

**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC**  
**11 Laurier St. / 11, rue Laurier**  
**Place du Portage , Phase III**  
**Core 0A1 / Noyau 0A1**  
**Gatineau, Québec K1A 0S5**  
**Bid Fax: (819) 997-9776**

**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

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

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

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

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

**Comments - Commentaires**

<b>Title - Sujet</b> RADIO FREQ SIGNAL MEASURING INSTRUM	
<b>Solicitation No. - N° de l'invitation</b> U4030-130081/A	<b>Date</b> 2012-11-02
<b>Client Reference No. - N° de référence du client</b> U4030-130081	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$QD-023-23315	
<b>File No. - N° de dossier</b> 023qd.U4030-130081	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2012-12-12</b>	<b>Time Zone Fuseau horaire</b> Eastern Standard Time EST
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Tanguay(qd div.), Heather	<b>Buyer Id - Id de l'acheteur</b> 023qd
<b>Telephone No. - N° de téléphone</b> (819) 956-0835 ( )	<b>FAX No. - N° de FAX</b> (819) 956-0636
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF INDUSTRY CANADA BLDG 94 3701 CARLING AVE OTTAWA Ontario K2H8S2 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

**Vendor/Firm Name and Address**

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

**Issuing Office - Bureau de distribution**

Defence Communications Division. (QD)  
11 Laurier St./11, rue Laurier  
Place du Portage, Phase III, 8C2  
Gatineau, Québec K1A 0S5

<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 (type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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19. Consignee

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## **ANNEXES**

**ANNEX A      STATEMENT OF REQUIREMENTS**  
**ANNEX B      BASIS OF PAYMENT**

**PART 1 - GENERAL INFORMATION****1. Security Requirement**

There is no security requirement associated with the requirement.

**2. Requirement**

Industry Canada, Certification & Engineering Bureau requires a turnkey Radio Frequency Signal Measuring Instrument to measure and analyze radio frequency (RF) signals in order to carry out regulatory compliance testing, standards development activities as well as measurement studies.

**3. Debriefings**

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

## PART 2 - BIDDER INSTRUCTIONS

### 1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions (<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) Manual issued by Public Works and Government Services Canada.

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

The 2003 (2012-09-05) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

#### 1.1 SACC Manual Clauses

B1000T	(2007-11-30)	Condition of Material
B3000T	(2006-06-16)	Equivalent Products

### 2. Submission of Bids

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

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

### 3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

### 4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

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.

## PART 3 - BID PREPARATION INSTRUCTIONS

### 1. Bid Preparation Instructions

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

Section I: Technical Bid (three (3) hard copies)

Section II: Financial Bid (three (3) hard copies)

Section III: Certifications (three (3) hard copies)

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

Bidders should include a completed paper copy of the Request for Proposal with its submission, and include the following:

- a) All information in the spaces provided of the solicitation document under Part 6 "Resulting Contract clauses".
- b) A proposed delivery date in calendar days after receipt or order (ARO).

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 are encouraged to:

- a) use paper containing fibre certified as originating from a sustainably-managed forest and/or containing minimum 30% recycled content; and
- b) 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

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Bidders must submit their financial bid in accordance with Annex B - Basis of Payment. The total amount of Goods and Services Tax (GST) or Harmonized Sales Tax (HST) must be shown separately, if applicable.

**1.1 SACC Manual Clauses**

A0222T	(2010-01-11)	Evaluation of Price
C3011T	(2010-01-11)	Exchange Rate Fluctuation

**Section III:**

**Certifications**

Bidders must submit the certifications required under Part 5.



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

##### 1. Evaluation Procedures

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

##### 1.1 Technical Evaluation

##### 1.1.1 Mandatory Technical Criteria

- (a) **Experience**  
In the Public Domain - Reference letter (name and telephone number of references)  
In Government Domain - Submit copy of cover page of the Government Contract.
- (b) **Technical Specification**  
Bidders must complete the following table, Technical Evaluation Plan, and provide proof of compliance

