



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving - PWGSC / Réception des
soumissions - TPSGC
1550 D'Estimauville Avenue
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

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
TPSGC/PWGSC
BFC Bagotville, CP 380
CFB Bagotville, PO Box 380
Bâtiment 62, local 112
Building 62, Room 112
Alouette
Québec
G0V1A0

Title - Sujet Data Acquisition System	
Solicitation No. - N° de l'invitation W7701-186608/A	Date 2018-01-30
Client Reference No. - N° de référence du client W7701-186608	
GETS Reference No. - N° de référence de SEAG PW-\$BAL-001-17335	
File No. - N° de dossier BAP-7-40175 (001)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-03-12	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: Tremblay, Marial	Buyer Id - Id de l'acheteur bal001
Telephone No. - N° de téléphone (418) 677-4000 (4159)	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Defence R & D Canada - Valcartier / R et D Défense Canada - Valcartier 2459 route de la Bravoure Québec (Québec) G3J 1X5	

Instructions: See Herein

Instructions: Voir aux présentes

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	

DATA ACQUISITION SYSTEM AND CONTROL SOFTWARE FOR AN IMAGING SPECTROMETER

DRDC-DEFENCE R & D CANADA-VALCARTIER

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

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Amd. No. - N° de la modif.

File No. - N° du dossier

BAP-7-40175

Buyer ID - Id de l'acheteur

bal001

CCC No./N° CCC - FMS No./N° VME

PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into six parts and annexes, as follows:

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

The Annexes include the Requirement, the Minimum Performance Characteristics of Equipment, the Basis of Payment, the Mandatory and Rated Criteria, the Basis of Selection and other annexes.

1.2 Summary

(a) Context:

For more than 25 years, DRDC Valcartier has developed a family of Infrared (IR) imaging spectrometers based on the Passive Infrared Ranging and Target Evaluation System (PIRATES) technology. Currently, three imaging spectrometers are being used to support DRDC Valcartier's scientific program: PIRATES IV, EPIR, and AIRIS. These instruments produce spectral images from an optical signal modulated by a Michelson interferometer of the MR300 type, which signal is then imaged on an 8x8 pixels detector array covering the 2 to 5.3 μm band; a second 8x8 pixels detector array can be used in AIRIS to additionally cover the 8 to 12 μm band.

The detector arrays used in these instruments are photovoltaic detectors. In a detector array, the interferometric signal measured by each individual detector is routed in a pre-amplification electronic circuit and then to an analog-to-digital converter (ADC). The ADC's readout rate of the interferometric signal is 130 kHz. Each detector element in the array has its own pre-amplification circuit and its own ADC, so that a detector array is equivalent to 64 single pixel spectrometers operating in parallel and in synchronization, the 64 detector elements in the array are read simultaneously. The data from each of the 64 channels is then processed by an acquisition card which organizes the data in a native format including the interferometric data of the measurement and the metadata associated with this measurement, and stores this data on an internal hard disk in the data acquisition system. DRDC then uses its own software tools to access this disk and extract the data from the acquisition system for processing and analysis.

The acquisition rate of hypercubes as a function of spectral resolution allowed by the current acquisition system is summarized in the following table:

Spectral resolution	1 cm^{-1}	4 cm^{-1}	8 cm^{-1}	16 cm^{-1}
Hypercubes/second	4.4	16.7	30.6	52.7

DRDC Valcartier wants to upgrade its imaging spectrometers by providing them with a new data acquisition system (DAS) developed with the latest technology.

In addition, software to control the Michelson interferometer and data acquisition must be developed to be compatible with the new DAS developed under this contract.

DRDC will acquire one DAS and its control software to equip one instrument, and may proceed with the acquisition of additional units to equip other imaging spectrometers.

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(b) Delivery Period:

Within a maximum of 12 months after contract award.

(c) Trade Agreements:

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canadian Free Trade Agreement (CFTA), and the Chile, Colombia, Honduras, Korea, Panama, Peru Trade Agreements with Canada.

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 (2017-04-27) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.
<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/1/2003/22>

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

- Delete: ~~-60~~ days
- Insert: **120** days

2.2 Submission of Bids

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

Bid Receiving Unit
Public Works and Government Services Canada (PWGSC)
1550 D'Estimauville Avenue
Quebec City, Quebec, Canada, G1J 0C7

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

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

2.4 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.

2.5 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 20 days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

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

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

Section II: Financial Bid

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

3.1.1 Exchange Rate Fluctuation

1. The Bidder may request Canada to assume the risks and benefits of exchange rate fluctuations. If the Bidder claims for an exchange rate adjustment, this request must be clearly indicated in the bid at time of bidding. The Bidder must submit form PWGSC-TPSGC 450, <http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/documents/450.pdf> Claim for Exchange Rate Adjustments with its bid, indicating the Foreign Currency Component (FCC) in Canadian dollars for each line item for which an exchange rate adjustment is required.
2. The FCC is defined as the portion of the price or rate that will be directly affected by exchange rate fluctuations. The FCC should include all related taxes, duties and other costs paid by the Bidder and which are to be included in the adjustment amount.
3. The total price paid by Canada on each invoice will be adjusted at the time of payment, based on the FCC and the exchange rate fluctuation provision in the contract. The exchange rate adjustment will only be applied where the exchange rate fluctuation is greater than 2% (increase or decrease).
4. At time of bidding, the Bidder must complete columns (1) to (4) on form PWGSC-TPSGC 450, for each line item where they want to invoke the exchange rate fluctuation provision. Where bids are evaluated in Canadian dollars, the dollar values provided in column (3) should also be in Canadian dollars, so that the adjustment amount is in the same currency as the payment.
5. Alternate rates or calculations proposed by the Bidder will not be accepted for the purposes of this exchange rate fluctuation provision.

Section III: Certifications

Bidders must submit the certifications and additional information 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 Criteria

Mandatory criteria are included in Annex D.

4.1.1.2 Rated Criteria

Rated criteria are included in Annex E.

