



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
**Bid Receiving Public Works and Government
Services Canada/Réception des soumissions
Travaux publics et Services gouvernementaux
Canada**
Pacific Region
401 - 1230 Government Street
Victoria, B.C.
V8W 3X4
Bid Fax: (250) 363-3344

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

Public Works and Government Services Canada - Pacific
Region
401 - 1230 Government Street
Victoria, B. C.
V8W 3X4

Title - Sujet VECTOR NETWORK ANALYZER	
Solicitation No. - N° de l'invitation 31034-155518/A	Date 2015-11-05
Client Reference No. - N° de référence du client 31034-155518	
GETS Reference No. - N° de référence de SEAG PW-\$VIC-211-6835	
File No. - N° de dossier VIC-5-38151 (211)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2015-12-16	Time Zone Fuseau horaire Pacific Standard Time PST
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: Park, Isabell	Buyer Id - Id de l'acheteur vic211
Telephone No. - N° de téléphone (250) 363-3981 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: NATIONAL RESEARCH COUNCIL CANADA 717 WHITE LAKE ROAD PO BOX 248 PENTICTON British Columbia V2A 6J9 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée See Herein	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

Solicitation No. - N° de l'invitation
31034-155518/A
Client Ref. No. - N° de réf. du client
31034-155518

Amd. No. - N° de la modif.
File No. - N° du dossier
VIC-5-38117

Buyer ID - Id de l'acheteur
211
CCC No./N° CCC - FMS No./N° VME

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PART 1 - GENERAL INFORMATION

1.1 Statement of Requirement

The Contractor must provide the items detailed under the Requirement at Annex "A".

1.2 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.

1.3 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), and the Agreement on Internal Trade (AIT).

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.

2.2 Submission of Bids

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

2.2.1 Maximum Funding

The maximum funding available for the Contract resulting from the bid solicitation is \$250,000.00 (Applicable Taxes excluded). Bids valued in excess of this amount will be considered non-responsive. This disclosure does not commit Canada to pay the maximum funding available.

2.3 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the Financial Administration Act, R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or

- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the Public Service Superannuation Act (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the Supplementary Retirement Benefits Act, R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the Canadian Forces Superannuation Act, R.S., 1985, c. C-17, the Defence Services Pension Continuation Act, 1970, c. D-3, the Royal Canadian Mounted Police Pension Continuation Act, 1970, c. R-10, and the Royal Canadian Mounted Police Superannuation Act, R.S., 1985, c. R-11, the Members of Parliament Retiring Allowances Act, R.S. 1985, c. M-5, and that portion of pension payable to the Canada Pension Plan Act, R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes () No ()**

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:

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

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with Contracting Policy Notice: 2012-2 and the Guidelines on the Proactive Disclosure of Contracts.

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes () No ()**

If so, the Bidder must provide the following information:

- name of former public servant;
- conditions of the lump sum payment incentive;
- date of termination of employment;
- amount of lump sum payment;
- rate of pay on which lump sum payment is based;
- period of lump sum payment including start date, end date and number of weeks;
- number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than 15 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.

2.5 Applicable Laws

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

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

3.1 Bid Preparation Instructions

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

Section I: Technical Bid (1 hard copy)
Section II: Financial Bid (1 hard copy)
Section III: Certifications (1 hard copy)

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

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

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

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

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

Section I: Technical Bid

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

Section II: Financial Bid

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

3.1.1 Exchange Rate Fluctuation

[C3011T](#) (2013-11-06), Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

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

4.1.1 Technical Evaluation

Refer to Annex A – Mandatory Specification.

4.1.1.1 Supporting Information

In the event that the Bidder fails to submit any supporting information pursuant to technical evaluation criteria, the Contracting Authority may request it thereafter in writing, including after the closing date of the bid solicitation. It is mandatory that the Bidder provide the supporting information within three (3) business days of the written request or within such period as specified or agreed to by the Contracting Authority in the written notice to the Bidder.

4.1.2 Financial Evaluation

SACC *Manual* Clause [A0220T](#) (2014-06-26), Evaluation of Price

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

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Declaration of Convicted Offences

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

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to

provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – List of Names

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

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

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

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

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

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

PART 6 - RESULTING CONTRACT CLAUSES

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

6.1 Security Requirements

There is no security requirement applicable to this Contract.

6.2 Statement of Requirement

The Contractor must provide the items detailed under the Requirement at Annex "A".

6.3 Standard Clauses and Conditions

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

6.3.1 General Conditions

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

6.4.1 Delivery Date

All the deliverables must be received on or before March 31, 2016.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Ji-Yon Isabell Park
Title: Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch

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31034-155518/A
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VIC-5-38117

Buyer ID - Id de l'acheteur
211
CCC No./N° CCC - FMS No./N° VME

Telephone: 250-363-3981
E-mail address: ji-yonisabell.park@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 Project Authority

The Project Authority for the Contract is: TBD

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

6.5.3 Contractor's Representative

Name:
Title:
Company:
Address:
Telephone:
Facsimiles:
E-mail address:
Mobile:

6.6 N/A

6.7 Payment

6.7.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price as specified in "contract **OR** "in Annex ____" for a cost of \$ _____ (insert the amount at contract award). 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.

