

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

Title - Sujet Caractérisation Système E		
Solicitation No. - N° de l'invitation W7701-145745/A	Date 2014-04-11	
Client Reference No. - N° de référence du client W7701-14-5745		
GETS Reference No. - N° de référence de SEAG PW-\$QCN-014-15901		
File No. - N° de dossier QCN-3-36199 (014)	CCC No./N° CCC - FMS No./N° VME	
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-05-09		Time Zone Fuseau horaire Heure Avancée de l'Est HAE
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>		
Address Enquiries to: - Adresser toutes questions à: Lemay, Hélène		Buyer Id - Id de l'acheteur qcn014
Telephone No. - N° de téléphone (418) 649-2974 ()		FAX No. - N° de FAX (418) 648-2209
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: R & D POUR LA DÉFENSE CANADA - VALCARTIER 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**

Issuing Office - Bureau de distribution

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

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

Solicitation No. - N° de l'invitation

W7701-145745/A

Amd. No. - N° de la modif.

File No. - N° du dossier

QCN-3-36199

Buyer ID - Id de l'acheteur

qcn014

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

W7701-14-5745

CCC No./N° CCC - FMS No/ N° VME

TITLE: Characterization of Electro-Optical (EO) Systems

TABLE OF CONTENTS

PART 1 - GENERAL INFORMATION

1. Introduction
2. Summary
3. Debriefings

PART 2 - BIDDER INSTRUCTIONS

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

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures
2. Basis of Selection

PART 5 - CERTIFICATIONS

1. Certifications Required Precedent to Contract Award

PART 6 - SECURITY, FINANCIAL AND OTHER REQUIREMENTS

1. Security Requirement
2. Financial Capability
3. Controlled Goods Requirement

PART 7 - RESULTING CONTRACT CLAUSES

1. Statement of Work
2. Standard Clauses and Conditions
3. Security Requirement
4. Term of Contract

-
5. Authorities
 6. Proactive Disclosure of Contracts with Former Public Servants
 7. Payment
 8. Invoicing Instructions
 9. Certifications
 10. Applicable Laws
 11. Priority of Documents
 12. Defence Contract
 13. Foreign Nationals (Canadian Contractor)
 14. Insurance
 15. Controlled Goods Program
 16. Progress Reports
 17. Site Regulations
 18. Identification Badge

List of Annexes:

- Annex "A" Statement of Work
Annex "B" Basis of Payment
Annex "C" Contractor Disclosure of Foreground Information
Annex "D" Non-disclosure Agreement
Annex "E" Security Requirements Check List
Annex "F" DND 626, Task Authorization Form

List of Attachments:

- Attachment 1 Evaluation of Price
Attachment 2 Mandatory and Point Rated Technical Criteria

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/History

The Canadian Forces (CF) must regularly select equipment to support operations. Sensors are an integral part of the electro-optical (EO) systems used to detect and locate threats. One of Defence Research and Development Canada (DRDC)'s mandates is to support the CF in its EO 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.

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

- a. Laboratory characterization of basic sensor parameters using quantitative measurements;
- b. Outdoor testing to emulate sensor performance in conditions similar to those encountered on operations (e.g. low light, natural spectral content, difficult environment);
- c. Modelling of sensor performance; and
- d. Laboratory application of comparative evaluation methods to measure performances similar to those encountered on operations.

Because the capacity of DRDC Valcartier laboratories is limited, it cannot respond to all requests for testing and characterizing EO systems.

2.2 Objective

The objective of this statement of work is the provision of technical and engineering services to predict/characterize the performance of EO systems covering spectral bands from ultraviolet (UV) to infrared (IR), including image intensifier (I2) systems.

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.

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.

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.

3. Former Public Servant

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

Definitions

For the purposes of this clause,

"former public servant" is any former member of a department as defined in the [Financial Administration Act](#), R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

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

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

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

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension?

Yes () No ()

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

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

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

Work Force Adjustment Directive

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

If so, the Bidder must provide the following information:

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

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

4. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority, 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"

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.

Solicitation No – N° de l'invitation
W7701-145745/A
Client Ref No. – N° de réf. du client
W7701-14-5745

Amd. No. – N° de la modif.
File No. – N° du dossier
QCN-3-36199

Buyer ID – id de l'acheteur
QCN014

Canada requests that bidders provide the following information :

Administrative representative :

Name :

Telephone :

Facsimile :

Email :

Technical representative :

Name :

Telephone :

Facsimile :

Email :

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

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

1.1 Technical Evaluation

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

1.1.1. Mandatory 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.

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 161 points overall for the technical evaluation criteria which are subject to point rating.

The rating is performed on a scale of 265 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 265 and the lowest evaluated price is \$794,176.31.

