

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

**REQUEST FOR PROPOSAL**  
**DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

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

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

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

**Comments - Commentaires**

<b>Title - Sujet</b> AUTOMATIC TARGET CUEING	
<b>Solicitation No. - N° de l'invitation</b> W7701-155960/A	<b>Date</b> 2015-01-12
<b>Client Reference No. - N° de référence du client</b> W7701-155960	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$QCL-029-16288	
<b>File No. - N° de dossier</b> QCL-4-37250 (029)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2015-01-29</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Heure Normale du l'Est HNE
<b>F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input checked="" type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Champoux, Nicolas	<b>Buyer Id - Id de l'acheteur</b> qcl029
<b>Telephone No. - N° de téléphone</b> (418) 649-2821 ( )	<b>FAX No. - N° de FAX</b> (418) 648-2209
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> MINISTERE DE LA DEFENSE NATIONALE VALCARTIER RESEARCH CENTER, BLDG 65 2459 DE LA BRAVOURE RD QUEBEC Québec G3J1X5 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**

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

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

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qc1029

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**TITLE : SOFTWARE DEVELOPMENT AND PERFORMANCE ASSESSMENT - AUTOMATIC TARGET CUEING (ATC) IN VISIBLE, SHORTWAVE INFRARED AND LONGWAVE INFRARED SPECTRUM FOR MILITARY OPERATIONS**

**PART 1 - GENERAL INFORMATION**

**1. Introduction**

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

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Financial 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 and the Contractor Disclosure of Foreground Information.

**2. Summary**

Background

Under the mandate of Future Small Arms Research (FSAR) project, DRDC will examine existing and future technologies for small arm capabilities with the objective of identifying technologies which could increase shot placement accuracy and reduce engagement time under various situations. These technologies include weapon, ammunition, positioning systems, optics and electro-optics. A series of studies on these subjects will be performed, some of which may involve literature survey, simulation and modelling, experiments with modules and systems in lab and field, user trials, etc.

For many years, defence scientists and military forces are exploring ATC capability based on imagery in order to assist situational awareness operations such as surveillance, target tracking and detecting, and target classification (man, vehicle, clutter) and recognition (LAV and tank, man and the head of a man, clutter). Under FSAR, ATC was considered as one of the key enablers in future small arm technology. The goal is to assess feasibility and capability of assisted target engagement (ATE) in small arms by combining ATC to electronic ignited ammunition and small arm weapons. It is believed that ATE may help improving shoot placement and shortening engagement time in some situations. A series of studies and experiments will be performed to quantify the ATE capability.

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Highly accurate ATC on both human and vehicle targets at standoff range (100m and more) under arbitrary field conditions has been demonstrated and could be achieved with today's technologies such as those in ALERT TDP, FAVS TDP and among many other DRDC projects. Most of these demonstrations, if not all, were performed in infrared spectrum. In a recent study, DRDC examined ATC performance in visible, SWIR and LWIR based on open source algorithms. This study suggests that sufficient ROC performance could be achieved in visible, SWIR and LWIR spectrum with current EO technology out to maximum effective range of small arms at 600m.

This work is to perform further study on ROC (Pd vs Fa) in association with image attributes and algorithm parameters.

### Objective

DRDC has identified two open source algorithms: (a) Histogram of Oriented Gradients (HOG) with Support Vector Machine (SVM); and (b) Local Self-Similarity (LSS). The contractor will analyse Receiver Operating Characteristic (ROC) of human target detection of these two algorithms based on image datasets provided by DRDC. The datasets consist of images in visible, passive shortwave infrared (SWIR), active SWIR, and longwave infrared (LWIR). These images are recorded at different time of day and different target standoff distance.

The contractor will:

- (1) Perform ground truth on DRDC image datasets and categorize image attributes of provided image datasets into these groups: (i) 8-bit and 16-bit encoding, (ii) spectral band, (iii) time of day, (iv) number of pixels on target, (v) target-background contrast, (vi) image with turbulence effect;
- (2) Determine ROC performance in association with image data attributes and categorized groups, and also in association with algorithm parameters mainly with window stride, scale, Hough bin size, threshold, training, query images, positive and negative examples;
- (3) Determine suitable algorithm parameters based on image attributes and categorized groups for ROC performance with high probability of detection (Pd) and low false alarm (Fa);
- (4) Analyse all operating parameters of the two algorithms against ROC performance and provide "weight score" to these parameters regarding impacts to ROC performance in association with the attributes of image datasets. These "weight scores" will be used to potentially optimize the speed-complexity of the algorithm performance;

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 October 31st, 2016, inclusive.

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 limited to Canadian goods and/or services.

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

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### **3. Debriefings**

After contract award, bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

## **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 (2014-09-25) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

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

Delete: sixty (60) days

Insert: one hundred and twenty (120) days

#### **1.1 SACC Manual Clauses**

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

### **2. Submission of Bids**

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

**Bid Receiving - PWGSC  
1550, D'Estimauville Avenue  
Quebec, Quebec  
G1J 0C7**

Due to the nature of the bid solicitation, bids transmitted by facsimile or email 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



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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:

- (i) an individual;
- (ii) an individual who has incorporated;
- (iii) a partnership made of former public servants; or
- (iv) 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:

- (i) name of former public servant;
- (ii) 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:

- (i) name of former public servant;
- (ii) conditions of the lump sum payment incentive;
- (iii) date of termination of employment;

- 
- (iv) amount of lump sum payment;
  - (v) rate of pay on which lump sum payment is based;
  - (vi) period of lump sum payment including start date, end date and number of weeks;
  - (vii) 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. Communications - Solicitation Period**

All enquiries must be submitted to the Contracting Authority 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.

