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

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

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

LETTER OF INTEREST
LETTRE D'INTÉRÊT

Title - Sujet RFI - VCM Air Monitoring System

Solicitation No. - N° de l'invitation W8472-225866/A	**Date** 2022-04-27
Client Reference No. - N° de référence du client W8472-225866	**GETS Ref. No. - N° de réf. de SEAG** PW-$VCM-004-28656
File No. - N° de dossier 004vcm.W8472-225866	**CCC No./N° CCC - FMS No./N° VME**

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM Eastern Daylight Saving Time EDT
on - le 2022-06-03 Heure Avancée de l'Est HAE

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

Address Enquiries to: - Adresser toutes questions à: Dawson, Kirby	**Buyer Id - Id de l'acheteur** 004vcm
Telephone No. - N° de téléphone (000) 000-0000 ( )	**FAX No. - N° de FAX** ( ) -

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

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

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

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

Signature **Date**

Issuing Office - Bureau de distribution
Victoria Class Modernization (VCM) / Modernisation de la classe Victoria
Louis St-Laurent Building (2)
2nd Floor - SC19
455 De la Carrière Blvd
Gatineau
Quebec
K1A 0S5

Canada

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ABBREVIATIONS AND DEFINITIONS

CAF: Canadian Armed Forces.

Component: The third level of decomposition, below that of system and sub-system, of physical installations to which ship-level capabilities are allocated. Components are typically wholly contained functions within a sub-system.

Dgr.C.: Measure of degrees Celsius.

DND: Department of National Defence.

Formation: an arrangement or deployment of moving military forces, including ships.

mBar: Measure of pressure in millibars

Maintenance Levels: maintenance levels are used to identify the level of complexity and difficulty of the activities required to perform that maintenance. They are determined by the depth of maintenance required and by the associated skill sets, special tools, facilities, etc. necessary to accomplish the maintenance. The following are guidelines in attributing maintenance levels:

> **Level One Maintenance**: maintenance that can normally be performed by shipboard naval technicians with only shipboard tools, equipment and facilities.
>
> **Level Two Maintenance:** maintenance that can normally only be performed by a qualified Fleet Maintenance Facility, industry, or naval technician with tools and equipment only available at Formation (not shipboard) facilities.
>
> **Level Three Maintenance:** maintenance that can be performed by industry or a qualified Fleet Maintenance Facility with specialized tools, skill sets, equipment, and facilities normally available only in industry.

NSE: National Security Exception.

PDF: Portable Document Format.

PSPC: Public Services and Procurement Canada.

RCN: Royal Canadian Navy.

RFI: Request for Information.

RFP: Request for Proposal.

SOR: Statement of Operational Requirements.

STTE: Specialized Tools or Test Equipment

VCS: VICTORIA class Submarines.

VCM: *Victoria*-class Modernization.

Videoconferencing applications: a set of tools designed for personal and corporate collaboration. Videoconferencing applications are used to connect to others, typically through the internet, and they allow you to communicate through audio, video, text, file sharing, whiteboard, and other features. Commonly used applications include Microsoft Teams and Cisco WebEx.

REQUEST FOR INFORMATION (RFI)

FOR THE VICTORIA CLASS MODERNIZATION AIR MONITORING SYSTEM PROJECT

1. Purpose of the Request for Information

Public Services and Procurement Canada (PSPC) is releasing a Request for Information (RFI) on behalf of the Department of National Defence (DND) in order to gather information for a potential future procurement opportunity related to the *Victoria*-class Modernization (VCM) Air Monitoring System Project. The responses provided will contribute to the further definition of the Statement of Operational Requirements (SOR).

The purpose of this RFI is to:

- To gain an understanding of available Air Monitoring System systems; and
- To receive feedback from industry on the Air Monitoring System questions contained at Annex A.

Changes to this RFI may occur and will be advertised on the Government Electronic Tendering System. Canada asks Respondents to visit Buyandsell.gc.ca regularly to check for changes, if any.

2. Background Information

VCM will provide modernized and increased capability to maintain the VICTORIA class Submarines' (VCS') operational relevance through the mid-2030s. VCM will be a collection of discrete projects that will be managed both individually and within a larger VCM portfolio to generate the necessary capability for Canada's submarines as detailed in *Strong, Secure, Engaged* - Canada's Defence Policy. Overall, the modernization outcomes will make Canada and its allies stronger and safer by:

a. improving the habitability and deployment conditions onboard the VCS in support of Royal Canadian Navy (RCN) submariners;
b. positioning the VCS to contribute meaningfully to Canadian Armed Forces (CAF) Joint Operations ashore; and
c. ensuring the survivability of the VCS against an evolving threat in an increasingly complex and changing battlespace.

