



**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**

**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>Title - Sujet</b> Digital cameras	
<b>Solicitation No. - N° de l'invitation</b> W7701-166155/A	<b>Date</b> 2015-12-22
<b>Client Reference No. - N° de référence du client</b> W7701-166155	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$QCL-029-16652	
<b>File No. - N° de dossier</b> QCL-5-38259 (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 2016-02-01</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Heure Normale du l'Est HNE
<b>F.O.B. - F.A.B.</b> Specified Herein - Précisé dans les présentes <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 RDDC-R&D Défense Canada-Valcartier DRDC-Defence R&D Canada-Valcartier Bâtisse 53 2459, route de la Bravoure Québec (Québec) G3J 1X5 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

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## PART 1 - GENERAL INFORMATION

### 1.1 Security Requirements

There is no security requirement associated with the requirement.

### 1.2 Summary

#### Requirement

Provide and deliver to Defence Research & Development Canada (DRDC)– Valcartier Research Center, digital cameras meeting the technical specifications below.

This Request for Proposal is for the acquisition of two (2) groups of two (2) cameras (total of 4 cameras). Two (2) contracts should be awarded.

#### Background

A one year prototype range upgrade program has been started as an interim, risk reduction activity prior to full implementation of the upgrade. This program will upgrade two shadowgraph stations, with Dual Spark Station, and develop the real time control software for the range control software. This partial implementation will be tested with live firing to fully prove out the integration of all new technologies.

The range was built in the early 1950's and was used primarily as a "yaw card" range until the early 1970's. At this point the instrumentation was upgraded to an orthogonal shadowgraph camera system. The building was also upgraded with insulation and a controlled heating system. The range was actively used for testing until the early 2000's. It has been ten years since the range was used for an instrumented test.

The facility includes a control room, gun bay, and instrumented range. A blast wall is located in front of the building to stop sabot pieces and minimize vibration transmitted to the range structure and equipment. Projectiles are stopped in a butt filled with a mixture of sand and sawdust. For low-velocity and short trajectory firings, a movable butt can be wheeled up-range to stop the test article. The range is designed to accommodate projectiles of 7.62 to 155mm caliber at velocities up to Mach 7.

The 220 meter instrumented length of the range has a 6.1 meter square cross section and 54 instrumented sites along the length of the range. Originally only fifteen of these stations were operational. Later additional equipment was procured to instrument all 54 stations. The first 37 stations are spaced 2.5 meters apart and located from 30 meters to 120 meters downrange as measured in the range reference coordinate system. The next 10 stations are spaced 5 meters apart (120 to 170 meters downrange) and the last 7 stations are 10 meters apart (170 to 240 meters downrange).

Each station consists of two spark light sources and two cameras which are located on the wall and on the floor, two reflective screens, two chronographs, a projectile detector and a station controller. A cross-sectional drawing showing the various components is included as **Error! Reference source not found..** The projectile window, an imaginary circle within which a projectile shadow will be cast on both reflective screens, is 1.6 meter in diameter.

In order to realize the prototype range upgrade program, DRDC needs to buy 4 digital cameras of two (2) different make, with the specifications listed below. This Request for Proposal is for the acquisition of two (2) groups of two (2) cameras (for a total of 4 cameras). Each group must be composed of two identical cameras. Two (2) contracts should be awarded:

- 1- The responsive bid with the lowest evaluated price will be recommended for award of a contract.