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## PART 3 - BID PREPARATION INSTRUCTIONS

### 1. Bid Preparation Instructions

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

Section I : Technical Bid (5 hard copies) (and 2 soft copy on CD or DVD).  
Section II: Financial Bid (2 hard copies)  
Section III: Certifications ( 1 hard copy)

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

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

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

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

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

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

#### 1.1 Section I : Technical Bid

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

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

- (b) The technical bid consists of the following:
  - (i) **All the information required to demonstrate its conformity with the Mandatory and Point Rated Technical Criteria** described in Section 1.1.2, Part 4, of this document.

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

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

- (a) A Total Cost to a Ceiling Price. The total amount of Applicable Taxes are to be shown separately, if applicable. The information should be provided in accordance with the Financial Bid Presentation Sheet at Attachment 1.
- (b) 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**

### **1.4.1 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.

Canada requests that bidders provide the following information :

**Administrative representative :**

Name :  
Telephone :  
Facsimile :  
Email :

**Technical representative :**

Name :  
Telephone :  
Facsimile :  
Email :

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

### **1. Evaluation Procedures**

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

#### **1.1 Technical Evaluation**

##### **1.1.1 Bidder Experience**

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.

##### **1.1.2 Mandatory and Point Rated Technical Evaluation**

Mandatory and Point Rated Technical Evaluation Criteria are included in Attachment 2.

#### **1.2 Financial Evaluation**

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

The information must be provided in accordance with the Financial Bid Presentation Sheet in Attachment 1.

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

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

### **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;
  - (c) obtain the required minimum points specified for each point rated technical criterion.
2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 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 135 and the lowest evaluated price is \$45,000 (45).

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

	<b>Bidder</b>		
	<b>Bidder 1</b>	<b>Bidder 2</b>	<b>Bidder 3</b>
<b>Overall Technical Score</b>	115/135	89/135	92/135
<b>Bid Evaluated Price</b>	\$55,000.00	\$50,000.00	\$45,000.00
	<b>Calculations</b>		
<b>Technical Merit Score</b>	$115/135 \times 60 = 51.11$	$89/135 \times 60 = 39.56$	$92/135 \times 60 = 40.89$
<b>Pricing Score</b>	$45/55 \times 40 = 32.73$	$45/50 \times 40 = 36.00$	$45/45 \times 40 = 40.00$
<b>Combined Rating</b>	83.84	75.56	80.89
<b>Overall Rating</b>	<b>1st</b>	<b>3rd</b>	<b>2nd</b>

The amounts listed in the table above are **fictitious** and are provided **for example purposes only**.

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## **PART 5 - CERTIFICATIONS**

Bidders must provide the required certifications and documentation to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority may render the bid non-responsive or constitute a default under the Contract.

### **1. Certifications Required Precedent to Contract Award**

#### **1.1 Integrity Provisions – Associated Information**

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

#### **1.2 Federal Contractors Program for Employment Equity - Bid Certification**

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](#)" list ([http://www.labour.gc.ca/eng/standards\\_equity/eq/emp/fcp/list/inelig.shtml](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)) available from [Employment and Social Development Canada \(ESDC\) - Labour's website](#)

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

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

**2.1.1.** SACC Manual clause [A3050T](#) (2014-11-27) 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, by submitting a bid, 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**

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

## **2.4 Language Capability**

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



Solicitation No – N° de l'invitation  
W7701-155960/A  
Client Ref No. – N° de réf. du client  
W7701-15-5960

Amd. No. – N° de la modif.  
File No. – N° du dossier  
QCM-4-37250

Buyer ID – id de l'acheteur  
QCL029

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## **PART 6 - FINANCIAL REQUIREMENTS**

### **1. Financial Capability**

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

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## PART 7 - RESULTING CONTRACT CLAUSES

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

### 1. Statement of Work

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

### 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 (2014-09-25), General Conditions - Research & Development, apply to and form part of the Contract.

### 2.2 Supplemental General Conditions

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

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

## 3. Security Requirement

3.1 There is no security requirement applicable to this Contract.

## 4. Term of Contract

### 4.1 Period of Contract

The period of the Contract is from date of Contract to October 31, 2016 inclusive.

## 5. Authorities

### 5.1 Contracting Authority

The Contracting Authority for the Contract is:  
Nicolas Champoux  
Public Works and Government Services Canada  
601-1550 D'Estimauville  
Québec, QC.

Solicitation No – N° de l'invitation  
W7701-155960/A  
Client Ref No. – N° de réf. du client  
W7701-15-5960

Amd. No. – N° de la modif.  
File No. – N° du dossier  
QCM-4-37250

Buyer ID – id de l'acheteur  
QCL029

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G1J 0C7  
Telephone: 418-649-2821  
Facsimile: 418-649-2209  
E-mail address: nicolas.champoux@tpsgc.pwgsc.gc.ca

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

**5.2 Technical Authority** *(to be completed by PWGSC at Contract award)*

The Technical Authority for the Contract is:

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

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

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

**5.3 Contractor's Representative**

**Administrative representative :**

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

**Technical representative :**

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

**5.4 Procurement Authority** *(to be completed by PWGSC at Contract award)*

The Procurement Authority for the Contract is:

\_\_\_\_\_ (Name of Procurement Authority)  
\_\_\_\_\_ (Title)  
\_\_\_\_\_ (Organization)  
\_\_\_\_\_ (Address)

