

# **Mobile Satellite (MSAT) 3<sup>rd</sup> Generation Services and Equipment**

## **ANNEX A2 – STREAM 2**

## **STATEMENT OF WORK**

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# 1 PART 1 – GENERAL REQUIREMENTS

## 1.1 INTRODUCTION

### 1.1.1 Mobile Satellite (MSAT) 3<sup>RD</sup> Generation (Data, and IP-Based Push-To-Talk (PTT)) services

1.1.1.1 Shared Services Canada (SSC) has a requirement for provisioning, maintenance and operation of Mobile Satellite (MSAT) 3<sup>RD</sup> generation data, and IP-Based Push-To-Talk (PTT) satellite services. The MSAT equipment and services needs to operate over the Ligado, SkyTerra-1 satellite and ViaSat managed terrestrial service network. The services need to be available across North and Central America, northern South America, the Caribbean, Hawaii and in coastal waters. Shared Services Canada also have a requirement for provisioning of terminal equipment, accessories and maintenance support.

### 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 – Operational Requirements;
- c) Part 3 – Mobile Satellite (MSAT) 3<sup>rd</sup> Generation (Data, GPS and Dispatch) services;
- d) Part 4 – Mobile Satellite (MSAT) 3<sup>rd</sup> Generation Terminal Requirements;
- e) Part 5 – Installation and Repair Services

## 2 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 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 primary point-of-contact for both management and technical matters.

### 2.2 CLIENT SUPPORT

#### 2.2.1 Help Desk

- 2.2.1.1 The Contractor must provide the Client with technical support through a help desk accessible using a toll-free number available within North America. The Contractor must also provide the technical support through an abbreviated toll-free number accessible from any Mobile Terminal.
- 2.2.1.2 The Contractor's help desk support representatives must respond to Client user questions and, to the extent possible, resolve user problems and provide advice regarding configuration problems relating to all the terminals, accessories and services supplied under this Contract.
- 2.2.1.3 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.
- 2.2.1.4 The Contractor's help desk must be staffed and available to the Client using the toll-free number 24 hours a day, every day of the year.
- 2.2.1.5 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:
- a) 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.
  - b) 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

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(D) Government Department.

- v) Description of the problem;
- vi) Resolution of the problem; and
- vii) Status (open or closed).

## 2.2.2 Engineering Assistance

2.2.2.1 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.

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

- a) Compatibility issues;
- b) Supported encryption protocols; and
- c) Intermittent or chronic performance issues.

2.2.2.3 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.

## 2.3 PROBLEM MANAGEMENT

### 2.3.1 General

2.3.1.1 The Contractor must manage all problems affecting the delivery of services under this Contract. 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 Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services (Data, and IP-Based Push-To-Talk (PTT) 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.

2.3.1.2 If the Contractor determines that a problem is a terminal equipment issue; the Contractor must refer the Client to the Contractor's repair centre.

2.3.1.3 The Contractor must perform remote network monitoring, preventative diagnostics and co-ordinate problem isolation and resolution.

2.3.1.4 The Contractor must perform the following activities on an on-going basis when handling network or service-related problems:

- a) identify each reported problem by a unique problem record number (ticket number);
- b) perform an analysis of the problem reported;
- c) maintain an audit trail that includes all actions taken until the problem is resolved; and
- d) Provide reports as listed in the Section named "Reports".

2.3.1.5 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 Mobile Satellite (MSAT) services.

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2.3.1.6 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.

## 2.3.2 Escalation Procedures

2.3.2.1 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 at contract award.

2.3.2.2 Escalation time lines (which are in effect 24 hours/day, 7 days/week):

SSC Management Escalation Levels	Contractor’s Management Escalation Levels	Low Severity	Medium Severity	High Severity
SSC Manager Operations	Level 1	8 hours	4 hours	30 minutes
SSC Director Operations	Level 2	12 hours	8 hours	1 hour
SSC Director General Operations	Level 3	24 hours	12 hours	2 hours

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 network affecting any single, or group of, satellite terminals(s) for, or during, a continuous period exceeding 8 hours (excluding scheduled maintenance as defined in Section 2.7).
- b) **Medium Severity:** Diminished capacity (including repeated intermittent availability) of the network affecting any Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services for, or during, a continuous period exceeding 4 hours (excluding scheduled maintenance as defined in Section 2.7).
- c) **High Severity:** Complete unavailability of the network affecting any Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services, including the complete failure of a satellite for a period exceeding 30 minutes (excluding scheduled maintenance as defined in Section 2.7).