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

	Bidder		
	Bidder 1	Bidder 2	Bidder 3
Overall Technical Score	200/265	215/265	240/265
Bid Evaluated Price	\$889,164.00	\$794,176.31	\$836,660.85
Calculations			
Technical Merit Score	$200/265 \times 60 = 45.28$	$215/265 \times 60 = 48.68$	$240/265 \times 60 = 54.34$
Pricing Score	$794,176.31/889,164.40 \times 40 = 35.73$	$794,176.31/794,176.31 \times 40 = 40.00$	$794,176.31/836,660.85 \times 40 = 37.97$
Combined Rating	81.01	88.68	92.31
Overall Rating	3rd	2nd	1st

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) 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.

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

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

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.

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 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

2.3 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.

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 # W7701-145745

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).

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

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.

7. Payment

7.1 Basis of Payment

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

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

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

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

The Contractor will be reimbursed its costs reasonably and properly incurred in the performance of the Work, plus a profit, as determined in accordance with the Basis of Payment in Annex B, to the ceiling price specified in the approved TA. Customs duties are included and Applicable Taxes are extra.

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

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

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

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

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

No increase in the liability of Canada or in the price of the Work specified in the authorized TA resulting from any design changes, modifications or interpretations of the

Work will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been authorized, in writing, by the Contracting Authority before their incorporation into the Work.

iv) Travel and Living Expenses :

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

7.3 Method of Payment

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

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

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

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

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

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

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

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

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

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

7.4 SACC Manual Clauses

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

7.5 Discretionary Audit

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

8. Invoicing Instructions

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

Each claim must show:

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

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

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

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

9. Certifications

9.1 Compliance

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

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

ANNEX A

STATEMENT OF WORK

1. GENERAL

1.1 Title

Characterization of electro-optical (EO) systems

1.2 Background/History

The Canadian Forces (CF) must regularly select equipment to support operations. Sensors are an integral part of the EO systems used to detect and locate threats. One of Defence Research and Development Canada (DRDC)'s mandates is to support the CF in its EO 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.

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

- a. Laboratory characterization of basic sensor parameters using quantitative measurements;
- b. Outdoor testing to emulate sensor performance in conditions similar to those encountered on operations (e.g. low light, natural spectral content, difficult environment);
- c. Modelling of sensor performance; and
- d. Laboratory application of comparative evaluation methods to measure performances similar to those encountered on operations.

Because the capacity of DRDC Valcartier laboratories is limited, it cannot respond to all requests for testing and characterizing EO systems.

1.3 Objective

The objective of this statement of work is the provision of technical and engineering services to predict/characterize the performance of EO systems covering spectral bands from ultraviolet (UV) to infrared (IR), including image intensifier (I2) systems.

1.4 Acronyms

CCD	Charge-Coupled Device
CMOS	Complementary metal-oxide-semiconductor
EBI	Equivalent Background Illumination
EMCCD	Electron-multiplying CCD
EO	Electro-optical

CF	Canadian Forces
I2	Image Intensifier
MRC	Minimum Resolvable Contrast
MRT	Minimum Resolvable Temperature
MTF	Modulation Transfer Function
NETD	Noise Equivalent Temperature Difference
DRDC	Defence Research and Development Canada
SNR	Signal-to-Noise Ratio
SiTF	Signal Transfer Function
UV	Ultraviolet

2. APPLICABLE DOCUMENTS (references)

N/A

3. SCOPE OF WORK

3.1 Characterization of image intensifiers or their components

The Contractor shall characterize image intensifiers or their components (e.g. tubes) and evaluate their performance in accordance with the criteria set out in the task authorization. This task includes taking measurements at the Contractor's facilities and analyzing data. The system characterization shall be consistent with recognized methodology in this field, accepted by DRDC Valcartier and performed using the Contractor's equipment. The image intensifiers or their components will be specified in the task authorization. The primary parameters to be measured are as follows:

- a. impulse response (Modulation Transfer Function (MTF));
- b. resolution response (Minimum Resolvable Temperature (MRT));
- c. image noise (Signal-to-Noise Ratio (SNR) and Equivalent Background Illumination (EBI));
- d. luminous gain;
- e. dynamic range; and
- f. spectral response.

3.2 Characterization of infrared sensors (0.9 µm to 15 µm) or their components

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 but are not restricted to photonic sensors, thermal sensors and microbolometers.

This task includes taking measurements at the Contractor's facilities and analyzing data. The system characterization shall be consistent with recognized methodology in this field, accepted by DRDC Valcartier and performed using the Contractor's equipment. The infrared sensors or

their components will be specified in the task authorizations. The primary parameters to be measured are as follows:

- a. impulse response (MTF);
- b. resolution response (Minimum Resolvable Contrast (MRC));
- 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. power consumption.

3.3 Characterization of UV/visible-light sensors

The Contractor shall characterize UV/visible-light sensors or their components and evaluate their performance. UV/visible-light 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 light; and
- e. Day sights, such as binoculars, sights or telescopes.

