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Québec
K1A 0S5
Bid Fax: (819) 997-9776

LETTER OF INTEREST
LETTRE D'INTÉRÊT

Title - Sujet RFI - Naval Inshore Support Vessels

Solicitation No. - N° de l'invitation	Date
W8472-225864/A	2022-11-24
Client Reference No. - N° de référence du client	**GETS Ref. No. - N° de réf. de SEAG**
W8472-225864	PW-$$MC-031-28863
File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
031mc.W8472-225864	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM Eastern Standard Time EST
on - le 2023-08-01 Heure Normale du l'Est HNE

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

Address Enquiries to: - Adresser toutes questions à:	Buyer Id - Id de l'acheteur
Langdon(031mc), Jeremy	031mc
Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(613) 220-8146 ( )	( ) -

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

Specified Herein
Précisé dans les présentes

Comments - Commentaires

Instructions: See Herein

Instructions: Voir aux présentes

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

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

Signature **Date**

Issuing Office - Bureau de distribution
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

Canada

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W8472-225864
REQUEST FOR INFORMATION (RFI) FOR THE NAVAL INSHORE SUPPORT VESSEL (NISV) PROJECT

1. Purpose and Nature of the Request for Information (RFI)

Public Services and Procurement Canada (PSPC) is requesting Industry feedback regarding potential solutions which meet the Naval Inshore Support Vessel (NISV) project operational requirements as listed in the Annex A and Appendixes provided herewith. The requirements as described in the attached annexes will be fulfilled for Government of Canada on behest of the Department of National Defence.

The objectives of this RFI are to:

a. Apprise potential bidders of the requirements of this project;
b. Collect information regarding the technical feasibility of the requirements as published in this document.
c. Seek industry feedback on potential solutions to the operational requirements described in ANNEX A.
d. Seek costing information from industry for budgetary purposes; and
e. Engage potential bidders and answer their questions as necessary.

The project will meet these objectives by requesting respondents to complete the Industry Response Template in ANNEX B.

This RFI is neither a call for tender nor a request for proposal (RFP). No agreement or contract will be entered into based on this RFI. The issuance of this RFI is not to be considered in any way a commitment by the Government of Canada, nor as authority to potential respondents to undertake any work that could be charged to Canada.

This RFI is not to be considered as a commitment to issue a subsequent solicitation or award any contract(s) for the work described herein. Canada does not intend to award any contract on the basis of this notice or otherwise pay for the information solicited. Any and all expenses incurred by the Respondent in pursuing this opportunity, including the provision of information and potential visits, are at the Respondent's sole risk and expense.

Any discussions on this subject with project staff representing Department of National Defence, Public Services and Procurement Canada, Innovation, Science and Economic Development Canada or any other Government of Canada representative or other personnel involved in project activities, must not be construed as an offer to purchase or as a commitment by Canada.

Although the information collected may be provided as commercial-in-confidence (and, if identified as such, will be treated accordingly by Canada), Canada may use the information to assist in drafting performance specifications (which are subject to change) and for budgetary purposes.

Respondents are encouraged to identify, in the information they share with Canada, any information that they feel is proprietary, third party or personal information. Please note that Canada may be obligated by law (e.g. in response to a request under the Access of Information and Privacy Act) to disclose proprietary or commercially-sensitive information concerning a respondent (for more information: http://laws-lois.justice.gc.ca/eng/acts/a-1/).

Respondents are asked to identify if their response, or any part of their response, is subject to the Controlled Goods Regulations.

Participation in this RFI is encouraged, but is not mandatory. There will be no short-listing of potential suppliers for the purposes of undertaking any future work as a result of this RFI. Similarly, participation in this RFI is not a condition or prerequisite for the participation in any subsequent potential solicitation/s.

Respondents will not be reimbursed for any cost incurred by participating in this RFI.

The RFI closing date published herein is not the deadline for comments or input. Comments and input will be accepted any time up to the time when/if a follow-on solicitation is published.

2. Background Information

The NISV project will procure six vessels; two vessels for Fleet Diving Units (FDUs) to replace the Granby and Sechelt-class Yard Diving Tenders (YDTs), two vessels to replace the current Canadian Forces Maritime Experimental and Test Range (CFMETR) Torpedo Ship Ranging Vessels (TSRVs), and two vessels to expand training capabilities and to support domestic operations. Due to commonalities between the TSRV, YDT, and NAVRES Training Vessel (NRTV) operational requirements, the procured vessels will share many characteristics. However, the Statement of Operational Requirements in ANNEX A identifies which requirements are mandatory for each operational unit (FDU and/or CFMETR and/or NAVRES).

The NISV project will specifically look to provide vessels with these three capabilities:

- Dive Tender Replacement: Vessels to enable FDUs to carry-out the full spectrum of specialized diving for employment and force generation, including surface supplied diving, mine countermeasures diving, and remotely operated seabed intervention.
- TSRV Replacement: Vessels to enable the full spectrum of range operations to allow CFMETR to meet both current and future test and development programmes.
- NAVRES Training Vessel: Vessels with which NAVRES will operate to conduct realistic at-sea naval Force Generation in the Great Lakes/St. Lawrence area.

This RFI is intended to investigate the following possible solutions:

- Common Ship Design: A single ship design that meets all the requirements in ANNEX A.
- Unique Ship Designs: Three unique ship designs which meet the requirements of each individual operational unit.
- Commercial-Off-The-Shelf (COTS) Design: An unmodified commercial design which meets all the requirements in ANNEX A.
- Other solutions that satisfy the requirements in ANNEX A can be proposed.

3. Project Work Scope and Constraints

The NISV Project will:

- Deliver six vessels which meet the requirements set out by FDUs, CFMETR, and select Naval Reserve Divisions (NRD) and are in accordance with Transport Canada and Classification Society regulations ;
- Provide two years' worth of spares for the vessels;
- Provide all necessary documentation, plans, and instruction manuals for vessel equipment maintenance and operations; and,
- Provide all initial cadre operator and maintainer training required for personnel.

The NISV Project will not:

- Deliver an in-service support contract;
- Address the disposal of the current vessels; or
- Acquire specialized (I.e. containerized) systems/equipment for the capabilities enabled by the NISV.

The NISV Project has the following constraints:

- The project will comply with all requirements of the Second Pillar of the National Shipbuilding Strategy (NSS) and the vessels will be built in a Canadian shipyard.

- The vessels will be registered in Canada in accordance with the provisions set forth in Part 2 of the Canada Shipping Act 2001 (CSA 2001).
- The project will comply with all applicable Transport Canada and Classification Society regulations and standards.
- The project will comply with all existing and forecasted (at time of contract award) Canadian statutory regulations and requirements that pertain to the registration and operation of vessels in waters under Canada's jurisdiction.
- The sleeping and wash place arrangements shall be suitable for mixed gender complements.
- The vessels and its equipment shall be accessible/usable by any person with an anthropometric measurements between the 5th and 95th percentile.
- The project will comply with all environmental regulations in force at the time of contract award.
- The project will utilize, to the greatest extent possible, existing infrastructure.

The proposed solutions must satisfy the list of preliminary Operational Requirements detailed in ANNEX A.

Additionally, the following must be considered:

i. The Request for Information is not subject to the Controlled Goods Program, however any resulting competitive process will be. For information pertaining to the Controlled Goods Program, please refer to the Public Services and Procurement Canada (http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html) website.

ii. The Federal Contractors Program for Employment Equity will apply to the upcoming competitive procurement process. Further details on the Federal Contractors Program for Employment Equity will be communicated on https://canadabuys.canada.ca/en as part of the upcoming competitive procurement process.

iii. There are no security requirements associated with this Request for Information, however, there may be security requirements associated with any resulting competitive procurement process. Additional information on the security requirements will be communicated on https://canadabuys.canada.ca/en as part of the upcoming competitive procurement process.

iv. Should Industry require information on personnel and organization security screening or security clauses, please refer to the Canadian Industrial Security Directorate, Industrial and Security Program of Public Services and Procurement Canada (https://www.tpsgc-pwgsc.gc.ca/esc-src/index-eng.html) website.

v. Any additional information on the potential scope and constraints will be communicated on https://canadabuys.canada.ca/en as part of any competitive process.

4. Legislation, Trade Agreements, and Government Policies

The following is indicative of some of the legislation, trade agreements and government policies that may impact any follow-on solicitation(s):

i. Defence Production Act (DPA)
ii. National Shipbuilding Strategy (NSS)
iii. Industrial and Technological Benefits (ITBs)
iv. Controlled Goods Program (CGP)
v. Federal Contractors Program for Employment Equity (FCP-EE)
vi. Indigenous Participation Component (IPC)
vii. Canadian Free Trade Agreement (CFTA)

Any additional information pertaining to Legislation and Government Policies will be communicated on https://canadabuys.canada.ca/en as they become available throughout the period of this Request for Information or as part of any resulting competitive procurement process.

5. Schedule

In providing responses, the following schedule should be utilized as a baseline:

- Posting RFI: November 2022
- Videoconference Industry Day: January 2022
- Virtual one-on-one sessions: February 2022
- Closing RFI: September 2023

Canada may modify the above timeline anytime as necessary.
Any changes to the tentative schedule will be communicated on https://canadabuys.canada.ca/en as they become available throughout the period of this RFI.

6. Important Notes to Respondents

All information, communication or correspondence must be directed to the Contracting Authority ONLY. No other member or representative of the Government of Canada can be informed, challenged or otherwise communicated with, including carbon copy or blind carbon copy on any verbal, emails or written correspondence regarding this Request for Information.

Any correspondence must be directed, in writing in electronic format only and in either official language of Canada, to the Public Services and Procurement Canada Contract Authority's positional mailbox identified below, and with "W8472-225864 NISV RFI" in subject line to ensure delivery

Jeremy Langdon
Contracting Authority
Public Services and Procurement Canada - Acquisitions Branch
Small Vessel Construction Division
E-mail: jeremy.langdon@pwgsc.gc.ca

A point of contact for the Respondent should be included in the package.
Changes to this RFI may occur and will be advertised on the Government Electronic Tendering System. Canada asks Respondents to visit https://canadabuys.canada.ca/en regularly to check for changes, if any.

7. Upcoming Engagement Sessions

Interested respondents will have the opportunity to participate in the "Videoconference Industry Day" on [TBD] January 2023 at 11:00 EST and "Virtual one-on-one sessions" throughout February 2023, with the government officials.

The purpose of these sessions is to provide interested participants with the opportunity to obtain further information about the NISV Project and its specific requirements.

Representatives from Public Services and Procurement Canada, the Department of National Defence, and Innovation, Science and Economic Development Canada will provide their speaking notes on procurement requirements, technical requirements, and industrial technological benefits, respectively.

Industry Day will be followed by virtual One-on-One meetings between industry and Canada during February 2023. Industry will be asked to submit their business presentations and to provide access to any technical demonstrations to reserve a one-hour teleconference with Canada. Industry representatives may ask questions and seek information required to gain a sound understanding of Canada's business needs. Topics for discussion may include potential procurement issues and opportunities for resolution, innovative solutions, and the overall potential procurement and sustainment strategies. Any Supplier questions and Canada's answers will be published on Canada Buys website following all One-on-One Meetings.

To register for the Teleconference Industry Day and the One-on-One meetings, please e-mail the Contracting Authority at the email address provided above before Monday 19 December 2022 at noon. Non-attendance at the industry day will not preclude any supplier from bidding on this requirement should follow-on solicitation/s be issued.

All parties interested in receiving the Industry Day Presentation with speaking notes and in booking One-on-One teleconference meetings must notify the Contracting Authority no later than 17:00 EST on January 27th. Parties must indicate in writing the name, position and contact information of all participants. One-on-One meetings will take place in 60 minute slots between the hours of 09:00 and 16:00 EST during the period of February 6th – 21st on a first come basis. If one hour is insufficient, any additional Industry Demonstrations may be arranged in 2 hour slots at 09:00 or 16:00 EST during the period of February 21st – 28th. Companies may indicate their preferred time and date but reservations will be allotted in the order of receipt.

These events will be delivered virtually. A link to the live broadcast or an invitation email, will be provided to registered participant(s), no later than 5 days prior to the agreed date at 16:00 EST.
All Questions and Answers throughout the engagement process will be recorded and posted on https://canadabuys.canada.ca/en.

Participants will be asked to submit any additional feedback to the Industry Interaction, in writing, to the Public Services and Procurement Canada Contracting Authority, identified within.

Respondents are asked to use Annex B Response Template (in Excel) as provided for their response, supplemented with additional information as needed.

All submitted information, comments, and/or questions must be based solely on the documentation within and industry should not reference any other past procurement process.

Non-participation at any Industry Day, One-on-One Sessions, or Demonstrations will not preclude any firm from bidding on this requirement should a follow-on solicitation be issued.

8. Responses to the RFI

Responses to this RFI are to be submitted to the PSPC Contracting Authority identified above by 15 March 2023.

Respondents should present their responses in template provided in Annex B, which is also provided as an MS Excel file.

Responses should provide costing for proposed solutions which meet all of the requirements identified in the specifications; partial or piecemeal solutions will not be accepted.

