



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

**Bid Receiving - PWGSC / Réception des  
soumissions → TPSGC**  
**10th Floor, 4900 Yonge Street /**  
**10e étage, 4900 rue Yonge**  
**Toronto**  
**Ontario**  
**M2N 6A6**

**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  
Ontario Region  
10th Floor, 4900 Yonge Street  
Toronto  
Ontario  
M2N 6A6

<b>Title - Sujet</b> Air Temperature Sensors	
<b>Solicitation No. - N° de l'invitation</b> K3D33-200105/A	<b>Date</b> 2019-05-28
<b>Client Reference No. - N° de référence du client</b> K3D33-200105	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$TOR-015-7772	
<b>File No. - N° de dossier</b> TOR-9-42017 (015)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2019-07-08</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Abela, Aaron	<b>Buyer Id - Id de l'acheteur</b> tor015
<b>Telephone No. - N° de téléphone</b> (416) 262-6212 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF THE ENVIRONMENT 4905 DUFFERIN STREET TORONTO Ontario M3H5T4 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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



Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Unit Price/Prix unitaire FOB/FAM Destination	Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	Air Temperature Sensors	K3D33	K3D33	1	Each	\$	XXXXXXXXXXXX	See Herein	

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Solicitation No. - N° de l'invitation  
K3D33-200105/A  
Client Ref. No. - N° de réf. du client  
K3D33-200105

Amd. No. - N° de la modif.  
File No. - N° du dossier  
TOR-9-42017

Buyer ID - Id de l'acheteur  
tor015  
CCC No./N° CCC - FMS No./N° VME

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Introduction**

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

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

The Annexes include the Statement of Work, the Basis of Payment, Security Requirements, the Federal Contractors Program for Employment Equity - Certification, the Insurance Requirements, the Task Authorization Form 572, and any other annexes.

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### **1.2 Summary**

- 1.2.1 The Meteorological Service Canada (MSC) requires a Partial Task Authorization Contract (TAC) for the combination of supply, delivery, and support (availability of parts and servicing) of air temperature sensors. The air temperature sensors must be compatible with MSC's existing infrastructure and data acquisition system. Specifically, the air temperature sensors must be compatible with CR3000 data logger and must meet size dimensions as stated in the specifications in 'Annex A.
- 1.2.2 The term of the contract will be from date of contract award until 31 March 2029.
- 1.2.3 It is anticipated that only one contract will be awarded as a result of this solicitation.
- 1.2.4 The Contractor will be responsible to ensure all technical expertise required to carry out the work Described in the Task Authorizations (TAs) are available and meet all regulations and standards applicable to the work. Specific details of the Work will be communicated in subsequent TAs and activities will be conducted on an 'as and when requested' basis, as determined by the ECCC Project Authority.
- 1.2.5 The Federal Contractors Program (FCP) for employment equity applies to this procurement; refer to Part 5 – Certifications and Additional Information, Part 7 - Resulting Contract Clauses and the annex titled Federal Contractors Program for Employment Equity – Certification.
- 1.2.6 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

### 1.3 Debriefings

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

## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

The 2003 standard instructions is amended as follows:

- Section 08, entitled Transmission by facsimile or by epost Connect, is amended as follows:  
subsection 2. is deleted entirely and replaced with the following:

#### 2. epost Connect

- a. Unless specified otherwise in the bid solicitation, bids may be submitted by using the epost Connect service provided by Canada Post Corporation.
  - i. PWGSC, National Capital Region: The only acceptable email address to use with epost Connect for responses to bid solicitations issued by PWGSC headquarters is:

[tpsgc.dgareceptiondessoumissions-abbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca](mailto:tpsgc.dgareceptiondessoumissions-abbidreceiving.pwgsc@tpsgc-pwgsc.gc.ca)

or, if applicable, the email address identified in the bid solicitation.

- ii. PWGSC regional offices: The only acceptable email address to use with epost Connect for responses to bid solicitations issued by PWGSC regional offices is identified in the bid solicitation.
- b. To submit a bid using epost Connect service, the Bidder must either:
  - i. send directly its bid only to the specified PWGSC Bid Receiving Unit, using its own licensing agreement for epost Connect provided by Canada Post Corporation; or
  - ii. send as early as possible, and in any case, at least six business days prior to the solicitation closing date and time, (in order to ensure a response), an email that includes the bid solicitation number to the specified PWGSC Bid Receiving Unit requesting to open an epost Connect conversation. Requests to open an epost Connect conversation received after that time may not be answered.
- c. If the Bidder sends an email requesting epost Connect service to the specified Bid Receiving Unit in the bid solicitation, an officer of the Bid Receiving Unit will then initiate an epost Connect conversation. The epost Connect conversation will create an email notification from Canada Post Corporation prompting the Bidder to access and action the message within the conversation. The Bidder will then be able to transmit its bid afterward at any time prior to the solicitation closing date and time.
- d. If the Bidder is using its own licensing agreement to send its bid, the Bidder must keep the epost Connect conversation open until at least 30 business days after the solicitation closing date and time.
- e. The bid solicitation number should be identified in the epost Connect message field of all electronic transfers.

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- f. It should be noted that the use of epost Connect service requires a Canadian mailing address. Should a bidder not have a Canadian mailing address, they may use the Bid Receiving Unit address specified in the solicitation in order to register for the epost Connect service.
  - g. For bids transmitted by epost Connect service, Canada will not be responsible for any failure attributable to the transmission or receipt of the bid including, but not limited to, the following:
    - i. receipt of a garbled, corrupted or incomplete bid;
    - ii. availability or condition of the epost Connect service;
    - iii. incompatibility between the sending and receiving equipment;
    - iv. delay in transmission or receipt of the bid;
    - v. failure of the Bidder to properly identify the bid;
    - vi. illegibility of the bid;
    - vii. security of bid data; or,
    - viii. inability to create an electronic conversation through the epost Connect service.
  - h. The Bid Receiving Unit will send an acknowledgement of the receipt of bid document(s) via the epost Connect conversation, regardless of whether the conversation was initiated by the supplier using its own license or the Bid Receiving Unit. This acknowledgement will confirm only the receipt of bid document(s) and will not confirm if the attachments may be opened nor if the content is readable.
  - i. Bidders must ensure that they are using the correct email address for the Bid Receiving Unit when initiating a conversation in epost Connect or communicating with the Bid Receiving Unit and should not rely on the accuracy of copying and pasting the email address into the epost Connect system.
  - j. A bid transmitted by epost Connect service constitutes the formal bid of the Bidder and must be submitted in accordance with section 05.

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

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

The 2003 (2018-05-22) 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: 120 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:

Bid Receiving - PWGSC / Réception des soumissions – TPSGC  
10<sup>th</sup> Floor, 4900 Yonge Street / 10<sup>e</sup> étage, 4900 rue Yonge  
Toronto, Ontario  
M2N 6A6

(Bids/Offer will not be accepted if emailed directly to this email address. This email is to initiate an Epost Connect conversation, as detailed in the Standard Instructions.)

[TPSGC.orreceptiondessoumissions-orbidreceiving.PWGSC@tpsgc-pwgsc.gc.ca](mailto: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.

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

## 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.

### 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:



- a. name of former public servant;
- b. 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:

- a. name of former public servant;
- b. conditions of the lump sum payment incentive;
- c. date of termination of employment;
- d. amount of lump sum payment;
- e. rate of pay on which lump sum payment is based;
- f. period of lump sum payment including start date, end date and number of weeks;
- g. 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 ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

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

## **2.5 Applicable Laws**

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

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

- If the Bidder chooses to submit its bid electronically, Canada requests that the Bidder submits its bid 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

- If the Bidder chooses to submit its bid in hard copies, Canada requests that the Bidder submits its bid in separately bound sections as follows:

Section I: Technical Bid (2 hard copies)  
Section II: Financial Bid (1 hard copy)  
Section III: Certifications (1 hard copy)

If there is a discrepancy between the wording of the soft copy on electronic media and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

- If the Bidder is simultaneously providing copies of its bid using multiple acceptable delivery methods, and if there is a discrepancy between the wording of any of these copies and the electronic copy provided through epost Connect service, the wording of the electronic copy provided through epost Connect service will have priority over the wording of the other copies.

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 hard copy 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 (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573>). To assist Canada in reaching its objectives, bidders should:

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

## **Section I: Technical Bid**

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

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

## **Section II: Financial Bid**

**3.1.1** Bidders must submit their financial bid in accordance with the Basis of Payment in Annex "B".

### **3.1.2 Electronic Payment of Invoices – Bid**

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

If Annex "D" 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.

### **3.1.3 Exchange Rate Fluctuation**

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

### **3.1.4 SACC Manual Clauses**

## **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 E – Evaluation Criteria

##### **4.1.1.2 Point Rated Technical Criteria**

See Annex E – Evaluation Criteria.

#### **4.1.2 Financial Evaluation**

The Bidders must submit pricing in accordance with Annex B, Basis of Payment, with their bid at bid closing.

The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

Calculation of Total Evaluated Price is as follows:

- a) For Section A and B - The Firm Unit Prices quoted (column D) will be multiplied by the estimated quantity (column C) to arrive at a total Extended Price for each year (Contract Period Year 1 to 6) for both Section A (Firm Requirement) and Section B (Optional Requirement).
- b) For Section C (i) and (ii) - The Firm Unit Prices Quoted (column E) for each Contract Year indicated will be added together. That figure will be divided by 10 (representing each year of the contract and an average price) and multiplied by the estimated quantity (column D) to arrive at a total evaluated price for Section C – Task Authorizations
- c) For Section C (iii) – The Total Limitation of Expenditure for Material and Replacement Parts will be added to the Total Limitation of Expenditure for Items (i) and (ii) to determine a combined total.
- d) The totals for Section A, Section B and Section C will be added together to determine the Total Evaluated Price.

##### **4.1.2.1 Mandatory Financial Criteria**

*SACC Manual* Clause A0220T (2014-06-26), Evaluation of Price - Bid

## 4.2 Basis of Selection – Mandatory Technical Criteria

A bid must comply with all requirements of the bid solicitation and meet all mandatory 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 Integrity declaration form available on the Forms for the Integrity Regime 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 specified 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 procurement agreement of the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### 5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (<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.

### **5.2.3 Additional Certifications Precedent to Contract Award**

#### **5.2.3.1 Status and Availability of Resources**

*SACC Manual* clause A3005T (2010-08-16), Status and Availability of Resources.

#### **5.2.3.2 Education and Experience**

*SACC Manual* clause A3010T (2010-08-16), Education and Experience.

#### **5.2.3.3 OEM Certification**

Any Bidder that is not the Original Equipment Manufacturer (OEM) for every item of hardware proposed as part of its bid is required to submit Annex "D" OEM's certification regarding the Bidder's authority to provide and maintain the OEM's hardware, which must be signed by the OEM (not the Bidder). No Contract will be awarded to a Bidder who is not the OEM of the hardware it proposes to supply to Canada, unless the OEM certification has been provided to Canada. Bidders are requested to use the OEM Certification Form included with the bid solicitation. Although all the contents of the OEM Certification Form are required, using the form itself to provide this information is not mandatory. For Bidders/OEMs who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided. Alterations to the statements in the form may result in the bid being declared non-responsive.