**Technical Evaluation Plan**

ITEM	TITLE	DESCRIPTION	PROOF OF COMPLIANCE	COMPLIANT YES OR NO
<b>SYSTEM SPECIFICATIONS</b>				
1.1	Frequency Range	The frequency range shall be from 1 kHz or lower to 40 Ghz or greater range		
<b>GENERATOR SPECIFICATIONS</b>				
1.2	Maximum RF Power	The maximum RF input power shall be greater than or equal to 30 dBm		
1.3	Level Accuracy	The instrument's level accuracy over the entire frequency range shall not exceed $\pm 1.0$ dB		
1.4	Flatness	The flatness (or frequency response) over the entire frequency range shall not exceed $\pm 3.5$ dB.		
1.5	Display Frequency Resolution	The display frequency resolution shall not exceed 1 Hz.		
1.6	Display Sweep Points	The number of display sweep points shall be greater than 30,000.		
1.7	Resolution Bandwidth (RBW) Range	The resolution bandwidth (RBW) range shall be from 1 Hz or lower to 8 MHz or greater.		

ITEM	TITLE	DESCRIPTION	PROOF OF COMPLIANCE	COMPLIANT YES OR NO
1.8	Video Bandwidth (VBW) Range	The video bandwidth (VBW) range shall be from 3 Hz or lower to 24 MHz or greater.		
1.9	Analysis Bandwidth	The analysis bandwidth shall be 160 MHz or greater.		
1.1	Displayed Average Noise Level (DANL)	At a frequency of 26.5 GHz, the displayed average noise level (DANL) shall not be greater than -140 dBm when no features (such as preamplifiers or noise corrections) are applied. At 26.5 GHz, the DANL shall not be greater than -155 dBm when features (such as preamplifiers or noise corrections) are applied.		
1.11	Third Order Intermodulation Intercept Point (POI)	At a frequency of 26.5 GHz, the third order intermodulation intercept point (TOI) shall be at least 10 dBm.		
1.12	1dB Compression Point	At a frequency of 26.5 GHz, with no features (such as preamplifiers or noise corrections) the 1dB compression point shall be -10 dBm or greater.		
1.13	Attenuation Range	The attenuation range including mechanical and electronic attenuation shall be from 0 dB to at a minimum 70 dB		
1.14	Attenuation Step Size	The mechanical attenuation step size shall be 2 dB or lower.		
1.15	Phase Noise	At a displacement frequency of 100 kHz, the phase noise shall be -120 dBc/Hz or lower. At a displacement frequency of 1 MHz, the phase noise shall be -155 dBc/Hz or lower.		
1.2.1	Internal Preamplifier	The Instrument shall have an internal preamplifier which covers the frequency range of 100 kHz or lower to 40 GHz or greater. The gain of the internal		

ITEM	TITLE	DESCRIPTION	PROOF OF COMPLIANCE	COMPLIANT YES OR NO
		preamplifier shall be at least 20 dB.		
1.2.2.	Detectors	The Instrument shall have the following detectors: a) Positive Peak b) Power Average c) Voltage Average d) Sample e) Quasi-peak (CISPR 16-1-1 Ed.3.0 (2010-01 compliant) f) CISPR Average (CISPR 6-1-1 Ed.3.0 (2010-01 compliant) g) CISPR RMS (CISPR 16-1-1 Ed.3.0 (2010-01 compliant)		
1.2.3	Traces	The number of traces shall be greater than 2. It shall be possible to display multiple traces on the screen at the same time. The trace functions shall include a "clear" or "free-run" option, a maximum hold option and a trace average function.		
1.2.4	Display Scales	The display shall be capable of logarithmic and linear modes. The scale units for logarithmic display capabilities shall include dBm and dBuV. The scale units for linear display capabilities shall include W (Watts) and V (Voltage).		
1.2.5	RBW Size Steps	The RBW steps shall include, but not be limited to, steps in increments of 1, 3 and 5 (e.g. 100 kHz, 300 kHz and 500 kHz, 1 MHz, 3 MHz and 5 MHz).		
1.2.6	Zero Span	The Instrument shall be capable of entering a "zero span" mode.		
1.2.7	Trigger	There shall be a function for triggering the displayed signals. This function shall include a "clear" or "free-run" function, a "video" or "line" trigger, a radio frequency "RF" or signal trigger and an external trigger via an external input.		

