

Shared Capacity Satellite Services BROADBAND SERVICES & TERMINAL EQUIPMENT FOR CANADIAN PROVINCES

Annex A1 – Stream 1

Statement of Work

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PART 1 - INTRODUCTION

1.1 SHARED CAPACITY SATELLITE SERVICES

1.1.1.1 Shared Services Canada (SSC) has a requirement for the provision, maintenance and operation of various shared capacity satellite services in the Canadian provinces with varying characteristics as well as related services for use by its Clients. Shared capacity satellite services consist of technologies based primarily on the use of Ka-band terminals but also other platforms such as ;

- a) Ku-band systems
- b) C-band systems
- c) L-band systems
- d) Community aggregator satellite connections combined with Fixed Wireless (Wifi)
- e) Community aggregator satellite connections combined with Mobile Wireless (Wifi)
- e) Community aggregator satellite connections combined with Wimax
- f) Community aggregator satellite connections combined with 3G
- g) Community aggregator satellite connections combined with 4G
- h) Community aggregator satellite connections combined with LTE
- i) Community aggregator satellite connections combined with other cellular based access methods

1.1.1.2 The Government of Canada has several existing federal clients who require Broadband Internet services. These services can be provisioned using shared capacity satellite technologies.

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 Provision, Maintenance and Operations;
- c) Part 3 – Provincial shared capacity satellite services requirements;
- d) Part 4 – Shared capacity satellite terminal requirements; and
- e) Part 5 – Glossary and Definitions.

PART 2 – OPERATIONAL REQUIREMENTS

2.1 GENERAL

- 2.1.1.1 The Contractor must provide the operational services defined in Part 2 on an on-going basis in support of the services delivered on an as and when requested basis in Part 3, 4 and 5.
- 2.1.1.2 The Contractor must ensure that all verbal, written and electronic communications that are required to be provided directly to Clients (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 The Contractor must designate a representative who will serve as the primary point of contact for both management and technical matters.

2.2 ACCOUNT 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 Clients 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.

2.2.2 Account Representative

- 2.2.2.1 The Contractor must assign an Account Representative (AR) to SSC, to address any technical and administrative issues and must have the following minimum level of experience:
- a) A minimum of 4 years of experience in the delivery of telecommunications experience within the last 10 years; and
 - a) At least 1 year of experience in the delivery of shared capacity satellite services within the last 4 years.
- 2.2.2.2 During the Contract Period, the Contractor must provide the résumé for each new AR to the Technical Authority for approval within 10 business days of the date the Contractor notifies the Technical Authority that a new AR is being assigned.
- 2.2.2.3 When requested, the AR must meet with the Technical Authority at a location agreed upon by Canada and the Contractor. Except in case of emergencies, Canada will provide the AR with at least 5 days of notice before a meeting.
- 2.2.2.4 When requested, the Contractor must provide sales and marketing support to Canada when Canada is communicating with existing and prospective Clients. This support may consist of attending meetings, participating in a telephone teleconference, providing literature (either electronic or paper) explaining shared capacity satellite services and/or terminals, or otherwise assisting SSC in communicating with Clients about the Services available under this Contract.
- 2.2.2.5 Attendance at all meetings is at the Contractor's own expense, including any travel and living expenses that may be incurred.

2.3 CLIENT SUPPORT

2.3.1 Help Desk

- 2.3.1.1 The Contractor must provide the Client with technical support through a help desk accessible using a toll-free number, to be called the "Hotline", available within North America. The Contractor must also provide the technical support through an abbreviated toll-free number accessible from any Mobile Terminal.
- 2.3.1.2 The Contractor's help desk support representatives must respond to Client user questions, resolve user problems and provide advice regarding configuration problems relating to all the terminals, accessories and services supplied under this Contract.
- 2.3.1.3 The Contractor must log and track all reported calls to the help desk from the time of initial report until the resolution of the problem. This must be done through a computerized logging system.
- 2.3.1.4 The Contractor's help desk must be staffed and available to the Client using the toll-free number Monday to Friday from 0700H to 2300H EST.
- 2.3.1.5 As and when requested from the Technical Authority, the Contractor must send the log of reported calls, for the requested date range, via email within 2 business days of the request. The report must show the following:
- b) Help desk summary (for the given date range) including the following:
 - i) Number of calls logged and resolved;
 - ii) Average time taken to answer the telephone;
 - iii) Total number of calls; and
 - iv) Total number of emails.
 - c) Detail Listing (for the given date range) including the following:
 - i) Ticket number;
 - ii) Date ticket was logged;
 - iii) Time ticket was logged;
 - iv) Contact information of who reported the problem:
 - (A) Name;
 - (B) Phone number;
 - (C) Email address; and
 - (D) Government Department.
 - v) Description of the problem;
 - vi) Resolution of the problem; and
 - vii) Status (open or closed).

2.3.2 Engineering Assistance

- 2.3.2.1 The Contractor must provide engineering assistance to the Technical Authority accessible using a North American phone number separate from the help desk toll-free number.
- 2.3.2.2 The Contractor must assist with issues requiring technical expertise at a level greater than the help desk (i.e. Level 3 support). This could include, but not be limited to:
- a) Compatibility issues;
 - b) Supported encryption protocols; and
 - c) Intermittent or chronic performance issues.
- 2.3.2.3 The Contractor's Engineering Assistance must be available Monday to Friday from 9:00 AM to 5:00 PM Eastern Time to receive and respond to calls.