This task includes taking measurements at the Contractor's facilities and analyzing data. The system characterization shall be consistent with recognized methodology in this field, accepted by DRDC Valcartier and performed using the Contractor's equipment. The UV/visible-light sensors or their components will be specified in the task authorizations. The primary parameters to be measured are as follows:

- a. impulse response (MTF);
- b. resolution response (MRC);
- c. image noise;
- d. luminous gain;
- e. dynamic range;
- f. spectral response; and
- g. power consumption.

3.4 Development of testing and evaluation methodologies for day/night vision sensors (0.2 to 15 μm) including the merging of multiple sensors

The criteria to be selected shall provide the maximum capabilities of night vision sensors. The Contractor's role will be to:

- a. Complete literature reviews;
- b. Develop metrics for measuring image quality;
- c. Develop data acquisition systems;

-
- d. Help collect and save data;
 - e. Assist with reducing and analyzing data; and
 - f. Attend conferences and/or workshops on EO-related topics.

3.5 Calibration of laboratory equipment

The Contractor's role will be to:

- a. Calibrate the photometer; and
- b. Calibrate the luminance/radiance source.

3.6 Support for optical design and assembly

The Contractor shall provide support for optical design and assembly. The Contractor's role will be to:

- a. Develop optical designs to support the preparation of optical assemblies; and
- b. Create optical assemblies.

3.7 Relative frequencies

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

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

4. REPORTS AND OTHER DELIVERABLES

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

4.1 Deliverables for tasks 3.1 to 3.3 and 3.5

A report describing:

- a. the methodology used;
- b. experimental results obtained in table and/or graph format; and
- c. a brief analysis of the data.

4.2 Deliverables for Task 3.4

Depending on the scale of the task, the deliverable for Task 3.4 shall be:

- a. A literature review;
- b. A conference report;
- c. Metrics for measuring image quality;
- d. Processed experimental data in tables and/or graphs written in English in a format that can be incorporated into a report written using the Microsoft Office suite; and

A report on performance characterization and evaluation describing:

- a. the methodology used;
- b. experimental results obtained in table and/or graph format; and
- c. a brief analysis of the data.

4.3 Deliverables for Task 3.6

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

- a. A drawing of the optical design;
- b. Graphs of optical design performances;
- c. A vision system; and
- d. Processed experimental data in tables and/or graphs written in English in a format that can be incorporated into a report written using the Microsoft Office suite.

A report describing:

- a. the methodology used;
- b. experimental results obtained in table and/or graph format; and
- c. a brief analysis of the data.

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 a designated DRDC Valcartier representative shall 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 efficiently. Other informal meetings can be held, as necessary, as mutually agreed upon by the Contractor and the technical authority. The Contractor shall keep minutes of all formal meetings listed above. For informal meetings, minutes will be kept if required, as agreed upon by the Contractor and the technical authority. The meeting agenda and minutes shall be prepared and submitted to the technical authority.

Table 1 – Schedule 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 shall be held whenever a new task authorization is begun. The meeting will require the participation of the technical authority and additional technical members, as appropriate, as well as Contractor personnel. The aim of the meeting will be to review in detail the objectives of each task authorization. It may last up to two hours and shall address all technical issues related to the task authorization. The Contractor is responsible for establishing the agenda and publishing the minutes of the meeting.

5.2 Progress review meetings

Regular progress review meetings shall be held for the duration of the contract (as indicated in Table 1). They can be held via teleconference unless otherwise directed by the technical authority or the TA's representative. These meetings shall involve the technical authority and the

appropriate personnel from the Contractor. The objective of the meetings is to review efforts from an administrative perspective (schedule compliance, budget, etc.) for a specific period. The frequency of meetings will be adjusted by DRDC Valcartier depending on requirements to track progress at different stages of the project. The meetings shall be brief and focus on providing a status of recent tasks and issues without addressing detailed technical issues. The Contractor shall be responsible for preparing the agenda and publishing the minutes of the meetings. The agenda and minutes shall be approved by DRDC Valcartier and published before the next 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 objective of the meeting will be to review efforts made for the duration of the task authorization from an administrative perspective. The meeting may last up to half a day and shall provide a detailed overview of all tasks and issues without addressing specific technical aspects. The Contractor shall be responsible for preparing the agenda and publishing the minutes of the meeting.

