

Solicitation No. - N° de l'invitation 2B0KB-UHF for IOR & AOR	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
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Annex A

Statement of Work

Government UHF Satellite Services For The Indian Ocean Region & Atlantic Ocean Region

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1 PART 1 - INTRODUCTION

1.1 INTRODUCTION

1.1.1 FSS Service

1.1.1.1 The Shared Services Canada (SSC) has a requirement for the provision of the following Government UHF Satellite Services (GUHFS) for use by its Partners:

- a) Indian Ocean Region (IOR) UHF channel services.
- b) Atlantic Ocean Region (AOR) UHF channel services

1.1.1.2 Within the Government of Canada, there is a requirement to provide strategic communications extension services to Partners in locations within the Indian Ocean Region & Atlantic Ocean Region. Partners will utilize their satcom terminal to communicate at UHF to another satcom terminal located within the same coverage area providing end-to-end connectivity. Partners, have procured, installed and maintain their own satcom terminals. Partners refer to any Federal Government Department, Territorial Government Department or Federal Government Agency.

1.1.2 Division of Document into Parts

1.1.2.1 This Statement of Work is divided into the following 5 Parts:

- a) Part 1 – Introduction
- b) Part 2 – General Requirements for Service, Maintenance and Operations;
- c) Part 3 – Technical Requirements that are specific to the Indian Ocean Region (IOR) UHF channel services;
- d) Part 4 – Technical Requirements that are specific to the Atlantic Ocean Region (AOR) UHF channel services;
- e) Part 5 – Glossary and Definitions.

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2 PART 2 – GENERAL REQUIREMENTS FOR SERVICE, MAINTENANCE AND OPERATIONS

2.1 GENERAL

2.1.1.1 The Contractor must provide the following services to Canada:

- a) Service Management;
- b) Service Order Processing;
- c) Client Support;
- d) Problem Management;
- e) Service Performance Monitoring;
- f) Payment Credits;
- g) Scheduled Service-affecting Advisory;
- h) Reporting; and
- i) Invoicing.

2.1.1.2 The Contractor must ensure that all verbal, written and electronic communications that are required to be provided directly to Partners (e.g. client support, recorded greetings and prompts, email and Voice Mail) are available at all times in both official languages of Canada (English and French), offering users a choice of either language depending on their individual preference.

2.1.1.3 In this Contract, "regular business hours" refers to 8:00AM to 4:00PM Eastern Time, Monday to Friday, excluding statutory holidays observed by the Federal government in the Province of Ontario.

2.1.1.4 SSC wishes to have available a long-term solution for its Partners with the supplier for reliable services that evolve as technology changes. The Contractor must provide to Canada any new satellite services or related hardware, as well as all administrative or business improvements, within one month of making them generally available to other customers, by advising the Contracting Authority and the Technical Authority. For those services that have become part of its standard service offering, it must provide these improvements at no additional charge to Canada. The price of any other service enhancements or additional equipment will be negotiated on a case-by-case basis. The Contractor acknowledges that no new services can be provided under this Contract unless the Contracting Authority issues a contract amendment authorizing the provision of those services. Canada reserves the right to add new services as services become available. Should the region called Pacific Ocean Region have UHF services made available to it, Canada reserves the right to add this region to the contract upon availability and upon request.

2.2 SERVICE MANAGEMENT

2.2.1 SSC Satellite Service Manager

2.2.1.1 The SSC Satellite Service Manager will:

- a) Accept and validate service requests from the Partners and determine whether to forward them to the Contractor as Service Orders;
- b) Monitor and manage the Contractor's Service Level performance; and
- c) Manage ongoing service issues.

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2.2.2 Contract Account Representative

