



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave. Jasper
5th floor/5e étage
Edmonton
Alberta
T5J 1S6
Bid Fax: (780) 497-3510

REQUEST FOR PROPOSAL DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

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

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

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

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave Jasper
5th floor/5e étage
Edmonton
Alberta
T5J 1S6

Title - Sujet Radio Frequency Study	
Solicitation No. - N° de l'invitation W7702-165787/A	Date 2016-02-17
Client Reference No. - N° de référence du client W7702-165787	
GETS Reference No. - N° de référence de SEAG PW-\$EDM-015-10705	
File No. - N° de dossier EDM-5-38278 (015)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-03-04	Time Zone Fuseau horaire Mountain Standard Time MST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Major, Andrea	Buyer Id - Id de l'acheteur edm015
Telephone No. - N° de téléphone (587) 926-3434 ()	FAX No. - N° de FAX (780) 497-3510
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF NATIONAL DEFENCE PO BOX 4000, STN MAIN MEDICINE HAT Alberta T1A8K6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

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

TITLE: RADIO FREQUENCY STUDY

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edm015
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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 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 and any other annexes.

1.2 Summary

Defence Research and Development Canada (DRDC-SRC)- Suffield has a requirement for research in the area of alternative detection technologies that differ from conventional explosive hazard detection techniques (i.e. metal detector) are being investigated. One such evolving IED detection technology is known as non-linear junction detection (NLJD).

The period of the Contract is from date of Contract award to 2016-03-31 with the option to extend the term of the Contract be one (1) additional one (1) year period.

The requirement is limited to 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 (2015-07-03) 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.

2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 5 (five) 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 Alberta.

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 and Development Canada (DRDC) has determined that any intellectual property arising from the performance of the Work under the Contract will vest in Canada. DRDC is exempted from the Treasury Board "Policy on Title to Intellectual Property Arising Under Crown Procurement Contracts" approved 1 June 2000.

2.7 Canada's Maximum Funding

Canada's maximum funding available for the contract resulting from the bid solicitation is **\$20,000.00 for fiscal year 2015/2016 and one (1) unfunded option year: (Option Year 1: Fiscal Year 2016/2017-\$20,000.00)**, applicable taxes extra, as appropriate. Any cost in excess of the maximum funding will be construed as a contractor's commitment of additional funding to the contract. This disclosure does not commit Canada to pay the maximum funding available.

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 (1 hard copy)
- Section II: Management Bid (1 hard copy)
- Section III: Financial Bid (1 hard copy)
- Section IV: Certifications (1 hard 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>). 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: Management Bid

In their management bid, Bidders must describe their capability and experience, the project management team and provide client contact(s).

Section III: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment in Annex B. The total amount of Applicable Taxes must be shown separately.

Section IV: Certifications

Bidders must submit the certifications 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, management and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

Mandatory and point rated technical evaluation criteria are included in Annex "D".

Except where expressly provided otherwise, the experience described in the bid must be the experience of the Bidder itself (which includes the experience of any companies that formed the Bidder by way of a merger but does not include any experience acquired through a purchase of assets or an assignment of contract). The experience of the Bidder's affiliates (i.e. parent, subsidiary or sister corporations), subcontractors, or suppliers will not be considered.

4.1.2 Financial Evaluation

The costs for the items in Annex "B" will be added together to obtain the Total Estimated Cost to a Ceiling Price.

4.2 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 point 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

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. 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 Declaration of Convicted Offences

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed Declaration Form (<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), to be given further consideration in the procurement process.

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 – List of Names

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.

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 Limited Eligibility to Bid" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Employment and Social Development Canada (ESDC) - Labour's website.

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:

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

5.1.3.1.1 SACC Manual clause A3050T (2014-11-27) Canadian Content Definition

5.2.3.2 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability.

5.2.3.3 Education and Experience

5.2.3.3.1 SACC Manual clause A3010T (2010-08-16) Education and Experience

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" and the technical and management portions of the Contractor's bid entitled _____, dated _____.

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>) issued by Public Works and Government Services Canada.

