

**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC**  
BFC Bagotville, CP 380  
CFB Bagotville, PO Box 380  
Bâtiment 71, local 115  
Building 71, Room 115  
Alouette  
Quebec  
G0V1A0  
FAX pour soumissions: (418) 677-3288

**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> Optical Beam Expander	
<b>Solicitation No. - N° de l'invitation</b> W7701-135548/B	<b>Date</b> 2013-02-20
<b>Client Reference No. - N° de référence du client</b> W7701-135548	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$BAL-001-15240	
<b>File No. - N° de dossier</b> BAP-2-35448 (001)	<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 2013-03-18</b>	
<b>Time Zone</b> Fuseau horaire 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> Tremblay, Marial	<b>Buyer Id - Id de l'acheteur</b> bal001
<b>Telephone No. - N° de téléphone</b> (418) 677-4000 (4159)	<b>FAX No. - N° de FAX</b> (418) 677-3288
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b>  Defence R&D Canada - Valcartier R & D défense Canada - Valcartier Bâtiment _____ 2459, boulevard Pie-XI nord Québec (Québec) G3J 1X5	

**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  
BFC Bagotville, CP 380  
CFB Bagotville, PO Box 380  
Bâtiment 71, local 115  
Building 71, Room 115  
Alouette  
Québec  
G0V1A0

<b>Delivery Required - Livraison exigée</b> See Herein	<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>



Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Unit Price/Prix unitaire FOB/FAM Destination	Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	<p>Optical Beam Expander in accordance with the Requirement at Annex "A".</p> <ul style="list-style-type: none"> <li>Firm lot price including the good (optical beam expender), technical documentation, delivery charge, installation, demonstration, and training.</li> </ul>	W7701	W7701	1	Lot	\$	XXXXXXXXXXXX	See Herein	

This bid solicitation cancels and supersedes previous bid solicitation number W7701-135548/A dated 2012-12-10 (December 10, 2012) with a closing of 2013-01-22 at 2 p.m..

## **OPTICAL BEAM EXPANDER DEFENCE R&D CANADA (DRDC) - VALCARTIER**

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Introduction**

The bid solicitation is divided into seven parts plus one annex, 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, Financial and Other 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.

Annex "A" - Requirement.

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## 1.2 Summary

- (i) Defence R&D Canada (DRDC) Valcartier has a requirement for an optical beam collimating and focusing system, hereby named as the optical beam expander (BEX). The primary objective of the BEX is to allow focusing a kW-class continuous wave laser beam at different ranges. The BEX will also integrate an optical camera and a ranging system so as to be able to automatically determine the required focus distance. The system will be lightweight, weatherproof, passively cooled, exhibiting minimal back reflections and with electronic adjustment and tuning abilities. The Contractor will have to demonstrate its expertise and knowledge in the field of high power optical beam control systems by providing information on the number and scope of completed projects, as per the evaluation criteria described in this document.
- (ii) Client: DRDC-Valcartier, Quebec, Quebec, Canada, G3J 1X5.
- (iii) Contract Period: There are four deliverables:
  - (1) Deliverable 1 is due by June 30th, 2013;
  - (2) Deliverable 2 is due by December 31st, 2013;
  - (3) Deliverable 3 is due by February 28th, 2014; and
  - (4) Final Contract deliverables is due by March 31st, 2014.
- (iv) Pursuant to section 01 of Standard Instructions 2003 and 2004, Bidders must submit a complete list of names of all individuals who are currently directors of the Bidder. Furthermore, as determined by the Special Investigations Directorate, Departmental Oversight Branch, each individual named on the list may be requested to complete a Consent to a Criminal Record Verification form and related documentation.
- (v) The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT).

## 1.3 Debriefings

After contract award, 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.

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## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

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

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

The 2003 (2012-11-19) 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 and twenty (120) days

### 2.2 Submission of Bids

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

Your proposal can be transmitted by fax to # 418-677-3288 or by mail to the following address:

Bid Receiving Unit: Public Works and  
Government Services Canada  
CFB Bagotville, PO Box 380  
Building 71, Room 115\*  
Alouette, Quebec, G0V 1A0

\*NOTE: Our offices are located in Building 71 which is the Recreation Centre at CFB Bagotville and room 115 is adjacent to the Subway restaurant.