If the hardware proposed by the Bidder originates with multiple OEMs, a separate OEM certification is required from each OEM.

For the purposes of this bid solicitation, OEM means the manufacturer of the hardware, as evidenced by the name appearing on the hardware and on all accompanying documentation.

#### **5.2.3.4 Software Publisher Certification and Software Publisher Authorization**

If the Bidder is the Software Publisher for any of the proprietary software products it bids, Canada requires that the Bidder confirm in writing that it is the Software Publisher. Bidders are requested to use Annex "D" Software Publisher Certification Form included with the bid solicitation. Although all the contents of the Software Publisher Certification Form are required, using the form itself to provide this information is not mandatory. For bidders who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided. Alterations to the statements in the form may result in the bid being declared non-responsive.

Any Bidder that is not the Software Publisher of all the proprietary software products proposed in its bid is required to submit proof of the Software Publisher's authorization, which must be signed by the Software Publisher (not the Bidder). No Contract will be awarded to a Bidder who is not the Software Publisher of all of the proprietary software it proposes to supply to Canada, unless proof of this authorization has been provided to Canada. If the proprietary software proposed by the Bidder originates with multiple Software Publishers, authorization is required from each Software Publisher. Bidders are requested to use the Software Publisher Authorization Form included with the bid solicitation. Although all the contents of the Software Publisher Authorization Form are required, using the form itself to provide this information is not mandatory. For Bidders/Software Publishers who use an alternate form, it is in Canada's sole discretion to determine whether all the required information has been provided. Alterations to the statements in the form may result in the bid being declared non-responsive.

In this bid solicitation, "Software Publisher" means the owner of the copyright in any software products proposed in the bid, who has the right to license (and authorize others to license/sub-license) its software products.

## **PART 6 - RESULTING CONTRACT CLAUSES**

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

### **6.1 Statement of Work**

The Contractor must perform the Work in accordance with the Statement of Work at Annex A.

#### **6.1.1 Optional Goods and/or Services**

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

The Contracting Authority may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor.

#### **6.1.2 Procedures for Design Change/Deviations**

The Contractor must complete Part 1 of form PWGSC-TPSGC 9038, Design Change/Deviation, and forward one (1) copy to the Technical Authority and one (1) copy to the Contracting Authority.

### **6.2 Task Authorization**

The Work or a portion of the Work to be performed under the Contract will be on an "as and when requested basis" using a Task Authorization (TA). The Work described in the TA must be in accordance with the scope of the Contract.

#### **6.2.1 Task Authorization Process**

1. The Project will provide the Contractor with a description of the task using the "Task Authorization" form specified in Annex G.
2. The Task Authorization (TA) will contain the details of the activities to be performed, a description of the deliverables, and a schedule indicating completion dates for the major activities or submission dates for the deliverables. The TA will also include the applicable basis (bases) and methods of payment as specified in the Contract.
3. The Contractor must provide the Project Authority, within 2 calendar days of its receipt, the proposed total estimated cost for performing the task and a breakdown of that cost, established in accordance with the Basis of Payment specified in the Contract.
4. The Contractor must not commence work until a TA authorized by the Project Authority has been received by the Contractor. The Contractor acknowledges that any work performed before a TA has been received will be done at the Contractor's own risk

### **6.2.2 Task Authorization Limit**

The Project Authority may authorize individual task authorizations up to a limit of \$10,000.00 Applicable Taxes included, inclusive of any revisions.

Any task authorization to be issued in excess of that limit must be authorized by the Project Authority and Contracting Authority before issuance.

### **6.2.3 Canada's Obligation - Portion of the Work - Task Authorizations**

Canada's obligation with respect to the portion of the Work under the Contract that is performed through task authorizations is limited to the total amount of the actual tasks performed by the Contractor.

### **6.2.4 Periodic Usage Reports - Contracts with Task Authorizations**

The Contractor must compile and maintain records on its provision of services to the federal government under authorized Task Authorizations issued under the Contract.

The Contractor must provide this data in accordance with the reporting requirements detailed below. If some data is not available, the reason must be indicated. If services are not provided during a given period, the Contractor must still provide a "nil" report.

The data must be submitted on a yearly basis to the Contracting Authority.

The data must be submitted to the Contracting Authority no later than 15 calendar days after the end of the reporting period.

### **Reporting Requirement- Details**

A detailed and current record of all authorized tasks must be kept for each contract with a task authorization process. This record must contain:

#### **For each authorized task:**

- i. the authorized task number or task revision number(s);
- ii. a title or a brief description of each authorized task;
- iii. the total estimated cost specified in the authorized Task Authorization (TA) of each task, exclusive of Applicable Taxes;
- iv. the total amount, exclusive of Applicable Taxes, expended to date against each authorized task;
- v. the start and completion date for each authorized task; and
- vi. the active status of each authorized task, as applicable.



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**For all authorized tasks:**

- i. the amount (exclusive of Applicable Taxes) specified in the contract (as last amended, as applicable) as Canada's total liability to the contractor for all authorized TAs; and
- ii. the total amount, exclusive of Applicable Taxes, expended to date against all authorized TAs

**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**

2030 (2018-06-21), General Conditions - Higher Complexity - Goods, apply to and form part of the Contract.

**6.3.2 Supplemental General Conditions**

4001 (2015-04-01) Hardware Purchase, Lease and Maintenance;  
4003 (2010-08-16) Licensed Software; and

**6.4 Security Requirements**

**6.4.1** There is no security requirement applicable to the Contract.

**6.5 Term of Contract**

**6.5.1 Period of the Contract**

The period of the Contract is from date of Contract Award to 31 March 2029.

**6.5.2 Delivery Date**

**6.5.2.1 - For Firm Requirement of 50 Air Temperature Sensors Only:**

All the deliverables must be received on or before 90 calendar days upon the issue date of the Contract.

**6.5.2.2 - For all Optional Air Temperature Sensors Purchased Only:**

All the deliverables must be received 120 calendar days after receipt of Contract Amendment from the Contracting Authority to purchase optional air temperature sensors.

**6.5.2.3 - For all Air Temperature Re-builds Only**

For Years 1 to 10, all requested services for re-build air temperature sensors must be completed and delivered back to Environment and Climate Change Canada (ECCC) within 90 calendar days after the receive date at the Contractor's service facility.

The "rebuilt acceptance date" is defined as the date the Contractor receives the air temperature sensor(s) from ECCC.

**6.5.2.3 - For all Air Temperature Calibration Only**

For Years 1 to 10, all requested services for calibration of air temperature sensors must be completed and delivered back to Environment and Climate Change Canada (ECCC) within 90 calendar days after the receive date at the Contractor's service facility.

The "calibration acceptance date" is defined as the date the Contractor receives the air temperature sensor(s) from ECCC.

### 6.5.5 Delivery Points

The Contractor must deliver all new and re-built Air Temperature Sensors purchased to Environment and Climate Change Canada (ECCC) at the following shipping address:

4905 Dufferin Street, Toronto, ON, M3H 5T4, Attn: LCM Surface Networks.

### 6.6 Authorities

#### 6.6.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Aaron Abela  
Title: Supply Specialist  
Public Works and Government Services Canada – Ontario Region  
Acquisitions Branch  
Address: 10<sup>th</sup> Floor, 4900 Yonge Street  
Toronto, Ontario  
M2N 6A6

Telephone: 416-262-6212  
E-mail address: [aaron.abela@pwgsc.gc.ca](mailto:aaron.abela@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.

#### 6.6.2 Project Authority

The Project Authority for the Contract is: **(will be inserted 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.

Solicitation No. - N° de l'invitation  
K3D33-200105/A  
Client Ref. No. - N° de réf. du client  
K3D33-200105

Amd. No. - N° de la modif.  
File No. - N° du dossier  
TOR-9-42017

Buyer ID - Id de l'acheteur  
tor015  
CCC No./N° CCC - FMS No./N° VME

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### 6.6.3 Contractor's Representative (To Be Filled Out By bidder)

Name: \_\_\_\_\_  
Title: \_\_\_\_\_  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
  
Telephone: \_\_\_\_ - \_\_\_\_ - \_\_\_\_  
Facsimile: \_\_\_\_ - \_\_\_\_ - \_\_\_\_  
E-mail address: \_\_\_\_\_

### 6.7 Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a Public Service Superannuation Act (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with Contracting Policy Notice: 2012-2 of the Treasury Board Secretariat of Canada.

### 6.8 Payment

#### 6.8.1 Basis of Payment – Firm Lot Prices.

For the Work described in Annex A – Statement of Work, Section 3 – Deliverables, Subsection 3.1 of Annex A

In consideration of the Contractor satisfactorily completing its obligations under the Contract, the Contractor will be paid a firm lot price for a cost of \$\_\_\_\_\_ (insert the amount at contract award). Customs duties are included and Applicable Taxes are extra.

For the firm price portion of the Work only, 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.

#### 6.8.2 Basis of Payment: Individual Task Authorizations

The Contractor will be paid for the Work specified in the authorized task authorization, in accordance with the Basis of payment at annex B.

Canada's liability to the Contractor under the authorized task authorization must not exceed the limitation of expenditure specified in the authorized task authorization. Custom duties are included and Applicable Taxes are extra.

No increase in the liability of Canada or in the price of the Work specified in the authorized task authorization resulting from any design changes, modifications or interpretations of the Work will be authorized or paid to the Contractor unless these design changes, modifications or interpretations have been authorized, in writing, by the Contracting Authority before their incorporation into the Work.

### **6.8.3 Limitation of Expenditure - Cumulative Total of all Task Authorizations**

1. Canada's total liability to the Contractor under the Contract for all authorized Task Authorizations (TAs), inclusive of any revisions, must not exceed the sum of \$ \_\_\_\_\_(TBA). Customs duties are included, and Applicable Taxes are extra.
2. No increase in the total liability of Canada will be authorized or paid to the Contractor unless an increase has been approved, in writing, by the Contracting Authority.
3. The Contractor must notify the Contracting Authority in writing as to the adequacy of this sum:
  - a. when it is 75 percent committed, or
  - b. four (4) months before the contract expiry date, or
  - c. as soon as the Contractor considers that the sum is inadequate for the completion of the Work required in all authorized TAs, inclusive of any revisions, whichever comes first.
4. If the notification is for inadequate contract funds, the Contractor must provide to the Contracting Authority, a written estimate for the additional funds required. Provision of such information by the Contractor does not increase Canada's liability

### **6.8.4 Multiple Payments**

SACC *Manual* clause H1001C (2008-05-12), Multiple Payments.

### **6.8.5 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)

### **6.9 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.

Each invoice must be supported by:

- a. a copy of time sheets to support the time claimed;
- b. a copy of the monthly progress report;
- c. a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses.

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.