ITEM	TITLE	DESCRIPTION	PROOF OF COMPLIANCE	COMPLIANT YES OR NO
1.2.8	Measurement Features	Measurement features shall be available which include the ability to display limit lines, measure the 99% occupied bandwidth, measure the x dB bandwidth, measure the channel power, measure Complementary Cumulative Distribution Function (CCDF), time gate and demodulate Frequency Modulation (FM) signals.		
1.2.9	Electronic Attenuator Control	The Instrument shall have electronic attenuation control from 10 MHz or less to 3.6 GHz or greater.		
1.2.10	Compatibility with External Frequency Mixers	The Instrument shall be compatible with external frequency mixers that can extend the frequency range of the instrument from the maximum standalone operational frequency of the instrument to 200 GHz. Although compatibility is required, the mixers do not have to be fabricated and sold by the instrument's manufacturer nor do they have to be included in the bid. Since there are many third-party external mixers that may be compatible with the instrument, it shall be ensured that external mixers, from at least one manufacturer are compatible with the instrument.		
1.2.11	Standard Commands for Programmable Instrumentation (SCPI) Compatibility	The Instrument shall have the ability to be remotely controllable via an external computer using SCPI commands and shall have SCPI remote software control commands that can be used to create limit lines on the display of the Instrument.		
<b>ENVIRONMENTAL REQUIREMENTS</b>				
1.3	Environmental Requirements	a) The manufacturer's operating temperature range shall be from		

ITEM	TITLE	DESCRIPTION	PROOF OF COMPLIANCE	COMPLIANT YES OR NO
		10 degrees Celsius or less to 35 degrees Celsius or greater. b) The minimum requirement for the maximum operating humidity level shall be equal to 70% greater.		
<b>CONNECTION REQUIREMENTS</b>				
1.4	Connection Requirements	a) The RF test port connector shall be a 2.92mm, 2.4mm or 1.85mm connector or a connector that is provided with adapters to 2.92mm, 2.4mm or 1.85mm. b) The nominal impedance of the RF test port connector shall be 50 ohms. c) The equipment shall have a Voltage Standing Wave Ratio (VSWR) specification no greater than 2.0 in the frequency range of 1 kHz to 40 Ghz. d) The AC power input connection shall be 120VAC e) The equipment shall be equipped with an IEEE 488 General Purpose Interface Bus (GPIB) interface and an Ethernet (LAN) interface for remote automation and remote control capability. f) The equipment shall be equipped with at least one USB port for connecting external storage devices to be able to save trace data.		
<b>INSTRUMENT SPECIFICATIONS</b>				
1.5.1	User Interface	The Instrument shall include a user interface embedded in the equipment. The user interface shall be a colour visual screen display of at least 7 inches with a resolution of at least 800 pixels by 480 pixels, with tactile user controls embedded in the equipment. There shall also be		

ITEM	TITLE	DESCRIPTION	PROOF OF COMPLIANCE	COMPLIANT YES OR NO
		an external monitor connection, either VGA or DVI.		
1.5.2	Data Storage	There shall be internal data storage and an external data storage option via USB.		
1.5.3	Weight	Instrument shall not weigh more than 50 kg		
1.5.4	Information Accessibility	There shall be continued accessibility, for as long as the equipment is supported by the manufacturer, to information on the Instrument including, but not limited to, relevant datasheets and user manuals.		
<b>SOFTWARE SPECIFICATIONS</b>				
1.6.1	Software License	The software license shall not require a periodic licensing fee.		
1.6.2	Operating System	The instrument operating system shall be a Microsoft Windows platform		
1.6.3	Remote Connectivity	The instrument shall have the ability for an external computer to remotely connect to the instrument and download trace images and trace data		
<b>GENERAL SPECIFICATIONS</b>				
1.7.1	Quality and Service	<p>a) The manufacturer of the instrument shall have at least 10 years experience in manufacturing electronic test equipment</p> <p>b) The instrument shall be a standalone piece of equipment stating that replacement components.</p> <p>c) The instrument shall not be manufactured using components that are older than 5 years. A letter of commitment stating that replacement components shall be available for 5 years from the time of purchase is required to be submitted with the bid.</p>		

ITEM	TITLE	DESCRIPTION	PROOF OF COMPLIANCE	COMPLIANT YES OR NO
		d) Training on how to use the equipment shall be available upon request. e) The instrument shall include contact information in the form of a website, email address and telephone number. The support shall be available for at least 2 years after the date of the purchase.		
1.7.2	Calibration of Equipment	a) All hardware components of the system shall be delivered with a certificate of calibration and data demonstrating compliance to all the manufacturers' specifications. The calibration shall be valid for at least 1 year after purchase. b) The recommended calibration interval shall be one or two years		
1.7.3	Safety Requirements	The instrument shall conform to the applicable CSA electric standard and shall contain the appropriate CSA marking.		

