

Advance Contract Award Notice

Communications Research Centre

Innovation, Science and Economic Development Canada

PROJECT TITLE: Crowdsourced RF Spectrum Data

The Communications Research Centre (CRC), a branch of the Spectrum and Telecommunications Sector (STS), Department of Innovation, Science and Economic Development Canada (ISED), has a requirement for a contract to obtain measurements of mobile phone Radio Frequency (RF) spectrum performance data from across Canada. The purpose of this Advance Contract Award Notice (ACAN) is to signal the government's intention to award a contract for these services to the pre-selected supplier:

OpenSignal

1st Floor, 3 Angel Square
London United Kingdom, EC1V 1NY

26081 Merit Circle, Suite 119
Laguna Hills, CA, USA 92653

Before awarding a contract, however, the government provides other suppliers with the opportunity to demonstrate that they are capable of satisfying the requirements set out in this Notice, by submitting a 'Statement of Capabilities' during the fifteen calendar day posting period.

If other potential suppliers submit Statements of Capabilities during the fifteen calendar day posting period that meet the requirements set out in the ACAN, the government will proceed to a full tendering process on either the government's electronic tendering service (buyandsell.gc.ca) or through traditional means, in order to award the contract

If no other supplier submits, on or before the closing date, a statement of capabilities meeting the requirements set out in the ACAN, a contract will be awarded to the pre-selected supplier, as referenced above.

BACKGROUND:

Spectrum Environment Awareness (SEA) is a CRC research program focused on the development and demonstration of techniques for monitoring how wireless spectrum is used in Canada. Wireless spectrum is a limited resource, the demand for which is rapidly increasing. The goal of this research program is to ensure that this limited resource is used effectively and efficiently.

Toward this goal, the CRC has developed a research system for spectrum monitoring which consists of a CRC custom developed smartphone application and a set of distributed custom designed spectrum sensors linked via a cloud computing infrastructure. Data collected by the CRC smartphone app and the sensors are uploaded to the cloud for analysis and visualization at CRC's Big Data Analytics Centre (BDAC). The CRC smartphone app and the distributed sensor network are capable of collecting usage data in most major licensed and unlicensed bands including those bands using 3G, 4G LTE and Wi-Fi radio protocols. Data collected by the smart phones and CRC sensors are sent to the cloud in near real-time for further processing, analysis and visualization.

OBJECTIVE:

CRC is seeking to establish a contract by which the SEA research program can increase the size and scope of its RF spectrum monitoring capabilities. As such, the CRC would like to augment the amount and geographical coverage of RF Spectrum data collected via crowdsourcing smartphone applications by buying this data from a commercial entity.

SCOPE OF WORK:

The main requirements for the crowdsourced smartphone radio spectrum data covered under this contract can be summarized as:

- Canadian RF spectrum current and historical usage, availability, and performance data across common wireless protocols such as 3G, 4G LTE and Wi-Fi.

TIMING AND DELIVERABLES:

The contractor must provide

1. Twelve (12) monthly deliveries of raw RF spectrum performance data (electronic format files) per year, collected by crowdsourced smartphone applications from across Canada,
2. Upon request by the contract Technical Authority (CRC), provide additional raw RF spectrum performance data (electronic format files), collected by crowdsourced smartphone applications from across Canada
3. Upon request by the contract Technical Authority (CRC) provide historical raw RF spectrum performance data (electronic format files) collected by crowdsourced smartphone applications from across Canada,
4. Upon request by the contract Technical Authority (CRC) provide monthly granular RF coverage data in electronic format files for major cities in Canada;

MINIMUM ESSENTIAL QUALIFICATIONS:

To fulfill the requirements of the contract, the person or firm must meet the following minimum requirements:

1. The vendor must own, distribute and keep up to date a publically available smartphone application for the Android and IOS operating systems;
2. The vendor must have at least one (1) year of experience in collecting RF spectrum data in Canada using its smartphone application;
3. In order to ensure timely and adequate coverage of Canada geographically, the contractor must provide current and historical Canadian RF usage, availability and performance data for 3G, 4G LTE, and Wi-Fi meeting the requirements below:
 - a. Have their application installed and running on more than 10,000 reporting devices across Canada on an annual basis; and
 - b. Provide more than 500 million samples of raw RF spectrum reports per year.
4. The raw and granular RF Spectrum data reports must contain at a minimum the spectrum data parameters as listed in Annex A.

