

**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> Support tech ing.	
<b>Solicitation No. - N° de l'invitation</b> W7701-145748/A	<b>Date</b> 2014-04-11
<b>Client Reference No. - N° de référence du client</b> W7701-14-5748	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$QCN-014-15902	
<b>File No. - N° de dossier</b> QCN-3-36202 (014)	<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> Lemay, Hélène	<b>Buyer Id - Id de l'acheteur</b> qcn014
<b>Telephone No. - N° de téléphone</b> (418) 649-2974 ( )	<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> TRAVAUX PUBLICS ET SERVICES GOUVERNEMENTAUX CANADA BATIMENT 53 2459 BOUL. PIE XI NORD 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**

<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/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

**Issuing Office - Bureau de distribution**  
TPSGC/PWGSC  
601-1550, Avenue d'Estimauville  
Québec  
Québec  
G1J 0C7



Solicitation No. - N° de l'invitation

W7701-145748/A

Amd. No. - N° de la modif.

File No. - N° du dossier

QCN-3-36202

Buyer ID - Id de l'acheteur

qcn014

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

W7701-14-5748

CCC No./N° CCC - FMS No/ N° VME

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**TITLE: Technical and Engineering Support for Characterization of Electro-Optical (EO) Systems**

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## **PART 1 - GENERAL INFORMATION**

### **1. Introduction**

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

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications: 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.

The Annexes include the Statement of Work, the Basis of Payment, the Security Requirements Checklist, DND 626 Task Authorization Form and any other annexes.

### **2. Summary**

#### **2.1 Background**

The Canadian Forces (CF) is regularly required to select equipment to support their operations. Sensors are an integral part of the electro-optical systems used to detect and locate threats. One of DRDC's mandates is to support the CF in its electro-optical system acquisition process by technically translating their operational needs, evaluating the performance of sensors currently in use, evaluating the potential of sensors from emerging technologies, analyzing options and issuing recommendations.



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Sensor performance is evaluated in four ways, depending on time and objectives:

- a. Laboratory characterization of basic sensor parameters via quantitative measurements;
- b. Exterior testing to emulate sensor performance in conditions similar to those encountered in operation (e.g. low light, natural spectral content, difficult environment, etc.);
- b. Sensor performance modelling; and
- d. Laboratory application of comparative evaluation methods to measure performances similar to those encountered in operation.

## **2.2 Objective**

The objective of this statement of work is the provision of technical and engineering services for the prediction/characterization of the performance of electro-optical (EO) systems covering spectral bands from ultraviolet (UV) to infrared (IR) and including image intensifier systems (I2). The Contractor shall meet the following objectives:

1. Characterize EO sensors in the laboratories of Defence Research and Development Canada (DRDC) Valcartier;
2. Support testing for the characterization of sensor performance in the field in conditions similar to those encountered in operation (e.g. low light, natural spectral content, difficult environment, etc.);
3. Improve detection/recognition/identification (DRI) performance prediction tools for laboratory-characterized sensors; and
4. Support hardware and/or software development, improvement and modification of test and characterization equipment.

The nature of the services required will cover applied research program tasks and direct Canadian Forces support tasks.

The work shall be completed at the offices of DRDC Valcartier.

## **2.3 Additional information**

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

The period of the Contract is from date of Contract to March 31st, 2017, inclusive.

Estimated amount of available funding for this contract: \$840,000.00, Applicable Taxes extra.



The Contractor shall use DRDC Valcartier ultraspecialized testing equipment to test, among other things, classified electro-optical equipment and controlled goods. As a result, the classified and unclassified work must be done on-site at DRDC Valcartier.

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

*"There is a security requirement associated with this requirement. For additional information, consult Part 6 - Security, Financial and Other Requirements, and Part 7 - Resulting Contract Clauses. For more information on personnel and organization security screening or security clauses, bidders should refer to the Canadian Industrial Security Directorate (CISD), Industrial and Security Program of Public Works and Government Services Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website".*

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.

The requirement is subject to the provisions of the Agreement on Internal Trade (AIT).

The requirement is limited to Canadian services.

This procurement is subject to the Controlled Goods Program.

### **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.



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## 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 Clause

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.

Bids must be submitted to:

**Bid receiving – PWGSC**  
**1550 D'Estimauville Avenue**  
**Quebec, Quebec**  
**G1J 0C7**

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



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### 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.



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**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



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

All enquiries must be submitted in writing to the Contracting Authority, [helene.lemay@tpsgc-pwgsc.gc.ca](mailto:helene.lemay@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 question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

#### **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**

Development and Research for Defence Canada (DRDC) Valcartier 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"*



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## 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 (**five (5)** hard copies)

Section II: Financial Bid (**two (2)** hard copies)

Section III: Certifications (**one (1)** hard copy)

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

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

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

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

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

#### 1.1 Section I: Technical Bid

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

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order



of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

## **1.2 Section II: Financial Bid**

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

- (a) **Pricing :** Bidders must submit a firm all-inclusive hourly rate for each resource proposed, for each year of the contract period.
- (b) The information must be provided in accordance with the Basis of Payment in Annex B.
- (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.

### **1.2.2 Exchange Rate Fluctuation**

C3011T (2013-11-06), Exchange Rate Fluctuation

## **1.3 Section III: Certifications**

Bidders must submit the certifications required under Part 5.

## **1.4 Section IV: Additional Information**

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.



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File No. – N° du dossier  
QCN-3-36202

Buyer ID – id de l'acheteur  
QCN014

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Canada requests that bidders provide the following information :

**Administrative representative :**

Name :

Telephone :

Facsimile :

Email :

**Technical representative :**

Name :

Telephone :

Facsimile :

Email :



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## **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 and Point rated Technical Criteria**

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

### **1.2 Financial Evaluation**

#### **1.2.1 Mandatory Financial Criteria**

- a) Bidders must submit a firm all-inclusive hourly rate for each key resource proposed and for each category of resources, for each year of the contract period.
- b) The information must be provided in accordance with the Basis of Payment in Annex B.

#### **1.2.2 Evaluation of Price**

The price of the bid will be evaluated in Canadian dollars, the Goods and Services Tax or the Harmonized Sales Tax 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 1, Evaluation of Price.



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## **2. Basis of Selection**

### **2.1 Basis of Selection - Highest Combined Rating of Technical Merit and Price**

1. To be declared responsive, a bid must:
  - a) comply with all the requirements of the bid solicitation;
  - b) meet all mandatory criteria; and
  - c) obtain the required minimum points specified for each criterion and each group of criteria for the technical evaluation, and
  - d) obtain the required minimum of 102 points overall for the technical evaluation criteria which are subject to point rating.

The rating is performed on a scale of 184 points.

2. Bids not meeting a) or b) or c) or d) 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 60 % for the technical merit and 40% 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 60 %.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 40%.
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.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 184 and the lowest evaluated price is \$769,428.41.



**Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)**

	<b>Bidder</b>		
	<b>Bidder 1</b>	<b>Bidder 2</b>	<b>Bidder 3</b>
<b>Overall Technical Score</b>	120/184	145/184	160/184
<b>Bid Evaluated Price</b>	\$896,548,50	\$769,428.41	\$826,200.30
<b>Calculations</b>			
<b>Technical Merit Score</b>	$120/184 \times 60 = 39.13$	$145/184 \times 60 = 47.28$	$160/184 \times 60 = 52.17$
<b>Pricing Score</b>	$769\,428.41/896\,548.50 \times 40 = 34.33$	$769\,428.41/769\,428.41 \times 40 = 40.00$	$769\,428.41/826\,200.30 \times 40 = 37.25$
<b>Combined Rating</b>	73.46	87.28	89.42
<b>Overall Rating</b>	<b>3rd</b>	<b>2nd</b>	<b>1st</b>



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## 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](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" 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.