2.4 PROBLEM MANAGEMENT

2.4.1 General

- 2.4.1.1 The Contractor must manage all incidents and problems affecting the delivery of services under this Contract. These problems must be managed Monday to Friday from 0700H to 2300H EST, by the Contractor by diagnosing, tracking, recording and reporting on all problems that affect any Client user's ability to use the shared capacity satellite 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.
- 2.4.1.2 If the Contractor determines that a problem is a terminal equipment issue; the Contractor must make repairs to the terminal or swap out terminal with a functioning unit at the cost of the Contractor.
- 2.4.1.3 The Contractor must perform remote network monitoring, preventative diagnostics and co-ordinate problem isolation and resolution.
- 2.4.1.4 The Contractor must perform the following activities on an on-going basis when handling network or service-related problems:
- identify each reported incident and/or 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 "Reports".
- 2.4.1.5 The Contractor must be the single point of contact and have full responsibility for leading and coordinating all activities with any terrestrial provider, Internet Service Provider (ISP), local exchange carrier (LEC), or interexchange carrier (IXC) for the resolution of any problem that affects the performance of the Service.
- 2.4.1.6 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.

2.4.2 Escalation Procedures

- 2.4.2.1 Depending on the severity of the problem where it affects the usage of the services, the Contractor must be ready to address SSC reporting requirements based on escalation timelines below. The Contractor must provide regular updates (intervals defined by the next escalation level) for which the incident has been identified and categorized and as defined below. The Contractor must provide the names and titles of the Contractor's Management escalation levels within their organization within 30 calendar days of the Contract being issued.
- 2.4.2.2 Escalation time lines (which are in effect Monday to Friday from 0700H to 2000H EST):

SSC Management Escalation Levels	Contractor's Management Escalation Levels	Low Severity	Medium Severity	High Severity
SSC Manager Operations	Level 1	24 hours	8 hours	30 minutes
SSC Director Operations	Level 2	48 hours	16 hours	1 hour
SSC Director General Operations	Level 3	60 hours	32 hours	2 hours

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

- Low Severity:** Diminished capacity (including repeated intermittent availability) of the network affecting any single terminal for, or during, a continuous period exceeding 24 hours (excluding scheduled maintenance as defined in Section 2.6).

- b) **Medium Severity:** Diminished capacity (including repeated intermittent availability) of the network affecting any Service Plan for, or during, a continuous period exceeding 4 hours (excluding scheduled maintenance as defined in Section 2.6).
- c) **High Severity:** Complete unavailability of the network affecting any Service Plan, including the complete failure of a satellite for a period exceeding 30 minutes (excluding scheduled maintenance as defined in Section 2.6).

2.4.2.3 The Contractor must continue to provide an updated list via email of the Contractor's Management Escalation Levels to the Technical Authority and as changes in personnel occur in the management positions listed above.

2.4.2.4 The Contractor must meet with the Technical Authority on a regular basis, if requested, to review outage reports, and any other information related to service availability, to ensure availability requirements are being met.

2.5 SERVICE PERFORMANCE MONITORING

2.5.1 Minimum Availability of Shared Capacity Satellite Services

2.5.1.1 The Contractor must provide the Shared Capacity Satellite Services, for each of the Service Plans and maintain any related terrestrial facilities to ensure that the connectivity from the satellite link (from the Earth Station Terminals to the Contractor's terrestrial hand-off point to the Internet) provides a Minimum Availability Level of at least **99.5%** in each calendar month.

2.6 SCHEDULED SERVICE-AFFECTING AND MAINTENANCE ADVISORY

2.6.1.1 The Contractor must provide the Technical Authority with written notice of any planned scheduled maintenance that may affect service at least 5 business days before performing any scheduled maintenance. The Contractor must wait for the clearance to proceed with the scheduled maintenance from the Technical Authority.

2.6.1.2 Except in cases of emergency, the Contractor must notify the Technical Authority before proceeding with any unscheduled service-affecting maintenance activities. When possible, the Contractor agrees to coordinate unscheduled service-affecting maintenance activities with the Technical Authority. In cases of emergency, the Contractor must notify the Technical Authority as soon as possible after beginning the emergency unscheduled service-affecting maintenance activity, together with the reason for the unscheduled service and information about how long service will be affected.

2.6.1.3 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 Technical Authority 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.

2.7 REPORTING

2.7.1 General

2.7.1.1 The Contractor must provide the monthly reports in an electronic format (in comma or tab delimited file format, MS Excel) by way of email. All reports must be sent to the Technical Authority, the Contracting Authority and Satellite Service Manager at the email address (SSC.satellite-satellite.SPC@canada.ca) and to Procurement and Vendor Relations at: RCNGCAREPORTAGE.NCRCMASREPORTING@PWGSC-TPSGC.GC.CA.

2.7.1.2 Amendments, changes or deletion of reports, as requested by the Technical Authority, will be handled through a Contract Amendment issued by the Contracting Authority.

2.7.2 Service Performance Level Report

2.7.2.1 Within 10 calendar days of the end of each billing period, the Contractor must provide a monthly report to the Satellite Service Manager showing calculations of Service Availability Level for the month on a per-client basis.