GOVERNMENT OF CANADA REGULATIONS EXCEPTION:

The Treasury Board's Government Contract Regulations, Part 10.2.1 Section 6 states there are four exceptions that permit the contracting authority to set aside the requirement to solicit bids. The exception for related to this ACAN includes:

- d. "only one supplier person or firm is capable of performing the contract."

JUSTIFICATION FOR THE PRE-SELECTED SUPPLIER:

CRC has conducted an extensive search of possible suppliers of this type of data. There is a very limited supplier market. Three have been contacted and two have responded with sample data and pricing. OpenSignal is the only supplier that met the Minimum Requirements.

Applicability of the trade agreement(s) to the procurement

This requirement is subject to the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT) and the Bilateral Trade Agreements.

Government Contracts Regulations Exception(s)

Government Contract Regulations applies as only one person is capable of performing the work (Supply Manual Chapter 3 - 3.15).

Limited tendering procedures in accordance with AIT, NAFTA, WTO-AGP and the Supply Manual (SM), Chapter 3, Annex 3.2 where:

- for works of art, or for reasons connected with the protection of patents, copyrights or other exclusive rights, or proprietary information or where there is an absence of competition for technical reasons, the goods or services can be supplied only by a particular supplier and no reasonable alternative or substitute exists; (CAP Code 71)

Ownership of Intellectual Property

Canada intends to retain ownership of any Foreground Intellectual Property arising out of the proposed contract on the basis that the main purpose of the contract is to develop algorithms.

Canada reserves the right to share the data procured under the contract with other legal entities to further its research. The data will be shared for the sole purpose of executing work under a legal agreement that prevents the legal entity from using the data for any other purpose.

Period of the proposed Contract

The proposed contract is for one year from the date of award of the contract, plus three (1) one-year irrevocable option periods allowing Canada to extend the term of the contract.

Cost estimate of the proposed Contract

The estimated value of the contract, including option(s), is \$550,000 including GST/HST.

Proposed Contractor

OpenSignal 1st Floor, 3 Angel Square London United Kingdom, EC1V 1NY	26081 Merit Circle, Suite 119 Laguna Hills, CA, USA 92653
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You are hereby notified that the government intends to solicit a bid and negotiate with one firm only as identified above.

Suppliers' right to submit a statement of capabilities

Suppliers who consider themselves fully qualified and available to provide the goods, services or construction services described in the ACAN may submit a statement of capabilities in writing to the contact person identified in this notice on or before the closing date of this notice. The statement of capabilities must clearly demonstrate how the supplier meets the advertised requirements.

Responses received on or before the closing date will be considered solely for the purpose of deciding whether or not to conduct a competitive procurement. Information provided will be used by the Crown for technical evaluation purposes only and will not be construed as a proposal. The submitted written response must provide sufficient evidence (e.g. specifications, technical data, drawings or any other proof) that clearly demonstrates that the proposed product is capable of fulfilling this requirement. Suppliers that have submitted a response will be notified in writing of CRC's decision whether to continue with the aforementioned procurement or to compete the requirement.

Inquiries and statements of capabilities are to be directed to:

Anne Nino
Manager Procurement and Contracting (CRC)
Contracts & Material Management, Corporate Management Sector
Innovation, Science and Economic Development Canada | Government of Canada
3701 Carling Avenue | Building 2D | Room 138 | Ottawa, ON K2H 8S2
Anne.Nino@canada.ca | Tel: 613-998-1922

All responses or inquiries are to be submitted to the Procurement officer identified above. The PWGSC file number, the procurement officer's name and the closing date of the ACAN must appear on the outside of the envelope in block letters or by email ic.crc-procurement.ic@canada.ca addressed to the Procurement officer identified above. The PWGSC file number and the closing date of the ACAN must appear in the email.

Any responses submitted to any e-mail address other than that stated herein will not be considered. The CRC will not assume responsibility for misdirected emails.

The Crown retains the right to negotiate with suppliers on any procurement. Documents may be submitted in either official language of Canada.

CLOSING DATE AND TIME FOR WRITTEN SUPPLIER RESPONSES CHALLENGING THIS REQUIREMENT IS Oct 25, 2017, 2:00 PM EST.