**6.10 Certifications and Additional Information**

**6.9.1 Compliance**

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

**6.11 Applicable Laws**

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

**6.12 Priority of Documents**

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

- (a) the Articles of Agreement;
- (b) the supplemental general conditions  
4001 (2015-04-01) Hardware Purchase, Lease and Maintenance;  
4003 (2010-08-16) Licensed Software, and
- (c) the general conditions 2035 (2018-06-21), General Conditions - Higher Complexity - Services;
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) Annex C, Insurance Requirements;
- (g) the signed Task Authorizations (including all of its annexes, if any);
- (h) the Contractor's bid dated \_\_\_\_\_.

### **6.13 Foreign Nationals (Canadian Contractor *OR* Foreign Contractor)**

*SACC Manual* clause A2000C (2006-06-16) Foreign Nationals (Canadian Contractor)

***OR***

*SACC Manual* clause A2001C (2006-06-16) Foreign Nationals (Foreign Contractor)

### **6.14 Insurance Requirements**

The Contractor must comply with the insurance requirements specified in Annex "C". The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. For Canadian-based Contractors, coverage must be placed with an Insurer licensed to carry out business in Canada, however, for Foreign-based Contractors, coverage must be placed with an Insurer with an A.M. Best Rating no less than "A-". The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

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## **ANNEX "A"**

### **STATEMENT OF WORK**

#### **SUPPLY OF AIR TEMPERATURE SENSORS (METEOROLOGICAL)**

##### **1. Background**

Environment and Climate Change Canada – Meteorological Service of Canada (MSC) owns and operates approximately 500 weather observing stations across Canada, and partners with other organizations to operate about 1000 more. The majority of these stations are automated. These stations serve different purposes such as weather forecasting and climatology measurements. At a principal climatological station, basic climatological elements (air temperature, precipitation amount, humidity, wind and atmospheric pressure) are measured on an hourly or more frequent basis. These stations provide sufficient information to make climate-dependent operational decisions and to provide input to most computer models requiring climatological or meteorological data.

Air temperature is a key variable for specifying the state of the atmospheric system. It varies in space and time and requires a high-density network to observe its variability and extremes.

##### **1.1 Objective**

- 1.1.1 The Contractor must supply air temperature sensors for use on MSC weather stations, and provide scheduled maintenance service, to MSC specification as stated in Section 2: Requirements

##### **1.2 SCOPE**

The MSC has a requirement for the combination of supply, delivery, and support (availability of parts and servicing) of air temperature sensors over the next 10 years. The air temperature sensors must be compatible with MSC's existing infrastructure and data acquisition system. Specifically, the air temperature sensors must be compatible with CR3000 data logger and must meet size dimensions as stated in the specifications in 'Annex A' in 'Table 1: item number '8. Dimensions'.

The Contractor must also rebuild or repair defective Air Temperature sensors on an as-and-when-requested basis.

##### **1.3 DEFINITIONS**

- 1.3.1 Maintenance Services: Services offered by the Contractor to repair, test, modify, and calibrate individual air temperature sensors at the Contractor's service facility.

##### **2. REQUIREMENTS**

Air temperature sensors must comply with each of the specifications set out in APPENDIX A to ANNEX A, TECHNICAL SPECIFICATIONS.

### 3. DELIVERABLES

- 3.1 The Contractor must provide firm and optional quantities of air temperature sensors, and maintenance services as in Table 3.1 Quantities of Air Temperature Sensors and Maintenance Service.

**Table 3.1 Quantities of Air Temperature Sensors and Maintenance Service.**

Contract Year			TASKS	TASKS
	Air Temperature Sensor		Maintenance Services	Calibration Services
	Firm Quantity	Optional Quantity: Unknown Minimum, Options up to -	Optional Quantity: Unknown Minimum, Options up to -	Optional Quantity: Unknown Minimum, Options up to -
1	50	0	0	0
2	0	300	100	100
3	0	300	100	100
4	0	300	100	100
5	0	300	100	100
6	0	300	100	100
7	0	0	100	100
8	0	0	100	100
9	0	0	100	100
10	0	0	100	100
Total	50	Up to 1500	Up to 900	Up to 900

- 3.2 Each air temperature sensor must be complete with all associated hardware required to operate fully in accordance within the specifications listed in Annex A. Hardware required to mount the sensor, radiation shield, or screen for the sensor are not deliverables the Contractor must provide
- 3.3 For the Contract Year 1, Firm Quantity of fifty (50) sensors must be delivered. The Contractor must provide the following documentation in English in relation to the air temperature sensors in hardcopy or portable document format (.pdf) upon delivery. The Contractor must also provide all documentation in French within six (6) months of contract award in either hardcopy or portable document format (.pdf)
- 3.3.1 Air temperature product technical specifications,
- 3.3.2 All operational user guide requirement information.
- 3.3.3 User manual(s) explaining the general usage of the air temperature sensor; Installation manual and related documentation describing procedures for installing, verifying sensor performance, maintaining, troubleshooting and repairing sensors, as applicable. The manuals must include sufficient text and graphical content to completely, accurately, and clearly provide the information required by ECCC-MS technical staff to ensure the continuous operation of the air temperature sensor in an operational environment



- 3.4 Upon Contract award, the Contractor must provide a catalogue (electronic portable document format preferred) of parts, accessories and cable ends with current pricing (to be updated annually or as needed) for the duration of the contract at no charge to Canada within 120 calendar days of Contract Award
- 3.5 Revisions to technical documentation: The Contractor must advise ECCC of updates to existing documents related to the air temperature sensor models or accessories delivered to ECCC. Revised documents must reflect changes to the air temperature sensor hardware, software, or to the procedures related to operation, installation, maintenance and repair. An electronic version of the revision in portable document format (.PDF) must be made available to ECCC Project Authority.
- 3.6 The Contractor must grant ECCC the right to provide intranet availability of the manuals (including revised documents) to ECCC's staff and to print copies of the manual as needed to meet operational requirements.
- 3.7 The Contractor must keep accurate and complete quality related records pertaining to the product and, upon request, make these records available to the Project Authority or other designated representative, in electronic PDF format.
- 3.8 At the time of delivery, each air temperature sensor must be accompanied by a certificate of calibration in a hard copy or in an electronic portable document format (".PDF") copy. The calibration certificate must reflect the results of the calibration of each individual sensor. The calibration must be conducted at the temperature points in Table 3.2 Air Temperature Calibration Points and must be valid for a minimum two years. The calibration certificate must list the temperature of the standard, the as-read temperature of the unit under test, and the resistance.

Table 3.2 Air Temperature Calibration Points

Nominal Temperature, °C
- 35
0
+ 35

- 3.9 Calibration certificates or Certificates of Calibration for the Contract Year 1, Firm Quantity of fifty (50) as well as subsequent shipments, must be provided for each individual sensor in English or French, as issued from the calibration facility. Where the original language of the certificate is neither English nor French, the information on the certificate must be provided in English or French. Each certificate must contain each of the following minimum details:
- Manufacturer, Model, Serial number.
  - Temperature comparison data of the reference equipment and the unit under test.
  - Coefficients required for the derivation of the temperature reading.
  - Reference test equipment and hierarchy of traceability.
  - Description of calibration or reference to calibration process.
  - Environmental conditions calibration was set in.
  - Technician name and signature, or stamp of Quality Assurance officer.
  - Date of calibration

- 
- 3.10 In addition to the standard calibration certificate, the Contractor must calibrate a portion (defined below) of the air temperature sensors at an accredited ISO/IEC 17025:2005 (or later), or equivalent standard, facility. The calibration points must be according to Table 3.2 Air Temperature Calibration Points. This additional calibration certificate must be provided with the sensor.
- 3.10.1 For the initial order, 100% of the air temperature sensors must be accompanied by an ISO (or equivalent) calibration.
- 3.10.2 For subsequent orders, 20% of the air temperature sensors must be accompanied by an ISO (or equivalent) calibration.
- 3.10.3 Each delivery must be accompanied by a copy of the laboratory's accreditation certificate, valid at the time of the calibration.
- 3.11 If the manufacturer's standard calibration certificate complies with the ISO 17025 (or equivalent) specification, then a second (additional) calibration certificate is not required. The Contractor must, however, include a copy of the manufacturer's ISO (or equivalent) accreditation certificate, valid at the time of the calibration.
- 3.11.1 A Contractor that is proposing an equivalent standard must include information which:
- Designates the name of the substitute certification; AND
  - Provides a compliance statement that the substitute certification is fully interchangeable with, or stronger than, the certification specified; AND
  - Provides specifications and literature for the substitute certification.
- 3.11.2 Certifications offered as equivalent will not be considered if:
- The Contractor fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute certification; OR
  - The substitute certification fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.
- 3.11.3 The Contractor must verify the acceptance of this equivalency in advance, with the Project Authority prior to delivery.
- 3.12 Technical Support: The Contractor must provide the following technical support services for the air temperature sensor at no charge to Canada throughout the duration of the contract. The support must be rendered by one of the OEM(s), the distributor(s) or their technical agent(s).
- 3.12.1 Clarification of provided documentation: At an engineering level, the Contractor must provide assistance in instances where the provided sensor documentation is insufficient in describing the sensor's operation, implementation, maintenance, troubleshooting, or modes of error.
- 3.12.2 Air temperature sensor technical changes: The Contractor must provide the ECCC Project Authority with notification of any modifications to the air temperature sensor model and the sensor accessories purchased by ECCC, prior to implementing the changes. The associated notification must clearly detail any effects of the change(s) on the performance of the air temperature sensor. ECCC Project Authority reserves the right to accept or reject the proposed modifications to the air temperature sensor models or accessories being supplied under this contract(s).
- 3.12.3 Operational Implementation: A key element of ECCC's network management is "data of known quality". As part of ECCC's implementation plan for the air temperature sensor, the Contractor must provide assistance in understanding the operational modes of the air temperature sensor and their effect on data quality.

- 3.13 **TASKS:** Optional Maintenance Services, if invoked, must be made available by the Contractor for contact year two (2) to ten (10) inclusive. Maintenance Service must ensure performance to the identified product specifications in in Annex "A" – Requirement, and be returned with a valid post-work calibration certificate and report on service performed. The types of maintenance and services may include, but not limited to the following:

- Verification, or re-calibration, test to original requirements,
- Replacement of damaged cable,
- Technical changes that add value to the sensor above the initial specification, either recommended by the Contractor or requested by ECCC, up to \$100 per sensor.

#### **4. QUALITY ASSURANCE**

The air temperature sensor must be manufactured at a facility that is registered to ISO 9001:2008 (or later) or a national equivalent quality management system standard. This certification must be maintained throughout the duration of the contract.

#### **5. DELIVERY LOCATION & SHIPPING INSTRUCTIONS**

- 5.1 The Contractor must deliver all new Air Temperature Sensors, at no additional charge, to ECCC at the following shipping address:  
ECCC/MS, 4905 Dufferin Street, Toronto, ON, M3H 5T4, Attn: LCM Surface Networks.
- 5.2 All ad-hoc Air Temperature Sensors sent to the contractor for re-calibration or other re-work must be returned to the same shipping address identified above. The cost of shipping all ad-hoc work, to and from the Contractor, will be paid by ECCC.