### 2. Additional Certifications Required 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 inform the Bidder of a time frame within which to provide the information. Failure to comply with the request of the Contracting Authority and to provide the certifications within the time frame provided will render the bid non-responsive.



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## 2.1 Canadian Content Certification

This procurement is limited to Canadian services.

The Bidder certifies that:

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

**2.1.1.** *SACC Manual* clause [A3050T](#) (2010-01-11) Canadian Content Definition.

## 2.2 Status and Availability of Resources

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

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

## 2.3 Education and Experience

**2.3.1** *SACC Manual* clause [A3010T](#) (2010-08-16) Education and Experience



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## PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

### 1. Security Requirement

1. Before award of a contract, the following conditions must be met:
  - (a) the Bidder must hold a valid organization security clearance as indicated in Part 7 - Resulting Contract Clauses;
  - (b) the Bidder's proposed individuals requiring access to classified or protected information, assets or sensitive work site(s) must meet the security requirement as indicated in Part 7 - Resulting Contract Clauses;
  - (c) the Bidder must provide the name of all individuals who will require access to classified or protected information, assets or sensitive work sites;
2. Bidders are reminded to obtain the required security clearance promptly. Any delay in the award of a contract to allow the successful bidder to obtain the required clearance will be at the entire discretion of the Contracting Authority.
3. For additional information on security requirements, bidders should refer to the [Canadian Industrial Security Directorate \(CISD\), Industrial Security Program](http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html) of Public Works and Government Services Canada (<http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html>) website.

### 2. Financial Capability

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

### 3. Controlled Goods Requirement

*SACC Manual* clause [A9130T](#) (2011-05-16) Controlled Goods Program



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## 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.

#### 1.1 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.

##### 1.1.1 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 F.
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. 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.

The Contractor shall not be paid for the preparation or presentation of a proposal or for the supplying of further information required for the preparation and awarding of the TA.



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.

#### **1.1.2 Task Authorization Limit**

The DND Procurement Authority may authorize individual task authorizations up to a limit of **\$100,000.00**, 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

#### **1.1.3 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 10%.

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.

2. 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.

3. Canada will have no obligation to the Contractor under this clause if Canada terminates the Contract in whole or in part for default.

#### **1.1.4 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.



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## **1.2 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

### **2.4 Non-disclosure Agreement**

The Contractor must obtain from its employee(s) or subcontractor(s) the completed and signed non-disclosure agreement, attached at Annex D, and provide it to the Contracting and Technical Authority before they are given access to information by or on behalf of Canada in connection with the Work.



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### 3. Security Requirement

- 3.1 The following security requirement (SRCL and related clauses) applies and form part of the Contract.

#### SECURITY REQUIREMENT FOR CANADIAN SUPPLIER: PWGSC FILE # W7701-145748

1. The Contractor/Offeror must, at all times during the performance of the Contract/Standing Offer, hold a valid **Facility Security Clearance** at the level of **SECRET**, with approved Document safeguarding at the level of **SECRET**, issued by the Canadian Industrial Security Directorate (CISD), Public Works and Government Services Canada (PWGSC).
2. The Contractor/Offeror personnel requiring access to **CLASSIFIED** information, assets or sensitive work site(s) must **EACH** hold a valid personnel security screening at the level of **SECRET**, granted or approved by the CISD, PWGSC.
3. This contract includes access to controlled goods. Prior to access, the contractor must be registered in the Controlled Goods Program of Public Works and Government Services Canada.

In order to gain access to Controlled Goods, the contractor personnel, who DND would deem to be embedded contractors, pursuant to the 2007 Exchange of Letters between DND and the U.S. Department of State, must **EACH** be citizens of Canada and hold a valid **SECRET** clearance, granted or approved by CISD/PWGSC.

4. Processing of **CLASSIFIED** information electronically at the Contractor/Offeror's site is NOT permitted under this Contract/Standing Offer.
5. Subcontracts which contain security requirements are **NOT** to be awarded without the prior written permission of CISD/PWGSC.
6. The Contractor/Offeror must comply with the provisions of the:
  - (a) Security Requirements Check List and security guide (if applicable), attached at Annex E;
  - (b) *Industrial Security Manual* (Latest Edition).



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#### **4. Term of Contract**

##### **4.1 Period of Contract**

The period of the Contract is from date of Contract to March 31, 2017 inclusive.

#### **5. Authorities**

##### **5.1 Contracting Authority**

The Contracting Authority for the Contract is:

Name: Hélène Lemay  
Title: Supply Specialist  
Public Works and Government Services Canada  
Acquisitions Branch  
Address: 601-1550 D'Estimauville Avenue  
Quebec (Quebec) G1J 0C7

Telephone: 418-649-2974  
Facsimile: 418-648-2209  
E-mail address: helene.lemay@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 at contract award*)**

The Technical Authority for the Contract is:

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

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

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be



discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

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

#### **Administrative representative :**

Name :

Telephone :

Facsimile :

Email :

#### **Technical representative :**

Name :

Telephone :

Facsimile :

Email :

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

The Procurement Authority for the Contract is:

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

Organization: \_\_\_\_\_

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.



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## **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



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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 Pie-XI Blvd North, 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 **\$840,000.00**. 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.



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### **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.



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**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



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## 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.



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## 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.

### 9.2 SACC Manual Clauses

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

## 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 completed 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) supplemental general 4002 (2010-08-16), Software Development or Modification Services
- c) the general conditions 2040 (2014-03-01), General Conditions - Research & Development, apply to and form part of the Contract.;
- d) Annex A, Statement of Work;
- e) Annex B, Basis of Payment;
- f) Annex C, Contractor Disclosure of Foreground Information;
- g) Annex D, Non-disclosure Agreement
- h) Annex E, Security Requirements Check List;
- i) Annex F, DND 626, Task Authorization Form
- j) the signed Task Authorizations (including all of its annexes, if any)
- k) 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. Controlled Goods Program**

*SACC Manual* clause [A9131C](#) (2011-05-16), Controlled Goods Program  
*SACC Manual* clause B4060C (2011-05-16), Controlled Goods

### **16. 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.



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- (iv) A description of any major equipment purchased or constructed during the period of the report.

**17. Canadian Forces 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.

**18. Identification Badge**

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



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## ANNEX A

### STATEMENT OF WORK

#### 1. GENERAL

##### 1.1 Title

Technical and Engineering Support for Characterization of Electro-Optical (EO) Sys-tems

##### 1.2 Background

The Canadian Forces (CF) is regularly required to select equipment to support their operations. Sensors are an integral part of the electro-optical systems used to detect and locate threats. One of DRDC's mandates is to support the CF in its electro-optical system acquisition process by technically translating their operational needs, evaluating the performance of sensors currently in use, evaluating the potential of sensors from emerging technologies, analyzing options and issuing recommenda-tions.

Sensor performance is evaluated in four ways, depending on time and objectives:

- a. Laboratory characterization of basic sensor parameters via quantitative measurements;
- b. Exterior testing to emulate sensor performance in conditions similar to those encountered in operation (e.g. low light, natural spectral content, difficult environment, etc.);
- c. Sensor performance modelling; and
- d. Laboratory application of comparative evaluation methods to measure performances similar to those encountered in operation.

##### 1.3 Objective

The objective of this statement of work is the provision of technical and engineering services for the prediction/characterization of the performance of EO systems covering spectral bands from ultraviolet (UV) to infrared (IR) and including image intensifier systems (I2). The Contractor shall meet the following objectives:

1. Characterize EO sensors in the laboratories of Defence Research and Development Canada (DRDC) Valcartier;
2. Support testing for the characterization of sensor performance in the field in



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conditions similar to those encountered in operation (e.g. low light, natural spectral content, difficult environment, etc.);

3. Improve detection/recognition/identification (DRI) performance prediction tools for laboratory-characterized sensors; and
4. Support hardware and/or software development, improvement and modification of test and characterization equipment.