6.2.1 General Conditions

2040 (2015-09-03), General Conditions –Research and Development, apply to and form part of the Contract.

6.2.2 SACC Manual Clauses

K3410C Canada to Own Intellectual Property Rights in Foreground Information

6.3 Security Requirements

6.3.1 There is no security requirement applicable to this Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Contract award to 2016-03-31 inclusive.

6.4.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to one (1) additional one (1) year period, under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least fifteen (15) Calendar days before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment

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6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Andrea Major
Title: Procurement Officer
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Western Region
Address: 5th Floor, ATB Place, North Tower
10025 Jasper Avenue,
Edmonton AB T5J 1S6

Telephone: (587) 926-3434
Facsimile: (780) 497-3510
E-mail address: andrea.major@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 Technical Authority

The Technical Authority for the Contract is: *(to be provided at contract award)*

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

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

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the

6.5.3 Procurement Authority

The Procurement Authority for the Contract is: *(to be provided at contract award)*

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

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

The Procurement Authority is the representative of the department or agency for whom the Work is being carried out under the Contract 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.

6.5.4 Contractor's Representative:

(to be filled out by bidder)

Name: _____

Title: _____

Organization: _____

Telephone: ____-____-____

Facsimile: ____-____-____

E-mail: _____.

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) [<http://laws-lois.justice.gc.ca/eng/acts/P-36/FullText.html>] 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 [http://www.tbs-sct.gc.ca/pubs_pol/dcgpubs/ContPolNotices/2012/10-31-eng.asp] of the Treasury Board Secretariat of Canada.

6.7 Payment

6.7.1 Basis of Payment- Ceiling Price

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of the Work, plus a profit as determined in accordance with the Basis of Payment in Annex "B" to a ceiling price of \$ _____ (*insert amount at contract award*). Customs duties are included and Applicable Taxes are extra.

The ceiling price is subject to downward adjustment so as not to exceed the actual costs reasonably incurred in the performance of the Work and computed in accordance with the Basis of Payment.

6.7.2 Limitation of Price

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

6.7.3 Method of Payment- Progress Payments

6.7.3.1 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 90 percent of the amount claimed and approved by Canada if:

- a. an accurate and complete claim for payment using form PWGSC-TPSGC WR01, 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 90 percent of the total amount to be paid under the Contract;
- d. all certificates appearing on form PWGSC-TPSGC WR01 have been signed by the respective authorized representatives.

6.7.3.2 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.

6.7.3.3 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 T1204 - Direct Request by Customer Department

SACC Manual Clause A9117C (2007-11-30), T1204 - Direct Request by Customer Department

6.7.5 Discretionary Audit

SACC Manual Clause C0705C (2010-01-11), Discretionary Audit

OR

SACC Manual Clause C0102C (2010-01-11), Discretionary Audit- Canadian Universities and Colleges

6.8 Invoicing Instructions

6.8.1 Invoicing Instructions- Progress Payment Claim

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC WR01, Claim for Progress Payment.

Each claim must show:

- a. all information required on form PWGSC-TPSGC WR01;
- b. all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- c. a list of all expenses;
- d. a holdback of 10 percent;
- e. the total of all previous claims against the Contract and the extension of the totals to date;

Each claim must be supported by:

- a. a copy of time sheets to support the time claimed;
- b. two (2) copies 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 WR01, and forward it to the Procurement Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The Procurement Authority will then forward the original and two (2) copies of the claim 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 SACC Manual clauses

C0305C (2014-06-26), Cost Submission- Limitation of Expenditure or Ceiling Price
C0710C (2007-11-30), Time and Contract Price Verification

6.10 Certifications

6.10.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

6.10.2 SACC Manual Clauses

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

6.10.3 Disclosures Certification

On completion of the Work, the Contractor must submit to the Technical Authority and to the Contracting Authority a copy of the Disclosures Certification attached as Annex "C" stating that all applicable disclosures were submitted or that there were no disclosures to submit under general conditions 2040.

