



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

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

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

Title - Sujet Long Haul Fiber install and testing	
Solicitation No. - N° de l'invitation 31034-195466/A	Amendment No. - N° modif. 001
Client Reference No. - N° de référence du client 31034-195466	Date 2020-01-30
GETS Reference No. - N° de référence de SEAG PW-\$VIC-223-7900	
File No. - N° de dossier VIC-9-42151 (223)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2020-02-12	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Locke, Kelsey	Buyer Id - Id de l'acheteur vic223
Telephone No. - N° de téléphone (250) 507-2482 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

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 001 IS RAISED TO AMEND THE SOLICITATION AND ADDRESS BIDDER QUESTIONS AS FOLLOWS:

SOLICITATION CLOSING DATE IS EXTENDED TO FEBRUARY 12, 2020 AT 2:00 PM, PST.

PART 1 – GENERAL INFORMATION

INSERT:

1.4 Canadian Content

The requirement is subject to a preference for Canadian goods and services.

PART 4 – EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

INSERT:

(c) The evaluation team will determine first if there are **two** or more bids with a valid Canadian Content certification. In that event, the evaluation process will be limited to the bids with the certification; otherwise, all bids will be evaluated. If some of the bids with a valid certification are declared non-responsive, or are withdrawn, and less than **two** responsive bids with a valid certification remain, the evaluation will continue among those bids with a valid certification. If all bids with a valid certification are subsequently declared non-responsive, or are withdrawn, then all the other bids received will be evaluated.

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

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

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

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

5.1 Certifications Required with the Bid

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

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

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

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real property agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

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

5.2.3 Works Compensation Certification – Letter of Good Standing

The Bidder must have an account in good standing with the applicable provincial or territorial Workers' Compensation Board.

The Bidder must provide, within three (3) days following a request from the Contracting Authority, a certificate or letter from the applicable Workers' Compensation Board confirming the Bidder's good standing account. Failure to comply with the request may result in the bid being declared non-responsive.

5.2.4 Canadian Content Certification

Subject to the evaluation procedures contained in the bid solicitation, bidders acknowledge that only bids with a certification that the good(s) offered are Canadian goods, as defined in clause A3050T, may be considered.

Failure to provide this certification completed with the bid will result in the good(s) offered being treated as non-Canadian goods.

The Bidder certifies that:

() the service offered is a Canadian service as defined in paragraph 2 of clause A3050T.

5.2.4.1.SACC Manual clause A3050T (2018-12-06) Canadian Content Definition

PART 6 – RESULTING CONTRACT CLAUSES

6.1.3 SACC Manual Clauses

INSERT:

A3060C (2008-05-12) Canadian Content Certification

6.4.2 Delivery Date

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INSERT: All deliverables, including installation and testing must be completed on or before May 31, 2020.

6.6 Payment

DELETE:

6.6.3 Multiple Payments SACC Manual Clause H1001C (2008-05-12), Multiple Payments

INSERT:

6.6.3 Single Payment SACC Manual Clause H1000C (2008-05-12), Single Payment

ANNEX "A" - STATEMENT OF WORK / MANDATORY TECHNICAL EVALUATION CRITERIA

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INSERT:

Overview

The vendor must supply and install a total Length=2.3 km (minimum) to Length=2.5 km (maximum), 288-core, single-mode G652.D, monolithic (i.e. single piece) All Dielectric Self-Supporting (ADSS) aerial fiber-optic cable at the NRC-Penticton site. **The cable diameter must be maximum 1.0"**. This installation is for research into telescope timing and communications.

The aerial portion, comprising up to 2.3 km of the cable, must be installed outdoors on the existing DRAO 22 MHz array pole infrastructure as indicated in Figure 1a and Figure 1b. The non-aerial portion, up to 350 m of the (near-end of the) cable, must be routed outdoors from the pole array egress point into the NRC-Penticton Main Building digital laboratory, where it terminates in a 36 x duplex SC/APC break out panel. **The routing path from pole egress to breakout panel in digital laboratory is outlined in Appendix 1 (see figure 1a).**

144 fusion-splice loopbacks at the far (outdoor) end, and a combination of 72 near-end loopback fusion-splices and 144 fusion splices to 72 x duplex SC/APC fiber connector bulkheads in a vendor-supplied and installed breakout panel located in the digital laboratory yield a net result of 36 x duplex-SC/APC-to-36 x duplex-SC/APC duplex single-mode fiber-optic "cables". Each of 36 such duplex cables is of total length = 4 x Length (i.e. 9.2 km to 10.0 km), with all such cables routing in the monolithic ADSS cable jacket, all accessible in the main digital laboratory SC bulkhead breakout panel. See Figure 2 schematic.

Supplemental Information:

- Work will be performed during standard work hours, approximately 8:00 am. – 4:00 pm., Monday to Friday.
- Security: Contractor and crew will be escorted by NRC personnel when working in secure areas.
- NRC will provide safety orientation on site prior to contractor's commencement of the work.

