ANNEX B1

STATEMENT OF WORK

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

NOTICE

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document must continue to apply.

AVIS

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement doivent continuer de s'appliquer.

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1 Scope

1.1 Purpose

The purpose of this Statement of Work (SOW) is to define the work requirements for the acquisition of the Laser Range Finder - Hand Held Thermal Imager - Long Range (LRF HHTI-LR) System.

1.2 Background

The LRF HHTI-LR will be acquired and supported through two separate contracts.

The Acquisition contract (to which this SOW applies) generally covers the following work:

- Development and verification of an LRF HHTI-LR system that fully satisfies Canada's requirements;
- Development of the Integrated Logistic Support (ILS) elements that will be required to support the LRF HHTI-LR when introduced into operational service;
- Production, verification and delivery of LRF HHTI-LR systems; and
- Delivery of ILS elements to support the introduction of the LRF HHTI-LR into operational service and support the systems for the first two years of service

The In-Service Support contract, for which the work is defined in the In-Service Support SOW, generally covers the following work:

- Second and third level repair and overhaul;
- Technical Investigations and Engineering Support (TIES);
- Additional Work Requirements (AWR);
- Investigation of Unsatisfactory Condition Reports (UCR);
- Failure Analysis;
- Provision of Spare Parts; and
- Disposal

1.3 Intended Use

The LRF HHTI-LR system will provide the Canadian Armed Forces (CAF) with hand-held capability(ies) to detect, recognize and identify of objects of interest under varying conditions of light and visibility. The system will provide the capability to accurately geolocate targets and transmit target(s) data to other systems. Imagery produced by the LRF HHTI-LR System will be saved and transferred for analysis. The system will be used by the Canadian Army in the combat arms leader, sniper, reconnaissance and other similar roles. It will be used by the Royal Canadian Navy to enhance general situational awareness, by boarding parties, and for security surveillance when in port.

1.4 Glossary and Acronyms

The glossary of terms and meaning of acronyms used in this SOW and associated annexes and appendices can be found in Appendix 7 References, Acronyms, Glossary and Lexicon.

First use of an Acronym will follow (in parentheses) the first use of the term it represents.

1.5 Applicable Documents

The Contractor must use the referenced documents listed in Section 2 to Appendix 7 References, Acronyms, Glossary and Lexicon for the preparation of deliverables to the extent specified in this SOW and appendices to this SOW

2 General Requirements

2.1 Contract End Item Deliverables

The contractor must deliver the contract end item deliverables in accordance with (IAW) the Contract End Items List (CEIL) in Appendix 1.

2.2 Contract Service Deliverables

The Contractor must deliver the contract service deliverables IAW the Contract Services Requirements List (CSRL) in Appendix 1.

2.3 Contract Data Deliverables

2.3.1 Identification of Contract Data Deliverables

The Contractor must deliver the contract data deliverables identified in the Contract Data Requirements List (CDRL) in Appendix 1 Contract Deliverables.

2.3.2 Format of Contract Data Deliverables

Unless otherwise specified in a CDRL or Data Item Description (DID), or approved by the Technical Authority (TA), the Contractor must prepare and deliver all electronic copies of data deliverables, in formats compatible with the office software currently in use by the Department of National Defence (DND):

a. Microsoft Windows 10 Enterprise Operating System, Version 21H2;

b. Microsoft Edge Version 108;

c. Microsoft Office 365 (Word, Excel, Access, PowerPoint and Outlook);

d. Microsoft Visio for Office 365; and

e. Microsoft Project for Office 365.

Unless otherwise specified in a CDRL or DID, the Contractor must deliver data deliverables in pdf format.

When delivering a document in pdf format, the Contractor must create a pdf version of the document with the following attributes:

a. The document text must be searchable; and

b. Internal hyperlinks, such as cross-references from the table of contents to document text, must be active.

The Contractor must format all soft copies for printing on 8.5 x 11-inch bond paper unless otherwise specified in a Data Item Description (DID) or approved by the TA.

2.3.3 File Naming Convention

The Contractor must propose a file naming convention that uniquely identifies each data deliverable.

On approval of the file naming convention by the TA, the Contractor must implement the file naming convention.

2.3.4 Custom Properties

The Contractor must uniquely identify each data deliverable using Custom Properties to indicate:

a. Contract Number;

b. Contract Description (i.e., LRF HHTII-LR Acquisition Contract);

c. Document Title;

d. CDRL ID;

e. DID Number;

f. Version; and

g. Release Date

2.3.5 Delivery of Contract Data Deliverables

For each delivery of a contract data deliverable, unless specified otherwise in the CDRL, the Contractor must:

a. Place the softcopy file of the data deliverable on the Secure Document Collaboration (SDC) Site;

b. Inform the Contracting Authority (CA) by email, copied to the TA and Functional Team Leader (FTL), that the data deliverable has been placed on the SDC Site;

c. When the CDRL for the data deliverable requires a hard copy deliverable, provide the hard copy deliverables by courier delivery addressed to the TA; and

d. Deliver the data deliverable as otherwise agreed with the TA.

2.3.6 Review and Revision of Contract Data Deliverables

The Contractor must deliver all Contract Data Deliverables initially as a draft version for Canada's review.

Canada will provide review comments or acceptance of the deliverable within 10 working days of delivery of the data deliverable.

Contractor must revise the data deliverable in response to comments provided by the TA.

The Contractor must provide a revision of the contract data deliverable within 15 working days after the receipt of review comments from the TA.

2.3.7 Bilingual Contract Data Deliverables

When a CDRL Item specifies a bilingual data deliverable, the Contractor must prepare the Canadian English content first.

When a CDRL Item specifies Canadian English and Canadian French versions of data deliverable, the Contractor must prepare the Canadian English version first.

The Contractor must revise the Canadian English content or version of the data deliverable in response to comments received from the TA.

In order to prevent unnecessary rework, the Contractor must not initiate work on the French content or version of the data deliverable until the TA has accepted the English version of the data deliverable.

The Contractor must revise the Canadian French content or version of the data deliverable in response to comments received from the TA.

2.3.8 Secure Document Collaboration (SDC) Site

The purpose of the SDC Site is to:

a. Provide a repository for draft and final versions of contract data deliverables that can be accessed by members of Canada's project team;

b. Provide a conduit for the ad-hoc exchange of data between the Contractor and Canada project teams;

c. Provide a portal for the distribution of software updates;

d. Provide a portal for representatives of the LRF HHTI-LR user and maintainer communities to access the latest user and maintenance documentation; and

e. Provide functionality that can be transitioned to support the interchange of data described above in support of the In-Service Support contract.

The Contractor must establish, maintain and administer an SDC Site for the duration of the Acquisition Contract.

The SDC Site must use the Canada Post Connect Collaboration service.

The Contractor must establish processes for use of the SDC Site to support the efficient delivery, review, and update and configuration management of contract data deliverables.

The Contractor must establish processes for use of the SDC Site to support the ad hoc delivery of data to key positional roles on the Contractor and Canada's project teams.

The Contractor must establish processes for use of the SDC Site to support the distribution of software updates.

The Contractor must provide and maintain user account management services to establish and administer user accounts for the SDC Site.

The TA will provide the Contractor with an initial list of authorized DND and CAF collaborators and participants, and update the list as required during the Contract.

The Contractor must transition the ongoing administration of the SDC Site to the contractor's In-Service Support team before the closure of the Acquisition Contract.

2.4 Metric System

The Contractor must use metric units in all manuals, drawings and instructions.

2.5 Use of Canadian English and Canadian French in Deliverables

The Contractor must use Canadian English and Canadian French when preparing deliverables.

The Contractor must be consistent in the use of equivalent terms in Canadian English and Canadian French.

The Contractor must consult, in order of preference, the following sources when determining the terminology to use in data deliverables:

a. The Lexicon provided in Section 5 of Appendix 7 References, Acronyms, Glossary and Lexicon:

b. TERMIUM Plus®,,the Government of Canada's terminology and linguistic data bank at << https://www.btb.termiumplus.gc.ca/tpv2alpha/alpha-eng.html?lang=eng >>;

c. Ernst Comprehensive Dictionary of Engineering and Technology;

d. The Canadian Oxford Dictionary (English); and

e. Dictionnaire Le Petit Robert (français).

3 Project Management

3.1 Contractor's Project Manager

The Contractor must designate a Project Manager with the responsibilities to coordinate, execute, and manage the Contractor's project management activities for the Contract.

The Contractor's Project Manager must have the total responsibility for all work required under the Contract.

The Contractor's Project Manager must be the primary point of contact between the Contractor, the TA, and CA for all issues related to the Contract.

The Contractor must inform Canada when the person assigned as the Contractor's Project Manager changes.

3.2 Project Management Plan

The Contractor must prepare a Project Management Plan (PMP) IAW Data Item Description (DID) PM-01 in Appendix 2 Data Item Deliverables.

The Contractor must deliver the Project Management Plan (PMP) IAW Contract Data Requirement List (CDRL) ID PM-101 in Appendix 1 Contract Deliverables.

The Contractor must manage the work IAW the PMP and subordinate plans.

The Contractor must maintain the PMP for the duration of the Contract.

3.3 Master Project Schedule

The Contractor must prepare a Master Project Schedule (MPS) IAW DID PM-02 in Appendix 2 Data Item Deliverables.

The Contractor must deliver the MPS IAW CDRL PM-002 in Appendix 1 Contract Deliverables.

The Contractor must present a proposed format for the MPS for discussion at the Project Kick-off meeting.

The Contractor must adjust the format of the delivered MPS as discussed and agreed with the TA.

The Contractor must baseline the schedule following acceptance of the MPS by Canada after the Project Kick-off meeting.

The Contractor must maintain the MPS to:

- Capture progress;
- Accurately forecast the schedule for future activities and milestones; and
- Communicate forecast dates versus planned and baseline dates

The Contractor must use the MPS as the primary tool for communicating the project schedule to Canada.

The Contractor may amend the MPS, without first obtaining the Technical Authority's and Contracting Authority's approval, as long as:

- Baseline dates are not changed;
- Contractual Milestone dates are not changed;
- Planned dates are not changed until they have been discussed and agreed at a Project Review Meeting (PRM); and
- The ability of the Contractor to meet its obligations under the Contract are not impacted.

The Contractor must ensure that the MPS is consistent with schedule constraints described in:

- Section 6.10.6.1 FAAT Schedule Constraints
- Appendix 1 Contract Deliverables, Section 4.5 Contract End Items Production

3.4 Issues and Action Items

The Contractor must prepare an Issue and Action Item Log (IAIL) IAW DID PM-03 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Issue and Action Item Log (IAIL) IAW CDRL PM-103 in Appendix 1 Contact Deliverables.

The Contractor must take action to address and complete the Action Items (AIs) that are assigned to the Contractor, by the agreed-on date.

Both the TA and the Contractor must agree on the disposition of an AI before it may be closed.

3.5 Risk Management

The Contractor must manage all risks identified by the Contractor and Canada, and mutually agreed, throughout the Contract IAW the Contractor's risk management process documented in the accepted PMP.

3.6 Project Status Report

The Contractor must prepare Project Status Reports (PSRs) IAW DID PM-04 in Appendix 2 Data Item Descriptions.

The Contractor must deliver PSRs IAW CDRL PM-104 in Appendix 1 Contact Deliverables.

3.7 Project Meetings

3.7.1 Meeting Organization and Coordination

Project Meetings will be chaired by Canada, unless specified otherwise.

The Contractor's Project Manager must be present at the Kick-off Meeting, Progress Review Meetings, and at other meetings when requested by Canada. If the Project Manager does not have final approval authority for decision making and changes, then the person that has that final approval authority must also be present.

The Contractor must conduct project meetings using Microsoft Teams, unless an in-person meeting is specified in this SOW.

When an in-person meeting is conducted at the Contractor's facilities, the Contractor must provide the capability for remote attendance using Microsoft Teams.

When an in-person meeting is conducted at Canada's facilities, Canada will provide a capability for remote attendance using Microsoft Teams.

The Contractor should schedule other meetings to follow in-person meetings and Project Review Meetings.

3.7.2 Project Kick-off Meeting

3.7.2.1 Project Kick-off Meeting – General

The Contractor must conduct an in-person Kick-off Meeting at the Contractor's facility no later than four weeks after contract award.

The Contractor must apply the requirements specified in Section 3.7.4 Project Meeting Documentation Requirements to the Kick-off Meeting.

The Contractor must conduct the Project Kick-off Meeting as the first of a series of meetings that are conducted sequentially at the Contractor's facility:

- Project Kick-off Meeting;
- Systems Engineering (SE) Kick-off Meeting (see Section 4.2);
- Integrated Logistic Support (ILS) Kick-off Meeting (see Section 8.2); and
- System Requirements Review (SRR) (see Section 4.3.9)

3.7.2.2 Purpose of the Project Kick-off Meeting

The purpose of the Project Kick-off Meeting is:

- To review and secure a common understanding of the requirements expressed in the Contract;
- To review and secure a common understanding of the Contractor's approach to managing the work described in the SOW; and
- To review the content of the draft PMP

3.7.2.3 Project Kick-off Meeting Entry Criteria

The Contractor must deliver the following to the TA before the Project Kick-off Meeting:

- Project Kick-off Meeting Agenda;
- Draft PMP;
- Draft MPS;
- Initial IAIL; and
- Quality Plan.

3.7.2.4 Project Kick-off Meeting Activities

The Contractor must cover, as a minimum, the following during the kick-off meeting:

- Contractor briefing on the company and how it will be organized to manage the contract;
- Roles and responsibilities of key personnel and points of contact;
- Key contract terms and project objectives;
- Timelines;
- Deliverables;
- Channels of communication; including protocols for informal communication;
- Procedures for monitoring and reporting progress;
- Procedures for managing risks and issues;
- Contract administration and contract change procedures; and
- Review of the draft PMP;
- Review of the draft MPS; and
- Review of the Quality Plan.

The Contractor must provide a tour of production and repair facilities, if requested by Canada. Canada will not request this tour if circumstances are unsuitable.

3.7.2.5 Project Kick-off Meeting Exit Criteria

The requirements for a successful project kick-off meeting are as follows:

- Acceptance of the meeting minutes and IAIL by the TA;
- Completion of action items assigned to the Contractor;

- Acceptance by the TA of the PMP;
- Acceptance by the TA to baseline the MPS; and
- Concurrence from the TA that all agenda items have been addressed.

3.7.3 Progress Review Meetings

The Contractor must schedule, plan and conduct Progress Review Meetings (PRMs) to formally report project progress to the TA.

The Contractor must coordinate with the Contracting Authority (CA) for all arrangements related to PRMs.

PRMs must occur monthly, unless otherwise mutually agreed.

Each PRM must address, referring to the PSR and IAIL, as a minimum, the following items:

- Project Progress;
- Master Project Schedule - status of milestones and deliverables, and forecast activities for the next month;
- Project Risks and associated mitigation;
- Issues and action items arising from previous PRMs, other meetings and correspondence;
- Engineering and Technical Issues;
- ILS Issues;
- Contractual Issues; and
- Financial Issues.

The Contractor must apply the requirements specified in Section 3.7.4 Project Meeting Documentation Requirements to PRMs.

3.7.4 Project Meeting Documentation Requirements

The Contractor must prepare a Meeting Agenda for each meeting IAW DID PM-05 in Appendix 2 Data Item Descriptions.

The Contractor must deliver a Meeting Agenda for each meeting IAW CDRL PM-105 in Appendix 1 Contract Deliverables.

The Contractor must collect and record the information necessary for the preparation of the minutes.

The Contractor must prepare the Meeting Minutes of each meeting IAW DID PM-06 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Meeting Minutes of each meeting IAW CDRL PM-106 in Appendix 1 Contract Deliverables.

The Contractor must update the IAIL as described in Section 3.4 Issues and Action Items following each formal meeting.

No change in the interpretation of the SOW, System Requirements Specification, cost, and schedule, as defined in the Contract, may be authorized by the minutes of a meeting. Such changes will require formal contract amendment by the CA.

3.7.5 List of Project Meetings

A list of formal meetings identified in this SOW is presented in Table 3 - 1 Project Meetings.

Table 3 - 1 Project Meetings

Meeting	***Reference***	***Comments***
Project Management		
Project Kick-off Meeting	Section 3.7.2	First of the series of kick-off meetings
Progress Review Meetings	Section 3.7.3	Monthly
Systems Engineering		
Systems Engineering Kick-off Meeting	Section 4.2	One of the series of kick-off meetings
System Requirements Review (SRR)	Section 4.3.9	One of the series of kick-off meetings
System Design Review (SDR)	Section 4.3.11	
Integrated Logistic Support		
Integrated Logistic Support Kick-off Meeting	Section 8.2	One of the series of kick-off meetings
Logistic Support Analysis Review	Section 8.3.3	
Configuration Review	Section 6.10.6.3	Same meeting as listed under Verification, part of FAAT
Verification		
LIBI AP Software Mid-Fidelity Prototype Review	Section 6.6.3	
Prototype Verification Test Readiness Review	Section 6.7.5	One for each prototype verification session.
Prototype Verification Session	Section 6.7.6	Includes a meeting component. One or more session as determined by Contractor.
Prototype Verification Test Exit Review	Section 6.7.9	One for each prototype verification session.
System Acceptance Test (SAT) Test Readiness Review	Section 6.8.5	Pre-production system
SAT	Section 6.8.7	Includes a meeting component.
SAT Wrap-up	Section 6.8.7.3	
SAT Test Exit Review	Section 6.8.11	
First Article Acceptance Test (FAAT) Test Readiness Review	Section 6.10.5	
Configuration Review	Section 6.10.6.3	Conducted as part of FAAT
FAAT	Section 6.10.6	Includes meeting components
FAAT Wrap-up	Section 6.10.6.5	
FAAT Test Exit Review	Section 6.10.9	

4 Systems Engineering (SE)

4.1 Systems Engineering Management

4.1.1 Systems Engineering Manager

The Contractor must designate a SE Manager with the responsibilities to coordinate, execute, and manage the Contractor's systems engineering activities for the Contract.

4.1.2 Systems Engineering Management Plan

The Contractor must prepare a Systems Engineering Management Plan (SEMP) IAW DID SE-01 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the SEMP IAW CDRL SE-101 in Appendix 1 Contract Deliverables.

The Contractor must conduct its program of engineering activities and ensure that all Subcontractor activities are consistent with and IAW the approved SEMP.

4.1.3 SE Schedule

The Contractor must provide a time-based schedule of systems engineering activities as part of the MPS.

The Contractor must capture all technical milestones, including formal technical review and verification events, and their key dependencies in the MPS.

4.1.4 SE Meetings

System engineering meetings will normally occur as part of, or immediately following, a PRM.

The Contractor must provide meeting documentation for SE meetings as described in Section 3.7.4 Project Meeting Documentation Requirements.

System engineering meetings include:

- SE Kick-off Meeting (see Section 4.2);
- Formal reviews and meetings associated with verification events as identified in Table 4 - 3 Formal Review and Verification Events; and
- Other SE meetings that may be required to resolve SE issues or seek input from the TA

4.2 SE Kick-off Meeting

4.2.1 SE Kick-off Meeting – General

The Contractor must conduct a SE Kick-off Meeting following the Project Kick-off Meeting.

The Contractor must apply the requirements specified in Section 3.7.4 Project Meeting Documentation Requirements.to the Kick-off Meeting.

4.2.2 Purpose of the SE Kick-off Meeting

The purpose of the SE Kick-off Meeting is:

- To review and secure a common understanding of the SE activities described in the SOW;
- To review and secure a common understanding of the requirements expressed in the SE CDRLs and DIDs; and
- To review the content of the draft SEMP

4.2.3 SE Kick-off Meeting Entry Criteria

The Contractor must deliver the following to the TA before the SE Kick-off Meeting:

- SE Kick-off Meeting Agenda;
- List of clarifications required to the SE activities, CDRLs and DIDs attached to the SE Kick-off Meeting Agenda; and
- Draft SEMP.

4.2.4 SE Kick-off Meeting Activities

The Contractor must conduct the SE Kick-off Meeting at the Contractor's facilities unless otherwise agreed between the Contractor and TA.

The Contractor must conduct the SE Kick-off Meeting following the Project Kick-off Meeting (see Section 3.7.2).

The Contractor must present an overview of the Contractor's understanding of the SE activities described in the SOW, and seek clarifications as required.

The Contractor must present an overview of how the SE requirements in the SOW have been implemented in the SEMP.

The Contractor must document the agreed clarifications to SE activities, CDRLs and DIDs and attach them to the minutes of the meeting.

4.2.5 SE Kick-off Meeting Exit Criteria

The requirements for a successful SE kick-off meeting are as follows:

- Acceptance of the meeting minutes and IAIL by the TA;
- Completion of action items assigned to the Contractor;
- Acceptance by the TA of the SEMP; and
- Concurrence from the TA that all agenda items have been addressed

4.3 System Realization

4.3.1 Overview

The conceptual configuration of the LRF HHTI-LR System is described in Section 3 of Appendix 3 System Requirements Specification (SRS).

The conceptual configuration presents a preliminary equipment breakdown structure for the LRF HHTI-LR System. It also includes the identification of LRF HHTI-LR System specific software applications that may be installed on external devices that are required to satisfy external interface requirements. It is understood that a compliant system may meet all the mandatory requirements of the SRS with a different equipment breakdown structure.

The LRF HHTI-LR System comprises components that are a mixture of Military Off-the Shelf (MOTS), Commercial Off-the-Shelf (COTS), modified MOTS, modified COTS and bespoke developmental items, as identified in Table 4 - 1 Preliminary Equipment Breakdown Structure.

The scope of realization work required for each component has been assessed, with each component being classed as:

- MOTS / COTS - no changes to physical configuration should be necessary to satisfy requirements in the SRS;
- Modified MOTS / COTS – modifications to commercially available components may be required to satisfy requirements in the SRS; or

- Developmental – a bespoke component will be necessary to satisfy requirements in the SRS.

For the purposes of defining the scope of realization efforts required for each component, components have been grouped into the following groups:

- MOTS / COTS Components;
- Cable Assemblies;
- Transport and Storage Cases;
- Pouches;
- External Battery Pack;
- Embedded Software;
- ATAK Software; and
- Technical Documents

Table 4 - 1 Preliminary Equipment Breakdown Structure (with Field Manuals)

Serial	***Component***	***Assessed Scope of Realization***	***Group***	***Initial Baseline System***
1	Laser Range Finder - Hand-held Thermal Imager - Long Range (LRF HHTI-LR)	MOTS	MOTS / COTS Components	Yes
2	LRF HHTI-LR Embedded Software	Modified MOTS	Embedded Software	Yes
3	Field Kit Storage and Transport Case	Modified MOTS / COTS	Storage and Transport Cases	Yes
4	Support Kit Storage and Transport Case	Modified MOTS / COTS	Storage and Transport Cases	Yes
5	Field Pouch	Modified MOTS / COTS	Pouches	Yes
6	Tripod Pouch	Modified MOTS / COTS	Pouches	Yes
7	Accessories Pouch	Modified MOTS / COTS	Pouches	Yes
8	External Battery Pack Pouch	Modified MOTS / COTS or Developmental	Pouches	No
9	Rechargeable Batteries (Internal)	MOTS / COTS	MOTS / COTS Components	Yes
10	Low Temperature Batteries (Internal)	MOTS / COTS	MOTS / COTS Components	Yes
11	Battery Charger	MOTS / COTS	MOTS / COTS Components	Yes
12	Tripod	MOTS / COTS	MOTS / COTS Components	Yes
13	Defense Advanced GPS Receiver (DAGR) Interface Cable	Modified MOTS / COTS	Cable Assemblies	Yes
14	Integrated Soldier System (ISS) Interface Cable	Modified MOTS / COTS	Cable Assemblies	No
15	LRF HHTI-LR / ISS Battle Management System Interface ATAK Plugins (LIBI AP)	Developmental	ATAK Software	No

Serial	***Component***	***Assessed Scope of Realization***	***Group***	***Initial Baseline System***
16	Ruggedized Tactical Laptop (RTL) Interface Cable	Modified MOTS / COTS	Cable Assemblies	Yes
17	Ruggedized Flash Drive	MOTS / COTS	MOTS / COTS Components	Yes
18	DC Power Cable Assembly	Modified MOTS / COTS	Cable Assemblies	Yes
19	AC Power Cable Assembly	Modified MOTS / COTS	Cable Assemblies	Yes
20	External Battery Pack	Modified MOTS / COTS or Developmental	External Battery Pack	If applicable
21	Lens Cleaning Kit	MOTS / COTS	MOTS / COTS Components	Yes
22	Operator Manual	Modified MOTS / COTS	Technical Documents	Yes
23	Quick Reference Guide	Modified MOTS / COTS	Technical Documents	Yes
24	Nitrogen Purging Adaptor	MOTS / COTS	MOTS / COTS Components	Yes
25	Maintenance Manual – 1st and 2nd Line	Modified MOTS / COTS	Technical Documents	Yes

4.3.2 Initial Baseline System

The Initial Baseline System (IBS) is defined as the standard configuration of the Contractor's LRF HHTI-LR system at the time of contract award before any modifications are made to any of the LRF HHTI-LR system components to satisfy the requirements in the SRS.

The IBS comprises those components identified in Table 4 - 1 Preliminary Equipment Breakdown Structure by a "Yes" in the Baseline System column.

The configuration of the IBS will be confirmed at the System Requirements Review (SRR).

4.3.3 Production Baseline System

The LRF HHTI-LR Production Baseline System (PBS) is defined as the configuration of the system at the time of production that fully satisfies requirements specified in the SRS, as defined by the Production Baseline (see Section 5.3 Configuration Baselines) The system engineering program comprises the work to progress the configuration of the system from the Initial Baseline to the Production Baseline.

4.3.4 Black-Box Approach

Canada is taking a "black-box" approach to the realization and verification of the LRF HHTI-LR System. A black-box approach focuses on the functional and non-functional attributes of a system without examining the internal structures or workings of the system. Using a black-box approach, test cases for verification are built around specifications and requirements. Visibility into design is limited to providing assurance that the functional and non-functional requirements will be satisfied.

With this approach, Canada will be focussing on:

- Ensuring the delivery of an LRF HHTI-LR system that satisfies the requirements specified in the SRS; and

- Ensuring that standards selected by the contractor to be used in the production of LRF HHTI-LR System components will result in a system that can be used in the intended operational environment.

Impacts of this approach include:

- A focus on requirements and verification that the delivered system will satisfy the requirements;
- Iterative development of modified MOTS / COTS and developmental components to validate requirements and ensure requirements are satisfied, including the production of prototypes;
- Minimization of formal design reviews; and
- Minimization of visibility of contractor's internal processes by Canada.

4.3.5 Government Furnished Equipment (GFE)

GFE will be provided by Canada to assist the Contractor in the design and implementation of the LRF HHTI-LR System. GFE is identified in Table 4 - 2 Government Furnished Equipment (GFE).