2.7.2.2 The Actual Availability Level for each Shared Capacity Satellite Service Plan 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 January the TNT would be $31 \times 24 \times 60 = 44640$); 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 Plan. 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 SSC in accordance with Section 2.7.

2.7.2.3 A Service Plan outage is defined as a failure of any network facilities that completely prevent successful processing of any of that Shared Capacity Satellite Service Plan's functionalities. The network facilities include the satellite network, Contractor's Gateway, Contractor's Teleport facilities and terrestrial backhaul networks.

2.7.3 Monthly Service Order Report

2.7.3.1 The Contractor must provide the Monthly Service Order Reporting Form (Annex F) that provides a listing of all the Service Orders that have been issued against the contract on a monthly basis within 20 calendar days from the end of the billing period. The report must provide the following information:

- a) Service Order number;
- a) Date issued;
- b) Description of service;
- c) Client Name (Government Department);
- d) Service Order Amount;
 - i) Total Committed Value (\$); and
 - ii) Spent/Billed amount;
- e) Applicable taxes;
- f) Total Value of Service Order amount including applicable taxes; and
- g) Status (Approved, Completed or Cancelled).

2.7.4 Contract Summary Report

2.7.4.1 The Contractor must provide a quarterly Contract Summary Report to the Technical Authority and Contracting Authority in order to track the total expenditures of the Contract to date. This report must include the following information:

- a) Government department;

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- b) Monthly value of goods delivered, where applicable;
- c) Government Fiscal Year-to-date value of goods delivered, where applicable;
- d) Monthly value of services rendered;
- e) Government Fiscal Year-to-date value of services rendered;
- f) Contract-to-date value of goods delivered, where applicable; and
- g) Contract-to-date value of services delivered, where applicable.

2.7.4.2 The Contractor must provide the Contract Summary Report no later than the 21st day of the month following each quarter (i.e., January-March, April-June, July-September, October-December).

2.7.5 Outage Notifications

2.7.5.1 The Contractor must provide the Technical Authority with an outage notification by email within the same timeframes indicated in the escalation procedures in section 2.4.2 for the Manager Operations. The report must contain:

- a) Reference number;
- b) Date;
- c) Outage start date and time;
- d) Name of the person and department reporting the incident;
- e) Description of the problem;
- f) Description of the proposed resolution; and
- g) Estimated time to restore.

2.7.5.2 The Contractor must send updates to the Technical Authority by email on regular basis as updates are available.

2.7.5.3 Once the Service(s) has been restored, the Contractor must notify the Technical Authority by email immediately.

2.7.6 Excessive Usage Report

2.7.6.1 The Contractor must provide an email exception report automatically to the Technical Authority and appropriate distribution list if the usage in GBytes of any Service for any of the terminals exceeds the pre-determined alert threshold set by the Technical Authority from time to time. This information will allow Canada to minimize the costs associated with lengthy unregulated data usage.

2.7.6.2 The Contractor must provide a separate invoice for all terminals that have exceeded the Plan capacity usage for the month. The invoice must include at least the following:

- a) Service Plan Type;
- b) Subscribed usage in GBytes per month per terminal as per Service Plan;
- c) Usage in GBytes per month over the subscribed value; and
- d) Cost of the GByte over usage as per Service Plan Type pricing table

2.8 INVOICING

2.8.1 General

2.8.1.1 The Contractor must establish a federal government Master account with at least one sub-levels to 1) identify the SSC Clients. The account number must be 15 characters or less not including any special characters.

2.8.1.2 The Contractor must invoice Canada on a monthly basis for all one-time, recurring and usage charges accounted for in that month based on a billing period of the first of the month until the last day of that month. All invoices for one-time costs (installation, de-installation, site surveys, civil works) must come from the Contractor and not from any of the Contractor's third party

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companies. Services that start part way during a calendar month will be prorated using the formula of: Total cost / number of days in billing month * number of days the item is being charged for. Equipment must be invoiced separately from services. All services and equipment must be delivered before the service can be invoiced.

- 2.8.1.3 The Contractor must summarize for charges associated with services separately from those associated with terminal and accessory purchases on the invoice.
- 2.8.1.4 The Contractor must cooperate with the Technical Authority for the resolution of any billing issues to the satisfaction of the Technical Authority.

2.8.2 Invoices

- 2.8.2.1 In addition to the information required by General Conditions 2035, the Contractor must provide a printable and non-modifiable monthly summary invoice to all Authorities listed on the contract in Portable Document Format (PDF), which includes the Contractor's official letterhead or logo via email.
- 2.8.2.4 The Contractor must ensure that the summary invoice are received by the Authorities within 10 working days after the end of each billing period.

2.9 SECURE WEB PORTAL ACCESS

2.9.1 General

- 2.9.1.1 The Contractor must provide a Secure Web Portal (SWP) accessible to the Technical Authority and the Clients. The SWP must provide at a minimum access for the following functions:
 - a) Inventory query;
 - b) Usage query; and
 - c) Over usage threshold level configuration.
- 2.9.1.2 This SWP must be available within 30 calendar days of the Contract being issued.
- 2.9.1.3 The SWP must authenticate users by using at least a user identification and password verification system.
- 2.9.1.4 The SWP must allow Client users to obtain access to information about their own Client, as authorized by the Technical Authority. The SWP must allow the Technical Authority to obtain access to all information about all Clients.
- 2.9.1.5 At contract award, the Technical Authority will submit a list of SSC authorized users for which the Contractor must allow write access for specific limited functions within the SWP. The Contractor must allow read-only access to the information contained in the SWP for the Clients as it pertains to their own network.