6.11 Applicable Laws

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

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6.12 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the general conditions 2040 (2015-07-03), General conditions- Research and Development;
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) Annex C, Disclosures Certification;
- (f) the Contractor's bid dated _____.

6.13 Defence Contract

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

6.14 SACC Manual Clauses

A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)
A9062C (2011-05-16), Canadian Forces Site Regulations
B6800C (2007-11-30), List of Non-consumable Equipment and Material

6.15 Insurance

SACC Manual clause G1005C (2008-05-12) Insurance

ANNEX "A"

STATEMENT OF WORK

1. TITLE

ELECTROMAGNETIC PROPAGATION FOR UAV-BORNE NON-LINEAR JUNCTION DETECTION

2. BACKGROUND

With the increase in improvised explosive device (IED) threats facing the Canadian Armed Forces (CAF) over the last decade, alternative detection technologies that differ from conventional explosive hazard detection techniques (i.e. metal detector) are being investigated. One such evolving IED detection technology is known as non-linear junction detection (NLJD).

NLJD systems are designed to detect the presence of the electrically conducting components of IEDs - such as wiring, circuit boards, and metallic casings - by emitting a high power radio-frequency (RF) signal that excites current flow across the target's conducting junctions, and detects the subsequent re-radiated signal. Based on the electrical construction of the target, specifically the semiconducting and metallic components, the re-radiated signal is a harmonic (integer multiple) of the incident signal, or perhaps a cross modulated product when multiple incident frequencies are used.

The NLJD is used in the detection of IED components such as cell phones, two-way radio, circuit boards, integrated circuits (ICs), and passive infrared (PIR) switches. Hand held NLJD units have been successfully used by dismounted search teams in military and public security operations. However, it would be advantageous if the technology could be exploited for standoff detection, one approach would be to use NLJD as a payload on unmanned vehicles, which would enable military operators to close the detection and localization distance to a target while maintaining a large, safe standoff distance.

In this role, questions arise concerning the development of NLJD specifically for Unmanned Aerial Vehicle (UAV) exploitation, specifically in regard to the propagation of the RF wave several meters above the ground plane to targets that could be above, adjacent to, or below the surface of the ground, such as: How does the angle of incidence to the ground plane effect the transmitted wave propagation? How does the proximity of the ground plane effect the re-radiated wave propagation back to the NLJD receiver? How does the frequency of operation affect these propagation problems? As a sensor platform, do UAVs offer alternative NLJD design options, such as separated transmission and receive functions?

3. ACRONYMS

CAF	Canadian Armed Forces
COTS	Commercial-Off-The-Shelf
DRDC	Defence Research and Development Canada
EM	Electromagnetic
NLJD	Non-Linear Junction Detector
MOTS	Military-Off-The-Shelf
PIR	Passive Infrared
Rx	Receive
RF	Radio Frequency
SA	Scientific Authority
SOW	Statement of Work
SWaP	Size, Weight, and Power
TA	Technical Authority

Tx Transmit
UAV Unmanned Aerial Vehicle

4. APPLICABLE DOCUMENTS & REFERENCES

AD1: C.W. Palmer, "The Luxembourg Effect in Radio", Radio-Craft, Feb 1935

AD2: Dudley E. Foster, "A New Form of Interference - External Cross Modulation", RCA Institutes Technical Press, Vol 1, Pages 18-25, April 1937.

AD3: Robert O. Hager, "Harmonic Radar Systems for Near-Ground In-Foliage Nonlinear Scatterers", IEEE Transactions on Aerospace and Electronic Systems, Vol AES-12, No. 2 March 1976.

AD4: R.C. Chapman, et al, "METRRA Producibility Investigation", Ford Aerospace and Communications Corp, Palo Alto, CA. NTIS ADA012658, June 1975.

5. TASKS

5.1 Literature Survey

The contractor will conduct a literature survey consisting of a review of scientific literature (including using search engines such as Web of Knowledge and IEEEExplore), internet search engines, and searches of government databases (such as DTIC and CANDID). The aim of this literature survey is collect reference material on the propagation and radiation of EM waves (RF Band) within the vicinity a dielectric half-space including the modeling and simulation thereof. Estimated level of effort for literature survey will constitute less than 10% of awarded contract.

