



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Bid Receiving Public Works and Government
Services Canada/Réception des
soumissions/Travaux publics et Services
gouvernementaux Canada
See herein for bid submission
instructions/
Voir la présente pour les
instructions sur la présentation
d'une soumission
NA
Ontario

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

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

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

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

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

Comments - Commentaires

Title - Sujet Proton Transfer Mass Spectrometer	
Solicitation No. - N° de l'invitation K3D57-220308/A	Date 2021-09-29
Client Reference No. - N° de référence du client K3D57-220308	
GETS Reference No. - N° de référence de SEAG PW-\$TOR-015-8087	
File No. - N° de dossier TOR-1-44049 (015)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Daylight Saving Time EDT on - le 2021-10-18 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: Abela, Aaron	Buyer Id - Id de l'acheteur tor015
Telephone No. - N° de téléphone (416) 262-6212 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF THE ENVIRONMENT K3D57 ECCC/ARQP 4905 Dufferin St. Attn: John Liggio Email: John.Liggio@ec.gc.ca TORONTO Ontario M3H5T4 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

Public Works and Government Services Canada
Ontario Region
10th Floor, 4900 Yonge Street
Toronto
Ontario
M2N 6A6

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

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PART 1 - GENERAL INFORMATION

1.1 Requirement

The Work to be performed is detailed under Article 6.2 of the resulting contract clauses.

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 epost Connect service

This bid solicitation allows bidders to use the epost Connect service provided by Canada Post Corporation to transmit their bid electronically. Bidders must refer to Part 2 entitled Bidder Instructions, and Part 3 entitled Bid Preparation Instructions, of the bid solicitation, for further information."

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) (<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](#) (2020-05-28), Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days
Insert: 180 days

2.2 Submission of Bids

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

PWGSC Ontario Region Bid Receiving Unit

Only bids submitted using epost Connect service will be accepted. The Bidder must send an email requesting to open an epost Connect conversation to the following address:

TPSGC.orreceptiondessoumissions-orbidreceiving.PWGSC@tpsgc-pwgsc.gc.ca

Note: Bids will not be accepted if emailed directly to this email address. This email address is to be used to open an epost Connect conversation, as detailed in Standard Instructions [2003](#), or to send bids through an epost Connect message if the bidder is using its own licensing agreement for epost Connect.

It is the Bidder's responsibility to ensure the request for opening an epost Connect conversation is sent to the email address above at least six days before the solicitation closing date.

Bids transmitted by facsimile or hardcopy 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 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 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.

2.5 Bid Challenge and Recourse Mechanisms

- (a) Several mechanisms are available to potential suppliers to challenge aspects of the procurement process up to and including contract award.
- (b) Canada encourages suppliers to first bring their concerns to the attention of the Contracting Authority. Canada's [Buy and Sell](#) website, under the heading "[Bid Challenge and Recourse Mechanisms](#)" contains information on potential complaint bodies such as:
 - Office of the Procurement Ombudsman (OPO)
 - Canadian International Trade Tribunal (CITT)
- (c) Suppliers should note that there are **strict deadlines** for filing complaints, and the time periods vary depending on the complaint body in question. Suppliers should therefore act quickly when they want to challenge any aspect of the procurement process.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

The Bidder must submit its bid electronically in accordance with section 08 of the 2003 standard instructions. The epost Connect system has a limit of 1GB per single message posted and a limit of 20GB per conversation.

The bid must be gathered per section and separated as follows:

Section I: Technical Bid
Section II: Financial Bid
Section III: Certifications

Bids transmitted by facsimile or hardcopy will not be accepted.

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.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex "1" Electronic Payment Instruments, to identify which ones are accepted.

If Annex "1" Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

3.1.2 Exchange Rate Fluctuation

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

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 Technical Criteria

See Annex C – Evaluation Criteria

4.1.2 Financial Evaluation

The bidder must submit pricing for all line items in accordance with Annex “B” – Basis of Payment, in Canadian Funds.

