the water to aid in rescue operations. |
| MRB-437 | Rigging and Canvas |
| MRB-438 | Each MRB must be supplied with 1 heavy duty cover. |
| MRB-439 | The MRB cover, when fitted must have sufficient peak to prevent the accumulation of water or snow. |

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| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-440 | The MRB cover, when fitted, must prevent water from entering MRB. |
| MRB-441 | The MRB cover must be constructed of a water resistant material. |
| MRB-442 | The MRB cover must be functional in temperatures of -55 degrees Celsius to +50 degrees Celsius. |
| MRB-443 | The MRB cover must be resistant to mold and mildew. |
| MRB-444 | The MRB cover must be designed to withstand freezing rain with ice accumulations of up to 12 mm on the entire surface of the cover when installed on the boat, without stretching or damage. |
| MRB-445 | The MRB cover and securing attachments must permit transport at speeds of up to 110 kilometers per hour. |
| MRB-446 | The MRB arrangements for attaching and securing the boat cover must not interfere with securing arrangements on the cradle. |
| MRB-447 | The MRB boat cover must be reinforced in way of the corners and edges. |
| MRB-448 | Weapon Mounts |
| MRB-449 | The MRB weapon pedestals must accommodate a GFE weapon mount. |
| MRB-450 | The MRB must have two aft weapons pedestals. |
| MRB-451 | The MRB must have one aft weapon pedestal on the port side and one aft weapon pedestal on the starboard side, forward of the dive doors. |
| MRB-452 | The MRB aft weapons pedestals must be removable. |
| MRB-453 | The MRB aft weapon pedestals securing points must not be a tripping hazard. |
| MRB-454 | The MRB aft weapon pedestals securing points must have a method to prevent down flooding when the pedestals are not installed. |
| MRB-455 | The MRB weapon pedestals must have a personnel operational envelope at the base of the pedestal. |
| MRB-456 | The top of the weapon pedestal must be between 1200 mm and 1300 mm above the deck. |
| MRB-457 | The MRB port and starboard weapons pedestals must not interfere with the boarding party equipment and seats. |
| MRB-458 | The data for the weapon mount will be provided to the successful bidder at Contract Award. |
| MRB-459 | Painting |
| MRB-460 | The MRB will intentionally not comply with International Life-Saving Appliance (LSA) Code requirement that the exterior of MRB be of a highly visible colour or any similar requirements identified in any other reference standard in this SRD. |
| MRB-461 | All MRB painted parts and components must be coloured Grey 16480 in accordance with "FED-STD-595B", Federal Standard for Colors. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-462 | Any MRB fiberglass components must have a coloured gelcoat finish on all exterior surfaces. |
| MRB-463 | Any MRB gel coating must be applied at a 2.0-2.2 mm thickness, and must be coloured Grey 16480 in accordance with "FED-STD-595B Federal Standard for Colors". |
| MRB-464 | All paintings and coverings shall be applied in accordance with <i>D-23-003-005/SF-002 Specification for Maintenance Painting of HMC Ships</i> . |
| MRB-465 | Any MRB aluminum components must have a painted finish on all exterior surfaces. |
| MRB-466 | The MRB aluminum material must not be covered in powder coatings. |
| MRB-467 | The MRB must not have retro-reflective tape affixed to any part of the boat. |
| MRB-468 | All MRB parts and components must have a matte finish. |
| MRB-469 | A full list of all coatings to be used on the MRB must be submitted for approval. |
| MRB-470 | Electrical |
| MRB-471 | Power Generation |
| MRB-472 | Electrical Plant General |
| MRB-473 | The MRB's electrical system must be designed, constructed and installed in accordance with "TP-1332 - Construction Standards for Small Vessels". |
| MRB-474 | The MRB electrical system must have the capacity to supply electrical power for simultaneous operation of all systems. |
| MRB-475 | Any components of the MRB electrical system that are installed in the engine compartment or any other enclosed space which may contain explosive gases or vapours must be ignition protected. |
| MRB-476 | The MRB electrical system must be configured so as not to cause any Electromagnetic Interference (EMI) to any electronic equipment or to the magnetic compass. |
| MRB-477 | Ship Service Power Generation |
| MRB-478 | The MRB's electrical power must be provided by two engine-driven, 12 volt alternators (one per engine), sized to supply the operational electrical load whilst maintaining battery charge throughout the entire operating range of the engines including idle speed. |
| MRB-479 | Batteries |
| MRB-480 | The MRB batteries must operate over the identified environmental temperature range for Critical Systems. |
| MRB-481 | The MRB batteries must start the engines at the lowest temperature identified in the environmental temperature range for Critical Systems. |
| MRB-482 | The MRB battery system must be sized in accordance with the requirements of the engine OEM and able to provide power to the 12 volt DC electrical distribution system in accordance with the electrical load calculation requirements without the engines running. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-483 | The MRB battery system must be sized to provide power the lights and radios, at full electrical draw, for six hours without running the engines, and have sufficient power in reserve for two engine starts. |
| MRB-484 | All MRB batteries must be identical. |
| MRB-485 | The MRB batteries must be either (a) maintenance free marine lead-acid sealed gel cell type, or (b) marine Absorbed Glass Mat (AGM) type that can function after capsizing. |
| MRB-486 | The MRB batteries must be installed and connected such that batteries may be selectable or connected in parallel for engine starting. |
| MRB-487 | The battery selector switch must be located on the console and accessible from the coxswain's position. |
| MRB-488 | The MRB battery selector switch must be mounted in a protected location in or on the control console. |
| MRB-489 | The MRB batteries must be installed in captive, heavy duty, drip-proof and ventilated battery boxes that will remain secured in the event of capsize and subsequent righting. |
| MRB-490 | The MRB battery boxes ventilation must be prevent water ingress in the event of capsize. |
| MRB-491 | The MRB must be fitted with a minimum of four marine grade dual-purpose 12 volt batteries. |
| MRB-492 | The MRB must be fitted with a protection circuit that will prevent full discharge of the engine starting batteries due to the electrical system load thus ensuring they remain available for engine starting. |
| MRB-493 | The MRB must be fitted with a 120 volt AC, 30 amps, ship's power inlet receptacle connection with convenient access from both port and starboard sides. |
| MRB-494 | The MRB must be fitted with a 120 volt AC battery charger, supplied via the ship's power inlet receptacle connection, with a capacity sufficient for recharging 2 fully discharged batteries within 12 hours, whilst simultaneously providing power to the engine block heaters and fuel tank(s) heaters. |
| MRB-495 | Power Distribution |
| MRB-496 | Ship Service Power Cable |
| MRB-497 | MRB cables must be grouped into wiring harnesses and routed below deck within rigid conduit pipe wherever possible. |
| MRB-498 | All MRB cables used for electrical distribution must be water blocked, marine grade cables of appropriate size for the service they are supplying. |
| MRB-499 | All MRB cabling and conductors passing through any watertight boundaries, decks, bulkheads or other exposed surfaces must include watertight marine glands. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-500 | All MRB cables and conductors must be secured for dynamic loading at least every 45 cm on horizontal runs and every 35 cm on vertical runs. |
| MRB-501 | All MRB cabling and conductors passing through structure or boundaries must be protected from chafing. |
| MRB-502 | All MRB electric connections must be sealed from the atmosphere with heat shrink material (or equivalent) to ensure a moisture resistant connection. |
| MRB-503 | All MRB electrical conductors must be colour coded to facilitate ease of maintenance and fault-finding. |
| MRB-504 | All MRB electrical conductors must be numbered and identified by name at both ends to facilitate ease of maintenance and fault-finding. |
| MRB-505 | Switchgear and Panels |
| MRB-506 | The MRB must be fitted with a circuit breaker panel in a protected location in the control console with separate double pole, single throw breakers for all fitted electrical equipment and power outlets. |
| MRB-507 | The MRB circuit breaker panel must have a minimum of 6 spare breakers. |
| MRB-508 | The MRB circuit breaker panel must have bilingual Identification labels for all breakers. |
| MRB-509 | The MRB must be fitted with a switch panel(s) on the control console. |
| MRB-510 | The MRB switch panel(s) must control all equipment and systems to be operated from the console location, not already controlled through the multi-function displays. |
| MRB-511 | The MRB switch panel(s) must be accessible by the coxswain and navigator such that they can be operated in all environmental and operational conditions while wearing PPE. |
| MRB-512 | The MRB must be fitted with six individually switched NEMA 15 accessory receptacles (with screw on watertight caps) installed in the following locations: a) Two receptacles on the forward side of the console; b) Two receptacles on the aft side of the console; and c) Two receptacles on the forward side of the engine compartment. |
| MRB-513 | The MRB control console must have a master switch to turn off all lights, indicators and displays and mute all audible warnings and alarms (i.e., blackout and silent) while maintaining all engine and boat operating functions. |
| MRB-514 | Lighting |
| MRB-515 | The MRB must be fitted with independently controlled white and night adaptive lighting (to preserve night vision), located to illuminate the entire cockpit, working areas and the upper surfaces of the collar. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-516 | The MRB must be fitted with a minimum of two independently controlled flood lights that illuminate the water surface around the MRB during exercises requiring high night time visibility. |
| MRB-517 | The MRB must be fitted with navigation lighting, including an all-round blue flashing light(s) with visibility out to 3.7 km as prescribed in "Canadian Shipping Act, 2001, Collision Regulations (C.R.C., c. 1416)". |
| MRB-518 | The MRB must be fitted with a hand-held searchlight, with minimum intensity of 250,000 candela, readily accessible and operable from either control console position. |
| MRB-519 | The MRB must be fitted with an Infra-Red (IR) strobe light that has 360 degree visibility to other platforms with Night Vision Imaging Systems (NVIS) when MRB is operating without lights. |
| MRB-520 | Navigation, Communications and Electronics |
| MRB-521 | Control Console |
| MRB-522 | Controls |
| MRB-523 | The MRB controls must configured with a mode that overrides all automatic shutdowns and alarms in order to allow the MRB to keep operating regardless of any alarms (battle mode). |
| MRB-524 | The MRB must be fitted with an engine kill switch system, located on the console, which connects to the coxswain via a lanyard and will automatically shut-off both engines in the event that the coxswain is ejected from the MRB. |
| MRB-525 | The MRB engine kill switch must be sited and arranged to prevent accidental activation. |
| MRB-526 | The MRB must have the steering controls located at the center of the coxswain's position on port side, with the throttle control located on the starboard side of the steering control at the coxswain's position. |
| MRB-527 | The MRB must be fitted with a boat trim system that allows the coxswain to control trim and heel without removing their hands from the wheel and throttle. |
| MRB-528 | The MRB control console must be fitted with a means for the coxswain to start the engines (e.g. a starter switch and button). |
| MRB-529 | The MRB control console must be fitted with a remote manual fuel shut-off control for each fuel line. |
| MRB-530 | The MRB automatic electric bilge pumping system must have a control switch on the control console with settings for "on", "off" and "automatic operation". |
| MRB-531 | Displays and Instrumentation |
| MRB-532 | The MRB control console must be fitted with two multi-function display screens of the not less than 30 cm measured diagonally, with one display at the coxswain's position and one display at the navigator's position. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-533 | The MRB must be fitted with a heading sensor that interfaces with the navigation system for display on the control console multi-function displays. |
| MRB-534 | Each MRB multi-function displays must be operated by its own dedicated track ball mouse. |
| MRB-535 | The MRB console must be supplied with a cover that protects all lights and displays on the console. |
| MRB-536 | Each MRB control console multi-function display screen must present, by "page" selection, information from the propulsion system, the maneuvering systems, the EO/IR camera system, the navigation systems and the communication systems. |
| MRB-537 | The MRB multi-function displays and gauges must be visible to the operators in all lighting and environmental conditions. |
| MRB-538 | The MRB multi-function displays, all indicators, gauges and lights on the console must be dimmable over the range of 0 to 100 percent. |
| MRB-539 | All MRB console displays must have switches or buttons for complete off or on. |
| MRB-540 | The MRB multi-function displays, all indicators, gauges and lights on the console turn on at the last dimming setting. |
| MRB-541 | The MRB multi-function displays and gauges must be compatible with Night Vision Imaging Systems (NVIS). |
| MRB-542 | The MRB control console must be fitted with the Human Machine Interface (HMI) controls, instrumentation and displays for the communication systems. |
| MRB-543 | The MRB control console must be fitted with HMI controls and display information from the Integrated Navigation System. |
| MRB-544 | The MRB control console must be fitted with HMI controls and instrumentation for lighting and other electrical equipment. |
| MRB-545 | Steering Control Systems |
| MRB-546 | The MRB must be fitted with a steering systems that can steer the MRB at all speeds and under all operating conditions and profiles. |
| MRB-547 | The MRB steering systems must be hydraulic and integrated with the stern drives. |
| MRB-548 | The MRB steering systems must comply with "TP-1332 - Construction Standards for Small Vessels". |
| MRB-549 | Antenna |
| MRB-550 | The proposed antenna arrangement for the MRB must be submitted for approval by Canada. |
| MRB-551 | The MRB vessel design must not incorporate spring loaded antenna. |
| MRB-552 | The MRB HF signal must reach the maximum range of 60 nautical miles. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-553 | The MRB communications suite must have dedicated transmit and receive antennas for each transceiver and receiver. |
| MRB-554 | The MRB antennas must be selected and sited to provide optimized performance across all frequencies of the supplied transceivers and receivers and for optimal satellite communication system connectivity. |
| MRB-555 | Electromagnetic Interference (EMI) |
| MRB-556 | The MRB must not pose a risk to personnel due to the exposure of hazardous electromagnetic radiation (HERP) during operation or maintenance in accordance with "MIL-STD-464C - Electromagnetic Effects Requirements for Systems". |
| MRB-557 | All MRB electronic equipment, including navigation, communication and propulsion control systems, must be sited, installed, grounded, bonded and shielded in accordance with OEM instructions. |
| MRB-558 | All MRB electronic equipment and systems, including navigation, communication and the propulsion control, must be sited, installed, grounded, bonded and shielded to allow the simultaneous operation of all electronic equipment. |
| MRB-559 | The MRB C4ISR sensors and antennas must all be mounted on the mast(s) or arch(es), incorporating location and mounting guidance provided by the OEM. |
| MRB-560 | Navigation Systems |
| MRB-561 | Navigation Systems General |
| MRB-562 | The MRB must be supplied with a removable radar reflector, meeting the requirements of the "Canadian Shipping Act, 2001, Collision Regulations (C.R.C., c. 1416), Rule 40". |
| MRB-563 | The MRB removable radar reflector must be mounted in its location on the mast(s) or arch(es) in not more than 15 minutes by one person wearing PPE |
| MRB-564 | The MRB must be fitted with a 9 cm to 13 cm direct read or combi-dial permanent magnetic marine compass that is adjustable for deviation, mounted at the center of the control console, with a dedicated dimmable light. |
| MRB-565 | The MRB must relay positional information back to the Parent ship through the communications system. |
| MRB-566 | The MRB must be fitted with a navigation system which is integrated into the two multi-function displays on the control console. |
| MRB-567 | The MRB must have a chart plotter that is integrated with the navigation system. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-568 | The MRB must have a chart plotter that utilises DND and commercially available maritime navigation electronic charts including: a) ENCs licensed to a specific ship or Submarine; b) DNCs and associated TODs; c) Canadian waters S-57 and BSB - 1 DVD for east coast and 1 DVD for west coast; d) AMLs (Additional Military Layers) - overlays of countries' territorial waters; e) ARCS (Admiralty Raster Chart System); f) S-63 (encrypted S-57); g) S-100; and h) S-101. |
| MRB-569 | Navigation Radar |
| MRB-570 | The MRB must be fitted with a navigational radar with an Automatic Radar Plotting Aid (ARPA) capability that interfaces with the navigation system for display on the two control console multi-function displays. |
| MRB-571 | The MRB navigation radar must have a minimum range of 20 m and a maximum range of 80 km. |
| MRB-572 | Navigation Systems Radio |
| MRB-573 | The MRB must be fitted with a Global Positioning System (GPS) receiver that interfaces with the navigation system for display on the control console multi-function displays. |
| MRB-574 | The MRB must be fitted with a class B, Automatic Identification System (AIS), which interfaces with the navigation system for display on the control console multi-function displays. |
| MRB-575 | The MRB class B, AIS must have the ability to receive both Class "A" and class "B" information. |
| MRB-576 | The MRB class B, AIS must have the ability to manually cease (turn off) the transmit function while still receiving and displaying AIS data from other vessels. |
| MRB-577 | Navigation Systems Below Water |
| MRB-578 | The MRB must be fitted with a through-hull transducer depth sounder that interfaces with the navigation system for display on the two control console multi-function displays. |
| MRB-579 | The MRB must be fitted with a through-hull transducer speed log that interfaces with the navigation system for display on the two control console multi-function displays. |
| MRB-580 | The MRB through-hull sensors may be combined into one sensor. |
| MRB-581 | The MRB through-hull transducer for the depth sounder must be sited to accurately display depth, of not less than 235 m. |

