



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 1T3
Nova Scotia
Bid Fax: (902) 496-5016

**REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION**

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

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

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

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

Comments - Commentaires

Title - Sujet Clustering Techniques	
Solicitation No. - N° de l'invitation W7707-175901/A	Date 2016-08-24
Client Reference No. - N° de référence du client W7707-17-5901	
GETS Reference No. - N° de référence de SEAG PW-\$HAL-406-9919	
File No. - N° de dossier HAL-6-77092 (406)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-09-09	Time Zone Fuseau horaire Atlantic Daylight Saving Time ADT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Matheson, Valerie	Buyer Id - Id de l'acheteur hal406
Telephone No. - N° de téléphone (902) 496-5100 ()	FAX No. - N° de FAX (902) 496-5016
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF NATIONAL DEFENCE SEE HEREIN DARTMOUTH NOVA SCOTIA B2Y3Z7 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Atlantic Region Acquisitions/Région de l'Atlantique
Acquisitions
1713 Bedford Row
Halifax, N.S./Halifax, (N.É.)
B3J 3C9
Nova Scot

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

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PART 1 - GENERAL INFORMATION

1.1 Introduction

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

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

The Annexes include: The Statement of Work, The Basis of Payment, The Electronic Payment Instruments and any other Annexes.

1.2 Summary

1.2.1 Defence Research & Development Canada (DRDC) Atlantic Research Centre (ARC) is currently investigating concepts to enable autonomous detection of underwater acoustic signals in deployed sensors.

This contract requirement is to investigate and develop clustering techniques and to evaluate those techniques using data sets provided by DRDC ARC.

The period of the contract is from award to **MARCH 31, 2017**.

See attached Annex A – Statement of Work for further details.

The requirement is subject to a preference for Canadian goods and/or services.

1.3 Debriefings

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

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

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

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

The **2003 (2016-04-04)** Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

2.2 Submission of Bids

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

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

2.3 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the *Financial Administration Act*, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the Supplementary Retirement Benefits Act, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the Canadian Forces Superannuation Act, R.S., 1985, c. C-17, the Defence Services Pension Continuation Act, 1970, c. D-3, the Royal Canadian Mounted Police Pension Continuation Act, 1970, c. R-10, and the Royal Canadian Mounted Police Superannuation Act, R.S., 1985, c. R-11, the Members of Parliament Retiring Allowances Act, R.S. 1985, c. M-5, and that portion of pension payable to the Canada Pension Plan Act, R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes** () **No** ()

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

- a. name of former public servant;
- b. date of termination of employment or retirement from the Public Service.

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes** () **No** ()

If so, the Bidder must provide the following information:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

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2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority, Valerie.Matheson@pwgsc-tpsgc.gc.ca no later than **FIVE (5) calendar days** before the bid closing date. Enquiries received after that time may not be answered.

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

2.5 Applicable Laws

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

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

2.6 Basis for Canada's Ownership of Intellectual Property

Defence Research & Development Canada (DRDC) has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada, for the following reasons, as set out in the *Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts*: the main purpose of the Contract, or of the deliverables contracted for, is to deliver a not-yet fully developed component or subsystem that will be incorporated into a complete system at a later date, as a prerequisite to the planned transfer of the complete system to the private sector, through licensing or assignment of ownership, for the purposes of Commercial Exploitation

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

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

Section I: Technical Bid (2 hard copies)
Section II: Financial Bid (1 hard copies)
Section III: Certifications (1 hard copies)
Section IV: Additional Information (1 hard copies)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

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

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

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

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

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

Section I: Technical Bid

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

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

Section II: Financial Bid

3.1.1 Bidders must submit their financial bid in accordance with the following:

- (a) Labour: For each individual and (or) labour category to be assigned to the Work, indicate: i) the hourly rate, inclusive of overhead and profit; and ii) the estimated number of hours.
- (b) Equipment: specify each item required to complete the Work and provide the pricing basis of each one, Canadian customs duty and excise taxes included, as applicable. These items will be deliverable to Canada upon completion of the contract.
- (c) Materials and Supplies: Identify each category of materials and supplies required to complete the Work and provide the pricing basis.
- (d) Subcontracts: Identify any proposed subcontractor and provide for each one the same price breakdown information as contained in this article.
- (e) Other Direct Charges: Identify any other direct charges anticipated, such as long distance communications and rentals, and provide the pricing basis.
- (f) Applicable Taxes: Identify any Applicable Taxes separately.

