



RETURN BIDS TO:

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Bid Receiving - PWGSC / Réception des soumissions -
TPSGC

11 Laurier St./ 11 rue, Laurier

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Gatineau, Québec K1A 0S5

Bid Fax: (819) 997-9776

**SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise
indicated, all other terms and conditions of the Solicitation
remain the same.

Ce document est par la présente révisé; sauf indication contraire,
les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Scientific, Medical and Photographic Division /
Division de l'équipement scientifique, des produits
photographiques et pharmaceutiques
L'Esplanade Laurier
140 O'Connor Street,
East Tower, 7th Floor
Ottawa
Ontario
K1A 0S5

Title - Sujet PRIMARY THERMOMETRY BRIDGE	
Solicitation No. - N° de l'invitation 31184-216133/A	Amendment No. - N° modif. 004
Client Reference No. - N° de référence du client 31184-216133	Date 2021-07-08
GETS Reference No. - N° de référence de SEAG PW-\$\$PV-904-80127	
File No. - N° de dossier pv904.31184-216133	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Daylight Saving Time EDT on - le 2021-07-14 Heure Avancée de l'Est HAE	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Frigon, Francine	Buyer Id - Id de l'acheteur pv904
Telephone No. - N° de téléphone (819) 743-4279 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: NATIONAL RESEARCH COUNCIL CANADA BLDG. M36, 1200 MONTREAL ROAD OTTAWA K1A 0R6	

Instructions: See Herein

Instructions: Voir aux présentes

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

Amendment 004 has been raised to answer questions received from industry and to make changes to the Request for Proposal as follows:

A. ANSWERS TO QUESTIONS RECEIVED FROM INDUSTRY

Questions/Answers

Q2. What is the frequency required?

A2. The frequency must be 60Hz. Please see modifications to the RFP, Annex A.

Q3. What is the Mains Voltage requirement?

A3. The mains voltage must be 110/120V. Please see modifications to the RFP, Annex A.

Q4. What is the Standby current requirement: Pre Selected 1mA, or 4 selectable for the multiplexor?

A4. The standby current could be fixed or selectable. Please see modifications to the RFP, Annex A.

Q5. Is the requirement for 2 bridges with 1 multiplexor? Or one multiplexor for each bridge?

A5. The requirement is for 2 bridges with 1 multiplexor as specified in the RFP at Annex A.

Q6. Does the NRC require assembly as a system build (Rack mount) or individual desktop versions.

A6. The requirement is for Individual desktop versions

Q7. Are the Resistors to come calibrated or will calibration be done in house at NRC?

A7. The NRC will calibrate the resistors.

B. CHANGES TO THE REQUEST FOR REQUEST FOR PROPOSAL

At Annex A – Part 1 – REQUIREMENT

Delete: Part 1 only in its entirety.

Replace with the following:

ANNEX "A"

Part 1 – REQUIREMENT

The National Research Council has a requirement for the supply of Thermometry Bridges, which must meet all of the mandatory technical requirements as specified below. The requirement must include all of the following:

1. The contractor must provide all of the following with specifications described herein:

1. Two Thermometry Bridges;
2. One Automated 4 Terminal Matrix Scanner with at least 10 channels;
3. One 25 Ohm AC/DC reference standard resistor;
4. One 100 Ohm AC/DC reference standard resistor;
5. Manuals in English (one for each bridge, one for the switch);
6. One Year Warranty including Maintenance and Support Services; and
7. On-site or virtual training (in Ottawa, two hours total).

The requirement must work and operate at all times in accordance with the following mandatory technical requirements:

2. Mandatory Technical Requirements

Each Thermometry Bridge must:

1. Provide metrology-level resistance measurement capabilities of platinum resistance thermometers meeting all of the following technical requirements:
 - a. The Thermometry Bridge accuracy must be 20 parts-per-billion (PPB) or lower;
 - b. The Thermometry Bridge linearity must be 20 parts-per-billion (PPB) or lower;
 - c. The Thermometry Bridge resolution must be 1 parts-per-billion (PPB) or lower;
 - d. The Thermometry Bridge must provide test currents from 10 micro-amps to 10 milli-amps;
 - e. The Thermometry Bridge must provide a measurement (in fast mode) at least every 3 seconds;
 - f. The Thermometry Bridge must provide a minimum of two input channels; and
 - g. The Thermometry Bridge must provide must have IEEE-488 communications capabilities.
 - h. The Thermometry must be powered by 60 Hz, 120 V power
 - i. The Thermometry must have stand-by current option (fixed or selectable)
2. The automated 4 terminal matrix scanner must have at least 10 channels, must work with the Thermometry bridges, and, if it requires power, be powered by 60 Hz, 120 V power
3. The 25 Ohm AC/DC reference standard resistor must meet all of the following technical requirements:
 - a. must have a resistance tolerance below 3 parts-per-million; and
 - b. must have a temperature coefficient below 0.3 parts-per-million per degrees Celsius.

4. The 100 Ohm AC/DC reference standard resistor must meet all of the following technical requirements:

- a. must have a resistance tolerance below 3 parts-per-million; and
- b. must have a temperature coefficient below 0.3 parts-per-million per degrees Celsius.

3. Manuals

The Contractor must deliver 3 complete sets of documentation one for each bridge and one for the switch in English with the deliverables. The documentation must include all publications pertaining to technical and operational specifications, installation requirements and operating instructions.

4. Training

The Contractor must provide virtual or on-site training at the discretion of the National Research Council in English. Training must be provided for a group of up to 2 persons and must include operation and manipulation of the equipment. The training should also include but not be limited to product functionality, product features and limitations.

The Technical Authority will notify the Contractor in writing, of the training format that is chosen by the National Research Council. After being notified by the Technical Authority, the Contractor must contact the Technical Authority within seven working days of being notified to schedule the training. The exact date, time and location of the training may be mutually agreed upon between the Contractor and the Technical Authority. The Contractor should complete the Training as per the delivery date specified at Article 6.4.2 of the Resulting Contract Clauses.

Location

National Research Council
1200 Montreal Road, Building M36
Ottawa Ontario K0A 1M0

5. Warranty including Maintenance and Support Services

The Contractor must provide warranty in accordance with the Standard Acquisition Clauses and Conditions, Supplemental General Conditions 4001 - Hardware Purchase, Lease and Maintenance dated 2015-04-01 available on BuyandSell at <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual/4/4001/6>

ALL OTHER TERMS AND CONDITIONS OF THE REQUEST FOR PROPOSAL REMAINS THE SAME.