

**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À:**  
Réception des soumissions - TPSGC / Bid  
Receiving - PWGSC  
1550, Avenue d'Estimauville  
1550, D'Estimauville Avenue  
Québec  
Québec  
G1J 0C7

## 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

<b>Title - Sujet</b> Aerosols & lidar		
<b>Solicitation No. - N° de l'invitation</b> W7701-145821/B	<b>Date</b> 2014-04-23	
<b>Client Reference No. - N° de référence du client</b> W7701-14-5821		
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$QCL-028-15915		
<b>File No. - N° de dossier</b> QCL-3-36270 (028)	<b>CCC No./N° CCC - FMS No./N° VME</b>	
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2014-05-09</b>		<b>Time Zone</b> <b>Fuseau horaire</b> Heure Avancée de l'Est HAE
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>		
<b>Address Enquiries to: - Adresser toutes questions à:</b> Roy, Josée		<b>Buyer Id - Id de l'acheteur</b> qcl028
<b>Telephone No. - N° de téléphone</b> (418) 649-2932 ( )		<b>FAX No. - N° de FAX</b> (418) 648-2209
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> R & D POUR LA DÉFENSE CANADA - VALCARTIER BATIMENT 53 2459 ROUTE DE LA BRAVOURE QUÉBEC Québec G3J1X5 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

TPSGC/PWGSC  
601-1550, Avenue d'Estimauville  
Québec  
Québec  
G1J 0C7

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

This bid solicitation cancels and supersedes previous bid solicitation number W7701-145821/A dated 2014-03-05 with a closing of 2014-04-14 at 02:00 PM. A debriefing or feedback session will be provided upon request to bidders/offerors/suppliers who bid on the previous solicitation.

## **TABLE OF CONTENTS**

### **PART 1 - GENERAL INFORMATION**

1. Introduction
2. Summary
3. Debriefings

### **PART 2 - BIDDER INSTRUCTIONS**

1. Standard Instructions, Clauses and Conditions
2. Submission of Bids
3. Former Public Servant
4. Enquiries - Bid Solicitation
5. Applicable Laws
6. Basis for Canada's Ownership of Intellectual Property

### **PART 3 - BID PREPARATION INSTRUCTIONS**

1. Bid Preparation Instructions:

### **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

1. Evaluation Procedures
2. Basis of Selection

### **PART 5 - CERTIFICATIONS**

1. Certifications Required Precedent to Contract Award

### **PART 6 - FINANCIAL REQUIREMENTS**

1. Financial Capability

### **PART 7 - RESULTING CONTRACT CLAUSES**

1. Statement of Work
2. Standard Clauses and Conditions
3. Security Requirement
4. Term of Contract
5. Authorities
6. Payment
7. Proactive Disclosure of Contracts with Former Public Servants

Solicitation No. - N° de l'invitation

W7701-145821/B

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

qcl028

Client Ref. No. - N° de réf. du client

W7701-14-5821

File No. - N° du dossier

QCL-3-36270

CCC No./N° CCC - FMS No/ N° VME

---

8. Invoicing Instructions
9. Certifications
10. Applicable Laws
11. Priority of Documents
12. Defence Contract
13. Foreign Nationals (Canadian Contractor)
14. Insurance
  
15. Progress Reports
16. Site Regulations
17. Identification Badge

**List of Attachments:**

- Attachment 1 Financial Bid Presentation Sheet  
Attachment 2 Mandatory and Point Rated Technical Criteria  
Attachment 3 Evaluation of Price

**List of Annexes:**

- Annex **A** Statement of Work or Requirement  
Annex **B** Basis of Payment  
Annex **C** Contractor Disclosure of Foreground Information  
Annex **D** DND 626, Task Authorization Form

## PART 1 - GENERAL INFORMATION

### 1. Introduction

The bid solicitation document 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: includes the certifications to be provided;
- Part 6 Security Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work, the Basis of Payment, the Contractor Disclosure of Foreground Information and the DND 626, Task Authorization Form

### 2. Summary

#### (a) Title

Aerosols-lidar

#### (b) Tasks

This task authorisation contract include the following tasks:

- Study the dispersion of manmade clouds and improve theirs detection;
- Study and improve techniques for the standoff determination of aerosol size and concentration;
- Study the polarization/depolarization properties of aerosols and solid targets and develop algorithm for their identification;
- Study propagation of laser beam in atmosphere and under water as a function of atmos-pheric/water physical parameters to determine the detection probability and identification of targets;
- Applied different lidar inversion techniques to a large variety of data;
- Conduct trials with the DRDC Valcartier lidar systems and analyse the resulting data;
- Present the work involved in/findings of the six previous objectives at meetings and conferences.

#### (c) Client department :

The organization for which the services are to be rendered is Defence Research and Development Canada - Valcartier (DRDC - Valcartier).

#### (d) Period of the contract :

The period of the contract is from the date of the contract to March 31, 2018 inclusive

**(e) Key information**

- i. Estimated amount of available funding for this contract : \$600,000.00, Applicable Taxes extra.
- ii. Defence Research and Development Canada - Valcartier has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada.
- iii. bidders must provide a list of names, or other related information as needed, pursuant to section 01 of Standard Instructions 2003 and 2004.
- iv. For services requirements, Bidders in receipt of a pension or a lump sum payment must provide the required information as detailed in article 3 of Part 2 of the bid solicitation.
- v. Pour les besoins de services, les soumissionnaires qui touchent une pension ou qui ont reçu un paiement forfaitaire, doivent fournir les renseignements demandés, tel que décrit à l'article 3 de la Partie 2 de la demande de soumissions.
- vi. The requirement is limited to Canadian services.
- vii. Some experimental work will be done at DRDC Valcartier (Task 1a, 2a, 3a 3b and 6). The work location will be specified in each task. The approximate work duration at DRDC Valcartier is of 2 weeks per year for the duration of the contract. When done at RDDC Valcartier all the resource of the Contractor will be accompanied by RDDC Valcartier personnel at all time.

**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 of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

## PART 2 - BIDDER INSTRUCTIONS

### 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 (2014-03-01) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: sixty (60) days

Insert: one hundred twenty (120) days

#### 1.1 SACC Manual Clauses

A7035T (2007-05-25), List of Proposed Subcontractors

### 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.

### 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 FPS, 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 FPS 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

#### **4. Enquiries - Bid Solicitation**

All enquiries must be submitted in writing to the Contracting Authority preferably by e-mail at the following address : josee.roy@tpsgc-pwgsc.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 questions 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.

#### **5. Applicable Laws**

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

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.

#### **6. Basis for Canada's Ownership of Intellectual Property**

Canada has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada on the following grounds:

*The Treasury Board, granted Defence Research and Development Canada exemption from the Treasury Board Policy on "Title to Intellectual Property Arising Under Crown Procurement Contracts"*



## PART 3 - BID PREPARATION INSTRUCTIONS

### 1. Bid Preparation Instructions

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

Section I : Technical Bid (4 hard copies and 4 soft copies on CD or DVD)

Section II : Financial Bid (1 hard copy)

Section III : Certifications ( 1 hard copy)

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; and
- (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 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, print double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

#### 1.1 Section I : Technical Bid

- (a) 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 clearly address 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.

(b) The technical bid consists of the following:

- (i) All the information required to demonstrate its conformity with the Mandatory and Point Rated Technical Criteria described in Attachment 2 - Mandatory and Point Rated Technical Criteria.

## 1.2 Section II : Financial Bid

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

- a. The information must be provided in accordance with the **Financial Bid Presentation Sheet in Attachment 1**
- b. A firm all-inclusive hourly rate (including profit and overhead) for each labour category listed in **Attachment 1 - Financial Bid Presentation Sheet**, for each year of the contract period.
- c. No travel and living expenses will be paid for services provided within the Quebec Region (including DRDC Valcartier facilities.) Further, Canada will not accept any travel and living expenses for travel between the contractor's place of business and the Quebec region (including DRDC Valcartier facilities). All these cost must be included in the firm all-inclusive hourly rates.
- d. Prices must be in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

## 1.3 Section III: Certifications

Bidders must submit the certifications required under **Part 5**.