- 2.2.2.1 The Contractor must provide documentation that the company they represent has provided UHF services for at least 3 years. The documentation must consist of a list of orders fulfilled for a Federal Government department and for what period of time.
- 2.2.2.2 The Contractor must assign a Contract Account Representative (CAR) to Canada to address any technical, administrative and service-related issues.
- 2.2.2.3 The CAR must have a minimum of 5 years of satellite telecommunications experience within the last 8 years.
- 2.2.2.4 The Contractor must provide the résumé for each replacement CAR to the Technical Authority for approval within 10 working days of the date the Contractor notifies the Technical Authority of the change.
- 2.2.2.5 When requested, the CAR must meet with the Technical Authority, the SSC Satellite Service Manager and/or the Contracting Authority at a location within the National Capital Area, or occasionally when this is not possible, be available by teleconference phone call. Except in case of emergencies, Canada will provide the CAR with at least 5 days of notice before a meeting.
- 2.2.2.6 The CAR must provide the relevant Authority (or Authorities) with a record of decision and meeting minutes within 10 working days following any meeting. If the relevant Authority does not agree with the record of decision or meeting minutes prepared by the CAR, the relevant Authority will advise the CAR within 5 working days after receiving them.
- 2.2.2.7 When requested, the Contractor must provide sales and marketing support to Canada when Canada is communicating with existing and prospective Partners. This support will consist of the following:
- a) Attending meetings;
 - b) Participating in telephone teleconferences or videoconferences;
 - c) Providing literature (either electronic or paper) explaining Fixed Satellite Services (FSS);
 - d) Assisting Canada in communicating with Partners about the FSS Services available under this Contract;
 - e) Acknowledging receipt of any of Canada's information requests within 2 working days to the Technical Authority and the SSC Satellite Service Manager; and
 - f) Providing the information within 5 working days to the Technical Authority and the SSC Satellite Service Manager.
- 2.2.2.8 The CAR's attendance at all meetings is at the Contractor's own expense, including any travel and living expenses that may be incurred.

2.3 SERVICE ORDER PROCESSING

2.3.1 General

- 2.3.1.1 The Contractor must provide two priority levels for Service Orders:
- a) **Regular priority:** Normal non-rush delivery of the Services processed during regular business hours.
 - b) **Express priority:** Expedited delivery of the Services processed during Regular business hours. The Contractor should process this Service Order before any other Service Order already in queue under a Regular priority.
- 2.3.1.2 The Maximum Service Delivery Interval (MSDI) for Service Orders with each level of priority is set out further below. While the order in which the Contractor processes Service Orders is

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within the Contractor's discretion, meeting the MSDIs is mandatory. Each Service Order will clearly indicate the priority level.

- 2.3.1.3 The Contractor must provide a single ordering point for all Regular and Express priority Service Orders.
- 2.3.1.4 The Contractor must only accept Regular and Express Priority Service Orders and Service Order Revisions sent by the SSC Satellite Service Manager by email.

2.3.2 Regular and Express Priority Service Orders

- 2.3.2.1 The Contractor must accept Regular and Express Priority Service Orders made by email to the Contractor-provided email address 7 days per week, 24 hours per day, every day of the year and provide an automated reply to confirm receipt of the emailed Service Order.
- 2.3.2.2 Regular and Express Priority Service Orders sent to the Contractor by the SSC Satellite Service Manager during regular business hours will be considered received by the Contractor on that day. Service Orders sent to the Contractor by the SSC Satellite Service Manager between 4:01 PM and 7:59 AM (Eastern Time) will be considered received by the Contractor at 8:00 AM the next working day.
- 2.3.2.3 The Committed Service Delivery Date (CSDD) is the date that the Contractor must complete the delivery of a given Service Order. This date must be within the appropriate Maximum Service Delivery Interval (MSDI).
- 2.3.2.4 If for any reason the CSDD for a Service Order cannot be met, the Contractor must immediately notify the SSC Satellite Service Manager outlining the reason for the delay and providing a new CSDD. If the revised CSDD places the completion of the order outside the MSDI, the information related to this Service Order must be tracked and reported in the Monthly Service Order Tracking Report, and the Service Order will be subject to service credits.

2.3.3 Service Delivery Intervals (SDI)

- 2.3.3.1 The SDI is defined as the elapsed time between the issuance of the Service Order or subsequent Service Order Revision by the SSC Satellite Service Manager and the delivery/acceptance of the Service.
- 2.2.3.2 The Maximum Service Delivery Interval (MSDI) is defined as the maximum allowable amount of time to process a Service Order depending on the type and priority of that Service Order. The Maximum Service Delivery Interval Table is as follows:
- 2.3.3.3 The Maximum Service Delivery Interval (MSDI) is specified in the table below.

Service Order Type	MSDI for Service Orders
Regular Priority Service delivery	45 business days after receipt of Service Order (inclusive of SLBA and frequency clearance mentioned in Section 3.1.4, 4.1.4, & 2.3.3.4)
Express Priority Service delivery	10 calendar days after receipt of Service Order (inclusive of SLBA mentioned in Section 3.1.4 and 4.1.4.)