The price used in the evaluation will be the sum of Total Evaluated Price which is, Extended price, calculated by adding the Firm Unit Price multiplied by the quantity of each line item in accordance with Annex B – Basis of Payment

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

4.2 Basis of Selection

4.2.1 Basis of Selection - Mandatory Technical Criteria

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. 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 Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-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 – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<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](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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

6.1.1 There is no security requirement applicable to the 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) (<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](#) (2020-05-28), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

6.3.2 Supplemental General Conditions

4001 (2015-04-01) Hardware Purchase, Lease and Maintenance;

6.4 Term of Contract

The Contractor grants to Canada the irrevocable option to extend the term of the Contract by up to 3 additional 1 year period(s) under the same conditions. The Contractor agrees that, during the extended period of the Contract, it will be paid in accordance with the applicable provisions as set out in the Basis of Payment.

Canada may exercise this option at any time by sending a written notice to the Contractor at least 5 calendar days before the expiry date of the Contract. The option may only be exercised by the Contracting Authority, and will be evidenced for administrative purposes only, through a contract amendment.

6.4.1 Period of the Contract

The period of the Contract is from Date of Contract Award to March 31, 2023 inclusive.

6.4.2 Delivery Date

All the deliverables must be received on or before March 31, 2022.

6.4.3 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex "A" of the Contract.

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File No. - N° du dossier
TOR-1-44049

Buyer ID - Id de l'acheteur
TOR015
CCC No./N° CCC - FMS No./N° VME

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Aaron Abela
Title: Supply Specialist
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Ontario Region
Address: 10th Floor - 4900 Yonge Street, Toronto ON M2N 6A6

Telephone: 416-262-6212
E-mail address: Aaron.Abela@pwgsc-tpsgc.gc.ca

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

6.5.2 Project Authority

The Project Authority for the Contract is: **(TBA at Contract Award)**

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone: _____
Facsimile: _____
E-mail address: _____

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 *(to be completed by bidder)*

Name: _____

Title: _____

Organization: _____

Address: _____

Telephone: _____ - _____ - _____

Facsimile: _____ - _____ - _____

E-mail address: _____

6.6 Payment

6.6.1 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 Annex B" 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.

6.6.2 Single Payment

Canada will pay the Contractor upon completion and delivery of the Work 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.

6.6.3 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

6.7 Certifications and Additional Information

6.7.1 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.

6.8 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (*insert the name of the province or territory as specified by the Bidder in its bid, if applicable*).

6.9 Priority of Documents

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

- (a) the Articles of Agreement;
- (b) the general conditions [2010A](#) (2020-05-28)
- (c) Annex A, Statement of Requirement;
- (d) Annex B, Basis of Payment;
- (e) Annex C, Evaluation Criteria;
- (F) the Contractor's bid dated _____ .

6.10 Insurance

SACC Manual clause [G1005C](#) (2016-01-28) Insurance – No Specific Requirement

6.11 SACC Manual Clauses

[B7500C](#) (2006-06-16), Excess Goods
[D0018C](#) (2007-11-30), Delivery and Unloading

6.12 Dispute Resolution

- (a) The parties agree to maintain open and honest communication about the Work throughout and after the performance of the contract.
- (b) The parties agree to consult and co-operate with each other in the furtherance of the contract and promptly notify the other party or parties and attempt to resolve problems or differences that may arise.
- (c) If the parties cannot resolve a dispute through consultation and cooperation, the parties agree to consult a neutral third party offering alternative dispute resolution services to attempt to address the dispute.
- (d) Options of alternative dispute resolution services can be found on Canada's Buy and Sell website under the heading "[Dispute Resolution](#)".

ANNEX "A"

STATEMENT OF REQUIREMENT

1. Background

The Air Quality Research Division (AQRD) of Environment and Climate Change Canada (ECCC) conducts atmospheric chemistry measurements of volatile organic compounds (VOCs) in an effort to quantify their emissions, transformation and fate the environment. VOCs are part of the criteria air contaminants regulated under the Canadian Environmental Protection act (CEPA), and the measurement of VOCs are a critical component of a number of priority programs for ECCC, including the Oil Sands Monitoring (OSM) program, urban and industrial emissions studies and arctic processes research.

2. Objective

In support of the above ECCC programs, the AQRD requires a Proton Transfer Reaction Time-of-Flight Mass spectrometer (PTR-ToF-MS), for quantitative ambient air measurements of VOCs across Canada. The instrument is for use at stationary grounds sites and mobile platforms (including aircraft), to measure a wide range of VOCs with high sensitivity, chemical selectivity and time response, and with low power and weight requirements. The instrument must be capable of detecting and quantifying VOCs present in ambient (ie: outside) air using H_3O^+ ionization chemistry. It must also have the ability to measure VOCs through the use of additional reagent ions, specifically NO^+ and NH_4^+ upon receipt. It must include all required data acquisition software and hardware (see requirements for further details).