### 1.3.1 Additionnal information precedent to Contract Award

Bidders must provide a list of names, or other related information as needed, pursuant to section 01 of Standard Instructions 2003.

For services requirements, Bidders in receipt of a pension or a lump sum payment must provide the required information as detailed in article 3 of Part 2 of the bid solicitation.

Canada requests that bidders provide the following information :

#### Administrative representative :

Name : \_\_\_\_\_

Telephone : \_\_\_\_\_

Facsimile : \_\_\_\_\_

Email : \_\_\_\_\_

#### Technical representative :

Name : \_\_\_\_\_

Telephone : \_\_\_\_\_

Facsimile : \_\_\_\_\_

Email : \_\_\_\_\_

## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 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.

#### 1.1 Technical Evaluation

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.

##### 1.1.1 Mandatory Technical Criteria

Refer to **Attachment 2**, Mandatory and Point Rated Technical Criteria.

##### 1.1.2 Point Rated Technical Criteria

Refer to **Attachment 2**, Mandatory and Point Rated Technical Criteria.

#### 1.2 Financial Evaluation

##### 1.2.1 Mandatory Financial Criteria

Bidders must submit their financial bid in accordance with **1.2 Section II : Financial Bid** of the *Part 3 - Bid preparation instructions*.

##### 1.2.2 Evaluation of Price

The price of the bid will be evaluated in Canadian dollars, applicable taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

For evaluation purposes only, the price of the bid will be determined as detailed in **Attachment 3, Evaluation of Price**.

### 2. Basis of Selection

#### 2.1 Basis of Selection - Lowest Evaluated Price Per Point

- 1. To be declared responsive, a bid must:
  - (a) comply with all the requirements of the bid solicitation;
  - (b) meet all mandatory technical evaluation criteria;
  - (c) obtain the required minimum points for each criterion and each group of criteria with a pass mark; and
  - (d) obtain the required minimum points overall for the technical evaluation criteria which are subject to point rating.

Bids not meeting (a) or (b) or (c) or (d) will be declared non-responsive. Neither the responsive bid that receives the highest number of points nor the one that proposed the lowest price will necessarily be accepted. The responsive bid with the lowest evaluated price per point will be recommended for award of a contract. The evaluated price per point will be determined by dividing the evaluated price of the bid by the number of points obtained for the point rated technical evaluation criteria.

In the event that two or more responsive bids have the same lowest evaluated price per point, the responsive bid which obtained the highest number of points overall for the point rated technical evaluation criteria will be recommended for award of a contract.

---

## PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and associated 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 in carrying out any of its obligations under the Contract, 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 may render the bid non-responsive or constitute a default under the Contract.

### 1. Certifications Required Precedent to Contract Award

#### 1.1 Integrity Provisions - Associated Information

By submitting a bid, the Bidder certifies that the Bidder and its Affiliates are in compliance with the provisions as stated in Section 01 Integrity Provisions - Bid of Standard Instructions 2003. The associated information required within the Integrity Provisions will assist Canada in confirming that the certifications are true.

#### 1.2 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](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.

#### 1.3 Additional Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

#### 1.4 Canadian Content Certification

This procurement is limited to Canadian services.

The Bidder certifies that:

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

**1.4.1 SACC Manual clause A3050T (2010-01-11), Canadian Content Definition**

**1.5 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. Failure to comply with the request may result in the bid being declared non-responsive.

**1.6 Education and Experience**

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

**1.7 Language Capability**

The Bidder certifies that it has the language capability required to perform the Work, as stipulated in the Statement of Work.

Solicitation No. - N° de l'invitation

W7701-145821/B

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

qcl028

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

W7701-14-5821

QCL-3-36270

---

## **PART 6 - FINANCIAL REQUIREMENTS**

### **1. Financial Capability**

*Manual* SACC clause A9033T (2012-07-16) Financial Capability

## PART 7 - RESULTING CONTRACT CLAUSES

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

### 1. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A and the Contractor's technical bid entitled \_\_\_\_\_, dated \_\_\_\_\_ **(to be completed by Canada at contract award)**.

### 1.2 Task Authorization

The Work or a portion of the Work to be performed under the Contract will be on an "as and when requested basis" using a Task Authorization (TA). The Work described in the TA must be in accordance with the scope of the Contract.

#### 1.2.1 Task Authorization Process

1. The DND Procurement Authority will provide the Contractor with a description of the task using the DND 626, Task Authorization Form specified in Annex D.
2. The Task Authorization (TA) will contain the details of the activities to be performed, a description of the deliverables, and a schedule indicating completion dates for the major activities or submission dates for the deliverables. The TA will also include the applicable basis(bases) and methods of payment as specified in the Contract.
3. The Contractor must provide the DND Procurement Authority, **within five (5) calendar days** of its receipt, the proposed total estimated cost for performing the task and a breakdown of that cost, established in accordance with the Basis of Payment specified in the Contract. The Contractor will not be paid for preparing or providing its response or for providing other information required to prepare and issue the TA.

When it is required by DND Procurement Authority, the Contractor must also provide a technical proposal that must include one or many of the following items :

- (a) a description of the understanding of objectives and scope of the work,
- (b) a description of the approach and methodology that will be put forward to perform the work,
- (c) a description of the anticipated deliverables,
- (d) an estimation of the level of success anticipated for the activities to be performed,
- (e) the deviations proposed to the requirements,
- (f) an identification of the major risks and a mitigation plan for each of them,
- (g) a complete work schedule and a prioritization of the activities to be performed.



4. The Contractor must not commence work until a TA authorized by the DND Procurement Authority has been received by the Contractor. The Contractor acknowledges that any work performed before a TA has been received will be done at the Contractor's own risk.

#### 1.2.2 Task Authorization Limit

The DND Procurement Authority may authorize individual task authorizations up to a limit of **\$80 000.00**, Applicable Taxes included, inclusive of any revisions.

Any task authorization to be issued in excess of these limits must be authorized by the Contracting Authority before issuance.

#### 1.2.3 Minimum Work Guarantee - All the Work - Task Authorizations

1. In this clause,  
  
"Maximum Contract Value" means the amount specified in the "Limitation of Expenditure" clause set out in the Contract; and  
  
**"Minimum Contract Value" means 25%.**
2. Canada's obligation under the Contract is to request Work in the amount of the Minimum Contract Value or, at Canada's option, to pay the Contractor at the end of the Contract in accordance with paragraph 3. In consideration of such obligation, the Contractor agrees to stand in readiness throughout the Contract period to perform the Work described in the Contract. Canada's maximum liability for work performed under the Contract must not exceed the Maximum Contract Value, unless an increase is authorized in writing by the Contracting Authority.
3. In the event that Canada does not request work in the amount of the Minimum Contract Value during the period of the Contract, Canada must pay the Contractor the difference between the Minimum Contract Value and the total cost of the Work requested.
4. Canada will have no obligation to the Contractor under this clause if Canada terminates the Contract in whole or in part for default.

#### 1.2.4 Task Authorization - Department of National Defence

The administration of the Task Authorization process will be carried out by **The Procurement and Payment group at Defence Research and Development Canada - Valcartier, represented by the DND Procurement Authority**. This process includes monitoring, controlling and reporting on expenditures of the contract with task authorizations to the Contracting Authority.

### 1.3 Disclosure Certification

On completion of the Work, the Contractor must submit to the Technical Authority and to the Contracting Authority a copy of the Contractor Disclosure of Foreground Information attached as **Annex C** stating that all applicable disclosures were submitted.

## **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.

### **2.1 General Conditions**

2040 (2014-03-01), General Conditions - Research & Development, apply to and form part of the Contract.

### **2.2 Supplemental General Conditions**

The following supplemental general conditions apply to and form part of the Contract:

4002 (2010-08-16), Software Development or Modification Services

### **2.3 SACC Manual Clauses**

K3410C (2008-12-12), Canada to Own Intellectual Property Rights in Foreground Information

K3305C (2008-05-12), License to Intellectual Property Rights in Foreground Information

## **3. Security Requirement**

There is no security requirement applicable to this Contract.