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

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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**

SACC Manual Clause A3025C (2013-03-21)

## **7. Payment**

### **7.1 Basis of Payment**

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

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

***Ceiling price:** A ceiling price is the maximum amount of money that may be paid to a contractor. By establishing a ceiling price, the contractor must satisfactorily fulfill all of its contractual obligations relative to the work to which this basis of payment applies without additional payment whether or not the actual costs incurred exceed the ceiling price.*

### **7.2 Limitation of Price**

SACC Manual Clause C6000C (2011-05-16), Limitation of Price

### **7.3 Method of Payment**

#### **7.3.1 Progress Payments**

1. Canada will make progress payments in accordance with the payment provisions of the Contract, no more than once a month, for cost incurred in the performance of the Work up to **90 percent** of the amount claimed and approved by Canada if:
  - (a) an accurate and complete claim for payment using form PWGSC-TPSGC 1111(<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/1111.pdf>), Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
  - (b) the amount claimed is in accordance with the Basis of payment;
  - (c) the total amount for all progress payments paid by Canada does not exceed **90 percent** percent of the total amount to be paid under the Contract;
  - (d) all certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives.

2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.
3. 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 Funding by Fiscal Year**

Despite the Total Estimated Cost (Limitation of Expenditure) specified in the Contract, and unless otherwise authorized in writing by the Contracting Authority, the maximum amount which may be paid for work completed in the period ending 31 March of the year specified is as follows:

Period from date of Contract to 31 March 2015 : **10,000.00 \$**

#### **7.5 SACC Manual Clauses**

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

#### **7.6 Discretionary Audit**

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

### **8. Invoicing Instructions - Progress Claim**

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

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
- (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
- (c) a list of all expenses;
- (d) expenditures plus pro-rated profit or fee.

Each claim must be supported by:

- (a) a copy of time sheets to support the time claimed;
- (b) a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses;
- (c) a copy of the monthly progress report.

2. Applicable Taxes must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no Applicable Taxes payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 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.

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

## 9. Certifications

### 9.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the entire contract period. If the Contractor does not comply with any certification, provide the related documentation or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

### 9.2 Federal Contractors Program for Employment Equity - Default by the Contractor

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms of the Contract.

### 9.3 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 Quebec.

## 11. Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions 4002 (2010-08-16), Software Development or Modification Services;

- 
- (c) the general conditions 2040 (2014-09-25), General Conditions - Research & Development;
  - (d) Annex A, Statement of Work;
  - (e) Annex B, Basis of Payment;
  - (f) Annex C, Contractor Disclosure of Foreground Information;
  - (g) the Contractor's bid dated \_\_\_\_\_ .

## **12. Defence Contract**

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

## **13. Foreign Nationals (Canadian Contractor)**

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

## **14. Insurance**

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

## **15. Progress Reports**

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

2. The progress report must contain three 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.

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## ANNEX A

### STATEMENT OF WORK

#### 1. GENERAL

##### 1.1 Title

Software development and performance assessment - Automatic target cueing (ATC) in visible, shortwave infrared and longwave infrared spectrum for military operations

##### 1.2 Objective

DRDC has identified two open source algorithms: (a) Histogram of Oriented Gradients (HOG) with Support Vector Machine (SVM); and (b) Local Self-Similarity (LSS). The contractor will analyse Receiver Operating Characteristic (ROC) of human target detection of these two algorithms based on image datasets provided by DRDC. The datasets consist of images in visible, passive shortwave infrared (SWIR), active SWIR, and longwave infrared (LWIR). These images are recorded at different time of day and different target standoff distance.

The contractor will:

- (1) Perform ground truth on DRDC image datasets and categorize image attributes of provided image datasets into these groups:
  - (i) 8-bit and 16-bit encoding,
  - (ii) spectral band,
  - (iii) time of day,
  - (iv) number of pixels on target,
  - (v) target-background contrast,
  - (vi) image with turbulence effect;
- (2) Determine ROC performance in association with image data attributes and categorized groups, and also in association with algorithm parameters mainly with window stride, scale, Hough bin size, threshold, training, query images, positive and negative examples;
- (3) Determine suitable algorithm parameters based on image attributes and categorized groups for ROC performance with high probability of detection (Pd) and low false alarm (Fa);
- (4) Analyse all operating parameters of the two algorithms against ROC performance and provide "weight score" to these parameters regarding impacts to ROC performance in association with the attributes of image datasets. These "weight scores" will be used to potentially optimize the speed-complexity of the algorithm performance;

##### 1.3 Background

Under the mandate of Future Small Arms Research (FSAR) project, DRDC will examine existing and future technologies for small arm capabilities with the objective of identifying



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technologies which could increase shot placement accuracy and reduce engagement time under various situations. These technologies include weapon, ammunition, positioning systems, optics and electro-optics. A series of studies on these subjects will be performed, some of which may involve literature survey, simulation and modelling, experiments with modules and systems in lab and field, user trials, etc.

For many years, defence scientists and military forces are exploring ATC capability based on imagery in order to assist situational awareness operations such as surveillance, target tracking and detecting, and target classification (man, vehicle, clutter) and recognition (LAV and tank, man and the head of a man, clutter). Under FSAR, ATC was considered as one of the key enablers in future small arm technology. The goal is to assess feasibility and capability of assisted target engagement (ATE) in small arms by combining ATC to electronic ignited ammunition and small arm weapons. It is believed that ATE may help improving shoot placement and shortening engagement time in some situations. A series of studies and experiments will be performed to quantify the ATE capability.