3.1.2 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex "E" Electronic Payment Instruments, to identify which ones are accepted.

If Annex "E" Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.3 SACC Manual Clauses

Section III: Certifications

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

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.
- (c) The evaluation team will determine first if there are two or more bids with a valid Canadian Content certification. In that event, the evaluation process will be limited to the bids with the certification; otherwise, all bids will be evaluated. If some of the bids with a valid certification are declared non-responsive, or are withdrawn, and less than two responsive bids with a valid certification remain, the evaluation will continue among those bids with a valid certification. If all bids with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other bids received will be evaluated.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

Refer to Annex D, Evaluation Criteria.

4.1.1.2 Point Rated Technical Criteria

Refer to Annex D, Evaluation Criteria.

4.2 Basis of Selection

4.2.1 Basis of Selection – Highest Rated Within Budget

To be declared responsive, a bid must:

- a. comply with all the requirements of the bid solicitation;
- b. meet all mandatory technical evaluation criteria; and
- c. obtain the required minimum points for the technical evaluation criteria which are subject to rating

Bids not meeting (a) or (b) or (c) will be declared non responsive. The responsive bid with the highest number of points will be recommended for award of a contract, provided that the total evaluated price does not exceed the budget available for this requirement - to a limitation of expenditure of **\$50,000.00**. Customs duties are *included* and Applicable Taxes are extra.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.1.2.1 Canadian Content Certification

5.1.2.1.1 SACC Manual clause [A3050T](#) (2014-11-27) Canadian Content Definition

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – Required Documentation

In accordance with the *Ineligibility and Suspension Policy* (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

Bidders must complete the Annex F – INTEGRITY PROVISIONS, herein.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP

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Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's website](http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969#afed) (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969#afed).

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

5.2.3 Additional Certifications Precedent to Contract Award

5.2.3.1 Canadian Content Certification

This procurement is limited to Canadian services.

The Bidder certifies that: (to be completed by Supplier)

(Yes) the service offered is a Canadian service as defined in paragraph 2 of clause [A3050T](#).

Signature

Date

5.2.3.1.1 *SACC Manual* clause [A3050T](#) (2014-11-27) Canadian Content Definition.

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A".

6.2 Standard Clauses and Conditions

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

6.2.1 General Conditions

[2040](#) (2016-04-04), General Conditions - Research & Development, apply to and form part of the Contract.

6.3 Security Requirements

6.3.1 There is no security requirement applicable to the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the contract is from contract award to **March 31, 2017**.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Valerie Matheson
Title: Supply Officer
Public Works and Government Services Canada
Acquisitions Branch
Address: Acquisitions Directorate

Telephone: 902-496-5100
Facsimile: 902-496-5016
E-mail address: Valerie.Matheson@pwgsc-tpsgc.gc.ca

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

6.5.2 Project Authority (will be completed at Contract award)

The Project Authority for the Contract is:

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

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

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

6.5.3 Contractor's Representative (to be completed by Supplier)

Name: _____
Telephone: _____
Email Address: _____
Procurement Business Number (PBN) _____

6.6 Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#) (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.

6.7 Payment

6.7.1 Basis of Payment

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of the Work, *and profit (if applicable)* as determined in accordance with the Basis of Payment in Annex B, to a limitation of expenditure of **\$50,000.00**. Customs duties are *included* and Applicable Taxes are extra.

6.7.2 Limitation of Expenditure

1. Canada's total liability to the Contractor under the Contract must not exceed **\$50,000.00**. Customs duties are included and Applicable Taxes are extra.
2. No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Work, will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority before their incorporation into the Work. The Contractor must not perform any work or provide any service that would result in Canada's total liability being exceeded before obtaining the written approval of the Contracting Authority. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
 - a. when it is 75 percent committed, or
 - b. four (4) months before the contract expiry date, or
 - c. as soon as the Contractor considers that the contract funds provided are inadequate for the completion of the Work, whichever comes first.
3. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability.