2.9.2 Inventory Query

- 2.9.2.1 The SWP must allow the authorized users to query the inventory of terminals and view the following information:
 - a) Service Plan Type;
 - b) Description (terminal type, manufacturer, model); and
 - c) Terminal status.

2.9.3 Usage Query

- 2.9.3.1 The SWP must allow the authorized users to query and view all usage of the last six months for all Shared Capacity Satellite Services subscribed to by the Clients.

- 2.9.3.2 The default view of the record must be of the particular day that the query is carried out while showing the most recent usage at the top.
- 2.9.3.3 The Contractor must make usage information about all data transferred available on the SWP. The available information must include at least the following:
- d) Service Plan Type;
 - e) Usage in Gbytes on a daily basis per terminal; and
 - f) Current total usage for the current month in Gbytes per terminal (for both upload and download).

2.9.4 Over Usage Threshold Level Configuration

- 2.9.4.1 The Contractor must allow the authorized users, including the Technical Authority, the ability to set the threshold percentage level of the total subscribed data plan level in GBytes. The Contractor must send an email message report (refer to Section 2.7.5) to the Technical Authority for any terminal sending and/or receiving data exceeding the threshold level.

2.9.5 Secure Web Portal Security Protocol

- 2.9.5.1 The Contractor must ensure that the following security measures are used when its Secure Web Portal is used to transfer Government data:
- a) Only the required ports must be open;
 - b) There must be audit trails (which must be made available to Canada when requested);
 - c) The anti-virus capabilities must be activated;
 - d) There must be 2048-bit SSL encryption that is enabled before and during any access or exchange of information; and
 - e) The Contractor's web site must be secured against unauthorized access by ensuring that all accesses are logged and by requiring a user identification and a password, where the password must:
 - i) Be at least six characters long;
 - ii) Be known only by the authorized user of the account;
 - iii) Not be embedded in an automated logon procedure (sign-on script);
 - iv) Never be displayed on the computer monitor;
 - v) Never be printed or included on computer file or print output;
 - vi) Be protected by one-way encryption; and
 - vii) Lock the account after three failed attempts to enter the correct password.

2.10 MAINTENANCE CAPABILITY & RESPONSE TIMES

2.10.1 General

- 2.10.1.1 The Contractor must ensure that all locations designated as equipment Maintenance Centres are equipped with adequate tools and test equipment to effectively perform the equipment maintenance function, and that technicians are skilled in the performance of such activity and are familiar with the equipment to be maintained.
- 2.10.1.2 The Contractor must ensure that in the process of on-site maintenance service, any impaired or failed remote hardware must be rendered serviceable within a period designated in Section 2.10.1.6 (subject to timely availability of commercial transportation). In the event of non-timely availability of commercial transportation, the Contractor must make a best effort approach to respect the period designated in Section 2.10.1.6.

- 2.10.1.3 Despite Supplemental General Conditions 4001, Section 12(3), the Contractor is responsible for the Service including any failure caused by a defect in the terminal.
- 2.10.1.4 "Maximum Time to Repair" or "MTTR" is the elapsed time from when Canada first reports the trouble or the time when Contractor first recognizes the performance of the Service or the Hardware is being affected by any condition (whichever is earlier) until the trouble or other performance problem has been resolved (i.e., the trouble has been resolved and the Service has been restored to full performance in accordance with the terms of this Contract). The MTTR, in the case of On-Site Maintenance will be calculated as the time elapsed during regular business hours. The MTTR includes all time taken by the Contractor to detect the fault, isolate the problem, remove and replace any faulty equipment, verify the repair, and restore the Service and/or Hardware to Fully Functional Operation.
- 2.10.1.5 Despite Supplemental General Conditions 4001, Section 26(3)(d), where the Contractor is able to resolve the trouble or performance problem remotely, the MTTR is 4 hours.
- 2.10.1.6 Despite Supplemental General Conditions 4001, Section 26(3)(a) & (d), where on-site maintenance is required, the Contractor must resolve the trouble or performance problem, within the following MTTR:
- a) Maintenance Zone A : 24 hours
 - b) Maintenance Zone B : 48 hours
 - c) Maintenance Zone C : 72 hours
- 2.10.1.7 Maintenance Zones are defined in Section 2.10.3.
- 2.10.1.8 During the operating term of the service, and for cases where the satellite earth station antenna is misaligned due to events caused by human activity or due to events outside human control for which no one can be held responsible, the contractor will be responsible to restore the service and will be able to charge at additional cost to Canada (labour, materials and T&L). For any other event, the contractor will be responsible to restore the service at cost to Canada.

2.10.2 Seasonal services

- 2.10.2.1 For services that are seasonal in nature, whereas at the end of the season there is no request to de-install the equipment and where the equipment will remain on-site, monthly service fees would apply for the service to remain idle until such time that Canada requests, via a service order, to reactivate the service

2.10.3 Maintenance Zones

- 2.10.3.1 Despite the Supplemental General Conditions 4001, Section 26 (3) (a), the Maintenance Zones are defined as follows:

Zone A:

Includes any site south of the 55th parallel in British Columbia, Saskatchewan or Manitoba, south of the 57th parallel in Alberta, or south of the 50th parallel in Ontario, Quebec, the Maritimes, Newfoundland or Labrador and is accessible using all-season paved public highways. Any location within Zone A boundaries that cannot be accessed using all-season paved public highways will be considered to fall within Zone B.