ANNEX A
NAVAL INSHORE SUPPORT VESSEL (NISV) PROJECT
STATEMENT OF OPERATIONAL REQUIREMENTS

ID	Requirement	Applicable Operator(s)
1	**1 Introduction**	NAVRES, FDU, and CFMETR
2	**1.1 Background**	NAVRES, FDU, and CFMETR
3	Navies require auxiliary vessels to perform a host of support roles that enable the operations of the combatant fleet. This is analogous to the vehicles that support airport operations (e.g. fuel trucks, food trucks, aircraft tow vehicles, etc) or logistics companies (e.g. training vehicles, tow trucks, maintenance vehicles, etc). The Royal Canadian Navy (RCN) is no different and operates a fleet of auxiliaries that perform mundane but critical tasks. The current auxiliary fleet is past its life expectancy and of disparate designs.	NAVRES, FDU, and CFMETR
4	The Granby-class Yard Dive Tenders (YDTs) were built in the early 1960s with an initial 30-year design life, which was subsequently lengthened until 2010 by a life-extension project. The Torpedo Ship Ranging Vessels (TSRVs) and Sechelt-Class YDTs were built in the late 1980s and early 1990s, with their 30-year design life expiring in 2017 and 2021 respectively. The Naval Reserves (NAVRES) have not had dedicated training platforms in the Great Lakes (the greatest concentration of reservists in Canada) since the late 1990s when their previous training vessels were taken out of service.	NAVRES, FDU, and CFMETR
5	The existing vessels cannot embark modern payloads and their limited sea-keeping qualities at low speeds make them poor platforms for inshore operations, such as seabed interventions in the normal environmental conditions of Canadian littoral waters. Many fitted systems in the existing platforms are obsolete and spares are no longer available, necessitating expensive and time-consuming special orders to sustain the vessels.	NAVRES, FDU, and CFMETR
6	The need to replace the YDT's presents an opportunity to standardize several auxiliary vessels into a common design in order to reduce in-service support (ISS) costs and allow for increased interoperability amongst end-users.	NAVRES, FDU, and CFMETR

7	This project will procure two vessels for Fleet Diving Units (FDUs) to replace the Granby and Sechelt-class YTDs, two vessels to replace the current CFMETR TSRVs, and two vessels to expand training capabilities and to support domestic operations. Due to commonalities between the TSRV, YDT, and NAVRES Training Vessel operational requirements, the procured vessels will be similar in hull design.	NAVRES, FDU, and CFMETR
8	**1.2 Business Need Statement and Outcomes**	NAVRES, FDU, and CFMETR
9	The RCN requires to conduct the full range of military diving operations, underwater weapons and sensors operational testing & evaluation, as well as Naval Reservist training.	NAVRES, FDU, and CFMETR
10	The following factors are indicative of the current platforms technical and operational obsolescence, and are driving the need for change:	NAVRES, FDU, and CFMETR
11	Capability Degradation – The main components of both the YDTs and TSRVs are being used beyond their design intent and specifications, and are approaching obsolescence. Continual and accelerated capability degradation is expected based on the age and usage of the vessel, ultimately resulting in significant capability gaps.	NAVRES, FDU, and CFMETR
12	Technological upgrades – In the intervening years since both the dive tenders and TSRVs were built, significant technological advances and upgrades have occurred in the marine industry. Modern vessels offer technological and mechanical upgrades far beyond the legacy systems onboard the current classes of vessels. These technological updates include more fuel-efficient engines, advanced navigation systems, and the proper infrastructure to support utility-connected containerized/modular equipment.	NAVRES, FDU, and CFMETR
13	Sustainability – Replacing degrading legacy platforms with newly constructed, modern vessels will inherently improve sustainability of the fleet. The maintenance effort required for the current vessels have proven to be economically inefficient due to the increased frequency of reactive maintenance procedures coupled with the difficulty in purchasing spare parts.	NAVRES, FDU, and CFMETR
14	GBA+ – The CAF's stated goal is to increase the number of female personnel by 1% annually, with a target of reaching 25% by 2026. Female sailors make up a significant portion of the workforce at NRDs and FDUs, however the current vessels do not reflect this reality in their design. The current vessels lack the required number of messes and wash place/toilet facilities to comfortably house the current gender mix of naval personnel. In order to help rectify this and enable ongoing recruiting efforts, modern vessels with appropriate messing facilities are required.	NAVRES, FDU, and CFMETR

15	Safety – Operating the current vessels and their associated jetty infrastructure while they are nearing or surpassing their design-life expectancy increases the chance of catastrophic failure to the vessel's hull, structure, and/or machinery. Depending on the timing and magnitude of such failures, the RCN risks the loss of their assets, and more importantly, risks the lives of the sailors. Additionally, improved sea keeping and stability reduces the risk of injury or loss of life during operations such as Surface Supplied Diving (SSD). Upgraded navigational systems reduce the risk of misfiring test equipment and vessel collisions, and finally, a focus on human factors in the design will not only improve the safety of the naval personnel on board, but also the safety of the vessels by reducing the risk of human error during operations.	NAVRES, FDU, and CFMETR
16	**2 High Level Mandatory Requirements**	NAVRES, FDU, and CFMETR
17	PERSISTANCE HLMR 1: Ability to safely operate independently for 5 days with a ship's complement of eight crew members and 16 additional personnel onboard.	NAVRES, FDU, and CFMETR
18	PHYSICAL CAPACITY HLMR 2: Ability to deploy two utility connected shipping containers, with 35% remaining deck space within the limits of a "Tender" described in NAVORD 3485-2.	NAVRES, FDU, and CFMETR
19	PHYSICAL CAPACITY HLMR 3: Ability to deploy, power, and store all required equipment to complete 24 hours continuous military diving, test range surface support, and training operations.	NAVRES, FDU, and CFMETR
20	RESPONSIVENESS HLMR 4: Ability to accurately maintain and correct vessel position with regards to latitude, longitude, and heading for the duration of operations.	NAVRES, FDU, and CFMETR
21	**2.1 Key Assumptions**	NAVRES, FDU, and CFMETR

22	Project Assumptions | # | It is assumed that: | Effects on Project: | Reliability Level: | Strategies if not Realized* | | 1 | Existing ISS for the Granby and Sechelt-Classes under the Minor Warship and Auxiliary Vessel (MWAV) ISSC contract will be transferred to the NISV vessels as they enter service. | The NISV Project must liaise with MEPM Non-Combatants (NC) to facilitate the handover. | High | Alternate options for ISS would be required to be investigated | | 2 | Design and ship construction expertise is available within Canada for this type of vessel. | If unavailable, adhering to the NSS would require re-evaluation. | High | Outside third-party assistance would be required | | 3 | Investment funds will be available in the years and quantity to be identified. | Project scope will support stakeholder requirements only if sufficient funding is available. | Medium | Procure fewer, or less capable, vessels. | | 4 | Contract option(s) for extra vessels could be exercised at a later date should NISV be deemed a suitable replacement for Orca-class. | Nil | Medium | No effect on NISV project. |	NAVRES, FDU, and CFMETR
23	**2.2 Initial Operational Capability (IOC)**	NAVRES, FDU, and CFMETR
24	Initial Operational Capability (IOC) will be deemed to have been met upon delivery and formal acceptance (harbour and sea trials) of two fully equipped and operational NISV to the RCN and the provision of initial operator and maintainer training. Sufficient spares (including manuals and technical drawings) to be provided to enable ISSC staff to conduct routine maintenance.	NAVRES, FDU, and CFMETR

25	**2.3 Full Operational Capability (FOC)**	NAVRES, FDU, and CFMETR
26	Full Operational Capability (FOC) will be deemed to have been met upon delivery and formal acceptance of all NISV to the RCN (one each to FDU(P), and FDU(A), and two to QHM Nanoose and the to-be-identified NAVRES unit), to include all spares, Technical Data Package (drawings) and finalized training (Operator and Maintainer) including training materials, and the completion of any and all warranty periods as described in the construction contract. The ISSC contractor must be provided with spares and consumables IAW the Maintainability Section of this document.	NAVRES, FDU, and CFMETR
27	**2.4 Capability Deficiency**	NAVRES, FDU, and CFMETR
28	Various stakeholder engagements and Statements of Operational Capability Deficiency (SOCD) have identified several capability gaps and operational limitations with the RCN's current fleet of Maritime Operational Enablers. These capability gaps and operational limitations described below include issues related to technological obsolescence, age of the platforms, emergent operational roles, and overall vessel capacity and availability.	NAVRES, FDU, and CFMETR
29	In summary, the identified capability deficiencies and operational limitations of the in-service vessels include issues related to technological obsolescence, age of the platform, vessel availability and vessel size/capacity. These deficiencies pose a serious threat to the CAF's long-term ability to effectively fulfill its operational mandates.	NAVRES, FDU, and CFMETR
30	From a range operations perspective, the TSRVs are increasingly challenged to provide the comprehensive scope of capabilities necessary to enable the Canadian Forces Maritime Experimental and Test Ranges (CFMETR) to support OT&E and other underwater development programmes. This has resulted in a capability gap which, over time, is expected to grow. The gap severely impedes CFMETR's ability to meet its mandate as an underwater armament testing facility. The TSRVs can no longer provide the comprehensive range of capabilities necessary to enable CFMETR to support OT&E and other development programs. This, has and will, limit the capabilities that may be extended to CFMETR by our allies. As CFMETR is a joint facility with the United States Navy (USN), the RCN and CAF are at risk of not meeting their responsibilities with respect to the International Agreement.	CFMETR
31	From a diving operations perspective, the consequences of not addressing the capability deficiencies inherent in the current YDTs will result in degradation of a range of RCN underwater capabilities such as mine countermeasures (MCM) diving and seabed intervention. Recently, Fleet Diving Unit (Atlantic) (FDU (A)) had to reject a request for their assistance due to this capability deficiency. In	FDU

	December 2020, a scallop dragger sunk off the southwest coast of NS. The vessel was located approximately 1 month later via ROV and Side Scan Sonar in approximately 60 metres of water, and FDU (A) assistance was requested to positively identify the vessel and to locate any potential human remains. Due to the depth of the water which necessitated utilizing SSD, FDU (A) was unable to assist. The only MARLANT vessel capable of conducting SSD at a depth of 60 meters sea water (msw) was the YDT Granby, which was removed from the auxiliary fleet in 2018 when it was deemed unsafe for sea-going evolutions. This capability deficiency not only results in a loss of service to the Canadian public, but also a hindrance to MARLANT fulfilling the Combat Readiness Requirements (CRR) mandated in CFCD 102 (O).	
32	From a NAVRES perspective, a lack of dedicated training vessels limits their capacity and accessibility of at-sea training. Limited training opportunities results in reservists unable to complete on the job training, which impacts NAVRES' ability to generate qualified sailors to support operations and deployments. A dedicated platform for Naval Reserve trades would allow for accessible on-the-job training and skill refresher training for current and future reservists. This would allow NAVRES to supply fully trained personnel to the Regular Force in support of the "One Navy" concept and allow the Navy to meet its operational requirements.	NAVRES
33	**2.5 Project Constraints**	NAVRES, FDU, and CFMETR
34	The NISV shall be registered in Canada in accordance with (IAW) the provisions set forth in part 2 of the Canada Shipping Act (CSA 2001).	NAVRES, FDU, and CFMETR
35	The NISV will comply with all existing and forecasted (at time of contract award) Canadian statutory and environmental regulations and requirements that pertain to the registration and operation of vessels in waters under Canada's jurisdiction.	NAVRES, FDU, and CFMETR
36	The NISV must comply with all applicable Transport Canada (TC) regulations and standards.	NAVRES, FDU, and CFMETR
37	The NISV must comply with all applicable Classification Society regulations and standards.	NAVRES, FDU, and CFMETR
38	The NISV must meet the operational requirements outlined in this SOR.	NAVRES, FDU, and CFMETR
39	The NISV shall have a minimum of a 25-year life expectancy on entering service.	NAVRES, FDU, and CFMETR

40	The NISV will utilize, to the greatest extent possible, existing infrastructure.	NAVRES, FDU, and CFMETR
41	The project will comply with all requirements of the National Shipbuilding Strategy (NSS).	NAVRES, FDU, and CFMETR
42	The NISV will be built in a Canadian shipyard.	NAVRES, FDU, and CFMETR
43	The Project must ensure that it meets scope within the allocated funding envelope and minimizes acquisition, operation and support costs.	NAVRES, FDU, and CFMETR
44	**2.6 Current Situation**	NAVRES, FDU, and CFMETR
45	The NISV project recently progressed to the Options Analysis Phase after a successful Independent Review Panel for Defence Acquisition (IRPDA) 1 engagement. Previously, the project has received endorsement of its Strategic Context Document (SCD) by the Vice Chief of the Defence Staff (VCDS) at the Defence Capabilities Board (DCB).	NAVRES, FDU, and CFMETR
46	**2.7 Project Interdependencies**	NAVRES, FDU, and CFMETR

47	Dependencies					
	Number	Element:	Is dependent upon [action] from [entity]:	Impact if not delivered:	Mitigation Strategy:	
	1	Sustainability Business Case Analysis	Is dependent upon the inclusion of the NISV in the MWAC ISSC from NC 3-3	No sustainment solution will be identified for the NISV.	Ensure commitment from NC 3-3 during OA.	NAVRES, FDU, and CFMETR