Table 4 - 2 Government Furnished Equipment (GFE)

Item	*NSN*	*Description*	*Quantity*	*Remarks*
1	TBD	ISS-S End User Device	1	Android device with ATAK
2	TBD	ISS-S Assaulter Hub	1	
3	TBD	ISS-S Assaulter Hub / EUD Cable	1	

The following items will not be provided as GFE, as it expected that the Contractor has commercial or other access to these items or function equivalents:

- AN/PSN-13 Defense Advanced GPS Receiver (DAGR);
- CF33 Mk2 Panasonic Toughbook;
- Batteries; and/or
- Various military and commercial vehicles

4.3.6 LRF HHTI-LR System Test Environment

The TA will establish a LRF HHTI-LR System test environment within Canada's PMO NVSM offices located in Gatineau, QC.

The test environment will comprise two LRF HHTI-LR systems and supporting in-service devices and systems to which the LRF HHTI-LR will interface. The initial configuration of the LRF HHTI-LR System test environment will be the IBS.

The LRF HHTI-LR test environment will:

- Provide the PMO NVSM team with the most recent configuration of each LRF HHTI-LR system component for analysis, review and integration purposes;
- Provide an opportunity for the ongoing informal verification of requirements specified in the SRS; and
- Provide a test environment for the verification of prototypes.

The Contractor must deliver LRF HHTI-LR Initial Baseline Systems IAW CEIL Item TE-101 in Appendix 1 Contract Deliverables to initially establish the LRF HHTI-LR Test Environment.

The test environment will be iteratively upgraded during the design and implementation phase as prototypes of various components are developed and tested using the test environment. See Section 4.4 Component Realization and CEIL IDs PT-101 to PT106 in Appendix 1 Contract Deliverables.

The LRF HHTI-LR Initial Baseline Systems, upgraded during component realization and used in support of the SAT, will be returned to the Contractor after successful completion of the SAT.

4.3.7 Overview of Formal Reviews and Verification

Review and verification events are identified in Table 4 - 3 Formal Review and Verification Events. These events are presented in the expected sequence in which they will occur.

Table 4 - 3 Formal Review and Verification Events

Event	***Applicable to***	***Timing***	***Notes***
System Requirements Review (SRR) (See Section 4.3.9)	LRF HHTI-LR System	Not later than two weeks after Project, SE and ILS Kick-off meetings	
System Design Review (SDR) (See Section 4.3.11)	LRF HHTI-LR System	To Be Determined (TBD) by Contractor	Focus on modified MOTS / COTS and developmental components
LIBI AP Software Mid-fidelity Prototype Review (See Section 6.6)	LIBI AP Software	TBD by Contractor	Mid fidelity prototype.
Prototype Verification Sessions (See Section 6.7)	Modified MOTS / COTS and Developmental Components by Group: • Cable Assemblies • Transport and Storage Cases • Pouches • External Battey Pack • Embedded Software • LIBI AP Software	TBD by Contractor	High fidelity prototypes. Prototype verification sessions may be combined.
System Acceptance Test Readiness Review (See Section 6.8.5)	Pre-Production LRF HHTI-LR System	TBD by Contractor	
System Acceptance Test (See Section 6.8.7)		TBD by Contractor	Focus on verification of system level functionality
System Acceptance Test Exit Review (See Section 6.8.11)		TBD by Contractor	Followed by FCA

Event	***Applicable to***	***Timing***	***Notes***
First Article Acceptance Test Readiness Review (See Section 6.10.5)	Production LRF HHTI-LR System	TBD by Contractor	Follows PCA
First Article Acceptance Test (See Section 6.10.6)		FAAT Activities must start no later than one year after Contract award	Focus on performance and quality Includes Configuration Review
First Article Acceptance Test Exit Review (See Section 6.10.9)			

4.3.8 System Design Description (SDD)

The Contractor must prepare an initial draft System Design Description (SDD) IAW DID SE-02 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the initial draft SDD IAW CDRL SE-102 in Appendix 1 Contact Deliverables.

The purpose of the SDD is to:

- Provide a single repository of design information communicated from the Contractor to Canada's TA as required to progress the configuration of the LRF HHTI-LR System from the Initial Baseline to the Product Baseline.
- Provide a record of all design decisions taken as agreed between the Contractor and Canada's TA during the design and implementation phase of the project.
- For those requirements specified in the SRS that are satisfied by analysis or third-party certification, document the supporting analysis, or provide a summary of the analysis where the analysis exists in a separate document such as a third-party Test Report.

The SDD will be updated iteratively to support each formal review and verification event as described elsewhere in this SOW.

4.3.9 System Requirements Review (SRR)

4.3.9.1 SRR – General

The Contractor must conduct a System Requirements Review at the Contractor's facilities (SRR) following SE Kick-off meeting.

The Contractor must conduct the SRR IAW the SEMP.

The Contractor must conduct the SRR IAW Section 4.6 Formal Technical Reviews – Common Processes.

4.3.9.2 Purpose of the SRR

The purpose of the SRR is to:

- Ensure that the Contractor and Canada have a clear and common understanding of the requirements specified in the SRS; and
- Convey a preliminary Equipment Breakdown Structure for the LRF HHTI-LR System which will satisfy the requirements specified in the SRS.

A successful SRR is a prerequisite to:

- The establishment of the Functional Baseline;

- The establishment of the Allocated Baseline; and
- The initiation of system realization efforts.

4.3.9.3 SRR Entry Criteria

The Contractor must deliver the following to the TA before the SRR:

- SRR Agenda;
- List of requirements and associated clarifications required attached to the SRR Agenda; and
- Preliminary EBS (See Section 5.4.2 Equipment Breakdown Structure).

4.3.9.4 SRR Meeting Activities

The Contractor must conduct the SRR meeting at the Contractor's facilities unless otherwise agreed between the Contractor and TA.

The Contractor must conduct the SRR meeting immediately following the SE Kick-off Meeting (see Section 4.2).

The Contractor must present an overview of the Contractor's understanding of the requirements.

The presentation must include:

- The identification of requirements in the SRS where a formal interpretation of the requirement is required to ensure a clear and common understanding; and
- The identification of requirements in the SRS where the contractor believes that the satisfaction of the requirement may present technical or schedule risks, and the contractor's approach to address these risks

The Contractor must also present the Preliminary EBS for discussion based on comments provided by Canada.

As part of the SRR meeting, the Contractor and Canada will develop and agree interpretations as required. Interpretations will be added as attributes to associated requirements in the SRS.

The Contractor must document the agreed interpretation to requirements and attach them to the minutes of the meeting.

4.3.9.5 SRR Exit Criteria

The requirements for a successful SRR are as follows:

- Acceptance of the meeting minutes and IAIL by the TA;
- Completion of action items assigned to the Contractor;
- Acceptance by the TA of the items listed in Section 4.3.9.3 SRR Entry Criteria; and
- Concurrence from the TA that all agenda items have been addressed

4.3.10 System Design

The Contractor must document the system design to provide assurance that the LRF HHTI-LR System will satisfy the requirements specified in the SRS.

Details of required work related to system design at the component level are identified for each group of modified MOTS / COTS and developmental components of the HHTI-LR System in Section 4.4.2 Modified MOTS / COTS and Developmental Components.

The Contractor must document the system design in the SDD, as described in Section 4.3.8 System Design Description (SDD).

4.3.11 System Design Review

4.3.11.1 SDR – General

The Contractor must conduct a System Design Review (SDR) IAW the SEMP.

The Contractor must conduct the SDR IAW Section 4.6 Formal Technical Reviews – Common Processes.

4.3.11.2 Purpose of the SDR

The purpose of the system design review (SDR) is to:

- Provide assurance that the design of the LRF HHTI-LR System will satisfy requirements specified in the SRS;
- Permit the TA to review the Contractor's design of the modified MOTS / COTS and developmental components of the HHTI-LR System;
- Determine if the design of the modified MOTS / COTS and developmental components of the HHTI-LR System is mature enough to proceed to realization; and
- Evaluate the progress, technical adequacy and risk resolution on a technical, cost, and schedule basis.

4.3.11.3 SDR Entry Criteria

The Contractor must deliver the following to the TA before the SDR:

- SDR Agenda;
- Initial draft System Design Description (see CDRL SE-102);
- Controlled Goods List (see CDRL LS-127);
- Laser Safety Data Sheet (see CDRL LS-128);
- Initial Equipment Environmental Assessment (see CDRL LS-129);
- Low fidelity prototype of LRF HHTI-LR embedded software;
- Low fidelity prototype of LIBI AP software;
- Draft LIBI AP ICD (see CDRL SE-103);
- Test Procedures associated with MOTS / COTS components (see CDRL SE-104);
- Requirements Traceability and Verification Matrix (RTVM) covering requirements associate with MOTS / COTS components (See CDRL SE-105);
- IBS (see Section 4.3.2); and
- Operator Training on IBS to members of Canada's project team (see Section 8.9.6.1).

4.3.11.4 SDR Meeting Activities

The Contractor must conduct the SDR meeting as a remote meeting unless otherwise agreed between the Contractor and TA.

The Contractor must present an overview of the design of the LRF HHTI-LR System, focussing on the modified MOTS / COTS and developmental components.

4.3.11.5 SDR Exit Criteria

The requirements for a successful SDR are as follows:

- Acceptance of the meeting minutes and IAIL by the TA;
- Completion of action items assigned to the Contractor;
- Acceptance by the TA of the items listed in Section 4.3.11.3 SDR Entry Criteria; and
- Concurrence from the TA that all agenda items have been addressed.

4.4 Component Realization

4.4.1 MOTS / COTS Components

The following system components are considered to be MOTS / COTS components of the LRF HHTI-LR System:

- LRF HHTI-LR;
- Battery Charger;
- Internal Rechargeable Batteries;
- Internal Low Temperature Batteries;
- Tripod;
- Ruggedized Flash Drive;
- Lens Cleaning Kit; and
- Nitrogen Purging Adaptor.

There is no anticipated realization effort associated with these components.

Any realization effort would result in an Engineering Change Request (ECR) / Engineering Change Proposal (ECP) as described in Section 5.5 Configuration Control.

For those requirements in the Requirements Verification Matrix (RVM) (Appendix 5 to this SOW) related to MOTS / COTS components of the LRF HHTI-LR System for which the verification method is "Test" or "Demonstration", the Contractor must develop Test Procedures for the initial release of the Test Procedures document (see Section 6.2.4) for review at the System Design Review (SDR).

For those requirements in the RVM (Appendix 5 to this SOW) related to MOTS / COTS components of the LRF HHTI-LR System for which the verification method is "Analysis", the Contractor must document the supporting analysis, or provide a summary of the analysis where the analysis exists in a separate document such as a third-party Test Report.

The Contractor must prepare the initial release of the Requirements Traceability and Verification Matrix (RTVM) (see Section 6.2.5) to include coverage of those requirements in the RVM related to MOTS / COTS components of the LRF HHTI System for review at the SDR.

4.4.2 Modified MOTS / COTS and Developmental Components

4.4.2.1 Prototyping Approach

For those components of the LRF HHTI-LR System that are considered to be modified MOTS / COTS or developmental components, a prototyping approach will be followed.

There are four levels of prototypes that will be produced:

- Low fidelity prototypes, applicable only to the LRF HHTI-LR embedded software and LIBI ATAK Plugins software, subject to System Design Review as described in Section 4.3.11;
- Mid fidelity prototype, applicable only to the LIBI ATAK Plugins software, subject to mid-fidelity prototype review as described in Section 6.6 LIBI AP Software Mid-Fidelity Prototype Review;
- High fidelity prototypes, subject to prototype verification as described in Section 6.7 Prototype Verification; and
- Pre-production prototypes, subject to system acceptance testing as components of the pre-production LRF HHTI-LR System, as Described in Section 6.8 System Acceptance Test.

4.4.2.2 Cable Assemblies

The Contractor must conduct design and implementation activities necessary to develop Cable Assemblies that satisfy the requirements specified in the SRS.

There are a number of different combinations of cable assemblies that together can meet the requirements for cable assemblies specified in the SRS.

The Contractor must develop Level 1 drawings of the proposed configuration of cable assemblies.

The Contractor must identify options for the configuration of cable assemblies that:

- Can reduce user burden; and
- Provide flexibility to the users

The Contractor must identify the standards to which the cable assemblies will be specified as required to meet environmental and ruggedness requirements specified in the SRS at the system level.

The Contractor must include the Level 1 drawings, configuration options, and standards in the SDD in support of the SDR.

The Contractor must produce and deliver high-fidelity prototypes of Cable Assemblies IAW CEIL Item PT-102 in Appendix 1 Contract Deliverables in support of Prototype Verification (see Section 6.7).

4.4.2.3 Storage and Transport Cases

The Contractor must conduct design and implementation activities necessary to develop Storage and Transport Cases that satisfy the requirements specified in the SRS.

The Contractor must develop Level 1 drawings of the proposed configuration of storage and transport cases.

The Contractor must identify an option for combining the storage and transport cases into a single storage and transport case. In the "single case" configuration, an additional transport case that would be used to ship only the LRF HHTI-LR binocular device for repair purposes would be included within the single case.

The Contractor must identify the standards to which the storage and transport will be specified as required to meet environmental and ruggedness requirements specified in the SRS at the system level.

The Contractor must include the Level 1 drawings, configuration options, and standards in the SDD in support of the SDR.

The Contractor must produce and deliver high-fidelity prototypes of Storage and Transport Cases IAW CEIL Item PT-103 in Appendix 1 Contract Deliverables in support of Prototype Verification (see Section 6.7).

4.4.2.4 Pouches

The Contractor must produce pre-production prototype Pouches that satisfy the requirements specified in the SRS.

The Contractor must develop Level 1 drawings of the proposed configuration of pouches.

The Contractor must identify options for the configuration of pouches that:

- Can reduce user burden; and
- Provide flexibility to the users in terms of load carriage configuration.

The Contractor must include the Level 1 drawings and configuration options in the SDD in support of the SDR.

The Contractor must produce and deliver high-fidelity prototypes of Pouches IAW CEIL Item PT-104 in Appendix 1 Contract Deliverables in support of Prototype Verification.

4.4.2.5 External Battery Pack

The Contractor must conduct design and implementation activities necessary to develop an External Battery Pack that satisfies the requirements specified in the SRS.

The Contractor must develop Level 1 drawings of the proposed configuration of the External Battery Pack and pouch.

The Contractor must identify options for the configuration of the External Battery Pack and pouch that:

- Simplify the changing of batteries under field conditions; and
- Carrying the External Battery Pack and pouch in a way that makes use of body heat to keep the batteries warm under conditions of extreme cold.

The Contractor must identify the standards to which the External Battery Pack and pouch will be specified as required to meet environmental and ruggedness requirements specified in the SRS at the system level.

The Contractor must include the Level 1 drawings, configuration options, and standards in the SDD in support of the SDR.

The Contractor must produce and deliver high-fidelity prototypes of External Battery Pack and pouch IAW CEIL Item PT-102 in Appendix 1 Contract Deliverables in support of Prototype Verification (see Section 6.7).

4.4.2.6 LRF HHTI-LR Embedded Software

The Contractor must produce pre-production LRF HHTI-LR Embedded Software that satisfies the requirements specified in the SRS.

The Contractor must identify the scope of changes to IBS LRF HHTI-LR embedded software necessary to satisfy the requirements specified in the SRS.

The Contractor must identify any risks related to modifying the embedded software in terms of technical, cost, schedule and security risks.

The Contractor must produce and demonstrate low-fidelity prototype of changes to LRF HHTI-LR Embedded Software in support of the SDR. The form and media used for the low-fidelity prototype is to be determined by the Contractor.

The Contractor must include the scope of changes to software, risks related to modifying the embedded software, and overview of the low-fidelity prototype in the SDD in support of the SDR.

The Contractor must produce and deliver high-fidelity prototype LRF HHTI-LR Embedded Software IAW CEIL Item PT-105 in Appendix 1 Contract Deliverables in support of Prototype Verification.

For each release of LRF HHTI-LR Embedded Software, the Contractor must prepare and deliver a Software Version Description Document (SVDD) as described in Section 5.4.3.

4.4.2.7 LIBI AP Software

The Contractor should note that the work described herein assumes that the functionality associated with the LIBI AP will be implemented as a collection of ATAK plug-ins. The Contractor may choose to implement LIBI AP functionality entirely within the LRF HHTI-LR embedded software. In this case, all work described for LIBI AP software may be merged with work described for embedded software.

The Contractor must produce pre-production LIBI AP Software that satisfy the requirements specified in the SRS.

The Contractor must use a Joint Application Development (JAD) methodology that involves representatives of Canada's user community and the integrator of the ISS BMS in the development of the LIBI AP Software through a succession of collaborative workshops and the development of prototypes.

The Contractor must design the interface between the LRF HHTI-LR and the ISS BMS.

The Contractor must collaborate with the integrator of the ISS BMS while designing the interface between the LRF HHTI-LR and the ISS BMS

The Contractor must document the design of the interface between the LRF HHTI-LR and the ISS BMS in the LIBI AP Interface Control Document (ICD)

The Contractor must produce a LIBI AP ICD IAW DID SE-03 in Appendix 2 Data Item Descriptions.

The Contractor must deliver a LIBI AP ICD IAW CDRL SE-103 in Appendix 1 Contract Deliverables.

The Contractor must produce and demonstrate low-fidelity prototype LIBI AP Software in support of the SDR. The form and media used for the low-fidelity prototype is to be determined by the Contractor.

The Contractor must include an overview of the low-fidelity prototype in the SDD in support of the SDR.

The Contractor must produce and deliver mid-fidelity prototype LIBI AP Software IAW CEIL Item PT-101 in Appendix 1 Contract Deliverables in support of LIBI AP Software Mid-Fidelity Prototype Review (see Section 6.6).

The Contractor must produce and deliver high-fidelity prototype LIBI AP Software IAW CEIL Item PT-106 in Appendix 1 Contract Deliverables in support of Prototype Verification (see Section 6.7).

The Contractor must produce and deliver pre-production prototype LIBI AP Software IAW CEIL Item PP-102 in Appendix 1 Contract Deliverables to update the LRF HHTI-LR Test Environment to the level of the pre-production LRF HHTI-LR System that will be subject to the System Acceptance Test (SAT).

For each release of LIBI AP Software, the Contractor must prepare and deliver a Software Version Description Document (SVDD) as described in Section 5.4.3.

For each release of LIBI AP Software, where implemented as ATAK plug-ins, the Contractor must include source code with the SVDD.

The contractor must update the LIBI AP ICD to record the "as-built" configuration of the interface in the production LRF HHTI-LR.

4.4.3 Pre-Production LRF HHTI-LR System

The Contractor must produce a fully integrated pre-production LRF HHTI-LR System that satisfies the requirements specified in the SRS.

The Contractor must produce and deliver pre-production LRF HHTI-LR Systems IAW CEIL Item PP-101 in Appendix 1 Contract Deliverables in support of System Acceptance Testing (see Section 6.8).

The Contractor must upgrade the configuration of the pre-production LRF HHTI-LR systems used in support of the SAT to the Production Baseline after successful completion of the FAAT.

4.5 Specialty Engineering

4.5.1 Growth, Evolution and Obsolescence Program

The Contractor must provide a growth, evolution and obsolescence program that meets the following objectives:

- Technology evolution and Obsolescence issues are appropriately considered in the design of the LRF HHTI-LR;
- The Contractor's design, development and production programs will not deliver equipment that has obsolescence problems at the time of delivery; and
- Solutions for the LRF HHTI-LR that minimize Life Cycle Cost when technology evolution and obsolescence issues are taken into consideration.

The Contractor must address the planning for, and the management of, the growth, evolution and obsolescence program in the SEMP.

The Contractor must conduct the growth, evolution and Obsolescence program IAW the approved SEMP.

4.5.2 Human Engineering

The Contractor must provide a Human Engineering program that meets the following objectives:

- Develop or improve human interfaces of the LRF HHTI-LR;
- Achieve required effectiveness of human performance during LRF HHTI-LR operation, maintenance, support, control, and transportation; and
- Make economical demands upon personnel resources, skills, training, and costs.

The Contractor must address planning for, and management of, the Human Engineering program in the SEMP.

The Contractor must conduct the Human Engineering program IAW the approved SEMP.

4.5.3 Electromagnetic Environmental Effects

The Contractor must provide an Electromagnetic Environmental Effects (E3) program that ensures that E3 is appropriately considered in the design of the LRF HHTI-LR System.

The Contractor must ensure that the E3 program addresses the requirements specified in the SRS presented in Appendix 3 to this SOW:

- 4.6.6 Radio Frequency Hazards; and
- 6.3.4 Electromagnetic Environmental Effects (E3)

The Contractor must address planning for, and management of, the Electromagnetic Environmental Effects program in the SEMP.

The Contractor must conduct the Electromagnetic Environmental Effects program IAW the approved SEMP.

4.5.4 System Security

The Contractor must provide a System Security program that meets the following objectives:

- Ensure the DND's security obligations are met as they pertain to the confidentiality, availability and integrity of information processed, stored and/or communicated electronically by the LRF HHTI-LR;
- Ensure the DND's security obligations and compliance requirements are met as they pertain to the protection of information, control of access to information, and providing an audit trail of access to information contained within the LRF HHTI-LR; and
- Provide controls to protect against system fault and/or failure caused by malicious threat.

The Contractor must address planning for, and management of, the System Security program in the SEMP.

The Contractor must conduct the System Security program IAW the approved SEMP.

The Contractor must document, in the first draft of the SDD, the controls that exist in the in the IBS to protect the LRH HHTI-LR against system fault or malicious threat.

4.6 Formal Technical Reviews – Common Processes

4.6.1 Overview

This section provides guidance on the expected conduct of Formal Technical Reviews. It is to be used by the Contractor in the preparation of the SEMP.

Each formal technical review comprises the following activities:

- Provision of deliverables subject to review to Canada by the Contractor;
- Preliminary review of deliverables subject to review by Canada;
- Preparations for Technical Review Meeting (TRM), including completion of entry criteria;
- Conduct of TRM;
- Implementation of action items resulting from the TRM; and
- Review completion when exit criteria are met.

The Contractor must apply the common processes for formal technical reviews to the following formal technical review events:

- System Requirements Review (see Section 4.3.9);
- System Design Review (see Section 4.3.11);
- SAT Test Entry Review (see Section 6.8.5);
- SAT Test Exit Review (see Section 6.8.11);
- FAA Test Entry Review (see Section 6.10.5); and
- FAA Test Exit Review (see Section 6.10.9).

The Contractor must conduct formal technical review IAW the accepted SEMP.

4.6.2 Review Preparation

The Contractor must include activities for all formal technical reviews in the MPS.

The Contractor must ensure that Canada has the deliverables subject to review at least 10 working days before the scheduled Technical Review Meeting (TRM) is to take place.

The Contractor must prepare and deliver the agenda for the TRM IAW Section 3.7.4 Project Meeting Documentation Requirements.

The Contractor's participants in the TRM must include the person responsible for and key personnel involved in the development of each deliverable subject to review.

The Contractor's participants in the TRM must be identified in the TRM Agenda.

A list of Canada authorized attendees will be provided to the Contractor prior to the TRM.

4.6.3 Technical Review Meeting

Canada's Technical Authority (TA) and the Contractor's PM must act as co-chairs of the TRM, unless otherwise agreed in advance.

The Contractor must record decisions, agreements, and approved action items in the Issues-Action Item Log (IAIL).

The Contractor must annotate the IAIL entries such that the entry can identify the technical review it is associated with.

The Contractor is to assign each Action Item (AI) to an appropriate individual, with a stipulated closure date for resolution.

Both Chairs are to review and sign off on the entries to the IAIL at the end of each day during which a review is being conducted.

The Contractor must update the Issue and Action Item Log (IAIL) IAW Section 3.4 Issues and Action Items.

The Contractor must prepare and deliver the minutes for the TRM IAW Section 3.7.4 Project Meeting Documentation Requirements.

4.6.4 Review Closure

Canada's TA will notify the Contractor when a recommendation is provided to the Contracting Authority (CA) resulting from the review.

The recommendation to the CA will be one of the following:

- Approval. The TA approves the Technical Review results and recommends the closure of the review.
- Contingent approval. The TA approves the Technical Review results contingent on identified AIs or Issues registered in the IAIL are tracked to closure. These items will be identified in the TAs recommendation.
- Rejection. The TA rejects the Technical Review results, and rework will be necessary on the part of the Contractor to resolve the major issues identified during the review. The Technical Review must be re-scheduled once the issues and AIs are resolved.

5 Configuration Management

5.1 Overview

The Contractor must implement a Configuration Management (CM) programme tailored to meet the requirements of this contract that aligns with the Configuration Management Principles described in *EIA649C Configuration Management Standard*.

5.2 Configuration Management Planning

The Contractor must address planning for, and management of, the Configuration Management (CM) program in the SEMP.

The Contractor must manage, conduct and coordinate all Contractor and Subcontractor CM activities IAW the approved SEMP.

The Contractor must ensure that all Subcontractors comply with the requirements of the SEMP and are integrated into the Contractor's CM activities

5.3 Configuration Baselines

The Initial Baseline is defined as the standard configuration of the contractor's LRF HHTI-LR system before any modifications are made to any of the LRF HHTI-LR system components to satisfy the requirements in the SRS.

The Contractor must establish the Initial Baseline.

The Contractor must establish and maintain a Functional Baseline based on Appendix 3 System Requirements Specification (SRS).

The Contractor must establish and maintain an Allocated Baseline.

The Contractor must establish and maintain a Product Baseline.

5.4 Configuration Identification

5.4.1 Configuration Items

The Contractor must decompose the LRF HHTI-LR System into configuration items (CIs) and Computer Software Configuration Items (CSCIs).

The Contractor must identify CIs and CSCIs IAW *D-01-002-007/SG-006 Criteria for the selection of Configuration Items*.

5.4.2 Equipment Breakdown Structure

The Contractor must prepare an Equipment Breakdown Structure (EBS) that captures the decomposition of the LRF HHTI-LR system into CIs and CSCIs IAW DID CM-01 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Equipment Breakdown Structure (EBS) IAW CDRL CM-101 in Appendix 1 Contact Deliverables.

The Contractor must update the EBS in response to:

- Progress in design and implementation to reflect greater granularity of decomposition of each component;
- Finalization of the configuration of modified COTS / MOTS and developmental components; and
- Changes in maintenance and support concepts that affect the identification of CIs and CSCIs

5.4.3 Software Version Description Document

For each release of each CSCI, the Contractor must prepare a Software Version Description Document (SVDD) IAW DID CM-02 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the SVDDs IAW CDRL CM-102 in Appendix 1 Contact Deliverables.

5.5 Configuration Control

5.5.1 Engineering Change Proposals

When the Contractor seeks to make changes to the Functional Baseline or to the Product Baseline, the Contractor must prepare an Engineering Change Proposal (ECP) IAW DID CM-03 in Appendix 2 Data Item Descriptions.

The Contractor must deliver ECPs IAW CDRL CM-103 in Appendix 1 Contact Deliverables.

5.5.2 Specification Change Notice

A Specification Change Notice (SCN) is prepared in parallel with an associated ECP that will result in a change to the Functional Baseline. The intent of an SCN is to give Canada early notice of a pending ECP.

When the Contractor seeks to make a change that will require a change to the Functional Baseline, the Contractor must prepare an SCN IAW CDRL DID CM-04 in Appendix 2 Data Item Descriptions.

The Contractor must deliver SCNs IAW CDRL CM-104 in Appendix 1 Contact Deliverables.