Highly accurate ATC on both human and vehicle targets at standoff range (100m and more) under arbitrary field conditions has been demonstrated and could be achieved with today's technologies such as those in ALERT TDP, FAVS TDP and among many other DRDC projects. Most of these demonstrations, if not all, were performed in infrared spectrum. In a recent study, DRDC examined ATC performance in visible, SWIR and LWIR based on open source algorithms. This study suggests that sufficient ROC performance could be achieved in visible, SWIR and LWIR spectrum with current EO technology out to maximum effective range of small arms at 600m.

This work is to perform further study on ROC (Pd vs Fa) in association with image attributes and algorithm parameters. Two open source algorithms were identified: (a) Histogram of Oriented Gradients (HOG) with Support Vector Machine (SVM); and (b) Local Self-Similarity (LSS). The contractor must perform the following tasks to achieve the objective.

#### 1.4 Acronymes

ALERT	Advanced Linked Extended Reconnaissance Targeting
FAVS	Future Armoured Vehicle Systems
TDP	Technical Demonstration Project
ATC	Automatic Target Cueing
ATD	Automatic Target Detection
ATR	Automatic Target Recognition
TA	Technical Authority
HOG	Histogram of Oriented Gradients
SVM	Support Vector Machine
LSS	Local Self-Similarity
ROC	Receiver Operating Characteristic
Pd	Probability of detection
Fa	False alarm

#### 2. APPLICABLE DOCUMENTS (references)

None.

#### 3. SCOPE OF THE WORK

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### Task 1 – Perform ground truth on DRDC image datasets

The contractor must perform ground truth on provided DRDC image datasets using the DRDC ground truth Matlab tool. These image datasets include visible, passive and active SWIR and LWIR imagery captured in different conditions including turbulence effected images. The exact number of images involved is unknown at this moment, however, it is expected that there will be a total of up to 5000 images for ground truth. The ground truth image datasets will be used to compute ROC (Pd and Fa) of the two detector algorithms. The task includes:

- Examine and label each image in the image datasets with image truing reference based on DRDC image truth format (Matlab)
- Categorize image attributes of provided image datasets into groups, for example, 16-bit encoding, spectral band, time of day, number of pixels on target, target-background contrast and with or without turbulence effect

### Task 2 – Determine ROC performance in association with image attributes and algorithm parameters

The contractor must determine ROC in association with image attributes and algorithm parameters. This includes:

- Implement and operate the two open source algorithms, HOG SVM and LSS provided by DRDC in a PC in Matlab environment  
Note: The contractor must make sure that the Matlab source codes can be installed and operated in DRDC PCs at the end of the contract
- Select operating parameters in each algorithm, determine ROC performance of the two algorithms against the categorized image datasets. These operating parameters mainly are:
  - Window stride
  - Scale factor
  - Hough bin size, block size, cell size
  - SVM (HOG) training approach (linear, non-linear, non-target selection approach)
  - Threshold
  - Selection and number of query images (LSS)
  - Selection and number of positive and negative examples
  - other parameters deemed important by the contractor and the technical authority (This part of the work and associated cost should represent 5% to 10% of the total work to perform)

### Task 3 – Determine suitable algorithm parameters based on image attributes for best ROC

The contractor must analyse results in Task 2, to examine and detail impacts to Pd and Fa of ROC under different image attributes and algorithm operating parameters. This includes:

- Establish trends of Pd and Fa with respect to image attributes of the two algorithms
- Establish trends of Pd and Fa with respect to algorithm operating parameters of the two algorithms
- Analyse relationship between Pd and Fa, and to identify optimum Pd and Fa values with respect to image attribute and operating parameters
- Analyse relationship between Pd and Fa, and to recommend possible tradeoffs between Pd and Fa to achieve larger Pd and/or lower Fa

- The Contractor must review all the operating parameters identified in Task 2 and provide “weight scores” to these parameters regarding impact to ROC and processing speed in association with the image attributes.

#### 4. REPORTS AND OTHER DELIVERABLES

- i. Monthly Progress Report which must include, at a minimum:
  - The work performed since the previous report;
  - Progress;
  - Technical and management issues requiring resolution and
  - The work planned for the next reporting period.
- ii. A final report summarizing all results in Task 1 to Task 4 detailed as so:

##### **Task 1**

- All ground truth image datasets with truthing reference based on DRDC format
- Categorized ground truth image datasets into groups of 8-bit and 16-bit encoding, spectral band, time of day, number of pixels on target, target-background contrast and turbulence effect

##### **Task 2**

- All source codes, compiled files and implementation software, in Matlab environment
- Methodology of selection of algorithm operating parameters in association with categorized image datasets
- Results (in table format and Excel files) of ROC performance of the two algorithms with selected operating parameters against the categorized image datasets

##### **Task 3**

- Analytical results of impacts to Pd and Fa of the two algorithms with respect to algorithm operating parameters
- Analytical results of impacts to Pd and Fa of the two algorithms with respect to image attributes
- Analytical results to identify optimum Pd and Fa values with respect to image attributes and operating parameters
- Methodology of “weight scores” analysis and associated “weight scores” to all operating parameters with respect to image attributes
- Results of ROC performance and processing speed of the two algorithms with reduced number of operating parameters

The final report must include detailed descriptions of the all software, operating instructions, details of optimization techniques, methodology, results of tests and evaluations, and an analysis of achieved performance. The report should also include recommendations for future improvements and upgrades. Software should have a moderate level of documentation to facilitate future improvements, modifications and implementations.