4.1.2 Financial Evaluation

The total price of each bid will be established using the following criteria:

- (a) Bidders must submit firm prices, Canadian customs duties and excise taxes included, and Applicable Taxes excluded. For evaluation purposes, bids received in a foreign currency will be converted to Canadian funds using the appropriate rate of exchange using the rate quoted by the Bank of Canada as being in effect on date of bid closing.
- (b) Bidders must submit their prices DDP destination; Delivered Duty Paid.

4.2 Basis of Selection

Basis of selection is included in Annex F.

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. Unless specified otherwise, 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 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide with its bid the required documentation, as applicable, 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 provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

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 available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (http://www.esdc.gc.ca/en/jobs/workplace/human_rights/employment_equity/federal_contractor_program.page?&_ga=1.229006812.1158694905.1413548969#afed).

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 OEM Certification

- (a) Any Bidder that is not the Original Equipment Manufacturer (OEM) for every item of hardware proposed as part of its bid is required to submit the OEM's certification (Annex G) regarding the Bidder's authority to provide and maintain the OEM's hardware, which must be signed by the OEM (not the Bidder). No Contract will be awarded to a Bidder who is not the OEM of the hardware it proposes to supply to Canada, unless the OEM certification has been provided to Canada. Bidders are requested to use the OEM Certification Form (Annex G) included with the bid solicitation. Although all the contents of the OEM Certification Form are required, using the form itself to provide this information is not mandatory. For Bidders/OEMs who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided.
- (b) If the hardware proposed by the Bidder originates with multiple OEMs, a separate OEM certification is required from each OEM.
- (c) For the purposes of this bid solicitation, OEM means the manufacturer of the hardware, as evidenced by the name appearing on the hardware and on all accompanying documentation.

5.2.4 Software Publisher Certification and Software Publisher Authorization

- (a) If the Bidder is the Software Publisher for any of the proprietary software products it bids, Canada requires that the Bidder confirm in writing that it is the Software Publisher (H.1 of Annex H). Bidders are requested to use the Software Publisher Certification Form included with the bid solicitation. Although all the contents of the Software Publisher Certification Form are required, using the form itself to provide this information is not mandatory. For bidders who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided. Alterations to the statements in the form may result in the bid being declared non-responsive.
- (b) Any Bidder that is not the Software Publisher of all the proprietary software products proposed in its bid is required to submit proof of the Software Publisher's authorization (H.2 of Annex H), which must be signed by the Software Publisher (not the Bidder). No Contract will be awarded to a Bidder who is not the Software Publisher of all of the proprietary software it proposes to supply to Canada, unless proof of this authorization has been provided to Canada. If the proprietary software proposed by the Bidder originates with multiple Software Publishers, authorization is required from each Software Publisher. Bidders are requested to use the Software Publisher Authorization Form included with the bid solicitation. Although all the contents of the Software Publisher Authorization Form are required, using the form itself to provide this information is not mandatory. For Bidders/Software Publishers who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided. Alterations to the statements in the form may result in the bid being declared non-responsive.
- (c) In this bid solicitation, "Software Publisher" means the owner of the copyright in any software products proposed in the bid, who has the right to license (and authorize others to license/sub-license) its software products.

PART 6 - RESULTING CONTRACT CLAUSES

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

Notice: Numbering will be revised at contract award.

6.1 Requirement

The Contractor must design and manufacture of a data acquisition system as well as design and development of control software for an imaging spectrometer, in accordance with the Requirement at Annex A.

6.1.1 Optional Goods and/or Services

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at section C.1.2 of Annex C of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option at any time before June 30, 2019 by sending a written notice to the Contractor.

6.2 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.

6.2.1 General Conditions

2010A (2016-04-04), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/3/2030/17>

6.2.1.1 Intellectual property infringement and royalties

Articles of Agreement, the "Intellectual Property Infringement and Royalties" section that is contained in general conditions 2030 (2016-04-04) are included. <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/3/2030/17#intellectual-property-infringement-and-royalties>

6.2.2 Supplemental General Conditions

The following Supplemental General Conditions apply to and form part of the Contract:

Number	Date	Title
4001	2015-04-01	Hardware Purchase, Lease and Maintenance https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4001/6
4002	2010-08-16	Software Development or Modification Services https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4002/3
4003	2010-08-16	Licensed Software https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4003/4
4004	2013-04-25	Maintenance and Support Services for Licensed Software https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4004/5

6.2.3 Warranty Periods

6.2.3.1 Hardware Warranty Period

The hardware warranty period is 12 months as indicated in section 14 of supplemental general conditions 4001 (2015-04-01).

6.2.3.2 Software Development or Modification Services Warranty Period

Section 12 of supplemental general conditions 4002 (2010-08-16) is amended by replacing the period of ninety (90) days by 12 months

6.2.3.3 Software Warranty Period

Section 15 of supplemental general conditions 4003 (2010-08-16) is amended by replacing the period of ninety (90) days by 12 months.

All other provisions of the warranty section remain in effect.

6.3 Security Requirements

There is no security requirement applicable to the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Contract until the end of the warranty period or December 31, 2019; the latest date.

6.4.2 Delivery Periods

6.4.2.1 Delivery Period - Contract

All the deliverables indicated in section C.1.1 of Annex C must be received within a period of twelve (12) months after the contract is awarded.

6.4.2.2 Delivery Period - Optional Goods and/or Services

All optional goods and/or services indicated in section C.1.2 of Annex C must be received within a period of six (6) months after receiving a contract amendment.

6.4.3 Liquidated Damages

1. If the Contractor fails to deliver the goods or perform the services within the times specified in the Contract, the Contractor agrees to pay to Canada liquidated damages in the amount of \$ 300.⁰⁰ for each calendar day of delay. The total amount of the liquidated damages must not exceed 10 percent of the contract price.
2. Canada and the Contractor agree that the amount stated above is their best pre-estimate of the loss to Canada in the event of such a failure, and that it is not intended to be, nor is it to be interpreted as, a penalty.
3. Canada will have the right to hold back, drawback, deduct or set off from and against the amounts of any monies owing at any time by Canada to the Contractor, any liquidated damages owing and unpaid under this section.
4. Nothing in this section must be interpreted as limiting the rights and remedies which Canada may otherwise have under the Contract.