## 2. Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsible bid with the lowest evaluated price for of all line items will be recommended for award of a contract.

## PART 5 - CERTIFICATIONS

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

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

### 1. Code of Conduct Certifications - Certifications Required Precedent to Contract Award

- 1.1** Bidders should provide, with their bid or promptly thereafter, a complete list of names of all individuals who are currently directors of the Bidder. If such a list has not been received by the time the evaluation of bids is completed, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Bidders must submit the list of directors before contract award, failure to provide such a list within the required time frame will render the bid non-responsive.

The Contracting Authority may, at any time, request that a Bidder provide properly completed and Signed Consent Forms (Consent to a Criminal Record Verification form - PWGSC-TPSGC 229) (<http://www.tpsgc-pwgsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>) for any or all individuals named in the aforementioned list within a specified delay. Failure to provide such Consent Forms within the delay will result in the bid being declared non-responsive.

### 2. Certifications Required with the Bid

#### 2.1 Federal Contractors Program - Certification

Federal Contractors Program - over \$25,000 and below \$200,000 Suppliers who are subject to the Federal Contractors Program (FCP) and have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive federal government contracts over the threshold for solicitation of bids as set out in the Government Contracts Regulations. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

- a) ( ) is not subject to the FCP, having a workforce of less than 100 full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- b) ( ) is not subject to the FCP, being a regulated employer under the Employment Equity Act, S.C. 1995, c. 44;



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- c) ( ) is subject to the requirements of the FCP, having a workforce of 100 or more full-time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC, having not bid on requirements of \$200,000 or more;
- d) ( ) has not been declared an ineligible contractor by HRSDC, and has a valid certificate number as follows: \_\_\_\_\_.

Further information on the FCP is available on the HRSDC Web site.

**AUTHORIZED SIGNATURE:** \_\_\_\_\_

## PART 6 - RESULTING CONTRACT CLAUSES

### 1. Security Requirement

There is no security requirement associated with the requirement.

### 2. Requirement

A turnkey Radio Frequency Signal Measuring Instrument to measure and analyze radio frequency (RF) signals in accordance with Annex A - Statement of Requirements (SOR).

#### 2.1 Optional Goods and/or Services

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described in Article 1 of Annex B - Basis of Payment. Optional Items for Purchase are detailed in Annex B - Basis of Payment. Articles 2.1, 2.2 and 2.3 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 options at Annex B at any time before the expiry of the Contract by sending a written notice to the Contractor.

### 3. 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 (<http://ccua-sacc.tpsgc-pwgsc.gc.ca/pub/acho-eng.jsp>) Manual issued by Public Works and Government Services Canada.

#### 3.1 General Conditions

The 2010A (2012-09-05), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### 4. Delivery Date

All the deliveries shall be received on or before March 29, 2013

Delivery schedule for optional quantity will to be determined upon receipt of order.

### 5. Authorities

#### 5.1 Contracting Authority (CA)

The Contracting Authority for the Contract is:

Heather Tanguay  
Supply Specialist  
Public Works and Government Services Canada  
Acquisitions Branch  
Defence and Major Projects Sector (DMPS)  
Place du Portage, Phase III, 11, rue Laurier Street, 8C2 #60, Gatineau, QC K1A 0S5  
Government of Canada  
Telephone: (819) 956-0835  
Facsimile: (819) 956-0636  
E-mail address: Heather.Tanguay@tpsgc-pwgsc.gc.ca

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

## 5.2 Procurement Authority (PA)

The Procurement Authority for the Contract is:

Anna Maria Sofonéa  
Procurement Authority  
Industry Canada  
Certification and Engineering Bureau,  
3701 Carling Avenue, Bldg. 94  
Ottawa, Ontario  
K2H 8S2  
Telephone: (613) 990-4863  
Facsimile: (613) 990-4752  
E-mail address: anna-maria.sofonea@ic.gc.ca

The Procurement 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 Procurement Authority, however the Procurement Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

## 5.3 Technical Authority (TA)

The Technical Authority for the Contract will be identified upon Contract award:

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

## 5.4 Contractor's Representative

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_

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

## 6. Payment

### 6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under this Contract, the Contractor shall be paid a firm price as detailed in Annex B - Basis of Payment. Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

No increase in the total liability of Canada or in the price of the Work resulting from any design changes, modifications or interpretations of the Specifications, will be authorized or paid to the Contractor unless such design changes, modifications or interpretations have been approved, in writing, by the Contracting Authority prior to their incorporation in the Work.