6. RESOURCE CATEGORIES

6.1 Resources 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 five fields:

- a. Characterization of EO systems (I2, IR and Vis)
Tasks 3.1, 3.2 and 3.3, in support of tasks 3.4 and 3.5
- b. Methodology for characterizing EO systems (I2, IR and Vis)
Task 3.4, in support of tasks 3.1, 3.2 and 3.3
- c. Calibration of laboratory equipment
Task 3.5, in support of tasks 3.1, 3.2 and 3.3
- d. Optical and opto-mechanical design
Task 3.6, in support of tasks 3.1, 3.2 and 3.3
- e. Software development
In support of tasks 3.1, 3.2 and 3.3

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

a. Characterization of EO systems (I2, IR and Vis)

Education

A.1 Technical diploma in physical technology or Electronics technology

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 and characterizing EO systems

b. Methodology for characterizing EO systems (I2, IR and Vis)

Education

B.1 Bachelor’s degree in physics or engineering physics

B.2 Master’s degree in physics or engineering physics

c. Calibration of laboratory equipment

Education

C.1 Technical diploma in physical technology or in Electronics technology

C.2 Bachelor’s degree in physics or engineering physics

d. Optical and opto-mechanical design

Education

D.1 Technical diploma in Mechanical technology or in Physical technology

D.2 Bachelor’s degree in physics or engineering physics

D.3 Master’s degree or higher in physics or in engineering physics

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

At least 12 months of experience in performing optical design and using optical design software

e. Software development

Education

E.1 Bachelor’s degree in computer science, computer engineering or in electrical engineering

E.2 Master’s degree in computer science, computer engineering or in electrical engineering

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 this group, there shall be at least two (2) key resources with a Master's degree (or higher) in physics or engineering physics, and at least one (1) resource with a diploma in physical technology 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 who accomplishes most of the work (over 50% of the time) in 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 PhD 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.

7. GOVERNMENT FURNISHED EQUIPMENT (GFE)

7.1 General

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

7.2 List of material

This list includes commercially unavailable equipment or equipment that would be difficult to fabricate in a timely or cost-effective manner to execute the task authorization issued in response to CF requirements. The list includes:

-
- equipment available only in CF inventory (all tasks); and
 - specialized equipment (e.g. NVG) (all tasks).

8. GOVERNMENT SUPPLIED MATERIAL (GSM)

8.1 General

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

8.2 List of materials

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

- material available only in CF inventory (all tasks); and
- material developed by DRDC (all tasks).

9. SPECIAL CONSIDERATIONS

None.

10. LOCATION OF WORK

The work shall be completed on the Contractor's premises using its test equipment, which shall be approved by DRDC Valcartier. In addition, the testing methodologies used shall be validated by the Contractor and approved by 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 EO systems (I2, IR and Vis) - At least 12 months of experience in handling, measuring and characterizing EO systems			
A1. Technical diploma in physical technology or electronics technology	\$ _____	\$ _____	\$ _____
A.2 Bachelor's degree in physics or in engineering physics	\$ _____	\$ _____	\$ _____
A.3 Master's degree in physics or in engineering physics	\$ _____	\$ _____	\$ _____

<u>Resource Categories</u>	Firm Hourly rate		
	AF 2014/15	AF 2015/16	AF 2016/17
B. Methodology for characterizing EO systems (I2, IR and Vis)			
B.1 Bachelor’s degree in physics or in engineering physics	\$_____	\$_____	\$_____
B.2 Master’s degree in physics or in engineering physics	\$_____	\$_____	\$_____
C. Calibration of laboratory equipment			
C.1 Technical diploma in physical technology or electronics technology	\$_____	\$_____	\$_____
C.2 Bachelor’s degree in physics or in engineering physics	\$_____	\$_____	\$_____
D. Optical and opto-mechanical design with at least 12 months of experience in performing optical design and using optical design software			
D.1 Technical in mechanical technology or in physical technology	\$_____	\$_____	\$_____
D.2 Bachelor’s degree in physics or in engineering physics	\$_____	\$_____	\$_____
D.3 Master’s degree in physics or in engineering physics			
E. Software development			
E1. Bachelor’s degree in computer science, computer engineering or in electrical engineering	\$_____	\$_____	\$_____
E2. Master’s degree or higher in physics or in engineering physics	\$_____	\$_____	\$_____

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)**

ANNEX C

CONTRACTOR DISCLOSURE OF FOREGROUND INFORMATION

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

The Contractor must provide the following information::

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

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

Signature

Date

Name

Title

(Internal DRDC Valcartier)

Signature

Date

Name

Title (Technical authority)

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. W7701-145745/001/QCN

Signature

Date

Solicitation No – N° de l'invitation
W7701-145745/A
Client Ref No. – N° de réf. du client
W7701-14-5745

Amd. No. – N° de la modif.
File No. – N° du dossier
QCN-3-36199

Buyer ID – id de l'acheteur
QCN014

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

Solicitation No – N° de l'invitation
W7701-145745/A
Client Ref No. – N° de réf. du client
W7701-14-5745

Amd. No. – N° de la modif.
File No. – N° du dossier
QCN-3-36199

Buyer ID – id de l'acheteur
QCN014

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.