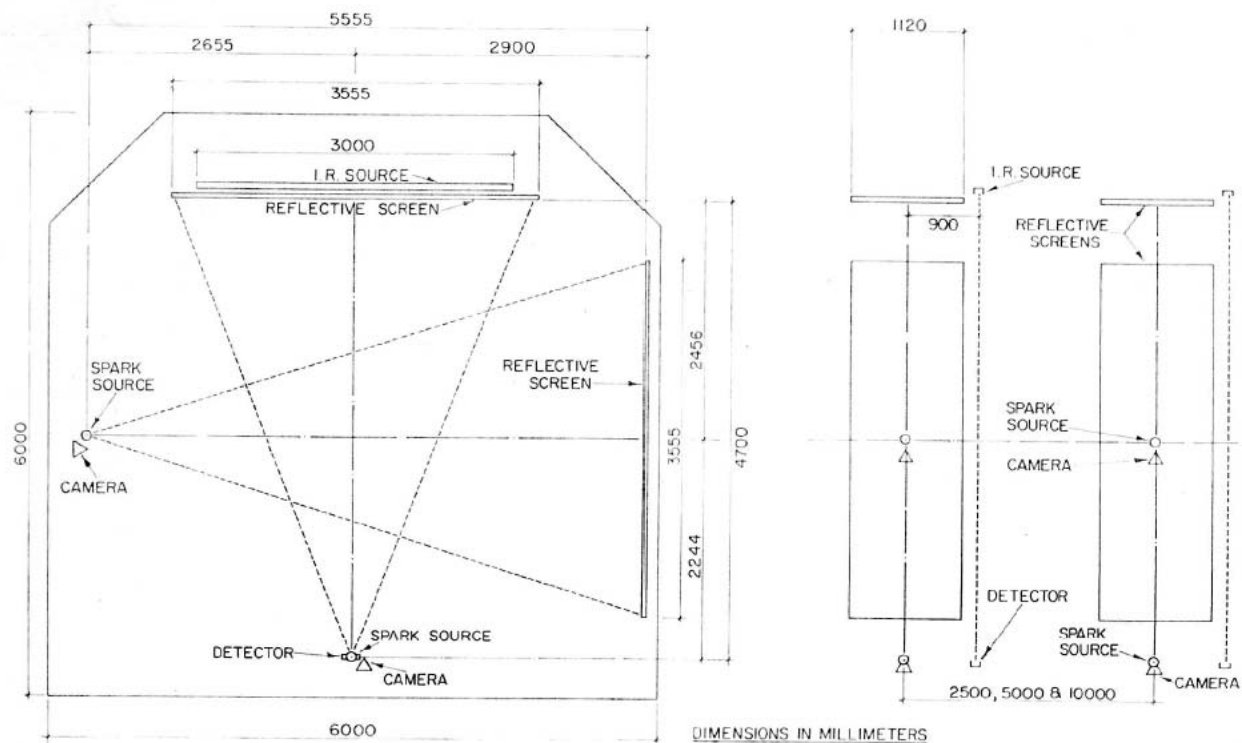
- 2- The responsive bid proposing a different make of camera having the second lowest evaluated price will be recommended for award of a contract.

If among responsive bids, only one make of camera is proposed, Canada reserves the right to award a contract for (4) cameras to the bidder with the lowest evaluated price.

### **Camera Technical Specifications**

<b>Feature</b>	<b>Minimum requirements (Or otherwise specified)</b>	<b>Comments</b>
Resolution	Minimum of 4800 pixels x 3200 pixels (16 MegaPixels)	16 or 29 Megapixels. Most important is the number of pixels in the long direction. This number must be a minimum 4800 or 6500 for the 16 or 29 MP cameras respectively. This is because the shadowgraph panels have a much higher aspect ratio (3:1) than the camera sensors. Common camera aspect ratios are 1.5 or 1.33 to 1.
Pixel Size	8.0 µm <b>maximum</b>	
Output Format	12-bit mono CCD	CCD Monochrome sensors are required. Since we are photographing a monochrome shadow we want all pixels to be equally sensitive to the light regardless of its color temperature.
Analog Gain Control	Manual, Auto: 0 – 32dB	
Shutter Duration	200 µsec with 5 µsec incremental steps	Sensor sensitivity must be high enough to record an image with an exposure time of 500 nsec using a spark gap light source
Input trigger	TTL / 5V	
Double Trigger (PiV)	10 µsec	This is the capability that allows acquisition of two images with as little as 10 µsec between images. This is made possible by the architecture of the CCD sensors.
Lens Mount	M42 (preferred) or M58	Screw mounts for cameras in severe environments.
Size – Width	100mm <b>Maximum</b>	Camera must fit within a protective case
Size – Height	100mm <b>Maximum</b>	
Size – Length	100mm <b>Maximum</b>	
Supply Power Voltage	12 VDC (10V – 15V)	
Communication	GigE	In our application with a large number of cameras, the Gigabit Ethernet interface will be required.
Vibration	6 Grms	Shock and Vibration are critical environmental requirements for our application. Insensitivity to electro-magnetic interference is very important as
Shock	40g XYZ	

		Spark Cans will be discharged in close proximity to the cameras. Reliability is also critical as we will expect over 100 cameras to be operational all the time.
Operating Temperature	-5°C +40°C	
Operating Humidity	20 – 80% non-condensing	
Operating Software	Camera must be controllable and operable with DRDC in-house software	Cameras must be able to communicate with software which will be developed by DRDC for their operation, i.e. camera's operation must not be tied to a specific implemented software and/or operating system.
Ready to fire signal	cameras must be able to report ready or any fault status to the host computer.	