CRITERIA FOR ASSESSMENT OF STATEMENT OF CAPABILITIES:

Any interested supplier must demonstrate by way of a statement of capabilities that it meets the following requirements. Proof must include specific evidence that clearly shows that the criteria are met.

1. The interested supplier must prove that it owns, distributes and keeps up to date a publically available smartphone application for the Android and IOS operating systems;
2. The interested supplier must prove that it has at least one (1) year of experience in collecting Canadian RF spectrum data using its smartphone application;
3. The interested supplier must be able to provide current and historical Canadian RF usage, availability and performance data for 3G, 4G LTE, and Wi-Fi meeting the requirements below:
 - a. The interested supplier must have had their application installed and running on more than 10,000 reporting devices across Canada for at least the last year;
 - b. The interested supplier's application must have collected more than 500 million samples of raw RF spectrum reports in Canada for at least the last year;
4. The interested supplier must provide a sample report that proves that the raw and granular RF spectrum reports contain at a minimum the spectrum data parameters listed in Annex A.

Potential suppliers who consider themselves fully qualified and available to meet the specified requirements may submit a statement of capabilities in writing to the Contracting Authority identified in this Notice on or before the closing date of this Notice. The statement of capabilities must clearly demonstrate how the supplier meets the advertised requirements.

If a potential supplier submits a statement of capabilities during the posting period that meets the requirements set out in this ACAN, the government will proceed to a full tendering process on either the government's electronic tendering system or through traditional means in order to award the contract. If no other supplier submits on or before the closing date a statement of capabilities meeting the requirements set out in this ACAN, a contract will be awarded to the pre-selected supplier.

Annex A Data Parameter Requirements

A.1 Android Raw Spectrum Mandatory Data Fields

entity_id
inserted_at
model
manufacturer
device_id
serial
device_id_time
phone_type
tos_time
app_vrs_code
android_vrs
android_sdk
name
time
loc_accuracy
loc_age
altitude
loc_bearing
loc_speed
latitude
longitude
loc_provider
loc_sat
loc_enabled
screen_on
screen_locked
cdma_dbm
cdma_ecio
evdo_dbm
evdo_ecio
evdo_snr
gsm_bit_error_rate
gsm_signal_strength
lte_rsrp
lte_rsrq
lte_rssnr
ss_operator_alpha
ss_operator_alpha_lng
ss_is_manual
ss_operator_num
ss_roaming
ss_state
ci_populated
cdma_lat
cdma_lng
cdma_net_id
cdma_sys_id
cdma_bsid
cs_cdma_asu
cs_cdma_dbm
cs_cdma_ecio
cs_cdma_level

cs_evdo_dbm
cs_evdo_ecio
cs_evdo_level
cs_evdo_snr
gsm_cid
gsm_lac
gsm_mcc
gsm_mnc
cs_gsm_asu
cs_gsm_dbm
cs_gsm_level
lte_ci
lte_mcc
lte_mnc
lte_pci
lte_tac
cs_lte_asu
cs_lte_dbm
cs_lte_level
cs_lte_timing_advance
wcdma_cid
wcdma_lac
wcdma_mcc
wcdma_mnc
wcdma_psc
cs_wcdma_asu
cs_wcdma_dbm
cs_wcdma_level
network_type_int
network_type
call_state
data_enabled
data_state
data_activity
is_network_roaming
network_id
network_id_sim
network_name
network_name_sim
sb_active_count
sb_mccmnc_list
wf_bssid
wf_freq
wf_ssid
wf_hidden_ssid
wf_link_spd
wf_rssi
wf_mac_address
wf_ip
wf_suppllicant_state
dhcp_dns1
dhcp_dns2
dhcp_gateway
dhcp_ip
dhcp_lease_dur
dhcp_netmask