5.5.3 Request for Deviation / Request for Waiver

When the Contractor seeks to deliver an item with a departure from a Contract requirement, the Contractor must prepare a Request for Deviation (RFD) / Request for Waiver (RFW) IAW DID CM-105 in Appendix 2 Data Item Descriptions.

The Contractor must deliver RFD / RFWs IAW CDRL CM-105 in Appendix 1 Contact Deliverables.

5.5.4 Configuration Changes Initiated by Canada

When Canada seeks to make changes to the Functional Baseline or to the Product Baseline, Canada will prepare and deliver an Engineering Change Request (ECR) to the Contractor.

On receipt of an ECR, the Contractor must prepare an ECP IAW DID CM-03 in Appendix 2 Data Item Descriptions.

The Contractor must deliver ECPs IAW CDRL CM-103 in Appendix 1 Contact Deliverables.

5.5.5 Implementation of Approved ECPs

Following the receipt of an ECP from the Contractor, Canada will analyze the ECP and review the ECP at an internal Change Control Board (CCB) meeting. Canada will inform the Contractor of the CCB's decision. Where Canada decides to proceed with the implementation of the ECP, Canada will raise a DND 626 Task Authorization.

On receipt of a DND 626 Task Authorization to implement an ECP, the Contractor must implement the ECP IAW the DND 626 Task Authorization.

The Contractor must verify the implementation of approved ECPs.

5.6 Configuration Status Accounting

The Contractor must establish and maintain, IAW the approved SEMP, a Configuration Status Accounting (CSA) system that correlates, stores, maintains and provides readily available views of all configuration information relating to those items identified as Configuration Items.

The Contractor must prepare CSA Reports, from the Contractor's CSA system, IAW DID CM-06 in Appendix 2 Data Item Descriptions, capturing all current change status and change history and the as-designed, as-built, as-delivered and as-modified configuration of all Configuration Items.

The Contractor must deliver CSA Reports IAW CDRL CM-106 in Appendix 1 Contact Deliverables.

For Computer Software Configuration Items and Computer Software Components, the CSA must include the as-delivered, as-modified and as-tested configuration.

5.7 Configuration Audits

5.7.1 Functional Configuration Audit (FCA)

The Contractor must conduct an FCA following successful completion of the System Acceptance Test (SAT).

The Contractor must address planning for the FCA in the SEMP.

The Contractor must conduct the FCA, in accordance with the approved SEMP.

The Contractor must prepare an FCA Report IAW DID CM-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the FCA Report IAW CDRL CM-107 in Appendix 1 Contract Deliverables.

5.7.2 Physical Configuration Audit (PCA)

The Contractor must conduct a PCA on the first production LRF HHTI-LR Systems, prior to the First Article Acceptance Test (FAAT).

The Contractor must address planning for the PCA in the SEMP.

The Contractor must conduct the PCA, in accordance with the approved SEMP.

The Contractor must prepare a PCA Report IAW DID CM-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the PCA Report IAW CDRL CM-108 in Appendix 1 Contract Deliverables.

6 Verification

6.1 Verification Overview

6.1.1 Verification Strategy

Canada has chosen an iterative, risk-based, "hands-on" verification strategy to ensure that the delivered LRF HHTI-LR System satisfies requirements specified in the SRS.

Verification activities will build on the initial verification of key performance requirements carried out using the Initial Baseline System during the bid evaluation process.

Iterative verification events will be carried out on modified MOTS / COTS and developmental components as the system progresses from the Initial Baseline System configuration to the Production System configuration.

System-level verification will occur during the System Acceptance Test on pre-production systems, and as part of the First Article Acceptance Test on the first production systems delivered.

6.1.2 Verification Events

Verification events, including design reviews, are identified in Table 6 - 1 Reviews and Verification Events.

Table 6 - 1 Reviews and Verification Events

Review or Verification Event	***SOW Section***	***Applicable to***	***Notes***
System Requirements Review (SRR)	4.3.9	LRF HHTI-LR System	Follows SE Kick-off Meeting, at Contractor's facility
System Design Review	4.3.11	Modified MOTS / COTS and developmental components	At Canada's facility Includes low-fidelity prototypes
Informal Verification	6.5	Evolution of LRF HHTI-LR system from initial baseline to production configuration.	Ongoing activity conducted by TA using Canada's LRF HHTI-LR System Test Environment
LIBI AP Software Mid-Fidelity Prototype Review	6.6	LIBI AP Software (ATAK plugins)	At Canada's facility Mid fidelity prototype
Prototype Verification	6.7	Transport and Storage Cases Cable Assemblies Pouches Embedded Software LIBI AP Software	High fidelity prototypes. Prototype verification sessions may be combined. Conducted with delivered prototypes using Canada's LRF HHTI-LR System Test Environment
System Acceptance Test	6.8	LRF HHTI-LR System – pre-production	At Canadian Armed Forces facility, such as CFB Gagetown

Review or Verification Event	***SOW Section***	***Applicable to***	***Notes***
Functional Configuration Audit	5.7.1	LRF HHTI-LR System – pre-production	Audit conducted by Contractor, FCA Report subject to review by TA
Physical Configuration Audit	5.7.2	LRF HHTI-LR System – first production systems	Audit conducted by Contractor, PCA Report presented at Configuration Review during FAAT
First Article Acceptance Test	6.10	LRF HHTI-LR System – first production systems	At Canada's facilities Includes Configuration Review

6.1.3 Validation of Requirements

Canada will conduct an ongoing validation of requirements specified in the SRS. When, as a result of a formal review or verification, Canada determines that one or more requirements are invalid, Canada will initiate a change to the functional baseline as described in Section 5.5.4 Configuration Changes Initiated by Canada.

6.2 Verification Management

6.2.1 Verification Planning

The Contractor must address planning for, and management of, the verification activities and events in the SEMP.

The Contractor must conduct all verification activities and events for the contract IAW the approved SEMP, Test Plans and Test Procedures.

6.2.2 Canada's Involvement in Verification Events

Canada will be fully involved in all verification events.

The Contractor must plan for verification events using the following protocols:

- When a requirement is to be verified by "Test", "Demonstration" or "Inspection", Canada will provide a member of the user community appointed by the TA to manipulate or inspect the items under test in accordance with the applicable test procedure(s), under the guidance and direction of the Contractor;
- When a requirement is to be verified by "Test", "Demonstration" or "Inspection", Canada will provide a member of the user community appointed by the TA to witness the test procedures; and
- Canada may, however, decline the involvement described above in which case these roles will be filled by Contractor personnel.

The members of the Canada's user community to be involved in verification activities will have:

- Received operator training on the Contractor's IBS (see Section 8.9.6.1 Initial Baseline System Operator Training Course Delivery) in preparation for prototyping activities and prototype verification events; and
- Attended the pilot Operator Training course (see Section 8.9.6.2 Pilot Operator Training Course Delivery) in preparation for involvement in the SAT.

The Contractor must invite the TA, or representatives appointed by the TA, to witness and participate in all Verification events.

Unless the TA has notified that they will not witness or participate in a verification event, the Contractor must not conduct that verification event in the absence of TA or appointed representative(s).

Unless otherwise agreed in writing by the TA, the Contractor must provide the TA with at least 42 calendar days advance notice of the start date and time of all verification events.

6.2.3 Test Plans

A stand-alone test plan is required for each verification event. Requirements related to test plans are included in sections related to each verification event.

6.2.4 Test Procedures

The Contractor must prepare a Test Procedures document IAW DID SE-04 in Appendix 2 Data Item Descriptions.

The Contractor must deliver a Test Procedures document IAW with CDRL SE-104 in Appendix 1 Contract Deliverables.

The Test Procedures document will be a common repository for test procedures developed in support of one or more verification events. The test plan associated with each verification event will identify the applicable test procedures in the Test Procedures document. The Test Procedures document will be incrementally updated as test procedures associated with each modified MOTS / COTS and developmental component are developed.

6.2.5 Requirements Traceability and Verification Matrix

The Contractor must prepare a Requirements Traceability and Verification Matrix (RTVM) IAW DID SE-05 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the RTVM IAW with CDRL SE-105 in Appendix 1 Contract Deliverables.

Canada does not require visibility into the Contractor's lower-level requirements and design documentation for the purpose of requirements traceability and verification. As a result, visibility of traceability is only required from test procedures to requirements specified in the SRS.

As the Test Procedures document is updated, the RTVM will be updated in a synchronous fashion.

6.2.6 Test Readiness Reviews

6.2.6.1 TRR - General

A formal Test Readiness Review (TRR) is required for each of the following verification events:

- Prototype Verification sessions;
- System Acceptance Test; and
- First Article Acceptance Test

Prior to the commencement of each verification event, the Contractor must hold a TRR, in accordance with the approved SEMP, which:

- Confirms the accuracy and completeness of the Test Procedures for the verification event;
- Confirms the status of the applicable Configuration Baseline and of the system, item, or process under test;
- Reviews results from preceding test activities, where applicable to the verification event;
- Assures that the relevant Item(s) Under Test (IUT) is ready for testing. The IUT may be a CI, group of CIs, subsystem, component or system;
- Assures that any DND resources required are available and prepared for formal testing; and
- Assures that the Contractor is prepared for formal testing.

The TRR should be held after the test procedures for formal testing have been dry run against the same configuration of the IUT as that which will be presented for formal testing. A technical understanding of the informal test results arising from the dry run should be established.

6.2.6.2 TRR Entry Criteria

The Contractor must meet the following entry criteria for the TRR to take place:

- The status of all design and test documentation for the IUT has been established and declared to the TA;
- The updated RTVM showing traceability from the test procedures to IUT requirements and contract test requirements has been established and declared to the TA; and
- Action items from any previous reviews affecting TRR have been successfully addressed or action plans agreed with the TA;

6.2.6.3 TRR Exit Criteria

The Contractor must meet the following exit criteria for the TRR to be complete:

- All required resources including personnel, equipment and facilities are available for formal testing;
- The IUT and test procedures are deemed to be satisfactory by both the Contractor and the TA to support formal testing; and
- All risks identified during the course of TRR have been documented and analyzed, and the risks with proceeding to the next phase are acceptable to the TA.

6.2.7 Test Reports

A stand-alone test report is required for each verification event. Requirements related to test reports are included in sections related to verification events.

6.3 Failure Reporting and Analysis

In support of verification events, the Contractor must establish, maintain and update a Problem Resolution System that:

- Collects Failure data (including applicable CI identification and configuration data);
- Classifies the Failure Severity in accordance with Table 6 - 2 Failure Severity;
- Documents the failures and associated failure modes;
- Defines corrective actions;
- Identifies the scope of additional verification activities required to confirm that the failure has been remedied; and
- Maintains a history of all transactions.

Table 6 - 2 Failure Severity

Failure Severity	***Applies if a problem could:***
1	a. Prevent the accomplishment of an operational or mission essential capability; or b. Jeopardize safety, security, or other requirement designated 'critical'.
2	a. Adversely affect the accomplishment of an operational or mission essential capability and no work-around solution is known; or b. Adversely affect technical, cost, or schedule risks to the Contract or to life-cycle support of the system, and no work-around solution is known.

Failure Severity	***Applies if a problem could:***
3	a. Adversely affect the accomplishment of an operational or mission essential capability, but a work-around solution is known; or b. Adversely affect technical, cost, or schedule risks to the Contract or to life-cycle support of the system, but a work-around solution is known.
4	a. Result in user/operator inconvenience or annoyance but does not affect a required operational or mission essential capability; or b. Result in inconvenience or annoyance for development or support personnel but does not prevent the accomplishment of those responsibilities.
5	Any other effect.

The Contractor must invite the TA, or representatives appointed by the TA, to witness corrective actions and the closure of failures during verification events that are assigned a Failure Severity classification of either 1 or 2.

The Contractor must incorporate all updates to failures and associated reports into the Problem Resolution System.

6.4 Verification Event Acceptance Criteria

The following conditions must all be met for the results of the verification event to be accepted by the TA:

- Verification has been conducted IAW the approved Test Plan and Test Procedures; and
- The reported results meet the pass criteria stated in the approved Test Plan and Test Procedures.

If any of the following conditions occur, for which corrective actions are agreed by the Contractor and TA at the TER, the results of the verification event will be conditionally accepted by the TA:

- Minor deviations from the approved test plan and test procedures occurred during the verification event;
- One or more failures was encountered during execution of the approved test procedures, but no failures encountered had a Failure Severity classification of either 1 or 2;
- The analysis of test data and the assessment of test results against pass/fail criteria are inconclusive; or
- Changes are made to the configuration of a LRF HHTI-LR component after starting a verification event.

If any of the following conditions occur, the results of the verification event will be rejected by the TA:

- The verification was conducted using test procedures that were not accepted by the TA;
- Major deviations from the approved test plan and test procedures occurred during the verification event; or
- One or more failures with a Failure Severity classification of either 1 or 2 were encountered during the execution of the test procedures.

In the case of conditional acceptance or rejection of the verification event, corrective actions will be discussed and agreed by the Contractor and the TA at the TER.

The Contractor must enter agreed corrective actions as action items into the IAIL and track the action items to completion.

In the case of condition acceptance of the verification event, the Contractor must conduct regression testing to verify that those requirements that were not adequately verified during the verification event have been satisfied after agreed corrective actions have been completed.

In the case of rejection of the verification event by the TA, the Contractor must repeat the verification event after agreed corrective actions have been completed.

6.5 Informal Verification

6.5.1 Description

Informal verification will be conducted by the TA on an ad hoc basis. The TA will verify selected requirements specified in the SRS using the LRF HHTI-LR System Test Environment (see Section 4.3.6). The TA will use either ad hoc test procedures or follow test procedures from the delivered Test Procedures (CDRL SE-103).

6.5.2 Entry and Exit Criteria

There are no entry and exit criteria associated with informal verification.

6.5.3 Outcome

When an unexpected non-compliance is encountered during informal verification, the TA will inform the Contractor by email entitled Notice of Suspected Non-Compliance.

When the Contractor receives a Notice of Suspected Non-Compliance, the Contractor must create a related issue in the IAIL and track to closure.

6.6 LIBI AP Software Mid-Fidelity Prototype Review

6.6.1 Description

A prototype review will be conducted for the LIBI AP software at the mid-fidelity prototype level. The objective of the mid-fidelity prototype review is to solicit user feedback and comments on:

- Validity of design concepts and assumptions;
- Consistency of look and feel in the context of existing suite of ISS plugins; and
- Usability of important functionality.

6.6.2 Entry Criteria

The Contractor must deliver the following to the TA before the mid-fidelity prototype review:

- SDD updated with LIBI AP software mid-fidelity prototype content (see CDRL SE-102);
- LIBI AP mid-fidelity prototype software;
- SVDD for the LIBI AP mid-fidelity prototype software; and
- Agenda for the Initial Prototype Review Session.

6.6.3 LIBI AP Mid-Fidelity Prototype Review Session

The mid-fidelity prototype review session will be held at Canada's PMO NVSM facilities, using the LRF HHTI-LR System Test Environment.

The Contractor must conduct the mid-fidelity prototype review session in person.

The Contractor must conduct the mid-fidelity prototype review session IAW the Contractor's JAD processes described in the SEMP.

The Contractor must apply the requirements specified in Section 3.7.4 Project Meeting Documentation Requirements to the mid-fidelity prototype review session.

The contractor must record feedback received from user representatives during the mid-fidelity prototype review session.

The contractor must record design decisions taken and agreed by the Contractor and Canada's TA in the Minutes.

The Contractor must update the SDD (see CDRL SE-102) with design decisions and supporting design information resulting from the mid-fidelity prototype review session.

6.6.4 Exit Criteria

The requirements for a successful LIBI AP mid-fidelity prototype review session are as follows:

- Acceptance of the meeting minutes and IAIL by the TA; and
- Concurrence from the TA that all agenda items have been addressed.

Based on the results of the mid-fidelity prototype review session, the Contractor can progress the design and implementation of the LIBI AP mid-fidelity prototype software to the high-fidelity level.

6.7 Prototype Verification

6.7.1 Prototype Verification – Purpose and Planning Guidance

Prototype verification applies to those components of the LRF HHTI-LR System that are identified as modified MOTS / COTS or developmental components in Table 4 - 1 Preliminary Equipment Breakdown Structure (with Field Manuals).

Prototype verification will be conducted over one or more sessions. Each prototype session will address one or more groups of components subject to prototyping:

- Transport and Storage Cases
- Cable Assemblies
- External Battery Pack
- Pouches
- Embedded Software
- LIBI AP Software

The purpose of each prototype verification session is to:

- Reduce the risk of discovery of non-compliance to requirements during System Acceptance Testing;
- Assess the validity of requirements, providing an opportunity to Canada to identify invalid or missing requirements; and
- Identify potential usability issues and design flaws.

Prototype verification sessions will be conducted at Canada's PMO NVSM facilities.

Where requirements related to the prototype under test involve integration with one or more LRF HHTI-LR system components or external components, Canada will use the LRF-HHTI-LR System Test Environment to support prototype verification activities.

Prototype verification sessions are not considered to be Formal Technical Reviews and need not adhere to the requirements of Section 4.6 Formal Technical Reviews – Common Processes.

6.7.2 Prototype Verification - General

The Contractor must conduct one or more prototype verification sessions that together cover all of the groups of components subject to prototyping.

The Contractor may cover more than one group of components subject to prototyping in each prototype verification session.

The Contractor must identify each prototype verification session in the MPS.

The Contractor must attend the LRF HHTI-LR and LIBI AP prototype verification sessions in person at Canada's PMO NVSM facilities, unless otherwise agreed between the Contractor and TA.

6.7.3 Prototype Test Plans and Test Report Templates

The Contractor must prepare a Prototype Test Plan IAW with DID SE-06 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Prototype Test Plan IAW with CDRL SE-106 in Appendix 1 Contract Deliverables.

For each prototype verification session, the Contractor must prepare a Prototype Test Report template in accordance with DID SE-07 in Appendix 2 Data Item Descriptions.

For each prototype verification session, the Contractor must deliver the Prototype Test Report template in accordance with CDRL SE-107 in Appendix 1 Contract Deliverables.

6.7.4 Prototype Verification TRR Entry Criteria

For each session of prototype verification, the Contractor must have progressed the design and prototyping activities to a point where requirements specified in the SRS associated with the prototype items under test have reached a point of substantial fulfilment.

For each session of prototype verification, the Contractor must deliver the following to the TA before the TRR for the prototype verification session:

- Prototype Test Plan (see CDRL SE-106);
- Updated Test Procedures related to the prototypes under test (see CDRL SE-104);
- Updated Requirements Traceability and Verification Matrix (see CDRL SE-105) covering the requirements for the prototype under test and related test procedures;
- Updated SDD (see CDRL SE-102) covering evidence for requirements satisfied by analysis associated with the prototypes under test;
- Prototypes under test as applicable to the prototype review session (see CEIL PT-102 to PT-106);
- For LRF HHTI-LR embedded software and LIBI AP software prototypes, SVDD (see CDRL CM-102);
- Prototype Test Report template (see CDRL SE-107); and
- Prototype Verification Session TRR Agenda (see CDRL PM-105)

6.7.5 Prototype Verification Test Readiness Review

Before each prototype verification session, the Contractor must conduct a TRR in accordance with the requirements specified in Section 6.2.6 Test Readiness Reviews.

The objective of the TRR is to:

- Confirm entry criteria have been met;
- Confirm administrative arrangements for the prototype verification session; and
- Achieve a go / no-go decision for the prototype verification session

Prototype TRRs will normally be conducted as a remote meeting using Microsoft Teams.

Canada's TA will communicate the results of the TRR, in terms of a go / no-go decision to the Contractor. In case of a not-go decision, Canada's TA will identify issues to be resolved before the prototype verification session can proceed.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the TRR.

6.7.6 Prototype Verification Session

6.7.6.1 Presentation of Prototype Items Under Test

The Contractor must initiate the prototype review session by presenting the prototype item(s) under test.

The Contractor's presentation must include:

- A review of the functionality and configuration of the prototype items under test, focussing on how requirements have been satisfied;
- An identification of requirements that have not yet been satisfied, and the plan to satisfy these requirements before the conduct of the SAT; and
- Further refinements expected to the configuration of items under test between the prototype verification session and the SAT

6.7.6.2 Execution of Test Procedures and Exercise of Prototype Items Under Test

Following the Contractor's presentation, Canada's TA or representative will conduct the prototype verification IAW the Test Plan and Test Procedures. Canada will record results of each test procedure in the Test Report template.

During prototype verification, the Contractor must be available to provide clarification on test procedures and other assistance as requested.

Following completion of the execution of test procedures, Canada will exercise the prototype items under test to identify potential usability issues and design flaws. Canada will note potential usability issues and design flaws in the Test Report template.

Within five days of the completion of the execution of test procedures, Canada will forward the partially completed Test Report template to the Contractor.

6.7.7 Prototype Test Report

For each prototype verification session, the Contractor must prepare Prototype Test Report IAW DID SE-07 in Appendix 2 Data Item Descriptions.

For each prototype verification session, the Contractor must deliver a Prototype Test Report IAW CDRL SE-107 in Appendix 1 Contract Deliverables.

6.7.8 Prototype Verification Exit Criteria

For each session of prototype verification, the following exit criteria must be satisfied:

- The Prototype Test Report has been accepted by Canada's TA (see CDLR Item SE-107);
- For each requirement specified in the SRS associated with the prototype item(s) under test that has not yet been satisfied, there is an agreed way ahead for the satisfaction of the requirement; and
- For each potential usability issue or design flaw identified by Canada, the Contractor has updated the IAIL accordingly, IAW Section 3.4 Issues and Action Items, and has proposed a way forward to resolve the issue or potential design flaw.

6.7.9 Prototype Verification Test Exit Review (TER)

After each prototype verification session, the Contractor must conduct a TER.

The objective of the TER is to:

- Conduct discussions required for exit criteria to be met; and

- Confirm exit criteria have been met

Prototype TERs will normally be conducted as a remote meeting using Microsoft Teams.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the TER.

6.7.10 Prototype Verification Outcome

Following each prototype verification session, the Contractor can progress the prototypes subject to test to the pre-production prototype level as required for the SAT.

Should Canada's TA determine that there are invalid or missing requirements, the TA will initiate a change to the Functional Baseline through the Engineering Change Request process, as described in 5.5.4 Configuration Changes Initiated by Canada.

6.8 System Acceptance Test (SAT)

6.8.1 SAT – Purpose and Planning Guidance

The purpose of the SAT is to confirm that the pre-production LRF HHTI-LR System, configured to the PBL, satisfies the requirements specified in the SRS.

The scope of the SAT will focus on the holistic, integrated functionality of the LRF HHTI-LR System. Requirements that have been proven to be satisfied during bid evaluation or prototype verification events, where there has not been a change in configuration, will not necessarily be re-tested.

Canada's participants in the testing component of the SAT will have an active, "hands-on" role, as described in Section 6.2.2 Canada's Involvement in Verification Events.

Those requirements that may be subject to verification at SAT are identified in Appendix 5 Requirements Verification Matrix.

Following the completion of all prototype verification sessions, Canada will determine the scope of testing to be carried out at SAT based on a risk analysis. Following the risk analysis, Canada may determine that specific requirements in the SRS are no longer subject to verification at the SAT and will communicate these determinations to the Contractor.

The testing component of the SAT will be conducted at a Canadian Armed Forces site, using pre-production LRF HHTI-LR systems configured to the Production Baseline.

6.8.2 SAT – General

The Contractor must conduct the SAT testing activities at CFB Gagetown, or other location as agreed between the Contractor and TA.

6.8.3 SAT Plan and Report Template

The Contractor must prepare a SAT Plan IAW with DID SE-06 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the SAT Plan IAW with CDRL SE-108 in Appendix 1 Contract Deliverables.

The Contractor must prepare a SAT Report template in accordance with DID SE-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the SAT Report template in accordance with CDRL SE-109 in Appendix 1 Contract Deliverables.

6.8.4 SAT TRR Entry Criteria

The Contractor must deliver the following test-related deliverables to the TA before the SAT TRR:

- SAT Plan (see CDRL SE-106);
- Updated Test Procedures related to the pre-production system in the PBL configuration (see CDRL SE-104);
- Updated RTVM (see CDRL SE-105) related to the pre-production system in the PBL configuration and related test procedures;
- Updated SDD (see CDRL SE-102) covering evidence for requirements satisfied by analysis associated with the SAT;
- SAT Report template (see CDRL SE-107);
- SAT TRR Agenda (see CDRL PM-105);
- Pre-production LFR HHTI-LR systems as described in Section 4.4.3 Pre-Production LRF HHTI-LR System;
- SVDDs for pre-production LRF HHTI-LR embedded software and LIBI AP software (see CDRL CM-102); and
- CSA Report (see CDRL CM-106).

The Contractor must deliver the following operator and maintainer related deliverables to the TA before the SAT TRR, in support of the pilot Operator Training Course:

- Draft Operator Manual (Canadian English) (see CDRL LS-111);
- Draft Quick Reference Guide (Canadian English);
- Draft Operator Training Course Package (Canadian English); and
- Draft Maintenance Manual 1st and 2nd line (Canadian English).

The Contractor must deliver the following supply support related deliverables to the TA before the SAT TRR, in support of the verification of requirements related to packaging and labelling data:

- Packaging Data (see CDRL LS-120);
- Identification Plates – Design Template & Populated Designs (see CDRL LS-121);
- Identification Labels for Storage & Shipment and Packaging Codes (see CDRL LS-122);
- Stowage Shipping and Handling Instructions (see CDRL LS-123); and
- UID Marking Specifications (see CDRL LS-126).

6.8.5 SAT TRR

The Contractor must conduct a SAT TRR in accordance with the requirements specified in Section 6.2.6 Test Readiness Reviews.

The objective of the TRR is to:

- Confirm entry criteria have been met;
- Confirm administrative arrangements for the SAT; and
- Achieve a go / no-go decision for the SAT.

The SAT TRRs will be conducted as a remote meeting using Microsoft Teams, unless otherwise agreed by the Contractor and TA.

Canada's TA will communicate the results of the TRR, in terms of a go / no-go decision to the Contractor. In case of a not-go decision, Canada's TA will identify issues to be resolved before the prototype verification session can proceed.

The Contractor must apply the requirements of Section 4.6 Formal Technical Reviews – Common Processes to the SAT TRR.

6.8.6 Operator Training for Canada's SAT Participants

The TA will appoint participants from the user community to participate in the SAT. Participants will attend the pilot LRF HHTI-LR Operator Training Course to familiarize themselves with the items under test, as described in Section 8.9.6.2 Pilot Operator Training Course Delivery.

This training will occur at the site of SAT, immediately before the commencement of SAT testing activities.

6.8.7 SAT Testing Activities

6.8.7.1 Presentation of Pre-Production Items Under Test

The Contractor must initiate the SAT by presenting the pre-production items under test.

The Contractor's presentation must include:

- A review of the functionality and configuration of the pre-production items under test, focussing on changes to functionality and configuration since prototype testing;
- A review of the results of dry-run testing that has been completed, and any issues that were encountered;
- Known issues that may affect the success of the SAT, and the Contractor's plan to resolve; and
- A review of the protocols to be followed during testing, as described in the SAT Test Plan

6.8.7.2 Execution of Test Procedures and Exercise of Pre-Production Items Under Test

Following the Contractor's presentation, the Contractor must conduct the testing component of the SAT IAW the SAT Plan and applicable Test Procedures.