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 EO systems (I2, IR and Vis)	15%
B. Methodology for characterizing EO systems (I2, IR, Vis)	7%
C. Calibration of laboratory equipment	7%
D. Optical and opto-mechanical design	7%
E. Software development	14%

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 physical technology or electronics technology	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:

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

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

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

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

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 Mechanical and opto-mechanical design = 7%
- 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 $\$840,000 \times 0.07 / \$88.33 = 665.69$ hours

and

- Labour costs for Mechanical and opto-mechanical design, bid a
= 665.69 hours x \$100 = \$66,569.00.
- Labour costs for Mechanical and opto-mechanical design, bid b
= 665.69 hours x \$75 = \$49,926.75.
- Labour costs for Mechanical and opto-mechanical design, bid c
= 665.69 hours x \$90 = \$59,912.10.

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	\$80.00	\$234 408.00	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
Methodology for characterizing Eo systems (i2, IR and Vis)	7%	\$65.00	\$57,327.40	\$75.00	\$66,147.00	\$60.00	\$52,917.60	881.96
Calibration of laboratory equipment	7%	\$60.00	\$54,277.20	\$75.00	\$67,846.50	\$60.00	\$54,277.20	904.62
Mechanical and opto-mechanical design	7%	\$100.00	\$66,569.00	\$75.00	\$49,926.75	\$90.00	\$59,912.10	665.69
Software Development	14%	\$80.00	\$125,440.00	\$75.00	\$117,600.00	\$70.00	\$109,760.00	1568.00
TOTAL :			\$794,176.31		\$889,164.00		\$836,660.85	

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

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 must apply.

Summary Table of mandatory and point rated technical criteria:

Mandatory criteria	
1.	The bidder must propose a team of key resources composed of at least: <ul style="list-style-type: none"> 2 intermediate or senior engineers/scientists 1 senior engineer/scientist 1 senior technician <p>Note 1: At least two of these resources must have a Master’s degree (or higher) in physics or engineering physics.</p> <p>Note 2: At least one of these resources must have a technical diploma (in physical technology or equivalent).</p> <p>Note 3: The bidder may propose more key resources than the minimum number required.</p>
2.	The bidder must propose key resources for each of the six tasks (ref. 3.1 through 3.6 in the statement of work). <p>Note 1: The same key resource may be associated with more than one activity.</p> <p>Note 2: The key resources proposed must have the expertise listed under one or more resource category as described in the “RESOURCE CATEGORIES” section of the statement of work.</p>
2.1	Characterization of image intensifiers or their components
2.2	Characterization of infrared sensors (0.9 µm to 15 µm) or their components
2.3	Characterization of UV/visible light sensors
2.4	Development of testing and evaluation methodologies for day/night vision sensors (0.2 µm to 15 µm), including the merging of multiple sensors
2.5	Calibration of laboratory equipment
2.6	Support for optical design and assembly
Technical criteria	
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).	
Criteria 4.1 and 4.2 are aimed at evaluating the bidder’s equipment and facilities.	
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	Pass	Fail
<p>1. <u>The bidder must propose a team of key resources composed of at least:</u></p> <ul style="list-style-type: none">• 2 intermediate or senior engineers/scientists• 1 senior engineer/scientist• 1 senior technician <p>Note 1: At least two of these resources must have a Master's degree (or higher) in physics or engineering physics. Note 2: At least one of these resources must have a technical diploma (in physical technology or equivalent). Note 3: The bidder may propose more key resources than the minimum number required.</p>		
<p>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></p> <p>Note 1: The same key resource may be associated with more than one activity. Note 2: The key resources proposed must have the education and the experience listed under one or more resource category as described in the "RESOURCE CATEGORIES" section of the statement of work.</p>		
<p>2.1 <u>Characterization of image intensifiers or their components</u></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 data measurements in the laboratory.</p>		

MANDATORY CRITERIA	Pass	Fail
<u>2.2 Characterization of infrared sensors (0.9 µm to 15 µm) or their components</u> 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 data measurements in the laboratory.		
<u>2.3 Characterization of UV/visible light sensors</u> 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 data measurements in the laboratory.		
<u>2.4 Development of testing and evaluation methodologies for day/night vision sensors (0.2 µm to 15 µm), including the merging of multiple sensors</u> A minimum of two (2) key resources, including one (1) technician, must be clearly identified for this task.		
<u>2.5 Calibration of laboratory equipment</u> A minimum of two (2) key resources, including one (1) technician, must be clearly identified for this task.		
<u>2.6 Support for optical design and assembly</u> A minimum of one (1) key resource 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.