3. Requirement

A complete state-of-the-art Proton Transfer Reaction Time-of-Flight Mass spectrometer instrument, which must be comprised of each of the following components:

- 3.1 A Time-of-flight MS detection system with bipolar ion (ie: positive and negative) detection capability and an MCP detector;
- 3.2 Must switch between H_3O^+ , and NO^+ or H_3O^+ and NH_4^+ reagent ions in real-time (<1 min), and all associated control hardware and software;
- 3.3 Must switch from a low pressure (< 10 mbar) source capable of H_3O^+ proton transfer ionization to a medium pressure source capable of Iodide anion cluster ionization(100 mbar) on the same mass spectrometer in under 30 minutes
- 3.4 Must include an interchangeable VUV lamp for generating iodide or bromide ionization chemistries and all associated control software and hardware;

-
- 3.5 Must include a complete vacuum System including all required scroll and turbo pumps and pressure gauges for operation;
 - 3.6 Must include all data analysis software for post processing, peak fitting and quantification and associated licence;
 - 3.7 Must include Mass spectrometer tuning/optimization software
 - 3.8 Must have a mass resolution of up to 15000 (M/□M) for select VOCs with molecular weight less than 120 amu
 - 3.9 Must have a mass resolution of up to 10,000 (M/□M) while maintaining linearity and specified sensitivity (see 3.12) over at least 5 orders of signal magnitude
 - 3.10 Must have a mass range of up to 2000 amu;
 - 3.11 Must have a limit of detection using H₃O⁺ ionization of <10 parts per trillion (ppt) in 1 second, for a gaseous aromatic VOC (ie: benzene, toluene, xylene, or ethyl benzene);
 - 3.12 Must have sensitivity using H₃O⁺ ionization of up to 20,000 counts per second, per part-per-billion (cps/ppb) for a gaseous aromatic VOC (ie: benzene, toluene, xylene, or ethyl benzene) at a resolution of at least 10,000 (M/□M);
 - 3.13 Must have an instrument time response (ie: data collection rate) of up to 10 Hertz (Hz).;
 - 3.14 Must have an ion-molecule reaction region (IMR) which under normal conditions operates at pressures <10 mBar (using H₃O⁺ ionization), while achieving the above sensitivities (see 3.12) and limits of detection (see 3.11)
 - 3.15 Must perform with the above sensitivity using H₃O⁺ ionization that are humidity independent
 - 3.16 Must have a signal dynamic range of at least 1x10⁴ in 1 second
 - 3.17 Must have total electrical power consumption of Less than 800 Watts under normal/typical operation
 - 3.18 Must have a Total weight of Less than 200 Kg
 - 3.19 Must have Integration and control of additional data streams (e.g. GPS, meteorology) through the use of an Application Programming Interface (API) and associated documentation

4. General Deliverables

4.1 Computer System

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The Contractor must have an integrated computer (including one flat screen LCD monitor) and software for full operational control of all modules constituting the system, data acquisition and manipulation. The software must be compatible with Windows 10 or higher

4.2 Software Updates

The Contractor must provide all software updates and new releases for a period of at least 3 years following the acceptance, at no additional cost

4.3 Warranty

The contractor must provide a minimum of 12 month warranty (parts and labour) from the date of delivery and acceptance of the instrument by Environment and Climate Change Canada;

4.4 Training

The Contractor must provide a minimum of 1 day on-site training for operation and routine maintenance on a mutually agreeable date with the Project Authority. The training will include, but not be limited to, an overview of hardware components, software/controller functions and a session on data acquisition for up to 3 Environment and Climate Change Canada personnel. Training must be conducted at ECCC in Toronto, ON, on or before March 31st, 2022.

Travel and Living expenses will not be paid by Canada and is the sole responsibility of the Contractor.

ANNEX "B"
BASIS OF PAYMENT

All prices are firm, all-inclusive unit prices and in Canadian dollars including Canadian customs duties, excise taxes, and delivery charges which are to be Delivered Duty Paid (DDP) to destination as indicated herein (Incoterms 2000).

The amount of Goods and Services Tax shall be shown as a separate item.