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All reports must be provided in two paper copies as well as one electronic copy in Adobe PDF or MSWord. The reports may be written in either official language.

#### 4.1 Publications

Any manuscript for publication in magazines, newspapers or other, including presentation summaries or other types of publication, must be submitted to the Technical Authority for revision 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 will 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

One kickoff meeting will be held at the beginning of the contract. One or two meetings during each task to refine the information need for the task and one meeting at the end of the task. The meeting can be held on-site or off-site, or through teleconference.

#### 6. GOVERNMENT SUPPLIED MATERIAL (GSM) HOG SVM and LSS algorithms

#### 7. GOVERNMENT FURNISHED EQUIPMENT (GFE) None

#### 8. SPECIAL CONSIDERATIONS

All work is unclassified and the contractor will not have access to any classified information.

#### 9. WORK LOCATION

The work may be performed at the Contractor's location.

**ANNEX B**

**BASIS OF PAYMENT**

*(to be completed by Canada at contract award)*  
***(Bidders must submit their financial bid in accordance with Attachment 1 - Financial Bid Presentation Sheet)***

**1. For the Work described at Annex A, “Statement of Work”:**

**1.1 LABOUR:** at firm all-inclusive rates (including profit and overhead, applicable taxes extra), in accordance with the following:

Proposed Resources	Firm Hourly Rate Proposed Contract Period				Extended Total per Resource
	From Contract Award to 2015-10-31	Total Est. Hours	From 2015- 11-01 to 2016-10-31	Total Est. Hours	
<b>Project Manager :</b>					
1	\$		\$		\$
2	\$		\$		\$
<b>Ressource with graduate studies :</b>					
1	\$		\$		\$
2	\$		\$		\$
3	\$		\$		\$
4	\$		\$		\$
5	\$		\$		\$
6	\$		\$		\$
<b>Ressource with bachelor’s degree :</b>					
1	\$		\$		\$
2	\$		\$		\$
3	\$		\$		\$
4	\$		\$		\$
5	\$		\$		\$
6	\$		\$		\$

TOTAL ESTIMATED LABOUR: \$ \_\_\_\_\_

**1.2 RENTALS:** at actual cost without markup

Description	Price
_____	_____
_____	_____

---

TOTAL ESTIMATED RENTALS: \$ \_\_\_\_\_

**1.3 MATERIALS AND SUPPLIES:** at laid down cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED MATERIALS AND SUPPLIES: \$ \_\_\_\_\_

**1.4 SUBCONTRACTS (EXCEPT RESOURCES PROPOSED IN SECTION 1.1 - LABOUR) :**  
at actual cost without markup

TOTAL ESTIMATED SUBCONTRACTS: \$ \_\_\_\_\_

**1.5 TRAVEL & LIVING:**

The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the Treasury Board Travel Directive ([http://www.tbs-sct.gc.ca/pubs\\_pol/hrpubs/TBM\\_113/td-dv\\_e.asp](http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/TBM_113/td-dv_e.asp)), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees" are applicable.

All travel must have prior authorization of the Technical Authority. All payments are subject to government audit.

TOTAL ESTIMATED TRAVEL & LIVING: \$ \_\_\_\_\_

**ESTIMATED COST TO A CEILING PRICE: \_\_\_\_\_ \$**  
**(Applicable Taxes extra)**

With the exception of the firm rate(s) and price(s), the amounts shown in the various items specified above are estimates only. Minor changes to these estimates will be accepted for billing purposes as the Work proceeds, provided that these changes have the prior approval of the Technical Authority, and provided that the estimated cost does not exceed the aforementioned Ceiling Price.

---

**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)

**ATTACHMENT 1**

**FINANCIAL BID PRESENTATION SHEET**

**1. For the Work described at Annex A, “Statement of Work”:**

**1.1 LABOUR:** at firm all-inclusive rates (including profit and overhead, applicable taxes extra), in accordance with the following:

**BIDDERS MUST QUOTE ONE RATE PER PROPOSED RESOURCE, PER PERIOD.**

The proposed resources can be employees of subcontractors, provided that this is done in accordance with Article 6 of the General Conditions 2040 that apply to this Contract. If the resource works for a subcontractor, bidders must also provide the name of the subcontractor.

Proposed Resources	Firm Hourly Rate Proposed Contract Period			Extended Total per Resource
	From Contract Award to 2015-10-31	Total Est. Hours	From 2015- 11-01 to 2016-10-31	
<b>Project Manager :</b>				
1	\$		\$	\$
2	\$		\$	\$
<b>Ressource with graduate studies :</b>				
1	\$		\$	\$
2	\$		\$	\$
3	\$		\$	\$
4	\$		\$	\$
5	\$		\$	\$
6	\$		\$	\$
<b>Ressource with bachelor’s degree :</b>				
1	\$		\$	\$
2	\$		\$	\$
3	\$		\$	\$
4	\$		\$	\$
5	\$		\$	\$
6	\$		\$	\$

TOTAL ESTIMATED LABOUR: \$ \_\_\_\_\_

*Items 1.2 through 1.5. shall be completed if the Bidder’s rates in 1.1 above do not include the following:*



**1.2 RENTALS:** at actual cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED RENTALS: \$ \_\_\_\_\_

**1.3 MATERIALS AND SUPPLIES:** at laid down cost without markup

Description	Price
_____	_____
_____	_____
_____	_____

TOTAL ESTIMATED MATERIALS AND SUPPLIES: \$ \_\_\_\_\_

**1.4 SUBCONTRACTS (EXCEPT RESOURCES PROPOSED IN SECTION 1.1 - LABOUR) :**  
at actual cost without markup

Support for the proposed subcontractor's price is required in the same details as that required for the Bidder's price. The estimated price for subcontracts should include all direct charges and travel & living expenses which would be to the account of the subcontractor.