The nature of the services required will cover applied research program tasks and direct Canadian Forces support tasks.

#### **1.4 Acronyms**

CCD	Charge-coupled device
CF	Canadian Forces
CMOS	Complementary metal–oxide–semiconductor
DRDC	Defence Research and Development Canada
EBI	Equivalent background illumination
EMCCD	Electron-multiplying CCD
EO	Electro-optical
I2	Image intensifier
MRC	Minimum resolvable contrast
MRT	Minimum resolvable temperature
MTF	Modulation transfer function
NETD	Noise equivalent temperature difference
SNR	Signal-to-noise ratio
SiTF	Signal transfer function
UV	Ultraviolet

#### **2. APPLICABLE DOCUMENTS (references)**

N/A



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### **3. SCOPE OF WORK**

#### **3.1 Characterization of image intensifiers or their components (e.g. I2 tubes) and performance evaluation**

The Contractor shall characterize image intensifiers or their components (e.g. I2 tubes) and evaluate their performance in accordance with the criteria set out in the task authorization. This task includes taking measurements in DRDC Valcartier laboratories in accordance with the methodology developed by DRDC Valcartier and the data analysis. The methodology shall be specified during the implementation of task authorizations. The main parameters to be measured are:

- a. Impulse response (modulation transfer function (MTF));
- b. Resolution response (minimum resolvable contrast (MRC));
- c. Image noise (signal-to-noise ratio (SNR) and equivalent background illumination (EBI));
- d. Luminous gain;
- e. Dynamic range;
- f. Field of view; and
- g. Spectral response and electricity consumption.

#### **3.2 Characterization of infrared sensors (0.9 µm to 15 µm) or their components and performance evaluation**

The Contractor shall characterize infrared sensors (0.9 µm to 15 µm) or their components and evaluate their performance in accordance with the criteria set out in the task authorization. Infrared sensors include photonic sensors, thermal sensors and microbolometers. This task includes taking measurements in DRDC Valcartier laboratories in accordance with the methodology developed by DRDC Valcartier and data analysis. The methodology shall be specified during the implementation of task authorizations. The main parameters to be measured are:

- a. Impulse response (MTF);
- b. Resolution response (minimum resolvable temperature (MRT));
- c. Image noise (3D-noise and noise equivalent temperature difference (NETD));
- d. Transfer function (signal transfer function (SiTF));
- e. Dynamic range;
- f. Spectral response; and
- g. Electricity consumption.



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### **3.3 Characterization of UV/visible sensors or their components to evaluate performance**

The Contractor shall characterize day/night vision sensors or their components and measure their performance. Day/night vision sensors include:

- a. Complementary metal–oxide–semiconductor (CMOS) sensors;
- b. Charge-coupled device (CCD) sensors;
- c. Electron-multiplying CCD (EMCCD) sensors;
- d. Sensors that function in UV; and
- e. Day sights, such as binoculars, sights or telescopes.

This task includes taking measurements in DRDC Valcartier laboratories in accordance with the methodology developed by DRDC Valcartier and data analysis. The methodology shall be specified during the implementation of task authorizations. The main parameters to be measured are:

- a. Impulse response (MTF);
- b. Resolution response (MRC);
- c. Image noise;
- d. Luminous gain;
- e. Dynamic range;
- f. Spectral response; and
- g. Energy consumption.

### **3.4 Characterization of sensor performance during field tests**

The Contractor shall characterize sensor performance during tests performed outside the laboratory in a natural environment. Depending on the nature of the sensor to be tested, the purpose of the measurement and the time available for characterization, the Contractor shall:

- a. Develop test plans;
- b. Set up and handle equipment involved in testing;
- c. Help adjust data acquisition systems to achieve test objectives;
- d. Help collect and save data; and
- e. Help reduce and analyze data.



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### **3.5 Detection/recognition/identification performance prediction tools**

The Contractor shall use and/or improve detection/recognition/identification performance prediction tools for laboratory-characterized sensors as set out in tasks 3.1 through 3.3. The Contractor's role includes:

- a. Reviewing literature;
- b. Improving/modifying the interfaces of detection performance prediction models;
- c. Programming and interfacing new modules or modifying existing modules to improve the validity of prediction tools. Modules include but are not limited to: optics, sensors, image processing, atmosphere, target, background and eye model; and
- d. Using detection/recognition/identification performance prediction tools for laboratory-characterized sensors.

### **3.6 Hardware and/or software development, improvement and modification of test and characterization equipment**

The Contractor shall support hardware and/or software development, improvement and modification of test and characterization equipment. The Contractor's role includes:

- a. Improving/modifying control hardware and/or software for laboratory acquisition instruments;
- b. Developing control hardware and/or software for laboratory acquisition instruments;
- c. Improving/modifying data analysis software; and
- d. Developing data analysis software.

### **3.7 Relative frequencies**

In order to meet objectives, efforts shall be distributed as follows:

Task 3.1 – 20%  
Task 3.2 – 20%  
Task 3.3 – 15%  
Task 3.4 – 10%  
Task 3.5 – 20%  
Task 3.6 – 15%



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## **4. REPORTS AND OTHER DELIVERABLES**

For each task, documents and reports shall be written in English using the Microsoft Office suite. As required, one hard copy and/or one electronic copy on CD or DVD shall be submitted.

### **4.1 Deliverables for tasks 3.1 through 3.4**

A report describing:

- a. Methodology used;
- b. Experimental results obtained in table and/or graph format; and
- c. A brief data analysis.

### **4.2 Deliverables for task 3.5**

Depending on the nature of the work, the deliverables shall be:

- a. Functional software with the source code on CD;
- b. A user manual;
- c. A literature review; and
- d. Experimental data processed in a table and/or graph format that can be incorporated into a Microsoft Office suite document.

### **4.3 Deliverables for task 1.6**

Depending on the nature of the work, the deliverables shall be:

- a. Functional software with the source code on CD;
- b. Documentation for the functional software in PDF format submitted on a CD; and
- c. A user manual.

### **4.4 Publications**

Any manuscript for publication in magazines, newspapers or other, including presentation summaries or other types of publication, shall be submitted to the technical authority for review and approval at least ninety (90) days before the date of the presentation or publication. An explicit reference regarding federal government funding must be included, and it must be clearly mentioned that the content is the authors' responsibility. The technical authority shall provide a written objection if there are specific elements (e.g. audience) that are not in the federal government's best interests. If the technical authority objects in writing, he/she shall send the written objection to the organization responsible for publication (the newspaper or conference).



## 5. MEETINGS

The Contractor shall organize the following meetings:

1. Preliminary task presentation meeting
2. Progress review meeting
3. Final task review meeting

The technical authority or an appointed DRDC Valcartier representative must chair the meetings listed above. The meetings will be held at DRDC Valcartier or at the Contractor's premises, as directed by the DRDC Valcartier representative. Videoconferencing can also be used. The technical authority and/or the Contractor, depending on the location of the meeting, must ensure that the required data, personnel and facilities are available for the meetings so they can be conducted in an efficient manner. Other informal meetings, if necessary, could be scheduled and held as required according to what was mutually agreed upon by the Contractor and the technical authority. The Contractor must keep minutes of all formal meetings listed above. For informal meetings, minutes will be recorded if required, according to what was agreed upon by the Contractor and the technical authority. The meeting agenda and minutes must be prepared and submitted to the technical authority.