**Text in italics will be deleted at Contract Award stage.*

1. Firm Requirement Period

1.1 Contract Year 1 : From Contract Award Date to March 23, 2023

A	B	C	D	E	F
Item	Product Description	Quantity	Unit of Issue	Firm Unit Price	Extended Price F = C x E
1	Proton transfer reaction time f flight mass spectrometer (PTR- ToF-MS) in accordance to specifications identified in Annex A – Requirement Make: _____ Model: _____	1	EA	\$ _____ /EA	\$
Total <i>Evaluated</i> Price: \$ _____					

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ANNEX "1" to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

The Bidder accepts any of the following Electronic Payment Instrument(s):

- VISA Acquisition Card;
- MasterCard Acquisition Card;
- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);
- Large Value Transfer System (LVTS) (Over \$25M)

ANNEX C

EVALUATION CRITERIA

MANDATORY TECHNICAL EVALUATION CRITERIA

Bidders must demonstrate meeting every mandatory technical criteria by providing a concise and detailed response to each of the mandatory technical criteria. To ensure compliance is clear, the bidders are strongly encouraged to provide evidence including but not limited to instrument specification, publications, documented data or discussion points, to show that their proposed system meets each of the mandatory technical criteria. Failure to demonstrate meeting all of the mandatory technical criteria will result in the bid being deemed non-responsive.

1. The proposed Proton-Transfer Reaction Time-of Flight Mass Spectrometer (PTR-ToF-MS) must meet each and every mandatory general and technical specification as follows:

Item No.	Mandatory General criteria	Cross Reference: In this column, Bidders should cross-reference where this performance specification is indicated in their supporting documents.
M1	Must include a Time-of-flight MS detection system with bipolar ion (ie: positive and negative) detection function and an MCP detector	
M2	Must switch between H ₃ O ⁺ , and NO ⁺ or H ₃ O ⁺ and NH ₄ ⁺ reagent ions in real-time (<1 min), and all associated control hardware and software	
M3	Must switch from a low pressure (< 10 mbar) source capable of H ₃ O ⁺ proton transfer ionization to a medium pressure source capable of Iodide anion cluster ionization(100 mbar) on the same mass spectrometer in under 30 minutes	
M4	Must have an interchangeable VUV lamp for generating iodide or bromide ionization chemistries and all associated control software and hardware	
M5	Must have a complete vacuum System including all required scroll and turbo pumps and pressure gauges for operation	
M6	Must be equipped with Data analysis software for post processing, peak fitting and quantification and associated licence	
M7	Mass spectrometer must have tuning/optimization software included	
M8	Must have a mass resolution of up to 15000 (M/ΔM) for select VOCs with molecular weight less than 120 amu	

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 K3D57-220308

Amd. No. - N° de la modif.
 File No. - N° du dossier
 TOR-1-44049

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M9	Must have a mass resolution of up to 10,000 (M/ΔM) while maintaining linearity and specified sensitivity (see 2.5) over at least 5 orders of signal magnitude	
M10	Must have a mass range of up to 2000 amu;	
M11	Must have a <u>limit of detection</u> using H ₃ O ⁺ ionization of <10 parts per trillion (ppt) in 1 second, for a gaseous aromatic VOC (ie: benzene, toluene, xylene, or ethyl benzene);	
M12	Must have sensitivity using H ₃ O ⁺ ionization of up to 20,000 counts per second, per part-per-billion (cps/ppb) for a gaseous aromatic VOC (ie: benzene, toluene, xylene, or ethyl benzene) at a resolution of at least 10,000 (M/ΔM);	
M13	Must have an instrument time response (ie: data collection rate) of up to 10 Hertz (Hz).;	
M14	Must have an ion-molecule reaction region (IMR) which under normal conditions operates at pressures <10 mBar (using H ₃ O ⁺ ionization), while achieving the above sensitivities (see 2.5) and limits of detection (see 2.4)	
M15	Must perform with the above sensitivity using H ₃ O ⁺ ionization that are humidity <u>independent</u>	
M16	Must have a signal dynamic range of at least 1x10 ⁴ in 1 second	
M17	Must have total electrical power consumption of Less than 800 Watts under normal/typical operation	
M18	Must have a Total weight of Less than 200 Kg	
M19	Must have Integration and control of additional data streams (e.g. GPS, meteorology) through the use of an Application Programming Interface (API) and associated documentation	