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

2.3.2.4 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.

## 2.4 SERVICE PERFORMANCE MONITORING

### 2.4.1 Minimum Availability of Mobile Satellite (MSAT) 3<sup>rd</sup> Generation Services

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2.4.1.1 The Contractor must provide the Mobile Satellite (MSAT) services and maintain any related terrestrial facilities to ensure that the connectivity from the satellite link (from the satellite terminal to the Contractor's terrestrial hand-off point) provides a Minimum Availability Level of at least **99.97%** in each calendar month.

2.4.1.2 The Actual Availability Level 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 Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services. 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.

2.4.1.3 Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services outage is defined as a failure of any network facilities that completely prevent successful processing of any of the Mobile Satellite (MSAT) 3<sup>RD</sup> Generation services functionalities. The network facilities include the satellite network (satellite and communications paths), Land Earth Station (LES), and terrestrial backhaul networks.

## 2.5 SCHEDULED SERVICE-AFFECTING AND MAINTENANCE ADVISORY

2.5.1.1 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.

2.5.1.2 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 ACCOUNT MANAGEMENT

### 2.6.1 Account Representative

2.6.1.1 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, sales or support of telecommunications services to government organizations experience within the last 10 years; and

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- b) At least 1 year of experience in the delivery, sales or support of Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services Satellite services to government organizations within the last 4 years.

2.6.1.2 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.

## 2.6.2 Meetings

2.6.2.1 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.

2.6.2.2 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 Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services and/or terminals, or otherwise assisting SSC in communicating with Clients about the Satellite Services available under this Contract.

2.6.2.3 Attendance at all meetings is at the Contractor's own expense, including any travel and living expenses that may be incurred.

## 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 at the email addresses identified in Article 1.6 of the Contract.

### 2.7.2 Monthly Service Order Report

2.7.2.1 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;
- b) Date issued;
- c) Description of service;
- d) Client Name (Government Department);
- e) Service Order Amount;
  - i) Total Committed Value (\$); and
  - ii) Spent/Billed amount;
- f) Applicable taxes;
- g) Total Value of Service Order amount including applicable taxes; and
- h) Status (Approved, Completed or Cancelled).

### 2.7.3 Contract Summary Report



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2.7.3.1 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;
- 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.

2.7.3.2 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).

## 2.7.4 Outage Notifications

2.7.4.1 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.

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

2.7.4.3 Once the Mobile Satellite (MSAT) services Narrowband (, Data and Pager) and Broadband ( and Data) Satellite Service(s) has been restored, the Contractor must notify the Technical Authority by email immediately.

## 2.7.5 Availability Report

2.7.5.1 The Contractor must provide the technical authority with an availability report of all MSAT services listed under this contract within 20 calendar days following the end of the previous month of provided services.

## 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 in Canada on a monthly basis for all one-time and recurring charges accounted for in that month based on a billing period of the first of the month until the last day of that month. 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

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charged for. Equipment must be ind separately from services. All services and equipment must be delivered before it can be ind.

- 2.8.1.3 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 Invoicing

- 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 in and a copy of Annex "B1" (if applicable) to the Contracting and Technical Authorities listed on the contract in Portable Document Format (PDF), which includes the Contractor's official letterhead or logo via email.

- 2.8.2.2 The Contractor must ensure that the summary in and Annex "B1" are received by the Contracting and Technical Authorities within 10 working days after the end of each billing period.

## 2.8.3 Billing Detail File

- 2.8.3.1 The Contractor must provide the Technical Authority with the Billing Detail File containing all billing details for the monthly billing period. The Billing Detail File is the data that supports the monthly summary in.

- 2.8.3.2 The Billing Detail File must be provided via email.