5.2 Transmitted EM wave propagation in the vicinity dielectric half-space

Using theoretical analysis and modeling of the reference material, the contractor will investigate the EM propagation of a RF source with varying heights to an observation point above and below the surface of the dielectric half-space. The investigation will include varying source heights as deployed on a UV platform (<10m), horizontal and vertical polarization, and transmit frequencies common to NLJD systems (500 to 5000 GHz). Alternative considerations and analysis must be approved by the Technical Authority (TA).

5.3 Re-radiated EM wave propagation in the vicinity dielectric half-space

Using theoretical analysis and modeling of the reference material, the contractor will investigate the EM field radiated from a dipole source that is within the vicinity of a dielectric half-space. The contractor will create radiation patterns for a dipole source placed above and below the ground plane with various polarizations, and re-radiation frequencies common to non-linear targets (second and third harmonics of the 5.2 transmit frequencies investigated). Alternative considerations and analysis must be approved by the TA.

5.4 Theoretical performance of UAV NLJD

With a theoretical understanding and modeling capability of the transmission and re-radiated propagation characteristic relevant to NLJD established in previous tasks, conduct an evaluation of the potential for UAV-borne NLJD to detect targets using a single UAV platform supporting both single-frequency-Tx and Rx functions. Consideration of Size, Weight, and Power (SWaP) of the theoretical UAV-borne NLJD system will not be of principal concern, in consultation with the TA, reasonable values for these parameters will be selected from the range of existing commercial- and military-off-the-shelf (COTS and MOTS) NLJD systems. Task 5.4 will combine the transmitted energy and re-radiated energy results from

5.2 and 5.3 to determine the optimal frequency, polarization and angle of incidence that present the maximum achievable signal at the NLJD receiver. Parameters will be selected at the discretion of the TA to align with common NLJD specifications.

5.5 Optional Work

Optional work will include tasks within the original scope and basis of payment rates (ie labor, profit, etc) of the contract. Exercise of the option will be dependant on funding, outcome, and continued program requirements. Optional work will be defined in detail should the option be exercised.

6. Deliverables

Number	Task reference	Description of deliverable	Quantity and Format
6.1	5.1	List of references for EM propagation and antenna radiation patterns. Description of the references and how they apply to the propagation and re-radiation study.	PDF/A-1a, to be combined into final report
6.2	5.2	Data plots containing the EM field as a function of source height, source to observation point distance, operating frequency, observation point position, polarization, and soil type.	PDF/A-1a, to be combined into final report
6.3	5.3	Data plots containing the re-radiation pattern as a function of source proximity to ground plane, frequency, polarization, and soil type.	PDF/A-1a, to be combined into final report
6.4	5.4	Data plots of the response function combining the results of the transmitted and re-radiated results (5.2 and 5.3).	PDF/A-1a, to be combined into final report
6.5	5.2, 5.3, 5.4	Description of the Simulation code and/or input parameters required to run the EM simulations.	PDF/A-1a, to be combined into final report
6.6		Final report summarizing the results from 5.1, 5.2, 5.3, and 5.4,	PDF/A-1a
6.7	5.5	Option - work will be defined within the original scope and basis of payment rates.	

7. DATE OF DELIVERY

Deliverable 6.1 – 6.6: On or before 31 March 2016

Deliverable Option 6.7: On or before 31 March 2017

8. Language of Work

English

9. Location of Work

The work must be performed on Contractor site.