### Delivery Date

All the deliverables must be received **on or before six (6) weeks after contract award.**

### Additional Informations

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As per the Integrity Provisions under section 01 of *Standard Instructions 2003*, bidders must provide a list of all owners and/or Directors and other associated information as required. Refer to section 4.21 of the *Supply Manual* for additional information on the Integrity Provisions.

### **1.3 Debriefings**

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

## **PART 2 - BIDDER INSTRUCTIONS**

### **2.1 Standard Instructions, Clauses and Conditions**

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

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

The 2003 (2015-07-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

#### **2.1.1 SACC Manual Clauses**

B1000T (2014-06-24), Condition of Material - Bid

### **2.2 Submission of Bids**

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

**Bids transmitted by facsimile (418-648-2209) to PWGSC will be accepted.**

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

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) business 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.

### **2.4 Improvement of Requirement During Solicitation Period**

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least five (5) business days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

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## 2.5 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**

### **3.1 Bid Preparation Instructions**

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

Section I: Technical Bid (2 hard copies)

Section II: Financial Bid (1 hard copy)

Section III: Certifications (1 hard copy)

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

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

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

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

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

#### **Section I: Technical Bid**

In their technical bid, bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

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

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

##### **3.1.1 Exchange Rate Fluctuation**

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

##### **3.1.2 SACC Manual Clauses**

#### **Section III: Certifications**

Bidders must submit the certifications required under Part 5.

## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 4.1 Evaluation Procedures

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

#### 4.1.1 Technical Evaluation

##### 4.1.1.1 Mandatory Technical Criteria

- I. Any Bidder must propose two (2) identical cameras per group.
- II. Any bidder must submit the technical specifications with its bid, or any official document relating to the proposed equipment, in order to demonstrate that the proposed equipment meets **all** technical specifications listed at the table below.

**Any proposal that does not clearly demonstrate compliance with each of the technical specifications listed in the table will be considered non-responsive.**

#### Camera Technical Specifications

Feature	Minimum requirements (Or otherwise specified)	Comments
Resolution	Minimum of 4800 pixels x 3200 pixels (16 MegaPixels)	16 or 29 Megapixels. Most important is the number of pixels in the long direction. This number must be a minimum 4800 or 6500 for the 16 or 29 MP cameras respectively. This is because the shadowgraph panels have a much higher aspect ratio (3:1) than the camera sensors. Common camera aspect ratios are 1.5 or 1.33 to 1.
Pixel Size	8.0 µm <b>maximum</b>	
Output Format	12-bit mono CCD	CCD Monochrome sensors are required. Since we are photographing a monochrome shadow we want all pixels to be equally sensitive to the light regardless of its color temperature.
Analog Gain Control	Manual, Auto: 0 – 32dB	
Shutter Duration	200 µsec with 5 µsec incremental steps	Sensor sensitivity must be high enough to record an image with an exposure time of 500 nsec using a spark gap light source
Input trigger	TTL / 5V	
Double Trigger (PiV)	10 µsec	This is the capability that allows acquisition of two images with as little as

		10 µsec between images. This is made possible by the architecture of the CCD sensors.
Lens Mount	M42 (preferred) or M58	Screw mounts for cameras in severe environments.
Size – Width	100mm <b>Maximum</b>	Camera must fit within a protective case
Size – Height	100mm <b>Maximum</b>	
Size – Length	100mm <b>Maximum</b>	
Supply Power Voltage	12 VDC (10V – 15V)	
Communication	GigE	In our application with a large number of cameras, the Gigabit Ethernet interface will be required.
Vibration	6 Grms	Shock and Vibration are critical environmental requirements for our application. Insensitivity to electro-magnetic interference is very important as Spark Cans will be discharged in close proximity to the cameras. Reliability is also critical as we will expect over 100 cameras to be operational all the time.
Shock	40g XYZ	
Operating Temperature	-5°C +40°C	
Operating Humidity	20 – 80% non-condensing	
Operating Software	Camera must be controllable and operable with DRDC in-house software	Cameras must be able to communicate with software which will be developed by DRDC for their operation, i.e. camera's operation must not be tied to a specific implemented software and/or operating system.
Ready to fire signal	cameras must be able to report ready or any fault status to the host computer.	