Mandatory Requirements

PART 1 of 2: COMPLIANCE MATRIX

Bidders **MUST** indicate if they **MEET (YES)** or **DO NOT MEET (NO)** each item in the Compliance Matrix.

Item No.	Description	Yes/No
1.1	The vendor must supply and install a monolithic (i.e. single piece) 288-core, single-mode G652.D, outdoor ADSS (All Dielectric Self-Supporting) "loose-tube" aerial fiber cable (Length=2.3 km (min) to Length=2.5 km (max), diameter = 1.0" (max)) in the routing region of the of the NRC DRAO 22 MHz array poles. The permissible routing region is marked on Figure 1a and 1b, although the entire region does not have to be used. The poles are on a 6.8 m (+/-0.2 m) x 6.8 m (+/-0.2 m) grid, and an aerial span of 50 m +/-10 m and tension typical of commercial aerial fiber must be used, ensuring that across the span, no undue cable mechanical stress against intervening poles (i.e. "slapping against the poles in the wind") occurs up to a wind speed of 20 km/hr. It is acceptable if, to avoid unusable poles or to move to the next row(s), some spans are outside this range. Diagonal spans are acceptable.	
1.2	The 22 MHz array treated wooden poles are aging and the vendor must supply any necessary supporting pole-to-ground guy wires to obtain tension to support the poles. Poles are typically 8"-10" diameter. See Figures 3-10.	
1.3	Ground ingress for additional guy wire support must be limited to "non-digging" anchor-driven. Duckbill anchors are required; screw anchors are not permissible.	
1.4	The ADSS cable must be installed such that a minimum clearance above ground level of 3 m is maintained along all spans.	
1.5	The vendor must be responsible for cutting and removing any existing 22 MHz pole array wires, up to the nearest pole attachment point, as needed for their equipment access and aerial cable hanging. There are wires running East-West between poles that are as low as 2.5 m but typically 5 m above ground level, and wires above those running North-South between poles that are 6.5 m above ground level. See Figure 3a.	
1.6	The cable must be loopback fusion-splice terminated in a vendor-supplied and installed all-weather termination box at the far (outdoor) end, mounted appropriately on an existing pole. There 144 of these far-end fusion splices (see Figure 2).	
1.7	The vendor must provide cable protections/grade/sleeving, if any, to ensure that all building and human safety and fire codes are met for the portion of the cable routing through NRC buildings.	

1.8	<p>The routing from the pole-array egress points “Ape” to the termination breakout panel in the digital laboratory is defined in Appendix 1 (also, see Figure 1a and 1b).</p> <p>It is acceptable, if the vendor wishes to break the ADSS cable into interior and exterior sections, to locate a fusion splicing box near the 1959 Building basement ingress/egress point, of maximum dimensions H” x W” x D”, to fuse fibers from the 2 sections together, as long as the total end-to-end attenuation specified in 1.12 is not exceeded. This box must be appropriately fastened by the vendor to a surface in the vicinity, other than the adjacent screened room wall. There is a 20”w X 20”h x 5” deep area on the West wall of room 155 “Lower screened room” for a splice box and a 24” X 24” X 6”d area on the North wall of room 155 where a splice box can be located.</p>	
1.9	<p>In the NRC Main Building digital laboratory, the vendor must supply and install a wall-mounted passive breakout panel with 36 x 2, SC/APC duplex female bulkhead connector terminations as well as near-end loopback fusion-splicing. The net result is 2 sets of 36 SC/APC duplex female connectors, forming 36 SC/APC-to-SC/APC duplex fiber “cables”, each of length 4 x L (see Figure 2 schematic).</p>	
1.10	<p>The vendor must ensure that the specified minimum bend radius of the ADSS cable is not violated anywhere along its length.</p>	
1.11	<p>The vendor must ensure that the specified maximum tension of the ADSS cable is not violated anywhere along its length.</p>	
1.12	<p>Fusion splices must have an average maximum attenuation of 0.05 dB with a maximum standard deviation of 0.03 dB at 1550 nm. In any case, the fusion-slicing loss of any SC connector-to-fiber-to-SC connector end-to-end connection, consisting of 5 fusion splices in series, must be less than 0.5 dB at 1550 nm.</p>	
1.13	<p>The vendor must label, or provide a label/plan drawing for the SC/APC bulkhead connectors for the breakout panel, i.e. so the NRC user knows which SC/APC duplex connector pairs form a duplex-fiber “cable” (see Figure 2).</p>	
1.14	<p>After installation the vendor must perform bi-directional OTDR and optical attenuation tests accessed at the SC breakout panel in the main digital laboratory, to verify the installation, and such measurements shall verify that acceptable values for fusion-splicing, SC/APC fiber-optic connections and the fiber lengths involved have been established. The vendor must repair any faults found during this testing at no additional cost to NRC.</p>	
1.15	<p>The vendor must provide all personnel, installation and handling equipment, and any necessary support of such for the entire duration of installation and testing until the work is complete.</p>	
1.16	<p>Since the NRC DRAO site is a radio quiet site, whilst on site the vendor must power down and not use any mobile/wireless communications devices of any kind unless required for human safety. In any case, the vendor shall inform the NRC DRAO site RFI manager if and when any mobile/wireless communications device usage is required.</p>	