Table 1 – Scheduling of Meetings

Meeting	Schedule
Preliminary task presentation meeting	Preliminary task presentation meeting will be held when a new task authorization is started.
Progress review meeting	Monthly or as required and specified by DRDC Valcartier.
Final task review meeting	At the end of the project.

### 5.1 Preliminary task presentation meeting

A preliminary task presentation meeting must be held when a new task authorization is started. The meeting must involve the technical authority and additional technical members, as appropriate, and Contractor personnel. The purpose of the meeting is to conduct a detailed review on the objectives of each task authorization. It could last up to two hours and must address all technical issues related to the task authorization to be done. The Contractor will be responsible for drawing up the agenda and publishing the minutes of the meeting.



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## **5.2 Progress review meeting**

A progress review meeting must be held on a regular basis for the duration of the contract (as described in Table 1). The meeting can be held via teleconference unless otherwise directed by the technical authority or its representative. This meeting must be attended by the technical authority and the appropriate personnel from the Contractor. The purpose of the meeting is to review the effort made from a management perspective (i.e. schedule compliance, budget, etc.) for a specific period. The frequency will be ad-justed by DRDC Valcartier if there is a need to track progress at different stages of the project. The progress review meeting must be brief and focus on providing a status report of recent tasks and issues without addressing detailed technical questions. The Contractor will be responsible for drawing up the agenda and publishing the minutes of the progress review meeting. These two documents (agenda and minutes) must be approved by DRDC Valcartier and published prior to the following meeting.

## **5.3 Final task review meeting**

A final task review meeting will be held upon completion of the project. The meeting will be held at DRDC Valcartier unless otherwise directed by the technical authority (upon agreement between technical authority and the Contractor, meetings could be held in the latter's premises). The purpose of the meeting is to review the effort made during the entire task authorization from a management perspective. It could last up to half day and must provide a detailed overview of all tasks and issues without addressing specific technical aspects. The Contractor will be responsible for drawing up the agenda and publishing the minutes of the meeting.



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## 6. RESOURCE CATEGORIES

### 6.1 Resource categories

The Contractor shall provide or have access to a team of qualified, competent and experienced resources, with complementary expertise that may be adapted to the various needs set out in each task, either within its company or through subcontractors. The team shall include the key resources and the other resources called on to do work under the tasks.

The needs set out in each task require expertise in the following six fields:

- a. Characterization of electro-optical systems (I2, IR and Vis)  
Tasks 3.1, 3.2, 3.3, in support of task 3.4
- b. Electro-optical measurements (I2, IR and Vis)  
Task 3.4, in support of tasks 3.1, 3.2, 3.3
- c. Performance modelling of electro-optical systems (I2, IR and Vis)  
Task 3.5, in support of tasks 3.1, 3.2, 3.3
- d. Software development  
Task 3.6, in support of tasks 3.4, 3.5
- e. Mechanical and opto-mechanical design  
Task 3.6, in support of tasks 3.1, 3.2, 3.3, 3.4
- f. Image processing  
In support of tasks 3.1, 3.2, 3.3, 3.4

Resources shall have the associated education and experience set out in the following list:

a. **Characterization of electro-optical systems (I2, IR and Vis)**  
**Education**

- A.1 Technical in physical technician or technical electronics
- A.2 Bachelor's degree in physics or engineering physics
- A.3 Master's degree in physics or engineering physics

**Mandatory experience for resources in A.1, A.2 and A.3:**

At least 12 months of experience in handling, measuring, calibrating and characterizing electro-optical systems



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**b. Electro-optical measurements (I2, IR and Vis)**  
**Education**

- B.1** Technical in physical technician or technical electronics
- B.2** Bachelor's degree in physics or engineering physics
- B.3** Master's degree in physics or engineering physics

**Mandatory experience for resources in B.1, B.2 and B.3:**

At least 12 months of experience in handling, calibrating and measuring using electro-optical systems.

**c. Performance modelling of electro-optical systems (I2, IR and Vis)**  
**Education**

- C.1** Bachelor's degree in physics, mathematics or in engineering physics
- C.2** Master's degree or higher in physics, mathematics or in engineering physics

**d. Software development**  
**Education**

- D.1** Bachelor's degree in computer science, computer engineering or in electrical engineering
- D.2** Master's degree in computer science, computer engineering or in electrical engineering

**e. Mechanical and opto-mechanical design**  
**Education**

- E.1** Technical in mechanical technician or in physical technician
- E.2** Bachelor's degree in mechanical engineering

**f. Image processing**  
**Education**

- F.1** Bachelor's degree in physics, mathematics, engineering physics or electrical engineering
- F.2** Master's degree or higher in physics, mathematics, engineering physics or electrical engineering



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## 6.2 Key resources:

The Contractor shall identify a group of at least four (4) key resources. The group shall be composed of at least:

- a. 2 intermediate engineers/scientists
- b. 1 senior engineer/scientist
- c. 1 intermediate technician

In that group, there shall be at least one (1) key resource with a Master's degree (or higher) in physics or engineering physics, at least one (1) key resource with a Bachelor's degree (or higher) in electrical engineering or computer engineering and at least one (1) key resource with a technical diploma in physics or engineering physics.

The role of the key resources is to:

- a. Help accomplish tasks as a specialist;
- b. Be involved as a key resource responsible for most of the work (over 50% of the time) of the task;
- c. Attend project meetings with the scientific authority;
- d. Propose solutions; and
- e. Act as project manager and manage a group of resources made up of technicians, engineers and/or physicists.

The experience of the proposed resources is defined as follows:

- a. Junior resource: between 1 and 3 years of experience
- b. Intermediate resource: between 4 and 12 years of experience
- c. Senior resource: over 12 years of experience

Note: The number of years of experience associated with the "junior, intermediate and senior" levels corresponds to the number of years of work since obtaining the required degree on the date that the bidder's proposal is submitted. The number of years of experience of resources who have completed post-graduate studies has been adjusted as follows: a Master's degree corresponds to one year of work experience, and a Doctorate corresponds to three.

## 6.3 Other resources:

The team's role is to supplement the expertise of the key resources. The team shall have the skills and expertise required for the tasks. The team shall not replace the key resources.



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## **7. GOVERNMENT SUPPLIED MATERIAL (GSM)**

### **7.1 General**

Although each task authorization request will contain detailed definition of government supplied material, the following paragraph provides a non-exhaustive list of material that could be provided.

### **7.2 List of material**

The list is based on commercially unavailable equipment or equipment that is difficult to fabricate in a timely or cost effective manner to execute task authorization in response to CF requirements. The list includes:

- a. Equipment available only in the CF inventory (all tasks);
- b. Specialized equipment (e.g. night vision goggles) (all tasks).

## **8. GOVERNMENT FURNISHED EQUIPMENT (GFE)**

### **8.1 General**

Although each task authorization request will contain detailed definition of government furnished equipment, the following paragraphs provide a non-exhaustive list of equipment that could be provided.

### **8.2 List of equipment**

The list is based on commercially unavailable equipment or equipment that is difficult to fabricate in a timely or cost effective manner to execute task authorization in response to CF requirements. The list includes:

- a. Equipment available only in the CF inventory (all tasks);
- b. Material developed by DRDC (all tasks).

## **9. SPECIAL CONSIDERATIONS**

None.

## **10. LOCATION OF WORK**

The work shall be completed at the offices of DRDC Valcartier..