## 6.2 Limitation of Price

C6000C (2011-05-16) Limitation of Price

## 6.3 Method of Payment

H1001C (2008-05-12) Multiple Payments

## 6.4 SACC Manual Clauses

C2608C (2010-08-16) Canadian Customs Documentation  
G1005C (2008-05-12) Insurance

## 7. Invoicing Instructions

7.1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the 2010A (2012-09-05) General Conditions - Goods Medium Complexity. Invoices cannot be submitted until all work identified in the invoice is completed.

7.2 The invoice must contain the following information:

- a) date;
- b) name and address of consignee;
- c) item/reference number, deliverable and/or quantity or description of work
- d) contract/purchase order number and financial codes;
- e) all separate charges detailed individually;
- f) the amount invoiced;
- g) the Client Reference Number (CRN);
- h) the Contractor's Vendor Code or Procurement Business Number (PB); and
- i) all invoices must have original signatures and be stamped as original

7.3 Invoices must be distributed as follows:

- a) The original and one (1) copy must be forwarded for certification and payment to the following address:

Anna Maria Sofonéa  
Procurement Authority  
Industry Canada  
Certification and Engineering Bureau,  
3701 Carling Avenue, Bldg. 94  
Ottawa, Ontario  
K2H 8S2

- b) One (1) copy must be forwarded to the "Consignee" identified in this document.

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

## 8. Certifications

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

## 9. Applicable Laws

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

## 10. 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) 2010A (2012-09-05), General Conditions - Goods (Medium Complexity)
- c) the Contractor's bid dated \_\_\_\_\_

## 11. SACC Manual Clauses

B4060C	(2011-05-16)	Controlled Goods
B7500C	(2006-06-16)	Excess Goods
D2000C	(2007-11-30)	Marking
D2001C	(2007-11-30)	Labeling
D5328C	(2007-11-30)	Inspection and Acceptance
D9002C	(2007-11-30)	Incomplete Assemblies
G1005C	(2008-05-12)	Insurance

## 12. Inspection and Acceptance

The Technical Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to acceptance by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with Annex A Requirements and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have to right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

## 13. Preparation for Delivery

### 13.1 Canadian-Based Contractor

Preservation and packaging shall be in accordance with best Commercial Standards.

### 13.2 United States-Based Contractor

- a) Preservation and packaging must be in accordance with Commercial Standard ASTN D3951.

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- b) Packaging data forms previously approved by U.S. authorities are acceptable.
- c) Approved coded packaging data is shown immediately below the description of the item to which it applies. Where no data is shown, the Contractor must submit a packaging data form for approval.

**14. Shipping Instructions****14.1 Canadian-Based Contractor**

Goods shall be consigned to the destination in the Contract and delivered Delivery Duty Paid (DD) Ottawa, Ontario Incoterms 2000 for shipments from a commercial contractor.

**14.2 United States-Based Contractor**

Delivery will be FCA Free Carrier at Industry Canada, Communications Research Center, 3701 Carling Ave., Ottawa, Ontario, K2H 8S2 Incoterms 2000. The Contractor must load the goods onto the carrier designated by Industry Canada. Onward shipment from the delivery point to the consignee will be Canada's responsibility.

**15. Quality, Inspection and Acceptance**

The Technical Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to acceptance by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with Annex A Requirements and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have to right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

**16. Loss or Damage**

Should magnetically recorded information and/or documentation become damaged or lost, including accidental erasure in the course of transit from the Contractor's site to the destination shown on Page 1 of the Contract, or while in the Contractor's care, it shall be replaced at the Contractor's expense.

**17. Canada's Data**

The Contractor agrees that all data created or owned by Canada shall remain the property of Canada, regardless of whether such data is created using the Licensed Software, is processed using the Licensed Software or is stored using the Licensed Software.