- 2.3.3.4 Within 5 calendar days of receipt of the Regular Priority Service Order, the Contractor must obtain, if required by the Client, from the relevant spectrum authorities worldwide all Radio

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Frequency Interface (RFI) clearances for all Transmit and Receive frequency pairs assigned between the satellite and DDP.

2.3.4 Service Order Revision (SOR)

2.3.4.1 The Contractor must accept revisions to a Service Order. Any revisions will be issued by email in the form of a Service Order Revision (SOR), if required by the SSC Satellite Service Manager.

2.3.5 Service Order Completion Notification (SOCN)

2.3.5.1 The Contractor must email a SOCN to the SSC Satellite Service Manager within 2 working days of fulfilling the Service Order.

2.3.5.2 The SOCN must, at a minimum, provide Canada with:

- a) Contract number;
- b) SSC Order number;
- c) Date of the Service Order;
- d) Date(s) of any Service Order Revisions;
- e) Verification of service signoff by Client; and
- f) Service Order Completion Date.

2.3.6 Service Order Elements

2.3.6.1 The Service Orders issued by Canada will include, at a minimum, the following fields:

- a) From;
- b) The time and date;
- c) To;
- d) Carbon copied (cc);
- e) SSC Contract number;
- f) A unique Service Order number;
- g) A unique Service Order Revision number (if necessary);
- h) Order status;
- i) Action type;
- j) Service;
- k) Supplier Name;
- l) The Client department who will be the user of the Service (Customer);
- m) Customer Order Number;
- n) Related Order Number;
- o) Priority level;
- p) Delivery date required for Goods;
- q) Delivery Address including postal code;
- r) Start date for Services;
- s) End date for Services:
Regardless of when the SO is issued if the SO specifies an end date or final delivery date that exceeds the end date of this contract, the Contractor must not fulfill the SO services and must forward the SO to the Contracting Authority. In the event the SO does not specify any end date, regardless of when a service order is issued, all service orders end at the end of the Contract Period.
- t) Order originator name & telephone number;
- u) Order remarks;
- v) Sub-total;
- w) GST/HST amount;
- x) Total Estimated Amount;

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y) Signature(s):

SSC Technical Authority	
_____	_____
Signature	Date

SSC Procurement Operations Directorate	
_____	_____
Signature	Date

SSC Contract Authority	
_____	_____
Signature	Date

2.3.6.2 The Contractor must provide to the SSC Satellite Service Manager the following deliverables for each Service Order received:

- a) Name of satellite that the UHF channel service will operate on; and
- b) Spatial coordinates (degree longitude) of the satellite; and

2.4 CLIENT SUPPORT

2.4.1 Hotline Service

2.4.1.1 The Contractor must provide the Client with technical support for all aspects of the Service through a hotline accessible using a toll-free number (the "Hotline").

2.4.1.2 The Contractor must pick up all Hotline calls within 5 rings 95 percent of the time. The Contractor must answer all calls, with a live service agent, within 2 minutes 95 percent of the time and 5 minutes 100 percent of the time or receive an email response to an inquiry within thirty (30) minutes 100 percent of the time.

2.4.1.3 The Contractor must log and track all reported calls to the Hotline from the time of initial report until the resolution of the problem. This must be done through a computerized logging system.

2.4.1.4 The Contractor must track and resolve a Client reported problem call 24 hours a day, every day of the year.

2.4.1.5 The Contractor's Hotline must be staffed with the appropriate technical expertise to facilitate all Hotline service calls and available to the Client 24 hours a day, every day of the year.

2.4.2 Engineering Assistance

2.4.2.1 In addition to the Hotline, the Contractor must provide engineering assistance to the SSC Satellite Service Manager and Technical Authority accessible using a North American phone number separate from the Hotline toll-free number.

2.4.2.2 The Contractor must assist with issues requiring technical expertise at a level greater than the Hotline. This could include, but not be limited to, assistance with:

- a) Compatibility issues; and
- b) Intermittent or chronic performance issues.

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2.4.2.3 The Contractor's Engineering Assistance must be available Monday to Friday from 8:00 AM to 4:00 PM Eastern Time to receive and respond to calls.

2.4.3 Web Site Support Service

2.4.3.1 The Contractor must provide Canada with technical support for all aspects of the UHF Channel Service through a web site support service, which must include, as a minimum, Frequently Asked Questions (FAQs) and, if applicable, on-line software diagnostic routines, support tools and services. The Contractor's web site must provide support in English and in French, available 24 hours/days, 365 days/year and be available 99% of the time..