## ANNEX B

### BASIS OF PAYMENT

#### 1. LABOUR :

The Contractor agrees to provide the following resources as and when requested by Canada at the following firm all inclusive rates (in accordance with the Payment provisions of the Contract):

Key proposed resources	Firm Hourly rate		
	AF 2014/15	AF 2015/16	AF 2016/17
Named key resources as per evaluation criteria:			
1. intermediate engineers/scientists			
a. _____	\$ _____	\$ _____	\$ _____
b. _____	\$ _____	\$ _____	\$ _____
2. senior engineer/scientist			
_____	\$ _____	\$ _____	\$ _____
3. intermediate technician			
_____	\$ _____	\$ _____	\$ _____

<u>Resource Categories</u>	Firm Hourly rate		
	AF 2014/15	AF 2015/16	AF 2016/17
A. Characterization of electro-optical systems (I2, IR and Vis) At least 12 months of experience in handling, measuring, calibrating and characterizing electro-optical systems			
A1. Technical in physical technician or technical electronics	\$ _____	\$ _____	\$ _____
A.2 Bachelor's degree in physics or engineering physics	\$ _____	\$ _____	\$ _____
A.3 Master's degree in physics or engineering physics	\$ _____	\$ _____	\$ _____



<b><u>Resource Categories</u></b>	<b>Firm Hourly rate</b>		
	<b>AF 2014/15</b>	<b>AF 2015/16</b>	<b>AF 2016/17</b>
B. Electro-optical measurements (I2, IR and Vis) with at least 12 months of experience in handling, calibrating and measuring using electro-optical systems			
B.1 Technical in physical technician or technical electronics	\$_____	\$_____	\$_____
B.2 Bachelor's degree in physics or engineering physics	\$_____	\$_____	\$_____
B.3 Master's degree in physics or engineering physics	\$_____	\$_____	\$_____
C. Performance modelling of electro-optical systems (I2, IR and Vis)			
C.1 Bachelor's degree in physics, mathematics or engineering physics	\$_____	\$_____	\$_____
C.2 Master's degree or higher in physics, mathematics or engineering physics	\$_____	\$_____	\$_____
D. Software development			
D.1 Bachelor's degree in computer science, computer engineering or in electrical engineering	\$_____	\$_____	\$_____
D.2 Master's degree in computer science, computer engineering or in electrical engineering	\$_____	\$_____	\$_____
E. Mechanical and opto-mechanical design			
E.1 Technical in mechanical technician or physical technician	\$_____	\$_____	\$_____
E.2 Bachelor's degree in mechanical engineering	\$_____	\$_____	\$_____
F. Image processing			
F.1 Bachelor's degree in physics, mathematics, engineering physics or electrical engineering	\$_____	\$_____	\$_____
F.2 Master's degree or higher in physics, mathematics, engineering physics or electrical engineering	\$_____	\$_____	\$_____



- 
2. **EQUIPMENT:** at laid down cost without markup
  3. **RENTALS:** at actual cost without markup
  4. **MATERIALS AND SUPPLIES:** at laid down cost without markup
  5. **TRAVEL AND LIVING EXPENSES:** in accordance with Section 7.1(iv) of the Contract.
  6. **SUBCONTRACTS (EXCEPT RESOURCES PROPOSED IN SECTION 1 - LABOUR) :** at actual cost without markup
  7. **OTHER DIRECT CHARGES:** at actual cost without markup

**Estimated Cost to a Limitation of Expenditure : \$840,000.00  
(Applicable Taxes extra)**



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## 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.

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Signature

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Date

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Name

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Title

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(Internal DRDC Valcartier)

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Signature

---

Date

---

Name

---

Title (Technical authority)



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## ANNEX D

### NON-DISCLOSURE AGREEMENT

I, \_\_\_\_\_, recognize that in the course of my work as an employee or subcontractor of \_\_\_\_\_, I may be given access to information by or on behalf of Canada in connection with the Work, pursuant to Contract Serial No \_\_\_\_\_ between Her Majesty the Queen in right of Canada, represented by the Minister of Public Works and Government Services and \_\_\_\_\_, including any information that is confidential or proprietary to third parties, and information conceived, developed or produced by the Contractor as part of the Work. For the purposes of this agreement, information includes but not limited to: any documents, instructions, guidelines, data, material, advice or any other information whether received orally, in printed form, recorded electronically, or otherwise and whether or not labeled as proprietary or sensitive, that is disclosed to a person or that a person becomes aware of during the performance of the Contract.

I agree that I will not reproduce, copy, use, divulge, release or disclose, in whole or in part, in whatever way or form any information described above to any person other than a person employed by Canada on a need to know basis. I undertake to safeguard the same and take all necessary and appropriate measures, including those set out in any written or oral instructions issued by Canada, to prevent the disclosure of or access to such information in contravention of this agreement.

I also acknowledge that any information provided to the Contractor by or on behalf of Canada must be used solely for the purpose of the Contract and must remain the property of Canada or a third party, as the case may be.

I agree that the obligation of this agreement will survive the completion of the Contract Serial No. W7701-145748/001/QCN

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date



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W7701-14-5748

Amd. No. – N° de la modif.  
File No. – N° du dossier  
QCN-3-36202

Buyer ID – id de l'acheteur  
QCN014

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## **ANNEX E**

### **SECURITY REQUIREMENTS CHECK LIST**

The Security Requirements Check List (SRCL) appended to the bid solicitation package is to be inserted at this point and forms part of this document



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File No. – N° du dossier  
QCN-3-36202

Buyer ID – id de l'acheteur  
QCN014

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## ANNEX F

### 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.



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## ATTACHMENT 1

### 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 **Annex B, Basis of Payment**.

#### 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 :

Intermediate Engineer/scientits	25%
Senior Engineer/scientits	10%
Intermediate Technician	15%
A. Characterization of electro-optical systems (I2, IR and Vis)	15%
B. Electro-optical measurements (I2, IR and Vis)	3%
C. Performance modelling of electro-optical systems (I2, IR and Vis)	6%
D. Software development	3%
E. Mechanical and opto-mechanical design	3%
F. Image processing	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:

$$\text{Effort} = \frac{(\text{Total anticipated available funding}) \times (\text{Approximate percentage use})}{\text{Available} \quad (\text{Average hourly rate for the resource category})}$$

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).

The average rate will be obtained by adding the rates provided by category for each level of training required and for each of the fiscal years, divided by the total for the levels of training required.

Example: Category E includes three required levels of training for three fiscal years. If Bid B includes the following rates:

Resource Category	Fixed hourly rate for FY 14/15	Fixed hourly rate for FY 15/16	Fixed hourly rate for FY 16/17
A.1 Technical diploma in physics or electronics	50.00	55.00	60.00\$
A.2 Bachelor’s degree in physics or engineering physics	70.00\$	75.00\$	80.00\$
A.3 Master’s degree in physics or engineering physics	90.00\$	95.00\$	100.00

Thus, the average rate for Category E shall be calculated as follows:

$$\text{Average E.1 rate} = \frac{50\$ + 55\$ + 60\$}{3} = 55.00\$$$

$$\text{Average E.2 rate} = \frac{70\$ + 75\$ + 80\$}{3} = 75.00\$$$

$$\text{Average E.3 rate} = \frac{90\$ + 95\$ + 100\$}{3} = 95.00\$$$

$$\text{Average Category E rate} = \frac{55\$ + 75\$ + 95\$}{3} = 75\$$$



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**For evaluation purposes, we will therefore use the average rate of \$75 for Category E.**

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 = \$840,000
- Percentage of use for Intermediate Engineer/scientists = 10%
- 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  $\$840,000 \times 0.10 / \$88.33 = 950.98$  hours

and

- Labour costs for image processing, bid a  
= 950.98 hours x \$100 = \$95,098.00.
- Labour costs for image processing, bid b  
= 950.98 hours x \$75 = \$71,323.50.
- Labour costs for image processing, bid c  
= 950.98 hours x \$90 = \$85,588.20.