### **2.3 Enquiries - Bid Solicitation**

All enquiries must be submitted to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

### **2.4 Applicable Laws**

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

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

### **3.1 Bid Preparation Instructions**

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

Section I : Technical Bid (1 hard copy)

Section II : Financial Bid (1 hard copy)

Section III : Certifications (1 hard copy)

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

Canada requests that bidders follow the format instructions described below in the preparation of their bid.

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponding 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, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

## **Section I: Technical Bid**

In their technical Bid, bidders should explain and demonstrate how they propose to meet the requirements and demonstrate their capability and describe their approach in a thorough, concise and clear manner how they will carry out the work.

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

## **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment in Part 7.

Exchange Rate Fluctuation

SACC Manual Clause C3010T (2010-01-11), Exchange Rate Fluctuation

## **Section III: Certifications**

In Section III, Bidders must submit the certifications required under Part 5.

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

### **4.1 Evaluation Procedures**

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### **4.1.1 Technical Evaluation**

##### **4.1.1.1 Mandatory Technical Criteria**

The bid must meet the mandatory technical criteria specified below. Bidders must provide the necessary documentation to support compliance with this requirement.

Bids which fail to meet the mandatory technical criteria will be declared non-responsive. Each mandatory technical criterion should be addressed separately.

1. Bidders must have completed at least three (3) projects involving beam director designs for high energy continuous laser systems over the past five (5) years. The definition of a "project" involves the design of a new system, or a retrofit, or an upgrade, or the replacement of an existing system, in the field of high energy continuous laser systems.
2. Bidders must provide supporting documentation explaining each projects including :
  - (1) Projects description;
  - (2) Dated, signed evidence of the completed projects;
  - (3) Project time frame in date;
  - (4) Outcome of the project regarding the deliverables.

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#### 4.1.1.2 Point Rated Technical Criteria

1. Bids which meet all the mandatory technical criteria will be evaluated and scored as specified in the tables inserted below.
2. Bids which fail to obtain the required minimum number of point specified will be declared non-responsive. Each Point Rated Technical criterion should be addressed separately.
3. Bidders can use the same projects submitted as mandatory technical requirement to address the following criterion.
4. For evaluation purposes, a "Eligible Demonstrated Project" implies that Bidders were the primary contractor for the beam expander system. Bidders must have performed the fabrication and assembly, and alignment of primary optics on their facilities.
5. Bidders should provide a minimum of three (3) Eligible Demonstrated Projects (EDP) demonstrating their expertise involving beam director designs for high energy continuous laser systems in any of the following power range (it could be a mix of them):
  - (a) continuous-wave laser power 1-10kW;
  - (b) a continuous-wave laser power 10-100kW;
  - (c) a continuous-wave laser power 100kW or more;of the laser used with the primary optics.

For the Point Rated Technical Criteria requirements listed below, Bidders should demonstrated using project description which include:

- (1) Dated and signed photographic evidence of the completed product;
- (2) The continuous-wave laser power rating (1-10 kW, 10-100 kW, 100 kW or more) of the laser used with the primary optics; and
- (3) Name, phone number, email address of Project referenced Point-of-Contact.

6. Bids will be evaluated and scored as specified in the table inserted below.

- (a) Canada will evaluate a maximum of five (5) **Eligible Demonstrated Projects (EDP)** per range.
- (b) Each cell in column "Score" will be equal to the multiplication of the cells in columns "a" and "b" for a specific range.

Example: If a Bidder provides three eligible demonstrated projects for the range "> 10 kW - 100 kW", the Bidder will get the following "Score":  $a \times b = 3 \times 5 = 15$  (range no 2).

		a	b		
Range		Number of <b>EDP</b>	Points per <b>EDP</b>	Score (a X b)	Maximum Score per Range
1	1-10 kW		2		10
2	>10 kW - 100 kW		5		25
3	> 100 kW		10		50
				TNPO*	85**

\* Total Number of Points Obtained (TNPO): Sum of the three cells in column "Score".

\*\* Maximum Number of Points Available.

#### 4.1.2 Financial Evaluation

The total price of each bid will be established using the following criteria:

- (a) Bidders should submit their financial bid in Canadian Funds including any applicable Taxes and Canadian Customs Duty (if applicable) and excluding the Goods and Services Tax (GST) or Harmonized Sales Tax (HST). For evaluation purposes, bids received in a foreign currency will be converted to Canadian funds using the appropriate rate of exchange using the rate quoted by the Bank of Canada as being in effect on date of bid closing.
- (b) Bidders must submit their prices DDP destination; Delivered Duty Paid.