## **4. Term of Contract**

### **4.1 Period of Contract**

The Work is to be performed during the period of April 1<sup>st</sup>, 2014 to March 31<sup>st</sup>, 2018.

The period of the Contract is from date of Contract to April 30, 2018 inclusive.

## **5. Authorities**

### **5.1 Contracting Authority**

The Contracting Authority for the Contract is:

Josée Roy  
Public Works and Government Services Canada  
601-1550 D'Estimauville  
Québec, QC.

G1J 0C7

Telephone: 418-649-2932  
 Facsimile: 418-648-2209  
 E-mail address: josee.roy@tpsgc-pwgsc.gc.ca

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

### 5.2 Technical Authority *(to be completed by Canada at contract award)*

The Technical Authority for the Contract is:

Name : \_\_\_\_\_  
 Title : \_\_\_\_\_  
 Organization : \_\_\_\_\_  
 Address : \_\_\_\_\_

Telephone: \_\_\_\_\_  
 Facsimile: \_\_\_\_\_  
 E-mail address: \_\_\_\_\_

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

### 5.3 Contractor's Representative *(to be completed by Canada at contract award)*

#### Administrative representative :

Name : \_\_\_\_\_  
 Telephone : \_\_\_\_\_  
 Facsimile : \_\_\_\_\_  
 Email : \_\_\_\_\_

#### Technical representative :

Name : \_\_\_\_\_  
 Telephone : \_\_\_\_\_  
 Facsimile : \_\_\_\_\_  
 Email : \_\_\_\_\_

### 5.4 Procurement Authority *(to be completed by Canada at contract award)*

The Procurement Authority for the Contract is:

Name : \_\_\_\_\_  
 Title : \_\_\_\_\_  
 Organization : \_\_\_\_\_  
 Address : \_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

E-mail: \_\_\_\_\_.

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

## 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.

## 7. Payment

### 7.1 Basis of Payment

#### (i) Professional Services provided under a Task Authorization subject to a Firm Price:

In consideration of the Contractor satisfactorily completing all of its obligations under the authorized Task Authorization (TA), the Contractor will be paid a firm price in accordance with the basis of payment, in Annex B, as specified in the authorized TA. Customs duties are included and Applicable Taxes are extra.

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

#### (ii) Professional Services provided under a Task Authorization subject to a Ceiling Price :

The Contractor will be reimbursed its 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 the ceiling price specified in the approved TA. 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.

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.

**(iii) Professional Services provided under a Task Authorization subject to a Limitation of Expenditure :**

The Contractor will be reimbursed for the costs reasonably and properly incurred in the performance of the Work specified in the authorized Task Authorization (TA), as determined in accordance with the Basis of Payment in Annex B, to the limitation of expenditure specified in the authorized TA.

Canada's liability to the Contractor under the authorized TA must not exceed the limitation of expenditure specified in the authorized TA. Customs duties are included and Applicable Taxes are extra.

No increase in the liability of Canada or in the price of the Work specified in the authorized TA 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 authorized, in writing, by the Contracting Authority before their incorporation into the Work.

**(iv) Travel and Living Expenses :**

There will be no travel time or travel and living expenses payable for services rendered within 50 kilometres from Defence Research and Development Canada - Valcartier, located at 2459 de la Bravoure Road, Quebec City, Quebec.

For services rendered further than 50 kilometres from Defence Research and Development Canada - Valcartier, the Contractor will be paid its actual travel time in accordance with the hourly rates detailed in Annex B, Basis of Payment.

The Contractor will be reimbursed for the authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance with the meal, private vehicle and incidental expense allowances specified in Appendices B, C and D of the Travel Directive, and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".

All travel must have the prior authorization of the Technical Authority.

**7.2 Limitation of Expenditure - Cumulative Total of all Task Authorizations**

1. Canada's total liability to the Contractor under the Contract for all authorized Task Authorizations (TAs), inclusive of any revisions, must not exceed the sum of **\$600,000.00**. Customs duties are included and Applicable Taxes are extra.
2. No increase in the total liability of Canada will be authorized or paid to the Contractor unless an increase has been approved, in writing, by the Contracting Authority.
3. 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 sum is inadequate for the completion of the Work required in all authorized TAs, inclusive of any revisions,

whichever comes first.

4. 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.

### **7.3 Method of Payment**

**7.3.1** Payments will be made not more frequently than once a month.

**7.3.2** Depending on the method of payment specified in the applicable TA, one of the following methods of payment clauses will apply.

#### **7.3.2.1 Single Payment** (For a Firm Price TA, for a TA subject to a Limitation of Expenditure or a Ceiling Price)

Canada will pay the Contractor upon completion and delivery of the Work associated with the Task Authorization in accordance with the payment provisions of the Contract if:

- (a) an accurate and complete claim for payment using PWGSC-TPSGC 1111, Claim for Progress Payment, and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- (b) all such documents have been verified by Canada;
- (c) the Work delivered has been accepted by Canada.

#### **7.3.2.2 Milestone Payments** (For a Firm Price TA)

For any task authorization issued under the Contract that includes a schedule of milestone payments to be made once specific portions of the work have been completed and accepted, Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Task Authorization and the payment provisions of the Contract if:

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

### **7.3.2.3 Progress Payments** (For a TA subject to a Limitation of Expenditure or a Ceiling Price)

- (a) Canada will make progress payments in accordance with the payment provisions of the Task Authorization and the Contract, no more than once a month, for costs incurred in the performance of the Work up to 90 percent of the amount claimed and approved by Canada if:
  - (i) 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;
  - (ii) the amount claimed is in accordance with the Basis of Payment and the Task Authorization;
  - (iii) the total amount for all progress payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Task Authorization.
  - (iv) all certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.
- (b) The balance of the amount payable will be paid in accordance with the payment provisions of the Task Authorization and the Contract upon completion and delivery of all work required under the Task Authorization if the Work has been accepted by Canada and a final claim for the payment is submitted.
- (c) Progress payments are interim payments only. Canada may conduct a government audit and interim time and cost verifications and reserves the right 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.

## **7.4 SACC Manual Clauses**

A9117C (2007-11-30), T1204 - Direct Request by Customer Department  
C0305C (2008-05-12), Cost Submission

## **7.5 Discretionary Audit**

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

## **8. Invoicing Instructions**

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111. Form PWGSC-TPSGC 1111 is available at the following Website  
<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>

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) the Task Authorization (TA) number;
    - (d) the description of the milestone invoiced, as applicable.
  2. For TAs subject to a Limitation of Expenditure or a Ceiling Price, each invoice must be supported by :
    - (a) a list of all expenses, in accordance with the TA;
    - (b) a copy of time sheets to support the time claimed;
    - (c) a copy of the invoices, receipts, vouchers for all direct expenses, travel and living expenses;
    - (d) a copy of the monthly progress report.
  3. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.
  4. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting Authority for certification.

**ATTN: Mrs Micheline Cauchon-Gravel**  
 Public Works and Government Services Canada  
 601-1550 D'Estimauville  
 Québec, QC.  
 G1J 0C7

The Contracting Authority will then forward the original and two (2) copies of the claim to the Technical Authority for appropriate certification after inspection and acceptance of the Work takes place, and onward submission to the Payment Office for the remaining certification and payment.

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

## 9. Certifications

### 9.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing associated 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 associated 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.

## 10. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in \_\_\_\_\_ **(to be inserted at contract award)**.



## 11. Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 4002 (2010-08-16), Software Development or Modification Services
- (c) the general conditions 2040 (2014-03-01), General Conditions - Research & Development
- (d) Annex A, Statement of Work
- (e) Annex B, Basis of Payment;
- (f) Annex C, Contractor Disclosure of Foreground Information
- (g) Annex D, DND 626, Task Authorization Form
- (h) the signed Task Authorizations (including all of its annexes, if any)
- (i) the Contractor's bid dated \_\_\_\_\_ **(to be completed at contract award)**.