TOTAL ESTIMATED SUBCONTRACTS: \$ \_\_\_\_\_

**1.5 TRAVEL & LIVING:** The Contractor will be reimbursed its authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for profit and/or administrative overhead, in accordance with the meal, private vehicle and incidental expenses provided in Appendices B, C and D of the Treasury Board Travel Directive ([http://www.tbs.sct.gc.ca/pubs\\_pol/hrpubs/TBM\\_113/td-dv\\_e.asp](http://www.tbs.sct.gc.ca/pubs_pol/hrpubs/TBM_113/td-dv_e.asp)), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees" are applicable. All travel must have prior authorization of the Technical Authority. All payments are subject to government audit.

*Details are to be provided on a separate sheet.*

TOTAL ESTIMATED TRAVEL & LIVING: \$ \_\_\_\_\_

**ESTIMATED COST TO A CEILING PRICE: \_\_\_\_\_ \$**  
**(Applicable Taxes extra)**

With the exception of the firm rate(s) and price(s), the amounts shown in the various items specified above are estimates only. Minor changes to these estimates will be accepted for billing purposes as the Work proceeds, provided that these changes have the prior approval of the

Solicitation No – N° de l'invitation  
W7701-155960/A  
Client Ref No. – N° de réf. du client  
W7701-15-5960

Amd. No. – N° de la modif.  
File No. – N° du dossier  
QCM-4-37250

Buyer ID – id de l'acheteur  
QCL029

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Technical Authority, and provided that the estimated cost does not exceed the aforementioned Ceiling Price.

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## ATTACHMENT 2

### MANDATORY AND POINT RATED TECHNICAL CRITERIA

#### 1. Mandatory Technical Criteria

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

*Note : 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*

**a) The bidder must propose the minimum number of resources indicated below for each field of activity (point rated criteria 2.1 (a) to 2.1 (g)). The same individual can be proposed for more than one field of activity:**

- At least one resource with graduate studies and one resource with bachelor's degree

Resources proposed as "Resource with graduate studies" must have completed at minimum;

- a Master's degree in physics, engineering physics, electrical engineering, computer engineering or computer science.

Resource(s) proposed as "Resource with bachelor's degree" must have completed at minimum:

- a bachelor's degree in physics, engineering physics, electrical engineering, computer engineering or computer science.

## 2. Point Rated Technical Criteria

Each technical offer that meets all the mandatory requirements defined above will be evaluated and rated in terms of the following evaluation criteria:

### **Summary Table of Point Rated Technical Criteria**

	MAX	MIN
<b>2.1 TECHNICAL PROPOSAL</b> <ul style="list-style-type: none"><li>• Understanding of objectives and required technical work</li><li>• Proposed strategy and methodology</li></ul>	<b>25</b>	<b>10</b>
<b>2.2 QUALIFICATIONS OF RESOURCES DIRECTLY INVOLVED IN THE PROJECT (EXPERIENCE AND ACADEMIC TRAINING)</b>	<b>32</b>	<b>7</b>
<b>2.3 BIDDER'S EXPERIENCE</b>	<b>20</b>	<b>4</b>
<b>TOTAL</b>	<b>77</b>	<b>21</b>

#### Note for criteria evaluating experience

*For all criteria evaluating the experience of the proposed resources, points will be given only for experience that is sufficiently demonstrated. Bidders should therefore provide sufficient information to allow for the complete evaluation of each example of experience mentioned. The points will not be awarded if the information provided is insufficient to confirm that the experience is in conformity with the criterion requirements.*

*Here are examples of information allowing for the complete evaluation of experience (applicable depending on the criterion):*

- *subject of the project or experience;*
- *nature of the project or experience;*
- *client name, including the name and telephone number of a client contact person who can confirm the information;*
- *exact dates of the project or experience (start and end dates – month and year);*
- *exact dates of resource's involvement in the project (start and end dates – month and year);*
- *tasks carried out by the resource during the project or experience.*

**Please note that overlapping experiences will be counted only once.**

	MAX	MIN
<b>2.1 TECHNICAL PROPOSAL</b>	<b>25</b>	<b>10</b>
<p><b>2.1.1 Understanding of objectives and required technical work</b></p> <p>The bidder should clearly demonstrate that he understands the objectives and specificities of the project by providing in its own word a demonstration of its understanding. He should also present in details the technical support that he proposes for the conduct of the work and for achieving the objectives. The demonstrated understanding should not be limited to the description of the statement of work.</p> <p><b>10 pts:</b> Proof of an excellent understanding of the task objectives and realistic technical solutions. All principal elements are defined and solutions given.  <b>8 pts:</b> Proof of a very good understanding of the task objectives and realistic technical solutions. Almost all principal elements are defined and solutions given.  <b>6 pts:</b> Proof of a good understanding of the task objectives and realistic technical solutions. Most of the principal elements are defined and solutions given.  <b>4 pts:</b> Proof of a limited understanding of the task objectives and realistic technical solutions. Some of the principal elements are defined and solutions given.  <b>0 pts:</b> No understanding of the task objectives and realistic technical solutions. Very few of the principal elements are defined and solutions given.</p>	10	4
<p><b>2.1.2 Proposed strategy and methodology</b></p> <p>The bidder should clearly present the technical approach and the methodology that he proposes. The technical approach and the methodology that are proposed both need to be realistic, relevant and directly tied to the required technical work. They should also be complete and realistic.</p> <p><b>15 pts:</b> The technical strategy and methodology (along with possible risks) presented is excellent (very concise and complete). All principal elements are defined and solutions given.  <b>12 pts:</b> The technical strategy and methodology (along with possible risks) presented is very good (concise and complete). Almost all principal elements are defined and solutions given.  <b>9 pts:</b> The technical strategy and methodology (along with possible risks) presented is good (concise and complete). Most of the principal elements are defined and solutions given.  <b>6 pts:</b> The technical strategy and methodology (along with possible risks) presented is limited (very concise and complete). Some of the principal</p>	15	6