6.5 Authorities

6.5.1 Contracting Authority - PWGSC

The Contracting Authority for the Contract is:

Name: Marial Tremblay
Title: Supply specialist
Telephone: 418-677-4000, ext.: 4159
E-mail address: Marial.Tremblay@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.

6.5.2 DRDC Authorities

6.5.2.1 Technical Authority

The Technical Authority for the Contract is:

(to be completed at contract award by PWGSC)

Name: _____
Title: _____
Telephone No.: _____
Facsimile No.: _____
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.

6.5.2.2 Administrative Authority

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

(to be completed at contract award by PWGSC)

Name: _____
Title: _____
Telephone No.: _____
Facsimile No.: _____
E-mail Address: _____

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6.5.3 Contractor's Representatives

Name and telephone number of the person responsible for :

(a) Contract Manager:

Name: _____

Title: _____

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

(b) Delivery Follow up:

Name: _____

Title: _____

Telephone No.: _____

Facsimile No.: _____

E-mail Address: _____

6.6 Payment**6.6.1 Basis of Payment – Firm Unit Prices**

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid the firm unit prices, as specified in Annex C for a cost of \$_____ (to be completed at contract award by PWGSC). 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 SACC Manual Clause

Number	Date	Title
C2000C	2007-11-30	Taxes - Foreign-based Contractor https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/5/C/C2000C/1

6.7 Terms of Payment, Milestones, and Invoicing – Applicable to Section C.1.1 of Annex C

The following Method of Payments, the Schedule of Milestones, and the Invoicing Instructions - Progress Payment Claim are applicable only to the prices of section C.1.1 of Annex C named:

C.1.1 Data acquisition system and control software - contract**6.7.1 Terms of Payment - Applicable to Section C.1.1 of Annex C****6.7.1.1 Terms of Payment - Milestone Payments - Subject to holdback**

1. Canada will make milestone payments in accordance with the Milestones detailed in the Contract and the payment provisions of the Contract, up to 90 percent of the amount claimed and approved by Canada if:
 - a. an accurate and complete claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
 - b. the total amount for all milestone payments paid by Canada does not exceed 90 percent of the total amount to be paid under the Contract;
 - c. all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;
 - d. all work associated with the milestone and as applicable any deliverable required have been completed and accepted by Canada.
2. The balance of the amount payable will be paid in accordance with the payment provisions of the Contract upon completion and delivery of all Work required under the Contract if the Work has been accepted by Canada and a final claim for the payment is submitted.

6.7.1.2 Schedule of Milestones - Applicable to Section C.1.1 of Annex C

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

Milestone No.	Description	Percentage of Contract Value	Due date or Delivery Date
1	Critical design review <ul style="list-style-type: none"> • Word or PDF document that includes : <ul style="list-style-type: none"> o Design drawings o Analysis of requirement o Block diagrams for the AIRIS, EPIR and PIRATES instruments o Graphical user interface definition o Database format description of data and metadata 	30%	2 months after award of the contract.
2	Production design review <ul style="list-style-type: none"> • Word or PDF document with detailed drawings for : <ul style="list-style-type: none"> o Data acquisition system box o Mechanical and electrical interface with existing detector o configuration and diagram of data acquisition system, including acquisition boards o prototype of control software to perform tests with existing data o Bill of materials o Test plan for factory acceptance test 	30%	5 months after award of the contract.

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Milestone No.	Description	Percentage of Contract Value	Due date or Delivery Date
3	Factory acceptance test <ul style="list-style-type: none"> Full integration of one data acquisition system and one control software in the EPIR instrument Word or PDF document with description of acceptance tests for the data acquisition system and the control software; acceptance tests must be performed using black body sources inside a laboratory and outdoors 	20%	10 months after award of the contract.
4	Delivery to DRDC and Acceptance as defined in section 4001 10 (2008-05-12) of General Conditions 4001: https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4001/6#acceptance	20%	12 months after award of the contract.
		100 %	

6.7.2 Invoicing Instructions - Progress Payment Claim - Applicable to Section C.1.1 of Annex C

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

Each claim must show:

- all information required on form PWGSC-TPSGC 1111;
 - all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
 - the description and value of the milestone claimed as detailed in the Contract.
- The Goods and Services Tax or Harmonized Sales Tax (GST/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.
 - 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 DRDC Procurement Officer identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The DRDC Procurement Officer will then forward the original and two (2) copies of the claim to the Contracting Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

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

6.8 Terms of Payment and Invoicing Instructions – Applicable for Section C.1.2 of Annex C

The following Terms of Payment and the Invoicing Instructions are applicable only to the prices of section C.1.2 of Annex C named:

C.1.2 Optional goods and/or services

6.8.1 Terms of Payment - Applicable for Section C.1.2 of Annex C

Canada will pay the Contractor upon completion and delivery of units in accordance with the payment provisions of the Contract if:

- (a) an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- (b) all such documents have been verified by Canada;
- (c) the Work delivered has been accepted by Canada.

6.8.2 Invoicing Instructions - Applicable for Section C.1.2 of Annex C

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.

6.9 Certifications and Additional Information

6.9.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.10 Applicable Laws

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

6.11 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions:
 - (i) 4001 (2015-04-01), Hardware Purchase, Lease and Maintenance;
 - (ii) 4002 (2010-08-16), Software Development or Modification Services;
 - (iii) 4003 (2010-08-16), Licensed Software; and
 - (iv) 4004 (2013-04-25), Maintenance and Support Services for Licensed Software.
- (c) the 2010A (2016-04-04), General Conditions - Goods (Medium Complexity);
- (d) Annex A - Requirement;
- (e) Annex B - Minimum Performance Characteristics of Equipment;
- (f) Annex C - Basis of Payment; and
- (g) the Contractor's bid dated _____, amended on _____" (to be completed at contract award by PWGSC).

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Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

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6.12 Canadian Forces Site Regulations

The Contractor must comply with all standing orders or other regulations, instructions and directives in force on the site where the Work is performed.

6.13 Electrical Equipment

All electrical equipment supplied under the Contract must be certified or approved for use in accordance with the Canadian Electrical Code, Part 1, before delivery, by a certification organization accredited by the Standards Council of Canada.