48	Contributions Number | Element: | Is dependent upon [action] from [entity]: | Impact if not delivered: | Mitigation Strategy: 1 | Operational and Technical Requirements | Are dependent upon the input from current equipment (Containerized Breathing System, URSUBVAN) LCMMs | Resulting ship design may not interface properly with existing equipment | Engage with LCMMs at earliest possible time 2 | Operational and Technical Requirements | Are dependent upon the input from current equipment acquisition projects (Remote Mine Disposal System (RMDS) Project: (C.001334), ROV/AUV Replacement Project) | Resulting ship design may not interface properly with future equipment | Engage with Projects at earliest possible time	NAVRES, FDU, and CFMETR
49	**3 System Operation**	NAVRES, FDU, and CFMETR
50	**3.1 Missions and Scenarios**	NAVRES, FDU, and CFMETR
51	As a component of the RCN's force structure, the NISV will support and enable naval operations by performing the tasks identified in Section 3.7 Key Tasks.	NAVRES, FDU, and CFMETR
52	**3.2 Environment**	NAVRES, FDU, and CFMETR
53	Excluding operations in ice-covered waters, the NISV shall operate throughout the year in the wind, wave, tide and current conditions in coastal waters as applicable to near coastal voyage, Class 1 and sheltered voyage as defined by the Canada Shipping Act, 2001.	NAVRES, FDU, and CFMETR
54	The NISV shall operate throughout a 24-hour day, in both unrestricted and restricted visibility as defined by the Convention on the International Regulations for Preventing Collisions at Sea (COLREGS).	NAVRES, FDU, and CFMETR
55	The NISV must keep station for Surface Supplied Diving in Sea State (SS) 3.	FDU

441	The NISV must keep station for OT&E operations in SS3	NAVRES, FDU, and CFMETR
56	The NISV must safely lower divers into the water in SS3.	FDU
57	The NISV must utilize the deck crane to hoist equipment, debris, or any other large loads in SS3.	FDU and CFMETR
58	The NISV must launch and retrieve its small boat in SS3.	NAVRES, FDU, and CFMETR
440	The NISV must safely and accurately deploy/recover test program equipment and precisely conduct range array calibrations in SS3.	NAVRES, FDU, and CFMETR
59	The NISV must transit in SS4.	NAVRES, FDU, and CFMETR
60	The NISV must survive in SS5.	NAVRES, FDU, and CFMETR
61	**3.3 Threats**	NAVRES, FDU, and CFMETR
62	The NISV shall not be assigned missions where an opposing hostile maritime force would operate.	NAVRES, FDU, and CFMETR
63	**3.4 Concepts of Operations**	NAVRES, FDU, and CFMETR
64	The NISV are envisioned to be interoperable Maritime Operational Enablers; Vessels capable of enabling a wide range of naval operations as described in 3.7 Key Tasks. This flexibility will allow each respective end-user (FDUs, CFMETR, and NAVRES) the ability to rotate vessels amongst themselves to mitigate any operational interruptions due to maintenance cycles, surge/slack in demand, and/or breakdowns. This would ensure that each end-user always had access to a vessel to meet their operational requirements.	NAVRES, FDU, and CFMETR
65	Interoperability will be made possible using a large working deck and containerized systems.	NAVRES, FDU, and CFMETR
66	The NISV will have a large working deck which can be used for different purposes depending on the mission at hand. Inherently multi-functional, the NISV's working deck can be arranged to:	NAVRES, FDU, and CFMETR

67	Provide sufficient space and interfaces for up to two (2) standard 20' utility connected shipping containers at one time or a single (1) "oversized" 20' utility-connected shipping container and/or;	NAVRES, FDU, and CFMETR
68	Provide spaces and interfaces for large deck- or bulwark-mounted equipment such as a utility crane, small boat crane, diving platform lifting appliance, torpedo target launcher, etc. And/or;	NAVRES, FDU, and CFMETR
69	Provide clear and unobstructed space to facilitate handling of large equipment or objects, such as torpedo targets, sonobuoys or salvaged debris and/or;	FDU and CFMETR
70	Provide a clear and unobstructed space to facilitate training drills or exercises for groups of trainees or reservists.	NAVRES
71	With space for up to two (2) standard 20' utility connected shipping containers or a single (1) "oversized" 20' utility-connected shipping container on the working deck, the RCN will have vast operational-flexibility through the use of containerized systems.	NAVRES, FDU, and CFMETR
72	Containerized systems are described as any system assembled into one or two standard shipping containers (also called intermodal containers and International Organization for Standardization (ISO) containers). The containers have standardized dimensions and external attributes which allows for ease of storage, transport, and handling.	NAVRES, FDU, and CFMETR
73	The NISV shall provide the necessary interfaces and connections in-order for all containerized systems to be "plug and play".	NAVRES, FDU, and CFMETR
74	The possible uses of containerized systems are endless, but currently, the RCN envisions the NISV to be capable of using the following containerized systems:	NAVRES, FDU, and CFMETR
75	The RCN Containerized Dive System (CDS) as used by the current YDT 11. The CDS includes a workshop container and a diver Recompression Chamber (RCC) container.	FDU
76	RCN and USN URSUBVANs as used by the current TSRVs. The URSUBVANs are "extra-wide" 20' shipping containers fitted with scientific equipment;	CFMETR
77	The RCN Remote Mine Disposal System (RMDS). The RMDS contains a series of Unmanned Underwater Vehicles (UUVs) and associated control equipment used to locate and dispose of mines.	FDU
78	Logistics units: classroom, infirmary, cafeteria, dormitory, command stations, meeting rooms, refrigerated warehouses, fuels or breathing gas tanks, workshops, or general storage.	NAVRES, FDU, and CFMETR
79	Electronic systems units: various radars, sonars, communications technology.	NAVRES, FDU, and CFMETR

80	In addition to containerized systems, the NISV will be fitted with universal mounts on the stern and bulwark to facilitate easy installing and dismantling of a range of existing RCN equipment such as the diving platform lifting appliance, scientific winch used for towed arrays, or the Mk-36 torpedo target launcher.	NAVRES, FDU, and CFMETR
81	Depending on the mission at hand, the proper containerized system(s) and equipment will be chosen, craned aboard and fitted in place, and the remaining open deck space will be arranged to ensure safe and effective operations.	NAVRES, FDU, and CFMETR
82	The NISV will be operated as Canadian Forces Auxiliary Vessels (CFAVs) by FDU(A) and Fleet Diving Unit (Pacific) (FDU(P)) personnel, CFMETR personnel, and NAVRES personnel. They will be home ported in their respective Her Majesty's Canadian (HMC) Dockyards or NRD Jetty.	NAVRES, FDU, and CFMETR
83	Depending on the mission, and the operators, the expected complements are as follows:	NAVRES, FDU, and CFMETR
84	**Operator** / **Minimum Core Crew** / **Additional Mission Specific Crew** **FDU(A) or (P)** / 8 / Up to 16	FDU
214	**Operator** / **Minimum Core Crew** / **Additional Mission Specific Crew** **CFMETR*** / 6 / Up to 6 ***CFMETR personnel are civilians	CFMETR
215	**Operator** / **Minimum Core Crew** / **Additional Mission Specific Crew** **NAVRES** / 6 / Up to 18	NAVRES
85	Once the proper payload is chosen and installed onboard, and the crew is accommodated, the NISV be capable transiting to the desired location, and keeping station if required.	NAVRES, FDU, and CFMETR
86	The NISV will operate within the definition of "Near coastal voyage, Class 1" and "sheltered voyage" as defined by the Canada Shipping Act, 2001.	NAVRES, FDU, and CFMETR
87	Out-of-harbour operations will have a maximum combined transit and on-station time of five days. Longer deployments are possible but will require port stops to refuel and replenish stores.	NAVRES, FDU, and CFMETR
88	The NISV must be fitted with a large general-use crane for operations such as deep-sea salvage or sonobuoy launching and retrieval.	FDU and CFMETR

89	24/7 fleet support services will be provided by the dockyard of the NISV's homeport. Daily services are generally scheduled from 0800-1600 Monday to Friday; however, operational requirements often demand that services be initiated and/or continued outside of these hours.	NAVRES, FDU, and CFMETR
90	**3.5 Concept of Support**	NAVRES, FDU, and CFMETR
91	The NISV will be maintained using an In-Service Support Contract (ISSC) for support of the vessels and their associated systems. This method of support is currently in place for all CFAVs.	NAVRES, FDU, and CFMETR
92	The in-service authority for the NISV will be Director Maritime Equipment Program Management (Non-Combatants) (DMEPM(NC)) within Assistant Deputy Minister (Materiel)'s (ADM(Mat)) DGMEPM. DMEPM(NC) will be the Design Authority and will coordinate engineering support and configuration management for the NISV and will manage the ISSC.	NAVRES, FDU, and CFMETR
93	DND personnel and the ISSC contractor will both conduct maintenance. Home-port personnel and the crew will be responsible for most first-level maintenance. Under the ISSC, some of the first-level maintenance, most second-level maintenance, and all of the third-level maintenance shall be performed by the ISSC contractor. Fleet Maintenance Facility (FMF) staff may perform second-level maintenance on selected systems. The Queen's Harbour Master (QHM) Esquimalt and QHM Halifax Auxiliary Fleet Managers will liaise with the local ISSC representative and with DMEPM(NC) staff to schedule maintenance tasks and maintenance periods (e.g. refits, dockings and alongside maintenance availability periods), to track maintenance completion, and to provide quality assurance.	NAVRES, FDU, and CFMETR
94	The ISSC contractor will be responsible for spares management, and maintenance of the technical data package and vessel drawings.	NAVRES, FDU, and CFMETR
95	The new NISV shall follow a programmed maintenance cycle. This cycle will include maintenance periods and dockings (as directed by the Classification Society requirements). The maintenance will be conducted by the crew, DND, and the ISSC contractor IAW the ISSC. The ISSC contractor will be responsible for the ISSC of the vessel systems and equipment and will be responsible for providing first, second, and third level maintenance, logistics support, training and training support, engineering support including an equipment management system, configuration management, obsolescence management, and technical data package management. The key performance measure for the ISSC will be the NISV's availability as described in 5.4.	NAVRES, FDU, and CFMETR
96	While a vessel is undergoing maintenance, their flexibility allows the vessels to be used interchangeably amongst themselves in order to mitigate any operational interruptions due to maintenance cycles, surge/slack in demand, and/or	NAVRES, FDU, and CFMETR

	breakdowns. This would ensure that each end-user always had access to a vessel in order to meet their operational requirements.	
97	The NISV will be fuelled, manned, and provisioned by the respective homeports. Stores, fuel and lubricants will be procured locally or through the Canadian Forces Supply System (CFSS)/ISSC as appropriate.	NAVRES, FDU, and CFMETR
98	Although the ISSC will support configuration management and obsolescence management, all engineering change requirements shall follow DGMEPM's Engineering Change process.	NAVRES, FDU, and CFMETR
99	**3.6 Key Roles**	NAVRES, FDU, and CFMETR
100	At any one time, the NISV will have one of the three roles as follows:	NAVRES, FDU, and CFMETR
101	Diving Tender: The NISV will fulfil the role of a diving tender, enabling Naval Dive Units (NDUs) to carry out diving tasks, such as clearance diving, seabed intervention, remote seabed intervention, underwater engineering and diver training.	FDU
102	Torpedo Ship Ranging Vessel: The NISV will fulfil the role of a Torpedo Ship Ranging Vessel (TSRV), enabling the comprehensive range of capabilities necessary to CFMETR to support Operational Testing & Evaluation (OT&E) and other underwater development programmes. This includes, but is not limited to, tasks such as countermeasure deployment and retrieval, target vessel operations, range oceanographic operations, and acoustic tests and evaluations.	CFMETR
103	Naval Reservist Training Vessel: The NISV will fulfill the role of a Naval Reservist Training Vessel, enabling the Naval Reservists to offer and carry out all at-sea reservist training programs such as Seamanship Training, Marine Technician Training, Culinary Training, Naval Communications Training, Naval Combat Information Operator Training and Naval Warfare Officer Training.	NAVRES
104	**3.7 Key Tasks**	NAVRES, FDU, and CFMETR
105	Clearance Diving Operations:	FDU
106	Remotely Operated Mine Counter Measure (MCM) Operations – The NISV must embark and fully enable remote MCM systems such as the Remote mine hunting and Disposal System (RMDS). This would involve embarking, connecting, and utilizing of all equipment including: AUVs, mine disposal vehicles, non-explosive inspection/training mine disposal vehicles, and the containerized transportable command center.	FDU

107	Mine CounterMeasure (MCM) Operations with Divers – The NISV must enable mine disposal operations by deploying clearance divers via ancillary vessel into mine-danger areas to search for and dispose of influence mines (magnetically, acoustically, seismically, etc actuated sea mines) and any other ordnance in the water using influence fusing. This activity requires the use of specially designed diving apparatuses (rebreathers) with low acoustic and magnetic signatures, underwater search and identification equipment designed for use in an influence minefield, a signature reduced small boat, a containerized Recompression Chamber (RCC), as well as safe stowage for disposed explosives and weapons. The NISV would be required to approach the mine danger area once the positions of the mines have been determined, and then support operations from a position of safety.	FDU
108	Maritime Explosive Ordnance Disposal (MEOD) Operations with Divers – The NISV must protect high value units, important maritime assets or infrastructure. This activity requires deployment of diving teams and underwater search equipment for confined areas, and the need to store explosive stores and tools for the disposal of improvised (non-influence) explosive devices.	FDU
127	The NISV must support clearance divers and/or port inspection divers to search for, render safe and/or dispose of unexploded ordnance (UXO) presenting a hazard to naval operations, other forces or the civilian population. This activity requires less stringent precautions than that for MCM diving, but still requires deployment of special Explosive Ordnance Disposal (EOD) tools and equipment, including stowage of explosive tools and disposal weapons.	FDU
109	Seabed Intervention using divers:	FDU
110	Mixed Gas Surface Supplied Diving Operations – The NISV must enable the conduct of mixed gas surface supplied diving operations in support of seabed intervention for water depths of < 100 metres of sea water (msw). This includes possessing mixed gas tanks and storage, gas supply system (i.e. umbilicals and distribution system) a crane(s) capable of supporting a loaded 3-diver diving stage, a containerized Recompression Chamber (RCC), and all other associated equipment.	FDU
111	Light Underwater Salvage Operations – The NISV must support clearance divers and/or port inspection divers in the conduct of light salvage operations. Aside from the diving equipment mentioned in the other Key Tasks, the vessel would be responsible for facilitating the handling and temporary storage of light salvaged debris or equipment utilizing an open working deck and a variety of equipment such as cranes, lifting bags, hydraulic-powered underwater tools, etc.	FDU
112	Submarine Search and Rescue (SUBSAR) Operations - The NISV must support SUBSAR operations in order to aid in the rescue of trapped submarine crews. The activity requires the ability to deploy divers, typically via surface supplied diving, along with other task specific hand-held equipment to facilitate the rescue.	FDU
113	Remote Seabed Intervention:	FDU