2.5 PROBLEM MANAGEMENT

2.5.1 General

- 2.5.1.1 The Contractor must manage all problems affecting the delivery of the UHF Channel Service. These problems must be managed 24 hours a day, every day of the year, by the Contractor by diagnosing, tracking, recording and reporting on all problems that affect any Client user's ability to use the Service(s). This includes all hardware, network and service problems. The Contractor must document all problems, including a description of the problem and all details on how the problem was resolved.
- 2.5.1.2 The Contractor must perform remote network monitoring, preventative diagnostics and co-ordinate problem isolation and resolution.
- 2.5.1.3 The Contractor must perform the following activities on an on-going basis when handling hardware, network or service-related problems:
- Identify each reported problem by a unique problem record number (ticket number);
 - Perform an analysis of the problem reported;
 - Maintain an audit trail that includes all actions taken until the problem is resolved; and
 - Provide reports as listed in the Section named "Reporting".
- 2.5.1.4 The Contractor must provide a "problem record" number to the reporting Client that permits the Client and any other representative of Canada to quote the problem record number for any reason.
- 2.5.1.5 The Contractor must notify the SSC Satellite Service Manager by e-mail and pager of any service outage or performance problem as soon as it appears that it may exceed 6 hours in duration.

2.5.2 Escalation Procedures

- 2.5.2.1 The Contractor's Hotline representatives must escalate to the appropriate level of the Contractor's management and generate a Critical Incident Report for any unresolved problem according to the time lines and severity indicated below.
- 2.5.2.2 Escalation time lines (which are in effect 24 hours/day, 7 days/week):

ESCALATION	Low Severity	Medium Severity	High Severity
Manager Operations	2 hours	30 minutes	15 minutes
Director Operations	4 hours	1 hour	30 minutes
VP Operations	8 hours	2 hours	1 hour

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Note: All escalation times listed in table above start running when the initial request is made.

- a) **Low Severity:** Diminished capacity (including repeated intermittent availability) of the service for or during a continuous period exceeding 2 hours (excluding scheduled maintenance as defined in Section 2.8).
- b) **Medium Severity:** Diminished capacity (including repeated intermittent availability) of the service for or during a continuous period exceeding 30 minutes (excluding scheduled maintenance as defined in Section 2.8).
- c) **High Severity:** Complete unavailability of the Service, including the complete failure of a satellite, for a period exceeding 15 minutes (excluding scheduled maintenance as defined in Section 2.8).

2.5.2.3 Within 10 working days of this Contract being issued, the Contractor must provide the SSC Satellite Service Manager and Technical Authority a list of the names and contact information (phone number, email address, etc.) of the Manager of Operations, Director of Operations, and Vice President of Operations (or the equivalent positions with the Contractor's organization). The Contractor must continue to provide an updated list to the SSC Satellite Service Manager and Technical Authority as changes in personnel occur in the management positions listed above.

2.6 SERVICE PERFORMANCE MONITORING

2.6.1 Availability of Services

2.6.1.1 The Contractor must provision the Services and maintain a guaranteed Service Availability Percentage Level per 5 KHz and 25 KHz UHF channel of at least **99.5 %** in each calendar month.

2.6.1.2 The Contractor must ensure that the monthly service Availability of the Services is as indicated above. The method of calculation is shown in Section 2.9.4

2.7 PAYMENT CREDITS

2.7.1.1 The credits for service outage will be calculated using the following formula:

$$P * [(TOT) / TST]$$

where "P" is defined as the monthly Service price as specified in the Basis of Payment - Pricing Tables; and

where "TST" is defined as the monthly total Service time, which is the total available number of minutes in the reported month and is calculated by multiplying by the number of calendar days in the month, times 24 hours, times 60 minutes (i.e., in January the TST would be 31 days X 24 hrs X 60 minutes = 44640 minutes); and

where "TOT" is defined as the monthly total Service outage time, which is the total number of Service outage minutes as tracked by the Contractor's problem record system which were determined through Contractor fault sectionalisation to be caused by the Contractor's Services for Channel provisioning. The Service outage problem records logged by the Contractor will be used to calculate outage minutes. The outage minutes will be calculated from the time the problem is first recorded until the problem is resolved (ticket close) for each problem record.

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The sum of all these outage minutes will be the TOT. This number does not include sun transit downtime where the Contractor properly advised the SSC Satellite Service Manager and Client Authorities.