RATED TECHNICAL CRITERIA				Maximum Score	Mininimum Score												
3. <u>Evaluation of experience of key resources</u> Instructions The bidder will be evaluated based on accomplishments that demonstrate the skills and experience of the proposed resources. For tasks 3.1 through 3.6 (except for 3.4), the total points for each criterion will be the sum of the 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 set out in the criteria: Task x, Activity x a. Key resource involved. b. Project title (including the client, scope in budget-time and date). c. Project objective and its relationship 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.																	
<table><tr><td colspan="4">Task 3.2, a)</td></tr><tr><td>Resource</td><td>Project</td><td>Objective</td><td>Description of resource involvement</td></tr><tr><td>Resource A</td><td>Project ABC, Client A, 6 months, \$10K, 2006</td><td>MTF measurement assembly</td><td>Opto-mechanical design and MTF assembly manufacturing for systems A, B and C. Involvement of X pers./month.</td></tr></table>				Task 3.2, a)				Resource	Project	Objective	Description of resource involvement	Resource A	Project ABC, Client A, 6 months, \$10K, 2006	MTF measurement assembly	Opto-mechanical design and MTF assembly manufacturing for systems A, B and C. Involvement of X pers./month.		
Task 3.2, a)																	
Resource	Project	Objective	Description of resource involvement														
Resource A	Project ABC, Client A, 6 months, \$10K, 2006	MTF measurement assembly	Opto-mechanical design and MTF assembly manufacturing for systems A, B and C. Involvement of X pers./month.														
Task 3.2, b) and c)																	

RATED TECHNICAL CRITERIA				Maximum Score	Minimum Score
<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 pers./month.		
			Analysis of MTF measurements. 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. Where 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> <ul style="list-style-type: none"> a. The project value must be \$10,000 or more; b. Only projects completed since January 1, 2000, will be considered. 					
<p>3.1 <u>Experience in characterizing image intensifiers or their components</u></p> <p>The bidder must present one or more projects related to the characterization of image intensifiers or their components.</p> <p>The bidder must use 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"> c. Data measurement and acquisition systems for image intensifiers or their components; <ul style="list-style-type: none"> o 1 point per parameter measured (see Note 1) for each key resource (max. 2) who has performed this type of measurement. d. Analysis of data collected in the laboratory on image intensifiers and their components; <ul style="list-style-type: none"> o 1 point per parameter analyzed (see Note 1) for one (1) of the key resources. <p>Points will be added in a) and b) based on the number of systems measured or analyzed (see Notes 1 and 2) for each resource assigned to these activities</p>				27	18

RATED TECHNICAL CRITERIA	Maximum Score	Minimum Score
<p>in accordance with the following list:</p> <ul style="list-style-type: none"> a. 1 system analyzed: 1 point b. Between 2 and 5 systems analyzed: 2 points c. More than 5 systems analyzed: 4 points <p>Note 1: 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"> 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; and e. Spectral response. <p>Note 2 : Analysis of simulation results will not be considered.</p>		
<p>3.2 <u>Characterization of infrared sensors (0.9 µm to 15 µm) or their components</u></p> <p>The bidder must present one or more projects related to the characterization of infrared sensors (0.9 µm to 15 µm) or their components to measure their performance.</p> <p>The bidder must use 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"> a. Data measurement in the laboratory for infrared sensors (0.9 µm to 15 µm) or their components; <ul style="list-style-type: none"> o 1 point per parameter measured (see Note 1) for each key resource (max. 2) who has performed this type of measurement. b. Analysis of data collected in the laboratory on infrared sensors (0.9 µm to 15 µm) or their components; <ul style="list-style-type: none"> o 1 point per parameter analyzed (see Note 1) for one (1) of the key resources. <p>Points will be added in a) and b) based on the number of systems measured or analyzed (see Notes 1 and 2) for each resource assigned to these activities in accordance with the following list:</p>	27	18

RATED TECHNICAL CRITERIA	Maximum Score	Minimum Score
<p>a. 1 system analyzed: 1 point b. Between 2 and 5 systems analyzed: 2 points c. More than 5 systems analyzed: 4 points</p> <p>Note 1: Only the following parameters for infrared sensors (0.9 µm to 15 µm) or their components will be considered in calculating points:</p> <p>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)); and e. Spectral response.</p> <p>Note 2: Analysis of simulation results will not be considered.</p>		
<p>3.3 <u>Characterization of UV/visible-light sensors</u></p> <p>The bidder must present one or more projects associated with the development of test methods for UV/visible-light sensors to measure performance. UV/visible-light sensors consist mainly of:</p> <p>a. Complementary metal–oxide–semiconductor (CMOS) sensors; b. Charge-Coupled Device (CCD) sensors; c. Electron-multiplying CCD (EMCCD) sensors; d. Sensors that function in ultraviolet (UV); and e. Day sights, such as binoculars, sights or telescopes.</p> <p>The bidder must use projects to present work that shows the experience and skills of the key resources in the following types of activities:</p> <p>a. Data measurement in the laboratory for UV/visible-light sensors or their components; ○ 1 point per parameter measured (see Note 1) for each key resource (max. 2) who has performed this type of measurement. b. Analysis of data collected in the laboratory on UV/visible-light sensors or their components; ○ 1 point per parameter analyzed (see Note 1) for one (1) of the key resources.</p>	27	18