#### 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
Intermediate Engineer/Scientits	25%	\$60.00	\$175 806.00	\$75.00	\$219 757.50	\$75.00	\$219 757.50	2930.10
Senior Engineer/Scientits	10%	\$90.00	\$90 723.36	\$75.00	\$75 603.00	\$85.00	\$85 683.40	1008.04
Intermediate Technician	15%	\$55.00	\$107 725.75	\$75.00	\$146 898.75	\$63.00	\$123 394.95	1958.65
Characterization of electro-optical systems (I2, IR and Vis).	15%	\$60.00	\$116 307.60	\$75.00	\$145 384.50	\$60.00	\$116 307.60	1938.46
Electro-optical measurements (I2, IR and Vis)	3%	\$65.00	\$24 568.70	\$75.00	\$28 348.50	\$60.00	\$22 678.80	377.98
Performance modelling of electro-optical systems (I2, IR and Vis)	6%	\$60.00	\$46 522.80	\$75.00	\$58 153.50	\$60.00	\$46 522.80	775.38
Software Development	3%	\$100.00	\$28 529.00	\$75.00	\$21 396.75	\$85.00	\$24 249.65	285.29
Mechanical and opto-mechanical design	3%	\$80.00	\$26 880.00	\$75.00	\$25 200.00	\$70.00	\$23 520.00	336.00
Image processing	20%	\$65.00	\$152 365.20	\$75.00	\$175 806.00	\$70.00	\$164 085.60	2344.08
<b>TOTAL :</b>			<b>\$769 428.41</b>		<b>\$896 548.50</b>		<b>\$826 200.30</b>	

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.



## ATTACHMENT 2

### MANDATORY AND POINT RATED TECHNICAL CRITERIA

Technical and Engineering Support for Characterization of Electro-Optical (EO) Systems

For all mandatory and rated criteria, the definitions set out in the “RESOURCE CATEGORIES” section of the statement of work shall apply.

Summary Table of mandatory and point rated technical criteria:

<b>Mandatory criteria</b>	
<b>1.</b>	<b>The bidder must propose a team of key resources composed of at least:</b>
	<ul style="list-style-type: none"> <li>2 intermediate engineers/scientists</li> <li>1 senior engineer/scientist</li> <li>1 intermediate technician</li> </ul>
	<p><b>Note 1:</b> In that group, there must be at least two key resources with a Master’s degree (or higher) in physics or engineering physics.</p> <p><b>Note 2:</b> In that group, there must be at least one resource with a Bachelor’s degree (or higher) in electrical engineering or computer engineering.</p> <p><b>Note 3:</b> In that group, there must be at least one resource with a technical diploma in physics or engineering physics.</p> <p><b>Note 4:</b> The bidder may propose more key resources than the minimum number required.</p>
<b>2.</b>	<b>The bidder must propose key resources for each of the six tasks (ref. 3.1 through 3.6 in the statement of work).</b>
<b>3.</b>	
	<p><b>Note 1:</b> The same key resource may be associated with more than one activity.</p> <p><b>Note 2:</b> The key resources proposed must have the education and the experience stated in one or more resource category as described in the “RESOURCE CATEGORIES” section of the statement of work.</p> <p><b>Note 3 :</b> The key resources proposed below must be among the key resources named in Point 1 above.</p>
	2.1 Characterization of image intensifiers or their components
	2.2 Characterization of infrared sensors or their components
	2.3 Characterization of UV/visible sensors or their components
	2.4 Characterization of sensor performance during field tests
	2.5 Detection/recognition/identification (DRI) performance prediction tools
	2.6 Hardware and/or software development, improvement and modification of test and characterization equipment
<b>Technical criteria</b>	
	Criteria 3.1 to 3.6 are aimed at evaluating the key resources' experience in the areas related to the 6 tasks (work experience, similar projects, systems and parameters measured).
	Criterion 4 is aimed at evaluating the company's experience and management model



## 1. 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.

Listing experience without providing any supporting data to describe where and how such experience was obtained will result in the experience not being included for evaluation. Failure to meet one or more of the mandatory requirements will preclude the proposal from further consideration and disqualify the proposal from any contract award.

The bidder must meet the following mandatory requirements.

MANDATORY CRITERIA	Met	Not Met
<p><b>1. <u>The bidder must propose a team of key resources composed of at least:</u></b></p> <ul style="list-style-type: none"><li>• 2 intermediate engineers/scientists</li><li>• 1 senior engineer/scientist</li><li>• 1 intermediate technician</li></ul> <p><b>Note 1:</b> In that group, there must be at least two key resources with a Master's degree (or higher) in physics or engineering physics.</p> <p><b>Note 2:</b> In that group, there must be at least one resource with a Bachelor's degree (or higher) in electrical engineering or computer engineering.</p> <p><b>Note 3:</b> In that group, there must be at least one resource with a technical diploma in physics or engineering physics.</p> <p><b>Note 4:</b> The bidder may propose more key resources than the minimum number required.</p>		



MANDATORY CRITERIA	Met	Not Met
<p><b>2. <u>The bidder must propose key resources for each of the six tasks (ref. 3.1 through 3.6 in the statement of work).</u></b></p> <p><b>Note 1:</b> The same key resource may be associated with more than one activity.</p> <p><b>Note 2:</b> The key resources proposed must have the education and the experience stated in one or more resource category as described in the “RESOURCE CATEGORIES” section of the statement of work.</p> <p><b>Note 3 :</b> The key resources proposed below must be among the key resources named in Point 1 above.</p>		
<p><b>2.1 <u>Characterization of image intensifiers or their components</u></b></p> <p>A minimum of two (2) key resources, including one (1) technician, must be clearly identified for this task. One of the key resources must have experience in taking measurements in a laboratory.</p>		
<p><b>2.2 <u>Characterization of infrared sensors or their components</u></b></p> <p>A minimum of two (2) key resources, including one (1) technician, must be clearly identified for this task. One of the key resources must have experience in taking measurements in a laboratory.</p>		
<p><b>2.3 <u>Characterization of UV/visible sensors or their components</u></b></p> <p>A minimum of two (2) key resources, including one (1) technician, must be clearly identified for this task. One of the key resources must have experience in taking measurements in a laboratory</p>		
<p><b>2.4 <u>Characterization of sensor performance during field tests</u></b></p> <p>A minimum of two (2) key resources, including one (1) technician, must be clearly identified for this task. One of the key resources must have experience in taking measurements in the field.</p>		



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File No. – N° du dossier  
QCN-3-36202

Buyer ID – id de l'acheteur  
QCN014

MANDATORY CRITERIA	Met	Not Met
<b>2.5 <u>Detection/recognition/identification (DRI) performance prediction tools</u></b> A minimum of two (2) key resources must be clearly identified for this task.		
<b>2.6 <u>Hardware and/or software development, improvement and modification of test and characterization equipment</u></b> A minimum of two (2) key resources must be clearly identified for this task.		



## 2. Point Rated Technical Criteria

The proposals received that meet the mandatory criteria will be evaluated and scored using the criteria below. The minimum score required for each of the main criteria is also given.

Point rated criteria will be scored according to the description accompanying each of the criteria listed in the table below. Submissions must obtain the minimum number of points required as indicated in the table below.

### POINT RATED TECHNICAL CRITERIA

#### 3. Evaluation of experience of key resources

##### Instructions

The bidder will be evaluated based on past accomplishments that demonstrate the skills and experience of the proposed team.

For tasks 3.1 through 3.6 (except for 3.5), the total points for each criterion will be the sum of points for each proposed member of the key resources team.