2.8 SCHEDULED SERVICE-AFFECTING AND MAINTENANCE ADVISORY

- 2.8.1.1 The Contractor must provide the SSC Satellite Service Manager with the network maintenance schedule (i.e., regular scheduled maintenance windows) within 10 working days of this Contract being issued, and update this schedule throughout the Contract Period.
- 2.8.1.2 The Contractor must provide the SSC Satellite Service Manager with written notice of any scheduled maintenance that may affect the Service at least 7 working days before performing any scheduled maintenance.
- 2.8.1.3 Except in cases of emergency, the Contractor must notify the SSC Satellite Service Manager before proceeding with any unscheduled maintenance activities that may affect the Service. When possible, the Contractor agrees to coordinate unscheduled maintenance activities that may affect the Service with the SSC Satellite Service Manager. In cases of emergency, the Contractor must notify the SSC Satellite Service Manager as soon as possible after beginning the emergency unscheduled maintenance activity, together with the reason for the unscheduled service and information about how long the Service will be affected.
- 2.8.1.4 The Contractor must provide advance notice of upcoming sun transits that will occur during the Spring and Fall. The Contractor must provide the notice to the SSC Satellite Service Manager by email, at least 2 weeks before the beginning of the sun transits. The notice must indicate when the sun transits will occur and when they will affect each geostationary satellite being used by the Contractor to deliver the Services under this Contract.
- 2.8.1.5 The Contractor must cancel a regular scheduled maintenance window, if required as a result of a client identified emergency. The cancelled maintenance window will be rescheduled at a later date mutually agreed upon by all parties.

2.9 REPORTING

2.9.1 General

- 2.9.1.1 The Contractor must provide the reports in an electronic format (in comma or tab-delimited file format, MS Excel) by way of CD-ROM or email.
- 2.9.1.2 Amendments, changes or deletion of reports, as requested by the Technical Authority, will be handled through a Contract Amendment issued by the Contracting Authority.

2.9.2 Recurring Problem Report

- 2.9.2.1 When requested by the SSC Satellite Service Manager, where the SSC Satellite Service Manager has identified a recurring problem, the Contractor must provide a consolidated report by email detailing all the instances in previous reporting periods of similar problems, together with the Contractor's detailed proposed plan for addressing the recurring problem, including a timeline for resolution. The Contractor must provide the SSC Satellite Service Manager with an incident report by email within 24 hours and the report must contain, at a minimum:
 - a) Problem Ticket number(s);
 - b) Date(s) of the ticket(s);
 - c) Outage start date(s) and time(s);
 - d) Name of the person and department reporting the incident;
 - e) Severity level (as described in section 2.5.2.2);

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- f) Description of the problem;
- g) Description of the proposed resolution; and
- h) Estimated time to implement remedial action to remedy underlying problem causing recurring problem.

2.9.3 Problem Summary Reports

2.9.3.1 The Contractor must provide the SSC Satellite Service Manager with a monthly Problem Summary Report containing the following information, within 10 calendar days from the end of the billing period:

- a) All problem tickets logged by the Contractor;
- b) The nature of the each problem;
- c) The date and time at which each problem was first reported to the Contractor;
- d) The date and time at which the Contractor determined each problem began (where the Contractor is able to determine this);
- e) The disposition of each problem;
- f) Whether the underlying cause of the problem was related to the Service or to equipment provided by Canada;
- g) The duration of each problem; and
- h) Whether, in the previous three monthly reporting periods, any similar problem tickets were opened.

2.9.4 Service Performance Levels Report

2.9.4.1 Within 10 calendar days of the end of each billing period, the Contractor must provide a monthly report to the SSC Satellite Service Manager showing the calculations of Service Availability Level for the month on a per-Client basis. The values of these monthly calculations will be compared to the threshold values listed in Section 2.6.1. The method of calculation is indicated in Section 2.9.4.2.

2.9.4.2 The Service Availability Level for the Service that is reported by the Contractor in the monthly Service Performance Level report must be calculated using the following formula:

$$[(TNT - TOT) / TNT] \times 100$$

where "TNT" is defined as the total network time, which is the total available number of minutes in the reported month and is calculated by multiplying by the number of calendar days in the month, times 24 hours, times 60 minutes (i.e., in April the TNT would be $30 \times 24 \times 60 = 43200$); and

where "TOT" is defined as the total outage time, which is the total number of outage minutes as tracked by the Contractor's problem record system affecting that service. The service outage problem records logged by the Contractor will be used to calculate outage minutes. The outage minutes will be calculated from the time the problem is first recorded until the problem is resolved (ticket close) for each problem record. The sum of all these outage minutes will be the TOT. This number does not include scheduled maintenance or sun transit downtime where the Contractor properly advised the SSC Satellite Service Manager in accordance with Section 2.8.