The Contractor must provide guidance and direction to Canada's participants in the orderly execution and witnessing of Test Procedures IAW the SAT Test Plan.

The Contractor must record the outcome of Test Procedures in the SAT Report template.

6.8.7.3 SAT Wrap-up

The Contractor must conduct a wrap-up session where the results of SAT testing are reviewed in the context of criteria described in Section 6.4 Verification Event Acceptance Criteria.

The focus of the SAT wrap-up will be:

- An initial determination by the TA of the success of the SAT;
- The preliminary identification of corrective actions to address deficiencies identified during testing activities; and
- The identification of corrective actions to occur before the SAT TER takes place.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the SAT wrap-up.

6.8.8 SAT Test Report

The Contractor must prepare a SAT Test Report IAW DID SE-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver a SAT Test Report IAW CDRL SE-109 in Appendix 1 Contract Deliverables.

6.8.9 Post-SAT Functional Configuration Audit

Following completion of the testing component of the SAT, the Contractor must conduct an FCA as described in Section 5.7.1 Functional Configuration Audit (FCA).

The Contractor must prepare and deliver an FCA Report as described in Section 5.7.1 Functional Configuration Audit (FCA).

6.8.10 SAT Exit Criteria

The following exit criteria must be satisfied for the SAT to be declared successful:

- The SAT Test Report has been accepted by Canada's TA (see CDLR Item SE-107);
- The FCA Report has been accepted by Canada's TA (see CDLR Item CM-107); and
- The SAT has been accepted by the TA IAW the criteria described in Section 6.4 Verification Event Acceptance Criteria.

6.8.11 SAT Test Exit Review (TER)

The Contractor must conduct a SAT TER.

The objective of the SAT TER is to conduct discussions required for exit criteria to be met.

The SAT TER(s) will be conducted as a remote meeting(s) using Microsoft Teams.

The Contractor must apply the requirements of Section 4.6 Formal Technical Reviews – Common Processes to the SAT TER.

6.9 Pre-FAAT Physical Configuration Audit

Following production of the LRF HHTI-LR Systems to be subjected to testing at the FAAT, the Contractor must conduct a PCA as described in Section 5.7.2 Physical Configuration Audit (PCA).

The Contractor must deliver a PCA Report as described in Section 5.7.2 Physical Configuration Audit (PCA).

6.10 First Article Acceptance Test (FAAT)

6.10.1 FAAT – Purpose and Planning Guidance

The purpose of the FAAT is to confirm that the first production LRF HHTI-LR Systems, configured to the PBL, satisfy the requirements specified in the SRS.

The scope of the FAAT will focus on:

- Packaging of the delivered LRF HHTI-LR Systems, and readiness for acceptance by the CAF supply system;
- Configuration review of the delivered LRF HHTI-LR Systems;
- The quality of the delivered LRF HHTI-LR Systems;
- The verification of requirements whose satisfaction is partially dependent on the quality of the production methods; and
- Regression testing to ensure that functionality of the system verified at SAT has been maintained in the first systems produced.

Requirements related to delivery of LRF HHTI-LR Systems in support of FAAT are specified in Section 10.2 Production in Support of the First Article Acceptance Test.

Requirements that have been proven to be satisfied during bid evaluation, prototype verification events or SAT, where there has not been a change in configuration, may not require re-testing at the FAAT, as confirmed by the TA.

Canada's participants in the testing component of the FAAT will have an active, "hands-on" role, as described in Section 6.2.2 Canada's Involvement in Verification Events.

Those requirements that may be subject to verification at FAAT are identified in Appendix 5 Requirements Verification Matrix.

Following the completion of the SAT, Canada will determine the scope of testing to be carried out at FAAT based on a risk analysis. Following the risk analysis, Canada may determine that specific requirements in the SRS are no longer subject to verification at the FAAT and will communicate these determinations to the Contractor.

On delivery of the production LRF HHTI-LR Systems in support of the FAAT, the delivered systems will be inspected for completeness and will undergo verification of requirements related to packaging and labeling.

A selection of delivered systems will be provided to Quality Engineering Test Establishment (QETE) for performance and environmental testing in laboratory conditions.

The remaining systems will be subjected to:

- Configuration review based on a detailed walk-through of the Contractor's PCA Report and technical documentation to be conducted at Canada's PMO NVSM facilities; and
- Regression testing to be conducted at PMO NVSM facilities and at a Canadian Armed Forces field site.

6.10.2 FAAT – General

The Contractor must provide production LRF HHTI-LR Systems in support of FAAT as described in Section 10.2 Production in Support of the First Article Acceptance Test.

The Contractor must conduct a configuration review of the delivered LRF HHTI-LR Systems at PMO NVSM facilities.

The Contractor must conduct the FAAT testing activities at the PMO NVSM facilities and CFB Gagetown, or other location as agreed between the Contractor and TA.

6.10.3 FAAT Test Plan and Test Report Template

The Contractor must prepare a FAAT Plan IAW with DID SE-06 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the FAAT Plan IAW with CDRL SE-110 in Appendix 1 Contract Deliverables.

The Contractor must prepare a FAAT Report template in accordance with DID SE-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the FAAT Report template in accordance with CDRL SE-111 in Appendix 1 Contract Deliverables.

6.10.4 FAAT TRR Entry Criteria

The Contractor must deliver the following to the TA before the FAAT TRR:

- FAAT Plan (see CDRL SE-106);
- Updated Test Procedures related to the production system in the PBL configuration (see CDRL SE-104);
- Updated Requirements Traceability and Verification Matrix (see CDRL SE-105) related to the production systems in the PBL configuration and related test procedures;
- Updated SDD (see CDRL SE-102) covering evidence for requirements satisfied by analysis associated with the FAAT;
- FAAT Report template (see CDRL SE-107);
- FAAT TRR Agenda (see CDRL PM-105);
- Production LFR HHTI-LR systems as described in Section 10.2 Production in Support of the First Article Acceptance Test:

- CSA Report (see CDRL CM-106);
- PCA Report (see CDRL cm-108); and
- Draft versions of all Data Deliverables identified in Appendix 1 Contract Deliverables, Section 2.6 Logistic Support Data Deliverables.

6.10.5 FAAT TRR

The Contractor must conduct a FAAT TRR in accordance with the requirements specified in Section 6.2.6 Test Readiness Reviews.

The objective of the TRR is to:

- Confirm entry criteria have been met;
- Confirm administrative arrangements for the FAAT testing session; and
- Achieve a go / no-go decision for the FAAT testing session.

The FAAT TRR will be conducted as a remote meeting using Microsoft Teams, unless otherwise agreed by the Contractor and TA.

Canada's TA will communicate the results of the TRR, in terms of a go / no-go decision to the Contractor. In case of a not-go decision, Canada's TA will identify issues to be resolved before the prototype verification session can proceed.

The Contractor must apply the requirements of Section 4.6 Formal Technical Reviews – Common Processes to the FAAT TRR.

6.10.6 FAAT Activities

6.10.6.1 FAAT Schedule Constraints

FAAT Activities must start within one year after Contract Award.

6.10.6.2 Presentation of Production Items Under Test

The Contractor must initiate the FAAT by presenting the production items under test.

The Contractor's presentation must include:

- A review of the functionality and configuration of the production items under test, focussing on changes to functionality and configuration since the SAT;
- A review of the results of dry-run testing that has been completed, and any issues that were encountered;
- Known issues that may affect the success of the FAAT, and the Contractor's plan to resolve; and
- A review of the protocols to be followed during testing, as described in the FAAT Test Plan.

6.10.6.3 Configuration Review

The Contractor must conduct a Configuration Review.

The objective of the Configuration Review is to provide evidence that the Contractor's CM efforts have resulted in accurate and consistent configuration data across LRF HHTI-LR System and data deliverables.

The Configuration Review must include:

- A presentation by the Contractor on the processes involved in production of the PCA Report, and a summary of the content of the PCA report;
- Review of the EBS, Provisioning Drawings and Associated Lists;
- Physical examination of the LRF HHTI-LR System against the EBS, Provisioning Drawings and Associated Lists, changes, deviations and waivers; and

- The verification of all requirements in the SRS related to packaging, labeling and identification plates.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the Configuration Review.

6.10.6.4 Execution of Test Procedures and Exercise of Production Items Under Test

Following the Configuration Review, the Contractor must conduct the testing component of the FAAT IAW the FAAT Plan and applicable Test Procedures.

The Contractor must provide guidance and direction to Canada's participants in the orderly execution and witnessing of Test Procedures IAW the FAAT Test Plan.

The Contractor must record the outcome of Test Procedures in the FAAT Report template.

6.10.6.5 FAAT Wrap-up

The Contractor must conduct a wrap-up session where the results of FAAT testing are reviewed in the context of criteria described in Section 6.4 Verification Event Acceptance Criteria.

The focus of the FAAT wrap-up will be:

- An initial determination by the TA of the success of the FAAT;
- The preliminary identification of corrective actions to address deficiencies identified during testing activities; and
- The identification of corrective actions to occur before the FAAT TER takes place.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the FAAT wrap-up.

6.10.7 FAAT Report

Canada will provide the Contractor with the results of performance and environmental testing conducted by QETE.

The Contractor must prepare a FAAT Report IAW DID SE-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver a FAAT Report IAW CDRL SE-111 in Appendix 1 Contract Deliverables.

6.10.8 FAAT Exit Criteria

The following exit criteria must be satisfied for the FAAT to be declared successful:

- The FAAT Report has been accepted by Canada's TA (see CDLR Item SE-107);
- The FAAT has been accepted by the TA IAW the criteria described in Section 6.4 Verification Event Acceptance Criteria; and
- Action items related to the configuration review and FAAT testing activities have been closed.

6.10.9 FAAT Test Exit Review (TER)

The Contractor must conduct a FAAT TER.

The objective of the TER is to conduct discussions required for exit criteria to be met.

The TER will be conducted as a remote meeting using Microsoft Teams.

The Contractor must apply the requirements of Section 4.6 Formal Technical Reviews – Common Processes to the SAT TER.

6.11 Design Acceptance

Successful completion of the FAAT will constitute Design Acceptance.

7 Quality Management

7.1 Quality Management Requirements

Full requirements for quality management are specified in the main articles of agreement section of the Contract. The information provided below is a summary these of requirements, and are included so that the scope work related to quality management is visible in this SOW.

7.2 Quality Management Program

In the performance of the Work described in the Contract, the Contractor must comply with the requirements of ISO 9001:2015 - Quality management systems – Requirements.

The Contractor must provide assistance for Government Quality Assurance (GQA)

7.3 Quality Plan

The Contractor must prepare a Quality Plan IAW DID PM-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Quality Plan IAW CDRL PM-107 in Appendix 1 Contract Deliverables.

8 Integrated Logistics Support (ILS)

8.1 ILS Management

8.1.1 ILS Manager

The Contractor must designate an ILS Manager with the responsibilities to coordinate, execute, and manage the Contractor's ILS activities for the Contract.

8.1.2 ILS Plan

The Contractor must prepare an Integrated Logistics Support Plan (ILSP) IAW DID LS-01 in Appendix 2 Data Item Descriptions.

The Contractor deliver the Integrated Logistics Support Plan (ILSP) IAW CDRL LS-101 in Appendix 1 Contract Deliverables.

The Contractor must conduct its programme of ILS activities IAW the accepted ILSP.

8.1.3 ILS Schedule

The Contractor must prepare and deliver a time-based schedule of ILS activities and deliverables as part of the MPS.

The Contractor must capture all ILS milestones and their key dependencies in the MPS.

8.1.4 ILS Meetings

ILS meetings will normally occur as part of, or immediately following, a Project Status Review meeting.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to all ILS meetings.

ILS meetings include:

- ILS Kick-off Meeting, as described in Section 8.2;
- Logistic Support Analysis (LSA) Review, as described in Section 8.3.3;
- Configuration Review, conducted during the FAAT, as described in Section 6.10.6.3; and
- Other ILS meetings that may be required to resolve ILS issues or seek input from the TA.

8.2 ILS Kick-off Meeting

The Contractor must conduct an in-person ILS Kick-off Meeting at the Contractor's facility following the Project kick-off meeting and SE Kick-off meeting. The objective of the ILS Kick-off Meeting is to review and secure a common understanding of the following:

- The requirements of the SOW related to the ILS programme;
- General overview of the ILS programme, risks, schedule and communication channels to follow;
- The requirements of the In-Service Support SOW; and
- Other contractual and programmatic issues associated with the project as agreed between the TA, CA and the Contractor.

The following activities are pre-requisites to the ILS Kick-off meeting:

- Completion of the Project Kick-off meeting; and
- Submission of the draft ILS Plan no later than ten days before the ILS Kick-off meeting

The Contractor must include, as a minimum, the following in the agenda for the kick-off meeting:

- Roles and responsibilities of key personnel and points of contact;

- Timelines;
- Deliverables;
- Channels of communication;
- Clarification of ILS programme elements;
- Clarification of in-service support elements;
- Initial identification of issues and risks; and
- Review of the ILS Plan

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the ILS Kick-off meeting.

8.3 Logistic Support Analysis (LSA)

8.3.1 Maintenance Plan

The Contractor must identify all maintenance tasks and assign them as:

- Operator maintenance tasks;
- First level maintenance tasks conducted by technicians in a first line field unit;
- Second level maintenance tasks conducted by technicians in a second line field maintenance unit;
- Second level maintenance tasks conducted by technicians at 202 Workshop Depot; or
- Repair and overhaul task conducted at the Contractor's facilities.

The contractor must ensure that the identification and allocation of maintenance tasks is consistent with the Support Concept as presented in to Appendix 6 Support and Maintenance Concept.

Based on the identification and allocation of maintenance tasks, the Contractor must prepare a Maintenance Plan IAW DID LS-02 in Appendix 2 Data Item Descriptions.

The Contractor deliver the Maintenance Plan IAW CDRL LS-102 in Appendix 1 Contract Deliverables.

The Contractor must include a Permissive Repair Schedule (PRS) in the Maintenance Plan.

The Contractor must include Standard Repair Times (SRT) in the Maintenance Plan.

8.3.2 Sparing Analysis Report

The Contractor must conduct a sparing analysis and prepare a Sparing Analysis Report IAW DID LS-03 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Sparing Analysis Report IAW CDRL LS-103 in Appendix 1 Contract Deliverables.

The contractor must ensure that the Sparing Analysis Report is consistent with the support and maintenance concepts presented in to Appendix 6 Support and Maintenance Concept.

8.3.3 LSA Review

8.3.3.1 LSA Review – General

The Contractor must conduct an LSA Review at Canada's PMO NVSM facilities.

The Contractor must conduct the LSA Review IAW the ILSP.

8.3.3.2 Purpose of the LSA Review

The purpose of the LSA Review is to:

- Ensure that the Contractor and Canada have a clear and common understanding of the logistic support approach for the LRF HHTI-LR System;
- Review the draft Maintenance Plan, and resolve related issues; and
- Review the draft Sparing Analysis Report and resolve related issues.

8.3.3.3 LSA Review Entry Criteria

The Contractor must deliver the following to the TA before the LSA Review:

- LSA Review Agenda;
- Updated EBS (See Section 5.4.2 Equipment Breakdown Structure);
- Draft Maintenance Plan (see Section 8.3.1);
- Draft Sparing Analysis Report (see Section 8.3.2);
- Preliminary Provisioning Parts Breakdown (see Section 8.4.2);
- Draft Recommended Special Tools and Test Equipment List (see Section 8.4.5);
- Initial Configuration Status Accounting Report (see Section 5.6); and
- Draft In-Service Support Plan for In-Service Support Contract (see Section 8.11).

8.3.3.4 LSA Review Meeting Activities

The Contractor must conduct the LSA Review meeting as an on-site meeting at Canada's PMO NVSM facilities unless otherwise agreed between the Contractor and TA.

The Contractor must present an overview of the results of the Contractor's LSA efforts.

The Contractor must facilitate a discussion to resolve comments and issues raised by the TA on the updated EBS, draft Maintenance Plan, draft Sparing Analysis Report and preliminary Provisioning Parts Breakdown.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the LSA Review meeting.

8.3.3.5 LSA Review Exit Criteria

The requirements for a successful LSA Review are as follows:

- Acceptance of the meeting minutes and IAIL by the TA;
- Completion of action items assigned to the Contractor;
- Acceptance by the TA of the items listed in Section 8.3.3.3; and
- Concurrence from the TA that all agenda items have been addressed.

8.4 Provisioning Documentation

8.4.1 General

The provisioning documentation lists and describes in detail the parts that make up the LRF HHTI-LR System as well as all specialized and specific items required to support the use and maintenance of the LRF HHTI-LR System. The provisioning documentation allows the LRF HHTI-LR's Integrated Logistics Support Manager (ILSM) to plan and implement a sparing and support strategy.

Included in the provisioning documentation are all the procurable parts — either from the Contractor or a third-party — of the LRF HHTI-LR System to the lowest replaceable unit. Also considered procurable parts are the consumables required to operate and maintain the LRF HHTI-LR (desiccants, lens cleaning

kits, etc.) and specialized equipment (special tools, test equipment, training aids, transport containers, etc.) specific to the LRF HHTI-LR System.

8.4.2 Provisioning Parts Breakdown

The Contractor must extend the EBS to include all necessary the data elements required to produce a Provisioning Parts Breakdown (PPB).

The PPB must include all data elements required to produce, as extracts from the PPB:

- Recommended Spare Parts List (RSPL);
- Recommended Support Equipment Requirements List (RSERL); and
- Recommended Consumable and Bulk Items List.

The Contractor must prepare a Provisioning Parts Breakdown (PPB) IAW DID LS-05 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the PPB IAW CDRL LS-105 in Appendix 1 Contract Deliverables.

8.4.3 Recommended Spare Parts List

The Contractor must prepare, as an extract from the PPB, a Recommended Spare Parts List (RSPL) IAW DID LS-06 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the RSPL IAW CDRL LS-106 in Appendix 1 Contract Deliverables.

8.4.4 Recommended Support Equipment Requirements List

The Contractor must prepare, as an extract from the PPB, a Recommended Support Equipment Requirements List (RSERL) IAW DID LS-07 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the RSERL IAW CDRL LS-107 in Appendix 1 Contract Deliverables.

8.4.5 Recommended Special Tools and Test Equipment List

The Contractor must prepare, as an extract from the PPB, a Recommended Special Tools and Test Equipment List (RSTTEL) IAW DID LS-25 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the RSTTEL IAW CDRL LS-125 in Appendix 1 Contract Deliverables.

8.4.6 Consumable and Bulk Items List

The Contractor must prepare, as an extract from the PPB, a Consumables and Bulk Items List (CBIL) IAW DID LS-08 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the CBIL IAW CDRL LS-108 in Appendix 1 Contract Deliverables.

8.4.7 Provisioning Drawings and Associated Lists

The Contractor must prepare Level 2 Provisioning Drawings and Associated Lists defining the LRF HHTI-LR System IAW DID LS-10 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Level 2 Provisioning Drawings and Associated Lists IAW CDRL LS-110 in Appendix 1 Contract Deliverables.

8.4.8 Material Change Notice (MCN)

For the duration of the contract, the Contractor must be aware of the availability of the parts comprising the LRF HHTI-LR System and must warn the TA of parts recommended for provisioning that are no longer manufactured, have become obsolete or are expected to become obsolete within two years.

Six months prior to the expiry date of the contract, the Contractor must review the anticipated date of obsolescence of each part. The Contractor must prepare and submit this information using the MCN.

The Contractor must prepare an MCN IAW DID LS-09 in Appendix 2 Data Item Descriptions to inform the TA of each change to accepted provisioning data, including anticipated obsolescence, for the duration of the contract.

The Contractor deliver each MCN IAW CDRL LS-109 in Appendix 1 Contract Deliverables.

8.5 Technical Publication Package

8.5.1 Operator Manual

The Contractor must prepare an Operator Manual IAW DID LS-11 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Operator Manual IAW CDRL LS-111 in Appendix 1 Contract Deliverables.

The initial draft unilingual (Canadian English) version of the Operator Manual will be used to support the delivery of the Pilot Operator Training Course Delivery (see Section 8.9.6.2).

8.5.2 Operator Quick Reference Card

The Contractor must prepare an Operator Quick Reference Card IAW DID LS-12 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Operator Quick Reference Card IAW CDRL LS-112 in Appendix 1 Contract Deliverables.

8.5.3 Maintenance Manual - 1st and 2nd Line

The Contractor must prepare a Maintenance Manual - 1st and 2nd Line IAW DID LS-13 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Maintenance Manual - 1st and 2nd Line IAW CDRL LS-113 in Appendix 1 Contract Deliverables.

8.5.4 Maintenance Manual - 202 Workshop Depot

The Contractor must prepare a Maintenance Manual – 202 Workshop Depot IAW DID LS-14 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Maintenance Manual – 202 Workshop Depot IAW CDRL LS-114 in Appendix 1 Contract Deliverables.

8.5.5 Illustrated Parts Manual

The Contractor must prepare an Illustrated Parts Manual IAW DID LS-15 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Illustrated Parts Manual IAW CDRL LS-115 in Appendix 1 Contract Deliverables.

8.5.6 Preservation, Storage and Reactivation Instructions

The Contractor must prepare Preservation, Storage and Reactivation Instructions IAW DID LS-18 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Preservation, Storage and Reactivation Instructions IAW CDRL LS-118 in Appendix 1 Contract Deliverables.

8.6 Supply Support

8.6.1 Equipment Data Summary

The Contractor must prepare an Equipment Data Summary IAW DID LS-04 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Equipment Data Summary IAW CDRL LS-104 in Appendix 1 Contract Deliverables.

8.6.2 Supplementary Provisioning Technical Documentation

The Supplementary Provisioning Technical Documentation (SPTD) will be used in the cataloguing process to uniquely identify each item considered for provisioning so that it can be correctly catalogued and assigned an NSN.

The Contractor must prepare SPTD IAW DID LS-19 in Appendix 2 Data Item Descriptions for each CI, spare part, and consumable item procured by Canada that has not already been assigned an NSN.

The Contractor must deliver the SPTD IAW CDRL LS-119 in Appendix 1 Contract Deliverables.

Any item with an existing NSN and needing modifications in order to meet Canada's requirements will require a new NSN and therefore the submission of SPTD.

8.6.3 Packaging Data

The Contractor must prepare Packaging Data IAW DID LS-20 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Packaging Data IAW CDRL LS-120 in Appendix 1 Contract Deliverables.

8.6.4 Identification Plates – Design Template & Populated Designs

The Contractor must prepare Identification Plates – Design Template & Populated Designs IAW DID LS-21 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Identification Plates – Design Template & Populated Designs IAW CDRL LS-121 in Appendix 1 Contract Deliverables.

8.6.5 Identification Labels for Storage & Shipment and Packaging Codes

The Contractor must prepare Identification Labels for Storage & Shipment and Packaging Codes IAW DID LS-22 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Identification Labels for Storage & Shipment and Packaging Codes IAW CDRL LS-122 in Appendix 1 Contract Deliverables.

8.6.6 UID Marking Specifications

The Contractor must prepare UID Marking Specifications IAW DID LS-26 in Appendix 2 Data Item Descriptions.

The Contractor must deliver Stowage, Shipping, and Handling Instructions IAW CDRL LS-126 in Appendix 1 Contract Deliverables.

8.6.7 Stowage, Shipping, and Handling Instructions

The Contractor must prepare Stowage, Shipping, and Handling Instructions IAW DID LS-23 in Appendix 2 Data Item Descriptions.

The Contractor must deliver Stowage, Shipping, and Handling Instructions IAW CDRL LS-123 in Appendix 1 Contract Deliverables.

8.6.8 Serial Number Register

The Contractor must prepare a Serial Number Register IAW DID LS-24 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Serial Number Register IAW CDRL LS-124 in Appendix 1 Contract Deliverables.

8.7 Controlled Goods List

The Contractor must prepare a Controlled Goods List IAW DID LS-27 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Controlled Goods List IAW CDRL LS-127 in Appendix 1 Contract Deliverables.

Controlled Goods includes Technical Data.

The Contractor must identify Controlled Technical Data in accordance with Annex B2 Technical Data Identification Guidelines to C-02-007-000/AG-001 Controlled Technology Access and Transfer (CTAT) Manual.

8.8 Laser Safety Data Sheet

The Contractor must prepare a Laser Safety Data Sheet (LSDS) IAW DID LS-28 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the LSDS IAW CDRL LS-128 in Appendix 1 Contract Deliverables.

8.9 Training

8.9.1 Training Programme

It is recognized that the LRF HHTI-LR System primarily comprises MOTS / COTS equipment, and the Contractor may have already developed comprehensive training packages. It is expected that if comprehensive training packages already exist, the Contractor will tailor existing packages to satisfy the requirements of this SOW.

The Contractor must conform to the training development requirements of Canadian Forces Individual Training Education System (CFITES), or to an equivalent training development system that follows the fundamental principles of CFITES as described in A-P9-050-000/PT-001: Canadian Forces Individual Training and Education System – Volume 1 – Introduction / Description.

The Contractor must describe their training development process in the ILSP.

If the Contractor proposes to conform to the requirements of an equivalent training development system, the Contractor must identify and describe the processes that comprise the equivalent training development system in the ILSP.

8.9.2 Operator Training Package

The Contractor must include training related to all components that comprise the LRF HHTI-LR System in the scope of Operator Training.

The Contractor must analyse training needs and requirements for Operator Training IAW A-P9-050-000/PT-002: CFITES Manual of Individual Training and Education Volume 2 – Needs Assessment and A-P9-050-000/PT-003: CFITES Manual of Individual Training and Education Volume 3 – Analysis of Instructional Requirements, or with an equivalent training development system.

The Contractor must design and develop the Operator Training Course IAW A-P9-050-000/PT-004: CFITES Manual of Individual Training and Education Volume 4 – Design of Instructional Programmes

and: CFITES Manual of Individual Training and Education Volume 5 – Development of Instructional Programmes, or with an equivalent training development system.

The Contractor must prepare an Operator Training Package IAW DID LS-16 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Operator Training Package IAW CDRL LS-116 in Appendix 1 Contract Deliverables.

8.9.3 Maintenance Training Package – 1st and 2nd Line

Canada has assessed that a maintenance training package for 1st and 2nd Line Maintenance Units is not required.

8.9.4 Maintenance Training Package – 202 WD

The Contractor must develop a Maintenance Training Package for 202 WD that is consistent with the Maintenance Plan and with the Support and Maintenance Concept at Appendix 6.

The Contractor must analyse training needs and requirements for Maintenance Training for 202 WD IAW A-P9-050-000/PT-002: CFITES Manual of Individual Training and Education Volume 2 – Needs Assessment and A-P9-050-000/PT-003: CFITES Manual of Individual Training and Education Volume 3 – Analysis of Instructional Requirements, or with an equivalent training development system.

The Contractor must design and develop the Maintenance Training Course for 202 WD IAW A-P9-050-000/PT-004: CFITES Manual of Individual Training and Education Volume 4 – Design of Instructional Programmes and A-P9-050-000/PT-005: CFITES Manual of Individual Training and Education Volume 5 – Development of Instructional Programmes, or with an equivalent training development system.