Zone B:

Includes any site south of the 55th parallel in British Columbia, Saskatchewan or Manitoba, south of the 57th parallel in Alberta, or south of the 50th parallel in Ontario, Quebec, the Maritimes, Newfoundland and Labrador that cannot be reached using all-season paved public

highways, or where a ferry or air transport must be used. Examples include bush camps, mining sites, oil explorations sites and isolated communities.

Zone C:

Includes any sites north of the Zone B boundaries.

2.11 INSTALLATION AND DE-INSTALLATION SERVICES

2.11.1 General

- 2.11.1.1 When requested by the Technical Authority via a Service Order, the Contractor must provide installation services on-site. Furthermore when requested by the Technical Authority via a Service Order, the Contractor must provide de-installation services on-site. See Section 2.11.1.7 and 2.11.1.8 for tasks involved in this work. On-site is considered at a site within Canada where Canada is requesting the installation services. The Contractor must perform all site surveys, installs, civil works (if required), de-installs and make all arrangements with landlords and landowners to deliver the Service. The Contractor must coordinate with and manage any third party installers or field service representatives (FSR) for all installations, de-installations, preventative maintenance activities and repair dispatches. A return to depot repair is considered the contractor's repair facility within North America. Any return to depot shipping and handling charges will be at the cost of the Contractor.
- 2.11.1.2 All installations done in Installation Zones 1 and 2 will be covered by the client's installation one-time fee and service monthly fees as indicated in the Pricing Tables (Annex B1 – Appendix C) of this contract. Installation Zones are defined in Section 2.11.1.6. The Contractor must provide a list of locations where the Contractor has authorized distributor(s) who provide installation services. The Contractor will not invoice for any extra Travel and Living expenses, outside those specified in the Pricing Tables of this contract.
- 2.11.1.3 For installations done in Installation Zones 3 and 4, for which these locations that are very remote and possibly do not have highway or road access, the Contractor must provide on request from the Technical Authority a quote to Canada that details the cost for the installation of a shared capacity satellite service at these locations and if applicable, the estimated Travel and Living expenses. Installation Zones are defined in Section 2.11.1.6. Travel and Living expenses must not exceed Treasury Board guidelines and all expenses must be supported with the appropriate receipts.
- 2.11.1.4 All de-installations done in Installation Zones 1 and 2 will be covered by the client's de-installation one-time fee as indicated in the Pricing Tables (Annex B1 – Appendix C) of this contract. De-Installation Zones are defined in Section 2.11.1.6. The Contractor must provide a list of locations where the Contractor has authorized distributor(s) who provide de-installation services. The Contractor will not invoice for any extra Travel and Living expenses, outside those specified in the Pricing Tables of this contract.
- 2.11.1.5 For de-installations done in Installation Zones 3 and 4, for which these locations that are very remote and possibly do not have highway or road access, the Contractor must provide on request from the Technical Authority a quote to Canada that details the cost for the de-installation of a shared capacity satellite service at these locations and if applicable, the estimated Travel and Living expenses. De-Installation Zones are defined in Section 2.11.1.6. Travel and Living expenses must not exceed Treasury Board guidelines and all expenses must be supported with the appropriate receipts.
- 2.11.1.6 The Installation and/or De-Installation Zones for the remote sites are defined as follows:
- a) Installation/De-Installation Zone 1: anywhere within 100 km from the city halls for Vancouver, Edmonton, Calgary, Regina, Winnipeg, Thunder Bay, Toronto, Ottawa, Montreal, Saint John, Halifax and St John's. This can include within 100 km of any

authorized third party distributor of the Contractor, who provides installation services on the behalf of the Contractor.

b) Installation/De-Installation Zone 2: anywhere south of or on the 55th parallel in B.C., Alberta, Saskatchewan or Manitoba and anywhere south of the 50th parallel in all other provinces.

c) Installation/De-Installation Zone 3: anywhere north of the 55th parallel in B.C., Alberta, Saskatchewan or Manitoba and anywhere north of the 50th parallel in all other provinces.

d) Installation/De-Installation Zone 4: anywhere in the Yukon, North West Territories and Nunavut.

2.11.1.7 The Contractor must satisfy the requirements of Supplemental General Conditions 4001 and Supplemental General Conditions 4004. Additional to Supplemental General Conditions 4001 05 (2008-05-12), the Contractor must ensure that the installation work also consists of the following tasks:

- a) locating a suitable location with proper line-of-sight to the satellite and obtain agreement/authority from the landlord as to the spot where the satellite antenna will be fixed.
- b) mounting the antenna, through the use of a mount that can be either wall or roof mounted.
- d) running the necessary cabling between the antenna and indoor based satellite modem.
- d) sealing all holes made to the outside building structure to allow penetration of the cabling.
- e) connecting the satellite modem to the antenna, using the cables just ran, and turn up the Service.
- f) demonstrating to the client that the Service is active by conducting some Internet browsing using the installer's laptop.