#### 4.2 Basis of Selection - Highest Combined Rating of Technical Merit (70%) and Price (30%)

1. To be declared responsive, a bid must:
  - (a) comply with all the requirements of the bid solicitation; and
  - (b) meet all mandatory criteria.
  - (c) Obtain the required minimum number of six (6) points overall for the technical evaluation criteria which are subject to point rating [the lowest scenario: 3 eligible demonstrated projects in power range of 1-10 kW; 3X2 = 6].

The rating is performed on a scale of eighty-five (85) points.

2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 70 % for the technical merit and 30 % for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 70 %.

$$\text{Technical Merit Score} = \frac{\text{Total number of point obtained}}{\text{Maximum number of points available of 85}} \times 70$$

5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30 %.

$$\text{Price Score} = \frac{\text{Lowest evaluated price}}{\text{Evaluated price of each bid}} \times 30$$

6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract. In the event two or more responsive bids have the same highest combined rating of technical merit and price, the responsive bid that obtained the highest technical merit score will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 70/30 ratio of technical merit and price, respectively. The total available points equals 85 and the lowest evaluated price is \$550,000 (55).

**Basis of Selection - Highest Combined Rating Technical Merit (70%) and Price (30%)**

		Bidder 1		Bidder 2		Bidder 3	
Overall Technical Score		50/85		60/85		70/85	
Bid Evaluated Price		\$600,000		\$550,000		\$700,000	
Calculations	<b>Technical Merit Score</b>	$50 / 85 \times 70 =$	<b>41.18</b>	$60 / 85 \times 70 =$	<b>49.41</b>	$70 / 85 \times 70 =$	<b>57.65</b>
	<b>Pricing Score</b>	$55 / 60 \times 30 =$	<b>27.50</b>	$55 / 55 \times 30 =$	<b>30.00</b>	$55 / 70 \times 30 =$	<b>23.57</b>
Combined Rating		<b>68.68</b>		<b>79.41</b>		<b>81.22</b>	
Overall Rating		3		2		1	

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## **PART 5 - CERTIFICATIONS**

Bidders must provide the required certifications and related documentation to be awarded a contract. Canada will declare a bid non-responsive if the required certifications and related documentation are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify the bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications to provide the related documentation or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

### **5.1 Mandatory - Certifications Precedent to Contract Award**

#### **5.1.1 Code of Conduct and Certifications - Related documentation**

1. By submitting a bid, the Bidder certifies, for himself and his affiliates, to be in compliance with the Code of Conduct and Certifications clause of the Standard instructions. The related documentation hereinafter mentioned will help Canada in confirming that the certifications are true. By submitting a bid, the Bidder certifies that it is aware, and that its affiliates are aware, that Canada may request additional information, certifications, consent forms and other evidentiary elements proving identity or eligibility. Canada may also verify the information provided by the Bidder, including the information relating to the acts or convictions specified herein, through independent research, use of any government resources or by contacting third parties. Canada will declare non-responsive any bid in respect of which the information requested is missing or inaccurate, or in respect of which the information contained in the certifications is found to be untrue, in any respect, by Canada. The Bidder and any of the Bidder's affiliates, will also be required to remain free and clear of any acts or convictions specified herein during the period of any contract arising from this bid solicitation.
2. Bidders who are incorporated, including those bidding as a joint venture, must provide with their bid or promptly thereafter a complete list of names of all individuals who are currently directors of the Bidder. Bidders bidding as sole proprietorship, including those bidding as a joint venture, must provide the name of the owner with their bid or promptly thereafter. Bidders bidding as societies, firms, partnerships or associations of persons do not need to provide

lists of names. If the required names 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 will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

3. Canada may, at any time, request that a Bidder provide properly completed and Signed Consent Forms (Consent to a Criminal Record Verification form-PWGSC-TPSGC 229) (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/229.pdf>) for any or all individuals aforementioned within the time specified. Failure to provide such Consent Forms within the time period provided will result in the bid being declared non-responsive.