| SRD Line Number | MRB Requirement |
|------------------------|---|
| MRB-582 | The MRB through-hull transducer for the speed log must be sited to accurately display speed (accurate to within 0.1 knots) at any operational depth. |
| MRB-583 | The MRB through-hull transducer for the depth sounder must be sited to facilitate ease of maintenance and replacement of the transducer while the MRB is in its cradle. |
| MRB-584 | The MRB through-hull transducer for the speed log must be sited to facilitate ease of maintenance and replacement of the transducer while the MRB is in its cradle. |
| MRB-585 | All MRB through-hull transducers must be protected against mechanical damage due to grounding, beaching, impact with the cradle, impact with the trailer or impact with debris. |
| MRB-586 | Alarm, Safety and Warnings Systems |
| MRB-587 | The MRB must be fitted with fire alarm sensors in the engine compartment that provide audible and visual alarms. |
| MRB-588 | The audible alarm must be mutable without affecting the visual alarm or new instances of other audible alarms. |
| MRB-589 | The MRB fire alarm system must provide audible and visual alarms at the coxswain's position on the control console. |
| MRB-590 | The MRB propulsion control system must provide audible and visual alarms at the control console for high engine cooling water temperature for each engine. |
| MRB-591 | The MRB propulsion control system must provide audible and visual alarms at the control console for low engine lube oil pressure for each engine. |
| MRB-592 | The MRB propulsion control system must provide audible and visual alarms at the control console for high lube oil temperature for each engine. |
| MRB-593 | The MRB propulsion control system must provide audible and visual alarms at the control console for low lube oil pressure for each engine. |
| MRB-594 | The MRB propulsion control system must provide audible and visual alarms at the control console for alternator failure for each alternator. |
| MRB-595 | The MRB propulsion control system must provide audible and visual alarms at the control console for high exhaust temperature. |
| MRB-596 | The MRB propulsion control system must provide audible and visual alarms at the control console for cooling water flow failure. |
| MRB-597 | The MRB must provide audible and visual alarms at the control console for high bilge water level. |
| MRB-598 | Radio Systems |