RATED TECHNICAL CRITERIA	Maximum Score	Minimum Score
<p>Points will be added in 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"> a. Fewer than 3 months of relevant full-time experience: 0 points b. Between 3 and 12 months of relevant full-time experience: 2 points c. More than 12 months of relevant full-time experience: 4 points <p>Note 1: Only the following parameters for UV/visible-light sensors or their components will be considered in calculating points:</p> <ul style="list-style-type: none"> a. Impulse response (MTF); b. Resolution response (MRC); c. Image noise (3D-Noise); d. Dynamic range; and e. Spectral response. <p>Note 2: Analysis of simulation results will not be considered.</p>		
<p><u>3.4 Development of testing and evaluation methods for UV/visible-light sensors (0.2 µm to 15 µm) including the merging of sensor images.</u></p> <p>The bidder must present one or more projects associated with developing methods for testing EO sensors and merging them to evaluate performance.</p> <p>The bidder must use projects to present work that shows the experience and skills of the key resources proposed in the following types of activities (max. one resource per activity):</p> <ul style="list-style-type: none"> a. Literature reviews for developing testing and evaluation methods for EO sensors, including the merging of multiple sensors; b. Development of metrics for measuring the quality of the merged images; c. Development of data acquisition systems to develop testing and evaluation methods for EO sensors, including the merging of multiple sensors; d. Collection and recording of data to develop testing and evaluation methods for EO sensors, including the merging of multiple sensors; and e. Reduction and analysis of data to develop testing and evaluation 	15	10

RATED TECHNICAL CRITERIA	Maximum Score	Minimum Score
<p>methods for EO sensors, including the merging of multiple sensors.</p> <p>Points will be awarded for each activity performed by the resource in accordance with the following list:</p> <ul style="list-style-type: none"> a. One (1) point for activities performed as part of projects resulting in fewer than 6 months of relevant experience; b. Two (2) points for activities performed as part of projects resulting in 6 to 12 months of relevant experience; and c. Three (3) points for activities performed as part of projects resulting in more than 12 months of relevant experience. 		
<p><u>3.5 Calibration of laboratory equipment</u></p> <p>The bidder must present one or more projects (or activities) associated with calibrating EO-related laboratory equipment.</p> <p>The bidder must use these projects (activities) to present work that shows the experience and skills of the key resources in the following types of activities (max. one resource per activity):</p> <ul style="list-style-type: none"> a. Writing calibration plans for EO equipment; b. Carrying out calibration plans for EO equipment; c. Calibrating photometers/radiometers; and d. Calibrating light/radiance sources <p>Points will be awarded based on the experience of the resource assigned to a given activity in accordance with the following list:</p> <ul style="list-style-type: none"> a. Completed activity once: 1 point b. Completed activity between two and five times: 2 points c. Completed activity more than five times: 4 points 	16	10
<p><u>3.6 Support for optical design and assembly</u></p> <p>The bidder must present one or more projects associated with designing optical assemblies.</p> <p>The bidder must use these projects to present work that demonstrates the key resource's experience and skills related to optical design and modelling.</p> <ul style="list-style-type: none"> a. Resource has less than 6 months of experience: 4 points 	10	7

RATED TECHNICAL CRITERIA	Maximum Score	Minimum Score
<p>b. Resource has between 6 and 12 months of experience and has proposed at least one original, customized solution that has been carried out: 6 points</p> <p>c. Resource has between 13 and 36 months of experience and has proposed multiple original, customized solutions that have been optimized and carried out: 8 points</p> <p>d. Resource has more than 37 months of experience and has proposed multiple original, customized solutions that have been optimized and carried out: 10 points</p> <p>Note 1: Optical design and modelling must have been performed using recognized optical design software.</p>		
TOTAL	122	81

RATED TECHNICAL CRITERIA	Maximum score	Minimum score
<p>4. <u>Access to bidder's equipment and facilities</u></p> <p>The bidder should demonstrate its ability to provide characterization services for electro-optical (EO) systems.</p> <p>The bidder should possess and/or have access to specialized laboratories, equipment or facilities that it can use to meet the objectives of the statement of work. Access must be achieved within one week following the task authorization. DRDC Valcartier laboratories should not be considered accessible.</p> <p>The proposed equipment should be able to be used by one or more of the key resources presented by the bidder.</p>		