6.7.2 Limitation of Price

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

6.7.3 Single Payment

H1000C, 2008-05-12, Single Payment

6.7.4 SACC Manual Clauses

SACC Manual, C2608C, 2015-02-25, Canadian Customs Documentation

6.8 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:
 - a. The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
 - b. One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.9 Certifications

6.9.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

6.10 Applicable Laws

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

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 general conditions (*2010A, 2015-09-03, Goods, Medium Complexity*);
- (c) Annex A, Requirement;
- (d) Annex B, Basis of Payment;
- (e) the Contractor's bid dated _____ (*insert date of bid*) (*If the bid was clarified or amended, insert at the time of contract award: ", as clarified on _____" or ", as amended on _____" and insert date(s) of clarification(s) or amendment(s)*)

6.12 Insurance

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

6.13 SACC Manual Clauses

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

Delivered Duty Paid (DDP) Ottawa, ON Incoterms 2000 for shipments from a commercial contractor.

ANNEX A: MANDATORY SPECIFICATIONS

1. Mandatory Technical Criteria

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

1.1 Instructions for completing this section

Your proposal must address each item **and also be compliant**, or your proposal will be deemed non-responsive and no further consideration of the proposal will be given.

If there is insufficient space in the table, assign SIR # (Supplementary Information Reference) and provide the appropriate details on a separate page in your proposal.

NOTE: When no published documentation currently available, (or applicable), Indicate the acronym CSP, (for: "Certified by Signature on our Proposal"). Example:

ITEM	SPECIFICATION	BIDDER'S RESPONSE	Met(yes /no)	Cross-referenced within my proposal or SIR#.
3.1	The Box has range of z-y frequencies	Agreed . Also see our brochure included in bid package	yes	CSP
3.2	The Box must have additional ports capability to allow for an additional accessory ABC analysis tool.	Agreed. This capability is not part of our regular model line-up, but will be provided at time of order. Please see our brochure of similar config	yes	For additional details refer to SIR # 01, in our proposal
EXAMPLE SIR# 01 - ITEM: 3.2 Since 1998, our company is a manufacturer which produces similar equipment to the BOX specified. We have multiple configurations not typically advertised and can meet your requirements. Please refer to our attached - custom specification build set.				

ITEM	MANDATORY SPECIFICATIONS	BIDDER'S RESPONSE / (Agree Disagree)	Met (yes / no)	Bidder's SIR#.
1.0	MANDATORY GENERAL SPECIFICATIONS Vector Network Analyzer			
1.1	New, Demo or refurbished unit acceptable if like-new with full warranty. Note: Bidders that offer a new unit will not receive a higher ranking.	Bidders proposal must state they are offering either a New, Demo or refurbished unit .		

2.0	TECHNICAL SPECIFICATIONS				
2.1	Reference impedance	= 50 ohms			
2.2	Frequency minimum	= 10 MHz			
2.3	Frequency maximum	= 50 GHz			
2.4	Continuous frequency coverage				
2.5	VNA connector type	= 2.4 mm or 1.85 mm			
2.6	4 ports				
2.7	Front panel access loops for test set				
2.8	Differential measurements of passive and active linear DUTs				
2.9	Time-domain measurement mode				
2.10	Front handles				
2.11	<i>Advanced de-embedding methods for non-connectorized devices using simple calibration standards</i>				
2.11.1	- de-embed 1-port DUT with open-circuit calibration only				
2.11.2	- de-embed 1-port DUT with short-circuit calibration only				
2.11.3	- de-embed 2-port DUT with equal input/output lines				
2.11.4	- de-embed 2-port DUT with unequal input/output lines				
2.11.5	MUST have real-time display of de-embedded measurements on VNA				
2.11.6	types of "simple calibration standards" MUST include BOTH 2x through line, and 1x line with a reflecting (open circuit, short circuit) termination.				
2.11.7	<p>"advanced de-embedding method" is defined as being more advanced than common techniques such as port extension, simple time-domain gating, SOLT, TRL, LRM, or similar, and uses time-domain analysis methods to extract models of the embedding networks (see references below ***).</p> <p>This is equivalent to, or superior to, "Automatic Fixture Removal" on Keysight VNAs.</p> <p>NOTE: validation results MUST be provided for ALL de-embedding cases listed above. Results will compare de-embedded measurements with circuit model simulations. Typical validation structures include Beatty standards.</p>				