This RFI relates to the VCM Air Monitoring System Project.

The VCS consists of four diesel electric submarines. The submarines contain three air and watertight compartments, with a total combined volume of approximately 1,000m^3. Typical deployments for the VCS are up to two months and the vessels are subjected to atmospheric conditions that evolve dynamically over time. Implementation of a platform-wide, dedicated Air Monitoring System will allow continuous monitoring and recording of air quality data. This will ensure the health and safety of the entire crew, and the aggregated data can then be used as medical data for sailors. Table 1 shows the typical conditions found on board the submarines.

Table 1: Operating Conditions		
Parameter	**Range**	**Unit**
Temperature	2 - 65	dgr.C.
Pressure	650 - 1400	mBar
Rel. Humidity	20 - 95	%
Static List	15	dgr.
Static Pitch	35	dgr.
Dynamic List	45	dgr.
Dynamic Pitch	10	dgr.

3. Directions to Respondents

3.1 Nature of the RFI

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 as 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 contract(s) for the work described herein.

Procurement of the goods or services described in this RFI will not necessarily follow this request. Any procurements of this system / equipment / services will be in accordance with standard government procurement policies.

Respondents and potential suppliers of any goods or services described in this RFI should not earmark stock or facilities, nor allocate resources, as a result of any information contained in this RFI.

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 potential subsequent solicitation.

3.2 Nature and Format of the Requested Responses

Respondents are asked to format their responses in MS Word, Excel, or a PDF document with a suggested limit of 6 megabytes per response.

Respondents must identify if their response, or any part of their response, is subject to the Controlled Goods Regulations and/or any export controls.

If respondents wish to provide multiple submissions or volumes/versions in response to this RFI, respondents are requested to indicate on the front cover page of the title of the response, the Buy and Sell identification number, the volume/version number, full legal name of the respondent and a point of contact of the respondent including name, telephone number and email address.

Respondents should list and explain any assumptions / constraints that they make in their responses.

3.3 Response Costs

Canada will not reimburse any respondent for expenses incurred in responding to this RFI.

3.4 Treatment of Responses

3.4.1 Use of Responses

Responses will not be formally evaluated. However, the responses received may be used by Canada to develop or modify procurement strategies and to draft performance specifications or requirements.

3.4.2 Review Team

A review team composed of representatives from Canada will review the responses, yet they will not be formally evaluated. Canada reserves the right to hire any independent consultant, or use any Government resources or contractors that it considers necessary to review any response. Any consultants or contractors utilized will be subject to a Non-Disclosure Agreement. Not all members of the review team will necessarily review all responses.

Canada will review all responses received by the RFI closing date. Canada may, in its discretion, review responses received after the RFI closing date.

3.4.3 Confidentiality

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

3.4.4 Post-Submission Review Meetings

Canada at their discretion may request individual Post-Submission Review Meetings with respondents to obtain clarity on information provided. This may take place in the form of follow on meetings via videoconferencing applications.

Respondents will not be reimbursed for any cost incurred in participating in Post Submission Review Meetings if Canada requests this meeting to take place.

3.5 Format of Responses

The respondents must identify all response data with the following information:

a. name and address of the respondent;
b. name, address, telephone number, and email address of the respondent's contact;
c. submission date;
d. RFI number; and
e. version number of the submission.

3.5.1 Numbering System

Each section has its own unique section number. Respondents are requested to prepare their response using the system that corresponds to the one in this RFI.

Descriptive material, technical manuals and brochures included as part of the response should be referenced accordingly.

3.5.2 Submission

Respondents shall send their responses directly to the PSPC Contracting Authority, identified in section 3.7, by 1400 EST, June 3rd, 2022. The PSPC Contracting Authority will provide positive confirmation of receipt.

Responses to this RFI will not be returned.

3.6 Enquiries

Because this is not a bid solicitation, Canada will not necessarily respond to enquiries in writing or by circulating answers to all potential suppliers. However, respondents with questions regarding this RFI may direct their enquiries to the PSPC Contracting Authority. The use of email to communicate is required .

Canada may, in its discretion, contact any respondent for clarification on any aspect of the respondent's submission.

All enquiries must be submitted to the PSPC Contracting Authority no later than seven (7) calendar days before the RFI closing date. Enquiries received after that time may not be answered.

Documents may be submitted in either official language of Canada.

3.7 Contracting Authority

The PSPC Contracting Authority for the Contract is:

Name:	Kirby Dawson
Title:	Supply Team Leader
	Public Works and Government Services Canada
Directorate:	Marine Sustainment Directorate
Address:	455 Boulevard de la Carrière, Gatineau, QC, J8Y 6V7
E-mail address:	Kirby.Dawson@tpsgc-pwgsc.gc.ca

3.8 Security Requirements

There is no security requirement associated with this RFI.

