

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Réception des soumissions - TPSGC / Bid
Receiving - PWGSC
601-1550, Avenue d'Estimauville
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 SWIR Camera		
Solicitation No. - N° de l'invitation W7701-125353/A	Date 2012-07-31	
Client Reference No. - N° de référence du client W7701-12-5353		
GETS Reference No. - N° de référence de SEAG PW-\$QCL-002-14757		
File No. - N° de dossier QCL-2-35179 (002)	CCC No./N° CCC - FMS No./N° VME	
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-08-29		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: Brisebois, Aline		Buyer Id - Id de l'acheteur qcl002
Telephone No. - N° de téléphone (418) 649-2883 ()		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 2459 BOUL. PIE XI NORD 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

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

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Solicitation No. - N° de l'invitation

W7701-125353/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

qc1002

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

File No. - N° du dossier

CCC No./N° CCC - FMS No/ N° VME

W7701-12-5353

QCL-2-35179

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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, if applicable, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Financial and others requirements
- 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 Contractor Disclosure of Foreground Information

2. Summary

The Statement of Work (SOW) describe the services required by Defence R&D Canada - Valcartier (DRDC Valcartier) aimed at carrying out the following objectives :

- (i) Defence Research and Development Canada (DRDC) wants to develop a compact, helmet-mounted, ruggedized Shortwave Infrared (SWIR) camera with an illuminator, built around an InGaAs focal plane array. This work involves mechanical engineering, electrical engineering, optical design, fabrication and evaluation of the infrared camera.

Defence Research and Development Canada (DRDC) will supply Fifteen 640 x 512, 25 µm pitch InGaAs focal plane array chips (InGaAs PIN diodes) hybridized to an existing read-out electronic circuit (ROIC). These fifteen InGaAs focal plane arrays are not packaged.

For this work, the contractor must:

- 1- Package the InGaAs focal plane array already hybridized to a read-out electronics integrated circuit (ROIC) using a suitable packaging strategy. There is no need at this point for ROIC development; and
- 2- Integrate the packaged InGaAs focal plane array into a compact, ruggedized, energy efficient SWIR camera optimized for night-time observation that includes an illuminator with a wavelength of 1.55 µm.

This project includes two phases: **Phase 1 - development and production of 1 Compact Short-Wave Infrared Camera. Optional Phase 2, supply and delivery of 10 cameras.**

Background

Imaging in the shortwave infrared (SWIR) range (wavelengths from 0.9 to 1.7 microns) offers many advantages and is therefore of great interest to the Canadian Forces. SWIR imaging provides improved recognition capabilities complementing MWIR and LWIR systems. SWIR is also effective for covert surveillance, camouflage detection, imaging through fog and target acquisition and tracking, as well as eye-safe laser designator viewing.

Moreover, recent developments of Indium Gallium Arsenide (InGaAs) sensors have pushed sensing in this spectral region to a higher level of performance. The advantage of InGaAs over other technologies relies in its high sensitivity in the SWIR spectrum and its capacity to be operated near room-temperature.

(ii) Client department

The services will be rendered to Defence Research and Development Canada (DRDC-Valcartier).

(iii) Period of the contract :

The period of the Contract is from date of Contract to **March 31, 2014 for Phase 1 plus an optional year for the possibility of purchasing 10 cameras.**

(iv) Ownership of Intellectual Property :

Defence Research and Development Canada - Valcartier has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada.

(v) Consent to a Criminal Record Verification form :

Pursuant to section 01 of Standard Instructions 2003 and 2004, a Consent to a Criminal Record Verification form, must be submitted with the bid, by the solicitation closing date, for each individual who is currently on the Bidder's Board of Directors.

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

(vii) The Controlled Goods Registration Program applied to this project.

(vii) The requirement is limited to Canadian goods and/or services.

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 (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) Manual issued by Public Works and Government Services Canada.

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

The 2003 (2012-06-11) 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 by the date, time and place indicated on page 1 of the bid solicitation.

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

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as proprietary will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. 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.

5. Basis for Canada's Ownership of Intellectual Property

Defence Research and Development Canada - Valcartier has determined that any intellectual property rights arising from the performance of the Work under the resulting contract will belong to Canada.

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

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

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

Section I : Technical Bid (4 hard copies) and 2 soft copies on CD or DVD

Section II : Financial Bid (2 hard copies) and 1 soft copy on CD or DVD)

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;
- (b) use 30% recycled paper;
- (c) print double sided (duplex printing);
- (d) use a numbering system that corresponds to the bid solicitation; and
- (e) submit bound bids using cerlox, staples, etc., but no binders.

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 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.

Section II : Financial Bid

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

FOR PHASE 1 - DEVELOPMENT AND PRODUCE 1 CAMERA

- (a) A firm, all inclusive lot price for the Work. The total amount of Goods and Services Tax or Harmonized Sales Tax is to be shown separately, if applicable.

For Canadian-based bidders, prices must be in Canadian funds, Canadian customs duties and excise taxes included, and Goods and Services Tax (GST) or Harmonized Sales Tax (HST) excluded.