<p>elements are defined and solutions given.  <b>3 pts:</b> The technical strategy and methodology (along with possible risks) is not rigorously presented. Very few of the principal elements are defined and solutions given.  <b>0 pts:</b> No technical strategy and methodology.</p>		
<p><b>2.2 QUALIFICATIONS OF RESOURCES DIRECTLY INVOLVED IN THE PROJECT (EXPERIENCE AND ACADEMIC TRAINING)</b></p>	<b>32</b>	<b>7</b>
<p><b>2.2.1 Experience of resources directly involved in the project.</b>  For each of the fields of activity, the bidder should indicate the name of the resources proposed and their resumes should be included with the proposal for the purpose of the evaluation. The same resource can be proposed for more than one field of activity.</p> <p>The bidder should propose a number of <b>IDENTIFIED</b> resources for <b>EACH</b> task, with required experiences associated to each task <b>CLEARLY PRESENTED IN THE PROPOSAL</b>. The number of identified resources required is indicated for each task. For each task, the resource proposed will be evaluated separately according to the point allocation as described below. The total point for each field of activity will be defined by the sum of each individual scoring divided by the number of resources proposed.</p> <p>The months of experience is defined by the number of months that the proposed resource has worked on projects relevant with the associated criteria items. This could be interpreted as the duration of the project multiplies by the percentage involvement of the resource.</p> <p><i>The bidder should describe each project as follows:</i></p> <ul style="list-style-type: none"> <li>- Title;</li> <li>- Client/company contacts;</li> <li>- Start and end dates (year/month);</li> <li>- Brief description;</li> <li>- Involvement and responsibility of the proposed resource within the project</li> </ul>		
<p><b>(a) Experiences of resource in image processing techniques and programming</b>  Criteria include;</p> <ul style="list-style-type: none"> <li>- Target pattern matching or image averaging or shaping, <b>and</b>;</li> <li>- Use of MATLAB products and databases</li> </ul> <p><b>Resource requirement :</b> At least one resource with graduate studies and one resource with bachelor's degree</p> <p><u>Points allocation</u></p> <ul style="list-style-type: none"> <li>- 96 months or more experience: <b>4 points</b></li> <li>- 72 months to 95 months experience: <b>3 points</b></li> </ul>	4	1

<p>- 48 months to 71 months experience: <b>2 points</b>  - 24 months to 47 months experience: <b>1 points</b>  - None of the above: <b>0 point</b></p>		
<p><b>(b) Experiences of resource in automatic target detection, or cueing or recognition techniques or programming based on reflective spectrum of visible or shortwave imagery</b></p> <ul style="list-style-type: none"> <li>- Criteria include; Target detection, or cueing, or recognition or tracking, or image registration, or background subtraction, or change detection, or target segmentation or false detection suppression, <b>and</b>;</li> <li>- Use of MATLAB products and databases</li> </ul> <p><b>Resource requirement :</b> At least one resource with graduate studies and one resource with bachelor's degree</p> <p><u>Points allocation</u></p> <ul style="list-style-type: none"> <li>- 96 months or more experience: <b>4 points</b></li> <li>- 72 months to 95 months experience: <b>3 points</b></li> <li>- 48 months to 71 months experience: <b>2 points</b></li> <li>- 24 months to 47 months experience: <b>1 points</b></li> <li>- None of the above: <b>0 point</b></li> </ul>	4	1
<p><b>(c) Experiences of resource in automatic target detection, or cueing or recognition techniques or programming based on emissive spectrum of infrared imagery</b></p> <p>Criteria include;</p> <ul style="list-style-type: none"> <li>- Target detection, or cueing, or recognition or tracking, or blob detection, or image registration, or background subtraction, or change detection, or target segmentation or false detection suppression, <b>and</b>;</li> <li>- Use of MATLAB products and databases</li> </ul> <p><b>Resource requirement :</b> At least one resource with graduate studies and one resource with bachelor's degree</p> <p><u>Points allocation</u></p> <ul style="list-style-type: none"> <li>- 96 months or more experience: <b>4 points</b></li> <li>- 72 months to 95 months experience: <b>3 points</b></li> <li>- 48 months to 71 months experience: <b>2 points</b></li> <li>- 24 months to 47 months experience: <b>1 points</b></li> <li>- None of the above: <b>0 point</b></li> </ul>	4	1
<p><b>(d) Experiences of resource in interfacing OPENCV with MATLAB for automatic target detection, or cueing or recognition techniques or programming based on imagery</b></p>	4	1