6.14 Shipping Instructions - Delivery at Destination

Goods must be consigned to the destinations specified in the Contract and delivered: Delivered Duty Paid (DDP):

DRDC-Defence R & D Canada-Valcartier
Building 53
2459, route de la Bravoure
Quebec, Quebec G3J 1X5

Incoterms 2000 for shipments from a commercial contractor.

ANNEX A - REQUIREMENT

A.1 Context

For more than 25 years, DRDC Valcartier has developed a family of Infrared (IR) imaging spectrometers based on the Passive Infrared Ranging and Target Evaluation System (PIRATES) technology. Currently, three imaging spectrometers are being used to support DRDC Valcartier's scientific program: PIRATES IV, EPIR, and AIRIS. These instruments produce spectral images from an optical signal modulated by a Michelson interferometer of the MR300 type, which signal is then imaged on an 8x8 pixels detector array covering the 2 to 5.3 μm band; a second 8x8 pixels detector array can be used in AIRIS to additionally cover the 8 to 12 μm band.

The detector arrays used in these instruments are photovoltaic detectors. In a detector array, the interferometric signal measured by each individual detector is routed in a pre-amplification electronic circuit and then to an analog-to-digital converter (ADC). The ADC's readout rate of the interferometric signal is 130 kHz. Each detector element in the array has its own pre-amplification circuit and its own ADC, so that a detector array is equivalent to 64 single pixel spectrometers operating in parallel and in synchronization, the 64 detector elements in the array are read simultaneously. The data from each of the 64 channels is then processed by an acquisition card which organizes the data in a native format including the interferometric data of the measurement and the metadata associated with this measurement, and stores this data on an internal hard disk in the data acquisition system. DRDC then uses its own software tools to access this disk and extract the data from the acquisition system for processing and analysis.

The acquisition rate of hypercubes as a function of spectral resolution allowed by the current acquisition system is summarized in the following table:

Spectral resolution	1 cm^{-1}	4 cm^{-1}	8 cm^{-1}	16 cm^{-1}
Hypercubes/second	4.4	16.7	30.6	52.7

DRDC Valcartier wants to upgrade its imaging spectrometers by providing them with a new data acquisition system (DAS) developed with the latest technology.

In addition, software to control the Michelson interferometer and data acquisition must be developed to be compatible with the new DAS developed under this contract.

DRDC will acquire one DAS and its control software to equip one instrument, and may proceed with the acquisition of additional units to equip other imaging spectrometers.

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A.2 Acronyms

ADC	Analog-to-Digital Converter
AIRIS	Airborne Infrared Imaging Spectrometer
AD	Applicable document
DAS	Data acquisition system
DRDC	Defence Research and Development Canada
EPIR	Embow-PIRATES
IR	Infrared
IRIG-B	Inter-range Instrumentation Group time code B
µm	micrometre
PIRATES	Passive Infrared Ranging And Target Evaluation System
PTP	Precision time protocol
SOW	Statement of work
TA	Technical authority
TCP/IP	Transmission Control Protocol/Internet Protocol

A.3 Deliverables

N°	Description of deliverables	Quantity and format
1	Data acquisition system:	
	1.1 Data acquisition system meeting the minimum performance requirements set out in Section B.1.1 of Annex B.	One data acquisition system in its casing and with the connection interfaces;
	1.2 Technical documentation of the data acquisition system.	A copy in electronic format on USB key, CD or DVD containing the complete detailed drawings of the acquisition system casing, the electrical and mechanical interface with the existing detector, the configuration and the diagram of the acquisition system and acquisition cards, the results of the functional tests of the acquisition system and the control software.

N°	Description of deliverables	Quantity and format
2	Control software:	
	2.1 An imaging spectrometer control software that meets the minimum performance requirements set out in section B.2.1 of Annex B.	source code and compiled code of the control software, and its installer;
	2.2 One user guide as described in section B.2.2 of Annex B.	One copy of the user guide in PDF electronic format, on a USB key, a CD or DVD; and
	2.3 Control software update service as described in Section B.2.3 of Annex B.	Service to be provided throughout the duration of the contract.

A.4 Language of work

English or French.

A.5 Work location

Work will be performed at the contractor's address.

A.6 Travel

The Contractor is not required to travel except between its facilities and the DRDC Valcartier premises for the meetings mentioned in section A.7 below.

A.7 Meetings

A kick-off meeting will be held at DRDC Valcartier's premises within 10 business days of the date of contract award. A closing meeting will be held at DRDC Valcartier 15 business days prior to the end of the contract. Other meetings may be convened as required by either party.

A.8 Government supplied material (GSM)

GSM 1: detector array

Quantity: 1

Part Number: 1-PMD-001-00

Serial number: PMD001Q0201

A.9 Government supplied equipment (GSE)

GSE 1 : EPIR imaging spectrometer

Quantity : 1

A.10 Special considerations**A.10.1 Additional quantities**

1. Additional quantities (between 1 and 4) of data acquisition systems may be acquired based on the needs of DRDC Valcartier. The request for these additional quantities will be confirmed by June 30, 2019.
2. Additional quantities (between 1 and 2) of the control software may be acquired based on the needs of DRDC Valcartier. The request for these additional quantities will be confirmed by June 30, 2019.

A.10.2 Characteristics option

The Contractor must provide an option for control software characteristics # 5, 8 and 9 in Section B.2.1 of Annex B in the event that DRDC requests the display of additional information (5), registration of additional information in the instrument logs (8) and the detection of other anomalies (9). These options may be purchased separately or together. The application for these options will be confirmed by June 30, 2019.

ANNEX B - MINIMUM PERFORMANCE CHARACTERISTICS OF EQUIPMENT

The minimum performance characteristics of the equipment described in this Annex are first and foremost minimums to meet, and are a non-exhaustive list.

All equipment performance characteristics necessary for the operation of equipment that are not described in the following tables are an integral part of this Annex and their prices are included in the prices of the data acquisition system and control software.