6.7.3 Method of Payment

6.7.3.1 Progress Payments

1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work, up to _____ percent of the amount claimed and approved by Canada if:
 - a. an accurate and complete claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
 - b. the amount claimed is in accordance with the basis of payment;
 - c. the total amount for all progress payments paid by Canada does not exceed _____ percent of the total amount to be paid under the Contract;
 - d. all certificates appearing on form [PWGSC-TPSGC 1111](#) have been signed by the respective authorized representatives.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of the item if the Work has been accepted by Canada and a final claim for the payment is submitted."
3. Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the rights to make adjustments to the Contract from time to time during the performance of the Work. Any overpayment resulting from progress payments or otherwise must be refunded promptly to Canada.

6.7.4 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

6.8 Invoicing Instructions - Progress Payment Claim

1. The Contractor must submit a claim for payment using form [PWGSC-TPSGC 1111](#), Claim for Progress Payment.
Each claim must show:
 - a. all information required on form [PWGSC-TPSGC 1111](#);
 - b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - c. a list of all expenses;
 - d. the description and value of the milestone claimed as detailed in the Contract.

Each claim must be supported by:

- a. a copy of time sheets to support the time claimed;
 - b. a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses;
 - c. a copy of the monthly progress report.
2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
 3. The Contractor must prepare and certify one original and two (2) copies of the claim on form [PWGSC-TPSGC 1111](#), and forward it to the Project Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The Project Authority will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

4. The Contractor must not submit claims until all work identified in the claim is completed.

6.9 Certifications and Additional Information

6.9.1 Compliance

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

6.9.2 SACC Manual Clauses

A3060C (2008-05-12), Canadian Content Certification

6.10 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in **NOVA SCOTIA**.

6.11 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) 2040 (2016-04-04), General Conditions - Research & Development;
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) Annex C, Intellectual Property Disclosure Certification;
- (f) Annex D, Evaluation Criteria;
- (g) Annex E, Electronic Payment Instructions;
- (h) Annex F, Integrity Provisions;
- (i) the Contractor's bid dated _____.

6.12 Defence Contract

SACC Manual clause A9006C (2012-07-16) Defence Contract

6.13 Insurance Requirements

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

ANNEX "A"

STATEMENT OF WORK

1. TITLE

CLUSTERING TECHNIQUES FOR AUTONOMOUS DETECTION OF UNDERWATER ACOUSTIC SIGNALS

2. BACKGROUND

Defence Research & Development Canada (DRDC) Atlantic Research Centre (ARC) is currently investigating concepts to enable autonomous detection of underwater acoustic signals in deployed sensors.

This contract requirement is to investigate and develop clustering techniques and to evaluate those techniques using data sets provided by DRDC ARC.

This contract effort is intended to investigate the value to be extracted from different types of signal detections available to an acoustic sensor as a noise source transits past an acoustic sensor. The basic concept is to run a series of light-weight signal detectors on narrowband and broadband omnidirectional hydrophones, on beam time-series, and on beam frequency bins and then to collect the instances of signal detection and signal loss and to cluster the detections on the basis of a set of rules (algorithms). A further step is to then generate messages to other systems or users based on the clusters of detections. These messages may assist other sensors in acquiring detection of the same noise source or they may be interpreted to provide situational awareness.

3. ACRONYMS

ARC	Atlantic Research Centre
DRDC	Defence Research and Development Canada
SOW	Statement of Work
TA	Technical Authority
NW	Northern Watch
DUSN	Distributed Undersea Sensor Network
HLA	Horizontal Line Array
VLA	Vertical Line Array

4. APPLICABLE DOCUMENTS & REFERENCES

- A) Excerpts of the Northern Watch log book information to assist with the analysis of data sets using the developed code. These excerpts will be provided on an as required basis.
- B) Excerpts of the Northern Watch data for processing by the developed code. These excerpts will be provided on an as required basis.
- C) If and when available, the Norwegian NILUS message code will be provided to simplify or improve the Message Generation component. It is unknown if this code will be available for this contract at the present time.

5. TASKS

The tasks under this contract are to investigate and develop clustering techniques and to evaluate those techniques using data sets provided by DRDC ARC. The detailed tasks are listed in the sub-sections below.