ANNEX "B"

BASIS OF PAYMENT

Payment will be paid for time expended and other costs reasonably and properly incurred from the date of contract to contract completion in accordance with the following:

(Note: line items listed below are considered "as applicable")

			Period 1: date of award to March 31, 2016	(Option Year) Period 2: April 1, 2016 to March 31, 2017
1.	Labour at firm (daily/hourly) rates. One day consists of 7.5 hours. The rates will be prorated for any period of more or less than one day..		\$ _____	\$ _____
	Title / Name	Firm Daily/Hourly Rate		
	a)	@	\$ _____	\$ _____
	b)	@	\$ _____	\$ _____
	c)	@	\$ _____	\$ _____
	d)	@	\$ _____	\$ _____
	e)	@	\$ _____	\$ _____
	d)	@	\$ _____	\$ _____
	Total Estimated Labour:		\$ _____	\$ _____
2.	Material and supplies at laid down cost without mark-up, including (list items).		\$ _____	\$ _____
3.	Equipment at laid down cost without mark-up, including (list items).		\$ _____	\$ _____
4.	Rentals at actual cost without markup.		\$ _____	\$ _____
5.	Travel and living expenses The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the Treasury Board Travel Directive.		\$ _____	\$ _____

	All travel must have prior authorization of the Technical Authority. All payments are subject to government audit. All travel must have prior authorization of the Technical Authority. All payments are subject to government audit.		
	http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/TBM_113/td-dv_e.asp		
5.	Authorized travel and living expenses in accordance with Standard University Travel Policy. Claims for travel expenses must include an explanation of who, where, when duration and purpose of travel. (Applicable to Universities only)	\$ _____	\$ _____
6.	Subcontracts at actual cost without markup. (Identify subcontractors, if applicable)	\$ _____	\$ _____
7.	Other direct charges at actual cost incurred without mark-up. (Identify what categories of direct charges)	\$ _____	\$ _____
8.	Computing Charges: at standard university rates: (applicable to universities only)	\$ _____	\$ _____
9.	Standard University overhead: as follows (applicable to universities only)	\$ _____	\$ _____
a)	<i>at a maximum 65% of on-campus labour (item 1)</i>	\$ _____	\$ _____
b)	<i>at a maximum 30% of off-campus labour (item 1)</i>	\$ _____	\$ _____
c)	<i>at a maximum 2% of travel expenses (item 5)</i>	\$ _____	\$ _____
10.	Profit at a firm rate of ____ % of items ____ above.	\$ _____	\$ _____
	Estimated Cost to a Ceiling Price:	\$ _____	\$ _____
	Total Estimated Cost to a Ceiling Price: (Period 1 + Option Period 2)	\$ _____	

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

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Work proceeds, provided that these changes have the prior approval of the Technical Authority, and provided that the estimated cost does not exceed the aforementioned Limitation of Expenditure.

APPLICABLE TAXES:

The applicable taxes are not included in the amounts above. The applicable taxes are to be shown as a completely separate item on each invoice.

F.O.B. Point: Defence Research and Development Canada – Suffield Research Centre

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ANNEX "C"

DISCLOSURES CERTIFICATION

This document is to be completed and signed by the Contractor at the completion of the subject contract and submitted to the Contracting Officer and the Technical Authority designated below:

Contracting Authority	Technical Authority
Andrea Major	<i>(to be inserted at contract award)</i>
Procurement Officer	
Acquisitions, Western Region	Defence Research & Development Canada Suffield
Public Works & Government Services Canada	Department of National Defence
ATB Place North Tower, 5th Floor	P.O. Box 4000 Main
10025 Jasper Avenue	Medicine Hat, AB T1A 8K6
Edmonton, AB T5J 1S6	

CONTRACT TITLE: ELECTROMAGNETIC PROPAGATION FOR UAV-BORNE NON-LINEAR JUNCTION DETECTION

Please tick appropriate box:

☐ We hereby certify that all applicable disclosures were submitted in compliance with General Conditions 2040 - Research and Development.

YOUR ATTENTION IS DRAWN TO THE TERMS AND CONDITIONS, REGARDING IMPLICATIONS ON NON-DISCLOSURE OF any Technical Documentation, Prototypes, Inventions and Technical Information arising during the performance of work pursuant to the above identified contract,

OR

☐ We hereby certify that there are no disclosures to submit under the above-referenced Contract, referred to in General Conditions 2040 - Research and Development.

Signature

Print Name

Title

Contractor Name

Date

ANNEX "D"

MANDATORY CRITERIA, EVALUATION CRITERIA AND SELECTION METHOD

MANDATORY EVALUATION CRITERIA

Failure to meet any of the following mandatory requirements **at solicitation closing** will render your submission non-compliant and given no further consideration.