#### **6. LABELLING, PACKING AND PACKAGING**

- 6.1 Each sensor must be labelled, at minimum, with sensor type, or model, and a unique individual serial number.
- 6.2 Each sensor must be bagged and labeled individually, in a plastic bag 4-mil or higher thickness, labelled with part number, description and serial number.

#### **7. ACCEPTANCE CRITERIA for new Air Temperature Sensors**

- 7.1 The MSC will inspect the deliverables upon delivery for the following criteria:
- Completeness of the order;
  - Labelling of each air temperature sensor with type and serial number;
  - Labelling of each bag that air temperature sensors are shipped;
  - Completeness of calibration certificates, and that each sensor meets the specification requirements.
- 7.2 For quality assurance (QA) purposes, the MSC has the right to test any air temperature sensors in-house, or in an independent ISO/IEC 17025:2005 accredited laboratory to confirm sensors performance and calibration documentation.
- 7.2.1 In the event that a sensor(s) tested by the MSC in an ISO 17025 accredited laboratory is found non-compliant, the Contractor must exchange the sensor(s) with a new sensor(s) complete with an ISO/IEC 17025:2005 calibration with no cost to the MSC.
- 7.2.2 The time period for MSC to perform independent QA testing is up to three (3) months from date of delivery receipt.

**8. WARRANTY**

New and Serviced sensors must have a minimum warranty period of three (3) years from the date received by ECCC-MSD.

**9. CONSTRAINTS**

- 9.1 Firm quantity orders must be shipped within three (3) months of the contract being awarded to the Contractor.
- 9.2 Subsequent optional quantity orders will be no less than one hundred (100) per order, and must be delivered within four (4) months of the contract amendment.
- 9.3 Maintenance Services must be performed and returned to ECCC-MSD within three (3) months of the sensors being received by the Contractor.

## APPENDIX A TO ANNEX A

### TECHNICAL SPECIFICATIONS

#### SUPPLY OF AIR TEMPERATURE SENSORS (METEOROLOGICAL)

An air temperature sensor is designed to provide a measurement of the electrical resistance of a material whose resistance varies in a known manner with the temperature of the material.

The air temperature sensor must meet or exceed the following technical specifications as in Table 1: Mandatory Technical Requirements.

**Table 1: Mandatory Technical Requirements**

Item Number	Description	Mandatory Technical Specification
1.	Instrument Type	The air temperature sensor must be a Thermistor or a Thermilinear network thermometer with a negative coefficient of resistance.
2.	Operating Environment	<p>2.1 <b>Temperature:</b> The air temperature sensor must always operate without performance deterioration over the complete range from -50°C to +50°C.</p> <p>2.2 <b>Humidity:</b> The air temperature sensor must always operate without performance deterioration over the complete range from 10% to 100%RH.</p> <p>2.3 <b>Corrosion:</b> The air temperature sensor must always operate without performance deterioration in an outdoor environment with salt, mist or fog. To demonstrate, the sensor, its associated modules and cable connectors must comply with one of the following:</p> <p>2.3.1 IEC 60068-2-52 severity 1 or 2, or</p> <p>2.3.2 MIL-STD-810G Method 509, or</p> <p>2.3.3 Equivalent standard.</p> <p>Note 1: The phrase “without performance deterioration” means that the accuracy requirement in Item 3 of Table 1: <i>Mandatory Technical Requirements</i>, <b>APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</b> is satisfied, and the device operates without internal faults.</p> <p>Note 2: the conditions are additive – i.e., the sensor must operate in an environment that combines all criteria simultaneously.</p>

3.	<b>Accuracy: uncertainty</b>	<p>Definition: The expanded uncertainty is defined as the Root Sum of Squares of repeatability, nonlinearity, interchangeability, hysteresis, system long-term stability and self-heating error with an expanded uncertainty of 2 standard deviations (coverage factor of <math>k = 2</math>). This uncertainty estimate must include any systematic errors due to probe manufacturing variations (interchangeability), resistor errors, calibration errors or other factors.</p> <p>The combined standard uncertainty <math>\sigma_c</math> is the square root of the sum of the square of the repeatability <math>\sigma_r</math>, nonlinearity <math>\sigma_n</math>, interchangeability <math>\sigma_i</math>, hysteresis <math>\sigma_h</math>, system long-term stability <math>\sigma_s</math> and self-heating error <math>\sigma_{s-h}</math> standard uncertainty values. This uncertainty estimate must include any systematic errors due to probe manufacturing variations (interchangeability), resistor errors, calibration errors or other factors.</p> $\sigma_c = \sqrt{\sigma_r^2 + \sigma_n^2 + \sigma_i^2 + \sigma_h^2 + \sigma_s^2 + \sigma_{s-h}^2}$ <p>The total measurement expanded uncertainty <math>\sigma_{k=2}</math> is equal to two times the combined standard uncertainty.</p> $\sigma_{k=2} = 2\sigma_c$ <p>The total measurement expanded uncertainty of the air temperature sensor system, as defined, must be less than <math>\pm 0.15^\circ\text{C}</math> at temperature from <math>-50^\circ\text{C}</math> to <math>+50^\circ\text{C}</math>.</p>
3.1	<b>Repeatability over full range</b>	<p>Definition: The standard uncertainty (<math>k=1</math>) due to repeatability <math>\sigma_r</math> is a measure of the agreement of successive temperature measurements carried out under the same measurement conditions.</p> <p>The standard uncertainty must be calculated from the standard deviation of the results of a minimum of 10 successive temperature measurements under the same environmental temperature. The repeatability must be valid over the full range of temperatures from <math>-50^\circ\text{C}</math> to <math>+50^\circ\text{C}</math> for the measurement uncertainty as described below:</p>

		$\sigma_r = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (T_i - \bar{T})^2}$ $\bar{T} = \frac{1}{n} \sum_{i=1}^n T_i$ <p>For <math>n</math> repeatability measurements of temperature <math>T_i</math></p>
3.2	<b>Nonlinearity</b>	<p>Definition: The standard uncertainty (k=1) due to nonlinearity <math>\sigma_n</math> is a measure of the agreement between the measured probe temperature (using the standard adjustment equation and coefficients and including resistor error) and the reference temperature over the full scale temperature range from -50°C to +50 °C.</p> <p>The nonlinearity must be calculated by the root mean square error between the probe and reference temperature in 1 °C increments over the full scale temperature range from -50°C to +50°C as described below:</p> $\sigma_n = \sqrt{\frac{1}{n} \sum_{i=1}^n (T_i - T_{\text{ref}})^2}$ <p>For <math>n</math> nonlinearity measurements over the full-scale temperature range</p>
3.3	<b>Interchangeability tolerance (accuracy)</b>	<p>Definition: The standard uncertainty (k=1) due to interchangeability <math>\sigma_i</math> is a measure of the probe to probe variability due to manufacturing variations between lots and batches representative of the variations expected to occur during the contract from the first sensor produced to the last sensor produced.</p> <p>A minimum of 20 probes chosen randomly from different production runs should be used to assess the variation between probes. The interchangeability must be assessed at -50°C, 0 °C and 50°C temperatures to determine the maximum interchangeability value as described below:</p> $\sigma_i = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (T_i - \bar{T})^2}$ <p>For <math>n</math> temperature probes covering the range of manufacturing variations (different</p>

		manufacturing lots etc.) applicable over the full-scale temperature range.
3.4	<b>Hysteresis</b>	<p>Definition: The standard uncertainty (k=1) due to hysteresis <math>\sigma_h</math> is a measure of the difference between the indication of the temperature probe when successive temperatures are increasing or decreasing.</p> <p>The hysteresis must be calculated from the maximum temperature difference over the full scale temperature range for one or more temperature cycles from 50°C to -50°C temperature and back up to 50°C.</p> <p>The standard uncertainty due to hysteresis is equal to the maximum temperature difference between increasing and decreasing probe measurements over the temperature range divided by the square root of twelve as described below:</p> $\sigma_h = \frac{dT_{\text{Max\_Hysteresis}}}{\sqrt{12}}$ <p>For maximum temperature difference between increasing and decreasing probe measurements <math>dT_{\text{Max\_Hysteresis}}</math>.</p>
3.5	<b>System Long-term Stability</b>	<p>Definition: The standard uncertainty (k=1) due to system long-term stability <math>\sigma_s</math> is a measure of the temperature probe ability to maintain its temperature characteristics due to the aging process at room temperature.</p> $\sigma_s = T_{\text{cal\_20C\_1year}} - T_{\text{cal\_20C\_start}}$ <p>At room temperature (defined as any temperature between 20 to 25°C), the stability of the air temperature sensor (deviation from existing calibration) must be less than or equal to <math>\pm 0.02^\circ\text{C}</math> per year.</p>
3.6	<b>Dissipation constant (self-heat error)</b>	<p>Definition: The standard uncertainty (k=1) due to self-heating error <math>\sigma_{s-h}</math> is a measure of the temperature increase of the temperature probe due to the ratio of power and dissipation over the full temperature range from -50°C to +50°C.</p> $\sigma_{s-h} = \max \left( \frac{P_{\text{probe}}}{D_{\text{stillair}}} \right)$



		<p>Over the full-scale temperature range where <math>P</math> is the power through the temperature probe and <math>D_{\text{stillair}}</math> is the dissipation constant for the temperature probe in still air.</p> <p>The maximum self-heat error due to power dissipation of the air temperature sensor must be less than 0.02°C over the full range from - 50 to +50°C.</p>
4.	<b>Reference Resistance</b>	The reference resistance of the air temperature sensor must be greater than 5000 $\Omega$ at +25°C.
5.	<b>Operation Mode</b>	The air temperature sensor must be able to operate in voltage mode configuration using a voltage divider. The output must have a positive slope.
6.	<b>Power Requirement - Voltage Range</b>	<p>The air temperature sensor must operate without performance deterioration when supplied with any voltage from 1 VDC to 3 VDC.</p> <p>Note: the provision of a power supply is not included in this procurement. The purchaser will provide their own power supply.</p> <p>Note: the phrase “operates” – means that the sensor must continue to operate as per Annex A, Statement of Work. No degradation of performance or loss of function is allowed, as defined in the technical specification published by the manufacturer.</p>
7.	<b>Construction</b>	<p>The air temperature sensor must be housed in a 316SS stainless steel tubular probe and have moisture protection encapsulation.</p> <p>And</p> <p>The Tubular probes must have rolled ends and uniform wall thickness throughout, hermetic tips and a medical-grade polished finish.</p> <p>And</p> <p>The measurement element “thermistor” must be located less than 0.75” from the tip of the probe.</p>

8.	<b>Dimensions</b>	The length of the air temperature sensor must be equal or more than 2" and equal or less than 4". The diameter of the air temperature sensor must be 0.25".
9.	<b>Cable</b>	The air temperature sensor must be terminated to an eight (8) foot to ten (10) foot shielded cable finished with stripped and tinned leads.
10.	<b>Response Time</b>	(a) On changing temperature: The time constant, timed at the statistical 63.2% of the step temperature change of the temperature sensor measured in still air must be less than, or equal to, 20 seconds at room temperature (+20°C to +26°C).  (b) On power-up: the time interval between the instant power (at a level specified in requirement Item 6 of Table 1: <i>Mandatory Technical Requirements, APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</i> ) is applied to sensor system and the instant when the sensor system outputs the temperature within the total measurement uncertainty specified in requirement Item 3 Table 1: <i>Mandatory Technical Requirements, APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</i> , must be less than or equal to 20 seconds.
11.	<b>Dust and Water Tight Integrity</b>	When fully assembled, the air temperature sensor, its associated modules, cables and cable connectors must resist ingress of dust and water, complying with Ingress Protection (IP) Rating Code of at least IP67 (Standard 60529).
12.	<b>Storage Temperature</b>	The air temperature sensor must always withstand and perform in a temperature range from -65°C to +70°C without degradation  Note: The phrase "withstands" means that the payload is not expected to perform its operational function when this withstanding condition exists. The sensor is only expected to survive during the withstanding condition. After the withstanding condition is removed, the sensor must automatically resume its operational function with no loss of data or any operational changes.