2.10 INVOICING

2.10.1 General

2.10.1.1 The Contractor must establish a federal government Master account with at least one sub-level to identify the Client. The account number must be 15 characters or less and must not include any special characters.

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2.10.1.2 The Contractor must cooperate with the SSC Satellite Service Manager for the resolution of any billing issues to the satisfaction of the SSC Satellite Service Manager.

2.10.1.3 The billing period is defined as each calendar month, starting from the 1st of the month to the last day of that month.

2.10.2 Invoices

2.10.2.1 In addition to the information required by General Conditions 2035, the Contractor must provide a printable and non-modifiable monthly invoice in Portable Document Format (PDF), and it must be submitted on the Contractor's official letterhead or include its logo.

2.10.2.2 The summary invoice must include the previous balance, current total charges, total payments, total adjustments, and any outstanding balance.

2.10.2.3 The Contractor must ensure that the individual service order reference number, deliverable and/or description of work is included in the invoice.

2.10.2.4 The Contractor must ensure that any applicable CRTC and/or Telecommunication Levies, imposed unto the Contractor is not listed as separate entries in the invoices sent to Canada. The Contractor must reflect any of these levies by incorporating them within their service pricing strategy.

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3 PART 3 - TECHNICAL REQUIREMENTS FOR THE IOR UHF CHANNEL SERVICES

3.1 TECHNICAL REQUIREMENTS

3.1.1 General

- 3.1.1.1 There are three attributes associated with the provisioning of the required services for the Indian Ocean Region. They are:
- a) The service to be provisioned on an ITU licensed UHF satellite which has coverage of the desired area, see Section 3.1.2 for coverage.
 - b) Satellite capacity representing power and bandwidth on that specified satellite to support 5 KHz and/or 25 KHz UHF channels.
 - c) UHF frequency pairs are to be within those authorized by the NATO Working Group within the frequency range specified in Sections 3.1.2.2 and 3.1.2.3.
- 3.1.1.2 At the time of the bid submission, the Contractor must have as a minimum one 25 KHz UHF satellite channel capacity available on an ITU licensed UHF satellite that may be ordered by Canada with the in-service date of June 1st, 2019 for a period of up to 2 years ending May 31st, 2021.
- 3.1.1.3 The 25 KHz UHF satellite channel mentioned above (in Section 3.1.1.2) must have an interference free UHF frequency pair(s) within the NATO approved frequency spectrum, subject to availability at the time the Service Order is issued.
- 3.1.1.4 The Contractor must provide this UHF channel service on a 24 hours per day, 7 days per week, 365 days per year basis.
- 3.1.1.5 The Contractor must ensure that the UHF satellite, in which the UHF channel service is being provisioned, is licensed by ITU, tested and operational at the time of the bid submission. The Contractor must provide the appropriate documentation attesting to the compliance of these conditions.

3.1.2 Satellite Coverage

- 3.1.2.1 The Contractor must provide UHF channel services for all 2-way satellite communication services in the coverage area which is defined as following:
- Zone Coordinates: 0° to 90° E.; 60° N. to 60° S.
- Minimum EIRP for 25 KHz channels: 24 dBW at a minimum elevation angle of 5 degrees to the satellite
- The Contractor must identify and provide EIRP and G/T coverage map(s) for this specified coverage area.
- 3.1.2.2 The Contractor must provide the 25 KHz UHF channel services that meet the following minimum technical requirements:

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- (i) Operate on an uplink frequency centered between 290-320 MHz with a bandwidth of 25 KHz
- (ii) Operate on a downlink frequency centered between 240-270 MHz with a bandwidth of 25 KHz
- (iii) Provide an EIRP of no less than 24 dBW.
- (iv) Provide a receive antenna G/T of no less than -17.5 dB/K
- (v) Be capable of receiving and retransmitting signals originating from MIL-STD 188-181B (Dedicated Mode) and MIL-STD 188-183B (Integrated Waveform) compliant terminals. The MIL-STD 188-181B is related to the Interoperability Standard for Access to 5-KHz and 25-KHz UHF Satellite Communications Channels. The MIL-STD 188-183B is related to the Interoperability Standard for Multiple-Access 5-KHz and 25-KHz UHF Satellite Communications Channels