114	The NISV must support the deployment and operation of various types of remotely operated/autonomous vehicles, in support of seabed intervention operations. This activity requires the capability to concurrently deploy and operate, remotely operated vehicles (ROVs), autonomous underwater vehicles (AUVs), side scan sonars (SSS), atmospheric diving systems (ADS), etc. These systems and their associated control equipment are stored in and operated from a containerized system, the Remote Mine Disposal System (RMDS).	FDU
115	Underwater Repair:	FDU
116	Battle Damage Repair Operations – The NISV must support clearance divers and/or port inspection divers in the conduct of battle damage repair operations to assist vessels which have suffered damage below or near the waterline. This would consist of efforts to contain/control the ingress of water into the damaged vessels via the application of cofferdams, the welding of patches, and potentially the removal of any damaged ordnance. This activity requires the capability to deploy and store surface supplied diving and underwater video equipment, as well as the full range of hydraulic-powered underwater tools, underwater welding gear, and basic EOD equipment.	FDU
117	Underwater Engineering (UWE) Operations – The NISV must support clearance divers and/or port inspection divers in the conduct of routine underwater engineering activities (ship's husbandry tasks, jetty maintenance, etc) in support of RCN assets and/or vessels. The activity requires the capability to deploy and store specialized underwater tools and inspection equipment, including patches and cofferdams held by Fleet Maintenance Facilities in each of the Dockyards.	FDU
118	Diver Training:	FDU
119	The NISV must support the various types and levels of dive training which is required to effectively force generate clearance and port inspection divers. This includes the ability to embark trainees and utilize the full spectrum of diving equipment, systems and tools as required by the course curricula.	FDU
120	Target Boat Operations:	CFMETR
121	The NISV will act as a target vessel on one of three ways:	CFMETR
123	1. As a launch platform, the NISV will launch target units anywhere from 6 inches to 21 inched diameter and up to 20 feet long. Examples are EMATTs and Mk30.	CFMETR
124	2. The NISV will tow a target from the stern. Examples are submarine mast target simulator, low frequency repeater towable target.	CFMETR
125	3. The NISV will act as a target – simulating a surface warship from the perspective of an actual submarine.	CFMETR
122	Countermeasure Deployment and Retrieval:	CFMETR
126	The NISV will act as a platform to deploy and retrieve Acoustic Device Countermeasures (ADCs) and other countermeasure devices. The crew will use deck area on the vessel is to safely store the devices and coordinate their deployment.	CFMETR

128	Range Oceanographic Operations:	CFMETR
129	The NISV will enable oceanographic and bathymetry testing (conductivity/temperature/depth readings) by employing a reelable bathymetry device, down to depths of 2500 ft. When not configured with the bathymetry survey reel & winch assembly, the NISV will be fitted with other modular testing attachments, such as a universal array/winch assembly.	CFMETR
130	For all range oceanographic operations, once the devices are launched in the correct location(s), they collect the data and send it to the installed Universal Bus (URSUBVAN). In real-time, the URSUBVAN captures all the recorded data for later analysis. In some cases, the crew will take the required oceanographic readings and immediately communicate the data to the Range Control Center.	CFMETR
131	Acoustic Tests and Evaluations:	CFMETR
132	Using a deck crane, the NISV will launch and retrieve multiple sonobuoys at a time. Similar to the oceanographic operations, the sonobuoy data will be transferred to the installed URSUBVAN for capture. Clear deck space will used to store the sonobuoys before launching and after retrieval.	CFMETR
133	Range Security:	CFMETR
134	During tests, the NISV must monitor and control the test range. The NISV must employ a maritime domain awareness suite (Radar/AIS/VHF/UHF/EO-IR) to monitor the surrounding area. Command and Control (C2) information will be communicated to Range Control, which will augment the collective maritime picture, enabling the Range Operations Officer to make timely decisions on range safety, marine mammal mitigation, etc.	CFMETR
135	If any unauthorized vessels come into proximity of the restricted areas, the NISV must communicate and/or observe them. Communication would be done through commercial radios and/or loudspeakers mounted to the superstructure.	CFMETR
136	Naval Reservist (NAVRES) Training:	NAVRES
137	The NISV will act as the Naval Reserve (NAVRES) training platform. Onboard, the naval reservists will be trained in their trade(s) to prepare them for surface fleet certifications. All training will use existing NISV systems and equipment while operating at-sea. The following training will be carried out onboard the NISV:	NAVRES
138	Seamanship Training: Seamanship training will be offered to NAVRES boatswains. The senior boatswain mate onboard will lead the training of 4-6 NAVRES boatswain trainees per 3-5 day at-sea training voyage. Seamanship training includes the usage and minor maintenance of onboard equipment and upper deck machinery such as the small boat(s), the crane(s), and the capstans.	NAVRES
139	Marine Technician Training: Marine Technician Training will be offered to NAVRES engineers (roundsmen). The chief engineer onboard will lead the training of 3-4 NAVRES roundsmen trainees per 3-5 day at-sea training voyage. Marine Technician Training includes the maintenance of onboard systems such as the propulsion and electrical systems.	NAVRES

140	Culinary Training: Culinary Training will be offered to NAVRES cooks. The qualified cook onboard will lead the training of 1-2 NAVRES culinary trainees per 3-5 day at-sea training voyage. Culinary trainees would assist the qualified cook in all meal prep and clean-up tasks onboard.	NAVRES
141	Naval Communication Training: Naval Communication Training will be offered to NAVRES communicators. A Naval Communications Officer onboard will lead the training of 2-3 NAVRES communicator trainees per 3-5 day at-sea training voyage. Naval Communication Training includes the monitoring and use of all installed communication systems onboard, including the receipt and transmittal of encrypted communications.	NAVRES
142	Naval Warfare Training: Naval Warfare Training will be offered to Naval Warfare Officer (NWO) Reservists. A NWO onboard will lead the training of 2-3 NAVRES trainees per 3-5 day at-sea training voyage. Naval Warfare Training takes place in the bridge, where the trainees will gain experience navigating and shiphandling and obtaining Bridge Watch Keeper certification.	NAVRES
143	Naval Combat Information Operator (NCIOP) Training: NCIOP Training will be offered to NCIOP Reservists. A qualified NCIOP onboard will lead the training of 2-3 per 3-5 day at-sea training voyage. NCIOP training typically takes place in the bridge where the trainees learn carry out situational assessments through collecting and monitoring all information systems on board, including: radars, weather equipment and received intelligence.	NAVRES
144	First Line Maintenance:	NAVRES, FDU, and CFMETR
145	Equipment Maintenance – The NISV must enable sailors to perform first line maintenance on any embarked equipment. Maintenance activities require a dedicated space for large pieces of equipment and sufficient stowage for any required tools.	NAVRES, FDU, and CFMETR
146	Transit:	NAVRES, FDU, and CFMETR
147	As stated in section 3.4, out-of-harbour operations will have a maximum combined transit and on-station time of five days. The transit portion of this operations would consist of a 24 hour transit at cruising speed to and from the destination (48 hours total), and 3 days of on-station operations.	NAVRES, FDU, and CFMETR
148	Search and Rescue (SAR):	NAVRES, FDU, and CFMETR
149	Occasionally, the NISV will be used to aid in Search and Rescue (SAR) operations. The NISV, its small boat(s) and all pre-existing life-saving equipment would be used to help sailors and passengers in distress.	NAVRES, FDU, and CFMETR

150	**3.8 User Characteristics**	NAVRES, FDU, and CFMETR
151	The NISV crews may include both male, female, and non-binary personnel.	NAVRES, FDU, and CFMETR
152	FDU crews will be made up of tender qualified military officers and non-commissioned officers, including qualified military divers.	FDU
153	CFMETR crews will be qualified civilian tender operators and scientific personnel.	CFMETR
154	NAVRES crews will consist of tender-qualified military officers and non-commissioned officers in addition to Naval Reservist trainees.	NAVRES
155	**4 Design and Concept Guidance**	NAVRES, FDU, and CFMETR
156	The system must comprise six vessels capable of transporting crew, personnel, equipment and containerized systems to and from each operating area.	NAVRES, FDU, and CFMETR
157	The system must be constructed and maintained in accordance with rules set out by a member of the International Association of Classification Societies.	NAVRES, FDU, and CFMETR
158	The NISV systems shall be chosen with simplicity of operation and maintenance as prime considerations.	NAVRES, FDU, and CFMETR
159	Commercial Design and Construction. The NISV shall be built and registered in Canada and satisfy the certification requirements of a recognized Classification Society, as well as the TC requirements.	NAVRES, FDU, and CFMETR
160	Single Class. All NISV shall be to a common design and TC Classification Society certification.	NAVRES, FDU, and CFMETR
161	Propulsion System. The propulsion system shall consist of at least two propulsion units. This is further described in 5.1.2.1.	NAVRES, FDU, and CFMETR
162	Manoeuvrability. The NISV shall be responsive and highly manoeuvrable. This is further described in 5.1.2.2.	NAVRES, FDU, and CFMETR

163	Upper Deck Configuration. The NISV shall have spacious reconfigurable forward and/or after working decks to facilitate a range of operations. The working decks shall be large enough with interfaces and lashings to install and safely access up to 2 standard 20' shipping containers or 1 "extra-wide" 20' shipping container (URSUBVAN), while allowing for safe access to stern and side bulwarks and use of deck crane(s). The working deck shall be fitted with universal winch/equipment mounts for the easy installation and dismantling of existing RCN equipment. Additionally, the decks shall provide sufficient tie-downs and bollards for securing cargo and securing alongside, respectively.	NAVRES, FDU, and CFMETR
164	Bridge Configuration. The NISV shall normally be operated from a centrally located Bridge Control Console (BCC) by a single officer (the master or the officer in charge of the deck watch). The bridge shall have large windows and sky ports to provide maximum all-round visibility. The more panoramic the view from the bridge, the easier it will be for the master to perform their work and oversee the safety of the crew and any ongoing operations on the working deck.	NAVRES, FDU, and CFMETR
165	Deck Equipment. The NISV shall be fitted with one large general-purpose deck crane for equipment handling and a davit for the rescue boat and universal mounts on the stern-side to facilitate easy install and dismantling existing RCN equipment The deck crane shall be situated to maximize reach and lifting efficiencies and maintain a clear working deck. Deck machinery shall be powered by one type of power source and be of proven manufacturer.	NAVRES, FDU, and CFMETR
166	Small Boat. The NISV shall have a rescue boat (defined IAW Life Saving Appliance (LSA) Code Chapter 5 Section 5.1 (Rescue Boats)) as a dual-purpose seaboat/rescue boat. The rescue boat is required to recover persons overboard, to shepherd the vessels' life rafts, and be capable of general duties such as transporting personnel and equipment over short distances.	NAVRES, FDU, and CFMETR
167	Habitability. The vessel design shall have accommodations, toilets and wash places for mixed gender crew of up to 24 military personnel, or 12 civilian personnel to carry out operations of up to 5 days duration. The NISV shall have cabins, a galley, and a crew lounge/cafeteria. Cabins shall be flexible in design to meet civilian Maritime Occupational Health and Safety (MOHS) regulations during ship ranging operations, and Canadian Forces habitability regulations during military operations.	NAVRES, FDU, and CFMETR
168	Damage Control and Firefighting. The NISV shall have damage control systems that are highly automated to minimize the requirement for firefighting/flood response by the crew.	NAVRES, FDU, and CFMETR
169	Training. The NISV shall be tailored to a specification that entails minimal training and familiarization. Systems are to be robust, yet simple, to minimize the level of technical competence required for minor fault finding and troubleshooting. Equipment shall correspond to specifications that are typically found in commercial vessels. Highly specialized, unique, and complex equipment shall be avoided.	NAVRES, FDU, and CFMETR