- 2.8.3.3 The Contractor must provide the Billing Detail File in a flat-file format. The flat-file format must be an industry-standard Open Data Base Connectivity (ODBC) compliant fixed-length file of 341 characters. Each file must be related to an invoicing period and contain the details to reconcile the in electronically. The flat file must contain 3 separate record layouts and the data must be formatted into specific record fields and each field must include a pre-specified element format. The specific formatting is provided in Appendix A to Annex A – Billing Detail File Layout. Canada reserves the right to make minor adjustments to the format to meet technical requirements once the Contract has been awarded to ensure accurate and timely processing.

- 2.8.3.4 The Billing Detail File must contain all charges for that invoicing period (including any charges resubmitted in accordance with the Contract). The amount on the monthly summary in for any usage and/or detailed charges at the item/service level must equal the total on the Billing Detail File and, in case of a discrepancy; the Billing Detail File will take precedence. Therefore the amount reconciled that will be paid is the total amount on the Billing Detail File, minus any transactions that are rejected.

- 2.8.3.5 The Contractor must ensure that the file is received by the Technical Authority within 10 working days after the end of each billing period.

- 2.8.3.6 If the Contractor applies an exchange rate fluctuation adjustment, the amounts being ind in that month in the Billing detail file must reflect the adjusted ind amount at the detail level and summary levels.

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## 2.8.4 Service Delivery Intervals (SDI)

- 2.8.4.1 The Service Delivery Interval (SDI) is defined as the elapsed time between the issuance of the Service Order and the delivery/acceptance of the service.
- 2.8.4.2 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.

Service Order Type	MSDI for Regular Priority Service Orders	MSDI for Express Priority Service Orders
Service functionality activation, deactivation or change	8 hours	4 hours
Existing Terminal registration or deregistration	8 hours	4 hours
Delivery of new terminal(s) within Canada (for quantities of 10 or less)	10 business days	5 business days
Delivery of new terminals within Canada (for quantities greater than 10)	20 business days	10 business days

## 2.8.5 Service Order Completion Notification (SOCN)

- 2.8.5.1 The Contractor must issue a Service Order Completion Notification in order for SSC to verify and validate that the Ligado service (Voice, Data, and Dispatch PTT) satellite service and/or equipment have been delivered per the Service Order. Any invoiced items related to a Service Order for which SSC has not received an SOCN will not be paid until the SOCN is received.
- 2.8.5.2 The Service Order Completion Notification must, at a minimum, provide Canada with:
- h) Service Order number;
  - i) the serial or inventory numbers of all the terminals, and/or accessories processed from this Service Order;
  - j) all activated or deactivated service functionalities from this Service Order; and
  - k) Service Order Completion Date.

### **3 PART 3 - MOBILE SATELLITE (MSAT) 3RD GENERATION (DATA AND IP BASED PUSH-TO-TALK) SERVICES REQUIREMENTS**

#### **3.1 MOBILE SATELLITE (MSAT) DATA AND GPS SERVICES DESCRIPTION**

3.1.1.1 The Contractor of Mobile Satellite (MSAT) 3<sup>rd</sup> Generation services must provide the following data and GPS service functionalities:

- a) Monthly Access;
- b) Data Services
  - i) Data speeds up to 1Mb/s download
  - ii) Data speeds up to 10Kb/s upload
  - iii) Ability to transmit GPS coordinates
  - iv) Ability to offer different service package plans;
  - v) Ability to secure data over AES-256 for military grade communication

#### **3.2 MOBILE SATELLITE (MSAT) IP BASED PUSH-TO-TALK SERVICE DESCRIPTION**

3.2.1.1 The Contractor of Mobile Satellite (MSAT) 3<sup>rd</sup> Generation service must provide the following service IP-Based Push-To-Talk service functionalities:

- a) Monthly Talkgroup Access;
- b) All Beams, Unlimited PTT and Talk Groups;
- c) All Beams, Unlimited PTT and Talk Groups, 24/7 phone support
- d) Ability to listen to and prioritize multiple talk groups
- e) Ability to create talk groups locally, regionally or nationwide at no extra cost;
- f) Ability to create talk groups of any size and number;
- g) Ability to reprogram talk groups over the air and on the go;

3.2.1.2 The Contractor of Mobile Satellite (MSAT) 3<sup>rd</sup> Generation service must provide the following service functionalities if and when they become available:

- a) Interoperability between MSAT-G3 hardware/services and MSAT-G2 Legacy hardware/services and talk groups, and;
- b) Private mode talk groups for one-to-one conversation.