B.1 Data Acquisition System

B.1.1 Design and manufacture of a data acquisition system

The Contractor must design and manufacture a data acquisition system that meets the following minimum performance requirements:

B.1.1 Design and manufacture of a data acquisition system		
1	64 independent and parallel channels for pre-amplification, analog-to-digital conversion and time annotation circuits; the pre-amplification circuits must be connected in trans-impedance with detectors having the following characteristics:	
	1.1.1	Indium-antimony (InSb) photovoltaic detectors;
	1.1.2	Interconnection between detectors and pre-amplification circuits using samtec micro-coax cables;
	1.1.3	Each detector has a dynamic resistance $R_{0 \text{ minimum}}$ equal to 0.5 Mega-Ohm;
2	Conversion of the analog signal into a digital signal of 16 bits or more;	
3	Time annotation of data by PTP protocol;	
4	Synchronization of signals for simultaneous read-out of 64 channels at a rate of 130 and 260 kHz (both rates are required);	
5	Spectral coverage from 1 to 8000 cm^{-1} (read-out rate 130 kHz) and from 1 to 16000 cm^{-1} (read-out rate 260 kHz);	
6	Analog to Digital Conversion rate of 1 MHz or more;	

B.1.1 Design and manufacture of a data acquisition system	
7	Control of amplification gain by the user; the amplification gains must be adjustable by the user to different values for each pixel (primary gain); the user must be able to set a multiplicative factor that applies uniformly to all pixels (secondary gain); the secondary gain must be changeable during data recording; the primary and secondary amplification gains must be adapted for the interferometric signal of the complete acquisition chain whose dynamic range covers infrared emission sources whose temperature ranges from ambient (10-20 ° C) to 3000 ° C; neutral density filters are used in the optical path for high temperature source measurements; and
8	Transmission of data to the control computer via TCP / IP link up to 10 Gbps; the data is stored in the control computer.

B.1.2 Data acquisition system documentation

The contractor must write a technical document describing the data acquisition system; this document must contain the following information (but not limited to) :

- (a) the complete detailed drawings of the acquisition system casing, the electrical and mechanical interface with the existing detector, the configuration and the diagram of the acquisition system and acquisition cards;
- (b) the results of the functional tests of the acquisition system and the control software; and

A copy in electronic PDF format of the technical document, on a USB key, on a CD or DVD.

B.2 Control software

B.2.1 Design and development of control software for an imaging spectrometer

The Contractor must design and develop control software for an imaging spectrometer that meets the following minimum performance requirements:

« B.2.1 Design and development of control software for an imaging spectrometer »	
1	compatibility with the metrology of ABB's MR300 series modulators;
2	TCP / IP network communication between the control computer and the imaging spectrometer components (modulator, data acquisition system);
3	Data recording in single scan and in coherent addition (co-addition);
4	control of the start and stop data recording functions in the following modes:
	4.1 free running: start and stop ordered by the user;
	4.2 fixed: number of scans set by the user;
	4.3 coherent addition with user inputs for the number of scans and the number of co-added measurements in each scan direction;
5	selection by the user of the spectral resolution of the interferometer for recording the data; the required values are 1 cm ⁻¹ , 2 cm ⁻¹ , 4 cm ⁻¹ , 8 cm ⁻¹ and 16 cm ⁻¹ ; it must be possible to change the spectral resolution while recording data; the spectral resolution must be recorded in the instrument logs for each spectral image (characteristic 9 of this table);
6	selection by the user of the signal amplification factor (primary and secondary gains (characteristic B.1 # 7), the required values are: 1, 2, 4, 8, 16, 32, 64 and 128; the user must be able to change the amplification factor during data recording, the change of amplification factor must be recorded in the instrument logs for each spectral image (characteristic 9 of this table);

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« B.2.1 Design and development of control software for an imaging spectrometer»		
7	Display on the user interface of the following information on the state of the interferometer, on the signals measured by the detector array, and on data acquisition:	
	7.1	display of the intensity measured by each pixel of the detector array with display options as a percentage of the dynamic range and as an absolute value of the dynamic range;
	7.2	User-selectable 4-pixel display, with interferogram and uncalibrated spectrum display options, and scan direction selection options to display (forward, reverse, both) and spectral band to display
	7.3	refreshing rate of information on the user interface equal to or greater than 3 Hz;
	7.4	display of the network connection status between the control computer and the imaging spectrometer components (modulator, data acquisition system);
	7.5	display of the progress of the data recording;
	7.6	display of attenuator filter position (characteristic # 8 below);
8	the software must be able to accept expansion modules for components external to the imaging spectrometer such as a filter system or telescopes producing different magnification factors;	
9	production and recording of instrument logs containing the following information: (Note: some information (example: 9.1 to 9.5) is entered manually by the user while others (example: 9.6 and 9.7) are generated automatically by the imaging spectrometer)	
	9.1	serial number of the detector array;
	9.2	serial number of the lens on the detector array;
	9.3	serial number and IP address of the data acquisition box connected to the detector;
	9.4	serial number and IP address of the interferometer;
	9.5	Instrument name;
	9.6	timestamping of spectral images to an accuracy of 1 microsecond with a PTP signal;
	9.7	spectral resolution and primary and secondary amplification gains for each spectral image;

« B.2.1 Design and development of control software for an imaging spectrometer»		
10	detection of the following anomalies in the interferometric signals of the instrument and display of an alarm for the user:	
	10.1	ZPD off-centering between the two scanning directions of the modulator;
	10.2	saturation of the measured signal.
11	resetting of the modulator and of the data acquisition system.	
12	Database management capability for spectral imaging data and their metadata, with indexable parameters.	

B.2.2 Control software technical documentation

The contractor must write a technical document describing the control software; this document must contain the following information (but not limited to):

- a. software installation instructions;
- b. software configuration instructions for a given instrument; and
- c. instructions for using the software.

A copy in PDF format of the instruction manual, on a USB key, on a CD or DVD.

B.2.3 Update service of the control software

The Contractor must provide an update service for the control software described in this Annex for the duration of the contract.

ANNEX C - BASIS OF PAYMENT

C.1 Pricing

- (b) Before submitting your prices, please refer to clause **6.6 Payment** mentioning, among other things, that applicable taxes are not included in the prices;
- (c) In addition, refer to Annex A first, then to Annex B according to the sections specified in each article of the table below.