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| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-599 | The MRB Radio System contains a significant amount of GFE. Exact details of the GFE will be provided to the selected Contractor after Contract Award. Specific details related to GFE included in this SRD are to allow for costing of cabling, mounting and integration activities. |
| MRB-600 | The MRB must integrate all Contractor supplied sensors and equipment with the GFE components to meet the requirements specified elsewhere in this SRD. |
| MRB-601 | The MRB must include a 1 X 12-28V DC/DC Power Converter, supplied as GFE: a. Installation envelope of 8.5 inches x 14.52 inches x 3.7 inches; b. Provides regulated 28V DC at 30 amps when supplied with 12V DC from vehicle electrical system; c. Include 105A circuit breaker for power input from vehicle battery. |
| MRB-602 | The MRB must include a 28V distribution box, supplied as GFE, to power GFE radios and RF amplifiers. |
| MRB-603 | The MRB must include a multiband/multichannel V/UHF/L/S band radio, supplied as GFE with an installation envelop of 5 inches x 4 inches X 10 inches |
| MRB-604 | The MRB must include a multiband HF/VHF radio, supplied as GFE with an installation envelop of 11 inches x 13.5 inches X 22 inches. |
| MRB-605 | The MRB must include an antenna couple, supplied as GFE, with an installation envelop of 11.5 inches X 16 inches X 11 inches near the HF antenna. |
| MRB-606 | The MRB must include all cabling and connections necessary to integrate the Radio System GFE into the MRB. |
| MRB-607 | The MRB must have two crew station units, with dual connection intercom, for use with the GFE HF radio GFE multiband/multichannel radio. |
| MRB-608 | The MRB must include two crew station units which must be mounted one at the navigator location and one at the coxswain location. |
| MRB-609 | The MRB must have a speaker unit, connected to the intercom system, mounted on the console. |
| MRB-610 | The MRB GPS must provide inputs to both the GFE multiband HF/VHF and GFE multiband/multichannel radios. |
| MRB-611 | The MRB must include two multiband/multichannel RF amplifiers, supplied as GFE: a. Installation envelope of 7 inches x 9 inches X 13.5 inches; b. Output power of: i. SOW VHF LO 30-80 Megahertz; ii. SOW VHF HI 118-174 Megahertz; iii. 75+2857W Burst 290-320 Megahertz; iv. SOW UHF 174-512 Megahertz. |

| SRD Line Number | MRB Requirement |
|-----------------|--|
| MRB-612 | The MRB must include a rugged HF whip antenna, continuously tunable from 2-30 Megahertz, supplied as GFE (approximately 9 inches tall). |
| MRB-613 | <p>The MRB must include a Multiband Wideband capable UHF/L/5 band whip antenna COMROD UHF2252000VM or equivalent, supplied as GFE:</p> <ul style="list-style-type: none"> a. Frequency Range: 225 Megahertz - 2000 Megahertz; b. Has gain 2 dBi on average; c. Maximum VSWR of 3.5:1; d. Has power rating of 100 Watts; e. Uses N-type female connector; f. Not to exceed overall height of 35 inches; g. mounted using standard NATO 4-hole base; h. Ground plane required; i. Include co-location filters. |
| MRB-614 | <p>The MRB must include a Multiband capable UHF band whip antenna, model VALCOM VMB- 11512-N or equivalent, supplied as GFE:</p> <ul style="list-style-type: none"> a. Frequency Range: 115 Megahertz - 512 Megahertz; b. Has gain of -3dBi to +3dBi; c. Maximum VSWR of 3:1; d. Has power rating of 100 Watts; e. N-type female connector; f. Not to exceed overall height of 26 inches; g. mounted using standard NATO 4-hole base; h. Ground plane required; i. Including co-location filters. |
| MRB-615 | <p>The MRB must include a UHF TacSat Antenna capable of (MUOS, DAMA, IW and Dedicated modes) model COMROD UHF2433805 or equivalent, supplied as GFE:</p> <ul style="list-style-type: none"> a. Has frequency range of 243 Megahertz - 320 Megahertz, and 260 Megahertz - Megahertz; b. Has gain of 4dBi Nominal; c. Maximum VSWR of 2.5:1; d. Has power rating of 60W; e. N-type female connector; f. Not to exceed overall height of 26 inches; g. mounted using standard NATO 4-hole base; h. Include co-location filters. |
| MRB-616 | The MRB must have a multipurpose ruggedized computer to integrate the multi-function displays, the radio system, navigation system and sensor systems. |

| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-617 | The MRB multipurpose computer must include, as a minimum: a. One RS-232 serial ports for programing and data transfer; b. Three USB connections for connection to GFE radios and devices; c. One Ethernet port for Connection to C2 systems; d. Connection necessary to integrate with MRB multi-channel intercom system; and e. Execute on OS available with Windows 7 and is upgradeable to Windows 10. |
| MRB-618 | The MRB must have a ruggedized multi-channel intercom system to provide: a. Simultaneous operation of both Multiband and HF Radios; b. User selection of desired radio via station; c. User intercommunications via the intercom function; d. Cross band voice and data between radios; e. Remote control radios wired and wirelessly; f. Integration with the external loud hailer; g. External rotary dial unit with dual headset outputs, and; h. Interface with ruggedized computer via RJ-45 or DB-9; |
| MRB-619 | The MRB must include a separate breaker for multi-channel intercom system. |
| MRB-620 | Visual and Audible Systems |
| MRB-621 | The MRB must be fitted with an electric air horn. |
| MRB-622 | The MRB electric air horn must be operated by a momentary push button switch which is readily accessible and operable from each console position. |
| MRB-623 | The MRB electric air horn must meet the "Canadian Shipping Act, 2001, Collision Regulations (C.R.C., c. 1416), Annex III - whistles". |
| MRB-624 | The MRB electric air horn must have an audible range of 1 km. |
| MRB-625 | The MRB must be fitted with a loudhailer that has both a siren and a "yelp" function. |
| MRB-626 | The loudhailer must have an audibility range of not less than 1 km. |
| MRB-627 | The loudhailer must be operable from both the coxswain and navigator position on the console, using a button or switch. |
| MRB-628 | Infrared Surveillance and Tracking System |
| MRB-629 | The MRB must be equipped with an EO/IR camera. |
| MRB-630 | The MRB EO/ IR camera must have, as a minimum, High Definition 1080p media capture capability. |
| MRB-631 | The MRB EO/ IR camera must capture near real time video. |
| MRB-632 | The MRB EO/ IR camera must be integrated with the multi-function displays in the control console. |
| MRB-633 | The MRB EO/IR camera must be controlled using a trackball, joystick or similar controls integrated into the console. |

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| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-634 | The MRB EO/IR camera controls must be positioned to be operated by the navigator. |
| MRB-635 | The MRB EO/IR system must search, detect, and track user identified targets of interest in luminance conditions ranging from direct unobscured sunlight to overcast starlight. |
| MRB-636 | The MRB EO/IR camera system must have a line of sight that ranges from 10 m from the edge of the MRB out to the maximum range of the camera. |
| MRB-637 | The MRB EO/IR camera system must operate continuously, without degradation in detection, in ambient air temperatures from -25 degree Celsius to +55 degree Celsius. |
| MRB-638 | The MRB EO/IR camera must be installed within 15 minutes by one person wearing PPE. |
| MRB-639 | The MRB EO/IR camera must be removed within 15 minutes by one person wearing PPE. |
| MRB-640 | The MRB EO/IR camera system must provide the capability to detect a person on the upper deck of a target vessel at 500m where the temperature difference is less than 1 degree Celsius. |
| MRB-641 | The MRB EO/IR camera system must provide the capability to detect a person in the water at a minimum range of 2 km where the temperature difference is less than 1 degree Celsius. |
| MRB-642 | The MRB EO/IR camera system must be installed in a position that optimizes its field of view. The field of view of the EO/IR camera is to take precedence over other sensors. |
| MRB-643 | The MRB EO/IR camera system can conduct a 360 degree azimuth scan with a minimum elevation scan of -30 degrees to +85 degrees. |
| MRB-644 | The MRB EO/IR camera system must be gyro and electronic stabilized utilizing a ruggedized marine gimbal system that provides a steady image and line of sight and can function in SS5 and survive SS6. |
| MRB-645 | The MRB EO/IR camera system must produce near real time imagery in a format compatible with GFE radios which can be readily recorded and transmitted. |
| MRB-646 | The MRB EO/IR camera system must be integrated to the navigation radar system to permit the tracking of selected radar targets. |
| MRB-647 | The MRB EO/IR camera must be the highest C4ISR sensor on the mast or arch, excluding the antennas. |
| MRB-648 | The MRB EO/IR camera must be positioned longitudinally to minimize motions. |
| MRB-649 | Stowables |