13.	<b>Survivability</b>	<p>(a) Temperature: The air temperature sensor must return to operation within specifications after 24 hours exposure (while operating) to temperatures outside of the normal operating range of -50°C to +50°C, down to at least -65°C and up to at least +55°C, without external intervention.</p> <p>(b) Thermal Shock: The air temperature sensor must return to operation within specifications without external intervention after being exposed to a sudden temperature change from +20°C to -50°C and from +25°C to +50°C. "Sudden" means a temperature change occurring in less than one minute, but lasting at least half hour at the new temperature.</p> <p>(c) Vibration: The air temperature sensor must operate within specifications after shipment and transportation in a factory package as loose cargo. The sensor and package must comply with one of the following:</p> <ul style="list-style-type: none"> <li>i. AECTP-400 Edition 3 NATO standard on loose cargo, or</li> <li>ii. MIL-STD-202G Method 201, or</li> <li>iii. IEC or EN-60068-2-6, or</li> <li>iv. Equivalent standard</li> </ul>
14.	<b>Maintenance</b>	<p>If field maintenance is required, the interval of the scheduled preventive maintenance recommended by the Manufacturer must be two years or longer.</p> <p>The air temperature sensor must not require any intervention for maintaining its normal operation, at intervals shorter than two years. Any recommended field maintenance procedures must be capable of being carried out without removing the sensor from service.</p> <p>Note: Scheduled preventive maintenance, as set out in the Manufacturer's recommended operation procedures, will be undertaken by the Project Authority or designated representative.</p> <p>Note: "removing the sensor from service" means that the sensor is disconnected, unmounted, and moved to another location for maintenance.</p>
15.	<b>Manufacturer</b>	<p>The air temperature sensor must be manufactured at a facility that is registered to ISO 9001:2008 (or later) or a national equivalent quality management system standard. This certification must be</p>

		maintained throughout the duration of the contract.
16.	<b>Calibration certificate (Manufacturer's standard calibration certificate)</b>	<p>(a) Each unit must be accompanied by a certificate of calibration, confirming that the sensor performance is within specifications. The calibration certificate must include the data on which the confirmation is based.</p> <p>(b) If the instrument has specific coefficients required for the derivation of the temperature reading, the calibration certificate must indicate these coefficients.</p>
17.	<b>ISO/IEC 17025 calibration certificate</b>	<p>As noted in Section 3 of the Statement Of Work, Deliverables, a portion of the sensors in each order (100% in the first order, 20% in subsequent orders) must be accompanied by an additional certificate of calibration from a facility accredited to ISO/IEC 17025:2005 (or later) or equivalent standard.</p> <p>This requirement is waived if the manufacturer's standard calibration certificate (Item 16 Table 1: <i>Mandatory Technical Requirements</i>, <b>APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</b>) meets the ISO requirement.</p>

## ANNEX "B"

### BASIS OF PAYMENT

Firm unit prices in Canadian funds including Canadian customs duties, excise taxes, and F.O.B. Destination. The total amount of Goods and Services Tax (GST) or Harmonized Sales Tax (HST) is not included.

#### Contract Years Defined

Contract Year 1: Date of Contract Award to March 31, 2020  
Contract Year 2: April 1, 2020 to March 31, 2021  
Contract Year 3: April 1, 2021 to March 31, 2022  
Contract Year 4: April 1, 2022 to March 31, 2023  
Contract Year 5: April 1, 2023 to March 31, 2024  
Contract Year 6: April 1, 2024 to March 31, 2025  
Contract Year 7: April 1, 2025 to March 31, 2026  
Contract Year 8: April 1, 2026 to March 31, 2027  
Contract Year 9: April 1, 2027 to March 31, 2028  
Contract Year 10: April 1, 2028 to March 31, 2029

#### NOTE TO BIDDER: (To be removed at time of Contract Award)

The Extended Price column are provided for the sole purpose of financial evaluation only and will be removed at time of Contract Award.

Make: \_\_\_\_\_

Model: \_\_\_\_\_

#### A. Firm Requirement for Air Temperature Sensors: as per Statement of Work, Annex "A".

A	B	C	D	E
Item	Period	Quantity	Firm Unit Price	Extended Price (CxD)
1	Contract Year 1	50 units	\$ _____	\$ _____

#### B. Optional Requirement for Air Temperature Sensors: as per Statement of Work, Annex "A".

A	B	C	D	E
Item	Period	Estimated Quantity	Firm Unit Price	Extended Price (CxD)
2	Contract Year 2	300 units	\$ _____	\$ _____
3	Contract Year 3	300 units	\$ _____	\$ _____
4	Contract Year 4	300 units	\$ _____	\$ _____
5	Contract Year 5	300 units	\$ _____	\$ _____
6	Contract Year 6	300 units	\$ _____	\$ _____

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**C) Task Authorization Special Work Orders - As and When Requested Services (TASKS):** Any service request for Maintenance or Calibration Services of Air Temperature Sensors when authorized by the Project Authority or MSC-ECCC representative designated by the Project Authority in accordance with Annex A – Statement of Work.

The Contractor will be paid for the each Air Temperature Sensor serviced at the firm hours rates detailed below.

During Regular Working Hours (Monday to Friday)

**i) Maintenance Re-Build Services**

A Item	B Period	C Description	D Optional Quantities	E Firm Unit Price
1	Contract Year 1 to 10	Maintenance Services	Up to 900 sensors	Contract Year 1: \$ _____ ea Contract Year 2: \$ _____ ea Contract Year 3: \$ _____ ea Contract Year 4: \$ _____ ea Contract Year 5: \$ _____ ea Contract Year 6: \$ _____ ea Contract Year 7: \$ _____ ea Contract Year 8: \$ _____ ea Contract Year 9: \$ _____ ea Contract Year 10: \$ _____ ea Contract Year 11: \$ _____ ea Contract Year 12: \$ _____ ea

**ii) Calibration Services**

A Item	B Period	C Description	D Optional Quantities	E Firm Unit Price
1	Contract Year 1 to 10	Maintenance Services	Up to 900 sensors	Contract Year 1: \$ _____ ea Contract Year 2: \$ _____ ea Contract Year 3: \$ _____ ea Contract Year 4: \$ _____ ea Contract Year 5: \$ _____ ea Contract Year 6: \$ _____ ea Contract Year 7: \$ _____ ea Contract Year 8: \$ _____ ea Contract Year 9: \$ _____ ea Contract Year 10: \$ _____ ea Contract Year 11: \$ _____ ea Contract Year 12: \$ _____ ea

**Total Limitation of Expenditure for Maintenance Re-Build (i) and Calibration Services (ii) for the entire contract period is: \$ \_\_\_\_\_ (HSTI).**

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**iii) Material and Replacement Parts - As and When Requested (TASKS):** Material and replacement parts supplied by the Contractor (other than free issue) will be priced at the Contractor's laid down cost plus a mark-up of no higher than \_\_\_\_%. (Bidder to insert percentage. If left blank a default of 5% will be used).

**Total Limitation of Expenditure for Material and Replacement Parts** for the entire contract period, is:  
**\$200,000.00 (HSTI).**



## **ANNEX "C"**

### **INSURANCE REQUIREMENTS**

#### **1. Commercial General Liability Insurance**

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than \$2,000,000 per accident or occurrence and in the annual aggregate.

2. The Commercial General Liability policy must include the following:

a. Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.

b. Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.

c. Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.

d. Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.

e. Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

f. Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.

g. Employees and, if applicable, Volunteers must be included as Additional Insured.

h. Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program)

i. Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.

j. Notice of Cancellation: The Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.

k. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

l. Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

m. Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to

pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

Director Business Law Directorate,  
Quebec Regional Office (Ottawa),  
Department of Justice,  
284 Wellington Street, Room SAT-6042,  
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:

Senior General Counsel,  
Civil Litigation Section,  
Department of Justice  
234 Wellington Street, East Tower  
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

## **2. Errors and Omissions Liability Insurance**

1. The Contractor must obtain Errors and Omissions Liability (a.k.a. Professional Liability) insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature but for not less than \$1,000,000 per loss and in the annual aggregate, inclusive of defence costs.
2. If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.
3. The following endorsement must be included:

Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

## **3. Bailee's Customer's Goods Insurance**

The Contractor must obtain Bailee's Customer's Goods insurance while Government Property is under its care, custody or control for repair or servicing, and maintain it in force throughout the duration of the Contract, in an amount of not less than \$600.00. Government Property must be insured on a Replacement Cost new basis.

1. Administration of Claims: The Contractor must notify Canada promptly about any losses or damages to Government Property and monitor, investigate and document losses of or damage to ensure that claims are properly made and paid.

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2. The Bailee's Customer's Goods must include the following:

a. Notice of Cancellation: The Contractor will provide the Contracting Authority thirty (30) days prior written notice of policy cancellation or any changes to the insurance policy.

b. Settlement of Claims: The insurance proceeds regarding any loss of or damage to Government Property must be payable to the appropriate party as directed by the Contracting Authority.

c. Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Environment and Climate Change Canada (ECCC) and Public Works and Government Services Canada for any and all loss of or damage to the property however caused.

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## **ANNEX "D"**

### **ELECTRONIC PAYMENT INSTRUMENTS**

The Bidder accepts to be paid by 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 E

### EVALUATION CRITERIA

#### 1. Mandatory Technical Criteria

At bid closing time, the Bidder must:

- Comply with each of the following Mandatory Requirements; and
- The Bidder must provide detailed documentation, in the bid proposal, supporting the performance and accuracies of the equipment offered, and the methods of demonstrating these. Documentation may include but is not limited to discussion points, technical and engineering files, equipment specifications, charts and diagrams to support compliance.

Proposals will be evaluated first on the basis of the mandatory specifications. Failure on the part of the bidder to meet one (1) or more of the mandatory requirements will result in the proposal being deemed non-compliant and ineligible for further consideration or evaluation.

The bidder should indicate the page number and section for each criterion in their proposal.