## 12. Defence Contract

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

## 13. Foreign Nationals (Canadian Contractor)

SACC Manual clause A2000C (2006-06-16), Foreign Nationals (Canadian Contractor)

## 14. Insurance

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

## 15. Progress Reports

1. The Contractor must submit monthly reports, in electronic format, on the progress of the Work, to both the Technical Authority and the Contracting Authority.

2. The progress report must contain two parts:

- (a) PART 1: The Contractor must answer the following three questions:

- (i) Is the project on schedule?
- (ii) Is the project within budget?
- (iii) Is the project free of any areas of concern in which the assistance or guidance of Canada may be required?

Each negative response must be supported with an explanation.

- (b) PART 2: A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing as a minimum:

- (i) A description of the progress of each task and of the Work as a whole during the period of the report. Sufficient sketches, diagrams, photographs, etc., must be included, if necessary, to describe the progress accomplished.
- (ii) An explanation of any variation from the work plan.
- (iii) A description of trips or conferences connected with the Contract during the period of the report.
- (iv) A description of any major equipment purchased or constructed during the period of the report.

#### **16. Site Regulations**

The Contractor must comply with all standing orders or other regulations, instructions and directives in force on the site where the Work is performed.

#### **17. Identification Badge**

SACC Manual clause **A9065C** (2006-06-16), Identification Badge

## ATTACHMENT 1

### FINANCIAL BID PRESENTATION SHEET

1. Firm all-inclusive rates (Applicable Taxes extra, including profit and overhead) as follows :

**Note to bidders:**

- Bidders must enter a firm all-inclusive rate (including profit and overhead) for each Labour Category and for each year of the Contract.
- The rates must include the travel and living fees for the work performed at DRDC Valcartier facility, located at 2459, de la Bravoure Road, Québec, Québec, G3J 1X5 or the work performed in Quebec city region.
- Bidders can propose more than one resource per labour category.
- The estimated percentage of effort per labour category specified in the following table are only estimates of the requirements provided in good faith for the purpose of evaluating the financial aspects of the bids and do not represent a commitment on behalf of Canada.

**Firm all-inclusive hourly rates for the following periods:**

**Labour Categories**

from April 1, 2014 to March 31, 2015    from April 1, 2015 to March 31, 2016

from April 1, 2016 to March 31, 2017    from April 1, 2017 to March 31, 2018

**Project Manager**

Estimated percentage of effort = 5%

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

**Specialist - atmospheric aerosol dispersion**

Estimated percentage of effort = 20%

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

**Specialist in lidar data inversion**

(estimated percentage of effort : 27.5%)

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

**Specialist in polarimetric lidar data analysis**

(estimated percentage of effort: 27.5%)

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

**Specialist - lidar conception/modification and data**

Estimated percentage of effort = 20%

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

2. **EQUIPMENT:** at laid down cost without markup
3. **MATERIALS AND SUPPLIES:** at laid down cost without markup
4. **TRAVEL & LIVING:**
  - (a) Canada will not accept any travel and living expenses incurred by the Contractor in the performance of the Work, for:
    - (i) services provided within the Québec City Region (including Defence Research and Development Canada, Valcartier facility), and
    - (ii) any travel between the Contractor's place of business and the Québec City Region (including Defence Research and Development Canada, Valcartier facility).
  - (b) For services to be provided outside the Québec City Region, 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 ([http://www.tbs-sct.gc.ca/pubs\\_pol/hrpubs/TBM\\_113/td-dv\\_e.asp](http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/TBM_113/td-dv_e.asp)), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".
  - (c) Canada will not accept any travel and living expenses incurred by the Contractor as a consequence of any relocation of personnel required to satisfy the terms of this Contract.
  - (d) All travel must have prior authorization of the Technical Authority. All payments are subject to government audit.

**TOTAL ESTIMATED COST TO A LIMITATION OF EXPENDITURE: 600,000.00\$**  
**(Applicable Taxes extra)**

## ATTACHMENT 2

### MANDATORY AND POINT RATED TECHNICAL CRITERIA

#### Instructions:

In order to allow the evaluation team to properly evaluate each technical evaluation criteria (mandatory and rated), the bidder must clearly indicate the name of the proposed resources and the categories for which they are proposed. Each resource will be evaluated with respect to the criteria related to the labour category for which it is proposed.

Bidder should clearly indicate the experience of the resources in terms of months of experience in relevant activity sectors to the different technical evaluation criteria. Moreover, it should be possible to verify the provided information within the curriculum vitae. For each of the relevant experience to technical evaluation criteria, the bidder should describe the projects/studies realized by the proposed resource. The description should provide sufficient detail to allow a complete evaluation of the criteria.

If it is impossible to demonstrate the experience of the proposed resources or of the bidder, the bid will be considered non-responsive (if it is a mandatory technical criterion), or no point will be awarded for insufficiently demonstrated experience (if it is a technical rated criterion).

Here are examples of information that should be provided for each presented project or study:

- a description of the project or of the study (including title, objectives and scope);
- the period of the project or of the study and the exact duration of the involvement of the resource in the project (month and year of start / month and year of end)
- the description of the role and responsibilities of the proposed resource in the project/study
- a full description of the work for the resource and the results obtained
- software solutions involved in the project/study (if applicable), programming language (if applicable)

Please note that the same type of information should be provided to describe the experience of the bidder.

#### A. Mandatory Technical Criteria

At bid closing time, the Bidder must comply with the following mandatory technical criteria and provide the necessary documentation to support compliance. Any bid which fails to meet the following mandatory technical criteria will be declared non-responsive. Each criterion should be addressed separately.

Criteria	Description
1	<p>The bidder must propose at least one (1) resource for each of the following labour category:</p> <ol style="list-style-type: none"> <li>Project Manager</li> <li>Specialist - atmospheric aerosol dispersion</li> <li>Specialist - lidar data inversion</li> <li>Specialist - polarimetric lidar data analysis</li> <li>Specialist - lidar conception/modification and data</li> </ol> <p>Note: A given resource can be proposed for more than one labour category.</p>

**B. Point Rated Technical Criteria**

<b>Point Rated Technical Criteria</b>	<b>Evaluation scale</b>	<b>Max</b>	<b>Min</b>
<b>1. BIDDERS' EXPERIENCE</b>		<b>20</b>	<b>10</b>
<b>1.1 Bidder's experience with research and development projects</b>	<p>a) The bidder has a minimum of 4 years of experience in executing and managing research and development projects (20 points)</p> <p>b) The bidder has a minimum of 3 years of experience in executing and managing research and development projects (15 points)</p> <p>c) The bidder has a minimum of 2 years of experience in executing and managing research and development projects (10 points)</p> <p>d) The bidder has less than 2 years of experience in executing and managing research and development projects (0 point)</p>	20	10
<b>2. MANAGEMENT PROPOSAL</b>		<b>10</b>	<b>5</b>
<b>2.1 The Bidder should describe how it proposes to control the management of the tasks with respect to assessing priorities, work overload, assignment and availability of resources.</b>	<p>The bidder proposes an excellent comprehensive plan for managing its staff and tasks. The plan ensures very effective management of staff and authorized tasks. In addition, relevant planning and control tools are proposed. 10 pts.</p> <p>The bidder proposes a plan for managing its staff and tasks. The plan ensures management of staff and authorized tasks. 5 pts.</p> <p>The bidder do not proposes a plan for managing its staff and tasks. 0 pts.</p>	10	5
<b>3. PROPOSED RESOURCES (per labour category)</b>			
More than one resource can be proposed per category. In this case, each resource will be evaluated individually and must get the minimum score. The overall scores obtained by each resource in the given category will be added and then divided by the number of resources available to obtain an average. The average will be the rating assigned to the bidder.		<b>240</b>	<b>155</b>