dhcp_server_addr
wf_capabilities
wf_center_fq_0
wf_center_fq_1
wf_channel_wd
wf_fq
wf_80211mc
wf_passpoint
wf_level
wf_operator_name
wf_venue_name
network_connection_type
sp_http_lat_0_name
sp_http_lat_0_url
sp_http_lat_0_mean
sp_http_lat_0_median
sp_http_lat_0_succ
sp_http_lat_0_max
sp_http_lat_0_min
sp_http_lat_0_nr
sp_http_lat_0_ip
sp_http_lat_0_host
sp_http_lat_1_name
sp_http_lat_1_url
sp_http_lat_1_mean
sp_http_lat_1_median
sp_http_lat_1_succ
sp_http_lat_1_max
sp_http_lat_1_min
sp_http_lat_1_nr
sp_http_lat_1_ip
sp_http_lat_1_host
sp_http_lat_2_name
sp_http_lat_2_url
sp_http_lat_2_mean
sp_http_lat_2_median
sp_http_lat_2_succ
sp_http_lat_2_max
sp_http_lat_2_min
sp_http_lat_2_nr
sp_http_lat_2_ip
sp_http_lat_2_host
sp_http_lat_3_name
sp_http_lat_3_url
sp_http_lat_3_mean
sp_http_lat_3_median
sp_http_lat_3_succ
sp_http_lat_3_max
sp_http_lat_3_min
sp_http_lat_3_nr
sp_http_lat_3_ip
sp_http_lat_3_host
sp_http_lat_4_name
sp_http_lat_4_url
sp_http_lat_4_mean
sp_http_lat_4_median

sp_http_lat_4_succ
sp_http_lat_4_max
sp_http_lat_4_min
sp_http_lat_4_nr
sp_http_lat_4_ip
sp_http_lat_4_host
sp_lat_unreliable
sp_dl_tts
sp_dl_speed
sp_dl_speed_trimmed
sp_dl_size
sp_dl_time
sp_dl_threads
sp_dl_ip
sp_dl_host
sp_cdn
sp_dl_unreliable
sp_ul_tts
sp_ul_speed
sp_ul_speed_trimmed
sp_ul_size
sp_ul_time
sp_ul_threads
sp_ul_ip
sp_ul_host
sp_ul_unreliable
public_ip
type_allocation_code
loc_mocking_enabled
wifi_on
lte_cqi
preferred_network_mode
network_name_mapped
network_country_mapped

A.2 IOS Raw Spectrum Mandatory Data Fields

region_name
entity_id
inserted_at
model
model_hardware
device_id
app_vrs_code
app_build
ios_vrs
name
time
loc_accuracy_h
loc_accuracy_v
location_age
altitude
loc_bearing
location_speed
latitude
longitude
network_type
network_id
network_name
wf_bssid
wf_ssid
network_connection_type_ios
sp_http_lat_0_name
sp_http_lat_0_url
sp_http_lat_0_mean
sp_http_lat_0_median
sp_http_lat_0_succ
sp_http_lat_0_max
sp_http_lat_0_min
sp_http_lat_1_name
sp_http_lat_1_url
sp_http_lat_1_mean
sp_http_lat_1_median
sp_http_lat_1_succ
sp_http_lat_1_max
sp_http_lat_1_min
sp_http_lat_2_name
sp_http_lat_2_url
sp_http_lat_2_mean
sp_http_lat_2_median
sp_http_lat_2_succ
sp_http_lat_2_max
sp_http_lat_2_min
sp_http_lat_3_name
sp_http_lat_3_url
sp_http_lat_3_mean
sp_http_lat_3_median
sp_http_lat_3_succ
sp_http_lat_3_max
sp_http_lat_3_min
sp_http_lat_4_name

sp_http_lat_4_url
sp_http_lat_4_mean
sp_http_lat_4_median
sp_http_lat_4_succ
sp_http_lat_4_max
sp_http_lat_4_min
sp_dl_speed
sp_dl_speed_trimmed
sp_cdn
sp_ul_speed
sp_ul_speed_trimmed
sp_ul_cdn
network_name_mapped
network_country_mapped

A.3 Granular Spectrum Mandatory Data Fields

Field Name	Description
rnd_lat	Latitude of this signal average. This represents the centre latitude of the grid area that this data corresponds to.
rnd_lng	Latitude of this signal average. This represents the centre longitude of the grid area that this data corresponds to.
network_id_mapped	The network id (concatenation of mcc and mnc)
network_name_mapped	Name of the network as reported by the device
avg_signal_2g	2G Average Signal Strength in dBm
avg_signal_3g	3G Average Signal Strength in dBm
avg_rsrp	RSRP for LTE networks dBm
avg_rsrq	RSRQ for LTE networks dBm
avg_rssnr	RSSNR for LTE networks (Centibel)
rows_2g	No of 2G samples taken at this location
rows_3g	No of 3G samples taken at this location
rows_lte	No of LTE samples taken at this location