## 5.2 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.

### 5.2.1 Federal Contractors Program - Certification

Federal Contractors Program - \$200,000 or more

1. The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at \$200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

- 
2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC ( <http://www.servicecanada.gc.ca/cgi-bin/search/eforms/index.cgi?app=profile&form=lab1168&dept=sc&lang=e> ).
3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:
- The Bidder or the member of the joint venture
- (a) ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- (b) ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44 ( <http://laws.justice.gc.ca/en/E-5.401/index.html>);
- (c) ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC ( having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;
- (d) ( ) is subject to the FCP, and has a valid certificate number as follows:  
\_\_\_\_\_ (e.g. has not been declared an ineligible contractor by HRSDC.)

Further information on the FCP is available on the HRSDC Web site ( <http://www.hrsdc.gc.ca/eng/labour/equality/fcp/index.shtml> ).

Solicitation No. - N° de l'invitation

W7701-135548/B

Amd. No. - N° de la modif.

File No. - N° du dossier

BAP-2-35448

Buyer ID - Id de l'acheteur

ba1001

CCC No./N° CCC - FMS No/ N° VME

W7701-135548

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## **PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS**

### **6.1 Financial Capability**

SACC Manual Clause A9033T (2012-07-16), Financial Capability.

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

Notice: Numbering will be revised at contract award

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

### **7.1 Requirement**

The Contractor must provide the item detailed under the "Line Item Detail" on page 2 in accordance with the Requirement at Annex "A".

### **7.2 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.

#### **7.2.1 General Conditions**

2030 (2012-11-19), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

#### **7.2.2 Supplemental General Conditions**

4003 (2010-08-16) Licensed Software, apply to and form part of the Contract.

4004 (2010-08-16) Maintenance and Support Services for Licensed Software, apply to and form part of the Contract.

### **7.3 Term of Contract**

#### **7.3.1 Delivery Dates**

There are four (4) deliverables which must be received on or before:

- Deliverable 1: June 30th, 2013;
- Deliverable 2: December 31st, 2013;
- Deliverable 3: February 28th, 2014; and
- Deliverable 4: March 31st, 2014.

## 7.4 Authorities

### 7.4.1 Contracting Authority

The Contracting Authority for the Contract is:

Marial Tremblay - Supply Specialist

Postal Address: Public Works and  
Government Services Canada  
CFB Bagotville, PO Box 380  
Building 71, Room 115  
Alouette, Quebec, G0V 1A0, Canada

Telephone: (418) 677-4000, Ext.: 4159

Facsimile: (418) 677-3288

E-mail address: marial.tremblay@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.

### 7.4.2 Technical Authority

The Technical Authority for DRDC is :

(to be completed at contract award by PWGSC)

Name:

Address:

Tel.:

Fax:

E-mail:

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 related to 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.

### 7.4.3 Contractor's Representatives

Name and telephone number of the person responsible for:

(a) Contract Manager:

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

Title: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Facsimile No.: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

(b) Delivery follow-up:

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

Title: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Facsimile No.: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

## 7.5 Payment

### 7.5.1 Basis of Payment

#### 7.5.1.1 Firm Lot Price

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid the firm lot price of \$\_\_\_\_\_ (to be completed at contract award by PWGSC). Customs duties are included, and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

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.

### 7.5.2 Method of Payment

#### 7.5.2.1 Milestone Payments

1. Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract, up to 90 percent of the amount claimed and approved by Canada if:
  - (a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111, <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf> Claim for Progress Payment , and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
  - (b) the total amount for all milestone payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;
  - (c) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
  - (d) all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all Work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.

### 7.5.2.2 Schedule of Milestones

The schedule of milestones for which payments will be made in accordance with the Contract is as follows:

Milestone No.	Description or "Deliverable" (please refer to article A.3 of Annex "A" for all details)	Percentage of Contract Value	Due Date or "Delivery Date"
1	A detailed design of the optical system including all relevant parameters and diagrams;	20%	June 30th, 2013
2	An intermediate proof of completion of the optical system frame core;	20%	December 31st, 2013
3	An operational, tested and aligned optical system along with performance characterization test results;	45%	February 28th, 2014
4	Technical and installation support and training at DRDC's facilities.	15%	March 31st, 2014
		100%	

### 7.6 Liability During the Testing Work

Under Milestone 4, the Contractor is liable for all damages and costs caused to the IPG fiber laser as a result of excessive backreflections from the Optical Beam Expander during the 15 minute test run described in Milestone 4. Costs include, but are not limited to, replacement of the damaged part, shipping and servicing up to a limit of \$ 250,000. The liability becomes inapplicable upon successful completion of Milestone 4.