FINANCIAL BID PRESENTATION SHEET

PHASE 1 - DEVELOPMENT AND PRODUCTION OF 1 CAMERA

Task 1 : Presentation of the detailed and final specifications (according to the description of the work at Annex A Phase 1)

\$_____ A firm, all inclusive lot price for the Work.

Task 2 to task 5 : (According to the description of the work at Annexe A Phase 1)

\$_____ A firm, all inclusive lot price for the Work.

1.1.1 Price Breakdown

Bidders are requested to detail the following elements for **each task** of the Work, as applicable:

- (a) Labour : For each individual and (or) labour category to be assigned to the Work, indicate: i) the hourly rate, inclusive of overhead and profit; and ii) the estimated number of hours.
- (b) Equipment : Specify each item required to complete the Work and provide the pricing basis of each one, Canadian customs duty and excise taxes included, as applicable. These items will be deliverable to Canada upon completion of the contract. “)
- (c) Materials and Supplies : Identify each category of materials and supplies required to complete the Work and provide the pricing basis.
- (d) Travel and Living Expenses : Indicate the number of trips and the number of days for each trip, the cost , destination and purpose of each journey, together with the basis of these costs which must not exceed the limits of the Treasury Board (TB) Travel Directive. With respect to the TB Directive, only the meal, private vehicle and incidental allowances specified in Appendices B, C and D of the Directive

<http://www.njc-cnm.gc.ca/directive/travel-voyage/index-eng.php> , and the other provisions of the Directive referring to "travellers", rather than those referring to "employees", are applicable.

- (e) Subcontracts : Identify any proposed subcontractor and provide for each one the same price breakdown information as contained in this article.
- (f) Other Direct Charges : Identify any other direct charges anticipated, such as long distance communications and rentals, and provide the pricing basis .
- (g) GST/HST : Identify any applicable GST or HST separately.

PHASE 2 - SUPPLY AND DELIVERY (OPTIONAL)

The following price for the supply and delivery of 10 cameras, as developed in Phase 1 will apply to the order place for the optional period from April 1st, 2014 to March 31, 2015.

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

CAMERAS

You must submit a firm unit price.

Description	Quantity	Firm unit price	Total cost
Cameras as developed in Phase 1	10	\$_____	\$_____
Delivery			\$_____
		Total	\$_____

Section III : Certifications

Bidders must submit the certifications required under Part 5.

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

Bidder **must** attach the CV of each proposed resource for this contract (including the CV of the resources of the subcontractors (if any).

Notice that experience acquired during graduate studies (technical criteria C1, 2 and 3) may be recognized if the relevance is demonstrated.

To be considered by the evaluation team, all the diplomas or the university courses acquired by the proposed resources **must** be from a recognized Canadian University or college, or the equivalent as established by a recognized Canadian academic credentials assessment service*, if obtained outside Canada

*The list of recognized organizations can be found under the Canadian Information Centre for International Credentials website, at the following internet link: <http://www.cicic.ca/indexe.stm>

1.1.2 Point Rated Technical Criteria

A. TECHNICAL PROPOSAL	WEIGHT	GRADE	SCORE
1. Understanding of the statement of work described in the request for proposal. The Bidder should present a short introduction with a brief evaluation of the need for the project, the objectives of the proposed Work, the reasons for carrying it out as proposed and the benefits to be derived. Grade : 5 = complete understanding expressed in the bidder's own words, 3=minimal understanding, 0=no evidence	2		

2. Proposed work feasibility, approach and methodology. The Bidder should clearly outline its approach and proposed methodology to meet the requirement, as well as the degree of success expected. The proposed technical approach must be compliant with the requirements of the Statement of Work provided as part of the RFP. Sufficient detail should be provided to demonstrate the Bidder's grasp of the requirement and the Bidder's competence to meet it. Grade : 5 = detailed and credible methodology is presented, 3 = methodology is lacking in details, 0= no methodology is presented	4		
3. Identifications of possible technical problems of the project and associated strategy for risk mitigation. The Bidder should state any major technical problems that are anticipated and explain how it would address theses difficulties and propose a mitigation plan that allows attaining the performance objectives. Grade: 5 = detailed and credible methodology is presented, 3 = methodology is lacking in details, 0 = no methodology is presented.	2		
4. Work plan deliverables and schedule, team composition, delivery of additional resources or replacements. The work plan must be adequate and sufficiently detailed to facilitate project monitoring. All deliverables and schedules should be properly identified. The team's structure and organization should be well explained. Assignments and roles should be clearly described and fulfill needs. The distribution of tasks should optimize the technical resources in relation to the management and clerical effort. Grade : 5 = detailed work plan,3 = work plan presented but lacking in details, 0= no work plan presented	4		
Maximum score possible			60
Minimum acceptable score			36
Score awarded			