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| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-650 | Each MRB must be supplied with one double braided nylon towline, with a length of not less than 50 m and with a minimum breaking strain of 1,500 kg. |
| MRB-651 | Each MRB must be supplied with one double braided nylon towline, with a length of not less than 50 m and with a minimum breaking strain of 1,500 kg. |
| MRB-652 | Each MRB must be supplied with two 8 m long double braided nylon docking lines (1/2 inch diameter). |
| MRB-653 | Each MRB must have a Jason's Cradle man-overboard recovery system, or equivalent. |
| MRB-654 | Each MRB must be supplied with one handheld searchlight. |
| MRB-655 | Each MRB must be supplied with one radar reflector. |
| MRB-656 | Cradle |
| MRB-657 | The MRB cradle must be designed and constructed to fasten to a parent ship using commercially available coupling and locking systems (e.g. ISO twist lock). |
| MRB-658 | The MRB cradle deck fastening and locking system must use the fewest locking points as practical and safe, to facilitate efficient coupling and decoupling, and minimize intrusive changes to the parent ship deck structure while still meeting all loading requirements. |
| MRB-659 | The MRB cradle deck fastening and locking system mechanisms for locking and release must be located to be readily accessible from both sides of the cradle. |
| MRB-660 | The MRB cradle must be designed and constructed from appropriate materials and components to resist failures due to shock. |
| MRB-661 | The MRB cradle must have three lash down points to connect to the bow stem bolt and the two transom connection points on the MRB. |
| MRB-662 | The MRB in its cradle must be designed and outfitted so as not to require an escort to transit on Canadian roadways. |
| MRB-663 | The MRB must remain captive in its cradle in SS9. |
| MRB-664 | The MRB cradle must remain secure to the deck of the <i>Halifax-class</i> in SS9. |
| MRB-665 | The MRB must withstand a heavy shock test as defined within "D-03-003-007/SG-000 - Specification for Design and Test Criteria for Shock Resistant Equipment in Naval Ships", and "MIL-DTL-901E - Shock Tests HI (High Impact) Shipboard Machinery, Equipment and Systems, Requirements", whilst the boat is secured within its cradle. |
| MRB-666 | The MRB cradles must be lifted by a crane, with the MRB secured in the cradle, without using lifting points attached to the MRB itself. |
| MRB-667 | Each MRB cradle must be supplied with all securing straps and any miscellaneous fittings required to secure the MRB to the cradle. |

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| SRD Line Number | MRB Requirement |
|------------------------|--|
| MRB-668 | Each MRB cradle must be provided with the necessary slings, cables, spreader bars and rigging equipment to lift the cradle, with the MRB in the cradle, from a single point hook on a crane. |
| MRB-669 | The MRB cradle must be suitable for conducting maintenance of equipment normally under the waterline including, the hull, hand holds, transducers, stern drives, etc. |
| MRB-670 | The MRB cradle installation on the <i>Halifax-class</i> must be completed in no more than 30 mins, with the aid of the MRB LARS system, from cradle pick on wharf to secure on deck. |
| MRB-671 | The MRB cradle removal on the <i>Halifax-class</i> must be completed in no more than 30 mins, with the aid of the MRB LARS system, from cradle pick on deck to secure on wharf. |
| MRB-672 | The MRB cradle installation or removal on the <i>Halifax-class</i> , must be completed with no more than 5 people wearing PPE. |
| MRB-673 | The MRB cradle must allow for long term storage of the MRB ashore without damaging the MRB. |
| MRB-674 | The MRB cradles must be configured such that positioning of the MRB in the cradle is automatically consistent. |
| MRB-675 | The MRB cradles must be designed for a minimum load equivalent to 150 percent of the MRB Fully Loaded condition weight less 1300kg and with 3 Gs acceleration in the vertical direction and 1 Gs acceleration in the horizontal and fore and aft directions. |
| MRB-676 | The MRB hull construction must be robust enough to stay intact during a Fully Loaded condition less personnel (1,500 kg), and on its cradle under vertical accelerations of 3 Gs without damage. |

ANNEX M

BID EVALUATION MATRICES

FOR THE

MULTI-ROLE BOAT PROJECT

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1.0 DESCRIPTION OF APPENDIX 1: MANDATORY EVALUATION CRITERIA

- 1.1 The Bidder's proposal must address all mandatory evaluation criteria. The proposal must include information and documentation to fully support the Bidder's response and support compliance so that it may be fairly evaluated in relation to the stated requirements.
- 1.2 The information provided must be complete, concise and clearly demonstrate that the Bidder meets the stated mandatory requirements. Where specific objective evidence is indicated in the tables to prove compliance with an evaluated criterion, the Bidder must provide that evidence within their bid proposal. Where drawings are required as objective evidence, the Bidder must include a hard copy of the drawing that is legible and provided on a minimum 11 inch x 17 inch standard size sheet.
- 1.3 In order to substantiate their compliance to each criterion, the Bidder must indicate where the supporting information can be found in their proposal by completing the tables contained in Appendix 1 Technical (Section I) and Management (Section II) Mandatory Evaluation Criteria. The Bidder must refer to the supporting documents within their Bid, with the exact page number(s) and paragraph number(s), where the required substantiation can be found. Each criterion must be addressed separately and should be presented in order of the evaluation criteria to facilitate the evaluation process.
- 1.4 For the Technical Bid (Section I), as part of their proposal, the Bidder must complete the following Tables;

Appendix 1 – Technical Mandatory Evaluation Criteria - Technical (Section I)

Table 5 – Bidder Mandatory Experience Matrix

- 1.5 For the, Management - (Section II), as part of their proposal, the Bidder must complete the following Tables;

Appendix 1 – Technical Mandatory Evaluation Criteria – Management (Section II)

Table 6 – Project Management Requirements

- 1.6 For the purposes of Bid Evaluation, '*unique class*' of vessel refers to a class of vessel submitted by the Bidder that differs from any other class of vessel submitted by a minimum of one of the following;
- i. Length difference greater than 1 metre (length overall), and/or;
 - ii. Installed power difference greater than 50 hp (37 kW), and/or;
 - iii. Maximum speed difference in calm water (Sea State 1 or less) of greater than 10 knots.

2.0 DESCRIPTION OF APPENDIX 2: TECHNICAL POINT RATED EVALUATION CRITERIA

- 2.1 Bids meeting ALL Appendix 1 Technical (Section I) and Management (Section II) Mandatory Evaluation Criteria will be evaluated against the Appendix 2 Experience (Section I) and Management (Section II) Technical Point Rated Evaluation Criteria.
- 2.2 Bidders should submit with their proposal all necessary information such that the evaluation team can make a clear determination as to the Bidder's understanding of the requirement and capability to perform the work. Where specific objective evidence is indicated in the tables to prove compliance with an evaluated criterion, the Bidder should provide that evidence within their bid proposal. Where drawings are provided as objective evidence, the Bidder should include a hard copy of the drawing that is legible and provided on a minimum 11 inch x 17 inch standard size sheet.
- 2.3 For the Technical Point Rated Evaluation Criteria the overall maximum points achievable is 1000 points. No minimum points are required in any Category for a bid to be considered compliant.

Table 1 - Technical Point Rated Evaluation Criteria

| Category | | Total Possible Points |
|--------------|--|-----------------------|
| 1 | Experience Related to Vessel Technical Requirements (Appendix 2, Section I, Table 7) | |
| a | High Speed Boat Experience | 100 |
| b | Shock Mitigating Seats Experience | 100 |
| c | Propulsion System Experience | 50 |
| d | Communication Equipment Experience | 150 |
| e | Multi-Function Display Experience | 100 |
| 2 | Experience with Marine Construction Standards (Appendix 2, Section I, Table 8) | |
| a | Classification Society Rules | 50 |
| b | Military (Naval) Standards | 50 |
| 3 | Project Management Team (Appendix 2, Section II, Table 9) | 100 |
| 4 | Project Management Plan (Appendix 2, Section II, Table 10) | 100 |
| 5 | Master Plan and Schedule (Appendix 2, Section II, Table 11) | 100 |
| 6 | Quality Plan (Appendix 2, Section II, Table 12) | 100 |
| TOTAL POINTS | | 1000 |

- 2.4 In order to substantiate the Bidder's compliance to each criterion, the Bidder should refer to the supporting documents within their technical bid proposal, with the exact page number(s) and paragraph number(s) where the required substantiation can be found. The Bidder should indicate where the supporting information can be found in their proposal by completing the tables contained in Appendix 2 Technical Point Rated Evaluation Criteria for Experience (Section I) and Management (Section II) elements.
- 2.5 Each of the six (6) categories of criteria listed in Table 1 have associated elements detailed in Tables 7 to 12 located in Appendix 2 and described in paragraphs 2.6 and 2.7.
- 2.6 For the Technical Point Rated Evaluation Criteria - Experience (Section I), as part of their proposal, the Bidder should complete the following tables:

Appendix 2 – Technical Point Rated Evaluation Criteria – Experience
(Section I)

Category (1) – Table 7 – Experience Related to Vessel Technical Requirements

Category (2) – Table 8 – Experience with Marine Construction Standards

- 2.7 For the Technical Point Rated Evaluation Criteria - Management (Section II), as part of their proposal, the Bidder should complete the following tables:

Appendix 2 – Technical Point Rated Evaluation Criteria – Management
(Section II)

Category (3) – Table 9 – Project Management Team

Category (4) – Table 10 – Project Management Plan

Category (5) – Table 11 – Master Plan and Schedule

Category (6) – Table 12 – Quality Plan

- 2.8 The points achieved by a Bidder in Appendix 2 will be used to calculate the technical portion of the Total Points Score.
- 2.9 For the purposes of the Technical Point Rated Evaluation Criteria the term '*qualifying vessel*' refers to a unique class of vessel produced by the Bidder that;
- i. is between 8m and 12m in length (length overall); and
 - ii. has had at least one such vessel the Bidder delivered and was accepted by the client, in the last ten (10) years.
- 2.10 Category (1) Experience Related to Vessel Technical Requirements: The Bidder should supply Objective Evidence with their proposal to demonstrate how the

qualifying vessel(s) meets each of the requirements described in Appendix 2, Section I, Table 7.