1.17	The vendor must ensure that their equipment has been cleaned of invasive species prior to coming on site. To ensure compliance, all vendor equipment and vehicles will be inspected by NRC personnel on arrival at the NRC site.	
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Appendix 1: Pole egress to breakout panel in digital laboratory routing options

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The vendor shall route a total of ~350 m of near-end ADSS cable from the pole array egress point “Ape” to the termination point (SC breakout panel) in the digital laboratory, with nominal routing (starting at the pole array egress point) as follows (see Figures 1a and 1c for “A” outdoor routing):

1. ~250 m through ~2.5” ID underground conduit to the 1959 Building basement access point. NRC will provide a pull cord through the length of this conduit for the vendor to use.
0. Another ~100 m through the 1959 and Main Building existing cable tray and into the fiber breakout panel termination point in the Main Building digital laboratory. Some of this routing is in the space above tile ceilings in the Main Building, but tiles can be removed for access.

Appendix 2: Figures

DELETE: Figure 1a: map of key aspects of the NRC-Penticton site marked up to show Option A (blue) and Option B (red) outdoor ADSS cable routing from the 22 MHz array approximate pole-egress points (“Ape” and “Bpe”) to the NRC Main Building and 1959 Building. The “Aerial fiber routing region of 22 MHz pole array” is as indicated—all aerial fiber routing takes place in all or a portion of this region, as the vendor sees fit. For scale, Option A and B routings are ~250-300 m.

INSERT: map of key aspects of the NRC-Penticton site marked up to show Option A (blue) outdoor ADSS cable routing from the 22 MHz array approximate pole-egress points (“Ape”) to the NRC Main Building and 1959 Building. The “Aerial fiber routing region of 22 MHz pole array” is as indicated—all aerial fiber routing takes place in all or a portion of this region, as the vendor sees fit. For scale, Option A routing is ~250-300 m.

Solicitation No. - N° de l'invitation
31034-195466/A
Client Ref. No. - N° de réf. du client
31034-195466

Amd. No. - N° de la modif.
001
File No. - N° du dossier
VIC-9-42151

Buyer ID - Id de l'acheteur
VIC 223
CCC No./N° CCC - FMS No./N° VME

ANNEX "B" – BASIS OF PAYMENT

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Bidder must complete the Basis of Payment in accordance with the following:

1. PRICING must be firm all-inclusive pricing. Prices MUST include ALL costs (transportation, shipping, freight and offloading, labour, parts, and miscellaneous charges) associated with providing the Goods in accordance with the Requirement at Annex A.
2. GST, if applicable, is to be shown as a separate item on the resulting invoice.
3. Bidder must provide prices as per the unit of issue requested. Failure to do so will render the bid non-responsive without further consideration.

All deliverables, including installation and testing must be completed by May 31, 2020.

FIRM REQUIREMENT				
Item	Description	Quantity	Unit of Issue	Unit Price
1	Supply and delivery of all required materials for the installation to the NRC site. This includes, but is not limited to: ADSS fiber reel, breakout panel, SC/AP bulkheads with fiber pigtailed to which fusion to the ADSS fiber occurs, pole hardware (guy wires, ground anchors, pole clamps, tension clamps), and any other materials that forms the vendor's materials list.	1	LOT	\$ _____
2	Installation and Testing as per Annex "A".	1	LOT	\$ _____
TOTAL EVALUATED PRICE (APPLICABLE TAXES EXCLUDED)				\$ _____

Delivery Address:

**National Research Council Canada
717 White Lake Road
Kaleden, BC V0R 1H0
Canada**

QUESTIONS AND ANSWERS

Q1: We propose having the outdoor splice case (FOSC) routed and racked within the existing SB/SV ("APE"). Is there existing room for this activity or should we aim to rack and install on a pole as per original design?

A1: *The outdoor splice case cannot be routed and racked within the existing SB/SV ("APE"). Bidders must rack and install on a pole as per original design.*

Q2: We will be proposing (within our installation plan) that a 288F Transition Cabinet (dimensions 20" wide and 18" deep) be installed at the point of entry into the 1959 Building. We intend to transition from the outside 288F ADSS cable to an indoor IL Plenum 288F cable whilst maintaining the full integrity of the outlined testing parameters within the RFP. Please confirm if these dimensions will work for this sized cabinet in the space provided.

A2: *Please refer to amended specification 1.8.*

Q3: NRC mentioned that all materials are to be pre-delivered to the site and stored at your facility. Due to the freight / shipping costs associated, does NRC see any issue with the vendor transporting all materials to site upon our approved build start date? This would reduce costs, carbon footprint and increase efficiencies with regards to the logistics of handling said materials.

A3: *Please refer to amended delivery date. All deliverables, including installation and testing must be completed on or before May 31, 2020.*

ALL OTHER TERMS AND CONDITIONS REMAIN UNCHANGED.