**Table 1: General Requirements**

Item Number	Description	Mandatory Requirement	Mandatory Information required in the bid	Identify where the supporting documentation is located in the bid
1.1	<p><b>Service History</b></p> <p><b>Service History:</b> The proposed sensor model must have been deployed - or be based on a sensor which has been deployed - in a field application, in one or more government or commercial organizations, in operating environments similar to those described in Item 2, Table 1: <i>Mandatory Technical Requirements</i>, <b>APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</b></p> <p>The service history must cover</p> <p>a) at least two years of use by each organization in the five years prior to the closing date of the solicitation.</p>	<p><b>Service History:</b> The proposed sensor model must have been deployed - or be based on a sensor which has been deployed - in a field application, in one or more government or commercial organizations, in operating environments similar to those described in Item 2, Table 1: <i>Mandatory Technical Requirements</i>, <b>APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</b></p> <p>The service history must cover</p> <p>a) at least two years of use by each organization in the five years prior to the closing date of the solicitation.</p>	<p>To demonstrate, evidence of previous use must be in the form of one or more letters from the organization(s) using the instruments, indicating each of the following:</p> <p>(a), the number of units used;</p> <p>(b) the period over which the units have been used, and</p> <p>(c) the overall environmental conditions, in terms of temperature and humidity.</p>	<p>PAGE(S) AND/OR SECTION NUMBER: _____</p>

		<p>b) total numbers, over all organizations, of at least 100 units.</p> <p>Note: for the assessment of similar environmental conditions, it is sufficient that the instruments proposed have operated in environments that are likely to experience the range of conditions as stated Table 1: <i>Mandatory Technical Requirements</i>.</p> <p><b>APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</b></p> <p>Item 2 (Operating Conditions, Temperature and Humidity) and not necessarily to have experienced the entire range of conditions.</p> <p>Specifically, the range of air temperature where the instrument is expected to have operated in the past is between -35°C to +35°C. It is not necessary that the entire range be covered by each organization – it is acceptable that different organizations' service history cover different parts of the range.</p>	<p>(d) The bidder must include contact information for the author of the letter (email preferred) to confirm its accuracy. Environment and Climate Change Canada may validate the information with the contact identified in the letter only to confirm the information identified in a) and b), with yes or no questions.</p> <p>Where the service history refers to a previous model, based on which the proposed model has been developed, the bidder must provide evidence to show the derivation of the design of the proposed model.</p> <p>For Item (d): If documentation is not provided with the bid proposal, the bidder must submit it to the Contracting Authority's attention within 2 calendar days of request from PSPC.</p>	
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Table 2: Sensor Specifications

Item Number	Description	Mandatory Technical Specification to be Evaluated in Bid	Mandatory Information required in the bid	Identify where the supporting documentation is located in the bid
2.1	<b>Instrument Type</b>	The air temperature sensor must be a Thermistor or a Thermilinear network thermometer with a negative coefficient of resistance.	To demonstrate, the Bidder must provide evidence in one of the following items to identify the principle of operation: 1. Specification Sheet; or 2. User Manual; or 3. Test Reports	PAGE(S) AND/OR SECTION NUMBER: _____
2.2	<b>Operating Environment</b>	<p>a) <b>Temperature:</b> The sensor must operate without performance deterioration over the complete range from -50°C to +50°C.</p> <p>b) <b>Humidity:</b> The sensor must operate without performance deterioration over the complete range from 10% to 100%RH.</p> <p>c) <b>Corrosion:</b> The sensor must operate without performance deterioration in an outdoor environment with salt, mist or fog. The sensor, its associated modules and cable connectors must comply with one of the following: i) IEC 60068-2-52 severity 1 or 2, or ii) MIL-STD-810G Method 509, or iii) Equivalent standard.</p>	<p>To demonstrate, the Bidder must provide evidence in one of the following:</p> <p>a) <b>Temperature</b> 1. Specification sheet; or 2. user manual; or 3. field data, or 4. test reports.</p> <p>b) <b>Humidity</b> 1. Specification sheet; or 2. user manual; or 3. field data, or 4. test reports.</p> <p>Note: the same material may be used to support both a) (Temperature) and b) (Humidity). The material</p>	PAGE(S) AND/OR SECTION NUMBER: _____

		<p>Note: The phrase "without performance deterioration" means that the accuracy requirement in Item 3 of Table 1: <i>Mandatory Technical Requirements, APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</i> is satisfied, and the device operates without internal faults.</p> <p>Note: the conditions are additive – i.e., the sensor must operate in an environment that combines all criteria simultaneously.</p>	<p>must give a clear indication of the operability of the sensor over the full temperature and humidity ranges specified. Test reports may use data from controlled environments – or outdoor tests.</p> <p>c) Corrosion The bidder must provide written proof (test results or certificate) of compliance with the selected standard or equivalent in the form of a</p> <p>1. Compliance statement AND 2. Test reports or test results.</p> <p>A bidder that is proposing an equivalent standard must include information which:</p> <p>1) designates the name of the substitute standard; AND 2) provides a compliance statement that the substitute standard is fully interchangeable with, or stronger than, the standard specified; and AND 3) provides technical specifications and tests procedures for the substitute standard to prove (b).</p>	
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			Standards offered as equivalent will NOT be considered if: 1) the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute standard; OR 2) the substitute standard fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item	
<b>2.3</b>	<b>Accuracy: uncertainty</b>	<p>Definition: The expanded uncertainty is defined as the Root Sum of Squares of repeatability, nonlinearity, interchangeability, hysteresis, system long-term stability and self-heating error with an expanded uncertainty of 2 standard deviations (coverage factor of <math>k = 2</math>). This uncertainty estimate must include any systematic errors due to probe manufacturing variations (interchangeability), resistor errors, calibration errors or other factors.</p> <p>The combined standard uncertainty must be calculated from the Square Root of the Sum of the Square of the standard uncertainty components for repeatability, nonlinearity, interchangeability, hysteresis, system long-term stability and self-heating error, applying</p>	<p>To demonstrate, the Bidder must provide evidence the criteria is met by providing each of the following</p> <p>1) Test Reports. AND 2) Data evidence to support the claim. AND 3) Discussion and analyses to explain how the provided material demonstrates model performance. AND</p>	PAGE(S) AND/OR SECTION NUMBER: _____

		the equation as defined in Table 3: Uncertainty Summary, Item 3.7 of Evaluation Criteria.  The expanded uncertainty ( $k=2$ ) of the air temperature sensor must be calculated as 2 times the combine standard uncertainty applying the equation as defined in Table 3: Uncertainty Summary, Item 3.8 of Evaluation Criteria.  The expanded uncertainty of the air temperature sensor system, as defined in Table 3: Uncertainty Summary, Item 3.8 of Evaluation Criteria, must be less than, or equal to $\pm 0.15^{\circ}\text{C}$ at temperatures from $-50^{\circ}\text{C}$ to $+50^{\circ}\text{C}$ .	4) Fill-up the result of the combined standard uncertainty calculation in Table 3: Uncertainty Summary, Item 3.7 of Evaluation Criteria.  AND  5) Fill-up the results of the expended uncertainty calculation in Table 3: Uncertainty Summary, Item 3.8 of Evaluation Criteria.	
2.3.1	<b>Repeatability over full range</b>	Definition: The standard uncertainty ( $k=1$ ) due to repeatability is a measure of the agreement of successive temperature measurements carried out under the same measurement conditions.  The standard uncertainty must be calculated from the standard deviation of the results of a minimum of 10 successive temperature measurements under the same environmental temperature applying the equation in Table 3: Uncertainty Summary, Item 3.1. The repeatability must be valid over the full range of temperatures from $-50^{\circ}\text{C}$ to $+50^{\circ}\text{C}$ for the measurement uncertainty applying the equation as defined	To demonstrate, the Bidder must provide evidence the criteria is met by providing each of the following  1) Test Reports.  AND  2) Data evidence to support the claim  AND  3) Discussion and analyses to explain how the provided	PAGE(S) AND/OR SECTION NUMBER:  _____

		in Table 3: Uncertainty Summary, Item 3.1 of Evaluation Criteria.	material demonstrates model performance.  AND  4) Fill-up the result of the standard uncertainty calculation in Table 3: Uncertainty Summary, Item 3.1 of Evaluation Criteria.	
2.3.2	<b>Nonlinearity</b>	<p>Definition: The standard uncertainty (<math>k=1</math>) due to nonlinearity is a measure of the agreement between the measured probe temperature (using the standard adjustment equation and coefficients and including resistor error) and the reference temperature over the full scale temperature range from <math>-50^{\circ}\text{C}</math> to <math>+50^{\circ}\text{C}</math>.</p> <p>The nonlinearity must be calculated by the root mean square error between the probe and reference temperature in <math>1^{\circ}\text{C}</math> increments over the full scale temperature range from <math>-50^{\circ}\text{C}</math> to <math>+50^{\circ}\text{C}</math>, applying the equation as defined in Table 3: Uncertainty Summary, Item 3.2 of Evaluation Criteria.</p>	<p>To demonstrate, the Bidder must provide evidence the criteria is met by providing each of the following:</p> <p>1) Test Reports.</p> <p>AND</p> <p>2) Data evidence to support the claim</p> <p>AND</p> <p>3) Discussion and analyses to explain how the provided material demonstrates model performance.</p> <p>AND</p> <p>4) Fill-up the results of the standard uncertainty calculation in Table 3:</p>	PAGE(S) AND/OR SECTION NUMBER:  

			Uncertainty Summary, Item 3.2 of Evaluation Criteria.	PAGE(S) AND/OR SECTION NUMBER:
2.3.3	<b>Interchangeability tolerance (accuracy)</b>	<p>Definition: The standard uncertainty (<math>k=1</math>) due to interchangeability is a measure of the probe to probe variability due to manufacturing variations between lots and batches representative of the variations expected to occur during the contract from the first sensor produced to the last sensor produced.</p> <p>A minimum of 20 probes chosen randomly from different production runs must be used to assess the variation between probes. The interchangeability must be assessed at -50°C, 0 °C and 50°C temperatures to determine the maximum interchangeability value applying the equation as defined in Table 3: Uncertainty Summary, Item 3.3 of Evaluation Criteria.</p>	<p>To demonstrate the Bidder must provide evidence the criteria is met by providing each of the following for each of the 20 probes:</p> <p>1) Test Reports.</p> <p>AND</p> <p>2) Data evidence to support the claim</p> <p>AND</p> <p>3) Discussion and analyses to explain how the provided material demonstrates model performance.</p> <p>AND</p> <p>4) Fill-up the results of the standard uncertainty calculation in Table 3: Uncertainty Summary, Item 3.3 of Evaluation Criteria.</p>	PAGE(S) AND/OR SECTION NUMBER: _____
2.3.4	<b>Hysteresis</b>	<p>Definition: The standard uncertainty (<math>k=1</math>) due to hysteresis is a measure of the difference between the indication of the</p>	To demonstrate, the Bidder must provide evidence the	PAGE(S) AND/OR SECTION NUMBER: _____