### 7.7 SACC Manual Clauses

Number	Date	Title
C2000C	2007-11-30	Taxes - Foreign-based Contractor
C3020C	2010-01-11	Exchange Rate/Milestone Payment

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## 7.8 Invoicing Instructions - Progress Payment Claim

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf> Claim for Progress Payment .

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
  - (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
  - (c) the description and value of the milestone claimed as detailed in the Contract.
2. The Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, 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 GST/HST payable as it was claimed and payable under the previous claims for progress payments.
  3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the DRDC Procurement Officer identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

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

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

## 7.9 Certifications

### 7.9.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation 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.

## 7.10 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the province of Quebec.

## 7.11 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
  - (i) 4003 (2010-08-16) Licensed Software, and
  - (ii) 4004 (2010-08-16) Maintenance and Support Services for Licensed Software;
- (c) 2030 (2012-11-19), General Conditions - Higher Complexity - Goods;
- (d) Annex "A" - Requirement; and
- (e) the Contractor's bid dated \_\_\_\_\_, as amended \_\_\_\_\_ (to be completed at contract award by PWGSC).

## 7.12 SACC Manual Clauses

Number	Date	Title
A9006C	2012-07-16	Defence Contract
B1501C	2006-06-16	Electrical Equipment

## 7.13 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destination specified in the Contract and delivered Delivered Duty Paid (DDP) "Defence R&D Canada (DRDC) - Valcartier, Québec, Quebec, Canada" Incoterms 2000 for shipments from a commercial contractor.

## **ANNEX " A " - REQUIREMENT**

### **A.1 Introduction**

#### **A.1.1 Background**

Defence Research and Development Canada (DRDC) is undertaking a new research initiative in the domain of high power lasers and fibre optics. DRDC is thus soliciting submissions for the development and delivery of an optical beam collimating and focusing system.

#### **A.1.2 General Description**

DRDC has a requirement for an optical beam collimating and focusing system, hereby named as the optical beam expander (BEX). The primary objective of the BEX is to allow focusing a kW-class continuous wave laser beam at different ranges. The BEX will also integrate an optical camera and a ranging system so as to be able to automatically determine the required focus distance. The system will be lightweight, weatherproof, passively cooled, exhibiting minimal back reflections and with electronic adjustment and tuning abilities. The Contractor will have to demonstrate its expertise and knowledge in the field of high power optical beam control systems by providing information on the number and scope of completed projects, as per the evaluation criteria.

#### **A.1.3 Special Considerations**

The exact specifications of the system are considered to be sensitive and will only be supplied upon contract award to the winning bidder. The specifications are not deemed necessary for bid proposals. These include parameters represented by LAS\_POW, LAS\_PROV, BEX\_AL, RAN\_MIN, RAN\_MAX, ADJ\_RES, RAN\_EX1, RAN\_SP1, RAN\_EX2, RAN\_SP2, RAN\_EX3, RAN\_SP3, LRF\_RAN.

### **A.2 Appendix 1 of Annex "A" - Description and Technical specifications (4 pages)**

The description and technical specifications attached hereto are to be inserted at this point and forms part of this document.

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### A.3 Deliverables

Four distinct deliverables will be provided to DRDC Valcartier:

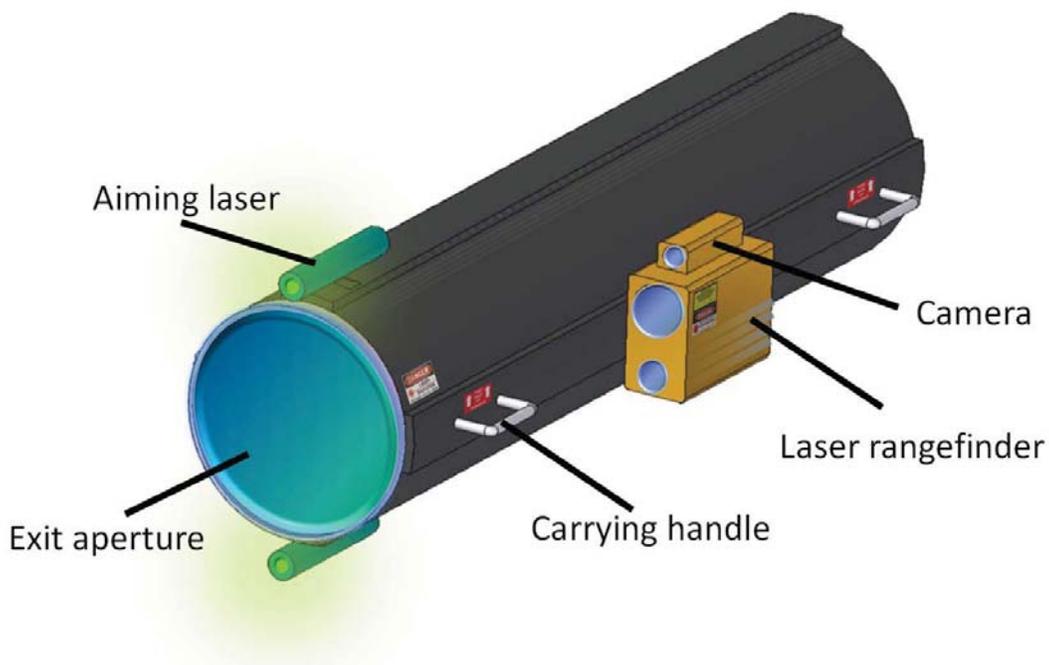
- (1) Technical documentation detailing the parameters, dimensions, and characteristics of the beam expander satisfying the requirements specified in the Contract. The document will include an inferred laser spot diameter as a function of the specified distance. The documentation will be subject to approval and minor modifications by DRDC Valcartier in order to proceed with the contract. This deliverable represents 20 % of the contract's value and must be completed and delivered by June 30th, 2013.
- (2) Photographic evidence of a pre-assembled beam expander system excluding the outermost converging lens, and stop window. The assembly will be subject to inspection and approval by a DRDC representative on the Contractor's premises. This deliverable represents 20% of the contract's value and must be completed and delivered by December 31st, 2013
- (3) A completed, functional, assembled beam expander including all subcomponents, accessories, software and control mechanism as specified in the technical requirements. This deliverable represents 45% of the contract's value and must be completed and delivered by February 28th, 2014.
- (4) Installation, operational demonstration and user training of the beam expander on DRDC's fibre laser, to be performed on DRDC's premises. Installation, training and demonstrations will last no more than two working days. The installation will be deemed successful when:
  - (a) All of the beam expander the features are demonstrated;
  - (b) Continuous operation of the beam expander with the laser at its maximum operating power for 15 minutes aimed at a non-reflecting surface is achieved;
  - (c) No excessive back-reflection error messages are reported by the IPG laser control software.

This deliverable represents 15% of the contract's value and must be completed and delivered by March 31st, 2014.

This Appendix provides the description and technical specifications for the requested Optical Beam Expander (BEX). All requirements are mandatory. Parameters identified by a string will be provided upon attribution of the contract: LAS\_POW, LAS\_PROV, BEX\_AL, RAN\_MIN, RAN\_MAX, ADJ\_RES, RAN\_EX1, RAN\_SP1, RAN\_EX2, RAN\_SP2, RAN\_EX3, RAN\_SP3, LRF\_RAN.

## 1. GENERAL DESCRIPTION

1.1 The BEX will be designed to expand and focus the laser beam from a LAS\_POW kW IPG single-mode laser. It will be able to focus the beam at any distance from RAN\_MIN m to RAN\_MAX. It will also incorporate a laser rangefinder for range assessment, an optical camera to observe the target, and visible lasers for aiming purposes. Figure 1 below depicts a possible overview of the BEX for illustration purposes.



*Figure 1: An overview of the beam expander*

## **2. MANDATORY TECHNICAL REQUIREMENTS**

### **2.1 Mechanical design**

2.1.2 The BEX will feature an aluminum tube construction, with handles on both sides for a 2-person lift. The bottom will have a mounting plate and threaded holes at the nominal balance point to attach the BEX on a tripod or on pan & tilt. Total system weight with secondary components and cables will not exceed 160 lbs. The delivered system will include a padded, robust transport case.

### **2.2 Optical design**

2.2.1 The BEX must be of a refractive telescope type. At its input, it will be connected to the fibre ending of a LAS\_POW kW continuous-wave 1076 nm laser from IPG). The laser will be connected to the BEX through single-mode fibre connector (HLC-16 type connector) with a 40  $\mu\text{m}$  core diameter. The exit aperture of the BEX will be at most BEX\_AP in diameter. Additionally, a protective and removable exit window will be added to protect the exit large-diameter lens. A spare protective window will be provided with the system. Total propagation losses of the beam expander including the protective window shall not exceed 200 ppm, achieved through the use of ultralow absorption glass and appropriate antireflective coatings for all optical components. The BEX will incorporate an electronically-controlled protective hard shutter at the exit aperture.