B. COMPANY EXPERIENCE	WEIGHT	GRADE	SCORE
<p>For each project proposed by the bidder, the bidder should provide enough information to enable the evaluation team to assess whether it meets the criteria.</p>			
<p>1.Number of general R&D projects of 2 millions dollars or more completed on time and within budget by the bidder.</p> <p>The Bidder should demonstrate the background and experience of its organization, in general R&D projects. Description of the projects required.</p> <p>Grade: 4 projects or more: 4 points, 3: 3 points, 2: 2 points, 1: 1 point</p>	2.5		
<p>2. Letters of recommendation from former clients.</p> <p>The Bidder should submit letters, prepared and signed by the former clients, must confirm that satisfactory electro-optical services or products were delivered in the last five years and had a value above 20 000\$.</p> <p>Grade: 1 point per positive letter of recommendation, maximum of 4 points</p>	2.5		
<p>Note: The Bidder should demonstrate experience of its organization, particularly relating to the following technologies.</p> <p>3. Experience of the company in the packaging of temperature controlled focal plane arrays for visible or infrared imaging. Description of the work performed required.</p> <p>Grade : 4= 60+ months, 3= 36 to 60 months, 2= 12 to 36 months, 1=less than 12 months, 0= no experience.</p>	2.5		
<p>4. Experience of the company in the development (design, testing and implementation) of proximity electronics in order to interface 320x240 or larger focal plane arrays (visible or infrared) working at 60 frame per second or above. Description of the work performed required.</p> <p>Grade : 4=4+ different designs, 3=3 designs, 2=2 designs, 1=1 design 0=no experience.</p>	2.5		

5. Experience of the company in the integration of visible or infrared cameras in a compact design. Description of the work performed required. Grade : 4=intégration of 4+ cameras, 3=3 cameras, 2=2 cameras, 1=1 camera 0=no experience.	2.5		
6. Experience of the company in the development of ruggedized electro-optical systems for military applications. Short description of systems required. Grade : 4= 4+ systems, 3=3 systems, 2=2 systems, 1=1 system 0= No experience.	2.5		
Maximum score possible			60
Minimum acceptable score			36
Score awarded			
C. QUALIFICATIONS OF RESOURCES DIRECTLY INVOLVED IN PROJECT (EXPERIENCE, EDUCATION, ETC). The Bidder should propose the curriculum vitae of each proposed technical resource who will be assigned to this requirement, demonstrating their education, qualifications and experience. For the following criteria 1, 2 and 3, more than one resource could be presented, example: 3 proposed resources with a Bachelor's degree, 3 points will be given, if 2 resource with Master's degree 4 points will be given.	WEIGHT	GRADE	SCORE
1. Relevance of the academic training of the personnel assigned to the project: Electrical Engineer Grade : 1 point per electrical engineer with a Bachelor's degree, 2 points for a Master's degree or above, maximum of 4 points	1,5		
2. Relevance of the academic training of the personnel assigned to the project: Mechanical Engineer Grade : 1 point per mechanical engineer with a Bachelor's degree, 2 points for a Master's degree or above, maximum of 4 points	1,5		
3. Relevance of the academic training of the personnel assigned to the project: Engineering physicist or physicist with a minimum of a master's degree. Grade : 1 points per engineering physicist or physicist with a Master's degree, 2 points for PhD, maximum of 4 points	1,5		

4. Relevant experience of the personnel assigned to the project: Grade : at least one person having a minimum of 2 years experience in one of the following fields : - Development of proximity electronics for FPA interfacing. - Integration of infrared cameras. - Development of ruggedized electro-optical systems for military applications. - Testing and evaluation of night-vision systems or infrared cameras. Grade: 1 point max for each fields, 4 total points maximum.	3		
Maximum score possible			30
Minimum acceptable score			18
Score awarded			
D. MANAGEMENT OF THE PROJECT The Bidder should provide the name of the Project Manager who will be assigned to this requirement, demonstrating his/her education, qualifications and experience. His/her curriculum vitae should also be included.	WEIGHT	GRADE	SCORE
1. Project manager: Number of years of experience in project management. Grade: 10 years and more: 4 points, 6 to 9 years: 3 points, 3 to 5 years: 2 points, 1 to 2 years: 1 point, less than 1 year: 0 point.	7.5		
2. Proposed mechanisms for general project management: - Use of a project management software. - Presence of a contingency plan to replace ressources unable to perform the work. - Plan for the coordination of project activities with the scientific authority. - Presence of a detailed schedule for the project. Grade: 1 point for each following items, max 4 points total.	5		
Maximum score possible			50
Minimum acceptable score			30
Score awarded			
MAXIMUM POSSIBLE TOTAL SCORE			200

MINIMUM ACCEPTABLE TOTAL SCORE		140
TOTAL SCORE AWARDED		

1.2 Financial Evaluation

1.2.1 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 follows:

BID EVALUATION PRICE

The firm, all inclusive lot price for the Work for PHASE 1 - DEVELOPMENT AND PRODUCTION OF 1 CAMERA

Plus

Total for PHASE 2 - SUPPLY AND DELIVERY (OPTIONAL), 10 cameras.

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) obtain the required minimum points specified for each group of criteria with a pass mark for the technical evaluation, and
- (c) obtain the required minimum of 140 points overall for the technical evaluation criteria which are subject to point rating.