#### 4.1.2 Financial Evaluation

The price of the bid will be evaluated as follows:

- (i) Canadian-based bidders must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded.
- (ii) Bids submitted in foreign currency will be converted to Canadian currency for evaluation purposes. The rate given by the Bank of Canada in effect on the bid solicitation closing date will be applied as a conversion factor to the bids submitted in foreign currency.
- (iii) Bidders must provide prices DDP DRDC - Valcartier Research Center (Incoterms 2000). Bids will be assessed on a DDP (Incoterms 2000) basis.

#### 4.2 Basis of Selection

##### 4.2.1 Basis of Selection - Mandatory Technical Criteria

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A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. There will be two (2) recommendation for contract award:

- 1- The responsive bid with the lowest evaluated price will be recommended for award of a contract.
- 2- The responsive bid proposing a different make of camera having the second lowest evaluated price will be recommended for award of a contract.

If among responsive bids, only one make of camera is proposed, Canada reserves the right to award a contract for (4) cameras to the bidder with the lowest evaluated price.

## **PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION**

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

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default 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 will render the bid non-responsive or constitute a default under the Contract.

### **5.1 Certifications Required with the Bid**

Bidders must submit the following duly completed certifications as part of their bid.

#### **5.1.1 Declaration of Convicted Offences**

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed Declaration Form (<http://www.tpsgc-pwgsc.gc.ca/ci-if/formulaire-form-eng.html>), to be given further consideration in the procurement process.

### **5.2 Certifications Precedent to Contract Award and Additional Information**

The certifications and additional information listed below should be submitted with the bid but may be submitted afterwards. If any of these required certifications or additional information 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 provide the certifications or the additional information listed below within the time frame specified will render the bid non-responsive.

#### **5.2.1 Integrity Provisions – List of Names**

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

#### **5.2.2 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

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([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.

### 5.2.3 Contractor's Representative

#### Administrative representative :

Name :

Title:

Telephone :

Facsimile :

Email :

#### Technical representative :

Name :

Title:

Telephone :

Facsimile :

Email :

## PART 6 - RESULTING CONTRACT CLAUSES

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

### 6.1 Security Requirements

6.1.1 There is no security requirement applicable to this Contract.

### 6.2 Requirement

The Contractor must provide and deliver to Defence Research and Development Canada (DRDC) - Valcartier Research Center, two (2) digital cameras, in accordance with the Requirement at Annex A.

### 6.3 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.

#### 6.3.1 General Conditions

2010A (2015-09-03), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### 6.4 Term of Contract

#### 6.4.1 Delivery Date

All the deliverables must be received **on or before six (6) weeks after contract award**.

#### 6.4.2 Period of the Contract

The period of the Contract is from date of Contract to the end of the warranty period.

#### 6.4.3 Delivery Address

All deliverables must be received at:

Defence Research and Development Canada –Valcartier Research Centre  
Building 53  
2459 Bravoure Road  
Quebec, Quebec G3J 1X5  
Canada

### 6.5 Authorities

#### 6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

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**Nicolas Champoux**  
**Supply Officer**  
**Public Works and Government Services Canada**  
**Acquisitions Branch**  
**1550, D'Estimauville Avenue**  
**Québec (Québec) G1J 0C7**

**Telephone:** (418) 649-2821  
**Facsimile:** (418) 648-2209  
**E-mail:** nicolas.champoux@pwgsc-tpsgc.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.

**6.5.2 Technical Authority** *(will be inserted by Canada at contract award)*

The Technical Authority for the Contract is :

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

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

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

**6.5.3 Contractor's Representative** *(will be inserted by Canada at contract award)*

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

**6.5.4 DRDC Procurement Representative** *(will be inserted by Canada at contract award)*

For all information related to invoicing and/or payments you may communicate with:

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

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



## **6.6 Payment**

### **6.6.1 Basis of Payment - Firm Lot Price**

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm lot price, as specified in Annex B. Customs duties are included and Applicable Taxes are extra.