2.11.1.8 The Contractor must satisfy the requirements of Supplemental General Conditions 4001 and Supplemental General Conditions 4004. Additional to Supplemental General Conditions 4001 22 (2008-05-12), the Contractor must ensure that the de-installation work also consists of the following tasks:

- a) removing any mount from the wall or roof.
- b) removing the cabling that was originally ran by the installer.
- c) removing from the premise, all antenna, contractor owned hardware and any packing/packaging material. Any shipping will be paid for by the Contractor.
- d) performing a general cleanup to the same state that the site was in before arriving to the site.

PART 3 – STREAM 1 - PROVINCIAL SHARED CAPACITY SATELLITE SERVICES REQUIREMENTS

3.1 GENERAL

- 3.1.1.1 When requested by the Technical Authority, the Contractor must provide shared capacity satellite communication services to the federal government clients in all Canadian provinces within the Contractor's identified coverage areas as referenced in section 3.1.1.3 below. A list of sites that require service can be found in locations in Annex A1, Appendix A.. In addition this service may include any extension into the Canadian Territories (Yukon, North West Territories, Nunavut) that can be covered under the same Contractor's network and pricing plan.
- 3.1.1.2 In areas in Canada, where there exist community based communication systems ,with main transport using a satellite connection, combined with using other technologies such as fixed wireless service, mobile wireless service, Wimax, 3G, 4G, LTE or others , the Contractor may offer that particular service instead of shared capacity satellite services under the following conditions:
- a) The monthly pricing of these different technologies must have the same monthly charges for the plan # specifications.
- 3.1.1.3 , The Contractor must provide current coverage maps by email indicating the availability of these services across Canada, including all territories. The Contractor must automatically send new maps at any time there is changes made to where the services are available.
- 3.1.1.4 The Contractor must ensure that the services indicated below are provided in such a manner that the data rates indicated are being delivered. The Contractor will continually monitor the congestion rate of these services and provided additional space segment resources if the peak congestion rate reaches a value of 75% utilization.
- 3.1.1.5 The Contractor must provide Internet access as part of the shared capacity satellite service. The Contractor must, upon request from the Technical Authority, provide access to an external backhaul provider in order to have a dedicated backhaul (i.e. MPLS, dark optic fibre, etc.) installed at the Hub facilities. This backhaul would be used to carry all of Canada's data traffic to a designated Data Center, operated by Canada, instead of through the Internet access that the Contractor is providing.
- 3.1.1.6 The Contractor must provide Hub redundancy to the shared capacity satellite services as to mitigate the effect of any component failure on the Hub.

3.2 PLAN # 1 SERVICES

- 3.2.1.1 The Contractor's Plan # 1 Services must provide the following service functionalities:
- a) Download Speed capable of up to 1.0 Mbps , Upload Speed capable of up to 256 kbps
 - b) Monthly data plan that includes at least 5 GBytes of combined upload and download data consumption.
 - c) Ability to consume over the included data plan limit at a specified price per GByte.
- 3.2.1.2 The Contractor's Plan # 1 Services must also support the use of VoIP services whether the VoIP service is provided by the Contractor or any other VoIP provider. The Plan must allow

the unobstructed operation of VoIP communications using the standards and compression codecs described in Section 3.7.

- 3.2.1.3 The Contractor must ensure that the Contractor's Plan # 1 Services service carries Virtual Private Network (VPN) traffic using VPN products based on IPSec, L2TP, PPTP, L2F and SSL protocols.
- 3.2.1.4 The Contractor must provide the Client, if requested, the assignment of a public static IP address with up to 60 IP subnets for any terminal using the Contractor's Plan # 1 on request.
- 3.2.1.5 The Contractor must not protocol filter any IP traffic originating from equipment at the remote sites unless requested by the Technical Authority.

3.3 PLAN # 2 SERVICES

- 3.3.1.1 The Contractor's Plan # 2 Services must provide the following service functionalities:
 - a) Download Speed capable of up to 2.0 Mbps , Upload Speed capable of up to 512 kbps
 - b) Monthly data plan that includes at least 20 GBytes of combined upload and download data consumption.
 - c) Ability to consume over the included data plan limit at a specified price per GByte.
- 3.3.1.2 The Contractor's Plan # 2 Services must also support the use of VoIP services whether the VoIP service is provided by the Contractor or any other VoIP provider. The Plan must allow the unobstructed operation of VoIP communications using the standards and compression codecs described in Section 3.7.
- 3.3.1.3 The Contractor must ensure that the Contractor's Plan # 2 Services service carries Virtual Private Network (VPN) traffic using VPN products based on IPSec L2TP, PPTP, L2F and SSL protocols.
- 3.3.1.4 The Contractor must provide the Client, if requested, the assignment of a public static IP address with up to 60 IP subnets for any terminal using the Contractor's Plan # 2 on request.
- 3.3.1.5 The Contractor must not protocol filter any IP traffic originating from equipment at the remote sites unless requested by the Technical Authority.