<table>
<tr><td>170</td><td>Maintainability. The life of the NISV shall be designed for no less than 25 years of operations and shall be efficient and economical to maintain over the lifespan of the vessel. The vessel shall have ease of access to major components to support maintenance and repair. Engines, pumps and auxiliary equipment shall be well proven in a marine environment and have a Canadian supplier with ISS available on each coast.</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>171</td><td>Crewing. The NISV's crew shall depend on the operation at hand. A minimum crew of six will be required for ship ranging or reservist training operations, and a minimum crew of eight will be required for diving operations. The maximum crew complement will be 24. The NISV must be capable of being crewed and operated by platform qualified personnel.</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>172</td><td>5 System Effectiveness Requirements</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>173</td><td>5.1 Operability</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>174</td><td>5.1.1 General</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>175</td><td>Six NISV are required in total.</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>176</td><td>5.1.2 Speed and Power</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>177</td><td>The NISV must achieve a minimum free-running speed of 13 knots in a fully loaded, deep departure condition, in calm water.</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>178</td><td>The NISV must sustain continuous, unrefueled operations of 5 days at speed profile provided in Tables 1:
<table>
<tr><td>Speed (kts)</td><td>% of time at speed</td><td>Comments</td></tr>
<tr><td>0-4</td><td>20%</td><td>Lots of stationkeeping or slow maneouvering during operations</td></tr>
<tr><td>5-9</td><td>15%</td><td>Typical time to ramp up to cruising speed</td></tr>
<tr><td>10-15</td><td>60%</td><td>Transiting at cruising speed</td></tr>
<tr><td>16+</td><td>5%</td><td>Rarely transit at max speed</td></tr>
</table></td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>179</td><td>The NISV must be capable of towing another NISV at low speeds in Sea State 2.</td><td>NAVRES</td></tr>
<tr><td>180</td><td>The NISV must maintain station over a fixed position and heading in Sea State 3.</td><td>NAVRES, FDU, and CFMETR</td></tr>
</table>

181	***5.1.2.1 Propulsion System***	NAVRES, FDU, and CFMETR
182	Any fuel required by the NISV must be commercially-available across Canada.	NAVRES, FDU, and CFMETR
183	The NISV fuel tanks shall never go below the minimum fuel amount of 40% as stated by the Naval Engineering Manual.	NAVRES, FDU, and CFMETR
184	If the propulsion system utilizes batteries, the batteries must be commercially-available across Canada.	NAVRES, FDU, and CFMETR
185	The propulsion system must be controllable and monitored through a microprocessor based Integrated Platform Control System (IPCS).	NAVRES, FDU, and CFMETR
259	The propulsion system and/or main machinery room must be optimized to reduce marine noise/vibration.	CFMETR
186	***5.1.2.2 Maneuverability***	NAVRES, FDU, and CFMETR
187	The NISV must have a propulsion system and power train that is capable of continuous low-speed manoeuvres while the vessel is underway.	NAVRES, FDU, and CFMETR
188	The NISV must have an immediate response to control inputs changing the thrust direction and force.	NAVRES, FDU, and CFMETR
189	The NISV must have a simple, intuitive, and easy-to-operate control system which gives the operator(s) a high degree of control over both the direction and the force of the thrust.	NAVRES, FDU, and CFMETR
190	***5.1.3 Habitability***	NAVRES, FDU, and CFMETR
191	The NISV must sustain the vessel's crew and additional personnel (as described in 3.4) onboard for five days.	NAVRES, FDU, and CFMETR
192	The NISV must comply with D-03-002-000-SG-008 Standard for the Design of Commissary Spaces for Canadian Forces Ships when crewed by military personnel (maximum complement of 24).	NAVRES and FDU
193	The NISV must comply with the MOHS standard and any collective agreement considerations when crewed by civilians (maximum complement of 12).	CFMETR

194	Conflicts between standards shall favour the more stringent of the two habitability regulations.	NAVRES, FDU, and CFMETR
195	The NISV must account for a modern gender mix through the provision of excess bunks through the use of smaller/more flexible sized cabins and private wash places.	NAVRES, FDU, and CFMETR
196	***5.1.3.1 Accommodations***	NAVRES, FDU, and CFMETR
197	The NISV must accommodate a military crew (FDU and NAVRES) of 24 or a civilian crew (CFMETR) of 12.	NAVRES, FDU, and CFMETR
198	The NISV must provide flexible cabins which can comply with the MOHS standard when crewed by civilian personnel and D-03-002-000/SG-006 Habitability and Husbandry Standard for Canadian Forces Ships when crewed by military personnel.	NAVRES, FDU, and CFMETR
199	***5.1.3.2 Galley***	NAVRES, FDU, and CFMETR
200	The NISV galley must be designed in accordance with D-03-002-000-SG-008 Standard for the Design of Commissary Spaces for Canadian Forces Ships.	NAVRES, FDU, and CFMETR
201	The galley must be configured and equipped for the preparation of meals for the maximum complement of twenty-four people.	NAVRES, FDU, and CFMETR
202	The galley must have countertop work surfaces, with drawers for utensils and galley supplies, and stowage with shelving underneath.	NAVRES, FDU, and CFMETR
203	Bulkhead shelves and cabinets must be provided for additional stowage in the galley.	NAVRES, FDU, and CFMETR
204	NAVRES culinary training requires a galley that is sufficiently large for three (3) cooks to work simultaneously.	NAVRES
205	The NISV galley and food (cold, dry, and frozen) stores must be sufficiently large to feed the full complement over the course of a 5-day mission.	NAVRES, FDU, and CFMETR
206	***5.1.3.3 Messes and Lounge***	NAVRES, FDU, and CFMETR
207	The NISV must be fitted with a large enough lounge that can either be used as a dining/leisure area for up to 12 people or a briefing room for the full complement (up to 24 people).	NAVRES, FDU, and CFMETR

208	***5.1.3.4 Other Spaces***	NAVRES, FDU, and CFMETR
209	The NISV must be fitted with an office space with sufficient desk space for a computer and enough storage for documentation.	NAVRES, FDU, and CFMETR
210	The NISV shall have a large multi-functional space which can be outfitted for its assigned operation:	NAVRES, FDU, and CFMETR
211	The NAVRES NISV shall outfit the large space as a classroom for all students on board.	NAVRES
212	The CFMETR and FDU NISV shall outfit the large space as an on-board workshop for overhaul and maintenance of equipment, such as diving gear, ROVs, or Operational Testing & Evaluation equipment.	FDU and CFMETR
213	***5.1.4 Hull Characteristics***	NAVRES, FDU, and CFMETR
216	The NISV must have a steel or aluminum hull.	NAVRES, FDU, and CFMETR
217	The NISV must be a “Tender” as described in NAVORD 3485-2.	NAVRES, FDU, and CFMETR
218	The NISV must have a hull design which enables NISV to operate as described in Section 3, SYSTEM OPERATION.	NAVRES, FDU, and CFMETR
219	The NISV must have a hull, appendages, and/or a roll dampening system which minimizes motions and sea-sickness for crew members.	NAVRES, FDU, and CFMETR
220	The NISV must be fendered on both starboard and port to avoid damage from berthing alongside CFMETR's Ranch Point floats or other vessels.	CFMETR
221	***5.1.5 Bridge Arrangement***	NAVRES, FDU, and CFMETR
222	The NISV must provide the capability and visibility for sole-officer operation when conditions permit. The bridge must be spacious enough to allow at least five additional watch-standers (pilot, two lookouts, a boatswain, and a Naval Communicator) to perform normal watch keeping duties within the bridge interior.	NAVRES, FDU, and CFMETR
223	The bridge must have minimum clear lines of sight from 90 degrees port to 90 degrees starboard forward, and unimpeded views directly aft of the bridge.	NAVRES, FDU, and CFMETR

224	Bridge Control Console (BCC) and the helm must be situated at or near the centreline of the bridge.	NAVRES, FDU, and CFMETR
225	The BCC must be placed so that the officer, when standing at the centreline, can (first priority) control the vessel's thrust and steering and (second priority) operate and monitor primary navigation and communications equipment.	NAVRES, FDU, and CFMETR
226	The BCC must provide continued operation during loss or reduction of electrical power generation.	NAVRES, FDU, and CFMETR
227	While sitting at the BCC, the officer must be able to operate the vessel's propulsion controls, radar and navigation systems, VHF radio communications, and ancillary controls, while keeping sight of the foc'sle deck.	NAVRES, FDU, and CFMETR
228	The officer at the BCC location must have rapid and easy access to the bridge windows.	NAVRES, FDU, and CFMETR
229	The BCC may comprise two or more co-located units to enable the officer in charge of the deck watch to traverse through and around it.	NAVRES, FDU, and CFMETR
230	The vessel's engineer must control and monitor the propulsion, electrical, and auxiliary systems from a Machinery Control Console (MCC) on the bridge.	NAVRES, FDU, and CFMETR
439	The MCC instrumentation and gauges must be digital, accurate and reliable.	NAVRES, FDU, and CFMETR
231	The placement of the MCC must not impede the master's vision or physical ability to move around for controlling and operating the vessel.	NAVRES, FDU, and CFMETR
232	Adjustable, swivelling chairs, fixed to the deck and situated to enable monitoring of the BCC and MCC must be provided.	NAVRES, FDU, and CFMETR
233	A Communication Control Console (CCC) must be situated in the bridge but must not interfere with high traffic areas.	NAVRES, FDU, and CFMETR
234	The CCC must display and control all communications and navigation equipment as described in 6.1.1 and 6.1.2.	NAVRES, FDU, and CFMETR
235	The NISV must have bridge wings or a deck which provides access to the port and starboard sides of the bridge exterior, which is accessible through bridge door(s), to enable officers to view and direct operations from outside the bridge.	NAVRES, FDU, and CFMETR

236	The NISV must have a chart table to hold paper charts located on the bridge.	NAVRES, FDU, and CFMETR
237	The NISV must have stowage for navigation publications and chart items on the bridge.	NAVRES, FDU, and CFMETR
238	The NISV must have their bridge enclosed by windows around the full perimeter.	NAVRES, FDU, and CFMETR
239	The windows must be made of safety glass;	NAVRES, FDU, and CFMETR
240	The windows must be arranged to provide an unobstructed view in all directions from the BCC;	NAVRES, FDU, and CFMETR
241	The windows must be easily accessible and not blocked by consoles, tables, or other equipment;	NAVRES, FDU, and CFMETR
242	The windows must be spaced closely together with a minimum of framing so that a person standing back from the windows has as close to an unobstructed panorama view as possible;	NAVRES, FDU, and CFMETR
243	The windows must be oriented and/or inclined so that lights are not reflected on the inside surface in such a way that would cause confusion to watch-standers;	NAVRES, FDU, and CFMETR
244	The windows must have vertical wipers to assure unimpeded visibility in heavy rain, snow or spray. One or more clear views on the bridge may augment the wipers;	NAVRES, FDU, and CFMETR
245	The windows must be heated to provide maximum visibility, defrosting and de-icing capability during cold weather operations;	NAVRES, FDU, and CFMETR
246	The windows must have a means of providing natural ventilation to the bridge.	NAVRES, FDU, and CFMETR
247	***5.1.6 Deck Characteristics***	NAVRES, FDU, and CFMETR
248	The NISV gangway must provide embarkation and disembarkation capabilities from both Port and Starboard sides.	NAVRES, FDU, and CFMETR
249	The NISV gangway must be light enough to be lifted and transported by four people.	NAVRES, FDU, and CFMETR

250	The NISV gangway must be securely stowed onboard in a place that does not interfere with the thoroughfare of the vessel.	NAVRES, FDU, and CFMETR
251	The NISV must connect low-pressure air, Defence-Wide Area Network (DWAN), fresh water, grey water, black water, oily water, internet and fire alarm pull station to shore on both port and starboard sides.	NAVRES, FDU, and CFMETR
252	The NISV deck must provide sufficient space to load up to two standard twenty-foot shipping containers while allowing access to all sides of the containers, and providing a walkway to access the stern of the vessel.	NAVRES, FDU, and CFMETR
253	In order to reduce the containers' effects on the stability of the NISV, the NISV deck must provide three sets of 20' ISO container lashings: one set of lashings centered on the centerline and two sets of lashings mirrored and equidistant from the centerline.	NAVRES, FDU, and CFMETR
254	All shipping container configurations must be arranged in a way to reduce their effects on the ship's stability.	NAVRES, FDU, and CFMETR
442	The deck will be fitted with a general deck crane, a small boat and davit, mounts for winches and test equipment and capstans.	NAVRES, FDU, and CFMETR
255	The NISV's bulwarks must prevent water from accumulating on working decks	NAVRES, FDU, and CFMETR
256	The NISV must tow from the side and from the stern.	NAVRES, FDU, and CFMETR
257	The NISV must deploy Conductivity, Temperature, Depth (CTD) sensor probes.	FDU and CFMETR
258	The NISV must have a large working deck area.	NAVRES, FDU, and CFMETR
260	***5.1.7 Machinery***	NAVRES, FDU, and CFMETR
261	The Machinery Spaces must be capable of operating unmanned.	NAVRES, FDU, and CFMETR
262	Primary control (including start and stop) and monitoring of propulsion, machinery, power generation and auxiliary systems must be through the MCC located on the bridge.	NAVRES, FDU, and CFMETR