		<p>temperature probe when successive temperatures are increasing or decreasing.</p> <p>The hysteresis must be calculated from the maximum temperature difference over the full scale temperature range for one or more temperature cycles from 50°C to -50°C temperature and back up to 50°C.</p> <p>The standard uncertainty due to hysteresis is equal to the maximum temperature difference between increasing and decreasing probe measurements over the temperature range divided by the square root of twelve applying the equation as defined in Table 3: Uncertainty Summary, Item 3.4 of Evaluation Criteria.</p>	<p>criteria is met by providing each of the following:</p> <p>1) Test Reports.</p> <p>AND</p> <p>2) Data evidence to support the claim.</p> <p>AND</p> <p>3) Discussion and analyses to explain how the provided material demonstrates model performance.</p> <p>AND</p> <p>4) Fill-up the result of the standard uncertainty calculation in Table 3: Uncertainty Summary, Item 3.4 of Evaluation Criteria.</p>	
2.3.5	<b>System Long-term Stability</b>	<p>Definition: The standard uncertainty (<math>k=1</math>) due to system long-term stability is a measure of the temperature probe ability to maintain its temperature characteristics due to the aging process at room temperature.</p> <p>At room temperature (between 20 to 25°C), the stability of the air temperature sensor</p>	<p>To demonstrate, the Bidder must provide evidence the criteria is met by providing each of the following</p> <p>1) Test Reports.</p> <p>AND</p>	<p>PAGE(S) AND/OR SECTION NUMBER:</p>

		(deviation from existing calibration) must be less than or equal to $\pm 0.02^{\circ}\text{C}$ per year applying the equation as defined in Table 3: Uncertainty Summary, Item 3.5.	2) Data evidence to support the claim.  AND 3) Discussion and analyses to explain how the provided material demonstrates model performance.  AND 4) Fill-up the result of the standard uncertainty calculation in Table 3: Uncertainty Summary, Item 3.5 of Evaluation Criteria.	
2.3.6	<b>Dissipation constant (self-heat error)</b>	<p>Definition: The standard uncertainty (<math>k=1</math>) due to self-heating error is a measure of the temperature increase of the temperature probe due to the ratio of power and dissipation over the full temperature range from <math>-50^{\circ}\text{C}</math> to <math>+50^{\circ}\text{C}</math>.</p> <p>The self-heat error due to power dissipation of the air temperature sensor must be less than <math>0.02^{\circ}\text{C}</math> over the full range from <math>-50^{\circ}\text{C}</math> to <math>+50^{\circ}\text{C}</math> applying the equation as defined in Table 3: Uncertainty Summary, Item 3.6 of Evaluation Criteria.</p>	<p>To demonstrate, the Bidder must provide evidence the criteria is met by providing each of the following</p> <p>1) Test Reports.</p> <p>AND</p> <p>2) Data evidence to support the claim.</p> <p>AND</p> <p>3) Discussion and analyses to explain how the provided</p>	PAGE(S) AND/OR SECTION NUMBER: _____

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			material demonstrates model performance.  AND  4) Fill-up the result of the standard uncertainty calculation in Table 3: Uncertainty Summary, Item 3.6 of Evaluation Criteria.	
<b>2.4</b>	<b>Reference Resistance</b>	The reference resistance of the air temperature sensor must be greater than 5000 $\Omega$ at $\pm 25^{\circ}\text{C}$ .	The Bidder must provide evidence by providing one of the following:  1. Specification Sheet; or 2. User Manual; or 3. Test Reports.	PAGE(S) AND/OR SECTION NUMBER: _____
<b>2.5</b>	<b>Operation Mode</b>	The air temperature sensor must be able to operate in voltage mode configuration using a voltage divider. The output must have a positive slope.	The Bidder must provide evidence by providing one of the following:  1. Specification Sheet; or 2. User Manual; or 3. Test Reports.	PAGE(S) AND/OR SECTION NUMBER: _____
<b>2.6</b>	<b>Power Requirement - Voltage Range</b>	The air temperature sensor must operate without performance deterioration when supplied with any voltage from 1 VDC to 3 VDC.	To demonstrate, the Bidder must provide evidence by providing one of the following:  1. Specification Sheet; or	PAGE(S) AND/OR SECTION NUMBER: _____

		<p>Note: the provision of a power supply is not included in this procurement. The purchaser will provide their own power supply.</p> <p>Note: the phrase "operates" – means that the sensor must continue to operate as per Annex A, Statement of Work. No degradation of performance or loss of function is allowed, as defined in the technical specification published by the manufacturer.</p>	2. User Manual; or 3. Test Reports.	
<b>2.7</b>	<b>Construction</b>	<p>The air temperature sensor must be housed in a 316SS stainless steel tubular probe and have moisture protection encapsulation.</p> <p>Tubular probes must have rolled ends and uniform wall thickness throughout, hermetic tips and a medical-grade polished finish.</p> <p>The measurement element "thermistor" must be located less than 0.75" from the tip of the probe.</p>	<p>To demonstrate, the Bidder must provide evidence by providing one of the following:</p> <ol style="list-style-type: none"> <li>1. Specification Sheet; or</li> <li>2. User Manual; or</li> <li>3. Test Reports.</li> </ol>	PAGE(S) AND/OR SECTION NUMBER: _____
<b>2.8</b>	<b>Dimensions</b>	<p>The length of the air temperature sensor must be equal or more than 2" and equal or less than 4". The diameter of the air temperature sensor must be 0.25".</p>	<p>To demonstrate, the Bidder must provide evidence by providing one of the following:</p> <ol style="list-style-type: none"> <li>1. Specification Sheet; or</li> <li>2. User Manual; or</li> <li>3. Test Reports.</li> </ol>	PAGE(S) AND/OR SECTION NUMBER: _____



<b>2.9</b>	<b>Cable</b>	The air temperature sensor must be terminated to an eight (8) foot to ten (10) foot shielded cable finished with stripped and tinned leads.	To demonstrate, the Bidder must provide evidence by providing one of the following:  1. Specification Sheet; or 2. User Manual; or 3. Test Reports.	PAGE(S) AND/OR SECTION NUMBER: _____
<b>2.10</b>	<b>Response Time</b>	(a) On changing temperature: The time constant, timed at the statistical 63.2% of the step temperature change of the temperature sensor measured in still air must be less than, or equal to, 20 seconds at room temperature (+20°C to +26°C).  (b) On power-up: the time interval between the instant power (at a level specified in requirement item 6 of Table 1: <i>Mandatory Technical Requirements, APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</i> ) is applied to sensor system and the instant when the sensor system outputs the temperature within the total measurement uncertainty specified in requirement item 3 Table 1: <i>Mandatory Technical Requirements, APPENDIX A TO ANNEX A TECHNICAL SPECIFICATIONS</i> , must be less than or equal to 20 seconds.	To demonstrate each of the requirements, the bidder must provide evidence by providing one of the following  For Criteria: a) Air temperature change: 1. Specification Sheet; or 2. User Manual; or 3. Test Reports  For Criteria: b) On power-up: 1. Specification Sheet; or 2. User Manual; or 3. Test Reports	PAGE(S) AND/OR SECTION NUMBER: _____

<b>2.11</b>	<b>Dust and Water Tight Integrity</b>	When fully assembled, the air temperature sensor, its associated modules, cables and cable connectors must resist ingress of dust and water, complying with Ingress Protection (IP) Rating Code of at least IP67 (Standard 60529).	To demonstrate, the bidder must provide written proof of compliance with IP67 (Standard 60529) in the form of a AND 1. Compliance statement 2. Test reports or test results.	PAGE(S) AND/OR SECTION NUMBER: _____
<b>2.12</b>	<b>Storage Temperature</b>	The air temperature sensor must always withstand and perform in a temperature range from -65°C to +70°C without degradation.  Note: The phrase "withstands" means that the payload is not expected to perform its operational function when this withstanding condition exists. The sensor is only expected to survive during the withstanding condition. After the withstanding condition is removed, the sensor must automatically resume its operational function with no loss of data or any operational changes.	To demonstrate, the bidder must provide evidence by providing one of the following:  1. Specification Sheet; or 2. User Manual; or 3. Test Reports.	
<b>2.13</b>	<b>Survivability</b>	a) <b>Temperature:</b> The air temperature sensor must return to operation within specifications after 24 hours exposure (while operating) to temperatures outside of the normal operating range of -50°C to +50°C, down to at least -65°C and up to at least +55°C, without external intervention.	For Items a) and b): To demonstrate, the Bidder must provide evidence by providing one of the following:  1. Specification Sheet; or 2. User Manual; or 3. Test Reports.	PAGE(S) AND/OR SECTION NUMBER: _____

		<p>b) <b>Thermal Shock:</b> The air temperature sensor must return to operation within specifications without external intervention after being exposed to a sudden temperature change from +20°C to -50°C and from +25°C to +50°C. "Sudden" means a temperature change occurring in less than one minute, but lasting at least half hour at the new temperature.</p> <p>c) <b>Vibration:</b> The air temperature sensor must operate within specifications after shipment and transportation in a factory package as loose cargo. The sensor and package must comply with one of the following:</p> <ul style="list-style-type: none"><li>i) AECTP-400 Edition 3 NATO standard on loose cargo, or</li><li>ii) MIL-STD-202G Method 201, or</li><li>iii) IEC or EN-60068-2-6, or</li><li>iv) Equivalent standard</li></ul>	<p>For Item c): The bidder must provide written proof (test results or certificate) of compliance with the selected standard or equivalent in the form of a 1. Compliance statement AND 2. Test reports or test results.</p> <p>A bidder that is proposing an equivalent standard must include information which:</p> <ul style="list-style-type: none"><li>1) designates the name of the substitute standard;</li></ul> <p>AND</p> <ul style="list-style-type: none"><li>2) provides a compliance statement that the substitute standard is fully interchangeable with, or stronger than, the standard specified; and</li></ul> <p>AND</p> <ul style="list-style-type: none"><li>3) provides technical specifications and tests procedures for the substitute standard to prove (b).</li></ul>	
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			Standards offered as equivalent will NOT be considered if: 1) the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute standard;  OR 2) the substitute standard fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.	
2.14	<b>Maintenance</b>	If field maintenance is required, the interval of the scheduled preventive maintenance recommended by the Manufacturer must be two years or longer. The air temperature sensor must not require any intervention for maintaining its normal operation, at intervals shorter than two years. Any recommended field maintenance procedures must be capable of being carried out without removing the sensor from service. Note: Scheduled preventive maintenance, as set out in the Manufacturer's recommended operation procedures, will be undertaken by the Project Authority or designated representative.	To demonstrate, the Bidder must provide evidence by providing one of the following:  1. Specification Sheet; or 2. User Manual; or 3. Discussion point on whether maintenance is two years or longer OR whether maintenance is not required.  Note: a list of maintenance requirements where no items mention or imply intervals less than two years and no items mention or imply	PAGE(S) AND/OR SECTION NUMBER: _____