C.1.1 Data acquisition system and control software - contract

- Please indicate the make and model for the product offered, and complete the last column of the following table:

Item	Description	Qty	Unit	Firm unit price	Total price per item
1	Data acquisition system				
	1.1 Design and manufacture of a data acquisition system • Brand offered : _____ • Model offered : _____ • according to section B.1.1 of Annex B.	1	each	\$	\$
	1.2 Technical documentation of the data acquisition system • according to section B.1.2 of Annex B.	1	each	\$	\$
2	Control software :				
	2.1 Design and development of control software for an imaging spectrometer • according to section B.2.1 in Annex B.	1	each	\$	\$
	2.2 Technical document of the control software • according to section B.2.2 in Annex B.	1	each	\$	\$

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Buyer ID - Id de l'acheteur

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Item	Description		Qty	Unit	Firm unit price	Total price per item
	2.3	Update service of the control software <ul style="list-style-type: none">according to section B.2.3 in Annex B.	1	each	\$	\$
3	Electrical equipment <ul style="list-style-type: none">according to clause 6.13 Electrical equipment of this document.		1	each	\$	\$
4	Delivery <ul style="list-style-type: none">According to clause 6.14 Shipping Instructions - Delivery in this document.		1	each	\$	\$
5	Travel / meetings <ul style="list-style-type: none">according to sections A.6 and A.7 in Annex A.		2	each	\$	\$
Total value of section C.1.1 - Total value of the contract:						\$

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C.1.2 Optional goods and/or services

Item	Description	Qty	Unit	Firm unit price	Total price per item
1	Travel / meetings other than those set out in item # 5 of section C.1.1 of this Annex <ul style="list-style-type: none"> according to sections A.6 and A.7 of Annex A. 	2	each	\$	\$
2	Characteristics option by system <ul style="list-style-type: none"> According to section A.10.2 of Annex A. 	5	each	\$	\$
3	Data Acquisition System as Designed and Manufactured in Item # 1 of section C.1.1 of this annex.	4	each	\$	\$
4	Control software as designed and developed in item # 2.1 of section C.1.1 of this annex.	2	each	\$	\$
5	Electrical equipment of item # 3 of this table <ul style="list-style-type: none"> according to clause 6.13 Electrical equipment of this document. 	4	each	\$	\$
6	Delivery of items # 3 and 4 of this table <ul style="list-style-type: none"> According to clause 6.14 Shipping Instructions - Delivery in this document. 	4	each	\$	\$
Total Value of Section C.1.2 - Goods and / or Optional Services:					\$

C.2 Total Bid Price

The total price of the bid will be equal to the sum of both sections C.1.1 and C.1.2 and will be used to determine the lowest price per point of the selection method referred to in Annex F:

Total value of Section C.1.1 - Total value of the contract:	\$
Total value of Section C.1.2 - Goods and / or Optional Services:	\$
Total price of the bid:	\$

ANNEX D - MANDATORY CRITERIA

The bid must meet the mandatory criteria specified in this annex. Bidders must provide the necessary documentation to support compliance with this requirement.

Bids which fail to meet the mandatory criteria will be declared non-responsive. Each mandatory criterion should be addressed separately.

D.1 Mandatory Criterion # 1 - Expertise in Fourier Transform Spectrometer Technology

Bidders must have acquired 5 years or more of expertise in Fourier transform (FT) spectrometer technology in the last 10 years.

In order to demonstrate that bidders have acquired the required expertise, bidders must provide with their bid proof of at least one (1) similar project.

A project will be considered similar if:

1. The project is of the same scope as is required herein: in Fourier transform (FT) spectrometer technology. This expertise can be the design and manufacture of FT spectrometers, or the integration of a FT spectrometer in an infrared optical remote sensing system;
2. the project has been completed by the tenderer. The experience of a proposed subcontractor or an affiliate of the bidder does not count; and
3. The project was completed no later than 10 years prior to the closing date of this bid solicitation.

In the description of the project (s), bidders must provide the following details:

- (1) The project's title;
- (2) the year of its completion;
- (3) its duration (in months); and
- (4) and a product data sheet produced during this project.

If the information provided does not meet the requirements of this mandatory criterion, the bid will be declared non-admissible.

D.2 Mandatory Criterion # 2 – Experience in the design and development of a control software for a FT spectrometer

Bidders must have an experience of 2 years or more in the last 5 years in the design and development of control software for a FT spectrometer.

In order to demonstrate that bidders have the required experience, bidders must provide with their bid proof of at least one (1) similar project.

A project will be considered similar if:

1. the project is from the same domain than what is required in this: in the design and development of a control software for a FT spectrometer;
2. the project has been completed by the tenderer. The experience of a proposed subcontractor or an affiliate of the bidder does not count; and
3. The project was completed no later than five years prior to the closing date of this bid solicitation.

In the description of the project (s), bidders must provide the following details:

- (1) The project's title;
- (2) The year of its completion;
- (3) Its duration (in months); and
- (4) the user's guide of this control software; this guide should include a description of all the features of the control software.

If the information provided does not meet the requirements of this mandatory criterion, the bid will be declared non-admissible.

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ANNEX E - RATED CRITERIA

Bids that meet all of the mandatory criteria will be evaluated and scored as indicated in this Annex. Each rated criterion should be treated separately.

The score for the technical merit will be determined from the rated criteria described in this Annex.

Bidders should complete the last column of the tables in this Annex with cross-references to the evidence of compliance provided; Bidders should indicate the exact location of the information, including the title of the documents, as well as the page and paragraph numbers.

Proof of compliance is a document such as a brochure, a technical document (specifications, drawings), a test report written by a nationally or internationally recognized independent testing organization.

➤ Refer to the following pages.