On future procurement phases relating to the VCM Air Monitoring System, Canada reserves the right to apply the National Security Exception (NSE).

4.0 Industrial and Technological Benefits (ITB) Policy:

Canada is consulting with industry as part of the development of an economic leveraging approach for the Air Monitoring System Project within the VCM. The Policy Framework for the ITB Policy, including Value Proposition, may be applied.

The ITB Policy, including the Value Proposition, applies to all eligible defence procurements over $100 million and for which the National Security Exception applies. 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; and increase the export potential of Canadian-based firms.

For more information regarding the ITB Policy, please visit:
http://www.ic.gc.ca/eic/site/086.nsf/eng/home

ANNEX A – Air Monitoring System Questions

1. Acquisition Costs

1.1 What is the acquisition cost breakdown of the system based on the following configurations?

a. economic order quantities and the associated prices,
b. cost of one boat set, and
c. cost of four boat sets.

2. Spares

2.1 What is the anticipated cost for 2 years' worth of spares (initial provisioning) to support the purchase of four boats systems and a training system set?

3. Training

3.1 Respondents are requested to provide information on training for equipment operators to include:

a. where the training can be conducted (RCN establishment, respondent facility, other commercial facility),
b. if the training already exists,
c. facilities recommended for training (classroom, simulator, emulator, suitably-equipped submarine),
d. cost for provision of initial cadre training (per student or per course),
e. cost for provision of periodic training courses (per student or per course), and
f. cost basis for provision of Training Material to the RCN.

3.2 Respondents are requested to provide information on training for equipment maintainers to include:

a. where the training can be conducted (RCN establishment, respondent facility, other commercial facility),
b. if the training already exists,
c. facilities recommended for training (classroom, simulator, emulator, suitably-equipped submarine),
d. cost for provision of initial cadre training (per student or per course),
e. cost for provision of periodic training courses (per student or per course), and
f. cost basis for provision of Training Material to the RCN.

3.3 Respondents are requested to provide details and cost of any recommended variant of the proposed equipment for use solely as a training system.

4. Delivery Lead Time

4.1 What is the production lead time for the system?

5. Installation Effort

5.1 What was the level of effort required for previous installations of the system (in hours)?

6. Current Production

6.1 Is the system currently in production?

7. Current Customer Base

7.1 What customers have installed the system?

8. Description of System

8.1 Respondents are requested to provide a description of the proposed Air Monitoring System including

a. performance specifications;
b. sub-systems and components;
c. interface requirements;
d. maintenance requirements; and
e. Integrated Logistic Support.

9. Functional Characteristics

9.1 Can your system operate under all conditions described in Table 1 (found at section 2)?

9.2 Is your system capable of measuring each of the gases as listed in Table 2 below?

Table 2: Measured Gases

Gas
Oxygen (02)
Carbon Dioxide (CO2)
Carbon Monoxide (CO)
Hydrogen Sulphide (H2S)
Chlorine (CL2)
Hydrogen (H2)
Oxides of Nitrogen (NOx)
Otto Fuel
Refrigerants (R426a,R134a)
Phenol (C6H5OH)

9.3 Is your system design modular?

9.4 Does your system have the capacity to add more sensors?

9.5 Is there any limitation to the number of sensors that can be interconnected or networked?

9.6 Does your system use a proprietary networking technology?

9.7 What type of medium is used to interconnect or network sensors (i.e. fibre optic, coaxial, etc.)?

9.8 Are specific gas measurements impacted as environmental conditions vary?

9.9 Is your system centralized or distributed?

9.10 If there is a central controller, what are the main functions of the controller?

9.11 Can the sensors operate in local mode independently of the controller (in case the controller is offline)?

9.12 Do sensors work independently and report status and alarms to a central controller?

9.13 How many locations can your system can measure simultaneously?

9.14 Is there a maximum distance between sensors and controller?

9.15 Does your system communicate measurements to a central controller?

9.16 What is the nature of communications between a sensor and controller (only when an alert is triggered, at periodic intervals or when interrogated by the controller)?

9.17 Is your system capable of providing the type of gas, location and concentration to a central location?

9.18 What type of messaging format or standard is used to communicate between sensors and controller?

9.19 What type of alarms does your system use?

9.20 Does your system include adjustable alarms to notify personnel in the event maximum permissible concentrations are exceeded (i.e. sound level, colour, luminous intensity)?