	CRITERIA	Met	Not Met	Page Reference
M1	Education: The resource must have a Master's level of education that covers EM theory in the context of electromagnetic propagation, antenna radiation and analytical methods.			
M2	Experience: Demonstrated relevant experience (experimental and theory) in the subject matter of EM propagation and antenna radiation. Demonstrated publication record.			

POINT-RATED EVALUATION CRITERIA

Each Technical Bid which meets all the Mandatory Criteria specified above, will be evaluated and scored in accordance with the following evaluation criteria:

POINT RATED CRITERIA (Rating: 4=excellent, 3=very good, 2=average, 1=poor, 0=nothing)			
A. TECHNICAL BID	WEIGHT	RATING	SCORE
1. Understanding of scope and objectives. The Bidder should include a short introduction with a brief evaluation of the need for the project, the objectives of the proposed Work, the reasons for carrying it out as proposed and the benefits to be derived.	5		
2. Proposed work feasibility, approach and methodology. The Bidder should clearly outline its approach and proposed methodology to meet the requirement, as well as the degree of success expected. The proposed technical approach must be compliant with the requirements of the Statement of Work provided as part of the bid solicitation. Sufficient detail should be provided to demonstrate the Bidder's grasp of the requirement and the Bidder's competence to meet it.	5		

3. Work plan, schedule and deliverables. The Bidder should include a list of specific tasks and deliverables and the proposed schedule for completion of the work or delivery.	5		
4. Recognition of problems and solutions proposed. The Bidder should state any major difficulties that are anticipated and explain how it would address these difficulties.	4		
5. Demonstrated original and innovative ideas.	5		
6. Project Manager - qualifications and relevant experience, including his/her position within the organization. The Bidder should provide the name of the Project Manager who will be assigned to this requirement, demonstrating his/her education, qualifications and experience. His/her curriculum vitae should also be included.	3		
7. Other key personnel (i.e. other than the Project Manager) - qualifications and relevant experience proven by similar or related work. The Bidder should provide the names of all other key personnel who will be assigned to this requirement, demonstrating their education, qualifications (including language capability *) and experience. Their curriculum vitae should also be included.	4		
8. Adequacy and availability of personnel to carry out the project.	4		
Maximum points available		140	
Minimum points acceptable		98	
Points awarded			

B. MANAGEMENT BID	WEIGHT	RATING	SCORE
<p>1. Proposed level of effort and planned team organization, including availability of team members and backup capability, reporting structure, and capability to carry out the project within the time frame allotted.</p> <p>The Bidder should include a description of the team (including subcontractors, as applicable), the reporting structure, as well as the ability of the proposed team to complete the Work. Where subcontractors are proposed as part of the project team, the Bidder should provide a list of all subcontractors proposed, describe the work to be performed by each one and explain the proposed basis of selection for each one. The level of effort (by task) for each individual should be specified and the availability of personnel (including backup capability) should be addressed.</p>	10		
2. Assurance of liaison with the Technical Authority.	5		
Maximum points available			60
Minimum points acceptable			42
Points awarded			
MAXIMUM TOTAL POINTS AVAILABLE			200
MINIMUM TOTAL POINTS ACCEPTABLE			140
TOTAL POINTS AWARDED			

Each proposal must meet all of the mandatory requirements set out in the evaluation criteria. Proposals that fail to meet these requirements will be discarded without further consideration.

Each point rated evaluation criterion has a number allotment ("weight") that reflects its importance in proposal submissions. The degree to that the proposal satisfies the requirement of each criterion will be assessed and a "rating" will be assigned ranging from 0 to 4, with 0 meaning the proposal completely fails to satisfy the requirement, and the total allotment meaning the proposal fully meets the outlined criterion. A score will be assessed by multiplying the weight by the rating.

Each proposal must achieve a minimum score of **70%** of the maximum points available in EACH category subject to point rating. Proposals that fail to achieve this score will be considered technically unacceptable and will be given no further consideration.