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ANNEXE E – RATED CRITERIA					Minimum number of points to obtain	Maximum number of points	To be completed by bidders Title of documents, as well as page and paragraph numbers										
Rates criteria n°																	
1	Rate of generation of hypercubes as a function of spectral resolution: <table border="1"><tr><td>Resolution</td><td>1 cm⁻¹</td><td>4 cm⁻¹</td><td>8 cm⁻¹</td><td>16 cm⁻¹</td></tr><tr><td>Rate</td><td>4.6 Hz</td><td>16.8 Hz</td><td>30.8 Hz</td><td>52.6 Hz</td></tr></table> <p>(0 point) : the hypercubes generation rate is lower than the rates in the table above for all spectral resolutions;</p> <p>(1 point) : The rate of generation of the hypercubes is equal to or greater than the rates in the table above for one of the four spectral resolutions and lower for the other three;</p> <p>(2 points) : the hypercubes generation rate is equal to or greater than the rates in the table above for two of the four spectral resolutions and lower for the other two;</p> <p>(3 points) : the rate of generation of the hypercubes is greater or equal to the rates of the table above for three spectral resolutions and lower for the other;</p> <p>(4 points) : the rate of generation of hypercubes is equal to the rates of the table above for the four spectral resolutions;</p> <p>(5 points) : the hypercubes generation rate is higher than the rates in the table above for the four spectral resolutions</p>				Resolution	1 cm ⁻¹	4 cm ⁻¹	8 cm ⁻¹	16 cm ⁻¹	Rate	4.6 Hz	16.8 Hz	30.8 Hz	52.6 Hz	4	5	
Resolution	1 cm ⁻¹	4 cm ⁻¹	8 cm ⁻¹	16 cm ⁻¹													
Rate	4.6 Hz	16.8 Hz	30.8 Hz	52.6 Hz													

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ANNEXE E – RATED CRITERIA		Minimum number of points to obtain	Maximum number of points	To be completed by bidders Title of documents, as well as page and paragraph numbers
Rates criteria n°				
2	<p>Volume of the pre-amplification and acquisition module.</p> <p>In the present configuration, the pre-amplification module and the acquisition module are two distinct components with the following dimensions:</p> <ul style="list-style-type: none"> ○ pre-amplification module: 3" x 9.5" x 8.5" (242.25 in³) ○ acquisition module: 17.5" x 7" x 13.75" (1684 in³) <p>Total volume : 1926.25 in³.</p> <p>Note: in the present configuration, the analog to digital conversion is done in the acquisition module.</p> <p>(0 point) : The proposed system is in two components and does not offer a volume reduction compared to the present configuration.</p> <p>(1 point) : The proposed system is in two components, the total volume of which is between 1000 et 1500 in³.</p> <p>(2 points) : The proposed system is in two components, the total volume of which is between 500 et 999 in³.</p> <p>(3 points) : The proposed system is in one component whose volume is between 1000 et 1500 in³.</p> <p>(4 points) : The proposed system is in one component whose volume is between 500 et 999 in³.</p> <p>(5 points) : The proposed system is in one component and its volume is lower than 500 in³.</p>	3	5	

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ANNEXE E – RATED CRITERIA		Minimum number of points to obtain	Maximum number of points	To be completed by bidders Title of documents, as well as page and paragraph numbers
Rates criteria n°				
3	<p>Design and manufacture of a data acquisition system.</p> <p>The Contractor is requested to design and manufacture a data acquisition system that meets the minimum performance requirements described in Section B.1 of Annex B.</p> <p>(0 point) : The bidder does not have any commercial products and must develop an original product that meets all the characteristics of B.1;</p> <p>(1 point) : The Bidder has a commercial product for a single pixel detector that does not meet any of the characteristics of B.1 and must modify its commercial product to meet the requirements of B.1;</p> <p>(2 points) : The bidder has a commercial product that meets 4 of the 8 characteristics of B.1; the Bidder must develop its commercial product to meet the 8 characteristics required in section B.1 of Annex B;</p> <p>(3 points) : The bidder has a commercial product that meets characteristics 2, 3, 5, 6, and 7 of B.1 but not characteristic No. 1 (64 independent and parallel channels) nor characteristic No. 4 (rates of signals reading); the bidder must develop its commercial product to support the 64 independent and parallel channels required and to read 64 channels simultaneously at 130 kHz and 260 kHz;</p> <p>(4 points) : The bidder has a commercial product that meets characteristics No. 2 to 8 of B.1 but not characteristic No.1 (64 independent and parallel channels); the bidder must develop its commercial product to support the 64 independent and parallel channels required;</p> <p>(5 points) : The bidder has a commercial product that meets the 8 required characteristics of B.1; no development is required.</p>	3	5	

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ANNEXE E – RATED CRITERIA		Minimum number of points to obtain	Maximum number of points	To be completed by bidders Title of documents, as well as page and paragraph numbers
Rates criteria n°				
4	<p>Spectrometer control software</p> <p>The Contractor is requested to design and develop control software for an imaging spectrometer that meets the minimum performance characteristics described in section B.2.1 of Annex B.</p> <p>(0 point) : The software performs only basic functions (spectrometer parameter setting, start and stop recording) and does not allow any metadata management.</p> <p>(1 point) : The software performs the basic functions (setting spectrometer parameters, start and stop recording) and metadata management, but works for a single pixel spectrometer; it must be expanded to add the other functions requested in section B.2.1 of Annex B and to work with the PIRATES detector arrays.</p> <p>(2 points) : The software performs 25% of the functions specified in section B.2.1 and operates for a single pixel spectrometer; it must be expanded to add the other functions requested in section B.2.1 and to work with the PIRATES detector arrays.</p> <p>(3 points) : The software performs at least 75% of the functions requested in section B.2.1 of Annex B and manages the metadata. It works for a single pixel spectrometer. The software must be expanded to add the missing features and to work with the PIRATES detector arrays.</p> <p>(4 points) : The software performs 75% of the functions requested in section B.2.1 and manages the metadata. It works for an imaging spectrometer of less than 64 pixels. The software must be expanded to add the missing features and to work with the PIRATES detector arrays.</p>	3	5	

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ANNEXE E – RATED CRITERIA		Minimum number of points to obtain	Maximum number of points	To be completed by bidders Title of documents, as well as page and paragraph numbers
Rates criteria n°				
	(5 points) : The software performs at least 75% of the functions requested in section B.2.1 of Annex B and manages the metadata. It works for an imaging spectrometer of 64 pixels or more; the only development required is the addition of the missing functions.			
Total number of points:		13	20	

ANNEX F - BASIS OF SELECTION

F.1 Basis of Selection - Lowest Price Per Point

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria; and
 - c. obtain the required minimum points for the technical evaluation criteria which are subject to point rating.
2. Bids not meeting (a) or (b) or (c) will be declared non-responsive. Neither the responsive bid that receives the highest number of points nor the one that proposed the lowest price will necessarily be accepted. The responsive bid with the lowest evaluated price per point will be recommended for award of a contract.
3. In the event two or more responsive bids have the same lowest evaluated price per point, the responsive bid that obtained the highest technical merit score will be recommended for award of a contract.