<p>Criteria include;</p> <ul style="list-style-type: none"> <li>- Programming, or;</li> <li>- Target detection and Receiver Operating Characteristic (ROC) performance analysis, or;</li> <li>- Use of Open Source Computer Vision Library (OpenCV), MATLAB products or databases</li> </ul> <p><b>Resource requirement</b> : At least one resource with graduate studies and one resource with bachelor's degree</p> <p><u>Points allocation</u></p> <ul style="list-style-type: none"> <li>- 96 months or more experience: <b>4 points</b></li> <li>- 72 months to 95 months experience: <b>3 points</b></li> <li>- 48 months to 71 months experience: <b>2 points</b></li> <li>- 24 months to 47 months experience: <b>1 points</b></li> <li>- None of the above: <b>0 point</b></li> </ul>		
<p><b>(e) Experiences of resource in optronic imaging systems</b></p> <p>Criteria include;</p> <ul style="list-style-type: none"> <li>- Optronic system principle, operation or characterization of optronic system in lab or in field, or;</li> <li>- Image or video acquisition of optronic imaging systems</li> </ul> <p><b>Resource requirement</b> : At least one resource with graduate studies and one resource with bachelor's degree</p> <p><u>Points allocation</u></p> <ul style="list-style-type: none"> <li>- 96 months or more experience: <b>4 points</b></li> <li>- 72 months to 95 months experience: <b>3 points</b></li> <li>- 48 months to 71 months experience: <b>2 points</b></li> <li>- 24 months to 47 months experience: <b>1 points</b></li> <li>- None of the above: <b>0 point</b></li> </ul>	4	
<p><b>(f) Experiences of resource in field experiments and trials on ATD/ATR/ATC algorithm</b></p> <p>Criteria include;</p> <ul style="list-style-type: none"> <li>- Experiment or trial planning, or;</li> <li>- Executing experiments or trials, or;</li> <li>- Capturing images or videos for live or post ATD or ATR or ATC analysis</li> </ul> <p><b>Resource requirement</b> : At least one resource with graduate studies and one resource with bachelor's degree</p> <p><u>Points allocation</u></p>	4	



<ul style="list-style-type: none"> <li>- 96 months or more experience: <b>4 points</b></li> <li>- 72 months to 95 months experience: <b>3 points</b></li> <li>- 48 months to 71 months experience: <b>2 points</b></li> <li>- 24 months to 47 months experience: <b>1 points</b></li> <li>- None of the above: <b>0 point</b></li> </ul>		
<p><b>(g) Experiences of resource in analysis of imagery and Receiver Operating Characteristic (ROC) performance for ATD/ATR/ATC</b>  Criteria include;</p> <ul style="list-style-type: none"> <li>- Analysis imagery for probability of detection and false alarm, or;</li> <li>- Implementation of ground truth data, positive and negative examples</li> </ul> <p><b>Resource requirement :</b> At least one resource with graduate studies and one resource with bachelor’s degree</p> <p><u>Points allocation</u></p> <ul style="list-style-type: none"> <li>- 96 months or more experience: <b>4 points</b></li> <li>- 72 months to 95 months experience: <b>3 points</b></li> <li>- 48 months to 71 months experience: <b>2 points</b></li> <li>- 24 months to 47 months experience: <b>1 points</b></li> <li>- None of the above: <b>0 point</b></li> </ul>	4	1
<p><b>(h) Project management</b></p> <p>The bidder should demonstrate that he has resources available for this contract in project management.</p> <ul style="list-style-type: none"> <li>- Project Management Professional (PMP) certificate awarded by the Project Management Institute (PMI), or a minimum of 24 months as project manager of research and development project experience: 4 points</li> <li>- Bachelor’s or higher in science or engineering: 2 points</li> </ul> <p><b>Resource requirement :</b> At least one resource</p>	4	2

	MAX	MIN
<b>2.3 BIDDER’S EXPERIENCE</b>	<b>20</b>	<b>4</b>

<p><i>The bidder should describe each project as follows:</i></p> <ul style="list-style-type: none"> <li>- <i>Title;</i></li> <li>- <i>Client/company contacts;</i></li> <li>- <i>Start and end dates;</i></li> <li>- <i>Brief description;</i></li> </ul>		
<p><b>2.3.1 Experience of the bidder in the field of image processing, or algorithm programming or operating or analysis in at least one of these areas: pattern matching, image averaging and shaping, background subtraction and object segmentation</b></p> <p>In the last 10 years, the bidder completed:</p> <ul style="list-style-type: none"> <li>- 10 or more projects/contracts: <b>10 points.</b></li> <li>- 7 to 9 projects/contracts: <b>6 points.</b></li> <li>- 4 to 6 projects/contracts: <b>4 points.</b></li> <li>- 2 and 3 projects/contracts: <b>2 points.</b></li> <li>- Less than 2 projects/contracts: <b>0 point.</b></li> </ul> <p><b>Projects valued at 20,000.00\$ or more will be considered.</b></p>	10	2
<p><b>2.3.2 Experience of the bidder in the field of automatic target detection or recognition, or cueing algorithm programming, or data/image analysis for Receiver Operating Characteristic (ROC) analysis or ground truth imagery</b></p> <p>In the last 10 years, the bidder completed:</p> <ul style="list-style-type: none"> <li>- 10 or more projects/contracts: <b>10 points.</b></li> <li>- 7 to 9 projects/contracts: <b>6 points.</b></li> <li>- 4 to 6 projects/contracts: <b>4 points.</b></li> <li>- 2 and 3 projects/contracts: <b>2 points.</b></li> <li>- Less than 2 projects/contracts: <b>0 point.</b></li> </ul> <p><b>Projects valued at 20,000.00\$ or more will be considered.</b></p>	10	2
<p><b>TOTAL (1-3)</b></p>	<b>77</b>	<b>21</b>