To evaluate the relevance of the experience of the resources proposed, the bidder must provide the following information for each activity addressed in this contract:

Task x, activity x

- a. Key resource involved.
- b. Project title (including the client, scope in budget-time and date).
- c. Project objective and association with the task.
- d. Description of the key resource’s involvement: effort (pers./month), skills used, systems characterized, parameters measured/analyzed or systems developed.

To facilitate the review, the use of a table is suggested, as shown below.

<i>Task 3.2, a)</i>			
<i>Resource</i>	<i>Project</i>	<i>Objective</i>	<i>Description of resource involvement</i>
Resource A	Project ABC, Client A, 6 months, \$10k, 2006	MTF measurement assembly	Opto-mechanical design, MTF assembly manufacturing for systems A, B and C. Involvement of X pers/month.
<i>Task 3.2, b) and c)</i>			
<i>Resource</i>	<i>Project</i>	<i>Objective</i>	<i>Description of resource involvement</i>



Resource B	Project ABC, Client A, 6 months, \$10k, 2006	Collection and analysis	Collection of measurements for systems A, B and C. Involvement of Y per/month.		
			MTF measurement analysis. Involvement of Z pers/month.		
<p>In the <i>Description of resource involvement</i> column, the bidder must clearly describe the tasks completed by the proposed resource that are related to the activities set out in the statement of work. As applicable, the type of systems characterized must also be provided, as well as the parameters measured and/or analyzed.</p> <p>To be considered in this evaluation, each project must meet both of the following conditions:</p> <ol style="list-style-type: none"> <li>The project value must be \$10,000 or more;</li> <li>Only projects completed since January 1, 2000, will be considered.</li> </ol>					
<b>POINT RATED TECHNICAL CRITERA</b>				<b>Maximum points</b>	<b>Minimum points</b>
<p><b><u>3.1 Characterization of image intensifiers or their components (e.g. I2 tubes) and performance evaluation</u></b></p> <p>The bidder must present one or more projects associated with the characterization of image intensifiers or their components (e.g. I2 tubes) and performance evaluation.</p> <p>The bidder must use these projects to present work that shows the experience and skills of the key resources in the following types of activities:</p> <ol style="list-style-type: none"> <li>Laboratory data measurement for image intensifiers or their components; <ol style="list-style-type: none"> <li>1 pt per parameter measured (see Note 1) for each key resource (max. 2) having completed the parameter measurement</li> </ol> </li> <li>Laboratory data analysis on image intensifiers or their components; <ol style="list-style-type: none"> <li>1 pt per parameter analyzed (see Note 1) by one (1) of the key resources</li> </ol> </li> </ol> <p>Points will be added in a) and b) based on the number of systems measured and/or analyzed (see Notes 1 and 2) by each resource involved in these</p>				27	18



<p>activities in accordance with the following list:</p> <ul style="list-style-type: none"> <li>a. One system was measured or analyzed: 1 pt</li> <li>b. Between 2 and 5 systems were measured or analyzed: 2 pts</li> <li>c. Over 5 systems were measured or analyzed: 4 pts</li> </ul> <p><b>Note 1:</b> Only the following parameters that can be measured and analyzed in systems based on image intensifiers or their components will be considered in calculating points:</p> <ul style="list-style-type: none"> <li>a. Impulse response (modulation transfer function (MTF));</li> <li>b. Resolution response (minimum resolvable contrast (MRC));</li> <li>c. Image noise (signal-to-noise ratio (SNR) and equivalent background illumination (EBI));</li> <li>d. Luminous gain; and</li> <li>e. Spectral response.</li> </ul> <p><b>Note 2:</b> Analysis of simulation results will not be considered.</p>		
<p><b><u>3.2 Characterization of infrared sensors (0.9 µm to 15 µm) or their components and performance evaluation</u></b></p> <p>The bidder must present one or more projects associated with the characterization of infrared sensors (0.9 µm to 15 µm) or their components and performance evaluation.</p> <p>The bidder must use these projects to present work that shows the experience and skills of the key resources in the following types of activities:</p> <ul style="list-style-type: none"> <li>a. Laboratory data measurement for image intensifiers or their components; <ul style="list-style-type: none"> <li>o 1 pt per parameter measured (see Note 1) for each key resource (max. 2) having completed the parameter measurement</li> </ul> </li> <li>b. Laboratory data analysis on image intensifiers or their components; <ul style="list-style-type: none"> <li>o 1 pt per parameter analyzed (see Note 1) by one (1) of the key resources</li> </ul> </li> </ul> <p>Points will be added in a) and b) based on the number of systems measured and/or analyzed (see Notes 1 and 2) by each resource involved in these activities in accordance with the following list:</p> <ul style="list-style-type: none"> <li>a. One system was analyzed: 1 pt</li> <li>b. Between 2 and 5 systems were analyzed: 2 pt</li> <li>c. Over 5 systems were analyzed: 4 pts</li> </ul>	27	18



<p><b>Note 1:</b> Only the following parameters for infrared sensors (0.9 to 15 µm) or their components will be considered in calculating points:</p> <ul style="list-style-type: none"> <li>a. Impulse response (MTF);</li> <li>b. Resolution response (minimum resolvable temperature (MRT);</li> <li>c. Image noise (3D-noise and noise equivalent temperature difference (NETD));</li> <li>d. Transfer function (signal transfer function (SiTF)); and</li> <li>e. Spectral response.</li> </ul> <p>Note 2: Analysis of simulation results will not be considered.</p>		
<p><b><u>3.3 Characterization of UV/visible sensors or their components to evaluate performance</u></b></p> <p>The bidder must present one or more projects associated with the characterization of UV/visible sensors to evaluate performance. UV/visible sensors consist mainly of:</p> <ul style="list-style-type: none"> <li>a. Complementary metal–oxide–semiconductor (CMOS) sensors;</li> <li>b. Charge-coupled device (CCD) sensors;</li> <li>c. Electron-multiplying CCD (EMCCD) sensors;</li> <li>d. Sensors that function in ultraviolet (UV); and</li> <li>e. Day sights, such as binoculars, sights or telescopes.</li> </ul> <p>The bidder must use these projects to present work that shows the experience and skills of the key resources in the following types of activities:</p> <ul style="list-style-type: none"> <li>a. Laboratory data measurement for image intensifiers or their components; <ul style="list-style-type: none"> <li>o 1 pt per parameter measured (see Note 1) for each key resource (max. 2) having completed the parameter measurement</li> </ul> </li> <li>b. Laboratory data analysis on image intensifiers or their components; <ul style="list-style-type: none"> <li>o 1 pt per parameter analyzed (see Note 1) by one (1) of the key resources</li> </ul> </li> </ul> <p>Points will be added in a) and b) based on the number of months of experience of a resource assigned to a given activity (see Notes 1 and 2) in accordance with the following list:</p> <ul style="list-style-type: none"> <li>a. Fewer than 3 months of relevant full-time experience: 0 pt</li> <li>b. Between 3 and 12 months of relevant full-time experience: 2 pts</li> <li>c. More than 12 months of relevant full-time experience: 4 pts</li> </ul>	27	18