		Note: "removing the sensor from service" means that the sensor is disconnected, unmounted, and moved to another location for maintenance.	removing the sensor from service would be acceptable proof.	
2.15	<b>Manufacturer</b>	The air temperature sensor must be manufactured at a facility that is registered to ISO 9001:2008 (or later) or a national equivalent quality management system standard. This certification must be maintained throughout the duration of the contract.	<p>To demonstrate, the Bidder must provide a current and valid ISO 9001:2008 (or later) certification from the date of bid closing, in the form of a valid Registration Certificate, or a national equivalent quality management system standard.</p> <p>A bidder that is proposing an equivalent standard must include information which:</p> <p>1) designates the name of the substitute certification;</p> <p>AND</p> <p>2) provides a compliance statement that the substitute certification is fully interchangeable with, or stronger than, the certification specified</p> <p>AND</p> <p>3) provides specifications and literature for the substitute certification</p> <p>Certifications offered as equivalent will not be considered if:</p>	<p>PAGE(S) AND/OR SECTION NUMBER:</p> <p>_____</p>

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			1) the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute certification; OR 2) the substitute certification fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.	
2.16	<b>Calibration certificate (Manufacturer's standard calibration certificate)</b>	<p>a) Each unit must be accompanied by a certificate of calibration, confirming that the sensor performance is within specifications. The certificate must include the data on which the confirmation is based.</p> <p>b) If the instrument has specific coefficients required for the derivation of the temperature reading, the certificate must indicate these coefficients.</p>	The bidder must include in the bid, the procedure for the calibration of the instrument or its components, as undertaken by the manufacturer, along with a sample calibration certificate.	PAGE(S) AND/OR SECTION NUMBER: _____
2.17	<b>ISO/IEC 17025 calibration certificate</b>	<p>As noted in Section 3 of the Statement of Work, Deliverables, a portion of the sensors in each order (100% in the first order, 20% in subsequent orders) must be accompanied by an additional certificate of calibration from a facility accredited to ISO/IEC 17025:2005 (or later) or equivalent standard.</p> <p>This requirement is waived if the manufacturer's standard calibration</p>	If the bidder desires that the manufacturer's calibration certificate be accepted as ISO/IEC 17025 or equivalent, the bidder must supply a copy of the relevant Registration Certificate, valid at the time of the bid.	PAGE(S) AND/OR SECTION NUMBER: _____

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		certificate (Item 2.16 Table 2) meets the ISO requirement.	<p>A bidder that is proposing an equivalent standard must include information which:</p> <p>1) designates the name of the substitute certification; AND</p> <p>2) provides a compliance statement that the substitute certification is fully interchangeable with, or stronger than, the certification specified AND</p> <p>3) provides specifications and literature for the substitute certification</p> <p>Certifications offered as equivalent will not be considered if:</p> <p>1) the bid fails to provide all the information requested to allow the Contracting Authority to fully evaluate the equivalency of each substitute certification; OR</p> <p>2) the substitute certification fails to meet or exceed the mandatory performance criteria specified in the bid solicitation for that item.</p>	
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# APPENDIX 1 TO ANNEX\_A - EVALUATION CRITERIA UNCERTAINTY SUMMARY (TABLE 3)

Table 3: Uncertainty Summary

Item Number	Description	Equation	Definition	Standard Uncertainty over the full temperature range from -50 °C to 50 °C (°C)
3.1	Repeatability over full range (standard uncertainty, k=1)	$\sigma_{\text{repeatability}} = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (T_i - \bar{T})^2}$ $\bar{T} = \frac{1}{n} \sum_{i=1}^n T_i$ <p>For <math>n</math> repeatability measurements of temperature <math>T_i</math></p>	The standard uncertainty due to repeatability is a measure of the agreement of successive temperature measurements carried out under the same measurement conditions. The standard uncertainty must be calculated from the standard deviation of the results of a <b>minimum of 10 successive temperature measurements</b> under the same environmental temperature. The repeatability must be valid over the full range of temperatures from -50 to +50 °C for the measurement uncertainty.	
3.2	Nonlinearity, rmse (standard uncertainty, k=1)	$\sigma_{\text{nonlinearity}} = \sqrt{\frac{1}{n} \sum_{i=1}^n (T_i - T_{\text{ref}})^2}$ <p>For <math>n</math> nonlinearity measurements over the full-scale temperature range</p>	The standard uncertainty due to nonlinearity is a measure of the agreement between the measured probe temperature (using the standard adjustment equation and coefficients and including resistor error) and the reference temperature over the full scale temperature range from -50°C to +50 °C. The nonlinearity must be calculated by the <b>root mean square error</b> between the probe and reference temperature in <b>1 °C increments over the full scale</b>	



			temperature range from -50 to +50 °C.	
3.3	<b>Interchangeability tolerance (accuracy)</b> (standard uncertainty, k = 1)	$\sigma_{\text{interchangeability}} = \sqrt{\frac{1}{n-1} \sum_{i=1}^n (T_i - \bar{T})^2}$ <p>For <i>n</i> temperature probes covering the range of manufacturing variations (different manufacturing lots etc.) applicable over the full-scale temperature range</p>	<p>The standard uncertainty due to interchangeability is a measure of the probe to probe variability due to manufacturing variations between lots and batches representative of the variations expected to occur during the contract from the first sensor produced to the last sensor produced. A <b>minimum of 20 probes</b> chosen randomly from different production runs should be used to assess the variation between probes. The interchangeability must be assessed at -50 °C, 0 °C and 50 °C temperatures to determine the maximum interchangeability value.</p>	
3.4	<b>Hysteresis</b> (standard uncertainty, k=1)	$\sigma_{\text{hysteresis}} = \frac{dT_{\text{Max\_Hysteresis}}}{\sqrt{12}}$ <p>For maximum temperature difference between increasing and decreasing probe measurements</p>	<p>The standard uncertainty due to hysteresis is a measure of the difference between the indication of the temperature probe when successive temperatures are increasing or decreasing. The hysteresis must be calculated from the <b>maximum temperature difference</b> over the full scale temperature range for one or more temperature cycles from 50 to -50 °C temperature and back up to 50°C. The standard uncertainty due to hysteresis is equal to the maximum temperature difference between increasing and decreasing probe measurements over the temperature range divided by the square root of twelve.</p>	
3.5	<b>System long-term stability</b>	$\sigma_{\text{stability}} = T_{\text{cal\_20C\_1year}} - T_{\text{cal\_20C\_start}}$	<p>The standard uncertainty due to system long-term stability is a measure</p>	

	(ΔT/one year)		of the temperature probe ability to maintain its temperature characteristics due to the aging process at room temperature. At room temperature (20 to 25 °C), the stability of the air temperature sensor (deviation from existing calibration) must be less than or equal to ±0.02°C per year.	
3.6	<b>Self-heating error</b>	$\sigma_{\text{self-heat}} = \max \left( \frac{P_{\text{probe}}}{D_{\text{stillair}}} \right)$ <p>Over the full-scale temperature range where <math>P</math> is the power though the temperature probe and <math>D_{\text{stillair}}</math> is the dissipation constant for the temperature probe in still air</p>	<p>The standard uncertainty due to self-heating error is a measure of the temperature increase of the temperature probe due to the ratio of power and dissipation over the full temperature range from -50°C to +50°C.</p> <p>The maximum self-heat error due to power dissipation of the air temperature sensor must be less than 0.02°C over the full range from -50 to +50 °C.</p>	
3.7	<b>Combined standard uncertainty (RSS, k=1)</b>	$\sigma_c = \sqrt{\sigma_{\text{repeatability}}^2 + \sigma_{\text{nonlinearity}}^2 + \sigma_{\text{interchangeability}}^2 + \sigma_{\text{hysteresis}}^2}$	<p>The combined standard uncertainty is the square root of the sum of the square of the individual standard uncertainty values.</p>	
3.8	<b>Expanded uncertainty (RSS, k=2)</b>	$\sigma_{k=2} = 2\sigma_c$	<p>The expanded uncertainty for a coverage factor k=2</p>	

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## ANNEX F

### ADDITIONAL CERTIFICATIONS

#### Board of Directors

In accordance with Section 1, Integrity Provisions – Bidder, Bidders are required to provide a list of their Board of Directors before contract award. Bidders are requested to provide this information in their bid.

Director Name - \_\_\_\_\_

Director Name - \_\_\_\_\_

Director Name - \_\_\_\_\_

Director Name - \_\_\_\_\_

Director Name - \_\_\_\_\_

Director Name - \_\_\_\_\_

Director Name - \_\_\_\_\_

Director Name - \_\_\_\_\_

#### Procurement Business Number (PBN)

In accordance with Section 2, Procurement Business Number, of the Standard Instructions, Bidders are required to have a Procurement Business Number (PBN) before Standing Offer award.

Procurement Business Number - \_\_\_\_\_

Suppliers may register for a PBN online at Supplier Registration Information. For non-Internet registration, suppliers may contact the InfoLine at 1-800-811-1148 to obtain the telephone number of the nearest Supplier Registration Age

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TOR-9-42017

Buyer ID - Id de l'acheteur  
tor015  
CCC No./N° CCC - FMS No./N° VME

## ANNEX "G"

### CERTIFICATION FORMS

<b>Form 1</b> <b>OEM Certification Form</b>	
This confirms that the original equipment manufacturer (OEM) identified below has authorized the Bidder named below to provide and maintain its products under any contract resulting from the bid solicitation identified below.	
<b>Name of OEM</b>	_____
<b>Signature of authorized signatory of OEM</b>	_____
<b>Print Name of authorized signatory of OEM</b>	_____
<b>Print Title of authorized signatory of OEM</b>	_____
<b>Address for authorized signatory of OEM</b>	_____
<b>Telephone no. for authorized signatory of OEM</b>	_____
<b>Fax no. for authorized signatory of OEM</b>	_____
<b>Date signed</b>	_____
<b>Solicitation Number</b>	_____
<b>Name of Bidder</b>	_____

<b>Form 2</b> <b>Software Publisher Certification Form</b> (to be used where the Bidder itself is the Software Publisher)
The Bidder certifies that it is the software publisher of all the following software products and that it has all the rights necessary to license them (and any non-proprietary sub-components incorporated into the software) on a royalty-free basis to Canada pursuant to the terms set out in the resulting contract:
_____
_____
_____
_____
<i>[bidders should add or remove lines as needed]</i>

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**Form 3**  
**Software Publisher Authorization Form**  
(to be used where the Bidder is not the Software Publisher)

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

This authorization applies to the following software products:

\_\_\_\_\_

\_\_\_\_\_

*[bidders should add or remove lines as needed]*

Name of Software Publisher (SP) \_\_\_\_\_

Signature of authorized signatory of SP \_\_\_\_\_

Print Name of authorized signatory of SP \_\_\_\_\_

Print Title of authorized signatory of SP \_\_\_\_\_

Address for authorized signatory of SP \_\_\_\_\_

Telephone no. for authorized signatory of SP \_\_\_\_\_

Fax no. for authorized signatory of SP \_\_\_\_\_

Date signed \_\_\_\_\_

Solicitation Number \_\_\_\_\_

Name of Bidder \_\_\_\_\_