The evaluation will make use of pre-existing data from the recently completed Northern Watch (NW) project. In this project, two 48-element HLA were placed on the sea floor of Barrow Strait separated by approximately 4 km. The passage of a cooperating vessel and other targets of opportunity will provide ample data to test and verify software and concept employment. The HLA provide three sub-arrays covering the frequency band from about 60-600 Hz. Each sub-array has either 24 or 25 hydrophones and is sampled at 2500 Hz. The signals from these arrays can be processed as omni-hydrophones and as directed beams. It will be necessary to filter the hydrophone and beam time-series signals to provide the desired broadband signals. A beamformer routine will be required to create the beam time-series. Software to create sequential averaged spectra will also be required. A set of detection tools will also be required.

Software developed in this effort must be primarily based on PYTHON scripts. The requirement for PYTHON is to ensure compatibility with existing DRDC ARC and partner systems; which could be used in future to test these clustering techniques.

It is recognized that some components may be better developed in other programming languages or may already be freely available. With mutual agreement between the TA and contractor, these components may be used, provided they can be wrapped and called with a PYTHON routine.

5.1 NW Data File Decoder

The NW data files are binary frame-based files. In order to access the data, the files must be decoded and data samples collected and buffered. The Contractor must develop a NW data file reader in PYTHON that can feed suitable array-based chunks of data to the signal processing chain.

The Contractor must provide a multi-channel WAV file translation capability to enhance the utility of this file decoder.

5.2 Signal Detectors

At a minimum, the Contractor must develop two routines in PYTHON to detect the presence of changing signal energy. One of the routines must make use of a fixed threshold detection scheme, while the other must employ a signal following scheme called Sentinel, which will be provided by DRDC ARC.

The detection routines must be able to work with time-series and spectral bin PSD levels. They must be efficient and able to run several thousand detection channels simultaneously (multiple time-series and multiple spectra inputs).

5.3 Signal Filters

The Contractor must develop in PYTHON a filter process for the raw time-series or beam time-series signals. The filters must allow user selected bands and tonals to be input. Multiple bands may be employed for each signal. The filtered data must be optionally written out to multi-channel WAV files.

5.4 Beamformer

The Contractor must develop or obtain an efficient beamformer routine for HLA signals. Ideally, the beamformer should be able to work with HLA or VLA and allow for other array architectures.

The beamformer must allow the user to specify the number of beams, array shading, and other required parameters.

5.5 Clustering Algorithms

The Contractor must develop in PYTHON at a minimum two clustering algorithms for the various detections. Algorithms must look for clusters of detections that span time, frequency, amplitude, bearing, and spatial distribution. For example, a straight-forward clustering algorithm might look for the signals that are detected within a short time interval. Similarly, the detections in a particular beam may form a cluster. Many such criteria are possible. The Contractor will review potential criteria and algorithms with the TA; and from this review the Contractor and TA agree on which algorithms will be implemented.

If possible, a framework or class should be developed to allow for the generation of clustering criteria and the implementation of the algorithm. The Contractor must also develop visualization tools for the clusters.

Detections from the different time-series, spectra, beams, and arrays will be many for each transiting vessel. A form of database should be investigated to hold the detections in a consistent format and allow subsequent data analysis.

5.6 Message Generator

Once a cluster has been formed, a message must be generated to send to the user and, potentially, to other sensor nodes. The Contractor, with input from the TA, must assess the formation of clusters and develop criteria and algorithms to generate messages based on the cluster existence.

If available, a PYTHON based library module will be used to generate messages. This module implements the Norwegian NILUS message protocol that is currently being used with existing DRDC ARC sensor nodes.

Messages must be stored in a database and/or log file as appropriate.

5.7 Cluster Message Interpretation

The contractor must implement an animated display based on the cluster messages.

Cluster messages can be interpreted to provide local area maritime awareness picture information. For example, sensors in contact can be highlighted on a map and based on various assumptions a region of high probability for the noise source can be highlighted.

As time progresses, cluster messages change, or possibly decay in validity. By forming various interpretations of the messages it will be possible to animate a map display providing an indication of the changing location of contacts and the local area picture.