- 2.11 Category (2) Experience with Marine Construction Standards: The Bidder should provide Objective Evidence that they have a proven history of incorporating the requirements of Classification Society and/or military standards, as requested in Appendix 2, Section I, Table 8, into a *qualifying vessel*.
- 2.12 Category (3) Project Management Team: The Bidder's proposal should provide evidence and demonstrate that the individuals put forward meet the listed criteria for the respective position described in Appendix 2, Section II, Table 9.

Bidders are advised that only listing experience without providing any supporting objective evidence to describe responsibilities, duties and relevance to these requirements, or reusing the same wording as in this RFP, will not be considered "demonstrated" for the purpose of this evaluation.

The Bidder should provide complete details as to where, when (month and year), how (through which activities and/or responsibilities), the stated qualifications and experience were obtained. Experience gained during formal education will not be considered work experience. For each curriculum vitae submitted, the Bidder must ensure that:

- i. The applicable project management organizational role and the individual's name are clearly indicated;
- ii. The starting and finishing date of the experience (month and year) are clearly indicated;
- iii. The name of the employer/institution as well as the position/title held by the individual during the period of the experience are clearly indicated;
- iv. Name of the organization / project the service was provided for (if outside of the employer / institution) are clearly indicated; and
- v. A brief summary description of the experience(s) and project(s) including activities performed and the responsibilities assigned to the individual during this period.

Bidders are advised that month(s) of experience listed for a project whose time frame overlaps that of another referenced project will only be counted once. For example: Project 1 time frame is July 2001 to December 2001; Project 2 time frame is October 2001 to January 2002; the total months of counted experience for these two project references is seven (7) months.

The curriculum vitae should be provided following the format set out in Appendix 3 – CURRICULUM VITAE FORMAT.

- 2.13 Category (4) Project Management Plan (PMP): The Bidder should include, for the purpose of evaluation, a draft PMP prepared in accordance with Data Item Deliverable (DID) DID-M-001 of the SOW at Annex A of the RFP.

The Bidder's proposal should address those criteria listed in Appendix 2, Section II, Table 10. Each element provided by the Bidder for the Project Management Plan will be evaluated against the following:

- i. comprehension of the element;
- ii. level of detail and description of each element; and
- iii. the quality, logic and clarity of presentation.

A weight value will be assigned to each element following review of the Bidder's submitted proposal, as shown in Table 2 below. The weight value will then be multiplied by the maximum available points for the particular element to obtain a Technical Points score.

Table 2 - Project Management Plan Weight Value Descriptions

| | Weight value |
|--|--------------|
| Exceptional - The Bidder has submitted a superior description of the element. The details are complete and demonstrate the Bidder has a full understanding of the element. All areas are thoroughly addressed. There are no apparent weaknesses that would affect the achievement of the work associated with this element. | 1 |
| Acceptable - The Bidder has submitted an adequate description of the element. The details are sufficient and demonstrate the Bidder's understanding of the element. All areas are addressed. | 0.5 |
| Unacceptable - The Bidder has submitted a weak description of the element. The proposal does not demonstrate that the requirement is understood and there are weaknesses that would affect the achievement of the work associated with this requirement. | 0 |

- 2.14 Category (5) Master Plan and Schedule: The Bidder should include, for the purpose of evaluation, a draft Master Plan and Schedule prepared in accordance with DID-M-002 of the SOW at Annex A of the RFP.

The Bidder's proposal should address those criteria listed in Appendix 2, Section II, Table 11. Each element provided by the Bidder for the Master Plan and Schedule will be evaluated against the following:

- i. comprehension of the element;
- ii. level of detail and description of each element; and

- iii. the quality, logic and clarity of presentation.

A weight value will be assigned to each element following review of the Bidder's submitted proposal, as shown in Table 3 below. The weight value will then be multiplied by the maximum available points for the particular element to obtain a Technical Points score.

Table 3 - Master Plan and Schedule Weight Value Descriptions

| | Weight value |
|--|--------------|
| Exceptional - The Bidder has submitted a superior description of the element. The details are complete and demonstrate the Bidder has a full understanding of the element. All areas are thoroughly addressed. There are no apparent weaknesses that would affect the achievement of the work associated with this element. | 1 |
| Acceptable - The Bidder has submitted an adequate description of the element. The details are sufficient and demonstrate the Bidder's understanding of the element. All areas are addressed. | 0.5 |
| Unacceptable - The Bidder has submitted a weak description of the element. The proposal does not demonstrate that the requirement is understood and there are weaknesses that would affect the achievement of the work associated with this requirement. | 0 |

- 2.15 Category (6) Quality Plan: The Bidder should include, for the purpose of evaluation, a draft Quality Plan prepared in accordance with DID-M-011 of the SOW at Annex A of the RFP.

The Bidder's proposal should address those criterion listed in Appendix 2, Section II, Table 12. Each element provided by the Bidder for the Quality Plan will be evaluated against the following:

- i. comprehension of the element;
- ii. level of detail and description of each element; and
- iii. the quality, logic and clarity of presentation.

A weight value will be assigned to each element following review of the Bidder's submitted proposal, as shown in Table 4 below. The weight value will then be multiplied by the maximum available points for the particular element to obtain a Technical Points score.

Table 4 - Quality Plan Weight Value Descriptions

| | Weight value |
|--|--------------|
| Exceptional - The Bidder has submitted a superior description of the element. The details are complete and demonstrate the Bidder has a full understanding of the element. All areas are thoroughly addressed. There are no apparent weaknesses that would affect the achievement of the work associated with this element. | 1 |
| Acceptable - The Bidder has submitted an adequate description of the element. The details are sufficient and demonstrate the Bidder's understanding of the element. All areas are addressed. | 0.5 |
| Unacceptable - The Bidder has submitted a weak description of the element. The proposal does not demonstrate that the requirement is understood and there are weaknesses that would affect the achievement of the work associated with this requirement. | 0 |

Appendix 1 – Technical Mandatory Evaluation Criteria – Technical (Section I)