The Contractor must prepare a Maintenance Training Package – 202 WD IAW DID LS-17 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Maintenance Training Package – 202 WD IAW CDRL LS-117 in Appendix 1 Contract Deliverables.

8.9.5 Common Training Course Delivery Requirements

For each training course delivered IAW CSRL Items TR-101 to TR-105 inclusive, the Contractor must provide training staff who are:

- Fully bilingual in English and French; and
- Subject matter experts in the courses being delivered

For each training course delivered IAW CSRL Items TR-101 to TR-105 inclusive, the Contractor must provide hard copies of Student Handouts to be retained by the students as follows:

- One Student Handout per student in the language of instruction;
- Two spare Student Handouts in the language of instruction; and
- Two spare Student Handouts in the other official language of Canada

For each training course delivered IAW CSRL Items TR-101 to TR-105 inclusive, the Contractor's training staff must bring a laptop computer with a USB port for projection and the training package stored in the computer's memory.

For each training course delivered IAW CSRL Items TR-101 to TR-105 inclusive, Canada will provide a fully equipped classroom to support the delivery of the course. The classroom provided will include:

- Computer compatible with PowerPoint presentation; and
- Projector and screen.

8.9.6 Operator Training Course Delivery

8.9.6.1 Initial Baseline System Operator Training Course Delivery

The Contractor must deliver an Operator Training Course based on the Contractor's Initial Baseline System IAW CSRL Item TR-101 in Appendix 1 Contract Deliverables.

The objective of this training is to familiarize members of Canada's LRF HHTI-LR project team with the functionality of the Contractor's Initial Baseline System, as described in Section 4.3.2.

This training will be conducted using Canada's LRF HHTI-LR System Test Environment, as described in Section 4.3.6.

8.9.6.2 Pilot Operator Training Course Delivery

The Contractor must deliver a pilot Operator Training Course IAW CSRL Item TR-102, using the draft Operator Training Course package delivered IAW CDRL LS-116 in Appendix 1 Contract Deliverables.

The objective of this training is to:

- Provide an opportunity for the review of the Operator Training Course package
- Familiarize members of Canada's LRF HHTI-LR project team with the functionality of the Contractor's Production Baseline System in preparation for involvement in the SAT

The Contractor must provide two LRF HHTI-LR Systems configured as closely as possible to the Product Baseline to support the pilot Operator Training Course.

8.9.6.3 Operator Training Course Delivery – CFB Gagetown

The Contractor must deliver the Operator Training Course IAW CSRL Item TR-103, using the final Operator Training Course package delivered IAW CDRL LS-116 in Appendix 1 Contract Deliverables.

LRF HHTI-LR Systems to support this course will be provided by Canada.

8.9.6.4 Operator Training Course Delivery – Various Locations – Contract Option

On execution of a contract option, the Contractor must deliver Operator Training Courses at multiple sites IAW CSRL Items TR-104-01 to TR-103-05, using the final Operator Training Course package delivered IAW CDRL LS-116 in Appendix 1 Contract Deliverables.

LRF HHTI-LR Systems to support these courses will be provided by Canada.

8.9.7 Maintenance Training Course – 202 WD Delivery

The delivery of the maintenance training course for 202 WD personnel will occur after the commissioning of the clean room at 202 WD.

The location of the delivery of this course is tentatively set for on-site at 202 WD. However, there are benefits to conducting this training at the OEM repair facilities, and the location of this course may be subject to a contract change.

The Contractor must deliver a Maintenance Training Course – 202 WD IAW CSRL Item TR-105, using the unilingual Maintenance Training Course package delivered IAW CDRL LS-117 in Appendix 1 Contract Deliverables.

8.10 Establishment of Second Level Maintenance Capability at 202 Workshop Depot

8.10.1 General

202 WD is a national level workshop that performs repairs and modifications to Canadian military equipment used mainly by Canadian Army. 202 WD capabilities include 3rd and 4th level repair and overhaul of complex military equipment systems.

202 Workshop has recently opened an optical clean room for the repair of optical sights and laser range finders that are used with the Canadian Army's Light Armoured Vehicles. The optical clean room was designed for expansion to include the in-service support of other electro-optical systems.

IAW the Support and Maintenance Concept at Appendix 6, Canada will be conducting centralized second level maintenance of the LRF HHTI-LR at 202 Workshop Depot (202 WD) at CFB Montreal. The scope of repairs to be undertaken at 202 WD will be limited to the replacement of shop replaceable units.

It is Canada's intent that 202 WD is capable of conducting second level repair activities by the time the warranty period ends for the first full production LRF HHTI-LR Systems, or before the end of the initial period of the Acquisition Contract, which ever comes first. Prerequisites for conduct of second level repair activities include:

- Special Tools and Test Equipment are installed, callibrated and commissioned, as described in Section 8.10.5 Special Tools and Test Equipment – Installation, Callibration and Commissioning
- Training of 202 WD electro-optical technicians on LRF HHTI-LR second level repairs is complete (see Section 8.9.7 Maintenance Training Course – 202 WD Delivery)

8.10.2 202 WD Clean Room – Capabilities and Attributes

The 202 WD Clean Room is an ISO Class 8 clean room. Within the clean room there is a separate space for the repair and testing of lasers, including those lasers whose strength is above "eye-safe". The clean room is supported by a general workshop area adjacent to the cleanroom.

The clean room does not have an area that screens out electro-magnetic fields. It also does not have access to an open window for sighting on distant objects. Callibration of geolocation functionality for electro-optic systems may be done outside at the outdoor 202 WD test track area, where there are minimal sources of electro-magnetic interference, and clear lines of sight are available to distinctive landmarks in the Montreal area at distances of up to 9 km.

The clean room includes storage space and storage cabinets for spare parts that require storage in a controlled environment.

Within the clean room, an area of maximum 3.8 m x 1.2 m has been set aside for the LRF HHTI-LR repair, inluding space for an optical repair bench and work area. Within the clean room, the following equipment is available to support the repair of LRF HHTI-LR:

- Nikon Autocollimator 6D-LED (specifications available on-line)
- ThermoFisher Scientific Heraguard™ ECO Clean Bench 1.5m laminar flow bench (specifications available online)
- TerraUniversal IsoDry™ RH Control System Glovebox Dessicator Cabinet (specifications available online)

Within the laser repair area of the clean room, an area of maximum 3.0 m x 1.8 m has been set aside for the LRF HHTI-LR repair, inluding space for an optical repair bench and work area. Within the laser repair area of the clean room, the following equipment is available to support the repair of LRF HHTI-LR:

- Design Filtration Microzone Inc. M-55228 HCM-400 Laminar Flow Cabinet – Horizontal, ISO Class 5, interior dimensions (W x D x H) 48 ¾" x 19.5" x 21.5"

In the workshop area beside the clean room, the following equipment is available to support the repair of LRF HHTI-LR:

- Thermotron S-16-8200 Temperature Chamber, 16 cubic feet workspace volume, -70°C to 180°C
- TIRA Vibration Test System TV 57315/LS-340 (specification available on-line)
- Memmert Universal Oven UF110 (specification available on-line)

202 WD is in the process of procuring a nitrogen generator that will be able to supply nitrogen at 99.998 percent purity.

Electrical power sources will be configured and installed by Canada to meet the electrical power requirements of STTE delivered by the contractor. STTE must operate using any combination of the available power configurations:

- 120V AC single phase
- 240V AC single phase
- 120/208V AC three phase

8.10.3 Site Survey and Gap Analysis

The Contractor must conduct a Site Survey and Gap Analysis of the optical clean room at 202 WD within four weeks after the project kick-off meeting.

The objective of the Site Survey and Gap Analysis is to, in consultation with 202 WD staff:

- Review the capabilities and attributes of the 202 WD clean room;
- Confirm the feasibility, from a facilities point of view, for Canada to conduct second level repairs of the LRF HHTI-LR at this location;
- Identify Government Furnished Infrastructure and modifications to the existing clean room facility that will be required for the Contractor to install and commission special tools and test equipment required for second level repairs;
- Determine a proposed location of an optical bench or other work areas required to conduct second level repairs of the LRF HHTI-LR; and
- Review the STTE already installed in the clean room, and confirm the scope of STTE to be delivered, installed and commissioned in the clean room.

The Contractor must coordinate the Site Survey and Gap Analysis activities through the TA.

The Contractor must prepare a Site Survey and Gap Analysis Report IAW DID LS-31 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the Site Survey and Gap Analysis Report IAW CDRL LS-131 in Appendix 1 Contract Deliverables.

The Contractor must update the RSTTEL after the Site Survey and Gap Analysis Report as described in Section 8.4.5.

8.10.4 Site Readiness Review

Based on the results of the Site Survey and Gap Analysis, Canada will install required GFE and modify the clean room at 202 WD as required to support the repair of the LRF HHTI-LR.

Following the installation of GFE and modifications to the clean room at 202 WD by Canada, the Contractor must conduct a site readiness review at the 202 WD clean room.

The objective of the site readiness review is to ensure that Canada has provided the required GFI and has implemented the necessary modifications to the clean room to such that the Contractor can install and commission the special tools and test equipment required for the second level repair of LRF HHTI-LR.

The Contractor must apply the requirements of Section 3.7.4 Project Meeting Documentation Requirements to the Site Readiness Review.

8.10.5 Special Tools and Test Equipment – Installation, Callibration and Commissioning

The Contractor must coordinate the installation, callibration and commissioning of STTE at 202 WD with the TA.

The Contractor must include in the suite of STTE to be delivered and installed:

- All STTE required to conduct second level repair of the LRF HHTI-LR that is not currently installed at the 202 WD clean room
- An optical repair bench that will be dedicated to the repair of LRF HHTI-LR in the Clean Room
- An optical repair bench that will be dedicated to the repair of LRF HHTI-LR in the laser repair section of the Clean Room (applicable only if specialized STTE are required for repairs in the laser repair section of the Clean Room)
- Any fixtures required to mount the LRF HHTI-LR on existing test equipment such as the vibration table
- Any special tools required to calibrate the STTE

The Contractor must deliver Special Tools and Test Equipment for 202 WD IAW CEIL WD-101 in Appendix 1 Contract Deliverables.

The Contractor must install, calibrate, and commission the STTE for 202 WD in the presence of 202 WD staff as coordinated with the TA.

The Contractor must review the installed and commissioned STTE with a representative of 202 WD and the TA for the purposes of acceptance.

8.11 In-Service Support Planning

The Contractor must plan the work to be conducted in the within the scope of the In-Service Support contract, as described in the LRF HHTI-LR System In-Service Support SOW.

The Contractor must prepare an In-Service Support Plan IAW DID LS-30 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the In-Service Support Plan IAW CDRL LS-130 in Appendix 1 Contract Deliverables.

9 Environmental Management and Assessment

9.1 Regulatory Requirements

9.1.1 Toxic Substances

IAW the Prohibition of Certain Toxic Substances Regulations (SOR/2012-285), the substances listed under this regulation must not be incorporated in any part of the equipment.

9.1.2 Mercury

IAW the Products Containing Mercury Regulations (SOR/2014-254), if Mercury is present in any part of the equipment, the Mercury content limit must comply with the regulation (SOR/2014-254). If such substances must be used, the Contractor must:

a. Inform the TA by identifying the substance(s); and

b. Identify the specific location within the equipment and its concentration.

9.1.3 Polychlorinated Biphenyls (PCBs)

IAW the Polychlorinated Biphenyls (PCBs) Regulations (SOR/2008-273), if PCBs are present in any part of the equipment, the Contractor must comply with the regulation (SOR/2008-273).

If such substances must be used, the Contractor must:

a. Inform the TA by identifying the substance(s);

b. Identify the specific location within the equipment and its concentration; and

c. Certify that there is no technically or economically feasible PCB-free alternative.

9.1.4 Asbestos

IAW the Prohibition of Asbestos and Products containing Asbestos Regulations (PAPCAR): SOR/2018-196, the Bidder/contractor must offer asbestos-free equipment.

9.2 Environmental Management System

The Contractor must implement and maintain an Environmental Management System (EMS) which is consistent with the principles presented in ISO 14001. Certification to this standard is preferred but not mandatory.

The Contractor must have a formalized set of procedures and control measures in place to demonstrate environmental compliance and minimize environmental impact of the work.

9.3 Equipment Environmental Assessment

The Contractor must prepare an Equipment Environmental Assessment (EEA) IAW DID LS-29 in Appendix 2 Data Item Descriptions.

The Contractor must deliver the EEA IAW CDRL LS-129 in Appendix 1 Contract Deliverables.

9.4 Environmental Packaging Labels

The Contractor must label and ship goods falling within the Hazardous Products Act, R.S.C. 1985, C. H-3 and regulation(s) there under, IAW the said Act and regulation(s).

The Contractor must clearly identify the contents of the hazardous material with labels, and the Safety Data Sheets (SDS) must explain what those hazards are.

10 Production and Delivery

10.1 Production Requirements – General

The Contractor must produce production LRF HHTI-LR Systems and Support Equipment that satisfy the requirements specified in the SRS.

The production LRF HHTI-LR Systems and Support Equipment must be configured IAW the PBL.

The Contractor must assure the quality of the production and production process, IAW the accepted QAP.

The production LRF HHTI-LR Systems must include identification plates that comply with the approved Identification Plates – Design Template and Populated Designs, as specified in Section 8.6.4.

The Contractor must package and label the components of the production LRF HHTI-LR systems and Support Equipment IAW the approved Identification Labels for Storage & Shipment and Packaging Codes as specified in Section 8.6.5.

For serially managed items, the Contractor must apply the Unique Item Identifier(s), in a machine-readable form, to the outside of any package of uniquely identified materiel where the UID data matrix is not easily machine-readable through the packaging material.

The Contractor must apply UIDs IAW the approved UID Marking Specifications as referenced in Section 8.6.6.

The Contractor must prepare the production LRF HHTI-LR systems and Support Equipment for shipping IAW the approved Stowage, Shipping, and Handling Instructions as specified in Section 8.6.7.

10.2 Production in Support of the First Article Acceptance Test

The Contractor must deliver Production LRF HHTI-LR Systems in Support of FAAT IAW CEIL PD-101 in Appendix 1 Contract Deliverables.

The Contractor must deliver Support Equipment in Support of FAAT IAW CEIL PD-102 in Appendix 1 Contract Deliverables.

10.3 Full Production

The Contractor must not initiate full production of LRF HHTI-LR Systems and Support Equipment until the Design Acceptance milestone has been accepted by the TA.

The Contractor must deliver Production LRF HHTI-LR Systems IAW CEIL PD-103 in Appendix 1 Contract Deliverables.

The Contractor must deliver Support Equipment IAW CEIL PD-104 in Appendix 1 Contract Deliverables.

The Contractor must deliver Spare Parts IAW CEIL SP-101 in Appendix 1 Contract Deliverables.

The Contractor must deliver Consumable and Bulk Items IAW CEIL CB-101 in Appendix 1 Contract Deliverables.

10.4 Delivery of Production LRF HHTI-LR Systems

The Contractor must package each LRF HHTI-LR System separately, less batteries, in a triple wall container.

Each physically separate component of an LRF HHTI-LR System delivered in a the Storage and Transport Case must be packaged, unless an exemption for component packaging has been made by the TA.

The Contractor must provide a separate packing slip for each LRF HHTI-LR System.

The packing slip for each LRF HHTI-LR System must include serial numbers of serialized items.

10.5 Delivery – Miscellaneous Requirements

When a delivery includes items with a shelf life, such as non-rechargeable batteries, the packing slip must include the date of fabrication of these items.

If a pallet of crate contains multiple boxes of the same item, but the quantities of the item in each box differ, the pallet or crate must be marked "Mixed Quantities".

If a pallet or crate contains multiple boxes that contain different items, the pallet or crate must be marked "Mixed Items"

10.6 Delivery of LIBI AP Production Software and Source Code

The Contractor must deliver LIBI AP production software and source code IAW CEIL PD-105 in Appendix 1 Contract Deliverables.

The Contractor must deliver a Software Version Description Document (SVDD) to accompany the LIBI AP production software and source code IAW CLRL CM-102 in Appendix 1 Contract Deliverables.

11 Additional Work

Canada may require the Contractor to perform additional work on an "if, as, and when requested basis" using the terms and conditions of the Contract.

The scope of additional work will be limited to the implementation, verification, integrated logistic support and production of the LRF HHTI-LR System, and may include:

- Enhancement of the ATAK functionality on the ISS EUD related to the LRF HHTI-LR through a follow-on release after FAAT of LRF HHTI-LR embedded software and LIBI AP software;
- Implementation of approved ECPs (see Section 5.5.5);
- Unforeseen work;
- Technical Investigations;
- Additional data deliverables;
- Additional services or end-item deliverables not covered by contract options; and/or
- Fielding support.

Additional work will be initiated on an "if, as, and when requested basis" using the DND 626 Task Authorization process described in the Contract.

12 List of Appendices

The following documents are appended to this SOW:

Appendix 1 Contract Deliverables

Appendix 2 Data Item Descriptions (DIDs)

Appendix 3 System Requirements Specification (SRS)

Appendix 4 Mission Profile – Battery Life

Appendix 5 Requirements Verification Matrix (RVM)

Appendix 6 Support and Maintenance Concept

Appendix 7 References, Acronyms, Glossary and Lexicon

APPENDIX 1 TO ANNEX B1

CONTRACT DELIVERABLES

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

NOTICE

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document must continue to apply.

AVIS

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement doivent continuer de s'appliquer.

TABLE OF CONTENTS

LIST OF TABLES

1 Introduction

1.1 Identification

This Appendix specifies the Deliverables required under the Acquisition Statement of Work (SOW) and the delivery of the data items.

The Contract Data Requirements List (CDRL) specifies the deliverable data items required. Each CDRL Item refers to an associated Data Item Description (DID). The DIDs define data content, preparation instructions, format and intended use of the data, and are provided in Appendix 2 to the SOW.

The Contract Services Requirements List (CSRL) specifies the deliverable services required.

The Contract End Items List (CEIL) specifies the end-item deliverables required.

1.2 References

References to related documents are embedded within each Data Item Description.

1.3 Acronyms and Glossary

Refer to Appendix 7 to the SOW for a list of acronyms and glossary of terms used in this Appendix.

2 Contract Data Requirements List (CDRL)

2.1 Contract Data Requirements in Statement of Work

The CDRL should be read in conjunction with Section 2.3 Contract Data Deliverable in the Acquisition Statement of Work.

2.2 Precedence of CDRL

The requirements stated in Blocks 5 through 10 of the CDRL take precedence over any such requirements that may have been identified in the DIDs. Guidance for the interpretation of the information in each block (field) in the CDRL is provided below.

2.3 CDRL Layout and Interpretation

The layout and interpretation of the CDRL blocks are described in Table 2 1.

Table 2 - 1 Layout and Interpretation of CDRL Blocks

Column	***Title***	***Interpretation***
1	CDRL ID	Unique identifier of CDRL item in the form AA-xyy-nn, where: "AA" is a two-letter identifier identifying the DND functional area: PM – Project Management SE – Systems Engineering CM – Configuration Management LS – Logistic Support DM – Data Management QA – Quality Assurance "x" identifies the contract: 1 – Acquisition 2 – In-service Support "yy" is a two-digit sequential number following the "x" prefix "nn" is a two-digit sequential number that is used if the deliverable associated with an event that occurs multiple times, such as an agenda for a project status meeting. The agenda for the first meeting would be PM-104-01, the agenda for the second meeting PM-104-02, etc.
2	Title	The title of the deliverable item.
3	DID	The associated DID that specifies the format of the deliverable item.
4	SOW Reference	A reference to the location(s) in the Acquisition SOW (Annex B1) where delivery of the deliverable item is specified.

Column	***Title***	***Interpretation***
5	Approval Code	Approval Code denotes whether the data is to be submitted for approval, review or information. The following codes are used: A – Approval: The data listed as being deliverable must be submitted for approval by Canada. The Contractor must obtain this approval before using the data. The Contractor must amend previously approved deliverable data within 10 working days from an agreement to amend the deliverable and must obtain further approval before use. R – Review: The deliverable will be reviewed by Canada for acceptability of format, clarity and completeness. Once accepted, the data must be considered for information only. I – Information: The data is for information purposes only.
6	Review Period	Indicate timeframe in which DND reviews will take place (i.e., 5 Days, 2 weeks). Abbreviations used include: WD – working days WKS - weeks
7	Frequency	Frequency denotes the frequency of delivery of the data (to be read in conjunction with Block 8 – Due dates). Frequencies may be expressed using the following codes: ANNLY – Annually ASREQ – As required MNTHY – Monthly ONCE – One time UPDT – The deliverable is progressively updated over time with new content All deliveries are subject to revision after comments are received by Canada
8	Due Date(s)	Date or dates of each submission, using constraints related to milestones as appropriate. Unless otherwise noted, the due date refers to the submission of the initial draft version of the document.
9	Distribution, Quantity and Media	Identifies recipients, number of copies and media type. Abbreviations used include: TA – Technical Authority CA – Contracting Authority SC – soft copy HC – hard copy When a quantity is not provided, the quantity is 1.
10	Remarks	Any additional or clarifying information that may be required.

2.4 Project Management Data Requirements

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution , Quantity and Media***	***Remarks***
PM-101	Project Management Plan (PMP)	PM-01 PMP	ACQ SOW Section 3.2	R	15 WD	10 WD before Project Kick-off meeting	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	Review comments to be discussed at Project Kick-off meeting.
PM-102	Master Project Schedule (PMS)	PM-02 MPS	ACQ SOW Section 3.3	R	10 WD	10 WD before Project Kick-off meeting 5 WD before Monthly PRM	MNTHLY	SC: TA, CA	Initial review comments to be discussed at Project Kick-off meeting. To be reviewed at monthly PRM.
PM-103	Issue and Action Item Log (IAIL)	PM-03 IAIL	ACQ SOW Section 3.4	R	Ongoing	5 WD before Project Kick-off meeting, then continuously available on Secure Document Collaboration (SDC) site.	UPDT	SC: TA, CA	Addressees to be notified when updates resulting from meetings and reviews have been made.
PM-104	Project Status Report (PSR)	PM-04 PSR	ACQ SOW Section 3.6	R	10 WD	5 WD before Monthly PRM	MNTHLY	SC: TA, CA	To be reviewed at Project Kick-off meeting.
PM-105-01 … PM-105-nn	Meeting Agenda	PM-05 Meeting Agenda	ACQ SOW Section 3.7.4	R	5 WD for Monthly PRM 10 WD for all other meetings	5 WD before Monthly PRM 10 WD before all other meetings	ASREQ	SC: TA, CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution , Quantity and Media***	***Remarks***
PM-106-01 … PM-106-nn	Meeting Minutes	PM-06 Meeting Minutes	ACQ SOW Section 3.7.4	R	5 WD for Monthly PRM 10 WD for all other meetings	5 WD after meeting	ASREQ	SC: TA, CA	
PM-107	Quality Plan (QP)	PM-07 QP	ACQ SOW Section 7.3	R	15 WD	10 WD before Project Kick-off meeting	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	Review comments to be discussed at Project Kick-off meeting.

2.5 Systems Engineering Data Requirements

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
SE-101	System Engineering Management Plan (SEMP)	SE-01 SEMP	ACQ SOW Section 4.1.2	R	15 WD	10 WD before SE Kick-off meeting	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	Review comments to be discussed at SE Kick-off meeting. Includes CMP
SE-102	System Design Description (SDD)	SE-02 SDD	ACQ SOW Section 4.3.8	R	10 WD	Initial version: 10 WD before SDR. Updates: 10 WD before TRR for each verification event	UPDT	SC: TA, CA	
SE-103	LIBI AP Interface Control Document (ICD)	SE-03 ICD	ACQ SOW Section 4.4.2.6	R	10 WD	10 WD before SDR 10 WD before LIBI AP Prototype Verification TER 15 WD before FAAT TER	UPDT	SC: TA, CA	Revised as required during development of LIBI AP
SE-104	Test Procedures	SE-04 Test Procedures	ACQ SOW Section 6.2.4	R	15 WD	Initial: 10 WD before SDR Updates: 10 WD before TRR for each verification event	UPDT	SC: TA, CA	
SE-105	Requirements Traceability and Verification Matrix (RTVM)	SE-05 RTVM	ACQ SOW Section 6.2.5	R	15 WD	Initial version: 10 WD before SDR Updates: 10 WD before TRR for each verification event	UPDT	SC: TA, CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution , Quantity and Media***	***Remarks***
SE-106	Prototype Test Plan	SE-06 Prototype Test Plan	ACQ SOW Section 6.7.3	R	10 WD	Initial version: 5 WD before TRR for first Prototype Verification session Updates: 5 WD before TRR for each verification event	UPDT	SC: TA, CA	
SE-107-01 … SE-107-nn	Prototype Test Report	SE-07 Prototype Test Report	ACQ SOW Section 6.7.3, 6.7.7	R	10 WD	Template: 5 WD before TRR for first Prototype Verification session Completed Test Report: 10 WD after completion of Canada's exercise of prototype(s) under test	ASREQ – once with revisions for each Prototype Verification session	SC: TA, CA	
SE-108	System Acceptance Test Plan	SE-08 System Acceptance Test Plan	ACQ SOW Section 6.8.3	R	10 WD	10 WD before SAT TRR	ONCE	SC: TA, CA	
SE-109	System Acceptance Test Report	SE-09 System Acceptance Test Report	ACQ SOW Section 6.8.3, 6.8.8	R	10 WD	Template: 10 WD before SAT TRR Completed Test Report: 5 WD before SAT TER	ONCE	SC: TA, CA	
SE-110	First Article Acceptance Test Plan	SE-10 First Article Acceptance Test Plan	ACQ SOW Section 6.10.3	R	10 WD	10 WD before FAAT TRR	ONCE	SC: TA, CA	
SE-111	First Article Acceptance Test Report	SE-11 First Article Acceptance Test Report	ACQ SOW Section 6.10.3, 6.10.7	R	10 WD	Template: 10 WD before FAAT TRR Completed Test Report: 5 WD before FAAT TER	ONCE	SC: TA, CA	

2.6 Configuration Management Data Requirements

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
CM-101	Equipment Breakdown Structure (EBS)	CM-01 EBS	ACQ SOW Section 5.4.2	R	10 WD Final: 15 WD	Preliminary EBS: 5 WD before SRR Update: 10 WD before LSA Review Final: 10 WD before FAAT TRR	ONCE	SC: TA, CA	
CM-102-01 … CM-102-nn	Software Version Description Document (SVDD)	CM-02 SVDD	ACQ SOW Section 5.4.3	R	10 WD	Accompanying all releases of LRF HHTI-LR embedded software and LIBI AP software	ASREQ	SC: TA, CA	
CM-103-01 … CM-103-nn	Engineering Change Proposal (ECP)	CM-03 ECP	ACQ SOW Sections 5.5.1, 5.5.4	A	10 WD	Initiated by Contractor In response to ECR: As agreed between TA and Contractor	ASREQ	SC: TA, CA	
CM-104-01 … CM-104-nn	Specification Change Notice (SCN)	CM-04 SCN	ACQ SOW Section 5.5.2	R	15 WD	Not applicable - initiated by Contractor	ASREQ	SC: TA, CA	
CM-105-01 … CM-105-nn	Request for Deviation (RFD) / Request for Waiver (RFW)	CM-05 RFD / RFW	ACQ SOW Section 5.5.3	A	10 WD	Not applicable - initiated by Contractor	ASREQ	SC: TA, CA	
CM-106-01 … CM-106-nn	Configuration Status Accounting (CSA) Report	CM-06 CSA Report	ACQ SOW Section 5.6	R	10 WD	10 WD before LSA Review 10 WD before SAT TRR 15 WD before FAAT TRR	ASREQ	SC: TA, CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
CM-107	Functional Configuration Audit Report	CM-07 Configuration Audit Report	ACQ SOW Sections 5.7.1, 6.8.9	R	10 WD	10 WD before SAT TER	ONCE	SC: TA, CA	
CM-108	Physical Configuration Audit Report	CM-07 Configuration Audit Report	ACQ SOW Section 5.7.2, 6.9	R	10 WD	15 WD before FAAT TRR	ONCE	SC: TA, CA	