<p>4.1 Facilities and equipment supporting evaluation activities for image intensifiers and EO sensors</p> <ul style="list-style-type: none"> a. Controlled low-light-level laboratory (below 1 mLux): 20 points b. Test bench dedicated to evaluating image intensifier sensors (in support of 3.1) <ul style="list-style-type: none"> ○ Full commercial system supported and calibrated by the manufacturer: 10 points ○ In-house system partly supported and calibrated by the manufacturers: 8 points In addition, <ul style="list-style-type: none"> ○ The resources proposed in 3.1 (max. 2) have more than 6 months of experience with the proposed test bench: Add 2 points per key resource proposed (max. 2 resources) c. Digital capture of video signals: 5 pts d. Capture of digital output from cameras (e.g. C-Link): 5 points e. Assembly that can be used to measure the spectral response of image intensifiers: 10 points f. A light source covering 300 nm to 1200 nm that can be used to reach light levels as low as 0.01 mLux: 5 points g. A light source covering 300 nm to 1200 nm calibrated: 10 points h. Spatial calibration targets for image analysis (e.g. USAF target): 2 points i. Photometer: 3 points j. Radiometer (visible spectral band): 3 points k. Radiometer (NIR-SWIR spectral band): 3 points <p>Note 1: The points are cumulative.</p> <p>Note 2: The bidder must include details, specifications and location of all facilities/equipment. The bidder must demonstrate that it is able to gather all of the available equipment indicated in section 4.1 in the same laboratory in less than 5 days.</p>	80	56
<p>4.2 Facilities and equipment supporting evaluation activities for infrared sensors</p> <ul style="list-style-type: none"> a. Test bench dedicated to evaluating infrared sensors (in support of 3.2) <ul style="list-style-type: none"> ○ Full commercial system supported and calibrated by the manufacturer: 10 points ○ In-house system partly supported and calibrated by the manufacturers: 8 points 	34	24

<p>In addition,</p> <ul style="list-style-type: none"> ○ The resources proposed in 3.2 (max. 2) have more than 6 months of experience with the proposed test bench: Add 2 points per key resource proposed (max. 2 resources) b. Digital capture of video signals from thermal cameras: 5 points c. Capture of digital output from cameras (e.g. C-Link): 5 points d. Temperature-controlled black-body source that can be used for temperature contrasts (-10 °C to +30 °C): 5 points e. Temperature-controlled black-body source (room temperature to +120 °C): 5 points <p>Note 1: The points are cumulative.</p> <p>Note 2: The bidder must include details, specifications and location of all facilities/equipment. The bidder must demonstrate that it is able to gather all of the available equipment indicated in section 4.1 in the same laboratory in less than 5 days.</p>		
TOTAL	114	80

5. RATED CRITERIA FOR EVALUATING THE COMPANY'S EXPERIENCE AND MANAGEMENT MODEL	Maximum score	Minimum score
<p><u>5.1 Bidder's experience in managing projects related to characterizing EO systems within the past 10 years</u></p> <p>The bidder should describe its experience in managing projects related to characterizing EO systems. This should include project titles and descriptions, values and years of completion.</p> <ul style="list-style-type: none"> a. More than 4 R&D projects with a total budget (sum of projects) greater than \$1 million: 6 points b. More than 2 R&D projects with a total budget (sum of projects) greater than \$0.5 million: 4 points c. Fewer than 2 R&D projects with a total budget (sum of projects) less than \$0.5 million: 2 points 	6	N/A

5. RATED CRITERIA FOR EVALUATING THE COMPANY’S EXPERIENCE AND MANAGEMENT MODEL	Maximum score	Minimum score
<p><u>5.2 Management tools/methods for planning and managing tasks and activities</u></p> <p>The bidder should propose appropriate project management techniques, including the production of schedules or Gantt charts, as well as a risk management plan. The proposed tools/methods should be supported by concrete examples from projects previously completed by the bidder. The tasks/activities, resources and deliverables should be clearly identified.</p> <ul style="list-style-type: none"> a. The bidder proposes a “flow chart process” (schedule or Gantt chart): 2 points 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 points c. The bidder proposes a risk management plan based on recognized standards (e.g. PMBOK): 2 points d. The bidder already uses a risk management plan based on recognized standards (e.g. PMBOK) and provides a sample document associated with a past project completed by the bidder’s company: 5 points <p>Note: Points are cumulative (a or b + c or d).</p>	10	N/A
<p><u>5.3 Quality assurance process</u></p> <p>The bidder should describe the quality assurance processes used within its company.</p> <ul style="list-style-type: none"> 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 points 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, 	5	N/A

5. RATED CRITERIA FOR EVALUATING THE COMPANY’S EXPERIENCE AND MANAGEMENT MODEL	Maximum score	Minimum score
<p>associated with a project completed by the bidder’s company, has been provided: 3 points</p> <p>c. The bidder does not submit a quality assurance process: 0 points</p>		
<p>5.4 <u>Resource management systems</u></p> <p>The bidder should propose an appropriate resource management system. The bidder should 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 using resource management tools: 2 points</p> <p>b. The bidder demonstrates that it regularly uses resource management tools (e.g. OpenProj). The methods/tools proposed should be supported by concrete examples from projects completed in the past by the bidder: 4 points</p> <p>c. The bidder demonstrates that it regularly uses resource management tools (e.g. OpenProj). The methods/tools proposed should 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 should propose at least two different solutions to staff shortage problems. The solutions proposed should be relevant, effective and explained in detail in order to be taken into account in the evaluation: 8 points</p>	8	N/A
TOTAL	29	N/A