<p><b>Note 1:</b> Only the following parameters for UV/visible sensors or their components will be considered in calculating points:</p> <ul style="list-style-type: none"> <li>a. Impulse response (MTF);</li> <li>b. Resolution response (MRC);</li> <li>c. Image noise (3D-noise);</li> <li>d. Dynamic range; and</li> <li>e. Spectral response.</li> </ul> <p><b>Note 2:</b> Analysis of simulation results will not be considered.</p>		
<p><b><u>3.4 Characterization of sensor performance during field tests</u></b></p> <p>The bidder must present one or more projects associated with the characterization of sensor performance during field tests.</p> <p>A field measuring campaign means the deployment of sensors and instruments that can take measurements autonomously outside the laboratory in a natural environment. Autonomy refers to the capacity for organization and coordination. Being electrically autonomous is not considered.</p> <p>The bidder must use these projects to present work that shows the experience and skills of each key resource (max. 2 resources) in the following types of activities:</p> <ul style="list-style-type: none"> <li>a. Preparation of testing instruments (see Note 1); <ul style="list-style-type: none"> <li>○ 1 pt per test where the resource has prepared instruments (max. 3 pts)</li> </ul> </li> <li>b. Use of instruments to collect data during testing (see Note 1); <ul style="list-style-type: none"> <li>○ 1 pt per test where the resource has collected data (max. 3 pts)</li> </ul> </li> <li>c. Data extraction for analysis purposes during testing. <ul style="list-style-type: none"> <li>○ 1 pt per test where the resource has prepared data for analysis (max. 3 pts)</li> </ul> </li> </ul> <p><b>Note 1:</b> To be taken into consideration, the duration of the field tests must be at least two days, and the resource’s involvement must be at least 20 hours.</p>	18	12



<p><b><u>3.5 Detection/recognition/identification (DRI) performance prediction tools</u></b></p> <p>The bidder must present one or more projects associated with the modelling of EO sensor performance in DRI.</p> <p>The bidder must use these projects to present work that shows the experience and skills of each key resource (max. 2 resources) in the following types of activities:</p> <ol style="list-style-type: none"> <li>Review of literature on DRI performance prediction models for EO sensors;             <ul style="list-style-type: none"> <li>Has completed one (1) literature review associated with sensor models or sensor performance modelling: 2 pts</li> <li>Has completed two (2) or more literature reviews associated with sensor models or sensor performance modelling: 4 pts</li> </ul> </li> <li>Use of DRI performance prediction tools for EO sensors (see Note 1);             <ul style="list-style-type: none"> <li>Has used recognized prediction tools (see Note 1) in one (1) performance validation project: 2 pts</li> <li>Has used recognized prediction tools (see Note 1) in two (2) or more performance validation projects: 4 pts</li> </ul> </li> <li>Software development associated with sensor modelling or performance prediction (see Note 2).             <ul style="list-style-type: none"> <li>Has developed one (1) software application associated with models or their modules: 2 pts</li> <li>Has developed two (2) or more software applications associated with models or their modules: 4 pts</li> </ul> </li> </ol> <p><b>Note 1:</b> Prediction tools must be based on models accepted by the scientific community. Some of the most common models are Night Vision Lab suite models: NVThermIP, IINVD, SSCamIP, IICamIP and NV-IPM.</p> <p><b>Note 2:</b> Points are calculated based on one of the following activities:</p> <ol style="list-style-type: none"> <li>Improving or modifying an interface for a prediction model (e.g. C++ programming); or</li> <li>Adapting or modifying sensor performance models (e.g. C++ programming, prototyping in MATLAB, Excel or Python); or</li> <li>Adapting or modifying sensor module models, such as optic, sensor, electronic, etc. (e.g. prototyping in MATLAB, Excel or Python).</li> </ol>	24	16
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<b><u>3.6 Hardware and/or software development, improvement and modification of test and characterization equipment</u></b>  The bidder must present one or more projects associated with hardware and/or software development, improvement and modification of test and characterization equipment.  The bidder must use these projects to present work that shows the experience and skills of the key resources in the following types of activities: <ul style="list-style-type: none"> <li>a. Improve/modify control hardware and/or software for laboratory acquisition instruments;</li> <li>b. Develop control hardware and/or software for laboratory acquisition instruments;</li> <li>c. Improve/modify data analysis software; and</li> <li>d. Develop data analysis software.</li> </ul> Points will be awarded for the number of months of experience of resources (max. 2) assigned to a given activity in accordance with the following list: <ul style="list-style-type: none"> <li>a. Fewer than 3 months of relevant full-time experience: 0 pts</li> <li>b. Between 3 and 12 months of relevant full-time experience: 2 pts</li> <li>c. More than 12 months of relevant full-time experience: 4 pts</li> </ul>	32	20
<b>TOTAL</b>	155	102

<b>RATED CRITERIA FOR EVALUATION OF THE COMPANY'S EXPERIENCE AND MANAGEMENT MODEL</b>		
<b>4. Experience and management model</b>	<b>Maximum score</b>	<b>Minimum score</b>
<b><u>4.1 Bidder's experience in managing projects in the EO system characterization field within the past 10 years</u></b>  The bidder must describe its experience in managing projects in the EO system characterization field. The description must include a project title and description, value and year of completion. <ul style="list-style-type: none"> <li>a. Over 4 R&amp;D projects with a total budget (sum of projects) of over 1 million dollars: 6 pts</li> <li>b. Over 2 R&amp;D projects with a total budget (sum of projects) of over 0.5 million dollars: 4 pts</li> </ul>	6	N/A



c. Fewer than 2 R&D projects with a total budget (sum of projects) of under 0.5 million dollars: 2 pts		
<p><b><u>4.2 Management tools/methods for planning and managing tasks and activities</u></b></p> <p>The bidder must propose appropriate project management techniques, including the production of schedules or Gantt charts, as well as risk management plans. The methods/tools proposed must be supported by concrete examples from projects completed in the past by the bidder. Tasks/activities, resources and deliverables must be clearly identified.</p> <ul style="list-style-type: none"> <li>a. The bidder proposes a “flow chart process” (schedule or Gantt chart): 2 pts</li> <li>b. The bidder already uses a “flow chart process” (schedule or Gantt chart) as a project management technique, and provides a sample document associated with a past project completed by the bidder’s company: 5 pts</li> <li>c. The bidder proposes a risk management plan based on recognized standards (such as PMBOX): 2 pts</li> <li>d. The bidder already uses a risk management plan based on recognized standards (such as PMBOX), and provides a sample document associated with a past project completed by the bidder’s company: 5 pts</li> </ul> <p><i>Note: Points are cumulative (a or b + c or d).</i></p>	10	N/A
<p><b><u>4.3 Quality assurance process</u></b></p> <p>The bidder must describe the quality assurance processes used within its company.</p> <ul style="list-style-type: none"> <li>a. The bidder submits a quality assurance process that is well documented and based on recognized standards (e.g. ISO). The process is well established in the bidder’s company, and an example of the process, associated with a project completed by the bidder’s company, has been provided: 5 pts</li> <li>b. The bidder submits a quality assurance process. The process is not necessarily based on recognized standardized processes, but it is well established in the company, and an example of the process, associated with a project completed by the bidder’s company, has been provided: 3 pts</li> <li>c. The bidder does not submit a quality assurance process: 0 pts</li> </ul>	5	N/A



<p><b>4.4 <u>Resource management systems</u></b></p> <p>The bidder must propose an appropriate system for resource management. The bidder must describe how it will approach project management with regard to priority assessment, work overload, resource availability and quality of services offered within the task authorization process.</p> <p>a. The bidder proposes the use of resource management tools: 2 pts</p> <p>b. The bidder demonstrates that it regularly uses resource management tools (e.g. OpenProj). The methods/tools proposed must be supported by concrete examples from projects completed in the past by the bidder: 4 pts</p> <p>c. The bidder demonstrates that it regularly uses resource management tools (e.g. OpenProj). The methods/tools proposed must be supported by concrete examples from projects completed in the past by the bidder. The bidder also has a plan to resolve resource management problems. In its problem management plan, the bidder must propose at least two different solutions to staff shortage problems. The solutions proposed must be relevant, effective and explained in detail in order to be taken into account in the evaluation: 8 pts</p>	8	N/A
<b>TOTAL</b>	29	N/A