The rating is performed on a scale of 200 points.

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

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

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%)

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

PART 5 - CERTIFICATIONS

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

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

1. Code of Conduct Certifications - Consent to a Criminal Record Verification

Bidders must submit with their bid, by the bid solicitation closing date:

- (a) a complete list of names of all individuals who are currently directors of the Bidder;
- (b) a properly completed and signed form Consent to a Criminal Record Verification (PWGSC-TPSGC 229), for each individual named in the list.

2. Certifications Precedent to Contract Award

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

2.1 Federal Contractors Program for Employment Equity - Certification

2.1.1 Federal Contractors Program - \$200,000 or more

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

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

2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, to the Labour Branch of HRSDC.
3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

- (a) ☐ is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- (b) ☐ is not subject to the FCP, being a regulated employer under the *Employment Equity Act*, S.C. 1995, c. 44;
- (c) ☐ is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;
- (d) ☐ is subject to the FCP, and has a valid certificate number as follows: _____ (e.g. has not been declared an ineligible contractor by HRSDC.)

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

2.2 Former Public Servant Certification

Contracts with 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 with FPS, bidders must provide the information required below.

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, in the context of the fee abatement formula, 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

Is the Bidder a FPS in receipt of a pension as defined above? **YES () NO ()**

If so, the Bidder must provide the following information:

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

Work Force Reduction Program

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a work force reduction program? **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 reduction 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 the Goods and Services Tax or Harmonized Sales Tax.

Certification

By submitting a bid, the Bidder certifies that the information submitted by the Bidder in response to the above requirements is accurate and complete.

2.3 Canadian Content Certification

This procurement is limited to Canadian goods and Canadian services.

The Bidder certifies that:

- () a minimum of 80 percent of the total bid price consist of Canadian goods and Canadian services as defined in paragraph 5 of clause A3050T.

For more information on how to determine the Canadian content for a mix of goods, a mix of services or a mix of goods and services, consult Annex 3.6.(9), Example 2, of the Supply Manual. (<http://www.tpsgc-pwgsc.gc.ca/app-acq/ga-sm/chapitre03-chapter03-eng.html>)

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

2.4 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.

2.5 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.

2.6 Language Capability

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

PART 6 - FINANCIAL AND OTHER REQUIREMENTS

1. Financial Capability

A9033T (2011-05-16), Financial Capability

1. Financial Capability Requirement: The Bidder must have the financial capability to fulfill this requirement. To determine the Bidder's financial capability, the Contracting Authority may, by written notice to the Bidder, require the submission of some or all of the financial information detailed below during the evaluation of bids. The Bidder must provide the following information to the Contracting Authority within fifteen (15) working days of the request or as specified by the Contracting Authority in the notice:
 - a. Audited financial statements, if available, or the unaudited financial statements (prepared by the Bidder's outside accounting firm, if available, or prepared in-house if no external statements have been prepared) for the Bidder's last three fiscal years, or for the years that the Bidder has been in business if this is less than three years (including, as a minimum, the Balance Sheet, the Statement of Retained Earnings, the Income Statement and any notes to the statements).
 - b. If the date of the financial statements in (a) above is more than five months before the date of the request for information by the Contracting Authority, the Bidder must also provide, unless this is prohibited by legislation for public companies, the last quarterly financial statements (consisting of a Balance Sheet and a year-to-date Income Statement), as of two months before the date on which the Contracting Authority requests this information.
 - c. If the Bidder has not been in business for at least one full fiscal year, the following must be provided:
 - i. the opening Balance Sheet on commencement of business (in the case of a corporation, the date of incorporation); and
 - ii. the last quarterly financial statements (consisting of a Balance Sheet and a requests this information.
 - d. A certification from the Chief Financial Officer or an authorized signing officer of the Bidder that the financial information provided is complete and accurate.
 - e. A confirmation letter from all of the financial institution(s) that have provided short-term financing to the Bidder outlining the total of lines of credit granted to the Bidder and the amount of credit that remains available and not drawn upon as of one month prior to the date on which the Contracting Authority requests this information.
 - f. A detailed monthly Cash Flow Statement covering all the Bidder's activities (including the requirement) for the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of cash expenditures on a monthly basis, for all the Bidder's activities. All assumptions made should be explained as well as details of how cash shortfalls will be financed.
 - g. A detailed monthly Project Cash Flow Statement covering the first two years of the requirement that is the subject of the bid solicitation, unless this is prohibited by legislation. This statement must detail the Bidder's major sources and amounts of cash and the major items of

cash expenditures, for the requirement, on a monthly basis. All assumptions made should be explained as well as details of how cash shortfalls will be financed.