3.4 PLAN # 3 SERVICES

- 3.4.1.1 The Contractor's Plan # 3 Services must provide the following service functionalities:
 - a) Download Speed capable of up to 3.0 Mbps , Upload Speed capable of up to 1.0 Mbps
 - b) Monthly data plan that includes at least 50 GBytes of combined upload and download data consumption.
 - c) Ability to consume over the included data plan limit at a specified price per GByte.
- 3.4.1.2 The Contractor's Plan # 3 Services must also support the use of VoIP services whether the VoIP service is provided by the Contractor or any other VoIP provider. The Plan must allow the unobstructed operation of VoIP communications using the standards and compression codecs described in Section 3.7.
- 3.4.1.3 The Contractor must ensure that the Contractor's Plan # 3 Services service carries Virtual Private Network (VPN) traffic using VPN products based on IPSec, L2TP, PPTP, L2F and SSL protocols.
- 3.4.1.4 The Contractor must provide the Client, if requested, the assignment of a public static IP address with up to 60 IP subnets for any terminal using the Contractor's Plan # 3 on request.

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3.4.1.5 The Contractor must not protocol filter any IP traffic originating from equipment at the remote sites unless requested by the Technical Authority.

3.5 PLAN # 4 SERVICES

- 3.5.1.1 The Contractor's Plan # 4 Services must provide the following service functionalities:
- a) Download Speed capable of up to 5.0 Mbps or more, Upload Speed capable of up to 1.0 Mbps or more
 - b) Monthly data plan that includes at least 100 GBytes of combined upload and download data consumption.
 - c) Ability to consume over the included data plan limit at a specified price per GByte.
- 3.5.1.2 The Contractor's Plan # 4 Services must also support the use of VoIP services whether the VoIP service is provided by the Contractor or any other VoIP provider. The Plan must allow the unobstructed operation of VoIP communications using the standards and compression codecs described in Section 3.7.
- 3.5.1.3 The Contractor must ensure that the Contractor's Plan # 4 Services service carries Virtual Private Network (VPN) traffic using VPN products based on IPSec, L2TP, PPTP, L2F and SSL protocols.
- 3.5.1.4 The Contractor must provide the Client, if requested, the assignment of a public static IP address with up to 60 IP subnets for any terminal using the Contractor's Plan # 4 on request.
- 3.5.1.5 The Contractor must not protocol filter any IP traffic originating from equipment at the remote sites unless requested by the Technical Authority.

3.6 VOIP SERVICES

3.6.1 VoIP Services Features

- 3.6.1.1 The Contractor, on request from the Technical Authority, may provide Voice over IP (VoIP) services for any of the 5 Plans described in Sections 3.2 to 3.6. If the Contractor does provide VoIP services, the Contractor must provide the pricing elements within the PPL (Purchase Price List) as described in Annex B1, Appendix E.
- 3.6.1.2 If the Contractor is providing VoIP services, then the Contractor ensure that the VoIP service conforms to the Emergency Response (911) requirements as identified in Section 3.8 – Emergency Response (911) over VoIP.
- 3.6.1.3 If the Contractor is providing VoIP services, then the Contractor must provide the following VoIP service features at no additional cost: Call Waiting, Voicemail and Caller ID. Any cost for these features must be imbedded/incorporated into the monthly fee of the VoIP service.

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3.6.1.4 If the Contractor is providing VoIP services, then the Contractor must imbed/incorporate all charges/fees for the following attributes within the VoIP monthly fee:

- a) Network Access Fee
- b) Long Distance Administration Fee
- c) 911 Service Fee.

3.6.1.5 The Contractor may provide the equipment for which an analog phone can be connected and the phone call is converted to an IP format, which will function over any of the 5 Plans.

3.6.2 VoIP Compression Codecs

3.6.2.1 The Contractor must provide the Ka-band services such that the following VoIP compression codecs will function over the Ka-band service, whether the VoIP service is provided by the Contractor or from some other provider: G.726, G.729, G.729A.

3.7 EMERGENCY RESPONSE (911) SERVICES OVER VOIP

3.7.1 General

3.7.1.1 The Section 3.7.2, including all clauses from 3.7.2.1 to 3.7.2.9, are relevant only if the Contractor is providing VoIP services in this contract. If the Contractor is not providing any VoIP services through this contract, then the Contractor can ignore Section 3.7.2.

3.7.2 Emergency Response Services over VoIP specifications

3.7.2.1 The VoIP service must route all emergency calls (i.e. calls placed by dialling 911, 9 + 911 or exit code + 911) to the Public Safety answering Point (PSAP) that is closest to the location of the user device being used to place the emergency call.

3.7.2.2 The VoIP service must deliver the "registered location" of the caller, which includes information that would identify the caller as a VoIP user to the PSAP.

3.7.2.3 The Emergency Response – 911 features must operate 24 hours-per-day, 7 days-per-week and 365 days-per-year.

3.7.2.4 The VoIP system servers supporting emergency Response -911 must be able to scale to the given number of user devices without adding additional equipment.

3.7.2.5 The Contractor must ensure that, in the event that the PSAP operator has a requirement to call back to the Direct Inward Dial (DID) number presented with the 911 call, the PSAP call must be forwarded by the VoIP system directly to the directory number of the hard or soft IP user device that initiated the original 911 call.

3.7.2.6 The Contractor must ensure that the VoIP system delivers 911 location identification based on an automated and survivable process; the VoIP system must be dependent on any parameters that must be set by the users or that could be overridden by user actions.

