



**RETURN BIDS TO:**

**RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des soumissions  
- TPSGC**

**11 Laurier St./11, rue Laurier**

**Place du Portage, Phase III**

**Core 0B2 / Noyau 0B2**

**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**

Special Projects/Projets Spéciaux

11 Laurier St./11, rue Laurier

Place du Portage/, Phase III

Floor 10C1/Étage 10C1

Gatineau

Québec

K1A 0S5

|  |   |
|--|---|
| <b>Title - Sujet</b><br>Spectrum Monitoring Evolution initi  |   |
| <b>Solicitation No. - N° de l'invitation</b><br>UT255-153306/C   | <b>Amendment No. - N° modif.</b><br>002                             |
| <b>Client Reference No. - N° de référence du client</b><br>UT255-153306  | <b>Date</b><br>2017-02-16   |
| <b>GETS Reference No. - N° de référence de SEAG</b><br>PW-\$\$ZL-107-30694   |   |
| <b>File No. - N° de dossier</b><br>107zl.UT255-153306  | <b>CCC No./N° CCC - FMS No./N° VME</b>                              |
| <b>Solicitation Closes - L'invitation prend fin<br/>at - à 02:00 PM<br/>on - le 2017-03-31</b>   | <b>Time Zone<br/>Fuseau horaire</b><br>Eastern Standard Time<br>EST |
| <b>F.O.B. - F.A.B.</b>   |   |
| <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/> |   |
| <b>Address Enquiries to: - Adresser toutes questions à:</b><br>Campbell, Jeff  | <b>Buyer Id - Id de l'acheteur</b><br>107zl                         |
| <b>Telephone No. - N° de téléphone</b><br>(873) 469-3956 ( )   | <b>FAX No. - N° de FAX</b><br>(819) 956-9235                        |
| <b>Destination - of Goods, Services, and Construction:<br/>Destination - des biens, services et construction:</b>                      |   |

**Instructions: See Herein**

**Instructions: Voir aux présentes**

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

N° de l'invitation - Solicitation No.

N° de la modif - Amd. No.

Id de l'acheteur - Buyer ID

UT255-153306/C

002

107zl

N° de réf. du client - Client Ref. No.

File No. - N° du dossier

N° CCC / CCC No./ N° VME - FMS

UT255-153306/C

107zl. UT255-153306/C

The purpose of this amendment is to:

1. Extend the closing date.
2. Address questions posed following the Vendors Conference.
3. Provide a link to the recording of the Vendors Conference.

1. On the cover page of the Solicitation, extend the solicitation closing date to March 31, 2017:

Delete:

Solicitation Closes - L'invitation prend fin

**at – à 02:00 PM**  
**on – le 2017-02-28**

Insert:

Solicitation Closes - L'invitation prend fin

**at – à 02:00 PM**  
**on – le 2017-03-31**

2. Vendors' Conference: Summary of Questions and Answers

|   | Question  | Answer   |
|---|---|--|
| 1 | How does the government envisage that spectrum will be managed?   | ISED is moving away from owning and managing technology. At this point, we are investigating a variety of alternatives and are sympathetic to the idea to having as much as possible managed by a third party.                       |
| 2 | What will happen to the existing infrastructure? Will it be made available to whoever is managing spectrum?   | In the past decades, ISED has invested significantly in its infrastructure and would like to see as much as possible to be reused. A comprehensive list of all existing infrastructure will be provided in the eventual RFP.         |
| 3 | What formula will be applied to performance measurement?  | This will depend on hosting. ISED would appreciate any useful suggestions.   |
| 4 | Would the sensors be expected to send all of their data to the hub in the cloud or would they be expected to perform some processing and then send the results? | ISED expects the sensors to have some processing power and storage to consolidate the collected spectrum information to minimize the backhaul costs to the cloud. We would welcome any suggestions on what approaches would be best. |

N° de l'invitation - Solicitation No.

N° de la modif - Amd. No.

Id de l'acheteur - Buyer ID

UT255-153306/C

002

107zl

N° de réf. du client - Client Ref. No.