2. If the Bidder is a joint venture, the financial information required by the Contracting Authority must be provided by each member of the joint venture.
3. If the Bidder is a subsidiary of another company, then any financial information in 1. (a) to (f) above required by the Contracting Authority must be provided by the ultimate parent company. Provision of parent company financial information does not by itself satisfy the requirement for the provision of the financial information of the Bidder, and the financial capability of a parent cannot be substituted for the financial capability of the Bidder itself unless an agreement by the parent company to sign a Parental Guarantee, as drawn up by Public Works and Government Services Canada (PWGSC), is provided with the required information.
4. Financial Information Already Provided to PWGSC: The Bidder is not required to resubmit any financial information requested by the Contracting Authority that is already on file at PWGSC with the Contract Cost Analysis, Audit and Policy Directorate of the Policy, Risk, Integrity and Strategic Management Sector, provided that within the above-noted time frame:
 - a. the Bidder identifies to the Contracting Authority in writing the specific information that is on file and the requirement for which this information was provided; and
 - b. the Bidder authorizes the use of the information for this requirement.
 It is the Bidder's responsibility to confirm with the Contracting Authority that this information is still on file with PWGSC.
5. Other Information: Canada reserves the right to request from the Bidder any other information that Canada requires to conduct a complete financial capability assessment of the Bidder.
6. Confidentiality: If the Bidder provides the information required above to Canada in confidence while indicating that the disclosed information is confidential, then Canada will treat the information in a confidential manner as permitted by the Access to Information Act, R.S., 1985, c. A-1, Section 20(1) (b) and (c).
7. Security: In determining the Bidder's financial capability to fulfill this requirement, Canada may consider any security the Bidder is capable of providing, at the Bidder's sole expense (for example, an irrevocable letter of credit from a registered financial institution drawn in favour of Canada, a performance guarantee from a third party or some other form of security, as determined by Canada).

2. 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

1.1 Phase 1 - Development and production of 1 camera

The Contractor must perform the Work in accordance with the Statement of Work at Annex A and the Contractor's technical bid entitled _____, dated _____.

AND

1.2 Requirement

Phase 2 - Supply and delivery (optional) 10 cameras.

The Contractor must provide cameras in accordance with the Requirement at Annex "A".

1.3 Work Authorization

Despite any other condition of the Contract, the Contractor is only authorized to perform the Work required to complete **Task 1 of the Contract** at a cost not to exceed \$Will be inserted in the contract. Upon completion of **Task 1**, the Work will be reviewed before the Contractor is authorized to commence any Work for tasks 2 to 5 . Depending on the results of the review and evaluation of the Work, Canada will decide at its discretion whether to continue with the Work.

If Canada decides to continue with all other tasks, the Contracting Authority will advise the Contractor in writing to commence work on Tasks 2 to 5 . The Contractor must immediately comply with the notice.

If Canada decides not to proceed with Tasks 2 to 5 , the Contracting Authority will advise the Contractor in writing of the decision and the Contract will be considered completed at no further costs to Canada. In no event will the Contractor be paid for any cost incurred for unauthorized work.

1.4 Disclosure Certification

On completion of the Work, the Contractor must submit to the Technical Authority and to the Contracting Authority a copy of the Disclosure Certification 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 (<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

FOR PHASE 1 - DEVELOPMENT AND PRODUCTION OF 1 CAMERA

2040 (2012-07-16), General Conditions - Research & Development, apply to and form part of the Contract.

AND

FOR PHASE 2 - SUPPLY AND DELIVERY (OPTIONAL)

2030 (2012-07-16), General Conditions - Higher Complexity - Goods, 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

3. Term of Contract

3.1 Period of Contract

The period of the Contract is from date of Contract to **March 31, 2014 inclusive**

3.2 Option to Extend the Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to 1 additional year period(s) under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least 7 calendar days prior to the Contract expiry date. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

4. Authorities

4.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: **Aline Brisebois**

Title: Supply Specialist

Public Works and Government Services Canada

Acquisitions and Compensation Directorate

1550 D'Estimauville Avenue

Quebec, Quebec

G1J 0C7

Telephone: 418-649-2883

Facsimile: 418-648-2209

E-mail address: **Aline.Brisebois@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.

4.2 Technical Authority

The Technical Authority for the Contract is: **(will be identified in the contract)**

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.

4.3 Contractor's Representative (Will be identified in the contract)

Administrative representative :

Name :

Telephone :

Facsimile :

Email :

Technical representative :

Name :

Telephone :

Facsimile :

Email :

5. Payment

5.1 Basis of Payment Phase 1 - Development

5.1.1 For the Work described in **Phase 1 - Development of a compact short-wave infrared camera** of the Statement of Work in Annex A.

In consideration of the Contractor satisfactorily completing its obligations under the Contract, the Contractor will be paid a firm price for a cost of \$_____ **amount to be inserted at contract award**). Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

For the firm price portion of the Work only, 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.

Phase 2 - Supply and delivery

5.1.2 For the Work described in **Phase 2 - Supply and delivery of the Statement of Work in Annex A.**

In consideration of the Contractor satisfactorily completing its obligations under the Contract, the Contractor will be paid a firm unit price for a cost of \$_____ **(the amount will be inserted at the time of use of option only)**. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

For the firm price portion of the Work only, 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.