	<p>*** References for Advanced De-embedding Method</p> <p>=====</p> <p>2x Thru: Dunsmore, J.; Cheng, N. & Zhang, Y.-X. "Characterizations of asymmetric fixtures with a two-gate approach", Microwave Measurement Conference (ARFTG), 2011, 1-6</p> <p>1x Reflect: Dunsmore, J. P.; Cheng, N. & Zhang, Y.-P. "Automatic fixture removal using one-port measurement", US Patent # 9086376 2015</p>				
3.0	REQUIRED ADDITIONAL COMPONENTS (accessories)				
3.1	<p>2-port automatic calibration unit with 3.5 mm or 2.92 mm connectors</p> <ul style="list-style-type: none"> - female connectors on all ports - provides calibration to at least 20 GHz - provides calibration for 3.5 mm and SMA DUTs 				
3.2	<p>2-port automatic calibration unit with 2.4 mm or 1.85 mm connectors</p> <ul style="list-style-type: none"> - female connectors on all ports - provides calibration over full frequency range of VNA 				
3.4	<p>4 x 60--90 cm VNA cables with 2.4 mm or 1.85 mm connectors</p> <ul style="list-style-type: none"> - male connector on DUT end of cables - prefer Gore-type cables (~8 mm diameter) 				
3.5	- 4 x 3.5 mm (m) to 2.4/1.85 mm (f) adapters				
4.0	PERFORMANCE SPECIFICATIONS				
4.1	<p>Bidders proposal shall demonstrate that the equipment offered can support the following:</p> <p>Example Measurement Scenarios</p> <p>Most measurements will be below 20 GHz and involve devices with SMA or 3.5 mm connectors so system must be configured to make these measurements convenient and accurate. Measurements above 20 GHz are important but less frequent. Here are several typical measurement scenarios.</p> <p>1) <u>Active or passive DUT mounted on PCB</u></p> <ul style="list-style-type: none"> * DUT does not have connectors and we would like to measure the S-parameters of the device. * Reference plane at input/output pins of DUT * PCB has connectors * Use a simple calibration standard which is either a thru-line or a one-port line with a reflecting termination 				

	<p>- De-embed the VNA cables, connectors, and traces on PCB</p> <p>2) <u>Antenna driven by a length of transmission line</u> * Would like to measure the feed-point impedance of the antenna * Use a simple calibration standard which is a one-port line (same length as feed line) with a reflecting termination - De-embed the VNA cables, connector, and transmission line</p> <p>3) <u>High-speed (28 G) digital board interconnects and connectors</u> * Measure S-parameters over a wide bandwidth * Often differential transmission lines * Use a simple calibration standard - De-embed the VNA cables, connectors, and traces on PCB * Results exported to PC for further analysis (e.g. eye diagram)</p>				
5.0	WARRANTY				
5.1	<p>WARRANTY: ONE YEAR (initial) Standard Warranty (included) in price</p> <p>a) Warranty: return to factory for repair</p> <p>b) <u>For information only.</u> Can the vendor provide a loaner equivalent equipment to NRC , while the warranty repair is being made (yes/ no) ?</p>				
5.2	<p>OPTIONAL EXTENDED WARRANTY</p> <p>Beyond the standard one year warranty, Bidders shall state Warranty offerings for extended warranty terms.</p> <p>Year 1 Year 2 Year 3</p>				
6.0	MANDATORY DELIVERY				
6.1	FOB: National Research Council, 717 White Lake Road , Kaleden BC V0H1K0				
6.2	<p>Delivery:</p> <p>While Delivery is requested by 30 Feb 2016 or earlier and mandatory delivery by March 31, 2016, the best delivery that can be offered is _____.</p>				
6.3	<p>SHIPPING COSTS:</p> <p>Bidder responsible for all shipping costs including insurance – crating etc. INCLUDED in PRICE</p>				

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7.0	<p>FACTORY EQUIPMENT PERFORMANCE CERTIFICATE</p> <p>A certificate must accompany the delivery of the goods and shall state the factory testing undertaken and conformance to all technical specifications called for in the purchase contract.</p> <p>*NOTE: The FACTORY EQUIPMENT PERFORMANCE CERTIFICATE must be sent via email to the NRC Technical Authority <u>prior to shipment</u>, for approval of the NRC Technical Authority.</p>				
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ANNEX "B" BASIS OF PAYMENT

ITEM	DESCRIPTION	QUANTIT Y	FIRM UNIT PRICE	EXTENDED PRICE
A.	FIRM REQUIREMENT: Vector Network ANALYZER, conforming to mandatory (all) specifications 1.0 to 4.1 in Annex A, including all delivery costs.	1 ea		
B.	OPTIONS:			
B.1	OPTIONAL (EXTENDED) *Note 01 Warranty			
B.2	1 st Year Exyended Warranty	1 lot		
B.3	2 nd Year Extended Warranty	1 lot		
B.4	3 rd Year Extended Warranty	1 lot		
D.	TOTAL ASSESSED BID PRICE = Items A +B			\$ CAD _____

**Note 01 – Optional (EXTENDED WARRANTY) : The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described herein under the same conditions and at the prices and/or rates stated in the Contract. The Contracting Authority may exercise the option thirty (30) calendar days prior to the end of initial one year warranty period by sending a contract amendment to the Contractor.*