File No. - N° du dossier

N° CCC / CCC No./ N° VME - FMS

UT255-153306/C

107zl. UT255-153306/C

|   |   |   |
|---|---|---|
| 5 | What security requirements would apply to the solution?   | ISED is not entertaining the idea to publish all collected information as some pertain to national security or policing and others may be related to privacy. In other cases, we anticipate the collected information may be of commercially sensitive nature. We would appreciate any insights that you may have. In the RFP, the security requirements and considerations will be clear.  |
| 6 | What is the balance between real-time monitoring and monitoring in response to a perceived problem? Is one approach expected?   | ISED's primary mandate is to make spectrum available. Acknowledging that multiple factors should be taken into considerations such as spectrum congestion, population density, network traffic and others, ISED may lean towards many approaches. The operational model is in discussion and will evolve with time.   |
| 7 | Is there a preference to include carrier spectrum in the solution? Would we be looking for unused spectrum on a carrier's network?  | ISED has an interest to monitor at higher frequencies which would include commercial mobile bands. As a spectrum regulator, we want to maximize the spectrum usage and part of this assessment is to better understand what spectrum is underutilized.  |
| 8 | Will carriers be involved in defining the solution?   | ISED expects carriers to be part of the solution to some degree. However, we do not anticipate them to participate in the design and we would not prevent them to apply to the eventual RFP.  |
| 9 | Are there policy changes being contemplated to accompany the solution? For example, is there an option for carriers to resell unused spectrum to each other (e.g. at peak times)? | ISED is looking for innovative solutions. For example, it may be possible that carriers sell each other blocks of their available spectrum to cover demand at peak times. The envisioned predictive analytics would be capable to indicate when there is a spectrum need. A parallel could be drawn to how electricity grid is managed. We are open to viable suggestions that could be implemented in the next five years. We aim to rely on an evidence-based solution. |

N° de l'invitation - Solicitation No.

N° de la modif - Amd. No.

Id de l'acheteur - Buyer ID

UT255-153306/C

002

107zl

N° de réf. du client - Client Ref. No.

File No. - N° du dossier

N° CCC / CCC No./ N° VME - FMS

UT255-153306/C

107zl. UT255-153306/C

|    |  |  |
|----|--|--|
| 10 | Will the same exciting vision be applied to the procurement process?   | ISED understands the complexity of our vision and eventual implementation challenges. We will look into applying an innovative mechanism to obtain the right solution. . All components of the current process, including procurement, are liable to innovative improvement. |
| 11 | What is the timing for achieving the project objectives?   | ISED plans to have a pilot within three years and expand to select sites within five years. Given a project of this magnitude, we expect delays.   |
| 12 | How much data is expected to be retained for historical analysis?  | ISED has not determined what type of data and duration that would be required for historical analyses. Any insights on cloud hosting costs would be welcome.   |
| 13 | How much collaboration is the government expecting from members of industry?   | ISED is of the view that a consortium of firms would be able to deliver its full vision. The specific nature of collaboration depends on the partners that would be involved and is up for discussion.   |
| 14 | Will the names and affiliations of the participants at this conference be published?   | Yes, please see below.   |
| 15 | Is CANARIE expected to be the backbone of this solution?   | No   |
| 16 | What is the role of Shared Services Canada (SSC) in this project? Is it expected to host the solution?                                 | The role of Shared Services Canada (SSC) has not been clearly specified but will not necessarily host the solution. However, should the solution be hosted externally, some Government of Canada's standards , as defined by SSC, will apply.                                |
| 17 | Will the project consider the possibility that there are two different skill sets involved in the solution (deployment and analytics)? | ISED recognizes there is a variety of required expertise (i.e hardware, cloud hosting, analytics specific to spectrum) to deliver our vision. We are aware that consulting early and widely will be beneficial to better understand the products in the marketplace.         |

N° de l'invitation - Solicitation No.

N° de la modif - Amd. No.

Id de l'acheteur - Buyer ID

UT255-153306/C

002

107zl

N° de réf. du client - Client Ref. No.

File No. - N° du dossier

N° CCC / CCC No./ N° VME - FMS

UT255-153306/C

107zl. UT255-153306/C

|    |   |   |
|----|---|---|
| 18 | Have the project authorities done an order-of-magnitude costing analysis of the potential solution?   | <p>ISED has been looking at a variety of factors and inputs. As the Communications Research Centre (CRC) platform is generic and scalable, we are interested of carrying those features into other domains using different types of sensors. That might have an impact on ultimate costs.</p> <p>The early estimate would be in tens of millions.</p> |
| 19 | What is the budget expected to cover?   | The budget is for the initial implementation of the solution.   |
| 20 | What is the project timeline?   | ISED has not yet determined the project length. However, we would expect it to be approximately five years.   |
| 21 | What model of private-sector participation does the government have in mind?  | ISED is open to various suggestions and innovative approaches.  |
| 22 | The RFI appears to only ask for answers to the 4 questions (in addition to the Corp Info Table). Is this all you are expecting for an RFI response, and if so, do you have a template for specific information you would like to see offered in each response?  | ISED does not require a template.   |
| 23 | This RFI claims to be an evolution of the original RFI in July 2015 for Spectrum Monitoring Systems, but it is not clear what happened to the information provided then. Should any previous information be refreshed and resubmitted along with the new/additional information requested in this RFI, or can ISED confirm that the previous submissions are still on file (and under consideration) and do not need to be duplicated here? In other words, is ISED requesting only new information be provided (since the previous RFI), or should these new offers to be stand-alone and complete so that they supersede in totality anything previously submitted? | <p>ISED does not require a refresh of previously submitted responses to the original RFI.</p> <p>ISED's vision has evolved and requires responses to reflect your firm's approach to be capable to deliver the new vision as expressed during the vendor conference.</p>  |