5.8 Analysis of NW data

The Contractor must analyse the NW data using the tools developed in Task 5.1 to 5.7 above.

6. Deliverables

Number	Task Reference	Description of the Deliverables	Quantity and Format
6.1	5.	Final Report –description of algorithms, listings of modules, and results of data analyses.	1 report (electronic format)
6.2	5.	PYTHON install and build package containing all source code, modules, files, and libraries to support detection clustering data analysis.	Electronic files on DVD

7. DATE OF DELIVERY

Deliverable	Delivery date
6.1	Within 6 months after contract award.

8. Location of Work

The work must be performed on Contractor site.

9. Travel

The Contractor is not required to travel.

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10. MEETINGS

The contract will include the following meetings:

- a. Kick-off Meeting (following contract award)
- b. Informal Progress Meetings / Discussions (timing as determined by the TA)
- c. Close-out Meeting (prior to the end of the contract)

Travel by Technical Authority may be required for the kick-off and close-out meetings. Follow-up meetings will be conducted by teleconference as much as possible.

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ANNEX "B"

BASIS OF PAYMENT

1. LABOUR: at the following firm rates

CATEGORY (OR NAME)	FIRM HOURLY RATE	
_____	\$ _____	
_____	\$ _____	
etc.		Est.: \$ _____

2. EQUIPMENT: at laid down cost without markup
(Specify type of equipment, if applicable) **Est.: \$ _____**

3. MATERIALS AND SUPPLIES: at laid down cost without markup
(Specify what categories of materials and supplies, if applicable) **Est.: \$ _____**

4. SUBCONTRACTS: at actual cost without markup
(Identify subcontractors) **Est.: \$ _____**

5. ANY OTHER DIRECT CHARGES: at actual cost without markup
(Specify what categories of direct charges, if applicable) **Est.: \$ _____**

Estimated Cost to a Limitation of Expenditure: \$ _____
(Applicable Taxes extra)

With the exception of the firm rate(s) and price(s), the amounts shown in the various items specified above are estimates only. Minor changes to these estimates will be accepted for billing purposes as the Work proceeds, provided that these changes have the prior approval of the Project Authority and provided that the estimated cost does not exceed the aforementioned Limitation of Expenditure.

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ANNEX "C"

INTELLECTUAL PROPERTY DISCLOSURE CERTIFICATION

This form is to be completed and signed by the contractor upon completion of the contract and returned to:

Ce formulaire est à être complété et signé par le fournisseur dès l'attribution du contrat. Veuillez retourner à la personne indiquée ci-dessous.

Valerie Matheson
Acquisitions Branch
Public Works and Government Services Canada
1713 Bedford Row, PO Box 2247
Halifax, Nova Scotia
B3J 3C9
Tel: (902) 496-5100
Fax: (902) 496-5016

Contract Title: Clustering Techniques for Autonomous Detection of Underwater Acoustic Signals

PWGSC File number - W7707-175901/001/HAL

It is a term of the referenced contract that, regardless of its ownership, all Foreground Information¹ that could be Inventions¹ and all other Foreground Information, shall be promptly and fully disclosed to Canada.

¹ - defined in the General Conditions identified in the Contract

Tel que stipulé dans le contrat mentionné ci-dessus, et peu importe à qui sont dévolus les droits de propriété intellectuelle, tous les renseignements originaux * susceptibles de constituer des inventions*, de même que tous les autres renseignements originaux découlant de ce contrat, devront être divulgués pleinement et sans délai au Canada.

* - tels que définis dans les conditions générales identifiées dans le contrat.

Consequently, the undersigned, being a duly authorized officer of the Contractor, certifies that during the tenure of the contract

(mark appropriate box):

- No Foreground Information was conceived, developed or produced as part of the Work and, therefore the Contractor has nothing to disclose.
- All Foreground Information which was conceived, developed or produced as part of the Work was fully disclosed and documented in the technical reports delivered by the Contractor to the Technical Authority designated in the Contract, and the Contractor has nothing further to disclose.
- All Foreground Information conceived, developed or produced as part of the Work by the Contractor is hereby fully disclosed in the attached document.