2.7 Integrated Logistic Support Data Requirements

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-101	Integrated Logistics Support Plan (ILSP)	LS-01 ILSP	ACQ SOW Section 8.1.2	R	10 WD	10 WD before ILS Kick-off meeting	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	
LS-102	Maintenance Plan	LS-02 Maintenance Plan	ACQ SOW Section 8.3.1	R	15 WD	Initial: 15 days before LSA Review Update: 15 Days before FAAT TRR	ONCE	SC: TA, CA	
LS-103	Sparing Analysis Report	LS-03 Sparing Analysis Report	ACQ SOW Section 8.3.2	R	15 WD	Initial: 15 days before LSA Review Update: 15 Days before FAAT TRR	ONCE	SC: TA, CA	
LS-104	Equipment Data Summary (EDS)	LS-04 Equipment Data Summary (EDS)	ACQ SOW Section 8.6.1	R	15 WD	Initial: 15 days before LSA Review Update: 15 Days before FAAT TRR	UPDT	SC: TA, CA	
LS-105	Provisioning Parts Breakdown (PPB)	LS-05 PPB	ACQ SOW Section 8.4.2	R	15 WD	Initial: 15 days before LSA Review Update: 15 Days before FAAT TRR	UPDT	SC: TA, CA	
LS-106	Recommended Spare Parts List (RSPL)	LS-06 RSPL	ACQ SOW Section 8.4.3	R	15 WD	15 Days before FAAT TRR	ONCE	SC: TA, CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-107	Recommended Support Equipment Requirements List (RSERL)	LS-07 RSERL	ACQ SOW Section 8.4.4	R	15 WD	15 Days before FAAT TRR	ONCE	SC: TA, CA	
LS-108	Consumables and Bulk Items List (CBIL)	LS-08 CBIL	ACQ SOW Section 8.4.6	R	15 WD	15 Days before FAAT TRR	ONCE	SC: TA, CA	
LS-109	Material Change Notice (MCN)	LS-09 MCN	ACQ SOW Section 8.4.8	R	10 WD	When a requirement for change has been identified. 6 months before the expiry date of the acquisition contract, for all parts that are expected to become obsolete within two years after the expiry of the acquisition contract.	ASREQ	SC: TA, CA	
LS-110	Provisioning Drawings and Associated Lists	LS-10 Provisioning Drawings and Associated Lists	ACQ SOW Section 8.4.7	R	10 WD	15 Days before FAAT TRR	ONCE	SC: TA, CA HC: TA (2), CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-111	Operator Manual	LS-11 Operator Manual	ACQ SOW Section 8.5.1	R	15 WD	Canadian English version: 10 WD before delivery of the pilot Operator Training Course Bilingual version: 30 WD after TA acceptance of Canadian English version.	UPDT	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA Delivered with each LRF HHTI-LR: 1 HC	
LS-112	Quick Reference Guide (QRG)	LS-12 Operator Quick Reference Guide	ACQ SOW Section 8.5.2	R	10 WD	Canadian English version: 10 WD before delivery of the pilot Operator Training Course Bilingual version: 30 WD after TA acceptance of Canadian English version.	UPDT	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA Delivered with each LRF HHTI-LR: 1 HC	
LS-113	Maintenance Manual - 1st and 2nd Line	LS-13 Maintenance Manual - 1st and 2nd Line	ACQ SOW Section 8.5.3	R	15 WD	Canadian English version: 10 WD before delivery of the pilot Operator Training Course Bilingual version: 30 WD after TA acceptance of Canadian English version.	UPDT	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	Includes Preservation, Storage and Reactivation Instructions (see CDRL LS-118) Includes Stowage, Shipping, and Handling Instructions (see CDRL LS-123)

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-114	Maintenance Manual – 202 WD	LS-14 Maintenance Manual – 202 WD	ACQ SOW Section 8.5.4	R	15 WD	Canadian English version: 15 WD before FAAT TRR Bilingual version: 20 WD After comments received by TA following delivery of Maintenance Training Course to 202 WD staff	UPDT	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	Includes Preservation, Storage and Reactivation Instructions (see CDRL LS-118) Includes Stowage, Shipping, and Handling Instructions (see CDRL LS-123)
LS-115	Illustrated Parts Manual (IPM)	LS-15 IPM	ACQ SOW Section 8.5.5	R	10 WD	Canadian English version: 15 WD before FAAT TRR Bilingual version: 30 WD after TA acceptance of Canadian English version.	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	
LS-116	Operator Training Package	LS-16 Operator Training Package	ACQ SOW Section 8.9.2	R	15 WD	Course outline: 15 WD before LSA Review Canadian English version: 10 WD before delivery of the pilot Operator Training Course Bilingual version: 30 WD after TA acceptance of Canadian English version.	UPDT	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-117	Maintenance Training Package – 202 WD	LS-17 Maintenance Training Package – 202 WD	ACQ SOW Section 8.9.4	R	15 WD	Course outline: 15 WD before LSA Review Canadian English version: 15 WD before FAAT TRR Bilingual version: 20 WD After comments received by TA following delivery of Maintenance Training Course to 202 WD staff	UPDT	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	
LS-118	Preservation, Storage and Reactivation Instructions	LS-18 Preservation , Storage and Reactivation Instructions	ACQ SOW Section 8.5.6	R	10 WD	Canadian English version: 10 WD before delivery of the pilot Operator Training Course Bilingual version: 30 WD after TA acceptance of Canadian English version.	UPDT	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	Content is also embedded in: LS-113 Maintenance Manual - 1st and 2nd Line: and LS-114 Maintenance Manual – 202 WD
LS-119	Supplementary Provisioning Technical Documentation (SPTD)	LS-19 SPTD	ACQ SOW Section 8.6.2	R	20 WD	15 Days before FAAT TRR	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	
LS-120	Packaging Data	LS-20 Packaging Data	ACQ SOW Section 8.6.3	A	20 WD	15 Days before SAT TRR	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-121	Identification Plates – Design Template & Populated Designs	LS-21 Identification Plates – Design Template & Populated Designs	ACQ SOW Section 8.6.4	A	20 WD	15 Days before SAT TRR	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	
LS-122	Identification Labels for Storage & Shipment and Packaging Codes	LS-22 Identification Labels for Storage & Shipment and Packaging Codes	ACQ SOW Section 8.6.5	A	20 WD	15 Days before SAT TRR	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	
LS-123	Stowage, Shipping, and Handling Instructions	LS-23 Stowage, Shipping, and Handling Instructions	ACQ SOW Section 8.6.7	R	20 WD	Canadian English version: 15 WD before SAT TRR Bilingual version: 20 WD after TA acceptance of Canadian English version	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	Content is also embedded in: LS-113 Maintenance Manual - 1st and 2nd Line: and LS-114 Maintenance Manual – 202 WD
LS-124	Serial Number Register	LS-24 Serial Number Register	ACQ SOW Section 8.6.8	R	10 WD	Template: 15 WD before FAAT TRR Updated on delivery of each shipment of production LRH HHTI-LR devices.	ASGEN	Draft: SC: TA, CA Final: SC: TA, CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-125	Recommended Special Tools & Test Equipment (STTE) List	LS-25 Special Tools & Test Equipment List	ACQ SOW Section 8.4.5	R	15 WD	Initial: 15 WD before LSA Review Updated: 15 WD after 202 WD Site Survey	UPDT	Draft: SC: TA, CA Final: SC: TA, CA	
LS-126	UID Marking Specifications	LS-26 UIID Marking Specifica-tions	ACQ SOW Section 8.6.6	R	5 WD	15 WD before SAT TRR	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA, CA	
LS-127	Controlled Goods List	LS-27 Controlled Goods List	ACQ SOW Section 8.7	R	10 WD	10 WD before SDR	ONCE	SC: TA, CA	
LS-128	Laser Safety Data Sheet (LSDS)	LS-28 Laser Safety Data Sheet (LSDS)	ACQ SOW Section 8.8	R	10 WD	10 WD before SDR	ONCE	SC: TA, CA	
LS-129	Equipment Environmental Assessment (EEA)	LS-29 Equipment Environ-mental Assessment (EEA)	ACQ SOW Section 9.3	R	15 WD	Initial: 10 WD before SDR Update: 15 WD before FAAT TER	UPDT	SC: TA, CA	

1	2	3	4	5	6	7	8	9	10
CDRL ID	***Title***	***DID***	***SOW Reference***	***Approval Code***	***Review Period***	***Due Date(s)***	***Frequency***	***Distribution, Quantity and Media***	***Remarks***
LS-130	In-Service Support Plan (ISSP) for In-Service Support Contract	LS-30 In-Service Support Plan (ISSP) for In-Service Support Contract	ACQ SOW Section 8.11	R	15 WD	10 WD before LSA Review	ONCE	Draft: SC: TA, CA Final: SC: TA, CA HC: TA (2), CA	
LS-131	Site Survey and Gap Analysis Report	LS-31 Site Survey and Gap Analysis Report	ACQ SOW Section 8.10.2	R	10 WD	15 WD after completion of 202 WD Site Survey	ONCE/R	SC: TA, CA	

3 Contract Services Requirements List (CSRL)

3.1 CSRL Layout and Interpretation

The layout and interpretation of the CSRL blocks are described in Table 3 - 1.

Table 3 - 1 Layout and Interpretation of CSRL Blocks

Column	***Title***	***Interpretation***
1	CSRL ID	Unique identifier of CDRL item in the form AA-xyy-nn, where: "AA" is a two-letter identifier identifying the DND functional area: TR – Training "x" identifies the contract: 1 – Acquisition 2 – In-service Support "yy" is a two-digit sequential number following the "x" prefix "nn" is a two-digit sequential number that is used if the deliverable associated with an event that occurs multiple times, such as an agenda for a project status meeting. The agenda for the first meeting would be PM-104-01, the agenda for the second meeting PM-104-02, etc.
2	Description	The description of the deliverable service.
3	SOW Reference	A reference to the location(s) in the SOW where delivery of the service is specified.
4	Canada's POC	Canada's Point of Contact for coordination of the deliverable of the service.
5	Due Date(s)	Date or dates of each submission, using constraints related to milestones as appropriate.
6	Location	Location of service delivery
7	Remarks	Any additional or clarifying information that may be required.

3.2 Training Requirements

1	2	3	4	5	6	7
CSRL ID	***Title***	***SOW Reference***	***Canada's POC***	***Due Date(s)***	***Location***	***Remarks***
TR-101	Initial Baseline System Operator Training Course	ACQ SOW Section 8.9.6.1	SEM	Following delivery of IBS, not later than 2 weeks before SDR	PMO NVSM	Delivered in English. 10 students maximum. Delivered IBS to be used to support training.
TR-102	Operator Course – Pilot Delivery	ACQ SOW Section 8.9.6.2	ILSM	Immediately before SAT	CFB Gagetown, New Brunswick	Delivered in English 10 students maximum
TR-103	Operator Training Course	ACQ SOW Section 8.9.6.3	ILSM	12 WKS after first full production delivery	CFB Gagetown, New Brunswick	Delivered in English 20 students maximum
TR-104-01	Operator Training Course	ACQ SOW Section 8.9.6.4	ILSM	TBD, IAW contract option	CFB Valcartier, Quebec	Contract option Delivered in French 20 students maximum
TR-104-02	Operator Training Course	ACQ SOW Section 8.9.6.4	ILSM	TBD, IAW contract option	CFB Petawawa, Ontario	Contract option Delivered in English 20 students maximum
TR-104-03	Operator Training Course	ACQ SOW Section 8.9.6.4	ILSM	TBD, IAW contract option	CFB Edmonton, Alberta	Contract option Delivered in English 20 students maximum
TR-104-04	Operator Training Course	ACQ SOW Section 8.9.6.4	ILSM	TBD, IAW contract option	CFB Halifax, Nova Scotia	Contract option Delivered in English 20 students maximum
TR-104-05	Operator Training Course	ACQ SOW Section 8.9.6.4	ILSM	TBD, IAW contract option	CFB Esquimalt, British Columbia	Contract option Delivered in English 20 students maximum
TR-105	Maintenance Training Course – 202 WD	ACQ SOW Section 8.9.7	ILSM	Within 4 WKS after commissioning of 202 WD Clean Room	CFB Montreal, Quebec	Language of delivery TBD 10 students maximum

4 Contract End Item List (CEIL)

4.1 CEIL Layout and Interpretation

The layout and interpretation of the CEIL blocks are described in Table 4 - 1.

Table 4 - 1 Layout and Interpretation of CEIL Blocks

Column	***Title***	***Interpretation***
1	CEIL ID	Unique identifier of CDRL item in the form AA-xyy-nn, where: "AA" is a two-letter identifier identifying the DND functional area: TR – Training "x" identifies the contract: 1 – Acquisition 2 – In-service Support "yy" is a two-digit sequential number following the "x" prefix "nn" is a two-digit sequential number that is used if the deliverable associated with an event that occurs multiple times, such as an agenda for a project status meeting. The agenda for the first meeting would be PM-104-01, the agenda for the second meeting PM-104-02, etc.
2	Description	The description of the deliverable end item.
3	SOW Reference	A reference to the location(s) in the SOW where delivery of the end item is specified.
4	Due Date(s)	Date or dates of each delivery, using constraints related to milestones as appropriate.
5	Delivery Location	Address of end item delivery
6	Remarks	Any additional or clarifying information that may be required.

4.2 Delivery Addresses

4.2.1 PMO NVSM

The delivery address for PMO NVSM is:

DSSPM 7 / PMO NVSM
National Printing Bureau Bldg
45 Sacré-Coeur Blvd.
Gatineau, QC J8X 1C6
Canada

4.2.2 25 CFSD Montreal

The delivery address for 25 CFSD Montreal is:

25 CFSD Montréal

6363 Rue Notre-Dame E

Montréal, QC H1N 3V9

Canada

4.2.3 7 CFSD Edmonton

The delivery address for 7 CFSD Edmonton is:

7 CFSD Edmonton

195 Ave. 82 St

Edmonton, AB T5J 4J5

Canada

4.3 Contract End Items – System Development and Implementation

1	2	3	4	5	6	7
CEIL ID	***Description***	***Quantity***	***SOW Reference***	***Due Date(s)***	***Delivery Location***	***Remarks***
TE-101	LRF HHTI-LR Initial Baseline System	2	ACQ SOW Section 4.3.2	1 month after SRR	PMO NVSM	Configuration of IBS to be confirmed at SRR To be returned to Contractor after SAT
PT-101	Prototype LIBI AP Software – Mid-Fidelity	1	ACQ SOW Section 4.4.2.6	1 WK before prototype review	SDC Site	In support of LIBI AP Mid-fidelity Prototype Review (see AQC SOW Section 6.6)
PT-102	Prototype Cable Assemblies – High Fidelity	2 sets	ACQ SOW Section 4.4.2.2	1 WK before prototype verification	PMO NVSM	In support of Prototype Verification (see ACQ SOW Section 6.7)
PT-103	Prototype Transport and Storage Cases – High Fidelity	2 sets	ACQ SOW Section 4.4.2.3	As determined by Contractor	PMO NVSM	In support of Prototype Verification (see ACQ SOW Section 6.7)
PT-104	Prototype Pouches – High Fidelity	2 sets	ACQ SOW Section 4.4.2.4	As determined by Contractor	PMO NVSM	In support of Prototype Verification (see ACQ SOW Section 6.7)
PT-105	Prototype LRF HHTI-LR Embedded Software – High Fidelity	1	ACQ SOW Section 4.4.2.5	As determined by Contractor	SDC Site	In support of Prototype Verification (see ACQ SOW Section 6.7)
PT-106	Prototype LIBI AP Software – High Fidelity	1	ACQ SOW Section 4.4.2.6	As determined by Contractor	SDC Site	In support of Prototype Verification (see ACQ SOW Section 6.7)

4.4 Contract End Items – Pre-Production

1	2	3	4	5	6	7
CEIL ID	***Description***	***Quantity***	***SOW Reference***	***Due Date(s)***	***Delivery Location***	***Remarks***
PP-101	Pre-Production LRF HHTI-LR System	4	ACQ SOW Section 4.4.3	2 WKS before SAT	PMO NVSM	Complete systems in support of SAT To be upgraded to Production Baseline after successful FAAT
PP-102	LIBI AP Software – pre-production prototype	1	ACQ SOW 4.4.2.6	2 WKS before SAT	SDC Site	To update ISS EUD in support of SAT Includes source code.

4.5 Contract End Items – Production

1	2	3	4	5	6	7
CEIL ID	***Description***	***Quantity***	***SOW Reference***	***Due Date(s)***	***Delivery Location***	***Remarks***
PD-101	Production LRF HHTI-LR System (First Production Articles)	6	ACQ SOW Section 10.2, 10.4	2 WKS before FAAT	25 CFSD Montreal	In Support of FAAT (see ACQ SOW Section 6.11)
PD 102	Support Equipment in support of FAAT	2 sets	ACQ SOW Section 10.2	2 WKS before FAAT	25 CFSD Montreal	Support Equipment as identified in RSEL (see CDRL LS-107)
PD 103	Production LRF HHTI-LR System	TBD	ACQ SOW Section 10.3	Deliveries complete NLT 2 years after Contract Award	TBC – 25 CFSD Montreal or 7 CFSD Edmonton	Complete system as per EBS (see CDRL CM-101)
PD 104	Support Equipment	TBD Sets	ACQ SOW Section 10.3, 10.4	Deliveries complete NLT 2 years after Contract Award	TBC – 25 CFSD Montreal or 7 CFSD Edmonton	Support Equipment as identified in RSEL (see CDRL LS-107)
PD 105	LIBI AP Software – Production	1	ACQ SOW Section 10.5	2 WKS before FAAT	SDC Site	To update ISS EUD in support of FAAT Includes source code.

4.6 Contract End Items – Integrated Logistic Support

1	2	3	4	5	6	7
CEIL ID	***Description***	***Quantity***	***SOW Reference***	***Due Date(s)***	***Delivery Location***	***Remarks***
WD-101	Special Tools and Test Equipment for 202 WD	Lot	ACQ SOW Section 8.10.4	Delivery, installation, callibration, and commissioning complete NTL 2 years after Contract Award	202 WD	
SP-101	Spare Parts	TBD	ACQ SOW Section 10.3	Deliveries complete NLT 2 years after Contract Award	TBC – 25 CFSD Montreal or 7 CFSD Edmonton	Quantities as determined in RSPL (see CDRL LS-06)
CB-101	Consumable and Bulk Items	TBD	ACQ SOW Section 10.3	Deliveries complete NLT 2 years after Contract Award	TBC – 25 CFSD Montreal or 7 CFSD Edmonton	Quantities as determined in CBIL (see CDRL LS-108)

APPENDIX 2 TO ANNEX B1

DATA ITEM DESCRIPTIONS (DIDs)

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

TABLE OF CONTENTS

1 Introduction

1.1 Identification

This Appendix specifies requirements for Deliverable Data required under the LRF HHTI-LR Acquisition Statement of Work (SOW) and under the LRF HHTI-LR In-Service Support (ISS) SOW.

The Data Item Descriptions (DIDs) (this document) define data content, preparation instructions, format and intended use of the data.

A common set of DIDs is used for the LRF HHTI-LR Acquisition and In-Service Support contracts.

DIDs applicable to the Acquisition Contract are called up in the Acquisition SOW (Annex B), and are referenced in the Contract Data Requirements List (CDRL) in the Acquisition Contract Deliverables (Appendix 1 to Annex CA).

DIDs applicable to the ISS Contract are called up in the ISS SOW (Annex B), and are referenced in the CDRL in the ISS Contract Deliverables (Appendix 1 to Annex B).

1.2 References

References to related documents are included within each Data Item Description, and are also listed in the References, Acronyms, Glossary and Lexicon (RAGL) at Appendix 8 to Annex B.

1.3 Acronyms and Glossary

Acronyms and terms used in this document are includes in the RAGL at Appendix 8 to Annex B.

2 Data Item Descriptions – Overview and Format

2.1 Layout and Interpretation of DID Blocks

The following section defines the various blocks of information found on the Data Item Description (DID) forms:

2.1.1 Block 1 – Title

The title of the data item for the DID.

2.1.2 Block 2 – Identification Number

The Data Item Description (DID) number, consisting of a sequential two-digit number and prefixed with an abbreviation code, to uniquely identify the DID. The abbreviation codes used for the prefix are:

- "PM" for Project Management
- "CM" for Configuration Management
- "SE" for Systems Engineering
- "LS" for Integrated Logistics Support

2.1.3 Block 3 – Description

Provides a general description of the data content requirements.

2.1.4 Block 4 – Related Document(S)

Provides a listing of the related documents and specifications associated with and required to produce this DID.

2.1.5 Block 5 – Contract Reference

The specific paragraph numbers from the Contract Statement of Work and CDRL to assist in identifying the work effort associated with the data item.

2.1.6 Block 6 – Preparation Instructions

Provides the preparation instructions for the content and format requirements for the DID.

2.2 Data Deliverable Format

Unless otherwise specified as a specific requirement, the Contractor must deliver all of the soft copies of data deliverables, in formats compatible with the office software currently in use by the DND as listed:

- Microsoft Windows 10 Enterprise Operating System, Version 21H2;
- Microsoft Edge Version 108;
- Microsoft Office 365 (Word, Excel, Access, PowerPoint and Outlook);
- Microsoft Visio for Office 365; and
- Microsoft Project for Office 365.

3 Project Management DIDs

3.1 DID PM-01 – Project Management Plan (PMP)

DATA ITEM DESCRIPTION	
1. TITLE **Project Management Plan (PMP)**	2. IDENTIFICATION NUMBER **DID PM-01**
3. DESCRIPTION The Project Management Plan (PMP) is the top-level plan that describes the Contractor's strategy, plans, methodologies and processes for meeting the requirements of the Contract.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL PM-101** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. **CONTENT** 6.1.1. The PMP must describe the management processes, administrative procedures and organizational structure that will be used to manage the work of the Contractor. 6.1.2. The PMP must further detail the practices and procedures for project scheduling, planning, organizing, directing, executing, communicating, reporting, managing risk, managing environmental health and safety issues and impacts, managing information, and closing of action items for all Work required by the Contract. 6.1.3. The PMP must address in detail the above points through the following: 6.1.3.1. Overview: • Purpose, Background, Scope and Objectives; • Assumptions, Constraints and Risks; • All Project Deliverables; • Organization Summary; and • Schedule Summary. 6.1.3.2. Organization: • Project Management Organizational Chart, consisting of internal and external organizations as it pertains to this Contract; 6.1.3.3. Management Processes: • Project Management Approach and Procedures; • Schedule Control; • Quality Assurance; • Reporting; • Communications; • Risk Management; • Environmental, Health and Safety Issues Management; • Information Management (IM); and • Change Control Processes.	

3.2 DID PM-02 – Master Project Schedule (MPS)

DATA ITEM DESCRIPTION	
1. TITLE **Master Project Schedule (MPS)**	2. IDENTIFICATION NUMBER **DID PM-02**
3. DESCRIPTION The MPS provides the DND Technical Authority (TA) with visibility of the Contractor's planned activities and accomplished activities to date, at a level of detail that is indicative of overall performance. The MPS is used to monitor schedule performance. It constitutes the principal framework for the planning, control of scheduled work and formal reporting of schedule status for the Contract.	
4. RELATED DOCUMENTS The MPS inter-relates with the following data items: • Project Management Plan (PMP)	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL PM-102** **ISS Sow: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. **CONTENT**

6.1.1. **Data to be Included**

6.1.1.1. The MPS must graphically depict the contract schedule and progress at the activity level, focusing on those activities which involve or trigger work undertaken by Canada.

6.1.1.2. The MPS must graphically present or otherwise identify:

- Activities and their estimated durations;
- The relationships and dependencies between activities and milestones to be accomplished by or for the Contractor in the performance of its obligations under the contract;
- The baseline schedule
- Actual completion dates for completed milestones and activities
- The forecast schedule
- Variance of the forecast schedule in relation to the baseline schedule
- Changes to the forecast schedule since the previous published schedule
- Notes on the use of the MPS, including a glossary of terms and symbols used.

6.1.1.3. The MPS must include schedule data for:

- Contractual milestones;
- All contract deliverables;
- All formal meetings and reviews;
- All verification events; and
- Activities undertaken by Canada, where such tasks interface with, and may affect, Contractor activities;

6.1.1.4. Activities undertaken by the contractor without Canada's direct involvement need not be included in the schedule, except at a summary level to provide context to the activities in which Canada is involved.

6.2. **FORMAT**

6.2.1. The MPS may be generated in using a scheduling tool chosen by the Contractor.

6.2.2. The MPS, as an output of the scheduling tool, must be delivered in pdf format.

3.3 DID PM-03 – Issue and Action Item Log (IAIL)

DATA ITEM DESCRIPTION	
1. TITLE **Issue and Action Item Log (IAIL)**	2. IDENTIFICATION NUMBER **DID PM-03**
3. DESCRIPTION The IAIL consists of itemized, dated and up-to-date records of all Contractor and Canada issue items with appropriate action/decisions detailed.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL PM-103** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. **CONTENT**

6.1.1. The IAIL must contain the itemized records of issue/action items and must include, as a minimum:

6.1.1.1. Date opened;

6.1.1.2. Identification number;

6.1.1.3. Title

6.1.1.4. Issue/AI description;

6.1.1.5. References to meeting, review, deliverable, event or activity;

6.1.1.6. Issue/AI description;

6.1.1.7. Issue/AI raised by;

6.1.1.8. Due date for completion and actual date closed;

6.1.1.9. Issue/AI Owner;

6.1.1.10. Action Required/Decision;

6.1.1.11. Resolution; and

6.1.1.12. Status (Open or Closed).

6.1.2. The IAIL must present issues and action items in separate sections.

6.1.3. Issues and action items must be sorted and presented in the following order:

- Project Management;
- Contractual and Financial;
- Systems Engineering (including verification);
- Configuration Management;
- Integrated Logistics Support, including in-service support;
- Quality Assurance;
- Production.
- Environmental, Health and Safety Issues; and
- Other

6.1. **FORMAT**

6.1.1. The format of the first submission will be subject to acceptance by Canada, and once accepted, must be used for deliveries of the IAIL that follow.