❖ The table below illustrates an example where we received 5 bids and the selection of the contractor is determined by the responsive bid with the lowest evaluated price per point:

Bidders:	A	B	C	D	E
Total price of the bids:	100,000 \$	125,000 \$	100,000 \$	125,000 \$	130,000 \$
Mandatory Criteria met?:	no	yes	yes	yes	yes
Minimum of points achieved on each rated criterion?:	yes	no	yes	yes	yes
Total number of points achieved:			13	14	18
The evaluated price per point for the responsive bids only:			100,000\$ / 13	125,000\$ / 14	130,000\$ / 18
			7,692.31	8,928.57	7,222.22

The responsive bid "E" achieves the lowest price per point.

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ANNEX G - ORIGINAL EQUIPMENT MANUFACTURER (OEM) CERTIFICATION FORM

Original Equipment Manufacturer (OEM) Certification Form

This confirms that the original equipment manufacturer (OEM) identified below has authorized the Bidder named below to provide and maintain its products under any contract resulting from the bid solicitation identified below.

Name of OEM

Signature of authorized signatory of OEM

Print Name of authorized signatory of OEM

Print Title of authorized signatory of OEM

Address for authorized signatory of OEM

Telephone no. for authorized signatory of OEM

Fax no. for authorized signatory of OEM

Date signed

Solicitation Number

Name of Bidder

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ANNEX H - SOFTWARE PUBLISHER CERTIFICATION FORM

H.1 Bidder itself is the Software Publisher

<p style="text-align: center;">Software Publisher Certification Form (to be used where the Bidder itself is the Software Publisher)</p> <p>The Bidder certifies that it is the software publisher of all the following software products and that it has all the rights necessary to license them (and any non-proprietary sub-components incorporated into the software) on a royalty-free basis to Canada pursuant to the terms set out in the resulting contract:</p> <hr/> <hr/> <hr/> <hr/> <p><i>[Bidders should add or remove lines as needed]</i></p>
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H.2 Bidder is not the Software Publisher

Software Publisher Authorization Form

(to be used where the Bidder is not the Software Publisher)

This confirms that the software publisher identified below has authorized the Bidder named below to license its proprietary software products under the contract resulting from the bid solicitation identified below. The software publisher acknowledges that no shrink-wrap or click-wrap or other terms and conditions will apply, and that the contract resulting from the bid solicitation (as amended from time to time by its parties) will represent the entire agreement, including with respect to the license of the software products of the software publisher listed below. The software publisher further acknowledges that, if the method of delivery (such as download) requires a user to "click through" or otherwise acknowledge the application of terms and conditions not included in the bid solicitation, those terms and conditions do not apply to Canada's use of the software products of the software publisher listed below, despite the user clicking "I accept" or signalling in any other way agreement with the additional terms and conditions.

This authorization applies to the following software products:

[Bidders should add or remove lines as needed]

Name of Software Publisher (SP)

Signature of authorized signatory of SP

Print Name of authorized signatory of SP

Print Title of authorized signatory of SP

Address for authorized signatory of SP

Telephone no. for authorized signatory of SP

Fax no. for authorized signatory of SP



Date signed

Solicitation Number

Name of Bidder

ANNEX I - PRESENTATION OF YOUR BID - CHECK LIST

Below is a checklist of the contents of your bid. This list is not an exhaustive list; it remains the Bidder's responsibility to prepare its bid in accordance with the instructions contained in the Request For Proposal (RFP) and provide a comprehensible and sufficiently detailed bid, including all requested pricing details that will permit a complete evaluation in accordance with the criteria set out in the RFP.

ANNEX I - PRESENTATION OF YOUR BID - CHECK LIST	
Pagination of <u>Document 1 of 2</u> (document of only one page)	
Page 1 of 1 	Bidders should include with their bid, the first sheet of this RFP properly completed and signed. Refer to 2003 Standard Instructions mentioned in clause 2.1 Standard Instructions, Clauses and Conditions .
Pagination of <u>Document 2 of 2</u> (document of 52 pages)	
Page 8 	Bidders must submit their bid only to the address indicated in clause 2.2 Submission of Bids .
Pages 12	Bidders must pay attention on how bids will be evaluated and the winning bid selected. Refer to Part 4 - Evaluation Procedures and Basis of Selection
Page 13	<u>Applicable only if an offence has been committed</u> Bidders must provide with their bid the required documentation as indicated Clause 5.1.1 Integrity Provisions - Declaration of Convicted Offences .
Page 13	Bidders must provide with their bid or promptly thereafter a list of names as indicated in clause 5.2.1 Integrity Provisions - Required Documentation . ➤ Please refer to section " 17. Information to be provided when bidding, contracting or entering into a real property agreement " of the following Web site: http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html

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ANNEX I - PRESENTATION OF YOUR BID - CHECK LIST	
Pages 14 and 48	Bidders must read Certification 5.2.3 OEM Certification and should include with their bid, Annex G - Original Equipment Manufacturer (OEM) Certification Form duly completed.
Pages 15, 49 and 50	Bidders must read Certification 5.2.4 Software Publisher Certification and Software Publisher Authorization and should include with their bid, Annex H – Software Publisher Certification Form duly completed.
Page 20	Bidders should submit with their bid, clause 6.5.3 Contractor's Representatives properly completed.
Pages 36 à 38	Bidders must include with their bid, Annex C - Basis of Payment duly completed.
Pages 39 and 40	Bidders must include with their bid, the necessary documentation to support compliance with the mandatory criteria and should include with their bid, Annex D - Mandatory Criteria duly completed.
Pages 41 à 46	Bidders must include with their bid, the necessary documentation to support compliance with the rated criteria and should include with their bid, Annex E - Rated Criteria duly completed.