5.2 Method of Payment

For Phase 1 - Development of a Compact Short-Wave Infrared Camera

5.2.1 Milestone Payments

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract 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>) 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.

5.2.2 Schedule of Milestones

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

To be completed by the proposal

Milestone No.	Description OR Deliverable	Firm Amount	Due Date OR Delivery Date

For Phase 2 - Supply and delivery

5.2.3 SACC Manual Clause

H1000C 2008-05-12 Single Payment

A9117C 2007-11-30 T1204 - Direct Request by Customer Department

For Phase 1 - Development of a Compact Short-Wave Infrared Camera

6. 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>).

Each claim must show:

- (a) all information required on form PWGSC-TPSGC 1111;
 - (b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - (c) the description and value of the milestone claimed as detailed in the Contract.
2. Goods and Services Tax (GST) or Harmonized Sales Tax (HST), as applicable, must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no GST/HST payable as it was claimed and payable under the previous claims for progress payments.
 3. **The Contractor must prepare and certify one original and two (2) copies of the claim on form PWGSC-TPSGC 1111, and forward it to the following address for certification in an electronic format to the electronic mail address identified under section entitled "Authorities" of the Contract.** Adobe Reader (.pdf) format is acceptable. The Contracting Authority will then forward the certified claim, in an electronic format, 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.

ATTN : Mrs Suzanne Larrivée

Supply Support Clerk

Public Works and Government Services Canada

601-1550 Avenue D'Estimauville, local 601

Québec, Québec

G1J 0C7

E-mail address : suzanne.larrivee@tpsgc-pwgsc.gc.ca

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

For Phase 2 - Supply and delivery

6.1 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:

(a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

(b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

7. Certifications

7.1 Compliance with the certifications 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 or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

7.2 SACC Manual Clauses

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

8. Applicable Laws

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

9. 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) For Phase I, the general conditions 2040 (2012-07-16) General Conditions - Research and Development and for Phase 2 General Conditions 2030 (2012-07-16) General Conditions - Higher Complexity - Goods;
- (c) Annex A, Statement of Work;
- (d) Annex B, Basis of Payment;
- (e) Annex C, Contractor Disclosure of Foreground Information;
- (f) the Contractor's bid dated _____,:

10. Defence Contract

SACC Manual clause A9006C (2008-05-12), Defence Contract

11. Insurance

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

12. Controlled Goods Program

12.1 SACC Manual clause A9131C (2011-05-16), Controlled Goods Program

12.2 SACC Manual clause B4060C (2011-05-16), Controlled Goods

13. 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.

14. Shipping Instructions - Delivery at Destination - For Phase 2 only.

Goods must be consigned to the destination specified in the Contract and delivered:

- (a) Delivered Duty Paid (DDP)_____(insert the named place of destination) Incoterms 2000 for shipments from a commercial contractor.

15. Delivery, Inspection and Acceptance .

1. Preservation and packaging for items must be in accordance with the Canadian Forces packaging specification D-LM-008-001/SF-001, and must be marked to D-LM-008-002/SF-001. Form Level B Pkg Data Form Req'd must be in accordance with D-LM-008-011/SF-001.
2. Packaging data forms previously approved by Canadian authorities are acceptable.

Solicitation No. - N° de l'invitation

W7701-125353/A

Amd. No. - N° de la modif.

File No. - N° du dossier

QCL-2-35179

Buyer ID - Id de l'acheteur

qc1002

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

W7701-12-5353

CCC No./N° CCC - FMS No/ N° VME

3. Approved coded packaging data is shown immediately below the description of the item to which it applies. Where no data is shown, the Contractor must submit a packaging data form for approval.

ANNEX A STATEMENT OF WORK

1. GENERAL

1.1 Title

Development of a Compact Short-Wave Infrared Camera

1.2 Objective

Defence Research and Development Canada (DRDC) wants to develop a compact, helmet-mounted, ruggedized Shortwave Infrared (SWIR) camera with an illuminator, built around an InGaAs focal plane array. This work involves mechanical engineering, electrical engineering, optical design, fabrication and evaluation of the infrared camera.

Defence Research and Development Canada (DRDC) will supply Fifteen 640 x 512, 25 µm pitch InGaAs focal plane array chips (InGaAs PIN diodes) hybridized to an existing read-out electronic circuit (ROIC). These fifteen InGaAs focal plane arrays are not packaged.

For this work, the contractor must:

1- Package the InGaAs focal plane array already hybridized to a read-out electronics integrated circuit (ROIC) using a suitable packaging strategy. **There is no need at this point for ROIC development;** and

2- Integrate the packaged InGaAs focal plane array into a compact, ruggedized, energy-efficient SWIR camera optimized for night-time observation that includes an illuminator with a wavelength of 1.55 µm.

1.3 Background

Imaging in the shortwave infrared (SWIR) range (wavelengths from 0.9 to 1.7 microns) offers many advantages and is therefore of great interest to the Canadian Forces. SWIR imaging provides improved recognition capabilities complementing MWIR and LWIR systems. SWIR is also effective for covert surveillance, camouflage detection, imaging through fog and target acquisition and tracking, as well as eye-safe laser designator viewing.