9.21 What is the range of alarm adjustment (i.e. full, partial or muted)?

9.22 Can sensors and alarms be controller remotely, locally or both?

9.23 Do alarms cease automatically once concentration levels drop below the alert threshold?

9.24 What type of sensors does your system use?

9.25 What type of technology is used for detection and identification?

9.26 How long does it take your system to begin sampling from a cold condition?

9.27 What is the individual reading response time?

10. Analysis

10.1 What analysis tools and functionality does your system provide?

10.2 Is your system capable of recording measured data?

10.3 Where does the recording of data take place (at the sensor location or at the controller)?

10.4 How long can the data be recorded for?

10.5 Can historical data be viewed in non-real time?

10.6 What type of data storage is used?

11. Control and Operation

11.1 Does the system require a separate, dedicated operator console?

11.2 Does the system support multiple display options?

11.3 Describe user interface options.

12. Performance Characteristics

12.1 What is your system threshold/range of detection for each gas in Table 2 (shown at question 9.2)?

12.2 What is the probability and confidence levels for the detection and identification for the gases listed in Table 2?

12.3 Was the sensor tested by an independent laboratory?

12.4 Can the sensor/system detect and identify multiple gases concurrently?

12.5 Does the system require a signature library in order to detect and identify a gas?

12.6 How would new gases be added to the library?

12.7 What other gases can your system detect?

13. Certification

13.1 If your system has been subjected to qualification testing (e.g., Shock, Noise and Vibration, EMC/EMI, Environmental, etc.) list the test methods and standards achieved.

13.2 Is your system capable of operating in the presence of high magnetic fields (e.g. in proximity of high power electrical motors)?

13.3 Does the system require calibration?

13.4 What is the frequency of any required calibration?

13.5 Can calibration be done by Ships Staff?

13.6 Are there special tools required for calibration?

13.7 How often do sensors require replacement?

13.8 Do sensors require calibration once replaced?

13.9 Does the system have a self-test or Built-in-Test?

13.10 If so, does the test operate continuously in the background?

14. Legacy Systems

14.1 Which onboard systems does the system rely on? (e.g. Power, Low Pressure air etc.)

15. Auxiliary Systems

15.1 What are the system's cooling requirements?

15.2 How much heat does the system generate inside the pressure hull in metric?

15.3 How much acoustic noise does the system generate?

16. Dimensions

16.1 What are the dimensions of each of the system's major Components in metric?

17. Weight

17.1 What is the weight of each of the system's major Components in metric?

18. Electrical

18.1 What are the system electric power requirements?

19. Sustainability

19.1 What is the intended service life of the system?

19.2 What are the planned system upgrades, when are the upgrades planned and what is the intended schedule?

20. Availability

20.1 What is the operational availability described as a percentage, over a Patrol Cycle and what is the confidence level in that number?

20.2 What was the methodology for determining the operational availability?

21. Maintainability

21.1 What is the recommended preventive maintenance profile of the system?

22. Reliability

22.1 What is the Mean Time Between Failure of the sensor / system?

23. Technical Readiness Level

23.1 What is the Technological Readiness Level (TRL) of the system in accordance with Technology Readiness Assessment (TRA) Guidance?

24. Trade Controls

24.1 If the system is subject to export trade controls, and if so, what are they?

25. Other Information

25.1 Is there any other important information the respondent feels will be of use to Canada?

26. Availability of components

26.1 For your solution(s), are there any limiting factors related to availability of components or customization that would impact supportability over a 10 year period? (e.g. component end of life or “one off” components).

27. Repair of components

27.1 Which components in your proposed solution(s) require the most repair or replacement and when do these repairs or replacements historically take place?

28. Maintenance

28.1 What is the maintenance regime proposed for your recommended solution(s)?

28.2 Can your solution(s) be maintained without removal from the submarine, or does it require periodic complete removal and transport to an overhaul facility?

28.3 Could you describe how any of the current customers of this solution(s) are performing maintenance and how Canada might be able to perform similar maintenance on the proposed solution(s)?

29. OEM

29.1 Who are the major OEMs in the manufacturing, integration, and delivery of the proposed solution(s)? Is reach-back required in order to maintain or repair the proposed solution?

30. Power Back-up

30.1 If primary power is lost, what capability does your solution(s) provide and for how long?

31. Test Equipment

31.1 Are there any specialized tools or test equipment (STTE) required for your solution's equipment to perform maintenance, calibration, removal, installation or transportation?

32. Related Publications

32.1 Are there any related published materials associated with the proposed solution(s), including Operating Manuals, Maintenance Manuals, Parts Catalogues, or Technical Data Packages?

32.2 Will you grant Canada use of these publications?

32.3 Will you allow Canada to have the right to transfer any related publications to a 3rd Party so that Canada has the ability to source a maintenance and supply chain separately?