**18. Shrink-wrap License**

Canada does not accept, nor will it be bound by, any terms and conditions contained in a shrink-wrap license, or any other software license, express or implied, which is contained within or on the packaging of the software, regardless of any notification to the contrary. The contract, including any terms and conditions incorporated by reference and any amendments made thereto, forms the entire agreement between Canada and the Contractor.

**19. Consignee**

Certification and Engineering Bureau  
Communications Research Center Canada (CRC)  
3701 Carling Ave.  
Building #94  
Ottawa, Ontario, K2H 8S2  
Attention: Peter Wolters  
Manager, Lab Administration Services  
Telephone Number: (613) 991-9311

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E-mail [peter.wolters@ic.gc.ca](mailto:peter.wolters@ic.gc.ca)



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## ANNEX A STATEMENT OF REQUIREMENT

### General Requirements:

The Certification & Engineering Bureau requires a turnkey Radio Frequency Signal Measuring Instrument to measure and analyze radio frequency (RF) signals in order to carry out regulatory compliance testing, standards development activities as well as measurement studies.

### Equipment Specification Requirements:

A turnkey Radio Frequency Signal Measuring Instrument is an instrument that is "ready for use" that is used for measuring and analyzing radio frequency (RF) signals. The instrument shall have a visual display, a user interface and shall be able to provide both graphical and tabular data via a modern externally accessible storage format.

The instrument shall be a standalone piece of equipment consisting of either a spectrum analyzer or a measuring receiver, or a combination of a spectrum analyzer and measuring receiver. The instrument must meet the following mandatory specifications:

#### 1. System Specifications:

##### 1.1 Frequency Range

The frequency range shall be from 1 kHz or lower to 40 GHz or greater.

##### 1.2 Maximum RF Input Power

The maximum RF input power shall be greater than or equal to 30 dBm.

##### 1.3 Level Accuracy

The instrument's level accuracy over the entire frequency range shall not exceed  $\pm 1.0$  dB.

##### 1.4 Flatness

The flatness (or frequency response) over the entire frequency range shall not exceed  $\pm 3.5$  dB.

##### 1.5 Display Frequency Resolution

The display frequency resolution shall not exceed 1 Hz.

##### 1.6 Display Sweep Points

The number of display sweep points shall be greater than 30,000.

##### 1.7 Resolution Bandwidth (RBW) Range

The resolution bandwidth (RBW) range shall be from 1 Hz or lower to 8 MHz or greater.

##### 1.8 Video Bandwidth (VBW) Range

The video bandwidth (VBW) range shall be from 3 Hz or lower to 24 MHz or greater.

**1.9 Analysis Bandwidth**

The analysis bandwidth shall be 160 MHz or greater.

**1.10 Displayed Average Noise Level (DANL)**

At a frequency of 26.5 GHz, the displayed average noise level (DANL) shall not be greater than -140 dBm when no features (such as preamplifiers or noise corrections) are applied. At 26.5 GHz, the DANL shall not be greater than -155 dBm when features (such as preamplifiers or noise corrections) are applied.

**1.11 Third Order Intermodulation Intercept Point (TOI)**

At a frequency of 26.5 GHz, the third order intermodulation intercept point (TOI) shall be at least 10 dBm.

**1.12 1dB Compression Point**

At a frequency of 26.5 GHz, with no features (such as preamplifiers or noise corrections) the 1dB compression point shall be -10 dBm or greater.

**1.13 Attenuation Range**

The attenuation range including mechanical and electronic attenuation shall be from 0 dB to at a minimum 70 dB.

**1.14 Attenuation Step Size**

The mechanical attenuation step size shall be 2 dB or lower.

**1.15 Phase Noise**

At a displacement frequency of 100 kHz, the phase noise shall be -120 dBc/Hz or lower. At a displacement frequency of 1 MHz, the phase noise shall be -155 dBc/Hz or lower.

**1.2 System Features****1.2.1 Internal Preamplifier**

The Instrument shall have an internal preamplifier which covers the frequency range of 100 kHz or lower to 40 GHz or greater. The gain of the internal preamplifier shall be at least 20 dB.