263	Emergency stops for the machinery must be located in the following places: • On the BCC; • On the MCC; • Outside the engine room door(s), at a prominent, rapidly accessible location; and • On the engine control panels in the engine room.	NAVRES, FDU, and CFMETR
264	Insofar as possible, all local engine controls, gauges and alarms must be centrally co-located in the engine room near the engines.	NAVRES, FDU, and CFMETR
265	Machinery, fire, emergency, and bilge audible and visual repeater alarms are required in the engine room.	NAVRES, FDU, and CFMETR
266	The NISV machinery space must have: • Tool stowage for a typical, anticipated tool fit; • Any special tools required for completing operator maintenance aboard the NISV shall be supplied; and • Stowage for spares to support at-sea operations of 5 days is required.	NAVRES, FDU, and CFMETR
267	***5.1.8 Electrical***	NAVRES, FDU, and CFMETR
268	The electrical system for the NISV must be designed and installed IAW TC regulations and the standards of a Classification Society.	NAVRES, FDU, and CFMETR
269	Electrical appliances must comply with the Canadian Standards Association (CSA) standards for equipment manufactured in Canada.	NAVRES, FDU, and CFMETR
270	Equipment manufactured outside Canada must comply with CSA-equivalent codes.	NAVRES, FDU, and CFMETR
271	All electrical equipment, fixtures, cables and fittings must be suitable for operation in the marine environment.	NAVRES, FDU, and CFMETR
272	The NISV must be capable of generating electricity.	NAVRES, FDU, and CFMETR
273	The NISV must be capable of generating enough electricity to power worst-case electrical loads without interruption over the course of a 5-day mission.	NAVRES, FDU, and CFMETR
274	An Uninterruptible Power Supply (UPS) must provide power for essential systems, including but not limited to: BCC and navigation systems, general alarm and broadcasting system, one fitted VHF radio, automatic fire and flood detection and activation systems, and emergency lighting.	NAVRES, FDU, and CFMETR

275	The NISV must store electricity using batteries.	NAVRES, FDU, and CFMETR
280	Using stored electricity, the NISV must be capable of powering the worst-case (winter night) critical electrical loads (as described in NISV_SOR274) for a period of 4 hours without making noise during “Signal Zero” operations.	CFMETR
276	Isolation transformers must be fitted to the shore supply system.	NAVRES, FDU, and CFMETR
277	Primary control and monitoring of the electrical power generation and distribution system must be from the MCC on the bridge.	NAVRES, FDU, and CFMETR
278	Cathodic protection to prevent electrolysis or galvanic corrosion of the shafts, propulsion system, appendages, bilges, ballast tanks and the hull is required.	NAVRES, FDU, and CFMETR
279	Shore power cables, with stowage, must be provided.	NAVRES, FDU, and CFMETR
437	The NISV must be fitted with extra cable routing tray capacity to allow for future system reconfiguration in support of test and development programs.	CFMETR
281	***5.1.9 Storage***	NAVRES, FDU, and CFMETR
282	The NISV must comply with D-03-002-000-SG-007 Stores Compartment Requirements for Canadian Forces Ships.	NAVRES, FDU, and CFMETR
283	The NISV must provide storage for ammunition and pyrotechnics.	NAVRES and FDU
284	The NISV must provide storage for Paint, Oil and Lubricants (POL).	NAVRES, FDU, and CFMETR
285	The NISV must provide storage for weapons.	NAVRES and FDU
286	The NISV must provide accessible storage for all tools and equipment required by the operation at hand. This includes large loads such as the required diver gas tanks needed for a 5 day SSD operation.	FDU and CFMETR
287	***5.1.10 Service Life***	NAVRES, FDU, and CFMETR

288	The system must have a service life of not less than 25 years.	NAVRES, FDU, and CFMETR
289	**5.2 Survivability**	NAVRES, FDU, and CFMETR
290	The NISV must comply with Safety of Life at Sea (SOLAS).	NAVRES, FDU, and CFMETR
291	The NISV must mitigate the effects of critical failure to critical systems.	NAVRES, FDU, and CFMETR
292	The NISV must provide sufficient environmentally-friendly firefighting and extinguishing capabilities to control on-board fires in machinery spaces or the galley.	NAVRES, FDU, and CFMETR
293	The NISV must alert crew to fires and flooding.	NAVRES, FDU, and CFMETR
294	The NISV must have a security alarm which is engaged while vessel is unmanned and alongside.	NAVRES, FDU, and CFMETR
295	The NISV must be equipped with backup power supplies for vital navigation, communication and propulsion equipment (I.e. navigation radar and VHF) as described in 5.1.9.	NAVRES, FDU, and CFMETR
296	**5.3 Maintainability**	NAVRES, FDU, and CFMETR
297	The NISV must be delivered with two years' worth of spares for the vessels.	NAVRES, FDU, and CFMETR
298	The NISV must be designed to undergo a 5-year docking cycle.	NAVRES, FDU, and CFMETR
299	The NISV must be delivered with all necessary documentation, plans and instruction manuals for vessel equipment maintenance and operations.	NAVRES, FDU, and CFMETR
300	The NISV machinery and equipment arrangement must provide an adequate and safe accessible maintenance envelope.	NAVRES, FDU, and CFMETR
301	**5.4 Availability**	NAVRES, FDU, and CFMETR

<table>
<tr><td>302</td><td>The NISV will rotate between tasks while other NISV undergo maintenance or refits in-order to reduce downtime in critical roles. For example, if the FDU (A) NISV is undergoing a refit in Halifax, a NAVRES NISV can travel from the Great Lakes to temporarily fulfill diving operations.</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>303</td><td>Excluding docking cycle requirements, the NISV must have full operational availability of not less than 85%.</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>304</td><td>The NISV will have the following availability profile:
<table>
<tr><th>Activity</th><th>Average Annual Usage per vessel (weeks)</th><th>Time %</th><th>Comments</th></tr>
<tr><td>Operations</td><td>43</td><td>82.6%</td><td>Always operating when not undergoing maintenance and down time</td></tr>
<tr><td>Downtime</td><td>2</td><td>3.85%</td><td>Projected 2 weeks of downtime per year due to work slack or weather</td></tr>
<tr><td>Maintenance Periods</td><td>4</td><td>7.7%</td><td>Projected to undergo two, two-week maintenance periods (total: four weeks) each year.</td></tr>
<tr><td>Refits</td><td>3</td><td>5.8%</td><td>Projected to undergo one 15 week refit at five-year intervals.</td></tr>
<tr><td>Total</td><td>52</td><td>100%</td><td></td></tr>
</table></td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>305</td><td>5.5 Reliability</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>306</td><td>The NISV must have a service life of not less than 25 years.</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>307</td><td>5.6 Environmental Sustainability</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>308</td><td>The NISV must comply with the International Convention for the Prevention of Pollution from Ships (MARPOL).</td><td>NAVRES, FDU, and CFMETR</td></tr>
<tr><td>309</td><td>All engines on the NISV must comply with Tier III regulations within MARPOL Annex VI – Regulations for the Prevention of Air Pollution from Ships.</td><td>NAVRES, FDU, and CFMETR</td></tr>
</table>

310	The NISV must comply with DND's current environmental policies.	NAVRES, FDU, and CFMETR
311	All liquid ballast tanks must use fresh water.	NAVRES, FDU, and CFMETR
312	Oily bilge water tanks must be of sufficient size to support the continuous underway duration (maximum of 5 days).	NAVRES, FDU, and CFMETR
313	Collected oily bilge water must be easily transferable to the CFB Halifax and Esquimalt oily water processing facilities, or commercial contractors, for treatment.	NAVRES, FDU, and CFMETR
314	In accordance with DEES 20-23 Strong, Secure, Engage (SSE) Greening the Navy Initiative. All electricity generation must be as environmentally friendly as possible.	NAVRES, FDU, and CFMETR
315	**5.7 Gender-Based Analysis Plus (GBA+)**	NAVRES, FDU, and CFMETR
316	The NISV must be designed with Gender-Based Analysis Plus considerations.	NAVRES, FDU, and CFMETR
317	The NISV must account for a modern gender mix through the provision of excess bunks through the use of smaller/more flexible sized cabins and private wash places.	NAVRES, FDU, and CFMETR
318	As part of the GBA+, the impacts of the project, including future training, employment requirements, policy/process updates and ongoing maintenance and management systems that could cause differential access or impacts will be assessed. Any potential differential impacts will identified.	NAVRES, FDU, and CFMETR
319	**5.8 Safety and Health**	NAVRES, FDU, and CFMETR
320	The NISV must comply with all applicable Transport Canada regulations.	NAVRES, FDU, and CFMETR
321	The NISV must comply with Maritime Operational Health and Safety (MOHS) during civilian-crewed operations.	NAVRES, FDU, and CFMETR
322	The NISV must comply with the International Convention for the Safety of Life at Sea (SOLAS).	NAVRES, FDU, and CFMETR

323	The NISV must comply with the Canada Labour Code.	NAVRES, FDU, and CFMETR
324	The NISV must be supplied with the lifesaving equipment required by Transport Canada Life Saving Equipment Regulations C.R.C c. 1436.	NAVRES, FDU, and CFMETR
325	The NISV must comply with DND, TC, IMO, and SOLAS requirements for required pyrotechnics and their storage.	NAVRES, FDU, and CFMETR
326	**5.9 Cyber Mission Assurance**	NAVRES, FDU, and CFMETR
327	The NISV will not operate in cyber contested environments, but the interception of communications is always possible. Therefore, the NISV will have encrypted communication capabilities for the transmittal and receipt of sensitive information.	NAVRES, FDU, and CFMETR
328	The NISV must be capable of transmitting and receive encrypted verbal and written communications with external parties in real-time;	NAVRES, FDU, and CFMETR
329	Encrypted verbal communications shall be enable through an encrypted radio system.	NAVRES, FDU, and CFMETR
330	Encrypted written communications will rely on the use of the Defence Wide Area Network (DWAN) and associate Public Key Infrastructure (PKI), if required.	NAVRES, FDU, and CFMETR
331	In order to secure all sensitive digital documentation, the documentation must be saved on the DWAN to leverage its firewall and privacy capabilities.	NAVRES, FDU, and CFMETR
332	**5.10 Delivery Requirements**	NAVRES, FDU, and CFMETR
333	Two NISV must be delivered to the Canadian Forces Maritime Experimental and Test Ranges (CFMETR) in Nanoose Bay, British Columbia.	CFMETR
334	Two NISV must be delivered to NAVRES units in the Great Lakes/St. Lawrence area.	NAVRES
335	One NISV must be delivered to FDU (Atlantic) in the Greater Halifax, Nova Scotia.	FDU
336	One NISV must be delivered to FDU (Pacific) in Esquimalt, British Columbia.	FDU

337	The NISV must be delivered with a complete Technical Data Package (TDP) which includes, but is not limited to the following: • Drawings and parts lists and software documentation needed to operate and maintain the system and to perform configuration management during the in-service phase; • Supplementary Provisional Technical Data (SPTD) needed for cataloguing; • Intellectual Property (IP) rights data; • Nomenclature and identification plate date; • A fitted equipment and loose items list; • A minimum equipment list; • Manual provided by the Original Equipment Manufacturer (OEM) for equipment, machinery and appliances installed on the vessels; and • Any certificate of approval by the appropriate authority for equipment, machinery and appliances installed on the vessels.	NAVRES, FDU, and CFMETR
338	The detailed design drawings of the NISV must be approved by a member of the International Association of Classification Societies.	NAVRES, FDU, and CFMETR
339	DND must be permitted to organize and hold a launch or acceptance event, as desired by DND, at the shipyard facility, adjacent to the NISV, to coincide with launch or acceptance of any of the NISV.	NAVRES, FDU, and CFMETR
340	The NISV must meet all requirements and standards as described in the Statement of Work, including all annexes.	NAVRES, FDU, and CFMETR
341	Assessment of Modern Treaty Implications (AMTI) NISV shall consider all requirements related to voluntary set asides for Procurement Strategy for Indigenous Business (PSIB).	NAVRES, FDU, and CFMETR
342	NISV shall consider all requirements related to Comprehensive Land Claims in the areas of operation.	NAVRES, FDU, and CFMETR
343	The NISV Project will be assessed for economic benefits, including the potential application of the Industrial and Technological Benefits (ITB) Policy. If applied, the ITB Policy requires the Contractor to perform work activities in Canada to an equal value of the Contract, including but not limited to direct work with Canadian suppliers, labour, Small and Medium Businesses, and through indirect investments. For more information in the ITB Policy, please visit: https://ised-isde.canada.ca/site/industrial-technological-benefits/en	NAVRES, FDU, and CFMETR

456	In accordance with the Procurement Strategy for Indigenous Business (PSIB), the NISV Project will be required to commit 5% of contract value to Indigenous content to encourage the participation of Indigenous-owned small and medium businesses (SMB) on defence procurements. Please note, that Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) are the lead on this initiative and will be involved in the final decision making before these clauses are implemented in the contract.	NAVRES, FDU, and CFMETR
344	**6 Sub-System Effectiveness Requirements**	NAVRES, FDU, and CFMETR
345	**6.1 Navigation and External Communications Equipment**	NAVRES, FDU, and CFMETR
346	All navigation equipment must be operated in accordance with TP 3668 E - Standards for Navigating Appliances and Equipment.	NAVRES, FDU, and CFMETR
347	Using navigation and external communications equipment, the NISV must:	NAVRES, FDU, and CFMETR
348	Determine accurate and reliable heading data by seeking the “true north”;	NAVRES, FDU, and CFMETR
349	Determine accurate and reliable heading data by seeking the “magnetic north”;	NAVRES, FDU, and CFMETR
350	Measure the speed of the vessel through water with respect to the surface reflecting the transmitted wave.	NAVRES, FDU, and CFMETR
351	Track and plot the course, speed and Closest Point of Approach (CPA) of ships within a radius of 0.5-24 Nautical Miles to inform the crew of any collision dangers.	NAVRES, FDU, and CFMETR
352	Provide IMO-compliant, real-time display of the NISV’s position on GPS-enabled, RCN-accepted navigation software and an electronic chart display;	NAVRES, FDU, and CFMETR
353	Measure, display and record water depth up to 1400 feet (426.72 metres), with survey-grade precision (Order 2 of Standards for Hydrographic Surveys – Canadian Hydrographic Service).	NAVRES, FDU, and CFMETR