Moreover, recent developments of Indium Gallium Arsenide (InGaAs) sensors have pushed sensing in this spectral region to a higher level of performance. The advantage of InGaAs over other technologies relies in its high sensitivity in the SWIR spectrum and its capacity to be operated near room-temperature.

A Request for Information (RFI, PW-\$QCL-028-12752) on the integration of a compact SWIR camera using InGaAs focal plane arrays was posted on MERX. The contributions from the industry helped scope and validate the duration, the budget and the technical requirements of the statement of work.

1.4 Acronyms

SWIR – Short-wave infrared
 InGaAs – Indium Gallium Arsenide
 FPA – Focal plane array
 ROIC – Read-out integrated circuit
 CMOS – Complementary metal-oxide semiconductor

2. **APPLICABLE DOCUMENTS (references)**

3. **SCOPE OF THE WORK**

Here are the basic properties of the InGaAs FPA. The contractor will be given the complete physical dimensions and electrical requirements of the FPA no later than one month after the contract is awarded.

The camera must meet the following specifications:

Camera parameters	Values	Comments
F/#	1	
Optics	Above 80% transmission for wavelengths between 0.9 and 1.7 μm . MTF > 0.5 at 40 lp/mm everywhere in the image plane.	
Field of view	40° x 32°	
Focus	Manual, from 30 cm to 8	
Processing	Offset, Non-uniformity and bad-pixel corrections adapted to any sensor operating temperature (from 30 to -40°C).	
Calibration	Recalibration must be possible	In a laboratory environment
Cooling of the InGaAs focal plane array	2 modes: - Active cooling to maintain 18 °C - No active cooling	
Maximum power consumption	6 W	@ 30°C ambient temperature with cooling and illuminator on.
Type of batteries	Compatible with the Thales AN/PRC-148 (MBITR/JEM) Lithium-Ion rechargeable battery (NSN 6140-01-487-1153) Dimensions: Depth (in): 1.52 Width (in): 2.63 Height (in): 2.58 Weight (lbs): 0.793 Max Voltage: 12.75V Nominal: 12V	The battery will be provided no later than one month after the contract is awarded
Battery pack	Possibility of carrying the battery pack on the	

Camera parameters	Values	Comments
	back of a helmet or on a belt. The battery pack must include a 1.55 μ m LED flashing at a frequency between 5 and 10 Hz and with on/off button. On-screen battery charge status indicator.	
Controls	<ul style="list-style-type: none"> -One control integrating the On/off of the camera and On/off button of the illuminator. -On/off button for the LED. -Manual focus. -Manual beam width adjustment (illuminator). -One control for the On/Off of the FPA cooling 	
Weight	Less than 440 g	Excluding the battery pack.
Size	Fits in a cylinder 15 cm long with a diameter of 7 cm.	Excluding the battery pack.
Camera and Display Frame rate (Hz)	60	
Integrated Display	256 levels of gray. Resolution equivalent or superior to the detector. 1X magnification.	
Digital output	14-bit Camera Link protocol	
Gain	Automatic gain control by auto-selecting one integration time.	
Illuminator	Continuous illumination Single wavelength $\lambda = 1.55 \pm 0.05 \mu$ m Optical power 300 mw Adjustable beam width from 40° to 0.14° Beam homogenization, speckle minimization.	
Helmet-mounting bracket	Compatible with ITT PVS-14 night vision goggle.	The bracket will be provided no later than one month after the contract is awarded
Ruggedized design	Compatible with environmental standards MIL-STD-810F (http://www.gd-itronix.com/upload/pdf/MIL-STD-810F.pdf)	Environmental testing and certification are not required.
Camera housing external color	Flat black	

PHASE 1 – DEVELOPMENT OF A COMPACT SHORT-WAVE INFRARED CAMERA

This work includes the following tasks:

Task 1:

In the first 4 months

Presentation by the contractor of the detailed and final specifications and general schematics of the camera subject to acceptance by the scientific authority.

Work authorization decision point:

At this point a decision will be take to continue or not the project.

Task 2:

- a) InGaAs focal plane array
- b) Packaging of the InGaAs FPA (**first 9 months**)
- c) Reported testing and evaluation of the assembled SWIR detectors (first 18 months)
- d) Noise performance
- e) Bad pixel map (a bad pixel is defined as having an optical response deviating by more than 35% of the mean).
- f) Evaluation of modulation transfer function (MTF)

Task 3:

Design of the lens of the camera (**first 6 months**)

- a) Production of the lens design using appropriate software (Zeemax, Oslo or other)
- b) Materials list, dimensions and tolerances.

Task 4:

Design of the illuminator (first 12 months).

- a) Completion of technical drawings.
- b) Materials list, dimensions and tolerances.