**1.2.2 Detectors**

The Instrument shall have the following detectors:

- a) Positive peak
- b) Power Average
- c) Voltage Average
- d) Sample
- e) Quasi-peak (CISPR 16-1-1 Ed.3.0 (2010-01) compliant)
- f) CISPR Average (CISPR 16-1-1 Ed.3.0 (2010-01) compliant)
- g) CISPR RMS (CISPR 16-1-1 Ed.3.0 (2010-01) compliant)

**1.2.3 Traces**

The number of traces shall be greater than 2. It shall be possible to display multiple traces on the screen at the same time. The trace functions shall include a "clear" or "free-run" option, a maximum hold option and a trace average function.

**1.2.4 Display Scales**

The display shall be capable of logarithmic and linear modes. The scale units for logarithmic display capabilities shall include dBm and dBuV. The scale units for linear display capabilities shall include W (Watts) and V (Voltage).

**1.2.5 RBW Step Sizes**

The RBW steps shall include, but not be limited to, steps in increments of 1, 3 and 5 (e.g. 100 kHz, 300 kHz and 500 kHz, 1 MHz, 3 MHz and 5 MHz).

**1.2.6 Zero Span**

The Instrument shall be capable of entering a "zero span" mode.

**1.2.7 Trigger**

There shall be a function for triggering the displayed signals. This function shall include a "clear" or "free-run" function, a "video" or "line" trigger, a radio frequency "RF" or signal trigger and an external trigger via an external input.

**1.2.8 Measurement Features**

Measurement features shall be available which include the ability to display limit lines, measure the 99% occupied bandwidth, measure the x dB bandwidth, measure the channel power, measure Complementary Cumulative Distribution Function (CCDF), time gate and demodulate Frequency Modulation (FM) signals.

**1.2.9 Electronic Attenuator Control**

The Instrument shall have electronic attenuation control from 10 MHz or less to 3.6 GHz or greater.

**1.2.10 Compatibility with External Frequency Mixers**

The Instrument shall be compatible with external frequency mixers that can extend the frequency range of the instrument from the maximum standalone operational frequency of the instrument to 200 GHz. Although compatibility is required, the mixers do not have to be fabricated and sold by the instrument's manufacturer nor do they have to be included in the bid. Since there are many third-party external mixers that may be compatible with the instrument, it shall be ensured that external mixers, from at least one manufacturer are compatible with the instrument.

**1.2.11 Standard Commands for Programmable Instrumentation (SCPI) Compatibility**

The Instrument shall have the ability to be remotely controllable via an external computer using SCPI commands and shall have SCPI remote software control commands that can be used to create limit lines on the display of the Instrument.

**1.3 Environmental Requirements:**

- a) The manufacturer's operating temperature range shall be from 10 degrees Celsius or less to 35 degrees Celsius or greater.

- b) The minimum requirement for the maximum operating humidity level shall be equal to 70% or greater.

#### **1.4. Connection Requirements:**

- a) The RF test port connector shall be a 2.92mm, 2.4mm or 1.85mm connector or a connector that is provided with adapters to 2.92mm, 2.4mm or 1.85mm.
- b) The nominal impedance of the RF test port connector shall be 50 ohms.
- c) The equipment shall have a Voltage Standing Wave Ratio (VSWR) specification no greater than 2.0 in the frequency range of 1 kHz to 40 GHz.
- d) The AC power input connection shall be 120Vac.
- e) The equipment shall be equipped with an IEEE 488 General Purpose Interface Bus (GPIB) interface and an Ethernet (LAN) interface for remote automation and remote control capability.
- f) The equipment shall be equipped with at least one USB port for connecting external storage devices to be able to save trace data.

#### **1.5 Instrument Specifications:**

##### **1.5.1 User Interface**

The Instrument shall include a user interface embedded in the equipment. The user interface shall be a colour visual screen display of at least 7 inches with a resolution of at least 800 pixels by 480 pixels, with tactile user controls embedded in the equipment. There shall also be an external monitor connection, either VGA or DVI.

##### **1.5.2 Data Storage**

There shall be internal data storage and an external data storage option via USB.

##### **1.5.3 Weight**

The Instrument shall not weigh more than 50 kg.

##### **1.5.4 Information Accessibility**

There shall be continued accessibility, for as long as the equipment is supported by the manufacturer, to information on the Instrument including, but not limited to, relevant datasheets and user manuals.

#### **1.6 Software Requirement:**

##### **1.6.1 Software License**

The software shall not require a periodic software licensing fee.