354	Track and display coordinate of other vessels using an Automatic Identification System (AIS);	NAVRES, FDU, and CFMETR
355	Display the coordinates of the NISV to others using an AIS;	NAVRES, FDU, and CFMETR
356	Automatically follow pre-programmed routing;	NAVRES, FDU, and CFMETR
357	Alert vessels in its immediate vicinity as well as shore-based rescue and communications authorities in the event of an emergency;	NAVRES, FDU, and CFMETR
358	Monitor the international Global Maritime Distress and Safety System (GMDSS);	NAVRES, FDU, and CFMETR
359	Be capable of receiving and transmitting voice communications though VHF, High Frequency (HF) and Medium Frequency (MF) radio waves;	NAVRES, FDU, and CFMETR
360	Transmit and receive encrypted verbal and written communications;	NAVRES, FDU, and CFMETR
361	Monitor wind speed and direction, air temperature, and atmospheric pressure;	NAVRES, FDU, and CFMETR
362	Be fitted with a vessel's whistle, operable during a power failure and be compliant with International Regulations for Preventing Collisions at Sea (COLREGS).	NAVRES, FDU, and CFMETR
363	Fully access the Defence Wide Area Network (DWAN);	NAVRES, FDU, and CFMETR
364	Provide a wireless internet connection to all crew and personnel.	NAVRES, FDU, and CFMETR
365	**6.2 Internal Communications**	NAVRES, FDU, and CFMETR
366	The NISV must provide broadcasting messaging capability for the exterior deck area and internal spaces to coordinate operations onboard the vessel.	NAVRES, FDU, and CFMETR
367	The NISV must provide two-way voice communication for the external deck area and internal spaces to allow for point-to-point communication.	NAVRES, FDU, and CFMETR

368	The NISV must sound alarms from the bridge.	NAVRES, FDU, and CFMETR
369	**6.3 Deck Equipment**	NAVRES, FDU, and CFMETR
376	The NISV must have a lifting appliances as described in 6.3.1	FDU and CFMETR
379	The lifting appliances must not interfere with the working deck thoroughfare.	FDU and CFMETR
395	The NISV must provide the proper interfaces for existing RCN and USN containerized systems as described in 6.3.2.	NAVRES, FDU, and CFMETR
370	The NISV must have a small boat (as described in 6.3.3) and an associated electrically powered crane.	NAVRES, FDU, and CFMETR
371	The small boat must not interfere with the working deck	NAVRES, FDU, and CFMETR
372	The NISV must have capstans on the focsle and working deck used for towing, berthing, and mooring.	NAVRES, FDU, and CFMETR
377	The NISV must have a winch to deploy CTD probes and other devices	CFMETR
373	***6.3.1 Deck Crane***	NAVRES, FDU, and CFMETR
374	The NISV general deck crane(s) will be used for but not limited to the following: • Lifting and lowering a Surface Supply Diving stage and its weight limits; • Launching and retrieving the small boat with personnel and effects; • Launching and retrieving sonobuoys and buoys; and • Loading and unloading equipment from the installed ISO containers.	FDU and CFMETR
448	The NISV general deck crane(s) must be located and/or have the lift/reach capacity to service the entire working deck and over at least one side of the hull without interfering with the working deck thoroughfare.	NAVRES, FDU, and CFMETR
444	The general deck crane(s) must be operated from a location with clear sightlines to the working deck and crane(s).	NAVRES, FDU, and CFMETR
446	The NISV general crane(s) control station must be positioned away from any lifted loads and must not interfere with the working deck thoroughfare.	NAVRES, FDU, and CFMETR

378	The deck crane lifting capacity must be as high as possible while maintaining stability criteria in accordance with C-03-001-024-MS-002 Stability and Buoyancy Requirements Surface Ships.	FDU and CFMETR
443	The NISV will have a dedicated crane/davit for deploying and recovering the small boat	NAVRES, FDU, and CFMETR
380	***6.3.2 Cargo Guidance***	NAVRES, FDU, and CFMETR
381	The system must provide deck space to accommodate two 20' shipping containers simultaneously. The contents of which may vary based upon operator requirements. The RCN envisions the NISV to be capable of using the following containerized systems:	NAVRES, FDU, and CFMETR
382	The RCN Containerized Dive System (CDS) as used by the current YDT 11. The CDS includes a workshop container and a diver Recompression Chamber (RCC) container.	FDU
383	RCN and USN URSUBVANs as used by the current TSRVs. The universal van comes in both Canadian and American varieties, and both are containerized within "extra-wide" 20' ISO containers;	CFMETR
384	The RCN Remote Mine Disposal System (RMDS). The RMDS contains a series of Unmanned Underwater Vehicles (UUVs) and associated control equipment used to locate and dispose of mines.	FDU
385	Logistics units: classroom, infirmary, cafeteria, dormitory, command station, meeting room, refrigerated warehouse, fuels or breathing gas tanks, workshop, or general storage.	NAVRES, FDU, and CFMETR
386	Electronic systems units: various radars, sonars, communications technology.	NAVRES, FDU, and CFMETR
387	The NISV must provide 3 sets of locks for onboard ISO containers. One set of locks on centreline for use of "extra-wide" shipping containers, while the other two would be placed in such a way to facilitate the installation and use of two standard ISO containers side by side.	NAVRES, FDU, and CFMETR
388	NISV Crew must have access to all ISO container locks when in use to facilitate the securing or detaching of the containers.	NAVRES, FDU, and CFMETR
389	The NISV must provide all necessary connections for all existing and future RCN containerized systems.	NAVRES, FDU, and CFMETR
390	Container connection interfaces must integrate with all existing RCN containerized systems (CDS, URSUBVANS, RMDS, Kingston-Class containerized mess).	NAVRES, FDU, and CFMETR

391	Container connection interfaces must be integrated into the ship in a fashion that does not interfere with high traffic working deck areas (no tripping hazards).	NAVRES, FDU, and CFMETR
392	The NISV must provide uninterrupted power and other utilities (communications, alarms, etc.) to onboard containers in all electrical loading conditions/engine operations.	CFMETR
393	The NISV must provide universal mounts on the stern and side bulwarks to facilitate easy install and dismantling existing RCN equipment such as the diving platform lifting appliance, scientific winch used for towed arrays, or the Mk-36 torpedo target launcher.	NAVRES, FDU, and CFMETR
394	***6.3.3 Small Boat***	NAVRES, FDU, and CFMETR
396	The NISV small boat must be a SOLAS-approved rescue boat.	NAVRES, FDU, and CFMETR
400	The NISV must be fitted with an appropriate cradle and crane for the small boat.	NAVRES, FDU, and CFMETR
397	The small boat must be large enough to carry 10-12 people and their effects and any mission-required gear.	NAVRES, FDU, and CFMETR
398	The small boat's location must be trackable from the NISV using a small or portable location transponders	NAVRES, FDU, and CFMETR
399	The small boat may be used in danger areas of influence mines.	NAVRES, FDU, and CFMETR
401	The small boat must be capable of being launched by both the small crane and the general deck crane.	NAVRES, FDU, and CFMETR
402	**6.4 Mast, Rigging, and Outboard Fixtures**	NAVRES, FDU, and CFMETR
403	The NISV must employ signal flags and lights in accordance with Collision Regulations (COLREGS), C.R.C., c. 1416 of The Canada Shipping Act.	NAVRES, FDU, and CFMETR
404	The NISV must store routinely-used signal flags and shapes IAW COLREGS, situated near the halyards;	NAVRES, FDU, and CFMETR

449	The NISV must be fitted with external lighting to illuminate all exterior decks to facilitate night time operations.	NAVRES, FDU, and CFMETR
405	The NISV must illuminate the area surrounding the vessel to search for a person lost overboard at night.	NAVRES, FDU, and CFMETR
406	The NISV searchlight must be controlled from within the bridge.	NAVRES, FDU, and CFMETR
407	A bell must be fitted on the forward exterior superstructure IAW COLREGS.	NAVRES, FDU, and CFMETR
436	The NISV mast must provide accessible mounting locations for additional antennae and other OT&E instruments.	CFMETR
408	**6.5 Water Systems**	NAVRES, FDU, and CFMETR
409	The NISV must supply hot and cold fresh water to meet the needs of the embarked personnel while at sea.	NAVRES, FDU, and CFMETR
410	The fresh water supply must comply with Health Canada's Guidelines for Canadian Drinking Water Quality – Summary Table.	NAVRES, FDU, and CFMETR
411	The black water system must provide basic treatment of sewage.	NAVRES, FDU, and CFMETR
412	**7 Performance Measures**	NAVRES, FDU, and CFMETR
413	**7.1 System Level Measures**	NAVRES, FDU, and CFMETR
414	An Inspection, Test and Trial programme, set up by the contractor and approved by the DND Project Team, must demonstrate the ability of the vessels, their systems and equipment to meet the contracted performance specification.	NAVRES, FDU, and CFMETR
415	Tests must be in both normal and simulated emergency operational conditions.	NAVRES, FDU, and CFMETR
416	**7.2 Sub-System Level Measures**	NAVRES, FDU, and CFMETR

417	Not applicable.	NAVRES, FDU, and CFMETR
418	**8 Personnel and Training Requirements**	NAVRES, FDU, and CFMETR
419	**8.1 Personnel - Staffing**	NAVRES, FDU, and CFMETR
420	The NISV's crewing requirements crew depend on the operation at hand.	NAVRES, FDU, and CFMETR
421	A minimum crew of five will be required for ship ranging or reservist training operations.	NAVRES and CFMETR
422	A minimum crew of eight will be required for diving operations.	FDU
423	The maximum military crew complement will be 24.	NAVRES and FDU
424	The maximum civilian crew complement will be 12.	CFMETR
425	FDU Operations: Main crew of 8 personnel, including a Tender Charge or TOIC qualified operator, Senior Diver, a MAR ENG Tech, Electrician, Senior Boatswain' Mate (SBM), and three deckhands for day-to-day vessel operations Diving crew depends on type of mission: 4-8 qualified divers needed for rebreather diving missions 14-16 qualified divers need for SSD.	FDU
426	CFMETR Operations: Main crew of 6 civilian personnel for day-to-day vessel operations plus up to 6 scientists (or other passengers).	CFMETR
427	NAVRES Operations: 1 senior SBM, 4-6 NAVRES bosun trainees 1 senior marine tech, 3-4 NAVRES roundsmen trainees 1 qualified cook, 2 NAVRES culinary trainees	NAVRES

	1 senior NAVCOMM 3-4 NAVRES NAVCOMM trainees 1 senior NCIOP, 3-4 NAVRES NCIOP Trainees 1 Officer-in-Charge Naval Tender must be qualified with Bridge Watch Keeper Certification	
428	**8.2 Training**	NAVRES, FDU, and CFMETR
429	The civilian (CFMETR) NISV crews must possess Transport Canada certification corresponding to the size and power of the NISV.	CFMETR
430	The military NISV crews (excluding NAVRES trainees) must possess platform qualifications.	NAVRES and FDU
431	The NISV crews must be allowed reasonable access to their vessels while under construction for training and familiarization purposes.	NAVRES, FDU, and CFMETR
432	Each vessel's crew must be provided underway familiarization prior to Delivery Acceptance of their vessels.	NAVRES, FDU, and CFMETR
433	Each vessel's crew, and Technical Authority designated representatives, must be provided shore-based familiarization.	NAVRES, FDU, and CFMETR
434	Each vessel's crew, and Technical Authority designated representatives, must be provided shore-based equipment training from the equipment or system supplier.	NAVRES, FDU, and CFMETR
435	Intellectual property rights for training courseware must permit reproduction, translation and distribution of the training materials for use by DND.	NAVRES, FDU, and CFMETR

Appendix 1 to Annex A: Application of the Industrial and Technological Benefits (ITB) Policy

The Industrial and Technological Benefits (ITB) Policy, including Value Proposition, may be applied on the **Naval Inshore Support Vessel (NISV) project.** Engagement with industry through the Request for Information (RFI) will help determine the application of the ITB Policy and how Canada could leverage opportunities for economic benefit through this procurement.

The ITB Policy, including the Value Proposition, applies to all eligible defence procurements over $100 million. Additionally, procurements valued between $20-100 million are reviewed for the possible application of the Policy.

Under the ITB Policy, companies awarded defence procurement contracts are required to undertake business activities in Canada equal to the value of the contract. The ITB Policy includes the Value Proposition (VP), which requires bidders to compete on the basis of the economic benefits to Canada associated with its bid. Winning bidders are selected on the basis of price, technical merit and their VP. VP commitments made by the winning bidder become contractual obligations in the ensuing contract.

The objectives of the ITB Policy are to: support the long-term sustainability and growth of Canada's defence sector; support the growth of prime contractors as well as suppliers in Canada, including small and medium-sized enterprises in all regions of the country; enhance innovation through research and technological development in Canada; encourage skills development and training opportunities for Canadian workers; and increase the export potential of Canadian-based firms

For more information about the ITB Policy, please visit www.canada.ca/itb.