Par conséquent, le soussigné, étant un agent dûment autorisé de l'Entrepreneur, certifie que durant la période du contrat

(cochez la case appropriée):

- Aucun renseignement original n'a été conçu, développé ou produit pendant l'exécution des travaux; l'entrepreneur n'a donc aucun renseignement original à divulguer.
- Tous les renseignements originaux conçus, développés ou produits pendant l'exécution des travaux ont été entièrement divulgués et documentés dans les rapports techniques livrés par l'Entrepreneur à l'autorité technique indiquée dans le contrat, et l'Entrepreneur certifie qu'il n'existe aucune information supplémentaire à divulguer.
- Tous les renseignements originaux conçus, développés ou produits pendant l'exécution des travaux par l'Entrepreneur sont entièrement divulgués dans le document ci-joint.

Signature - Signature: _____

Print Name - Nom en caractère imprimé: _____

Title - Titre: _____

Company Name - Entrepreneur: _____

Date - Date: _____

ANNEX "D"

EVALUATION CRITERIA

1. MANDATORY EVALUATION CRITERIA

In their proposals, Contractors must demonstrate that they meet the following mandatory criteria. Failure to meet any of the mandatory criteria will render the bid non-compliant and it will be given no further consideration.

	CRITERIA	MET	NOT MET
M1	The Contractor must have demonstrated the capability to design and develop software using the PYTHON programming language. The contractor must provide at a minimum one example of a successful PYTHON code development within the last 60 months.		

2. POINT-RATED EVALUATION CRITERIA

	POINT-RATED EVALUATION CRITERIA	Minimum	Maximum
P1	The resume of the Project Manager must demonstrate a minimum of 12 months of project management experience in the last 72 months. Point rating: less than 12 months – 0 points; between 12 and 24 months – 10 points; between 25 and 36 months – 15 points; and more than 36 months – 20 points.	10	20
P2	The resume(s) of the technical staff involved must demonstrate a minimum of 1 previous experience in designing and evaluating some PYTHON code in the last 60 months. Point rating: less than 1 experience – 0 points; 1 experience – 10 points 2 experiences – 15 points; and More than 2 experiences – 20 points. Public-domain documented evidence of experience – Extra 5 points	10	25
P3	The Contractor must provide a reasonable plan for tackling all tasks listed in the Statement of Work. The plan should provide a coarse estimate of resource allocation (labour and time) for each task. Point rating: None or little demonstration of a plan – 0 points; Some demonstration of plan addressing tasks and resource allocations – 10 points Full demonstration of plan addressing tasks and resources allocations – 15 points	10	15
P4	The resume(s) of the technical staff should demonstrate previous experience in designing and evaluating clustering related processing in the last 60 months. Point rating: less than 1 experience – 0 points; 1 experience – 10 points 2 experiences – 15 points; and More than 2 experiences – 20 points. Public-domain documented evidence of experience – Extra 5 points	0	25

P5	<p>The resume(s) of the technical staff involved should preferably demonstrate previous experience involving signal processing, particularly beamforming and signal detection, in the last 60 months.</p> <p>Point rating: less than 1 experience – 0 points; 1 experience – 10 points 2 experiences – 15 points; and More than 2 experiences – 20 points. Public-domain documented evidence of experience – Extra 5 points</p>	0	25
P6	<p>The resume(s) of the technical staff involved should preferably demonstrate previous experience with the development of software to open files, read data, decode complex formatting, or converting data formats in the last 60 months.</p> <p>Point rating: No prior experience – 0 points; 1 or more experience with range exceeding 100 kilometers – 5 points; and 1 or more experience with range between 100 and 400 kilometers – 10 points; Public-domain documented evidence of experience – Extra 5 points</p>	0	15
TOTAL		30	125

3. SELECTION METHODOLOGY

Highest-rated Responsive Proposal within a Stipulated Maximum Budget

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ANNEX "E"

to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts to be paid by any of the following Electronic Payment Instrument(s):

- VISA Acquisition Card;
- MasterCard Acquisition Card;
- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);
- Large Value Transfer System (LVTS) (Over \$25M)

ANNEX “F”

INTEGRITY PROVISIONS

If the required list of names has not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to provide the names within the time frame specified will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

Blank area with horizontal lines for text entry.