#### **3.3 MOBILE SATELLITE (MSAT) VOICE SERVICE**

3.3.1.1 The Contractor of Mobile Satellite (MSAT) 3<sup>rd</sup> Generation service must provide the following voice service if and when the service becomes available:

- a) Voice service to the public switching telephone network (PSTN) from the MSAT G3 service;
- b) Voice service from the public switching telephone network (PSTN) to the MSAT G3 service;

## 4 PART 4 – MOBILE SATELLITE (MSAT) 3RD GENERATION TERMINAL REQUIREMENTS

### 4.1 GENERAL

- 5.1.1.1 The Contractor must provide terminals and terminal support, as specified in this Contract, for all Clients throughout the Contract Period.
- 5.1.1.2 The Contractor must provide terminal installation services for the maritime, vehicles and fixed terminal classes anywhere in Canada. The Technical Authority will issue the necessary Service Order for the Contractor to perform any required installation service.
- 5.1.1.3 The terminal equipment supplied must be type-approved by Canada and ViaSat and/or Ligado.
- 5.1.1.4 "Mobile or Fixed" is defined as AC / DC powered land operation systems designed to be used in fixed locations using non-tracking high-gain antenna systems
- 5.1.1.5 Must be able to operate on a moving vehicle at speeds up-to 200KM/h.

### 5.2 MOBILE SATELLITE (MSAT) 3<sup>RD</sup> GENERATION TERMINALS

- 5.2.1.1 The Contractor must offer Mobile Satellite (MSAT) 3<sup>rd</sup> Generation Terminal Equipment.
- 5.2.1.2 The terminal equipment supplied must be type-approved to operate within Canada and over the Ligado satellite constellation and over the Ligado / ViaSat management network
- 5.2.1.3 Each Mobile Satellite (MSAT) 3<sup>rd</sup> generation mobile terminal must include and have the following components, features and specifications:
  - a) Explorer 122 Satellite Terminal;
  - b) Power/Ethernet mating connector,
  - c) Quick Start Guide
  - d) Push-To-Talk Unit
  - e) Cable Relief Bracket
  - f) PTT Power Cable
  - g) Control Speaker Microphone and cradle
  - h) 5M Speaker Handset/Mic Extension Cable
  - i) Explorer 122 connection box
  - j) E122 magnetic mounts
  - k) 6M E122 combined power/Ethernet cable
  - l) IP-66 rating – dust and spray proof in all directions
  - m) Wireless connectivity with 802.11 B/G or Bluetooth 3.0
  - n) Works at speeds up to 200 KM per hour
  - o) Must be roof mountable with optional magnetic mounts
  - p) Have the ability to automatically switch to LTE/3G/2G when these ground services are available.
  - q) Must support the ability to connect to Land Mobile Radio (LMR) DEVICES
- 5.2.1.4 The Contractor must offer the following accessories for the Mobile Satellite (MSAT) Terminals:
  - a) Magnetic mount kit;
  - b) Permanent (Mast) pole mounting kit;
  - c) USB Cellular Modem;
  - d) E122 Connection box;

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- e) E122 Connection cable – 6M Combined Ethernet and Power Cable;
- f) G3 satellite terminal including power/Ethernet mating connector and documentation;
- g) G3 Explorer PTT unit with E3647 PTT BDU, E6205 Control Speaker Mic, BDU Power cable and documentation;
- h) G3 Integration cable – G3 to VHF/UHF Land Mobile Radio (LMR) – 6’;
- i) Fixed Pole mount Kit;
- j) Fly away kit for the MSAT G3;

## 6.0 PART 5 - INSTALLATION AND REPAIR SERVICES

5.0.1.1 When requested by the Technical Authority via a Service Order, the Contractor must provide installation and repair services on-site or return to depot. On-site is considered at a site within Canada where Canada is requesting the installation or repair services. A return to depot repair is considered the Contractor’s repair facility within North America.

5.0.1.2 When requested, the Contractor must provide a quote to Canada that details the number of effort hours required to complete the installation or repair and if applicable, the estimated Travel and Living expenses. Travel and Living expenses must not exceed Treasury Board guidelines and all expenses must be supported with the appropriate receipts.