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

### **6.6.2 Single Payment**

SACC Manual Clause H1000C (2008-05-12), Single Payment

### **6.6.3 Shipping Instructions - Delivery at Destination**

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

Delivered Duty Paid (DDP) Defence Research and Development Canada - Valcartier Research Center, Incoterms 2000 for shipments from a commercial contractor.

## **6.7 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:  
  
The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.

## **6.8 Certifications**

- 6.8.1** 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 term of the Contract. 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.

## **6.9 Applicable Laws**

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

## **6.10 Priority of Documents**

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

- (a) the Articles of Agreement;
- (b) the general conditions 2010A (2015-09-03), General Conditions - Goods (Medium Complexity);
- (c) Annex A, Requirement;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated \_\_\_\_\_ .

#### **6.11 Defence Contract**

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

#### **6.12 SACC Manual Clauses**

G1005C (2008-05-12), Insurance

## ANNEX A

### REQUIREMENT

Provide and deliver to Defence Research and Development Canada (DRDC) - Valcartier Research Center, two (2) digital cameras, in accordance with the specifications listed below:

#### Technical specifications

Feature	Minimum requirements (Or otherwise specified)	Comments
Resolution	Minimum of 4800 pixels x 3200 pixels (16 MegaPixels)	16 or 29 Megapixels. Most important is the number of pixels in the long direction. This number must be a minimum 4800 or 6500 for the 16 or 29 MP cameras respectively. This is because the shadowgraph panels have a much higher aspect ratio (3:1) than the camera sensors. Common camera aspect ratios are 1.5 or 1.33 to 1.
Pixel Size	8.0 µm <b>maximum</b>	
Output Format	12-bit mono CCD	CCD Monochrome sensors are required. Since we are photographing a monochrome shadow we want all pixels to be equally sensitive to the light regardless of its color temperature.
Analog Gain Control	Manual, Auto: 0 – 32dB	
Shutter Duration	200 µsec with 5 µsec incremental steps	Sensor sensitivity must be high enough to record an image with an exposure time of 500 nsec using a spark gap light source
Input trigger	TTL / 5V	
Double Trigger (PiV)	10 µsec	This is the capability that allows acquisition of two images with as little as 10 µsec between images. This is made possible by the architecture of the CCD sensors.
Lens Mount	M42 (preferred) or M58	Screw mounts for cameras in severe environments.
Size – Width	100mm <b>Maximum</b>	Camera must fit within a protective case
Size – Height	100mm <b>Maximum</b>	
Size – Length	100mm <b>Maximum</b>	
Supply Power Voltage	12 VDC (10V – 15V)	
Communication	GigE	In our application with a large number of cameras, the Gigabit Ethernet interface will be required.
Vibration	6 Grms	Shock and Vibration are critical environmental requirements for our
Shock	40g XYZ	

		application. Insensitivity to electro-magnetic interference is very important as Spark Cans will be discharged in close proximity to the cameras. Reliability is also critical as we will expect over 100 cameras to be operational all the time.
Operating Temperature	-5°C +40°C	
Operating Humidity	20 – 80% non-condensing	
Operating Software	Camera must be controllable and operable with DRDC in-house software	Cameras must be able to communicate with software which will be developed by DRDC for their operation, i.e. camera's operation must not be tied to a specific implemented software and/or operating system.
Ready to fire signal	cameras must be able to report ready or any fault status to the host computer.	

## ANNEX B

### BASIS OF PAYMENT

Item	Description	Qty	Unit Firm Price	Total Firm Price	Currency
<b>1</b>	Digital camera in accordance with Annex A.  Make: _____  Model: _____	2	_____ \$	_____ \$	
<b>2</b>	Custom duties (if not included in 1.)	1	_____ \$	_____ \$	
<b>3</b>	Shipping and delivery fees (if not included in 1.)	1	_____ \$	_____ \$	
<b>Firm Lot Price</b>				_____ \$*	

\*Delivered Duty Paid (DDP) Defence Research and Development Canada – Valcartier Research Center, Incoterms 2000 for shipments from a commercial contractor.