N° de l'invitation - Solicitation No.

N° de la modif - Amd. No.

Id de l'acheteur - Buyer ID

UT255-153306/C

002

107zl

N° de réf. du client - Client Ref. No.

File No. - N° du dossier

N° CCC / CCC No./ N° VME - FMS

UT255-153306/C

107zl. UT255-153306/C

|    |   |  |
|----|---|--|
| 24 | Will it be possible to provide screenshots of the various dashboards from the Microsoft BI software as well as the 3D modeller that was demonstrated yesterday? This will help to convey ISED's ideas to our team working on the RFI response that could not make it yesterday. | ISED will publish a link to the recorded session which includes the presentation decks and the live demo views.  |
| 25 | Some of the dates in the RFI have shifted. Has the due date for responses to the four questions changed or does it remain Feb 17th?   | The due date for responses to the four questions is February 28.   |
| 26 | Will you be conducting industry consultations as part of the RFI process, in addition to the four questions asked in the RFI?   | ISED intends to have further discussions with the vendor community through individual meeting following a review of the RFI responses.   |
| 27 | Will we be able to request a 1-on-1 meeting to discuss our responses and provide additional details that may be considered commercially confidential?   | ISED intends to have further discussions with the vendor community through one-on-ones following a review of the RFI responses.  |
| 28 | In the crowdsourcing pilot, "user experience" or Quality of Service metrics were collected, presumably as they are defined by the wireless telecom standards. For the pilot involving dedicated sensors, what data was sent back over the wireless backhaul (ISM) link?         | <p>ISED takes 'dedicated sensors' to refer to sensors monitoring particular bands rather than secondary activity (e.g., crowdsourcing via smartphones).</p> <p>In the prototype, the data sent back over the wireless backhaul will depend on a variety of factors such as the monitoring objectives, the number of available sensors and the capabilities. The data required (e.g., signal parameters, 3D location) will vary depending on needs and what the sensor is tasked to do.</p> <p>The wireless backhaul was sometimes Wi-Fi (using the ISM band), but we typically used the commercial cellular bands.</p> |

N° de l'invitation - Solicitation No.

N° de la modif - Amd. No.

Id de l'acheteur - Buyer ID

UT255-153306/C

002

107zl

N° de réf. du client - Client Ref. No.

File No. - N° du dossier

N° CCC / CCC No./ N° VME - FMS

UT255-153306/C

107zl. UT255-153306/C

Following is a list of companies who participated in the Vendor Conference.

| Company                                 |
|---|
| ADGA Group Consultants Inc.             |
| Aerosystems International Inc           |
| Amazon Web Services                     |
| Anritsu Electronics Ltd.                |
| Appliedmind                             |
| CGI                                     |
| Cognitive Systems Corp                  |
| Computer Sciences Canada Inc.           |
| CRFS Inc                                |
| Deloitte                                |
| Dundas BI                               |
| Ericsson                                |
| Ernst & Young LLP                       |
| Gap Wireless                            |
| General Dynamics Information Technology |
| GEW Technologies (Pty) Ltd              |
| IBM                                     |
| Interfax Systems Inc                    |
| Keysight Technologies                   |
| L3 Technologies                         |
| Leidos Innovations Canada, Inc          |
| Lixar                                   |
| LS telcom Limited                       |
| Microsoft Canada Inc                    |
| Pallotta Consulting Inc                 |
| Rohde & Schwarz America                 |
| SAS Canada                              |
| SPX Corporation                         |
| Testforce (Narda)                       |

3. The WebEx recording can be found at the following link:

<https://gts-ee.webex.com/gts-ee/ldr.php?RCID=51bba7bf5c020817bf47330c0874f6d2>

**ALL OTHER TERMS AND CONDITIONS REMAIN THE SAME**