<p>The experience gained during study period may be accepted if its relevance to the criteria is sufficient demonstrated.</p> <p>Several sub-criteria of this section aim to evaluate the background education of the resources. To be acceptable to the evaluation team, the diploma must come from a recognized* Canadian university, or college, or the equivalent as established by a recognized* Canadian academic credentials assessment service,* if obtained outside Canada.</p> <p>*The list of recognized organizations can be found on the Canadian Information Centre for International Credentials Web site at <a href="http://www.cicic.ca/">http://www.cicic.ca/</a></p>			
<b>3.1 Proposed resources in the project management labour category</b>		<b>25</b>	<b>5</b>
<b>3.1.1</b> Training of the proposed resource.	a) Bachelor degree (or higher diploma) in science, engineering (10 pts) b) Other bachelor degree (or higher diploma) in project management or in business administration (5 pt) c) Any other situation (0 pt)	10	0
<b>3.1.2</b> Experience of the resource in R&D project management.	a) At least 24 months of experience in this field (15 pts) a) 12 to 23 months of experience in this field (10 pts) b) 6 to 11 months experience in this field (5 pts) c) Less than 6 months experience in this field (0)	15	5
<b>3.2 Proposed specialist in atmospheric aerosol dispersion category</b>		<b>55</b>	<b>20</b>
<b>3.2.1</b> Training of the proposed resource.	a) PhD or Master Degree in physic, physic engineering or electrical engineering (15 pts) b) Bachelor degree in physic, physic engineering or electrical engineering (10 pts) c) Other engineering bachelor degree (5 pt). d) Any other situation (0 pt)	15	5
<b>3.2.2</b> Experience in atmospheric dispersion of aerosols.	a) The proposed resource has conducted 3 studies on	30	10

	<p>atmospheric dispersion of aerosols (30 points)</p> <p>b) The proposed resource has conducted 2 studies on atmospheric dispersion of aerosols (20 points)</p> <p>c) The proposed resource has conducted 1 studies on atmospheric dispersion of aerosols (10 points)</p> <p>d) The proposed resource has conducted 0 studies on atmospheric dispersion of aerosols (0 points)</p> <p>Note: For study, we mean research work leading to a scientific report or to a publication in the scientific literature.</p>		
<b>3.2.3</b> Experience in C sharp or in C++.	<p>a) The proposed resource has more than 24 months of experience programming in C sharp programming (10 points) or in C++.</p> <p>b) The proposed resource person has between 12 and 23 months of experience programming in C sharp programming or in C++. 5 points)</p> <p>c) The proposed resource person has less than 12 months of experience programming in C sharp programming or in C++. 0 point).</p>	10	5
<b>3.3 Proposed Specialist – lidar conception/modification and data acquisition category</b>		<b>70</b>	<b>30</b>
<b>3.3.1</b> Training of the proposed resource	<p>a) PhD or Master Degree in physic, physic engineering or electrical engineering (15 pts)</p> <p>b) Bachelor degree in physic, physic engineering or electrical engineering (10 pts)</p> <p>c) Other engineering bachelor degree (5 pt)</p> <p>d) Any other situation (0 pt)</p>	15	5
<b>3.3.2</b> Experience in the conception or modification of lidar systems.	<p>a) The proposed resource has conceived or modified lidar systems in a minimum of 2 completed projects (20 points)</p> <p>b) The proposed resource has conceived or modified lidar</p>	20	10



	<p>systems in a minimum of 1 completed project (10 points)</p> <p>c) The proposed resource has not conceived/modified lidar systems in any completed project ( 0 point).</p>		
<b>3.3.3</b> Experience in the programming and data acquisition of gated intensified camera (ICCD).	<p>a) The proposed resource has directly worked on the programming of ICCD camera in a minimum of 2 completed project (20 points)</p> <p>b) The proposed resource has directly worked on the programming of ICCD camera in a minimum of 1 completed project (10 points)</p> <p>c) The proposed resource person has not worked directly on the programming of ICCD camera in any completed project ( 0 point)</p>	20	10
<b>3.3.4</b> Experience in C++ programming or in C sharp.	<p>a) The proposed resource has more than 36 months experience programming in C++ programming or in C sharp.(15 points)</p> <p>b) The proposed resource person has between 24 and 36 months of experience programming in C++ programming or in C sharp.(10 points)</p> <p>c) The proposed resource person has between 12 and 23 months of experience programming in C++ programming or in C sharp.(5 points)</p> <p>d) The proposed resource person has less than 12 months of experience programming in C++ programming or in C sharp.(0 point)</p>	15	5
<b>3.4 Proposed resource for specialist in lidar data inversion category</b>		<b>40</b>	<b>15</b>
<b>3.4.1</b> Training of the proposed resource.	<p>a) PhD or Master Degree in physic, physic engineering or electrical engineering (15 pts).</p> <p>b) Bachelor degree in physic, physic engineering or electrical engineering (10 pts).</p> <p>c) Other engineering bachelor degree (5 pts).</p>	15	5

	d) Any other situation (0 pt)		
<b>3.4.2</b> Experience on lidar inversion technique.	a) The proposed resource has conducted 3 studies on lidar inversion technique (15 points) b) The proposed resource has conducted 2 studies on lidar inversion technique (10 points) c) The proposed resource has conducted 1 study on on lidar inversion technique (5 points) d) The proposed resource has conducted 0 study on lidar inversion technique (0 point) Note: For study, we mean research work leading to a scientific report or to a publication in the scientific literature.	15	5
<b>3.4.3</b> Experience in Matlab programming.	a) The proposed resource has more than 24 months of experience programming in Matlab programming (10 points) b) The proposed resource person has between 12 and 23 months of experience programming in Matlab programming (5 points) c) The proposed resource person has less than 12 months of experience programming in Matlab programming (0 point)	10	5
<b>3.5 Proposed resource for specialist in polarimetric lidar data analysis category</b>		<b>50</b>	<b>20</b>
<b>3.5.1</b> Training of the proposed resource.	a) PhD or Master Degree in physic, physic engineering or electrical engineering (15 pts). b) Bachelor degree in physic, physic engineering or electrical engineering (10 pts). c) Other engineering bachelor degree (5 pts). d) Any other situation (0 pt)	15	5
<b>3.5.2</b> Experience in analysing polarimetric lidar data.	a) The proposed resource has conducted 3 studies on polarimetric lidar data analysis (15 points) b) The proposed resource has conducted 2 studies on polarimetric lidar data analysis (10points)	15	5

	c) The proposed resource has conducted 1 study on polarimetric lidar data analysis (5 points) d) The proposed resource has conducted 0 study on lidar inversion technique ( 0 point) Note: For study, we mean research work leading to a scientific report or to a publication in the scientific literature.		
<b>3.5.3</b> Experience in data analysis obtained with a gated intensified camera (G-ICCD)	a) The proposed resource has directly worked on data analysis obtained with a G-ICCD camera in a minimum of 2 completed project ( 10 points) b) The proposed resource has directly worked data analysis obtained with a G-ICCD camera in a minimum of 1 completed project (5 points) c) The proposed resource person has not worked directly data analysis obtained with a G-ICCD camera in any completed project (0 point)	10	5
<b>3.5.4</b> Experience in Matlab programming.	a) The proposed resource has more than 24 months of experience programming in Matlab programming (10 points) b) The proposed resource person has between 12 and 23 months of experience programming in Matlab programming (5 points) c) The proposed resource person has less than 12 months of experience programming in Matlab programming (0 point)	10	5
<b>4. TECHNICAL PROPOSAL</b>		<b>30</b>	<b>10</b>
<b>4.1</b> Demonstrated understanding of context, scope and objectives  The demonstration of understanding of the context, scope and objectives should be complete and not limited to the description in the "Statement of Work". The bidder	a) The demonstration of understanding of the context, scope and objectives exceeds the requirements (15 points) b) The demonstration of understanding of the context, scope and objectives meets the requirements (10 points) c) The demonstration of understanding of the context, scope and objectives barely meets the requirements (5 points) d) The demonstration of understanding of the context,	15	5

should use his own words to provide a convincing demonstration of his understanding of the context, scope and objectives.	scope and objectives is absolutely insufficient (0 points)		
<b>4.2 Identification of risks</b>  The bidder should mention the risks that could compromise the project and propose a method to manage said risks. The factors described should be suitable, and the risk-management method realistic.	a) The main risk factors and risk-management methods are identified and the propose method to manage said risks exceeds the requirements (15 points)  b) The main risk factors and risk-management methods are identified and the propose method to manage said risks meets the requirements (10 points)  c) Risk factors and risk-management methods are identified for some tasks and barely meet the requirements (5 points)  d) Risk factors and risk-management methods are poorly identified or do not meet the requirements (0 points)	15	5
<b>TOTAL</b>		<b>300</b>	<b>195</b>

## ATTACHMENT 3 EVALUATION OF PRICE

For evaluation purposes only, the price of the bid will be determined as follows :

### 1 - Financial Bid

Bidders must submit their financial bid in accordance with Attachment 1 Financial Bid Presentation Sheet.