Task 5:

Integration of the camera

- a) Design of the proximity and display electronics (**first 6 months**)
- b) Fabrication and programming of the proximity and display electronics (**first 18 months**).
- c) Design of the ruggedized camera housing including the temperature control system for the detector (**first 12 months**).
- d) Fabrication of the ruggedized camera housing including the temperature control system for the detector (**last 12 months**).
- e) Final integration of the SWIR camera (**last 12 months**).
- f) Outdoor testing, evaluation and optimization for night-time operation of the camera to optimize the recognition of a human target at 100 m under clear and covered sky, with and without illumination. Full report on performance must be presented (**last 12 months**).

PHASE 2 OPTIONAL: SUPPLY AND DELIVERY OF 10 CAMERAS

Task 1:

Dependent on the results of acceptance tests performed and at the discretion of DND, the production and delivery of 10 additional cameras no later than 12 months after the option is exercised. This option may not be exercised even if the camera meets all the requirements described in the statement of work.

4. REPORTS AND OTHER DELIVERABLES

- Detailed and final specifications and general schematics of the camera (after 4 months).
- Lens design file using appropriate software (Zeemax, Oslo or other) (after 6 months).
- Complete schematics of all electronic circuits present in the camera (after 6 months).
- Report on the testing and evaluation of the assembled SWIR detectors (first 18 months)
 - i. Noise performance
 - ii. Bad pixel map (a bad pixel is defined as having an optical response deviating by more than 35% of the mean).
 - iii. Evaluation of modulation transfer function (MTF)
 - One SWIR camera, fully functional according to the specifications and **not subject to any restrictions issued by a foreign government or entity** (after 24 months)
 - Report on the complete and final design of the camera (after 24 months).
 - Report on the principles of operation of the camera (after 24 months).
 - Complete technical drawings of the camera in paper and electronic format (after 24 months).
 - Complete description (supplier, part number, technical specifications) of all components of the camera (after 24 months).
 - Source code of all software developed (after 24 months).
 - Report on the testing, evaluation and optimization for night-time operation of the camera (after 24 months).
 - **Option:** 10 additional SWIR cameras, fully functional according to the specifications.

Deliverables – Reports (Standard clause)

All reports, in English, must be delivered in at least 3 printed and bound copies. A PDF version must be included with all printed reports. The presentation format of these reports must comply with DRDC standards. These standards are available through the project's Technical Authority.

4.1 Publications

Only DRDC Valcartier is allowed to publish results obtained from this work.

5. MEETINGS

Kick-off meeting

The contractor must prepare for and attend a kick-off meeting with the technical authority and DRDC representatives no later than one week after the contract is awarded. The contractor must prepare the agenda, minutes and follow-up of the meeting. The meeting must be held in person, at DRDC Valcartier. The meeting could be held in French or English.

Progress review meetings

Every 3 months, the technical authority could ask to hold a progress review meeting at DRDC Valcartier. The contractor will be responsible for leading these meetings, including preparing the agenda, minutes and follow-up. Each meeting will have to cover at least the following items:

- Discussion of progress, results, problems, documentation;
- Management report by the contractor (financial and manpower); and
- Contractor's work plan for the next period (overview of the expected progress for the upcoming period).

6. GOVERNMENT SUPPLIED MATERIAL (GSM) (in French – MFG – Matériel fournis par le gouvernement)

Fifteen 640 x 512, 25 µm pitch InGaAs focal plane array chips (InGaAs PIN diodes hybridized to an existing ROIC, not packaged) delivered no later than 40 days after the contract is awarded. The contractor will be given the physical dimensions and electrical requirements of the FPA no later than one month after the contract is awarded. All unused packaged focal plane arrays must be returned at the end of the contract..

7. GOVERNMENT FURNISHED EQUIPMENT (GFE) (in French – EFG – Équipement fourni par le gouvernement)

None.

8. WORK LOCATION

The work will be performed at the contractor's location.

ADDITIONAL INFORMATION

DELIVERABLES

In addition to the disclosure obligation under Section 28 of the general conditions 2040, any Foreground Information must be fully disclosed and documented by the Contractor in the technical reports delivered by the Contractor to the Technical Authority under this Contract.

Solicitation No. - N° de l'invitation

W7701-125353/A

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

W7701-12-5353

Amd. No. - N° de la modif.

File No. - N° du dossier

QCL-2-35179

Buyer ID - Id de l'acheteur

qc1002

CCC No./N° CCC - FMS No/ N° VME

ANNEX B

BASIS OF PAYMENT

PART 1 - PHASE 1 - DEVELOPMENT BASIS OF PAYMENT

PART 2 - PHASE 2 - SUPPLY AND DELIVERY BASIS OF PAYMENT

Will be included in the contract

ANNEX "C"

CONTRACTOR DISCLOSURE OF FOREGROUND INFORMATION

Please see reference applicable in your contract to look into **Article 1 - Interpretation of 2040 General Conditions** to obtain the complete definition of the term Foreground Information and thus to help you to determine the information which must be revealed. <http://sacc.pwgsc.gc.ca/sacc/query-e.jsp>.

The Contractor shall respond to the following questions:

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.

Name:

Title:

Date

(Internal DRDC Valcartier)

Nom

Titre : (Technical authority)

Date