3.1.2.3 The Contractor must provide the 5 KHz UHF channel services that meet the following minimum technical requirements:

- (i) Operate on an uplink frequency centered between 290-320 MHz with a bandwidth of 5 KHz
- (ii) Operate on a downlink frequency centered between 240-270 MHz with a bandwidth of 5 KHz
- (iii) Provide an EIRP of no less than 17 dBW.
- (iv) Provide a receive antenna G/T of no less than -17.5 dB/K
- (v) Be capable of receiving and retransmitting signals originating from MIL-STD 188-181B (Dedicated Mode) and MIL-STD 188-183B (Integrated Waveform) compliant terminals.

3.1.2.4 The Contractor must provide the same pricing for the 25 KHz UHF channel increments independent of which satellite will be utilized in the delivery of the Service.

3.1.2.5 The Contractor must provide the same pricing for the 5 KHz UHF channel increments independent of which satellite will be utilized in the delivery of the Service.

3.1.3 Satellite Command Link

3.1.3.1 The Contractor must ensure that the command link controlling any and all of the satellites is secure and protected by an encryption system approved by NSTISSP-1 or NSTISSP-12 (National Security Telecommunication and Information Systems Security Policy) or better.

3.1.4 Frequency Clearance

3.1.4.1 The Contractor must ensure that the frequencies assigned to Canada are cleared with the NATO Working Group in regards to any radio frequency interference in the Indian Ocean Region.

3.1.4.2 All costs involving frequency clearance must be consolidated with the Contractor who will provide one invoice that includes everything, including licensing costs. License requests can be submitted by the Contractor to Industry Canada or the respective country's frequency spectrum administration agency, who will invoice the Contractor directly.

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4 PART 4 – TECHNICAL REQUIREMENTS FOR THE AOR UHF CHANNEL SERVICES

4.1 TECHNICAL REQUIREMENTS

4.1.1 General

- 4.1.1.1 There are three attributes associated with the provisioning of the required services for the Atlantic Ocean Region. They are:
- a) The service to be provisioned on an ITU licensed UHF satellite which has coverage of the desired area, see Section 4.1.2 for coverage.
 - b) Satellite capacity representing power and bandwidth on that specified satellite to support 5 KHz and/or 25 KHz UHF channels.
 - c) UHF frequency pairs are to be within those authorized by the NATO Working Group within the frequency range specified in Sections 4.1.2.2 and 4.1.2.3.
- 4.1.1.2 Upon channel availability and request from Canada, the Contractor must provide either a 25 KHz or 5 KHz UHF satellite channel capacity available on an ITU licensed UHF satellite.
- 4.1.1.3 The 25 KHz or 5 KHz UHF satellite channel mentioned above (in Section 4.1.1.2) must have an interference free UHF frequency pair(s) within the NATO approved frequency spectrum, subject to availability at the time the Service Order is issued..
- 4.1.1.4 The Contractor must provide this UHF channel service on a 24 hours per day, 7 days per week, 365 days per year basis.
- 4.1.1.5 The Contractor must ensure that the UHF satellite, in which the UHF channel service is being provisioned, is licensed by ITU, tested and operational at the time of the bid submission. The Contractor must provide the appropriate documentation attesting to the compliance of these conditions.

4.1.2 Satellite Coverage

- 4.1.2.1 The Contractor must provide UHF channel services for all 2-way satellite communication services in the following mandatory coverage area which is defined as following:
- Zone Coordinates: 90° W. to 0°; 60° N. to 60° S.
- Minimum EIRP for 25 KHz channels: 24 dBW at a minimum elevation angle of 5 degrees to the satellite
- The Contractor must identify and provide EIRP and G/T coverage map(s) for the coverage area specified in Section 3.3.2.1.
- 4.1.2.2 The Contractor must provide the 25 KHz UHF channel services that meet the following minimum technical requirements:
- (i) Operate on an uplink frequency centered between 290-320 MHz with a bandwidth of 25 KHz
 - (ii) Operate on a downlink frequency centered between 240-270 MHz with a bandwidth of 25 KHz
 - (iii) Provide an EIRP of no less than 24 dBW.