Table 5 - Bidder Mandatory Experience Matrix

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|--|---|--|---|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| The Bidder Mandatory Experience Matrix lists the minimum mandatory experience that the Bidder must demonstrate in order to be considered as compliant with the Technical Bid (Section I) of the Mandatory Evaluation. The Bidder must provide evidence it has fabricated and delivered class(es) of vessel meeting the requirements specified in the following sections. | | | | | | |
| 1) The Bidder must provide documentation demonstrating it has experience delivering multiple platforms of one unique class. The Bidder must identify, and provide documentation of one unique class of vessel, that it produces / has produced, that meets all of the following identified requirements; | | | | | | |
| 1.a) | The class of vessel is between 8m and 12m in length (length overall, LOA.). | | Drawings and/or other official documentation stating the length of the class of vessel, including the following: i. Identify the <i>unique class</i> principal particulars; ii. Properly dimensioned General Arrangement (GA) drawings; | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|------|--|--|--|--------------------|----------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | and iii. Photos of vessel; | | | |
| 1.b) | The class of vessel has a top speed of not less than 30 knots in calm water (Sea State 1 or less). | | Documentation showing the speed test for the vessel class or other documentation that confirms a speed of not less than 30 knots , including the following: i. Trials reports which verify speeds and sea states. | | | |
| 1.c) | The class of vessel has had a minimum of five (5) platforms delivered in the last ten (10) years. | | Documentation of the dates and identifying hull number, serial numbers, vessel names, or similar information that clearly indicates of the delivery of five (5) individual platforms of the unique class | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|--|--|--|---|--------------------|----------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | including the following: i. Identify Owner(s) / Client(s) (Note: these can be delivered to one or more different Clients); and ii. Identify the delivery date of five (5) of the class that falls within the last ten (10) years. | | | |
| 2) The Bidder must provide documentation demonstrating it has experience delivering one unique class of vessels that are designed to launch from a parent vessel. The Bidder must identify, and provide documentation of one unique class of vessel, that it produces / has produced, that meets all of the following identified requirements; | | | | | | |
| 2.a) | The class of vessel is between 8m and 12m in length (length overall.). | | Drawings and/or other official documentation stating the length of the class of vessel, | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|------|---|--|---|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | including the following: i. Identify the <i>unique class</i> principal particulars; ii. Properly dimensioned GA drawings, and ; iii. Photos of vessel being launched from parent ship. | | | |
| 2.b) | The class of vessel has been designed to be launched from the deck of a parent vessel either through use of a davit or a crane. | | Drawings and/or other official documentation showing the launching arrangement of the class of vessel conforms to the stated criteria including the following: | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|------|--|--|---|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | i. Identify the <i>unique class</i> principal particulars; ii. Properly dimensioned drawing of the lifting arrangement; iii. Identify parent vessel, class or vessel type the vessel(s) are launched from; and iv. Identify the type of connection point(s) to the unique class. | | | |
| 2.c) | At least one vessel of the unique class has been delivered in the last ten (10) years. | | Documentation of the dates and identifying hull number, serial number, vessel | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|--|--|--|--|--------------------|----------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | name, or similar information that clearly indicates of the delivery one platform of the class, including the following: i. Identify the delivery date of at least one of the class that falls within the last ten (10) years; and ii. Identify Owner(s) or Clients(s). | | | |
| 3) The Bidder must provide documentation demonstrating it has experience delivering one unique class of vessels that are designed with a minimum installed power, dual propulsion system. The Bidder must identify, and provide documentation of one unique class of vessel, that it produces / has produced, that meets all of the following identified requirements; | | | | | | |
| 3.a) | The class of vessel is between 8m and 12m in length (length overall.). | | Drawings and/or other official documentation stating the length of the class of vessel, including the | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|------|--|--|---|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | following: i. Identify the <i>unique class</i> principal particulars; ii. Properly dimensioned GA drawings, and; iii. Photos of vessel. | | | |
| 3.b) | The class of vessel has a dual propulsion engine configuration.. | | Drawings and/or other official documentation stating the engine configuration of the class of vessel, including the following: i. Properly dimensioned GA or engine arrangement drawings, and; | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|------|--|--|--|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | ii. Photos of engine and propulsion arrangement; | | | |
| 3.c) | The class of vessel has a total installed power of not less than 300 horsepower (223kW). | | <p>Drawings and/or other official documentation stating the total engine power of the class of vessel, including the following:</p> <p>i. Properly dimensioned GA or engine arrangement drawings;</p> <p>ii. Identify the delivery date of at least one of the class that falls within the last ten (10) years; and</p> <p>iii. Identify</p> | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|------|--|--|--|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | engines, OEMs and their main performance parameters. | | | |
| 3.d) | At least one vessel of the qualifying class has been delivered in the last ten (10) years. | | Documentation of the dates and identifying hull number, serial number, vessel name, or similar information that clearly indicates of the delivery one platform of the class, including the following: i. Identify the delivery date of at least one of the class that falls within the last ten (10) years; and ii. Identify Owner(s) or | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|--|--|--|---|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | | | Client(s). | | | |
| 4) The Bidder must provide documentation demonstrating it has experience delivering multiple classes of vessels. The Bidder must identify, and provide documentation of two (2) unique classes of vessel that it produces / has produced that both meet all the following identified requirements; | | | | | | |
| 4.a) | The classes of vessel are between 8m and 12m in length (length overall), | | Drawings and/or other official documentation stating the length of the class of vessel, including the following: i. Identify both <i>unique class</i> principal particulars; ii. Properly dimensioned GA drawings; and iii. Photos of vessels. | | | |
| 4.b) | The two classes of vessel differ by at least one of the following discriminators; i. Length difference greater than 1 metre (length overall), | | Drawings and/or other official documentation clearly stating the how the two classes | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|--|---|--|---|--------------------|-------------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| | <p>and/or;</p> <p>ii. Installed power difference greater than 50 hp (37 kW), and/or;</p> <p>iii. Maximum speed difference in calm water (Sea State 1 or less) of greater than 10 knots.</p> | | <p>of vessels have the necessary difference(s), including the following evidence where applicable:</p> <p>i. Identify both <i>unique class</i> principal particulars;</p> <p>ii. Properly dimensioned GA or engine arrangement drawings;</p> <p>iii. Photos of vessels;</p> <p>iv. Identify engines, OEMs and their main performance parameters; and</p> <p>v. Trials reports which verify speeds and</p> | | | |

| | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to prove compliance | Comments / Remarks | Canada's Evaluation | |
|------|---|--|--|--------------------|----------------------------------|--|
| | | | | | Demonstrated Compliance Yes / No | |
| 4.c) | At least one platform of each unique class of vessel has been delivered in the last ten (10) years. | | <p>sea states.</p> <p>Documentation of the dates and identifying hull number, serial number, vessel name, or similar information that clearly indicates of the delivery one of each of the unique classes identified, including the following:</p> <ul style="list-style-type: none"> i. Identify Owner(s) or Clients(s); and ii. Identify the delivery date of at least one of the class that falls within the last ten (10) years. | | | |

Appendix 1 – Technical Mandatory Evaluation Criteria – Management (Section II)

Table 6 - Project Management Requirements

| Description of Mandatory Criteria Technical Bid | Submitted Reference with page and paragraph number | Comments / Remarks | Canada's Evaluation | |
|---|--|--------------------|-------------------------------------|--|
| | | | Demonstrated Compliance Yes / No | |
| a. Project Manager | | | | |
| The Bidder must provide a curriculum vitae of the Project Manager (PM). The PM must have a minimum of 60 months experience in a project management role in the last 120 months for marine projects. | | | | |
| Curriculum vitae (CV) of Project Manager including a description of PM expertise in a project management role demonstrating the requisite minimum time. See Appendix 3 for CV example. | | | | |
| b. Engineering Manager | | | | |
| The Bidder must provide a curriculum vitae of the Engineering Manager (EM). The EM must be a Professional Engineer registered to practice in the province where the engineering office is located. The Engineering Manager must possess a minimum of 60 months of demonstrated professional marine work experience in engineering within the last 120 months. | | | | |
| Curriculum vitae of Engineering Manager included with all required details including the following: i. Description of EM marine work expertise; ii. Proof of the EM's P.Eng licensing (i.e. copy of a valid license if applicable). | | | | |

| Description of Mandatory Criteria Technical Bid | Submitted Reference with page and paragraph number | Comments / Remarks | Canada's Evaluation | |
|---|--|--------------------|----------------------------------|--|
| | | | Demonstrated Compliance Yes / No | |
| See Appendix 3 for CV example. | | | | |
| c. Subcontractors List | | | | |
| The Bidder must provide a list in the form of the attached Annex C of the RFP, of subcontractors for labour and / or material and must be included with the Bidder's Proposal, stating the name and address of each subcontractor, and a description (Make, Model No.) of the goods or services to be supplied by each. | | | | |
| Subcontractors List in accordance with Annex C of the RFP. | | | | |
| Information to include name and address of each subcontractor and a description (make, model no.) of the goods or services to be supplied by each. | | | | |
| OR | | | | |
| A statement that the Bidder has no subcontractors. | | | | |
| d. Bidder Quality Management System | | | | |
| The Bidder must provide a minimum of one (1) example of completed quality records used by the Bidder on the most recent boat construction at its facility. | | | | |
| One (1) example of a completed quality record that was filled out and used by the Bidder on a marine boat construction at its facility. | | | | |

| Description of Mandatory Criteria Technical Bid | Submitted Reference with page and paragraph number | Comments / Remarks | Canada's Evaluation | |
|---|---|--------------------|--|--|
| | | | Demonstrated Compliance Yes / No | |
| | | | | |
| e. Bidder's Master Plan and Schedule <i>The Bidder must include a description to show how they will schedule the work associated with the design, construction and delivery of the vessels by providing information with respect to elements which form part of the Master Plan and Schedule. The Bidder's schedule should include estimated start and completion dates based on an assumed Contract Award date.</i> | | | | |
| Project Schedule prepared in MS Project or similar scheduling software and presented as a Gantt Chart with dependencies included. | | | | |

Appendix 2 – Technical Point Rated Evaluation Criteria – Experience (Section I)

Maximum Score for Category = 500 points

Category (1) – Table 7 - Experience Related to Vessel Technical Requirements

| Bid Evaluation Criteria | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|---|--|--|--|--------------------|--|----------------|
| 1) The Bidder should identify and provide documentation demonstrating it has experience producing vessels with the identified capabilities. Five Hundred (500) points maximum. | | | | | | |
| 1.a) High Speed Boat Experience | <p>The Bidder should provide evidence that they have a <i>qualifying</i> vessel that meets or exceeds the following speed(s) in calm water(Sea State 1 or less);</p> <ul style="list-style-type: none"> a. 35 knots (50 points), or; b. 40 knots (75 points), or; c. 45 knots (100 points). | | <p>Documentation showing the speed test for the <i>qualifying</i> vessel or other documentation that confirms the minimum top speed of the class meets the requirement, including the following:</p> <ul style="list-style-type: none"> i. Identify the <i>qualifying</i> vessel and the principal particulars; ii. Properly dimensioned GA drawings; iii. Identify the | | 100 | |

| Bid Evaluation Criteria | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|---------------------------------------|---|--|---|--------------------|--|----------------|
| | | | <p>final acceptance and delivery date of at least one of the class that falls within the last ten (10) years; and</p> <p>iv. Trials reports which verify speeds and sea states.</p> | | | |
| 1.b) Shock Mitigating Seat Experience | <p>The Bidder should provide evidence that they have a <i>qualifying vessel</i> that has the identified number of shock mitigating seats installed which provide a mechanical means to mitigate adverse vessel motions;</p> <p>a. 1 to 5 seats (25 points), or;</p> <p>b. 6 to 8 seats (50 points), or;</p> <p>c. 9 to 11 seats (75 points), or;</p> <p>d. 12 + seats (100 points).</p> | | <p>Drawings and/or other official documentation showing the <i>qualifying vessel</i> has the stated number of shock mitigating seats, including the following:</p> <p>i. Identify the <i>qualifying vessel</i> principal and the particulars;</p> | | 100 | |