### 2 - Calculation of bid price

The bid price will be calculated as follows :

#### **Bid price = Cost of labour**

The Total Bid Price will be calculated as set out in section 3 below

The Bid Price will be evaluated on the basis of the following estimated level of effort :

1- Project Manager	5%
2- Specialist - atmospheric aerosol dispersion	20%
3- Specialist in lidar data inversion	27.5%
4- Specialist in polarimetric lidar data analysis	27.5%
5- Specialist - lidar conception/modification and data	20%

### 3 - Cost of labour :

To establish labour costs, the effort available in terms of hours (see last column in Table 4.1, below) must be determined. The effort available for each resource category will be calculated as follows:

$$\text{Effort available} = \frac{[\text{Total anticipated available funding}] \times [\text{Approximate percentage use}]}{[\text{Average hourly rate for the resource category}]}$$

The cost of labour for a given category (for a given bid) is then obtained by multiplying the effort available by the average hourly rate provided for the given category (for a given bid).

Lastly, the cost of labour is calculated by adding the labour costs per category for a given bid.

For example:

- Anticipated funding for the work = \$600,000
- Percentage of use for "PM" = 5%
- If the average hourly rate for bid A = \$100, that for bid B = \$75 and that for bid C = \$90, then the average hourly rate for the resource category = \$88.33.

Therefore,

- Effort available  $\$600,000 \times 0.05 / \$88.33 = 339.64$  hours

and

- Labour costs for PM, bid a  
=339.64 hours x \$100 =33 964.00\$.
- Labour costs for PM, bid b  
=339.64 hours x \$75 = 25 473.00\$
- Labour costs for PM, bid c  
=339.64 hours x \$90 = 30 567.60\$

#### 4 - Sample calculations for the price of the three bids

Table 4.1 - Sample calculations for the three bids

Resource category	% of use	Rate A	Price for A	Rate B	Price for B	Rate C	Price for C	Qty
1- Project Manager	5%	\$90.00	\$31,764.71	\$75.00	\$26,470.59	\$90.00	\$31,764.71	352.9
2- Specialist - atmospheric aerosol dispersion	20%	\$60.00	\$100 465.12	\$75.00	\$125,581.40	\$80.00	\$133,953.49	1674.4
3- Specialist in lidar data inversion	27.5%	\$90.00	\$189 574.47	\$75.00	\$157 978.73	\$70.00	\$147 446.81	2106.4
4- Specialist in polarimetric lidar data analysis	27.5%	\$90.00	\$189 574.47	\$75.00	\$157 978.73	\$70.00	\$147 446.81	2106.4
5- Specialist - lidar conception/modification and data	20%	\$60.00	\$110 769.23	\$75.00	\$138,461.54	\$60.00	\$110,769.23	1846.2
<b>TOTAL :</b>			\$622 147.99		\$606,470.97		\$571,381.04	

The "percentages of use" listed in the table are provided solely for the purpose of determining the estimated price for each bid. They represent approximate needs, provided in good faith, and should not be considered as a contractual guarantee.

These rates are provided as an example only and must not be interpreted as an indicator of the experience of the labour categories.

	Evaluated Price	Points (total)	Calculation	\$/points	Range
A	\$622 147.99	75 points	\$622 147.99/ 75	8 295.31	3rd
B	\$606 470.97	82 points	\$606 470.97/ 82	7 395.99	2nd
C	\$571 381.04	82 points	\$571 381.04/ 82	6 968.06	<b>1st (winner)</b>

Solicitation No. - N° de l'invitation

W7701-145821/B

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

qcl028

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

W7701-14-5821

QCL-3-36270

---

## **ANNEX A**

### **STATEMENT OF WORK**

The *Statement of Work* appended to the Solicitation file is to be inserted at this point and forms part of this document.

## ANNEX B

### BASIS OF PAYMENT

*(to be completed by Canada at Contract award)*

1. Firm all-inclusive rates (Applicable Taxes extra, including profit and overhead) as follows :

#### Firm all- inclusive hourly rates for the following periods:

##### Labour Categories

from April 1, 2014 to March 31, 2015    from April 1, 2015 to March 31, 2016    from April 1, 2016 to March 31, 2017    from April 1, 2017 to March 31, 2018

##### Project Manager

Estimated percentage of effort = 5%

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

##### Specialist - atmospheric aerosol dispersion

Estimated percentage of effort = 20%

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

##### Specialist in lidar data inversion

(estimated percentage of effort : 27.5%)

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

##### Specialist in polarimetric lidar data analysis

(estimated percentage of effort: 27.5%)

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

##### Specialist - lidar

##### conception/modification and data

Estimated percentage of effort = 20%

\_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour    \_\_\_\_\_ \$ / hour

Name: \_\_\_\_\_

2. **EQUIPMENT:** at laid down cost without markup

3. **MATERIALS AND SUPPLIES:** at laid down cost without markup

4. **TRAVEL & LIVING:**

- (a) Canada will not accept any travel and living expenses incurred by the Contractor in the performance of the Work, for:



- 
- (i) services provided within the Québec City Region (including Defence Research and Development Canada, Valcartier facility), and
  - (ii) any travel between the Contractor's place of business and the Québec City Region (including Defence Research and Development Canada, Valcartier facility).
- (b) For services to be provided outside the Québec City Region, 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 ([http://www.tbs-sct.gc.ca/pubs\\_pol/hrpubs/TBM\\_113/td-dv\\_e.asp](http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/TBM_113/td-dv_e.asp)), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees".
- (c) Canada will not accept any travel and living expenses incurred by the Contractor as a consequence of any relocation of personnel required to satisfy the terms of this Contract.
- (d) All travel must have prior authorization of the Technical Authority. All payments are subject to government audit.

**TOTAL ESTIMATED COST TO A LIMITATION OF EXPENDITURE: 600,000.00\$**  
**(Applicable Taxes extra)**

## ANNEX C

### CONTRACTOR DISCLOSURE OF FOREGROUND INFORMATION

Please refer to **Article 1 - Interpretation of 2040 General Conditions** for the definition of Foreground Information to determine what information must be disclosed.

The Contractor must provide the following information::

1. Contract No.:
2. What is the descriptive title of the FIP (Foreground Intellectual Property)?
3. Abbreviated description of the FIP and, if applicable, of the different systems and sub-systems.
4. What is or was the objective of the project?
5. Explain how the FIP meets the objective of the project (for example: the advantage of the new solution, what problem did the FIP resolve or what benefits did the FIP deliver).
6. Under which category (ies) would you best describe the FIP and why: Patents, Inventions, Trade Secrets, Copyright, Industrial Designs, Rights in Integrated Circuit Topography, Know-how, Other?
7. Describe the features or aspects of the FIP that are novel, useful and not obvious.
8. Has the FIP been tested or demonstrated? If yes, please summarise the results.
9. Has any publication or disclosure to others been made? If so, to whom, when, where and how?
10. Provide names and addresses of the inventors.
11. Provide an explicit and detailed description of the FIP developed during the contract (Refer to pertinent section of the technical report, if necessary).

Please specify name and position of person approving / authorizing this disclosure. This person is to sign and date the disclosure.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title

-----  
(Internal DRDC Valcartier)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name

\_\_\_\_\_  
Title (Technical authority)

Solicitation No. - N° de l'invitation

W7701-145821/B

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

qc1028

Client Ref. No. - N° de réf. du client

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

W7701-14-5821

QCL-3-36270

## **ANNEX D**

### **DND 626 TASK AUTHORIZATION FORM**

The DND 626, *Task Authorization Form*, which is enclosed, is to be inserted at this point and forms part of this document.