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- (iv) Provide a receive antenna G/T of no less than -17.5 dB/K
- (v) Be capable of receiving and retransmitting signals originating from MIL-STD 188-181B (Dedicated Mode) and MIL-STD 188-183B (Integrated Waveform) compliant terminals. The MIL-STD 188-181B is related to the Interoperability Standard for Access to 5-KHz and 25-KHz UHF Satellite Communications Channels. The MIL-STD 188-183B is related to the Interoperability Standard for Multiple-Access 5-KHz and 25-KHz UHF Satellite Communications Channels.

4.1.2.3 The Contractor must provide the 5 KHz UHF channel services that meet the following minimum technical requirements:

- (i) Operate on an uplink frequency centered between 290-320 MHz with a bandwidth of 5 KHz
- (ii) Operate on a downlink frequency centered between 240-270 MHz with a bandwidth of 5 KHz
- (iii) Provide an EIRP of no less than 17 dBW.
- (iv) Provide a receive antenna G/T of no less than -17.5 dB/K
- (v) Be capable of receiving and retransmitting signals originating from MIL-STD 188-181B (Dedicated Mode) and MIL-STD 188-183B (Integrated Waveform) compliant terminals.

4.1.2.4 The Contractor must provide the same pricing for the 25 KHz UHF channel increments independent of which satellite will be utilized in the delivery of the Service.

4.1.2.5 The Contractor must provide the same pricing for the 5 KHz UHF channel increments independent of which satellite will be utilized in the delivery of the Service.

4.1.3 Satellite Command Link

4.1.3.1 The Contractor must ensure that the command link controlling any and all of the satellites is secure and protected by an encryption system approved by NSTISSP-1 or NSTISSP-12 (National Security Telecommunication and Information Systems Security Policy) or better.

4.1.4 Frequency Clearance

4.1.4.1 The Contractor must ensure that the frequencies assigned to Canada are cleared with Industry Canada with regards to any Canadian radio frequency interference. The Contractor must deliver frequencies to Canada within 1 business day after receiving clearance from Industry Canada. If Canada decides to process the radio frequency interference study with Industry Canada, the Contractor must provide the frequency plan to Canada at a minimum of 30 days before the service date requested by Canada.

4.1.4.2 All costs involving frequency clearance must be consolidated with the Contractor who will provide one invoice that includes everything, including licensing costs. License requests can be submitted by the Contractor to Industry Canada or the respective country's frequency spectrum administration agency, who will invoice the Contractor directly.

5 PART 5 - GLOSSARY AND DEFINITIONS

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- **AOR:** Atlantic Ocean Region
- **Business Hours:** Regular business hours is used for business transactions like service offering inquiries, Service Order inquiries, etc. These hours are different than those of the Hotline service, which are 24 hours a day, every day of the year, and which is used for immediate technical support (See Section 2.4.1)
- **Carrier:** Sometimes employed as a synonym for a telecommunications provider company (operator), such as a common carrier.
- **Coverage Beam:** The downlinked beam pattern of a satellite, which is commonly mapped in contours of EIRP (effective isotropic radiated power).
- **CSDD:** Committed Service Delivery Date (CSDD) is the date that the Contractor must complete the delivery of a given Service Order.
- **EIRP:** Effective Isotropic Radiated Power
- **FSS:** Fixed Satellite Services
- **G/T:** Gain to Temperature Ratio
- **IOR:** Indian Ocean Region
- **MSDI:** Maximum Service Delivery Interval (MSDI) is defined as the maximum allowable amount of time to process a Service Order depending on the type and priority of that Service Order
- **Protocol:** A defined set of communication standards that lay down the parameters to which all users must abide.
- **PSPA:** Public Services and Procurement and Accessibility. Formerly called PWGSC.
- **RF:** Radio Frequency
- **SDI:** SDI is defined as the elapsed time between the issuance of the Service Order or subsequent Service Order Revision by the SSC Satellite Service Manager and the delivery/acceptance of the Service
- **SOCN:** Service Order Completion Notification; a notification sent by email indicating that the respective Service Order was completed on a specific date.
- **SSC (Shared Services Canada Agency):** a branch of Public Services and Procurement and Accessibility (PSPA, formerly PWGSC)
- **SSC Satellite Service Manager:** the authorized representative of the Technical Authority for the day-to-day operational activities
- **Sun Transit:** Sun transits occur when the sun crosses the earth's equatorial plane during the spring and fall equinoxes (late February or early March; September or October). Each Spring and Fall RF Channel users will experience varying degrees of signal interference caused by sun transit.
- **UHF:** Ultra-high frequency