##### **1.6.2 Operating System**

The Instrument's operating system shall be a Microsoft Windows platform.

**1.6.3 Remote Connectivity**

The Instrument shall have the ability for an external computer to remotely connect to the Instrument and download trace images and trace data.

**1.7 General Specifications****1.7.1 Quality and Service**

- a) The manufacturer of the Instrument shall have at least 10 years of experience in manufacturing electronic test equipment.
- b) The Instrument shall be a standalone piece of equipment and not a combination of pieces of equipment.
- c) The Instrument shall not be manufactured using components that are older than 5 years. A letter of commitment stating that replacement components shall be available for 5 years from the time of purchase is required to be submitted with the bid.
- d) Training on how to use the equipment shall be available upon request
- e) The Instrument shall include contact information for product support in the form of a website, email address and telephone number. The support shall be available for at least 2 years after the date of purchase.

**1.7.2 Calibration of Equipment**

- a) All hardware components of the system shall be delivered with a certificate of calibration and data demonstrating compliance to all the manufacturers' specifications. The calibration shall be valid for at least 1 year after purchase.
- b) The recommended calibration interval shall be one or two years.

**1.7.3 Safety Requirements**

The Instrument shall conform to the applicable CSA electrical standard and shall contain the appropriate CSA marking.

**2. Optional Items for Purchase Consideration ("added value" to primary requirements):**

The following items are options that may be exercised in accordance with Article 2.1 Optional Goods and/or Services, Part 6 - Resulting Contract Clauses.

- a) Calibration and Support Service Agreement ;
- b) Additional Calibration, Support, Service and/or Repair; and
- c) Additional Options

## ANNEX B BASIS OF PAYMENT

- a) For the performance of the Work, the Contractor shall be paid firm unit prices in Canadian funds, DDP Delivered Duty Paid Incoterms 2000, including any applicable Customs/Duties, GST/HST Extra (if applicable) and shipping/transportation costs.

Item #	Part #	Description	Qty	Unit Price (\$ CDN)	Extended Price (\$ CDN)
1		Radio Frequency Signal Measuring Instrument to measure and analyze radio frequency (RF) signals	1		\$
				GST/HST	\$
				Total	\$

- b) Should any of the following Services be exercised, the Contractor shall be paid firm fixed prices in Canadian funds GST/HST Extra (if applicable):

1)	Full calibration and support service agreement for three years:	\$
2)	Other calibration support including number of years the agreement could be offered:	\$
3)	Service or repair options including number of years the agreement could be offered	\$
		\$
		GST/HST
		Total
		\$

- c) Should any of the following Additional Options be exercised, the Contractor shall be paid firm fixed prices, DDP Delivered Duty Paid Incoterms 2000, including any applicable Customs/Duties, GST/HST Extra (if applicable) .

1. Capability to provide the following measurement features for the IEEE wireless network standards listed below:
 

802.11a <a href="http://standards.ieee.org/findstds/standard/802.11a-1999.html">http://standards.ieee.org/findstds/standard/802.11a-1999.html</a>	\$
802.11b <a href="http://standards.ieee.org/findstds/standard/802.11b-1999.html">http://standards.ieee.org/findstds/standard/802.11b-1999.html</a>	\$
802.11g <a href="http://standards.ieee.org/findstds/standard/802.11g-2003.html">http://standards.ieee.org/findstds/standard/802.11g-2003.html</a>	\$
802.11n <a href="http://standards.ieee.org/findstds/standard/802.11n-2009.html">http://standards.ieee.org/findstds/standard/802.11n-2009.html</a>	\$
802.11ac <a href="http://standards.ieee.org/develop/project/802.11ac.html">http://standards.ieee.org/develop/project/802.11ac.html</a>	\$
2. Specific conducted and radiated emission testing measurement features
3. Pulsed emissions measurement features
4. Remote operation command compatibility with older instruments and/or  
Instruments from other manufactures
5. Hardware and/or software options for additional display formats (e.g. Spectrogram)
6. Hardware and/or software options for an internal tracking generator or external  
generator/source control

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|----|--|----|
| 7. | Hardware and/or software option(s) for power sensor connectivity                     | \$ |
| 8. | Hardware and/or software for frequency extension to 200 GHz (using external mixers). | \$ |