## **ANNEX A**

### **Statement of Work**

#### **1. GENERAL**

##### **1.1 Title**

Aerosols-lidar

##### **1.2 Objectives**

The objectives of the work are to:

- Study the dispersion of manmade clouds and improve their detection
- Study and improve techniques for the standoff determination of aerosol size and concentration
- Study the polarization/depolarization properties of aerosols and solid targets and develop algorithm for their identification
- Study propagation of laser beam in atmosphere and under water as a function of atmospheric/water physical parameters to determine the detection probability and identification of targets
- Applied different lidar inversion techniques to a large variety of data
- Conduct trials with the DRDC Valcartier lidar systems and analyse the resulting data
- Present the work involved in/findings of the six previous objectives at meetings and conferences

##### **1.3 Context/Background**

Aerosols play a key role in the performance of most electro-optical systems. In that context, the DRDC Valcartier has developed a strong expertise in measuring and modeling laser beam propagation through the atmosphere.

1. Manmade clouds of interest include bioaerosol clouds, RDD clouds and vehicles generated clouds. The clouds structure is highly dependent of the meteorological condition, nature of the aerosols and dissemination type. A scanning lidar is used to retrieve a large variety of information on the probed cloud such as: dimensions, average and maximal concentration, position as function of time, OD, aerosols type.
2. The use of multiple-field-of-view (MFOV) lidar to obtain standoff determination of aerosol size has made important progress. The principle is based on the fact that multiple scattered light contains information on the size of the scatterers. An MFOV lidar is used to measure with precision the angular dependence of the multiple scattered light. Analysis of the angular dependence of the scattered light provides the effective size of the aerosol. We wish to broaden the domain of application of the concepts developed and improve/adapt the particle size recovering algorithms.
3. The backscatter light from aerosols and solid targets contain information on the nature of the aerosol/solid target. The study of the total backscattered intensity coupled to the polarization/depolarization measurement of the backscattered light allows aerosols and solid targets discrimination.
4. The major aim for the study of propagation of laser beam in atmosphere and underwater as a function of atmospheric/water physical parameters is to determine for a give lidar-target geometry the maximal OD to which a target could be detected. A laser beam propagating in the atmosphere is scattered by

the presence of aerosols. The angular intensity of the scattered light is a function of the aerosol concentration and particle size. The concentration and size of the aerosols are a complex function of meteorological conditions such as temperature, relative humidity and wind speed

5. DRDC Valcartier lidars are used for many different applications. From one application to another the aerosol concentration can range from  $\mu\text{g}/\text{m}^3$  to  $\text{g}/\text{m}^3$ ; also for some experiments solid targets are present and can be used. Therefore different lidar inversion techniques can be applied to the data. For high O.D, estimation of multiple scattering effects has to be performed.
6. The likely DRDC lidars to be used are: The Laser Cloud Mapper (LCM) lidar and the Harsh Environment Fibers (HEF)-Lidar.

The LCM is a fast-scanning lidar system that operates at wavelengths of 355nm, 532 nm, 1064 nm and 1570nm. In support of other teams or agencies, we are called upon to use the LCM to execute field measurements. The work is in support of data acquisition and analysis. The detection configuration can also be adapted to support a G-ICCD camera; in that configuration the system can perform MFOV/multiple scattering study.

The HEF Lidar can be operated underwater and engulfed in dense aerosols. It has polarimetric, multiple scattering and spectral measurement capabilities.

#### **1.4 Acronyms**

G-ICCD: Gated-Intensify Charge Coupled Device

Lidar: Light detection and ranging

MFOV: Multiple Field-of-Views

FOV: Field-of-Views

OD: Optical Depth

RDD: Radioactive Dispersing Device

DRDC: Defence Research Development Canada

LCM : Laser Cloud Mapper

## **2. SCOPE OF THE WORK**

### **EXECUTE ON AN 'AS AND WHEN REQUESTED BASIS THE AEROSOL LIDAR WORK**

#### **TYPES OF WORK TO BE PERFORMED**

Each task will include different types of work that are grouped into seven (7) sub-tasks. One task may often require work from several sub-tasks. The nature and extent of the work to be carried out for each sub-task are described below.

1. **Study the dispersion of manmade clouds and improve their detection and identification**
  - a. Using a scanning lidar acquire lidar signals
  - b. Perform lidar inversion of data and calculate cloud parameters (size, concentration, etc)
  - c. Study clouds structure and develop algorithm to regroup them into as many different clouds that there is.
  - d. Modify scanning pattern to optimise clouds detection
  - e. Develop algorithm to predict future cloud position
2. **Study and improve techniques for the standoff determination of aerosol size and concentration**

- a. Measure with lidar the FOV dependence of the encircled energy as a function of the concentration and the particle size of the aerosol for different measurement geometries.
- b. Modify/improve MFOV lidar measurement techniques.
- c. Modify/improve MFOV lidar inversion algorithms.

**3. Study the polarization/depolarization properties of aerosols and solid targets**

- a. Measure with an imaging MFOV lidar the polarisation states of the backscattered light.
- b. Design a calibration methodology for accurately measuring the various polarisation states measured with the imaging MFOV lidar.
- c. Analyse the polarized lidar signals to obtain the Stokes parameters.
- d. Compare the measured Stokes parameters with the existing models.
- e. Convert and save the polarization data in a format suitable for comparisons with the work of other laboratories, e.g., the NASA Calipso lidar team data.

**4. Study propagation of laser beam in atmosphere and under water as a function of atmospheric/water physical parameters to determine the detection probability and identification of targets**

- a. Create/modify models to predict the intensity of scattered light from a laser beam. These models will take into account the physical parameters of the atmosphere/water and the various observation geometries.
- b. Using a lidar measure the intensity of scattered energy from aerosols/hydrosols and targets
- c. Analyse the measurements and compare them with the models.
- d. Analyse and compare images quality of active imaging systems and fast scanning lidar

**5. Applied different lidar inversion techniques to a large variety of data**

- a. Make use of solid targets to define boundary values
- b. Estimation of multiple scattering effects

**6. Conduct trials with DRDC Valcartier lidars and analyse the data**

- a. Perform a complete verification of the operation of the instrument before the trials.
- b. Adapt the lidars configuration for the desired measurement type (wavelength, polarization, imaging)
- c. Deploy the instrument on the trial site.
- d. Perform and validate the measurements.
- e. Perform inversion of the lidar data to obtain physical parameters of clouds.
- f. Create/modify software to analyse the data

**7. Participate in meetings and conferences**

- a) Participate to national and international meetings and conferences in direct relation with the executed work, including NATO, TTCP or bi-lateral forums. Write papers and prepare technical presentations to be approved by the Technical Authority (TA).

**3. REPORTS AND OTHER DELIVERABLES**

- A) **For task 1-6**, deliverables may include, the following :

- Electronic reports containing description of instrumentation used, the experimental set-up, the data analyse procedure and the results.
- The software code developed and the experimental data
- Documented theories/algorithms used for data analysis.
- A final report in English in WORD format describing in detail all work accomplished during the task.

B) **For task 7**, deliverables may include the following:

- Electronic minutes in English of the meeting/conferences

#### 4. MEETINGS

Meetings to be held as required

When a task is issued a first meeting will be held and a second meeting will be at the end of the completion of the task; the nature of the meeting (face to face or telephonic) and their locations will be specified at the emission of the task.

#### 5. GOVERNMENT FURNISHED EQUIPMENT

All the instrumentation required for the measurements.

Technical assistance for setting up the instrumentation.

Technical assistance during data acquisition

A computer for data analysis

#### 6. WORK LOCATION

All the trials preparation and data analysis will be performed at the Contractor facility. Some experimental work will be done at DRDC Valcartier (Task 1a, 2a,3a 3b and 6). The work location will be specified in each task. The approximate work duration at DRDC Valcartier is of 2 weeks per year for the duration of the contract. When done at RDDC Valcartier all the resource of the Contractor will be accompanied by RDDC Valcartier personnel at all time.