3.4 DID PM-04 – Project Status Report (PSR)

DATA ITEM DESCRIPTION	
1. TITLE **Project Status Report (PSR)**	2. IDENTIFICATION NUMBER **DID PM-04**
3. DESCRIPTION The Project Status Report (PSR) is the principal statement and explanation of the status of the contract at the end of each reporting period, and will summarize the Contractor's progress and activities in relation to the Project milestones, schedule, and contract data deliverables.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL PM-104** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. **CONTENT**

6.1.1. The PSR must identify the date at which the PSR is valid, and the time period since the status date of the previous PSR (the 'reporting period').

6.1.2. The PSR must include the following sections:

6.1.2.1. Executive Summary: A summary of the state of the project in terms of progress, risk and key issues requiring management attention

6.1.2.2. Project Management: This section must cover as a minimum, when relevant, summaries reflecting:

- Significant work activities undertaken during the reporting period;
- Significant work activities expected to be undertaken in the next reporting period.
- An identification of schedule changes in the MPS since the last PSR and potential effect on contract milestones;
- An identification of issues and action items in the IAIL that are new or require immediate attention
- Contracting invoicing status;
- Payment status; and
- Contract Change Proposals.

6.1.2.3. Systems Engineering (SE): This section must cover as a minimum, when relevant, summaries reflecting progress and status of:

- Design, implementation, configuration management and verification activities;
- SE and CM deliverables;
- Engineering Change Proposals;
- Deviations and Waivers; and
- Quality Assurance.

6.1.2.4. Integrated Logistic Support (ILS): This section must cover as a minimum, when relevant, summaries reflecting progress and status of ILS activity and deliverables.

6.1.2.5. Production: This section must cover as a minimum, when relevant, summaries reflecting progress and status of Production activity and deliverables.

6.1.2.6. A list of correspondence that requires a response from the DND/PSPC, but for which no response has been received; and

6.1.2.7. A list of DND/PSPC correspondence to the Contractor for which a response is outstanding, and an estimate of the response date.

6.1.3. The subject headings must remain relevant from the first instance that they have been reported on. They must be used in all future reports with the term "No change" inserted if no information is to be provided for a particular report.

3.5 DID PM-05 – Meeting Agenda

DATA ITEM DESCRIPTION	
1. TITLE **Meeting Agenda**	2. IDENTIFICATION NUMBER **DID PM-05**
3. DESCRIPTION The Meeting Agenda contains the venue information and identifies the discussion items to be covered at meetings.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL PM-105** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. **CONTENT** 6.1.1. The Meeting Agenda must set forth the venue, identify all requirements and list the discussion items to be covered at the meeting. 6.1.2. Venue. The Meeting Agenda must address the venue as follows: 6.1.2.1. Meeting Identification Number; 6.1.2.2. Purpose; 6.1.2.3. Date, time and location; and 6.1.2.4. Attendees. 6.1.3. Discussion items. The Meeting Agenda must address the discussion items through the following sections: 6.1.3.1. Opening Remarks; 6.1.3.2. Agenda Review; 6.1.3.3. Review of Previous Minutes; 6.1.3.4. Open Discussion Items; 6.1.3.5. New Discussion Items: 6.1.3.6. Review of Action Items; 6.1.3.7. Next Venue; and 6.1.3.8. Closing Remarks.	

3.6 DID PM-06 – Meeting Minutes

DATA ITEM DESCRIPTION	
1. TITLE **Meeting Minutes**	2. IDENTIFICATION NUMBER **DID PM-06**
3. DESCRIPTION The Meeting Minutes contains the detailed records of proceedings, discussions, decisions and action items from meetings.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL PM-106** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. **CONTENT**

6.1.1. The Meeting Minutes must contain the detailed records of proceedings, discussions, decisions and action items from the meeting and be presented through the following sections:

6.1.1.1. General – consisting of meeting identification number, purpose, date, time and location;

6.1.1.2. Attendees, consisting of the organization each person represents, and the identification of the Chairperson (s);

6.1.1.3. Discussion Items:

- For each agenda item, the discussion should document the key points raised in discussions and resulting decisions and action items.
- Where applicable, a reference to an entry in the IAIL is provided.

6.1.1.4. Next Venue; and

6.1.1.5. Closing Remarks.

6.1.2. An updated IAIL is attached to each Meeting Minutes

3.7 DID PM-07 – Quality Plan (QP)

DATA ITEM DESCRIPTION	
1. TITLE **Quality Assurance Plan**	2. IDENTIFICATION NUMBER **DID PM-07**
3. DESCRIPTION The QP describes the methodology used by the Contractor to implement his Quality System under the provisions of CAN/CSA-ISO 9001-16 - Quality Management Systems – Requirements	
4. RELATED DOCUMENTS **CAN/CSA-ISO 10005-05 (R2015)**, Quality Management Systems, Guidelines for Quality Plans.	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL PM-107** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. **CONTENT** 6.1.1. The QP must be prepared in accordance with CAN/CSA-ISO 10005-05 (R2015) – Quality Management Systems – Guidelines for Quality Plans.	

4 System Engineering DIDs

4.1 DID SE-01 – System Engineering Management Plan (SEMP)

DATA ITEM DESCRIPTION	
1. TITLE **System Engineering Management Plan (SEMP)**	2. IDENTIFICATION NUMBER **DID SE-01**
3. DESCRIPTION The SEMP describes the Contractor's strategy, plans, methodologies and processes for the management of a fully integrated engineering program IAW the contract. The SEMP describes the relationships between concurrent activities as well as between sequential activities to demonstrate that a fully integrated engineering program has been achieved.	
4. RELATED DOCUMENTS **IEEE 15288.1,** IEEE Standard for Application of Systems Engineering on Defense Programs **IEEE 15288.2,** IEEE Standard for Technical Reviews and Audits on Defense Programs **ANSI/EIA-649-C,** Configuration Management Standard	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL SE-101** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. **CONTENT**

6.1.1. **Engineering Management**

6.1.1.1 The SEMP must define the engineering organization for the contract, including the key engineering positions, and the partitioning of engineering effort between the various Contractor and Subcontractor organizations.

6.1.1.2 The SEMP must describe how technical effort will be coordinated to meet cost, schedule, and performance objectives.

6.1.1.3 The SEMP must summarise planned personnel needs, applicable to the various phases of the contract, by discipline and level of expertise.

6.1.1.4 The SEMP must identify the standards (e.g., IEEE 15288 and ANSI/EIA-649-C) to be utilised by the Contractor and Subcontractors to undertake the Systems Engineering, software, Configuration Management (CM) and Verification activities, including the proposed tailoring of those standards to meet requirements of the contract.

6.1.1.5 The SEMP Management/Organization portion must describe the Contractor's systems engineering organization, responsibilities, terms of reference, internal operating relationships within the company, external operating relationships with subcontractors, management relationships, management procedures and supporting and tracking system.

6.1.2. **System Engineering Process**

6.1.2.1 The SEMP must define the tailored application of the Contractor's Systems Engineering process to the activities of the contract, including:

- The major products and/or increments to be delivered;
- The major outcomes to be achieved;
- The major Systems Engineering tools that will be used for the Contracts;
- The methods for documentation and control of engineering and technical information, including expected specifications and Configuration Baselines;
- The methods and tools for analysis and validation of system requirements;
- The required implementation tasks, including the integration and assembly of the system; and
- The approach, methods, procedures, and tools to be used for systems analysis and control, including establishing and maintaining requirements traceability.

6.1.3. **Technical Risk Management**

6.1.3.1 The SEMP must describe the risk-management strategies associated with any global, engineering-related risks.

6.1.4. **Software Development and Management**

6.1.4.1 The SEMP must define the tailored application of the Contractor's software processes to the activities of the Contract, including:

- The management of software development activities undertaken by Subcontractors; and
- The development of software being undertaken by the Contractor.

6.1.5. **System Reviews**

6.1.5.1 The SEMP must describe the approach planned to establish and conduct all System Reviews (i.e. Mandated System Reviews and Internal System Reviews) required under the contract.

6.1.5.2 The SEMP must describe, for each engineering related System Review, the relationship between the System Review and other engineering program activities.

6.1.5.3 Based on the SOW requirements for System Reviews and the Contractor's internal processes, the SEMP must detail the following information for each of the engineering related System Reviews:

- Organisations and individuals involved in the review and their specific review responsibilities;
- Proposed review venue;
- Review objectives;
- Pre-requisites for the conduct of the review (i.e. entry criteria);
- Actions to be addressed during the System Review, including the documentation to be reviewed;
- Essential review completion criteria (i.e. criteria); and
- Application Milestone criteria specified in the contract.

6.1.6. **Growth, Evolution and Obsolescence**

6.1.6.1 The SEMP must, for the Contractor's growth, evolution and Obsolescence program:

- Describe the technical measures and methods to be used to identify and assess candidate elements, including hardware and software items, and the primary candidate elements to be addressed under by program;
- Describe the application of design aspects (e.g. modularity and 'open architectures') to improve system growth, facilitate evolution, and to counter Obsolescence;
- identify the steps to be undertaken during the acquisition phase to balance technological maturity and Obsolescence risks, and solutions to minimise the complexity (and cost) of through-life upgrades; and
- Identify the steps to be undertaken during the support phase to maintain effective and supportable equipment configurations and the expected need for upgrades.

6.1.7. **Human Engineering**

6.1.7.1 The SEMP must, for the Contractor's Human Engineering program:

- Identify the standards to be used, and that have been used for COTS / MOTS items, and describe the application of those standards to meet the Human Engineering requirements of the system;
- The activities, including system functional requirements analysis, equipment design and procedures development activities, to be undertaken in order to meet the Human Engineering required under the contract; and
- The verification methods to be applied for the Human Engineering program.

6.1.8. **Electromagnetic Environmental Effects**

6.1.8.1 The SEMP must, for the Contractor's Electromagnetic Environmental Effects (E3) program:

- Identify the standards to be used, and describe the application of those standards to meet the E3 program required under the Contract;
- Identify the E3-related requirements applicable to the system, including certification and regulatory requirements, and describe the approach to ensure that the requirements are met and to obtain all applicable certifications; and

- Describe the V&V methods to be applied for the E3 program.

6.1.9. **System Security**

6.1.9.1 The SEMP must, for the Contractor's system security program:

- Identify the security-related requirements applicable to the system;
- Describe the approach to ensure that the security-related requirements are met, and to obtain any Applicable certifications; and
- Describe the method(s) to verify that the system security-related requirements have been met.

6.1.10. **Configuration Management**

6.1.10.1 The SEMP must describe the Contractor's CM methodology, processes and activities for meeting the CM requirements of the contract, including:

- The approach planned to establish and maintain Configuration Control and audit of identified system products and processes;
- The requirements for establishing Configuration Baselines and the documentation to be used to define each baseline; and
- The approach planned to establish and maintain control of external and internal interfaces.

6.1.10.2 Configuration Identification

- Selection of Configuration Items
  - The SEMP must define the procedures for the selection of CIs, and detail the criteria used for their selection. The SEMP must, by inclusion or reference, define the list of CIs and their respective specifications and other defining top-level documentation.
- Configuration Baselines
  - The SEMP must define the requirements for establishing Configuration Baselines, and include:
    - The procedures for the establishment of, at least, the Functional, Allocated and Product Baselines; and
    - The documentation to be used to define each Configuration Baseline.
- Engineering Release
  - The SEMP must define the procedures for issuing approved configuration documentation, and amendments to this documentation, to functional activities (e.g. manufacturing, logistics, and acquisition) within the Contractor's organisation.
- Configuration Control
  - The SEMP must define the procedures, including DND involvement, and associated documentation for processing the following:
    - Classification of changes, and the level of authority for change approval / concurrence;
    - Contractual change requests;
    - Major Changes;
    - Minor Changes;
    - Request for Deviations/Waivers; and
    - Specification Change Notices.

6.1.10.3 Configuration Status Accounting (CSA)

- The SEMP must define the procedures for CSA, including:
  - Methods for collecting, recording, processing and maintaining the data required to provide the status of accounting information through reports on the CSA database.
  - A complete description of the CSA database with respect to the areas related to:
    - The identification of the currently approved configuration documentation and configuration identifiers associated with each CI;
    - The status of proposed engineering changes from initiation to implementation;
    - The results of configuration audits, and the status and disposition of discrepancies;
    - The status of requests for deviations;

- The ability to trace changes from the baseline documentation of each CI; and
- The effectiveness and installation status of configuration changes to all Cis.

6.1.10.4 Configuration Audits

- The SEMP must:
  - Describe the Contractor's methodology and processes to establish and conduct Functional Configuration Audits (FCAs) and Physical Configuration Audits (PCAs);
  - Describe the plans, procedures, documentation, and schedules for the audits; and
  - Describe the format for reporting results of in-process audits.

6.1.10.5 Subcontractor Control

- The SEMP must define the methods used to ensure that Subcontractors comply with the Configuration Management requirements of the contract.

6.1.11. **Verification**

6.1.11.1 The SEMP must, for the Contractor's Verification program:

- Describe the overall Verification program objectives, activities and schedule;
- Describe the use of the RTVM and the extent to which previous Verification results are proposed to be used for Acceptance Verification purposes;
- Describe the process for recording Failure reporting and analysis, and the approach to regression testing; and
- Identify the requirements for DND Personnel and other resources in order to conduct the Verification program.

6.1.11.2 Verification Activities

- The SEMP must describe the verification activities to be conducted to demonstrate that the system offered for acceptance complies with the requirements of the contract.
- The SEMP must describe all test activities to be included in the verification of the system.
- The SEMP must detail requirements and procedures for the DND provision of resources for, and involvement in, or witnessing of, verification activities.
- Where the Contractor proposes to claim previous verification results as precluding the need for specific verification activities within the Verification program, the SEMP must summarize:
  - The scope and context of the previous verification activities;
  - The reasons why the previous results preclude the need for specific verification activities including how the previous results are valid for the configuration of the system, and the intended operational role and environment; and
  - How the previous verification results will be integrated into the planned verification activities and the RTVM.

6.1.11.3 Flow Diagram

- The SEMP must include an overall flow diagram of the verification program for the system, this flow must be sequentially arranged to include:
  - All significant verification milestones and efforts in the development phase associated with each class of verification;
  - Hardware and software integration schedules;
  - Requirements for concurrency of verification activities;
  - The Contractor/Subcontractor or group responsible for each verification event; and
  - Any additional information that clarifies the description of the test program.

6.1.11.4 Verification Objectives

- The SEMP must specify the broad objective for each verification phase for the system, and objectives must be specified in terms of verifying part or all of system or lower level specifications (e.g. subsystem specifications).

6.1.11.5 Test Readiness Reviews

- The SEMP must outline the procedures for conducting Test Readiness Reviews (TRRs).

6.1.11.6 Failure and Corrective Action Management

- The SEMP must describe the Problem Resolution System used for the collection of Failure data for the system and must identify when it will be established.
- The SEMP must identify the process used to analyse failures and track the corrective action taken as a result of a failure, and the interaction with the engineering development groups, logistic organisation, Subcontractors and the DND.
- The SEMP must identify how regression testing for the system will be managed following test failure or design change throughout the Verification program.

4.2 DID SE-02 – System Design Description (SDD)

DATA ITEM DESCRIPTION	
1. TITLE **System Design Description**	2. IDENTIFICATION NUMBER **DID SE-02**
3. DESCRIPTION The System Design Description (SDD) documents the design of the system. It is the repository for design decisions made during the development of the system, and for data that verifies system requirements that are verified by analysis or third-party certification. The SDD is progressively updated during system design and implementation. This DID is derived from the MIL-STD-948 DID for a System / Subsystem Design Description.	
4. RELATED DOCUMENTS System Requirements Specification (SRS) (Appendix 3 to ACQ SOW) Requirements Verification Matrix (RVM) (Appendix 5 to ACQ SOW)	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL SE-102** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. This DID is not meant to be restrictive, and may be tailored by the contractor with the agreement of the Technical Authority. The resultant document may be prepared in contractor's format, and must contain sufficient detail to fully address the following subjects as applicable to design of the system.

6.2. Content must be structured as outlined the Sections that follow.

6.3. Scope

6.3.1. Identification. This paragraph must contain a full identification of the system to which this document applies

6.3.2. System Overview. This paragraph must briefly state the purpose of the system to which this document applies. It must describe the general nature of the system; summarize the history of system development, operation, and maintenance; identify the project sponsor, acquirer, user and developer.

6.4. Referenced documents. This section must list the number, title, revision, and date of all documents referenced in this document.

6.5. System-wide design decisions. This section must be divided into paragraphs as needed to present system-wide design decisions, that is, decisions about the system's behavioral design (how it will behave, from a user's point of view, in meeting its requirements, ignoring internal implementation) and other decisions affecting the selection and design of system components. If all such decisions are explicit in the requirements or are deferred to the design of the system components, this section must so state. Design decisions that respond to requirements designated critical, such as those for safety, security, or privacy, must be placed in separate subparagraphs. This sections must focus on the system-wide design decisions required to progress the system from the Initial Baseline System (IBS) to the Production Baseline System (PBS). Historical design decisions that led to the IBS should only be included where necessary to provide contextual background to current design decisions.

6.6. System architectural design. This section must be divided into the following paragraphs to describe the system architectural design.

6.6.1. System Components. This paragraph must:

6.6.1.1. Identify the components of the system (HWCIs, CSCIs, and manual operations).

6.6.1.2. Assign each component a project-unique identifier.

6.6.1.3. State the purpose of each component.

6.6.1.4. Identify each component's development status/type, if known (such as new development, existing component to be reused as is, existing design to be reused as is, existing design or component to be reengineered, component to be developed for reuse, etc.) For existing design or components, the description must provide identifying information, such as name, version, documentation references, location, etc.

6.6.1.5. For each component classed as MOTS / COTS:

- Identify the Manufacturer, make and model, and part number as applicable
- Provide one or more images image of the component
- Provide commercial specifications for the component as a supporting Annex

6.6.1.6. For components classed as modified MOTS / COTS or developmental:

- Identify options to satisfy requirements;
- Include Level 1 drawings related to configuration options;
- Identify the standards to which the components will be specified as required to meet environmental and ruggedness requirements specified in the SRS;
- Document design decisions; and
- Update content to include as-built configuration and include information as per MOTS / COTS components.

6.6.2. Interface Design. This paragraph must be divided into the following subparagraphs to describe the interface characteristics of the system components. It must include both interfaces among the components and their interfaces with external entities such as other systems, configuration items, and users. Note: There is no requirement for these interfaces to be completely designed at this level; this paragraph is provided to allow the recording of interface design decisions made as part of system architectural design.

6.6.2.1. Interface identification and diagrams. This paragraph must state the project-unique identifier assigned to each interface and must identify the interfacing entities (systems, configuration items, users, etc.) by name, number, version, and documentation references, as applicable. The identification must state which entities have fixed interface characteristics (and therefore impose interface requirements on interfacing entities) and which are being developed or modified (thus having interface requirements imposed on them). One or more interface diagrams must be provided, as appropriate, to depict the interfaces.

6.6.2.2. Project unique identifier of interface. This paragraph must identify an interface by project unique identifier, must briefly identify the interfacing entities, and must be divided into subparagraphs as needed to describe the interface characteristics of one or both of the interfacing entities. If a given interfacing entity is not covered by this SSDD (for example, an external system) but its interface characteristics need to be mentioned to describe interfacing entities that are, these characteristics must be stated as assumptions or as "When [the entity not covered] does this, [the entity that is covered] will ...." This paragraph may reference other documents (such as data dictionaries, standards for protocols, and standards for user interfaces) in place of stating the information here. For interfaces that exist in the IBS, the interface characteristics can be limited to describing the physical configuration of the interface and use cases. For developmental interfaces, the design description must include the following:

- Type of interface (such as real-time data transfer, storage-and-retrieval of data, etc.) to be implemented;
- Characteristics of individual data elements that the interfacing entity(ies) will provide, store, send, access, receive, etc.;
- Characteristics of data assemblies (records, messages, files, arrays, displays, reports, etc.) that the interfacing entity(ies) will provide, store, send, access, receive, etc.;
- Characteristics of communication methods that the interfacing entity(ies) will use for the interface
- Characteristics of protocols that the interfacing entity(ies) will use for the interface
- Other characteristics, such as physical compatibility of the interfacing entity(ies) (dimensions, tolerances, loads, voltages, plug compatibility, etc.)

6.7. Requirements Traceability. This paragraph must contain:

6.7.1. Traceability from each system component identified in this SSDD to the system requirements in the SRS allocated to it.

6.7.2. Traceability from each system requirement in the SRS to the system components to which it is allocated.

6.8. Requirements Verification – Analysis and Certification. This paragraph must contain evidence to show that those requirements in the SRS whose verification method is "Analysis" or "Certification" have been satisfied.

6.9. Notes. This section must contain any general information that aids in understanding this document. This section must contain an alphabetical listing of all acronyms, abbreviations, and their meanings as used in this document and a list of any terms and definitions needed to understand this document.

6.10. Appendixes. Appendixes may be used to provide information published separately for convenience in document maintenance.

4.3 DID SE-03 – Interface Control Document (ICD)

DATA ITEM DESCRIPTION	
1. TITLE **Interface Control Document**	2. IDENTIFICATION NUMBER **DID SE-03**
3. DESCRIPTION The Interface Control Document (ICD) documents the interface agreements, specification, and design of an interface between configuration items.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL SE-103** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. This DID is not meant to be restrictive, and may be tailored by the contractor with the agreement of the Technical Authority. The resultant document may be prepared in contractor's format, and must contain sufficient detail to fully address the following subjects as applicable to the interface:

6.2. **Introduction**

6.2.1. Give a high-level overview of the document. Present a system context using appropriate diagrams and description. Identify the interfacing entities (e.g. system-of-interest, system elements, Computer Software Configuration Items (CSCIs), users or computer software units), and describe the purpose of the interface at a high level.

6.3. **Application Standard and Specifications**

6.3.1. Applicable version of ISO/IEC 15289 at contract time.

6.4. **Design Constraints**

6.4.1. Describe the design features resulting from any a-priori decisions constraining this design document.

6.5. **Require Interface**

6.5.1. General

6.5.1.1. In the subsections that follow, provide the detailed description, responsibilities, coordinate systems, and numerical specifications as they relate to the interface boundaries.

6.5.2. Interface Description

6.5.2.1. Describe the hardware and software interface as defined in the system specification. Use tables, figures, or drawings as appropriate.

6.5.3. Interface Responsibilities

6.5.3.1. Define interface hardware, software and interface boundary responsibilities to depict the interface plane. Use tables, figures, or drawings as appropriate.

6.5.4. Engineering Units, Tolerances, and Conversions

6.5.4.1. Define the measurement units along with tolerances. If required, define the conversion between measurement systems.

6.5.5. Interface Specification

6.5.5.1. In the subsections that follow, define limiting values (structural, data wise, etc.) at the interface. The safety and security aspect will be described in these subsections. The various interface controls (mechanical, electronic and software) need to be describe when required in their proper section.

6.5.6. Interface boundary

6.5.6.1. Define the interface specifications on each side of the interface boundary.

6.5.7. Envelope

6.5.7.1. Define the mechanical dimensions and range of motions of the interface when appropriate.

6.5.8. Structural/Mechanical

6.5.8.1. Define the derived interface specification based on the allocated specifications contained in the applicable specification pertaining to that side of the interface.

6.5.8.2. For example, this subsection should cover attachment, stiffness, latching, and mechanisms.

6.5.9. Fluid

6.5.9.1. Define the derived interface specification based on the allocated specifications contained in the applicable specification pertaining to that side of the interface. E.g. this subsection should cover fluid areas such as thermal control, O2, potable, fuel cell fuel and water.

6.5.10. Electrical (Power)

6.5.10.1. Define the derived interface specification based on the allocated specifications contained in the applicable specification pertaining to that side of the interface. For example, this subsection should cover various electric current, voltage, wattage, and resistance levels.

6.5.11. Electronic (Signal)

6.5.11.1. Define the derived interface specification based on the allocated specifications contained in the applicable specification pertaining to that side of the interface.

6.5.11.2. For example, this subsection should cover various signal types such as audio, video, command data handling, and navigation.

6.5.12. Software and Data

6.5.12.1. Define the derived interface specification based on the applicable specification pertaining to that side of the interface. For example, this subsection should cover various data standards, message timing, protocols, error detection/correction, functions, initialization, and status. This section should also cover when appropriate: special processing or data handling functions pertaining to security, safety, reliability, integrity, authentication, encryption/decryption, encoding, compression, buffering, burst transmission, etc.

6.5.13. Environments

6.5.13.1. Define the derived interface specification based on the allocated specifications contained in the applicable specification pertaining to that side of the interface, e.g. temperature and humidity limitations of the interface, explosive environment, Electromagnetic Interference (EMI)/EMC.

6.5.14. Electromagnetic Effects

6.5.14.1. EMC

- Define the appropriate electromagnetic compatibility specifications.

6.5.14.2. EMI

- Define the appropriate electromagnetic interference specifications.

6.5.14.3. Grounding

- Define the appropriate grounding specifications.

6.5.14.4. Bonding

- Define the appropriate bonding specifications.

6.5.14.5. Cable and Wire Design

- Define the appropriate cable and wire design specifications.

6.5.14.6. Acoustic

- Define the appropriate acoustics specifications. Define the acoustic noise levels on each side of the interface in accordance with program or project specifications.

6.5.14.7. Structural Loads

- Define the appropriate structural loads specifications. Define the mated loads that each end item must accommodate.

6.5.14.8. Vibroacoustic

- Define the appropriate vibroacoustic specifications. Define the vibroacoustic loads that each end item must accommodate.

6.5.15. Other Types of Interface Specifications

6.5.15.1. Define other types of unique interface specifications that may be applicable.

6.5.16. Performance

6.5.16.1. State the expected performance of the interface based on the proposed design. Use appropriate metrics (e.g. baud rate, processing time, response time, throughput, etc.).

6.5.17. Specification traceability

6.5.17.1. Cross-reference the interface design features and trace them to the relevant requirements in the LRF HHTI-LR TPS when applicable.

4.4 DID SE-04 – Test Procedures

DATA ITEM DESCRIPTION	
1. TITLE **Test Procedures**	2. IDENTIFICATION NUMBER **DID SE-04**
3. DESCRIPTION The Test Procedures document is a common repository for test procedures developed in support of multiple verification events. It includes all test procedures required to verify those requirements in the System Requirements Specification (SRS) where the means of verification is test, demonstration or inspection. It includes test procedures at the System and Configuration Item level.	
4. RELATED DOCUMENTS System Requirements Specification (SRS) (Appendix 3 to ACQ SOW) Requirements Verification Matrix (RVM) (Appendix 5 to ACQ SOW) Requirements Traceability Verification Matrix (RTVM) Test Plan Test Report	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL SE-104** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. **Content**

6.1.1. The Test Procedures must be organized in a logical manner to allow for the extraction of Test Procedures related to a one or more Configuration Items under Test.

6.1.2. Each Test Procedure must be uniquely identified to support cross-referencing to the RTVM, Test Plans and Test Reports.

6.1.3. Each Test Procedure must have a unique title which includes the contextual information about the Test Procedure.

6.1.4. Test Procedures may be grouped together to eliminate unnecessary duplication of text.

6.1.5. The method of verification for each Test Procedure must comply VRM.

6.1.6. Each Test Procedure or group of test procedures must provide information the following where applicable:

6.1.6.1. Test Purpose

- Configuration Item(s) under Test;
- Test objective.
- Identification of requirement(s) in the SRS that are verified by the test procedure, and whether verification is a full or partial verification.