| Bid Evaluation Criteria | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|-----------------------------------|---|--|--|--------------------|--|----------------|
| | | | ii. Properly dimensioned GA drawings showing shock seating arrangement; iii. Identify the delivery date of at least one of the class that falls within the last ten (10) years; and iv. Identify the type of shock mitigating seating and the OEM. | | | |
| 1.c) Propulsion System Experience | The Bidder should provide evidence that they have a <i>qualifying vessel</i> that meets the identified propulsion system requirements; a. 450hp (335kW) or more installed power (25 points), or; b. Dual Inboard/Outboard | | Drawings and/or other official documentation showing that the <i>qualifying vessel</i> has the stated power and/or propulsion arrangement, including the | | 50 | |

| Bid Evaluation Criteria | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|-------------------------|---|--|--|--------------------|--|----------------|
| | <p>Propulsion Arrangement (25 points), or;</p> <p>c. Both a. and b. (50 points).</p> <p><i>Note: If the Bidder proposes multiple qualifying vessels only one qualifying vessel that meets the objective evidence and results in the highest points score for the criteria will be counted. Additional points will not be awarded for additional qualifying vessels.</i></p> | | <p>following:</p> <p>i. Identify the <i>qualifying vessel</i> principal particulars;</p> <p>ii. Properly dimensioned GA drawings;</p> <p>iii. Photos of vessel;</p> <p>iv. Identify Owner;</p> <p>v. Identify the delivery date of one of the vessels that falls within the last ten (10) years;</p> <p>vi. Identify total horsepower and number of engines;</p> <p>vii. Identify engines, OEM and</p> | | | |

| Bid Evaluation Criteria | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|---|---|--|---|--------------------|--|----------------|
| | | | main performance parameters; and viii. Identify range and fuel capacities. | | | |
| 1.d) Communication Equipment Experience | The Bidder should provide evidence that they have a <i>qualifying vessel</i> that meets the identified communication equipment requirements; a. HF and VHF Radio (25 points), or; b. Satellite Radio (25 points), or; c. Encrypted VHF Radio (50 points), or; d. Encrypted Satellite Radio (50 points), or; e. Any 3 of a., b., c., and d. (maximum of 125 points based on points allocated above), or f. All 4 of a., b., c., and d. (150 points). | | Drawings and/or other official documentation showing that the <i>qualifying vessel's</i> identified communication equipment, installed at time of delivery, include the following: i. Identify the equipment's OEM and model type; ii. Identify the vessel in which the equipment was installed; and iii. Identify the | | 150 | |

| Bid Evaluation Criteria | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|--|---|--|--|--------------------|--|----------------|
| | <i>Note: If the Bidder proposes multiple qualifying vessels only one qualifying vessel that meets the objective evidence and results in the highest points score for the criteria will be counted. Additional points will not be awarded for additional qualifying vessels.</i> | | delivery date of at least one vessel that falls within the last ten (10) years. | | | |
| 1.e) Multi-Function Display Experience | <p>The Bidder should provide evidence that they have a <i>qualifying vessel</i> that utilize multi-function display(s) to meet the following requirements;</p> <ul style="list-style-type: none"> a. Control of communication equipment (25 points), or; b. Platform propulsion monitoring and control (25 points), or; c. Navigation equipment control and integration (25 points), or; d. Sensor Integration and control (25 points), or; e. Any two (2) of a, b, c and d (50 points), or; f. Any three (3) of a, b, c, and d (75 points), or; g. All four (4) of a, b, c, and d | | <p>Drawings and/or other official documentation showing that each <i>qualifying vessel's</i> identified communication equipment, installed at time of delivery, includes the following:</p> <ul style="list-style-type: none"> i. Identify the <i>qualifying vessel</i> and the principal particulars; ii. Identify the final acceptance and delivery date of at least one | | 100 | |

| Bid Evaluation Criteria | Description of Criteria | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|-------------------------|--|--|--|--------------------|--|----------------|
| | <p>(100 points).</p> <p><i>Note: If the Bidder proposes multiple qualifying vessels only one qualifying vessel that meets the objective evidence and results in the highest points score for the criteria will be counted. Additional points will not be awarded for additional qualifying vessels</i></p> | | <p>vessel that falls within the last ten (10) years;</p> <p>iii. As-built photos of multi-function display(s) in the console;</p> <p>iv. Identify systems monitored and controlled through the MFD(s).</p> | | | |

Appendix 2 – Technical Point Rated Evaluation Criteria – Experience (Section I)

Maximum Score for Category = 100 points

Category (2) – Table 8 - Experience with Marine Construction Standards

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|---|---|--|--|--------------------|--|----------------|
| 2) The Bidder should identify and provide documentation demonstrating it has experience working with the identified marine standards. Fifty (50) points maximum. | | | | | | |
| 2.a) Classification Society Rules | <p>The Bidder should provide evidence that they have a <i>qualifying vessel</i> that has been;</p> <ul style="list-style-type: none"> a. Designed utilizing Classification Society Rules (25 points), or; b. Fabricated under Classification Society Survey (50 points). <p><i>Note: If the Bidder proposes multiple qualifying vessels only one qualifying vessel that meets the objective evidence and results in the highest points score for the criteria will be counted. Additional points will not be awarded for additional qualifying vessels.</i></p> | | <p>Documentation showing the <i>qualifying vessel</i> has been designed or fabricated using Classification Society Rules, including the following where applicable:</p> <ul style="list-style-type: none"> i. Evidence of Class design approvals; ii. Identify the Class Society involved; iii. Identify the delivery date of the <i>qualifying vessel</i> that | | 50 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|---------------------------------|---|--|--|--------------------|--|----------------|
| | | | falls within the last ten (10) years; iv. Identify the Class notation(s) received; v. Describe why the Class notation(s) were sought; vi. Identify the unique vessel with the notation; vii. Provide vessel class principal particulars; and viii. Properly dimensioned GA drawings.. | | | |
| 2.b) Military (Naval) Standards | The Bidder should provide evidence that they have a <i>qualifying vessel</i> that has been; | | Documentation showing the <i>qualifying vessel</i> has | | | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Maximum Points (Minimum Points Required) | Bidder's Score |
|-------------------------|--|--|--|--------------------|--|----------------|
| Experience | <p>a. Designed utilizing military standards (25 points), or;</p> <p>b. Designed to an Allied military shock mitigation standard for adverse vessel motions (50 points).</p> <p><i>Note: If the Bidder proposes multiple qualifying vessels only one qualifying vessel that meets the objective evidence and results in the highest points score for the criteria will be counted. Additional points will not be awarded for additional qualifying vessels.</i></p> | | <p>been designed to an Allied military (naval) standard, including the following:</p> <ul style="list-style-type: none"> i. Identify the unique vessel; ii. Identify the principal particulars; iii. Properly dimensioned GA drawings; iv. Identify the Allied military; and v. Identify the military standards used in design. | | 50 | |

Appendix 2 – Technical Point Rated Evaluation Criteria – Management (Section II)

Maximum Score for Category = 100 points

Category (3) – Table 9 - Project Management Team

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|--|---|--|---|--------------------|------------------------------|----------------|
| <p>The Bidder should submit in their proposal details of their Project Management Organization. The Project Management Organization should consist of the following roles:</p> <p>a) Lead Marine Engineer (35 points)</p> <p>b) Lead Naval Architect (50 points)</p> <p>c) Draftsperson (15 points)</p> <p>The Bidder should submit curriculum vitae for one unique candidate for each of the categories of personnel listed above.</p> <p>One Hundred (100) points maximum.</p> <p>NOTE: The Lead Marine Engineer or Lead Naval Architect can also be the Project Manager or Engineering Manager.</p> | | | | | | |
| Lead Marine Engineer | The Lead Marine Engineer (LME) must have a minimum of 60 months experience in a lead marine engineering role within the last 120 months for ship construction projects. | | Curriculum vitae of Lead Marine Engineer included with all required details including the following: i. Description of LME marine engineering expertise; | | 35 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|--------------------------------|--|---|---|---------------------------|-------------------------------------|-----------------------|
| | | | ii. Proof of the LME's P.Eng licensing (i.e. copy of a valid license if applicable). | | | |
| Lead Naval Architect | The Lead Naval Architect (LNA) must have a minimum of 60 months experience as a lead naval architect within the last 120 months in ship construction projects. | | Curriculum vitae of Lead Naval Architect included with all required details including the following: i. Description of LNA as lead or Principal Naval Architect expertise; ii. Proof of the LNA's P.Eng licensing (i.e. copy of a valid license if applicable). | | 50 | |
| Draftsperson | The Draftsperson must possess a minimum of 36 months of | | Curriculum vitae of Draftsperson | | | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|-------------------------|---|--|---|--------------------|------------------------------|----------------|
| | demonstrated experience within the last 60 months in computer-aided design (CAD) within the marine field. | | included with all required details including the following: i. Description of Draftsperson's marine expertise; | | 15 | |

Appendix 2 – Technical Point Rated Evaluation Criteria – Management (Section II)

Maximum Score for Category = 100 points
Category (4) – Table 10 - Project Management Plan