**TASK AUTHORIZATION**  
**AUTORISATION DES TÂCHES**

All invoices/progress claims must show the reference Contract and Task numbers. Toutes les factures doivent indiquer les numéros du contrat et de la tâche.		Contract no. – N° du contrat
		Task no. – N° de la tâche
Amendment no. – N° de la modification		Increase/Decrease – Augmentation/Réduction
		Previous value – Valeur précédente
To – À	<b>TO THE CONTRACTOR</b>  You are requested to supply the following services in accordance with the terms of the above reference contract. Only services included in the contract shall be supplied against this task.  Please advise the undersigned if the completion date cannot be met. Invoices/progress claims shall be prepared in accordance with the instructions set out in the contract.  <b>À L'ENTREPRENEUR</b>  Vous êtes prié de fournir les services suivants en conformité des termes du contrat mentionné ci-dessus. Seuls les services mentionnés dans le contrat doivent être fournis à l'appui de cette demande.  Prière d'aviser le signataire si la livraison ne peut se faire dans les délais prescrits. Les factures doivent être établies selon les instructions énoncées dans le contrat.	
Delivery location – Expédiez à		
Delivery/Completion date – Date de livraison/d’achèvement	Date	for the Department of National Defence pour le ministère de la Défense nationale
Contract item no. N° d'article du contrat	Services	Cost Prix
		GST/HST TPS/TVH
		Total
APPLICABLE ONLY TO PWGSC CONTRACTS: The Contract Authority signature is required when the total value of the DND 626 exceeds the threshold specified in the contract.  NE S'APPLIQUE QU'AUX CONTRATS DE TPSGC : La signature de l'autorité contractante est requise lorsque la valeur totale du formulaire DND 626 est supérieure au seuil précisé dans le contrat.		
for the Department of Public Works and Government Services pour le ministère des Travaux publics et services gouvernementaux		



## Instructions for completing DND 626 - Task Authorization

### Contract no.

Enter the PWGSC contract number in full.

### Task no.

Enter the sequential Task number.

### Amendment no.

Enter the amendment number when the original Task is amended to change the scope or the value.

### Increase/Decrease

Enter the increase or decrease total dollar amount including taxes.

### Previous value

Enter the previous total dollar amount including taxes.

### To

Name of the contractor.

### Delivery location

Location where the work will be completed, if other than the contractor's location.

### Delivery/Completion date

Completion date for the task.

### for the Department of National Defence

Signature of the DND person who has delegated **Authority** for signing DND 626 (level of authority based on the dollar value of the task and the equivalent signing authority in the PAM 1.4). **Note:** the person signing in this block ensures that the work is within the scope of the contract, that sufficient funds remain in the contract to cover this task and that the task is affordable within the Project/Unit budget.

### Services

Define the requirement briefly (attach the SOW) and identify the cost of the task using the contractor's quote on the level of effort. The Task must use the basis of payment stipulated in the contract. If there are several basis of payment then list here the one(s) that will apply to the task quote (e.g. milestone payments; per diem rates/labour category hourly rates; travel and living rates; firm price/ceiling price, etc.). All the terms and conditions of the contract apply to this Task Authorization and cannot be ignored or amended for this task. Therefore it is not necessary to restate these general contract terms and conditions on the DND 626 Task form.

### Cost

The cost of the Task broken out into the individual costed items in **Services**.

### GST/HST

The GST/HST cost as appropriate.

### Total

The total cost of the task. The contractor may not exceed this amount without the approval of DND indicated on an amended DND 626. The amendment value may not exceed 50% (or the percentage for amendments established in the contract) of the original value of the task authorization. The total cost of a DND 626, including all amendments, may not exceed the funding limit identified in the contract.

### Applicable only to PWGSC contracts

This block only applies to those Task Authorization contracts awarded by PWGSC. The contract will include a specified threshold for DND sole approval of the DND 626 and a percentage for DND to approve amendments to the original DND 626. Tasks that will exceed these thresholds must be passed to the PWGSC Contracting Authority for review and signature prior to authorizing the contractor to begin work.

### Note:

Work on the task may not commence prior to the date this form is signed by the DA Authority - for tasks within the DND threshold; and by both DND and PWGSC for those tasks over the DND threshold.

## Instructions pour compléter le formulaire DND 626 - Autorisation des tâches

### N° du contrat

Inscrivez le numéro du contrat de TPSGC en entier.

### N° de la tâche

Inscrivez le numéro de tâche séquentiel.

### N° de la modification

Inscrivez le numéro de modification lorsque la tâche originale est modifiée pour en changer la portée.

### Augmentation/Réduction

Inscrivez le montant total de l'augmentation ou de la diminution, y compris les taxes.

### Valeur précédente

Inscrivez le montant total précédent, y compris les taxes.

### À

Nom de l'entrepreneur.

### Expédiez à

Endroit où le travail sera effectué, si celui-ci diffère du lieu d'affaires de l'entrepreneur.

### Date de livraison/d'achèvement

Date d'achèvement de la tâche.

### pour le ministère de la Défense nationale

Signature du représentant du MDN auquel on a délégué le **pouvoir d'approbation** en ce qui a trait à la signature du formulaire DND 626 (niveau d'autorité basé sur la valeur de la tâche et le signataire autorisé équivalent mentionné dans le MAA 1.4). **Nota :** la personne qui signe cette attache de signature confirme que les travaux respectent la portée du contrat, que suffisamment de fonds sont prévus au contrat pour couvrir cette tâche et que le budget alloué à l'unité ou pour le projet le permet.

### Services

Définissez brièvement le besoin (joignez l'ET) et établissez le coût de la tâche à l'aide de la soumission de l'entrepreneur selon le niveau de difficulté de celle-ci. Les modalités de paiement stipulées dans le contrat s'appliquent à la tâche. Si plusieurs d'entre elles sont prévues, énumérez ici celle/celles qui s'appliquera/ront à la soumission pour la tâche à accomplir (p.ex. acompte fondé sur les étapes franchies; taux quotidien ou taux horaire établi selon la catégorie de main-d'œuvre; frais de déplacement et de séjour; prix fixe ou prix plafond; etc.). Toutes les modalités du contrat s'appliquent à cette autorisation de tâche et ne peuvent être négligées ou modifiées quant à la tâche en question. Il n'est donc pas nécessaire de répéter ces modalités générales afférentes au contrat sur le formulaire DND 626.

### Prix

Mentionnez le coût de la tâche en le répartissant selon les frais afférents à chaque item mentionné dans la rubrique **Services**.

### TPS/TVH

Mentionnez le montant de la TPS/TVH, s'il y a lieu.

### Total

Mentionnez le coût total de la tâche. L'entrepreneur ne peut dépasser ce montant sans l'approbation du MDN, formulaire DND 626 modifié à l'appui. Le coût de la modification ne peut pas être supérieur à 50 p. 100 du montant initial prévu dans l'autorisation de tâche (ou au pourcentage prévu dans le contrat pour les modifications). Le coût total spécifié dans le formulaire DND 626, y compris toutes les modifications, ne peut dépasser le plafond de financement mentionné dans le contrat.

### Ne s'applique qu'aux contrats de TPSGC

Le présent paragraphe s'applique uniquement aux autorisations de tâche accordées par TPSGC. On inscrira dans le formulaire DND 626 un plafond précis qui ne pourra être approuvé que par le MDN et un pourcentage selon lequel le MDN pourra approuver des modifications au formulaire DND 626 original. Les tâches dont le coût dépasse ces plafonds doivent être soumises à l'autorité contractante de TPSGC pour examen et signature avant qu'on autorise l'entrepreneur à débiter les travaux.

### Nota :

Les travaux ne peuvent commencer avant la date de signature de ce formulaire par le responsable du MDN, pour les tâches dont le coût est inférieur au plafond établi par le MDN, et par le MDN et TPSGC pour les tâches dont le coût dépasse le plafond établi par le MDN.