Appendix 2 to Annex A: Acronyms, Abbreviations and Terminology

Acronym / Abbreviation	Description
ADC	Acoustic Device Countermeasures
ADM(Mat)	Assistant Deputy Minister (Materiel)
ADS	Atmospheric Diving Systems
AIS	Automatic Identification System
AMTI	Assessment of Modern Treaty Implications
AUV	Autonomous Underwater Vehicle
BCC	Bridge Control Console
CAF	Canadian Armed Forces
CCC	Communication Control Console
CDS	Containerized Dive System
CFB	Canadian Forces Base
CFMETR	Canadian Forces Maritime Experimental and Test Range
CFSS	Canadian Forces Supply System
CFSS	Canadian Forces Supply System
CIRNAC	Crown-Indigenous Relations and Northern Affairs Canada
COLREGS	Convention on the International Regulations for Preventing Collisions at Sea
CPA	Closest Point of Approach
CPA	Closest Point of Approach
CSA	Canadian Shipping Act
CSA	Canadian Standards Association
CTD	Conductivity, Temperature, Depth
DCB	Defence Capabilities Board
DGMEPM	Director General Maritime Equipment Program Management
DMEPM(NC)	Director Maritime Equipment Program Management (Non-Combatants)

DND	Department of National Defence
DWAN	Defence-Wide Area Network
EMATT	Expendable Mobile ASW Training Target and Field Programmability System
EOD	Explosive Ordnance Disposal
EO-IR	Electro-Optical/Infra-Red
EPIRB	Emergency Position Indicating Radio Beacons
FDU(A)	Fleet Diving Unit (Atlantic)
FDU(P)	Fleet Diving Unit (Pacific)
FG	Force Generation
FMF	Fleet Maintenance Facility
FOC	Final Operational Capability
FRRB	Fast Response/Rescue Boat
GBA+	Gender Based Analysis Plus
GMDSS	Global Maritime Distress and Safety System
HF	High Frequency
HLMR	High Level Mandatory Requirements
HMC	Her Majesty's Canadian
IAW	In Accordance With
IOC	Initial Operational Capability
IPCS	Integrated Platform Control System
IPCS	Intellectual Property
IRPDA	Independent Review Panel for Defence
ISED	Innovation, Science and Economic Development Canada
ISO	International Organization for Standardization
ISSC	In-Service Support Contract
LSA	Life Saving Appliance
MARPOL	International Convention for the Prevention of Pollution from Ships
MARS	Maritime Surface
MCC	Machinery Control Console
MCDV	Maritime Coastal Defence Vessel

MCM	Mine Counter Measure
MEOD	Maritime Explosive Ordnance Disposal
MF	Medium Frequency
MF	Medium Frequency
MOHS	Maritime Occupational Health and Safety
msw	Meters seawater
NAVORD	Naval Order
NAVRES	Naval Reserve
NCIOP	Naval Combat Information Operator
NISV	Naval Inshore Support Vessel
NRD	Naval Reserve Division
NSS	National Shipbuilding Strategy
OEM	Original Equipment Manufacturer
OT&E	Operational Testing & Evaluation
POL	Paint, Oil and Lubricants
PSIB	Procurement Strategy for Indigenous Business
QHM	Queen's Harbour Master
RCC	Recompression Chamber
RCN	Royal Canadian Navy
RMDS	Remote Mine Disposal System
ROV	Remotely Operated Vehicle
SAR	Search and Rescue
SART	Search and Rescue Transponders
SBM	Senior Boatswain' Mate
SOLAS	Safety of Life at Sea
SPRD	Supplementary Provisional Technical Data
SS	Sea State
SSD	Surface Supplied Diving
SSE	Strong, Secure, Engaged
SSS	Side Scan Sonar

SUBSAR	Submarine Search and Rescue
TC	Transport Canada
TDP	Technical Data Package
TSRV	Torpedo Ship Ranging Vessels
UHF	Ultra-High Frequency
UPS	Uninterruptible Power Supply
USN	United States Navy
UUV	Unmanned Underwater Vehicles
UWE	Underwater Engineering
UXO	Unexploded Ordnance
VCDS	Vice Chief of the Defence Staff
VHF	Very High Frequency
YDT	Yard Dive Tenders

Glossary Term	Glossary Description
Shipping Container	Also called intermodal containers and International Organization for Standardization (ISO) containers). The containers have standardized dimensions and external attributes which allows for ease of storage, transport, and handling.
Signal Zero	During acoustically sensitive CFMETR operations, TSRV machinery, specifically the ship's diesel generators, radiate unacceptable levels of noise into the water. To compensate, ship generators are shut down during program tests, which then necessitates total dependence on the UPS to meet underwater weapons testing noise parameters
Influence Mines	A mine actuated by the effect of a target on some physical condition in the vicinity of the mine or on radiations emanating from the mine.
Platform qualified personnel	Personnel who are qualified to operate the type of platform (i.e. Tender qualified)
Tender	(As defined by NAVORD 3485-2) Tenders are generally over 40 tonnes and 20 metres in length but less than 350 tonnes and 30 metres. Naval tenders include, but are not limited to YDT and ORCA Class Patrol Craft Training (PCT) vessels or other smaller craft, which by nature of their construction or operation may be required to be under way on a 24-hour/day basis.

Appendix 3 to Annex A: Applicable Documents

Referenced Texts
C-03-001-024-MS-002 Stability and Buoyancy Requirements Surface Ships
Canada Shipping Act, 2001
Convention on the International Regulations for Preventing Collisions at Sea (COLREGS)
D-03-002-000/SG-006 Habitability and Husbandry Standard for Canadian Forces Ships
D-03-002-000-SG-007 Stores Compartment Requirements for Canadian Forces Ships
D-03-002-000-SG-008 Standard for the Design of Commissary Spaces
Health Canada's Guidelines for Canadian Drinking Water Quality – Summary Table
International Convention for the Prevention of Pollution from Ships
Maritime Offshore Health and Safety
MWVA Vessel List
Naval Engineering Manual
NAVORD 3485-2
NISV Strategic Context Document (SCD)
Statement of Operational Capability Deficiency (SoCD) Effective Delivery Platform for CAF Surface Supplied Diving (SSD), 24 November, 2016
Statement of Operational Capability Deficiency (SoCD) Torpedo and Ship Range Vessels (CFMETR)
TP 3668 E - Standards for Navigating Appliances and Equipment
Transport Canada Towboat Crew Accommodation Regulations (C.R.C., c. 1498.Current to January 27, 2013)

ANNEX B INDUSTRY RESPONSE TEMPLATE

ANNEX B INDUSTRY RESPONSE TEMPLATE

BUSINESS INFO

Business Name	
Business Address	
Web	
Procurement Business Number	
Controlled Goods Registration	
Facility Security Level	

Points of Contact			
	Name	Email Address	Tel #
Chief Executive Officer			
Chief Financial Officer			

Economical and Social Benefits

Please read the entirety of the RFI before answering. Provide your answers in the blue cells in column D, providing as much detail as possible.

BUSINESS NAME:	
Response to Appendix 1 to Annex A - Industrial and Technological Benefits (ITB)	**ANSWERS**
Defence Sector: **The ITB Policy seeks to promote the long-term growth and sustainability of Canada's defence industry.**	
1. Based on the project scope put forward by the Department of National Defence within this RFI, please describe what work activities your company could foresee undertaking in Canada for the production and delivery of the NISV vessels. What percentage of the total contract value do you foresee could be sourced in Canada on this procurement, both as regards labour and materials?	
a. Are there elements related to the NISV work that could not be completed in Canada? Please explain.	
Supplier Development: **The ITB Policy seeks to encourage the competitiveness of Canadian industry by supporting the growth of prime contractors and suppliers in Canada, including small and medium businesses (SMB) in all regions of the country.**	
2 One of the ITB Policy's objectives is to encourage the participation of Canadian small and medium businesses (SMBs) on defence procurements. To what extent would you be able to commit to undertake business activities with SMBs (Canadian companies with less than 250 employees)?	

	a. With this objective in mind, do you foresee any challenges if the ITB Policy is applied to this procurement? Please explain.	
Skills Development and Training: **The ITB Policy seeks to fill skills and training gaps within the Canadian economy to support a more innovative Canada.**		
3	Do you foresee any opportunity to promote the Canadian marine industry through Skills Development and Training opportunities and programs, either through the NISV project or more generally across the industry?	
	a. What skills and trades in particular do you consider most important for the future of the marine industry in Canada?	
Research and Development (R&D) **The ITB Policy seeks to enhance innovation through Research and Development (R&D) opportunities in Canada.**		
4	To what extent is there potential to undertake R&D activities in Canada related to NISV?	
	a. Recognizing the role that post-secondary institutions and public research institutes play in fostering innovation in Canada, please describe what potential R&D opportunities your company could foresee undertaking in Canada with these organizations and what specific research areas you would pursue?	
	b. Is there potential to invest in research and development partnerships with Canadian SMBs, including funding for R&D and commercialization of innovative products or services?	
Export: **The ITB Policy seeks to increase the export potential and international competitiveness of Canadian-based firms.**		

5	Please describe any high value export opportunities from Canada, whether commercial or defence, which could be leveraged as a result of this procurement.	
a.	Do you foresee any challenges in securing the relevant intellectual property rights and an exclusive global product mandate to export from your Canadian-based operations?	

Procurement Strategy for Indigenous Business (PSIB)		**ANSWERS**
Indigenous Participation Component (IPC): **The Government of Canada has a commitment that a mandatory minimum target of 5% of the total value of contracts are awarded to Indigenous businesses annually. Contractors shall set-aside a percentage ('5% target') of contract value for Indigenous content to encourage the participation of Indigenous-owned small and medium businesses (SMB) on defence procurements**		
1	What percentage of contract value will you be able to commit to business activities with Aboriginal businesses (as listed in the Indigenous Business Directory https://www.sac-isc.gc.ca/eng/1100100033057/1610797769658)?	
a	With this objective in mind, do you foresee any challenges if the Indigenous Participation Component is applied to this procurement? Please explain.	
b	Where does your company see an opportunity for Indigenous participation within the NISV procurement project?	

Response to Annex A – PROPOSED NISV SOLUTION WITH COSTS	
BUSINESS NAME:	

The Naval Inshore Support Vessel (NISV) project requires input from industry to facilitate the preparation of the Project Approval documents. For each question, Respondents are asked to:

a. provide a clear and concise response;
b. provide a further description where necessary;
c. provide pricing including margins of accuracy (where required);
d. provide durations including margins of accuracy (where required);

EXAMPLE SUBMISSION

Vessels: Propose design/construction methodologies which would be used to satisfy the Operational Requirements in ANNEX A. Respondants can propose multiple methods and their associated costs.

Description	Design/Construction Methodology	Margin of Accuracy		Estimated Cost (0 for no cost)
		+ %	- %	
6 NISV vessels delivered	*2 vessels of each of the three designs, designed specifically for the operational units as identified in the Statement of Operational Requirements (Unique ship designs)*			*For input by industry*
6 NISV vessels delivered	*6 vessels which share a common design, specifically designed to meet all the requirements identified in the Statement of Operational Requirements (Common ship design)*			*For input by industry*
6 NISV vessels delivered	*6 vessels which share a common design based on a parent hull (identify parent hull), specifically modified to meet all the requirements identified in the Statement of Operational Requirements (Common ship design)*			*For input by industry*
6 NISV vessels delivered	*6 unmodified commercially designed vessels (identify vessel) which meet all the requirements identified in the Statement of Operational Requirements (COTS design)*			*For input by industry*

Vessels:
Propose design/construction methodologies which would be used to satisfy the Operational Requirements in ANNEX A. Respondants can propose multiple methods and their associated costs.

Description	Proposed Solution	Margin of Accuracy		Estimated Cost (0 for no cost)
		+ %	- %	

Ship Design and Construction Experience:
Has the respondant designed vessels similar to the NISV? If so, please indicate how many and how recently, and high-level parameters of the vessel(s). If no, indicate how this activity would be accomplished (i.e. subcontract)

Has the respondant constructed vessels similar to the NISV? If so, please indicate how many and how recently, and high-level parameters of the vessel(s). If no, indicate how this activity would be accomplished (i.e. subcontract)

Project Name	Description - Year, number of vessels, ship parameters, etc.

Construction Facility:
Do the respondants have the infrastructure available to construct the NISVs? Please describe the facilities.

Facility	Description

Schedule:
How long would the proposed solution take to design?
How long would the proposed solution take to build (per ship)?

Task	Description	Margin of Accuracy		Estimated Duration
		+ %	- %	

Delivery:

Once constructed, how would the respondant deliver:
2 vessels to Nanoose Bay, BC,
1 vessel to Esquimalt, BC,
1 Vessel to Halifax, NS,
1 vessel to Quebec City, QC, and
1 vessel to Kingston, ON

Please provide a general description of how the respondant would deliver the vessels, and an estimated cost.

Delivery Location	Proposed Solution	Margin of Accuracy		Estimated Cost (0 for no cost)
		+ %	- %	

Spares:
What is the cost of the recommended initial provisioning for two (2) years of spares for the system?

Answer	Margin of Accuracy		Estimated Cost (0 for no cost)
	+ %	- %	

Training Systems:
Can the respondant provide all initial cadre operator and maintainer training required for personnel (assume four 2 week sessions with 12 people at each)? If so, please provide a cost estimate.

Answer	Margin of Accuracy		Estimated Cost (0 for no cost)
	+ %	- %	

Feasibility: Are there any requirements in ANNEX A - Statement of Operational Requirements that the respondant believes may not be technically feasible or finacially feasible? Please state the requirements and provide a short explanation describing the cost driver or technical issue .

Requirement	Feasibility Issue Description