3.7.2.7 The Contractor must ensure, for the purposes of providing accurate location information for 911 calls, the VoIP system supports up to one(1) Emergency Location Identification Number (ELIN) per fifty (50) licensed user devices

3.7.2.8 The Contractor must ensure that the VoIP system pre-empt a lower-priority PSTN call in progress in order to allow the 911 call to be directed to the PSAP when the PSTN connections are all in use and are unavailable for a 911 call.

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3.7.2.9 Supplemental General Conditions 4005 07 (2008-05-12) Limitation of Liability for Mandatory 9-1-1 Emergency Service for Wireless Telecommunications Services will be in effect.

PART 4 – SHARED CAPACITY SATELLITE EQUIPMENT REQUIREMENTS

4.1 GENERAL

- 4.1.1.1 The Contractor must provide equipment, as and when requested with on-going equipment support. This equipment will remain the property of the Contractor.
- 4.1.1.2 The Contractor must offer installation services for equipment anywhere in Canada. The Technical Authority will issue the necessary Service Order for the Contractor to perform any required installation services.
- 4.1.1.3 The equipment supplied must be compatible to the network infrastructure from which the clients of Canada will be subscribed to.
- 4.1.1.4 The Contractor must provide to each of Canada's clients the necessary equipment, determined by the Contractor, in order to successfully access the subscribed Plan. The Contractor must include/imbed any fees for the supply/use of the equipment into the monthly cost of the Service Plan.
- 4.1.1.5 The Contractor must provide approved equipment for the following services in any of the 2 Streams:
- a) Plan # 1 Services;
 - b) Plan # 2 Services;
 - c) Plan # 3 Services; and
- Plan # 4 Services; 4.1.1.6 The equipment supplied must have Ethernet RJ-45 connectivity.

4.2 HARDWARE RETROFITS AND UPGRADES

- 4.2.1.1 The Contractor must satisfy the requirements of Supplemental General Conditions 4001 and Supplemental General Conditions 4004, except as specifically noted below. As part of the Hardware Maintenance Service, the Contractor must provide hardware retrofits and modifications including software and installation where required for the correction of identified operational problems as a result of design deficiencies, and where such modifications are supported by the equipment manufacturer or software publisher.

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- 4.2.1.2 Where equipment retrofits and/or upgrades are required, the Contractor must coordinate these activities with user groups and perform these activities where required to ensure that system/hardware modifications are performed with minimal inconvenience and no additional cost to the Clients, and with minimal disruption to service.
- 4.2.1.3 The Contractor must provide software updates and enhancements as supported by the hardware manufacturer or his agent during the Contract Period at no additional cost to the Clients for equipment supported directly by the Contractor. These software updates and enhancements are to be downloaded to the remote hardware through the transmission capability of the hub or through the actions of an agent of the Contractor who is providing on-site maintenance services on the remote hardware..

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PART 5 - GLOSSARY AND DEFINITIONS

- **DID, Direct Inward Dial:** Telephony feature that allows a Calling Party to place a call to a Called Party on the PSTN without the assistance of an automated attendant or Attendant Answering.
- **Earth Station:** The earth-based communications station providing the communication link to a communications satellite. The earth station itself is usually an antenna that includes a low-noise amplifier, a down-converter, as well as an electronics receiver/modem. The antenna itself can vary in size from at little at 66 cm to 1.8 meters, depending on its usage. May also be called a *satellite earth station*.
- **ELIN, Emergency Location Identification Number:** An identification number assigned to an IP user to help locate the user during a state of emergency.
- **E-mail:** Electronic mail: a global message-handling system whereby subscribers to commercial e-mail services can exchange electronic messages and data files between computers. E-mail services are provided by some service providers and private organisations. Access to e-mail services may be via PSTN, PSDN networks or the Internet.
- **Footprint Coverage (of a satellite):** The area on the Earth's surface (sea or land) covered by the satellite and where an antenna can obtain line-of-sight communications. In the Inmarsat systems, this area is also known as the ocean region or coverage area.
- **IP (Internet protocol):** The set of protocols used to communicate via the Internet and between multiple networks.
- **ISP (Internet Service Provider):** An entity which establishes a contract with one or more of the SPs to bill, promote and retail the services of the contracted SPs to end users. It can be an alternative to an AA.
- **Kbps:** Kilobits per seconds
- **Mbps:** Megabits per second.
- **Gbytes:** Gigabytes.
- **Modem:** MODulator/DEModulator, a device used to transmit digital data, by converting (modulating) a digital signal into an analogue form and re-converting (demodulating) the analogue signal into digital form at the receiving end.
- **Protocol:** A defined set of communications standards which lay down the parameters to which all users must abide.
- **PSTN:** Public Switched Telephone Network; The network of the world's public circuit-switched telephone networks which allows any telephone in the world to communicate with any other.
- **PSAP, Public Safety Answering Point:** A call center responsible for answering calls to an emergency directory number for police, firefighting, and emergency medical services.
- **Public Networks:** term used to reference all publicly accessible terrestrial networks comprising of PSTN, PSDN and Internet.
- **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.
- **Spot beam:** A concentrated area offering coverage within the global footprint for particular regions in the world.
- **Terminal:** a satellite communication device used to access the Ka-band network with any of the Service Plans. This will be considered as part of the "Leased Hardware".
- **VoIP:** A family of internet technologies, communication protocols, and transmission technologies for delivery of voice communications and multimedia sessions over Internet Protocol (IP) networks.