### **2.3 Thermal resistance**

2.3.1 The BEX should be passively-cooled, and remain functional for continuous LAS\_POW laser operation in between a -10 °C and +50 °C ambient temperature range. At least one temperature probe will be installed inside the BEX for monitoring purposes.

## 2.4 Tuning

2.4.1 The BEX will comprise a mechanism to continuously focus the exit beam at distances ranging from RAN\_MIN metres to RAN\_MAX. The mechanism shall be implemented by electronically adjusting the axial position of the inner, small diameter lens, with a resolution smaller than ADJ\_RES.

## 2.5 Optical Performance

2.5.1 The BEX will theoretically allow focusing a perfect  $M^2=1$  laser Gaussian beam at RAN\_EX1, RAN\_EX2, and RAN\_EX3 with respective  $1/e^2$  spot diameters of, at most, RAN\_SP1, RAN\_SP2, and RAN\_SP3. The optical system shall be designed for best wavefront performance at a nominal 200 m target range. The BEX shall be designed so as to minimise stray emissions off the main optical axis.

## 2.6 Secondary systems

2.6.1 The BEX will comprise three factory-assembled aligned and removable secondary optical systems.

- 2.6.2 A boresighted eyesafe laser rangefinder, with a range of at least LRF\_RAN km, and a  $\leq 2$  m precision at 2 km;
- 2.6.3 A boresighted high sensitivity day/night camera, with an adjustable zoom up to 25 x; a minimum resolution of 700 x 400 pixels; a minimum colour sensitivity of 0.05 lux and a signal-to-noise ratio of at least 50 dB and
- 2.6.4 Two axially opposed boresighted within  $\pm 0.1$  mrad green lasers emitting at 532 nm for aiming purposes. Each laser should have a maximum output power of at least 200 mW.

## 2.7 Control and interface

2.7.1 The BEX will be controlled via a simple interface (either USB, RS-232 or GigE) compatible with a Windows-based platform. The control interface will:

- 2.7.2 Display the visible camera image with a cross-hair boresighted to the laser beam;
- 2.7.3 Display the range provided by the rangefinder;
- 2.7.4 Display the range to the focal point of the BEX;

- 2.7.5 Display the inferred spot diameter at the given range;
  - 2.7.6 Display the temperature reading from the probe inside the BEX;
  - 2.7.7 Display a warning message if the temperature inside the BEX exceeds safe operation levels;
  - 2.7.8 Allow for automatic adjustment of the focusing mechanism to match the rangefinder's readings;
  - 2.7.9 Allow for a manual mode in which the user will enter the desired focusing range;
  - 2.7.10 Allow for fine-tuning of the focusing range after the BEX adjusted itself to the rangefinder's reading;
  - 2.7.11 Allow to turn the green aiming lasers on and off at a full and reduced power level and
  - 2.7.12 Allow to control the exit shutter.
- 
- 2.7.13 The BEX must have an additional connector for the video feed of the camera;
  - 2.7.14 The hard shutter mechanism on the BEX will also incorporate an electrical switch designed to be in a closed-circuits when the aperture is fully opened, and open-circuit otherwise. The purpose of this switch is to be connected to the laser interlock mechanism, so as to avoid laser emission if the shutter is not fully opened and
  - 2.7.15 The communication protocol and/or software library must be provided to allow BEX integration in an in-house or third-party software.

## **2.8 Power supply**

- 2.8.1 The BEX will operate on a 10 V – 36 V DC power supply.

## **2.9 Environmental resistance**

- 2.9.1 The BEX and all its subsystems must be operational at temperatures between -10 °C and +50 °C;
- 2.9.2 The BEX and all its subsystems must be operational at humidity levels between 0 % and 100 %;
- 2.9.3 The BEX and all its subsystems must be operational under light rain exposure;
- 2.9.4 The BEX and all its subsystems must be operational under full sunlight exposure and
- 2.9.5 The BEX and all its subsystems will remain functional when subject to vibrations occurring during off-road vehicle transport.