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|--|-----------------------------------|---|--|--------------------|------------------------------|----------------|
| Project Management Plan The Bidder should provide, at time of bid submission, information that details the Bidder's management approach and the processes to be used to address each requirement of the design, construction, outfit, test, trial, certification, and delivery to Canada of the Multi-Role Boat with respect to the following elements which form part of the Project Management Plan. Only the elements listed below form part of the evaluation: 1) Overview of the Bidder's Organization (up to 20 points); 2) Overview of the Bidder's Human Resources Plan (up to 20 points); 3) Communications Plan (up to 15 points); 4) Design, engineering and drafting capabilities (up to 15 points); 5) Integrated Logistics Support capabilities (up to 5 points); 6) Management Information System (up to 10 points); 7) Planning, scheduling and production control and performance monitoring system (up to 10 points); and 8) Requirements Management Strategy (up to 5 point). One hundred (100) points maximum. | | | | | | |
| 1 | Overview of Bidder's Organization | Bidders should include a description showing the reporting relationships, | i. Bidder's Organization Overview | | 5 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|--|---|--|--|--------------------|------------------------------|----------------|
| | | | | | | |
| 2 Overview of Bidder's Human Resources Plan | responsibilities, authorities and lines of communication and project control within their organization. The overview should include the Bidder's Organization for design and engineering, material procurement, construction, quality management, test and trials, and administration. | | ii. Reporting Relationships/Responsibilities | | 5 | |
| | | | iii. Lines of Communication | | 5 | |
| | | | iv. Project Control | | 5 | |
| | | | i. Design and Engineering personnel resources | | 5 | |
| | Bidder's should include details of their Human Resources plan and resource allocation strategy to illustrate how they will obtain, if necessary, the HR capacity with the right education, experience and qualifications to successfully manage and complete the work, specifically as it relates to administration, design | | ii. Construction personnel resources | | 5 | |
| | | | iii. Quality Management personnel resources | | 5 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|-------------------------|---|--|--|--------------------|------------------------------|----------------|
| | | | | | | |
| 3 Communication Plan | Bidders should include details of their Communication Plan which describes the communications workflow within the Bidder's organization and how communications and reporting will be handled with Canada. The Communications Plan should include details of information distribution and reporting, identify team members responsible for various elements of correspondence and reporting including monitoring and controlling, and identify what information is | | iv. Test and Trials personnel resources | | 5 | |
| | | | i. Communication workflow | | 5 | |
| | | | ii. Identification of team members responsible for various elements of correspondence and reporting including monitoring and controlling | | 5 | |
| | | | iii. Identification of information | | 5 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|--|---|--|---|--------------------|------------------------------|----------------|
| | reported, the method and frequency of communications and reporting submissions that the Bidder will employ if the Bidder is awarded a Contract as a result of this Solicitation. | | to be reported, the method and frequency of communications and reporting submissions | | | |
| 4 Description of the Bidder's design, engineering and drafting capabilities | Bidders should include a description of the design, engineering and drafting capabilities that will be used for the project. The Bidder should include details of either their in-house capabilities, or that they have written commitment for the duration of the Contract from a supplier to provide marine drafting and engineering services. The supplier should have the | | i. Description of Design, Engineering and Drafting Capabilities ii. Description of project team or proposed supplier's resources responsible for engineering design and drafting | | 5 5 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|-------------------------|---|--|--|--------------------|------------------------------|----------------|
| | | | | | | |
| | experience and capabilities with respect to the design and construction of vessels of similar complexity. | | iii. Evidence of in-house or supplier's capabilities or written commitment (from Bidder or supplier) for the duration of the Contract from a supplier to provide marine drafting and engineering services signed by the supplier on supplier letterhead. | | 5 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|-------------------------|--|--|---|--------------------|------------------------------|----------------|
| 5 | Description of the Bidder's Integrated Logistics Support Capabilities | The Bidder's should include a description of how they will handle the Integrated Logistics Support requirements of the contract including sparing, publications, translation (as necessary), and how warranty issues will be dealt with. | i. Description of system by which the Bidder intends to conduct activities related to the calculation, storage, handling and packaging of spares, and warranty issues | | 5 | |
| 6 | Description of the procedures and operations of the Bidder's management information system | The Bidder's should include a description of their management information system | i. Description of procedures and operations of data management and configuration management . | | 5 | |

| Bid Evaluation Criteria | | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|-------------------------|---|--|--|--|--------------------|------------------------------|----------------|
| | | | | ii. Description of document tracking and records management procedures | | 5 | |
| 7 | Description of the Bidder's planning, scheduling and production control and performance monitoring system | The Bidder's should include a description of their planning, scheduling and production control and performance monitoring system | | i. Description of planning, scheduling and production control systems. | | 10 | |
| 8 | Description of the Bidder's requirements management strategy | The Bidder's should provide the details of their methodology for managing project requirements | | i. Description of requirements management strategy | | 5 | |

Appendix 2 – Technical Point Rated Evaluation Criteria – Management (Section II)

Maximum Score for Category = 100 points
Category (5) – Table 11 - Master Plan and Schedule

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comment / Remarks | Point Value of each Criteria | Bidder's Score |
|--|--|--|---|-------------------|------------------------------|----------------|
| Master Plan and Schedule | | | | | | |
| The Bidder should describe how they will schedule the work associated with the design, construction and delivery of the Multi-Role Boat by providing information with respect to the following elements which form part of the Master Plan and Schedule. | | | | | | |
| One hundred (100) points maximum. | | | | | | |
| 1 | <p>Description of the Bidder's Master Plan and Schedule</p> <p>Bidders should include a description to show how they will schedule the work associated with the design, construction and delivery of the vessels by providing information with respect to elements which form part of the Master Plan and Schedule</p> <p>The Bidder's schedule should include estimated start and completion dates based on an assumed Contract Award date.</p> | | <p>a) Identification of all activities of the contract in accordance with a recognized Work Breakdown Structure with a critical path including details of any activities that affect the Critical Path and impact successor activities.</p> | | 50 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comment / Remarks | Point Value of each Criteria | Bidder's Score |
|-------------------------|----------------------------|--|--|-------------------|------------------------------|----------------|
| | | | b) Schedule includes all anticipated major milestones and key events | | 50 | |

Appendix 2 – Technical Point Rated Evaluation Criteria – Management (Section II)

Maximum Score for Category = 100 points

Category (6) – Table 12 - Quality Plan

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|---|----------------------------|--|--|--------------------|------------------------------|----------------|
| <p>Quality Plan</p> <p>The Bidder should describe the plan that the Bidder will follow for controlling the quality of the various major work processes and where there will be opportune points to witness key quality program process points on either an occasional or continuing bases as part of the quality program verification activities.</p> <p>The Quality Plan should be prepared in accordance with the current version of ISO 10005 Quality Management Systems - Guidelines for Quality Plans, and describe, depict and define the Quality Program inspection and test activities.</p> <p>The Quality Plan should address the following elements from ISO 9001 Quality Management Systems - Requirements, as a minimum:</p> <ul style="list-style-type: none"> 4.3 Determining the scope of the quality management system; 5.2 Policy; 5.3 Organizational roles, responsibilities and authorities; 6.2 Quality objectives and planning to achieve them; 7 Support; 8 Operation; 9 Performance Evaluation; and 10 Improvement. <p>A Quality Plan for each of the following major work processes should be detailed to ensure product conformity with the System Requirements Document:</p> <ul style="list-style-type: none"> a. Initial material preparation, cutting and forming; b. Pre-construction fabrication of hull components; c. Module construction, outfitting and final preparation; | | | | | | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|--|---|--|---|--------------------|------------------------------|----------------|
| d. Hull assembly and fitting; e. Major equipment acceptance inspections and tests; f. Major equipment installation; and g. Installed equipment inspections and tests. | | | | | | |
| The Quality Plans should describe how the Bidder will conform to the specified quality requirements of the contract and specify how the required quality activities are to be carried out including quality assurance of subcontractors. | | | | | | |
| One hundred (100) points maximum. | | | | | | |
| 1 | Description of the Bidder's Quality Plan Bidders should include a plan they will follow, including a description of the processes used to manage, monitor and control the quality of the various major work processes associated with the design, construction and delivery of the vessels | | a) The Quality Plan is prepared in accordance with ISO 10005 b) The Quality Plan describes, depicts and defines the Quality Program for inspection and test activities | | 20 | |
| | | | c) The Quality Plan addresses the elements from ISO 9001 Quality Management | | 20 | |

| Bid Evaluation Criteria | Description of Requirement | Submitted Reference with page and paragraph number | Example of objective evidence required to demonstrate compliance | Comments / Remarks | Point Value of each Criteria | Bidder's Score |
|-------------------------|----------------------------|--|---|--------------------|------------------------------|----------------|
| | | | | | | |
| | | | Systems – Requirements listed above | | | |
| | | | d) The Quality Plan addresses the major work processes listed above | | 20 | |
| | | | e) The Quality Plans describes how the Bidder will conform to the specified quality requirements of the contract | | 10 | |
| | | | f) The Quality Plan specifies how the required quality activities are to be carried out including quality assurance of subcontractors | | 10 | |

Appendix 3 – Curriculum Vitae Format Example

BIDDER'S NAME: "XYZ COMPANY"

| | | |
|--|-------------------------|--|
| Occupational Category : Project Manager Individual's Name: "JOE BLOGGINS" | | |
| SECURITY CLEARANCE INFO: | | |
| Project Team Requirements | | |
| a. possess a minimum of 60 months of demonstrated experience in project management for marine projects within the last 120 months. | | |
| Month & Year (Start to finish) | Employer/Position/Title | Work Experience <i>Where, When and How Acquired?</i> |