6.1.6.2. Testing Conditions

- Test facility;
- Environmental conditions; and
- Test and recording equipment.

6.1.6.3. Software to Run Test

- Set up;
- Calibration;
- Pre-test checks;
- Initialization of test item;
- Operation conditions of test item; and
- Inputs, loads, outputs.

6.1.6.4. Test Procedure

- Physical layout of the equipment under test;
- Test procedures and methods;

- Safety precautions;
- Modes of operation;
- Test interruptions;
- Design parameters and tolerances;
- Parameters to be measured;
- Definition of failure; and
- Pass/fail criteria.

6.1.6.5. Test Recording and Reporting

- Format for recording test results;
- Data collection and analysis

4.5 DID SE-05 – Requirements Traceability and Verification Matrix (RTVM)

DATA ITEM DESCRIPTION	
1. TITLE **Requirement Traceability Verification Matrix (RTVM)**	2. IDENTIFICATION NUMBER **DID SE-05**
3. DESCRIPTION The RTVM provides traceability from Test Procedures to requirements specified in the System Requirements Specification (SRS), and vice versa.	
4. RELATED DOCUMENTS System Requirements Specification (SRS) (Appendix 3 to ACQ SOW) Requirements Verification Matrix (RVM) (Appendix 5 to ACQ SOW) Requirements Traceability Verification Matrix (RTVM) Test Plan Test Report System Design Description	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL SE-105** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. **CONTENT**

6.1.1. The RTVM must provide backwards and forward traceability between Test Procedures and requirements specified in the SRS.

6.1.2. The RTVM must include a Requirements View and a Test Procedures View.

6.1.3. The Requirements View must extend the content of the RVM provided by Canada through the additional of data elements related to Test Procedures.

6.1.4. Extended Data elements for each requirement extracted from the SRS must include:

- Unique identifier of requirement assigned by Contractor (if applicable)
- For those requirements verified by demonstration, test or inspection:
  - Unique ID of Test Procedure(s) that verify that the requirement has been satisfied;
  - Verification method(s) of Test Procedure(s);
  - Title of Test Procedure(s) that verify that the requirement has been satisfied;
  - Section of Test Procedures document in which the Test Procedure can be found; and
- For those requirements verified by analysis, a reference to the section of the System Design Description where the analysis can be found.
- Explanatory remarks as required.

6.1.5. The Test Procedures View must provide a listing of Test Procedures found in the Test Procedures document.

6.1.6. The Test Procedures in the list must be grouped and ordered in the same structure in which they appear in the Test Procedures document.

6.1.7. Each Test Procedure in the Test Procedures list must include the following data elements:

- Unique Identifier of Test Procedure;
- Title of Test Procedure;
- Verification method;
- Verification event(s) to which the Test Procedure applies;
- Unique ID of the requirement(s) that are verified by the Test Procedure;
- Text of the requirement(s) that are verified by the Test Procedure; and
- Explanatory remarks

6.2. **FORMAT**

6.2.1. The RTVM must be in a format in which text is searchable.

6.2.2. For ease of use, Unique IDs of requirements in the Test Procedures View should be hyperlinked to the associated requirement in the Requirements View and vice-versa.

4.6 DID SE-06 – Test Plan

DATA ITEM DESCRIPTION	
1. TITLE **Test Plan**	2. IDENTIFICATION NUMBER **DID SE-06**
3. DESCRIPTION The Test Plan describes the Contractor's plans and processes for scheduling, planning, organizing, directing, conducting, controlling and coordinating a verification event.	
4. RELATED DOCUMENTS RTVM Test Procedures	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL SE-106** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. **CONTENT** 6.1.1. The Test Plan must include: 6.1.1.1. Identification of verification event; 6.1.1.2. Objective of verification event; 6.1.1.3. Scope of verification event, link to attached RTVM and Test Procedures 6.1.1.4. Description of the system under test; and 6.1.1.5. Resource and organization; 6.1.1.6. Roles and Responsibilities; 6.1.1.7. Common test processes applicable to all test procedures, such as witnessing and recording. 6.1.1.8. Tools; 6.1.1.9. Schedule; 6.1.1.10. Organizational relationships and degrees of independence between development organization and SAT and organization. 6.1.1.11. Processes related to post-test wrap up and review of results. 6.1.2. The Test Plan must include as attachments: • Filtered version of the RTVM Test Procedures View displaying only those Test Procedures associated with the verification event • Extract from, or filtered version of, the Test Procedures document including only those Test Procedures associated with the verification event	

4.7 DID SE-07 – Test Report

DATA ITEM DESCRIPTION	
1. TITLE **Test Report**	2. IDENTIFICATION NUMBER **DID SE-07**
3. DESCRIPTION The Test Report documents the results of a verification event, conducted in accordance with a Test Plan.	
4. RELATED DOCUMENTS Test Plan	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL SE-107** **ISS SOW: N/A**

6 **PREPARATION INSTRUCTIONS**

6.1 **CONTENT**

6.1.1 A test report is developed to record the results of a verification event. As the verification event is described in detail in the Test Plan, the details of the verification event can be provided through reference to the Test Plan.

6.1.2 The Test Report must include the following content:

6.1.2.1 Introduction. The Introduction should include:

- Identification of the verification event to which the Test Report applies
- Reference to the Test Plan

6.1.2.2 Summary of Results. The summary of results should include:

- Date, location of the verification event
- Identification of participants and their roles
- A list of test procedures executed and the result of each test procedure
- Divergences from the Test Plan
- Agreed action items resulting from Test Wrap-up after testing complete, if applicable

6.1.3 Detailed Test Results. The detailed test results section should be filled out either in ink or electronically as the test procedures are being executed, or at the conclusion of each test procedure. For each Test Procedure executed, the Detailed Test Results should have data fields for:

- Unique Test Procedure ID;
- Test Procedure Title;
- Expected test results;
- Achieved test results:
- Assessment of overall test result (Pass / Fail in terms of requirement verified)
- Deviations from the test procedure;
- Detailed discussion of the results obtained, including failures, corrective actions taken and results of re-test;
- Identification on participants and the role of each;
- Date of execution of test procedure;
- Signatures of Contractor and Canada representatives

6.2 **FORMAT**

6.2.1 The Test Report is produced initially as a template for review with all Sections and data fields present but not populated with test results.

5 Configuration Management DIDs

5.1 DID CM-01 – Equipment Breakdown Structure (EBS)

DATA ITEM DESCRIPTION	
1. TITLE **Equipment Breakdown Structure (EBS)**	2. IDENTIFICATION NUMBER **DID CM-01**
3. DESCRIPTION The EBS defines the system and is comprised of a list and a pictorial representation of the system decomposition down to its lowest CI, including the identification of each item. The EBS also identifies the associated product baseline data and documents, including drawings for each item.	
4. RELATED DOCUMENTS **D-01-002-007/SG-006,** System Requirements Specification (SRS) Appendix 3 to ACQ SOW	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL CM-101** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. **FORMAT** 6.1.1. The Contractor must provide an EBS in the Contractor's format and must contain the following information: 6.1.1.1. Title Page; 6.1.1.2. Revision Record; and 6.1.1.3. Table of Contents. 6.2. **CONTENT** 6.2.1. The EBS lists and provides a pictorial representation of the system decomposition down to the CI level, including identification of each item, the associated product baseline data and documents, including drawings for each item. A family tree format can be used. 6.2.2. The EBS must clearly define down to the lowest repairable assembly the relationship of the LRF HHTI-LR items which combine to perform the same function. 6.2.3. The EBS must identify all LRUs, as determined by the Contractor and consistent with DID LS-02 Maintenance Plan. The LRUs identified must completely encompass all of the requirements of the LRF HHTI-LR as detailed in the SRS 6.2.4. The EBS must clearly define down to the Lowest Replaceable Unit (LoRU) the relationship of the LRF HHTI-LR items which combine to perform the same function. 6.2.5. Common Configuration List (if applicable) - The Contractor must list those items of common configuration as identified in the LRF HHTI-LR EBS. This list will be used by the TA to rationalize test requirements for the LRF HHTI-LR and to identify common repair parts that were procured during the LRF HHTI-LR program.	

5.2 DID CM-02 – Software Version Description Document (SVDD)

DATA ITEM DESCRIPTION	
1. TITLE **Software Version Description Document (SVDD)**	2. IDENTIFICATION NUMBER **DID CM-02**
3. DESCRIPTION The SVDD identifies and describes a software version comprising one or more CSCIs. It is used to release, track and control software versions. The SVDD is applicable to the initial release of software, subsequent Block Changes or releases, as well as any site-specific variants of the software.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL CM-102** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. The SVDD must be prepared in the Contractor's format.

6.2. This document must be updated and resubmitted upon new software release of the related CSCI.

6.3. The SVDD must contain the following:

6.4. **Title Page**

6.4.1. The document must include a title page containing, as applicable: document number; volume number; version/revision indicator; security markings or other restrictions on the handling of the document; date; document title; name, abbreviation, and any other identifier for the system, subsystem, or item to which the document applies; Contract number; CDRL item number; organization for which the document has been prepared; name and address of the preparing organization; and distribution statement. For data in a database or other alternative form, this information must be included on external and internal labels or by equivalent identification methods.

6.5. **Record of Review and History**

6.6. **Table of Contents**

6.6.1. The document must contain a table of contents providing the number, title, and page number of each titled paragraph, figure, table, and appendix. For data in a database or other alternative form, this information must consist of an internal or external table of contents containing pointers to, or instructions for accessing, each paragraph, figure, table, and appendix or their equivalents.

6.7. **Scope**

6.7.1. This section must be divided in the following paragraph:

6.7.1.1. Identification. This paragraph must contain a full identification of the system and the software to which this document applies, including, as applicable, identification number(s), title(s), abbreviation(s), version number(s), and release number(s);

6.7.1.2. System Overview. This paragraph must briefly state the purpose of the system and the software to which this document applies. It must describe the general nature of the system and software; summarize the history of system development, operation, and maintenance, developer and support agencies; and list other relevant documents; and

6.7.1.3. Document Overview. This paragraph must summarize the purpose and contents of this document and must describe any security or privacy considerations associated with its use.

6.8. **Referenced Documents**

6.8.1. This section must list the number, title, revision, and date of all documents referenced in this document. This section must also identify the source for all documents not available through normal Government stocking activities.

6.9. **Version Description**

6.9.1. This section must be divided into the following paragraphs.

6.9.1.1. Inventory of Materials Released. This paragraph must list by identifying numbers, titles, , version numbers, and release numbers, as applicable, all physical media (for example, listings, tapes, disks) and

associated documentation that make up the software version being released. It must include applicable security and privacy considerations for these items, safeguards for handling them, such as concerns for static and magnetic fields, and instructions and restrictions regarding duplication and license provisions.

- Media. This paragraph must describe the media on which the released version of the CSCI has been stored. It must state the number of copies that have been produced and provide information on the media identification.
- Support. This paragraph must identify the hardware and software tools, either commercial off the shelf or developed, needed for the generation and maintenance of the software (compiler, environment, etc.) and for the installation of the executable on the target system (hardware, environment, etc.). This paragraph must also describe the step by step procedure to build the executable program or refer to an external document in which the build procedure is described.

6.9.1.2. Inventory of Software Contents. This paragraph must list by identifying numbers, titles, abbreviations, dates, version numbers, and release numbers, as applicable, all computer files that make up the software version being released. Any applicable security and privacy considerations must be included.

6.9.1.3. Changes Installed. Describe the changes, which have been implemented in the current software version, as compared to the previous one. This may include both enhancements as well as fault fixes. This paragraph must identity, as applicable, the problem reports, change proposals, and change notices associated with each change. This paragraph is not applicable to the initial release of software.

6.9.1.4. Target Platform Configuration. Specify the required configuration of the target platform before this software version can be installed and executed, or reference a hardware specification document.

6.9.1.5. Adaptation Data. For the initial software release, describe the site-specific data or customizations featured in this version of the software, corresponding to the target platform above. For subsequent releases, describe any changes to the site-specific data.

6.9.1.6. Interface Compatibility. This paragraph must indicate other systems and CSCIs affected by the changes incorporated in this version. It must also indicate which version(s) of the interfaced CSCI(s) is (are) compatible with the current version of the software.

6.9.1.7. Related Documents. List any other documents, which are applicable to the software version being released, but which are physically not included in this release. Indicate the document titles, document numbers, version numbers, version dates, and publication source.

6.9.1.8. Summary of Changes. This paragraph must describe the operational effect, if any, of the changes listed above.

6.9.1.9. Installation Instructions. This paragraph must provide or reference the following information, as applicable.

- Instructions for installing the software version;
- Identification of other changes that have to be installed for this version to be used, including site-unique adaptation data not included in the software version;
- Security, privacy, or safety precautions relevant to the installation;
- Procedures for determining whether the version has been installed properly; and
- Point-of-contact in case difficulties are encountered with the software installation.

6.9.1.10. Possible Problems and Know Errors. This paragraph must identity any possible problems or known errors with the software version at the time of release, any steps being taken to resolve the problems or errors, and instructions (either directly or by reference) for recognizing, avoiding, correcting, or otherwise handling each one. The information presented must be appropriate to the intended recipient of the SVDD (for example, a user agency may need advice on avoiding errors, a support agency on correcting them).

6.10. **Supplementary Notes**

6.11. Any additional information about the software version, which may facilitate installer or user understanding (e.g. acronyms, definitions, background information, and rationale).

5.3 DID CM-03 – Engineering Change Proposal (ECP)

DATA ITEM DESCRIPTION	
1. TITLE **Engineering Change Proposal (ECP)**	2. IDENTIFICATION NUMBER **DID CM-03**
3. DESCRIPTION An ECP is a request for authorization to make changes to an approved baseline. An ECP includes the documentation both to describe and to substantiate the engineering change.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL CM-103** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. The Contractor must use the ECP form provided herewith to propose an engineering change.

6.2. The Contractor must complete the ECP form as described below.

6.3. Block 1. The Contractor must enter the submittal date of the ECP.

6.4. Block 2. The Contractor must enter the originating organization's name, address and contact information.

6.5. Block 3.

6.5.1. The Contractor must classify the ECP in accordance with ACMP-2009 pages D-12 and D-13.

6.5.2. The Contractor must enter the class of ECP as either "Class I" or "Class II".

6.6. Block 4. The Contractor must use at least one of the following codes to classify the ECP:

6.6.1. B – Functional Baseline, Allocated Baseline or Product Baseline changed from established baseline;

6.6.2. C – Compatibility with interfacing items;

6.6.3. D – Delivered operational or maintenance manuals require change;

6.6.4. G – Government Furnished Equipment affected;

6.6.5. I – Interchangeability or replaceability affected;

6.6.6. O – Operational or logistics support change;

6.6.7. P – Personnel skills, manning, training or human factors engineering consideration;

6.6.8. S – Safety or security; or

6.6.9. Z – Contractual item such as cost or schedule.

6.7. Block 5. The Contractor must recommend the a priority for processing the ECP from the following:

6.7.1. E - Emergency. Vital modification required to rectify a condition which may result in a serious hazard to personnel or equipment or may seriously compromise national security. ECP to be actioned within (the DID originator may set a different time limit) 24 hours.

6.7.2. U - Urgent. Urgent modification required to rectify a condition that results in degraded mission effectiveness. ECP to be actioned within (the DID originator may set a different time limit) 5 days.

6.7.3. R - Routine. ECP to be actioned within (the DID originator may set a different time limit) 30 days.

6.8. Block 6. The Contractor must describe the ECP with the following:

6.8.1. No. A unique number consisting of "ECP-Y-NNN", where:

6.8.1.1. Y – C (Contractor) or P (Project Office – DND) indicating ECP originator, and

6.8.1.2. NNN - Unique serial number for the ECP;

6.8.2. Type – P (Preliminary) or F (Final);

6.8.3. Revision – Enter revision indicator to identify version; and

6.8.4. SYSTEM DESIGNATION – Identify and describe the system/sub-system affected by the ECP. Include reference to affected configuration identifier(s).

6.9. Block 7.

6.9.1. The Contractor must list all specifications affected by the ECP.

6.9.2. The Contractor must list all documents affected by the ECP.

6.9.3. The Contractor must submit copes of the affected specifications and documents with the ECP.

6.10. Block 8.

6.10.1. The Contractor must list all drawings affected by the change.

6.10.2. The Contractor must submit copes of the affected drawings with the ECP.

6.11. Block 9. The Contractor must enter a brief title that identifies the ECP.

6.12. Block 10.

6.12.1. The Contractor must describe the engineering change.

6.12.2. Supplementary information may be attached to the ECP to describe the proposed change.

6.13. Block 11.

6.13.1. The Contractor must explain the need for the engineering change.

6.13.2. The Contractor must explain the benefit to Canada such as enhanced performance, range, reliability or maintainability.

6.14. Block 12.

6.14.1. The Contractor must state the contract number affected by the ECP.

6.14.2. The Contractor must identify the contract line item number affected by the proposed engineering change.

6.15. Block 13.

6.15.1. The Contractor must indicate the estimated date when change can be incorporated into production.

6.15.2. The Contractor must indicate the planned serial number or lot number upon which the change will be implemented.

6.16. Block 14.

6.16.1. The Contractor must provide the delivery schedule of items incorporating the engineering change.

6.16.2. The Contractor must identify if the change is a variance from the current established production and delivery schedule.

6.17. Block 15.

6.17.1. Block 15a. The Contractor must indicate the lot numbers or serial numbers to be retrofitted as a result of the change.

6.17.2. Block 15b. The Contractor must enter details of delivery schedule, quantities and locations for completing the retrofit as a result of the change.

6.18. Block 16. The Contractor must estimate the total cost or savings that results if the ECP is approved.

6.19. Block 17. The Contractor must identify which configuration items (CI) will change as a result of the ECP's approval.

6.20. Block 18. The Contractor must indicate which other CI will be affected by the ECP's approval.

6.21. Block 19. The Contractor must state whether other contractors or Government activities will be affected by the ECP.

6.22. Block 20.

6.22.1. The Contractor must describe the performance change that results if the ECP is approved.

6.22.2. The Contractor must describe the impact upon performance specifications, including the defined functional and physical interfaces, which would be affected by the ECP.

6.23. Block 21. The Contractor must describe other effects, such as the effect upon health and safety, if the ECP is approved.

6.24. Block 22. The Contractor must describe effects of the proposed change upon performance in quantitative terms as it relates to the defence system and CI specifications.

6.25. Block 23.

6.25.1. The Contractor must print the name of the individual authorized to submit the ECP.

6.25.2. The Contractors' authorized individual must sign and date the ECP.

6.26. Block 24.

6.26.1. The Contractor must indicate the effects of the proposed engineering change upon configuration identification and contract reference by checking the corresponding box at 24a through 24e.

6.26.2. The Contractor must describe the effects upon the product configuration identification and contract specifications with reference to Specification Change Notices (SCNs), Notices of Revision (NORs) or other enclosure(s).

6.26.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 24a through 24e.

6.27. Block 25.

6.27.1. The Contractor must indicate the effects of the proposed engineering change upon operational employment by checking the corresponding boxes at blocks 25a through 26j.

6.27.2. The Contractor must explain these effects within enclosures.

6.27.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 25a through 25j.

6.27.4. The Contractor must use quantitative values when reliability and service life are affected. Survivability includes nuclear survivability.

6.28. Block 26.

6.28.1. The Contractor must indicate the effects of the proposed engineering change upon Integrated Logistics Support (ILS) by checking the corresponding boxes at blocks 26a through 26n.

6.28.2. The Contractor must explain these effects within enclosures.

6.28.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 26a through 26n.

6.28.4. The Contractor must indicate the method used to determine ILS plans and items required for the support of the new configuration.

6.29. Block 27.

6.29.1. The Contractor must indicate other considerations of the proposed engineering change by checking the boxes at blocks 27a through 27i.

6.29.2. The Contractor must explain the effects within enclosures.

6.29.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 27a through 27i.

6.30. Block 28.

6.30.1.1. The Contractor must summarize the alternative solutions considered such as revisions of operation, maintenance procedures, inspections, servicing requirements or part replacement schedules.

6.30.1.2. The Contractor must provide an analysis of the alternatives, identify the advantages and disadvantages inherent to each alternative.

6.30.1.3. The Contractor must present supporting data with the proposal to authenticate the trade-off analysis if the analysis addresses new concepts or new technology.

6.30.1.4. The Contractor shows the reasons for adopting the alternative proposed by the ECP.

6.31. Block 29.

6.31.1. The Contractor must recommend additional tests, trials, installations, prototypes, fit checks, or other verification that prove the proposed engineering change performs as expected.

6.31.2. The Contractor must recommend the test objective, test vehicle(s) and GFE to be used for the verification.

6.32. Block 30.

6.32.1. The Contractor must recommend whether or not to retrofit the engineering change into accepted items.

6.32.2. The Contractor must substantiate the retrofit recommendation with data and a brief description of the action required.

6.33. Block 31. The Contractor must show the work-hours, material costs and subcontract costs to retrofit the defence system.

6.34. Block 32. The Contractor must show the work-hours required to test the defence system following retrofit.

6.35. Block 33. The Contractor must state whether to incorporate the proposed change before, after or concurrently with other approved engineering changes.

6.36. Block 34.

6.36.1. The Contractor must indicate whether one or more Contractor field service representatives (FSR) are required for the retrofit.

6.36.2. If "yes" to FSR, then the Contractor must attach a proposed program for Contractor participation.

6.37. Block 35. The Contractor must estimate the total time period a defence system must be removed from operational service for the retrofit.

6.38. Block 36.

6.38.1. The Contractor must summarize the cumulative effect upon performance of this ECP and previously approved ECPs when design limitations are being approached or exceeded.

6.38.2. Consequences of ECP disapproval may be stated within Block 36 or within a referenced enclosure.

6.39. Block 37. The Contractor must request a date for approval by the contracting authority to implement the change.

ENGINEERING CHANGE PROPOSAL (ECP)

1. DATE (*YY/MM/DD*)

2. ORIGINATOR NAME AND ADDRESS

3. CLASS OF ECP (I or II)	4. CLASSIFICATION CODE (Applicable to Class I Only)	5. PRIORITY

6. ECP DESIGNATION

No.	Type	Revision

SYSTEM DESIGNATION:

7. SPECIFICATIONS / DOCUMENTS AFFECTED			8. DRAWINGS AFFECTED		
Spec/Doc No.	Title	Rev	Dwg No.	Title	REV

9. TITLE OF CHANGE

10. DESCRIPTION OF CHANGE

11. NEED FOR CHANGE

12. CONTRACT NUMBER AND LINE ITEMS

13. PRODUCTION EFFECTIVITY	14. EFFECT UPON PRODUCTION DELIVERY SCHEDULE

15. RETROFIT

15a. RECOMMENDED ITEM EFFECTIVITY	15b. ESTIMATED KIT DELIVERY SCHEDULE / LOCATIONS

16. ESTIMATED COSTS / SAVINGS UNDER CONTRACT
IMPACT ANALYSIS / EFFECTS
17. ITEMS / SYSTEMS DIRECTLY AFFECTED
18. OTHER SYSTEMS AFFECTED
19. OTHER CONTRACTORS / ACTIVITIES AFFECTED
20. EFFECTS UPON PERFORMANCE / SYSTEM SPECIFICATIONS
21. EFFECTS UPON EMPLOYMENT, INTEGRATED LOGISTICS SUPPORT, TRAINING, OPERATIONAL EFFECTIVENESS, ENVIRONMENT, HEALTH & SAFETY (EHS) OR SOFTWARE
22. EFFECTS UPON ITEM SPECIFICATIONS
23. SUBMITTING ACTIVITY – Authorized Signature (Print Name and Sign) Date

`EFFECTS UPON PRODUCT CONFIGURATION IDENTIFICATION, LOGISTICS AND OPERATIONS							
(X)	**FACTOR**	**ENCL**	**PAR**	**(X)**	**FACTOR**	**ENCL**	**PAR**

	24. EFFECT UPON PRODUCT CONFIGURATION IDENTIFICATION OR CONTRACT				25. EFFECT UPON OPERATIONAL EMPLOYMENT		
	a. PERFORMANCE				a. SAFETY		
	b. WEIGHT BALANCE STABILITY (*Aircraft*)				b. SURVIVABILITY		
	c. WEIGHT-MOMENT (*Other Equipment*)				c. RELIABILITY		
	d. CDRL, TECHNICAL DATA				d. MAINTAINABILITY		
	e. NOMENCLATURE				e. SERVICE LIFE		
					f. OPERATING PROCEDURES		
	26. EFFECT UPON INTEGRATED LOGISTICS SUPPORT (ILS) ELEMENTS				g. ELECTROMAGNETIC INTERFERENCE		
					h. ACTIVATION SCHEDULE		
	a. ILS PLANS				i CRITICAL SINGLE POINT FAILURE ITEMS		
	b. MAINTENANCE CONCEPT, PLANS AND PROCEDURES				j. INTEROPERABILITY		
	c. LOGISTICS SUPPORT ANALYSIS						
	d. INTERIM SUPPORT PROGRAMS						
	e. SPARES AND REPAIR PARTS				**27. OTHER CONSIDERATIONS**		
	f. TECH MANUALS/PROGRAMMING TAPES				a. INTERFACE		
	g. FACILITIES				b. OTHER AFFECTED EQUIPMENT/GFE/ GFI		
	h. SUPPORT EQUIPMENT				c. PHYSICAL CONSTRAINTS		
	i. OPERATOR TRAINING				d. COMPUTER PROGRAMS AND RESOURCES		
	j. OPERATOR TRAINING EQUIPMENT				e. REWORK OF OTHER EQUIPMENT		
	k. MAINTENANCE TRAINING				f. SYSTEM TEST PROCEDURES		
	l. MAINTENANCE TRAINING EQUIPMENT				g. WARRANTY/GUARANTEE		
	m. CONTRACT MAINTENANCE				h. PARTS CONTROL		
	n. PACKAGING, HANDLING, STORAGE, TRANSPORTABILITY				i. LIFE CYCLE COSTS		

28. ALTERNATE SOLUTIONS

29. DEVELOPMENTAL STATUS

30. RECOMMENDATIONS FOR RETROFIT

31. WORK-HOURS, MATERIAL COSTS AND SUBCONTRACT COSTS PER UNIT TO INSTALL RETROFIT KITS

a. WORK HOURS	b. MATERIAL COSTS	c. SUBCONTRACT COSTS

32. WORK-HOURS TO CONDUCT SYSTEM TESTS AFTER RETROFIT

33. THIS CHANGE MUST BE ACCOMPLISHED ☐ BEFORE ☐ WITH ☐ AFTER THE FOLLOWING CHANGES	**34. IS CONTRACTOR FIELD SERVICE REPRESENATIVE REQUIRED?** ☐ YES ☐ NO	**35. OUT OF SERVICE TIME**
36. EFFECT OF THIS ECP AND PREVIOUSLY APPROVED ECPs UPON ITEM	**37. DATE CONTRACTUAL AUTHORITY NEEDED**	

5.4 DID CM-04 – Specification Change Notice (SCN)

DATA ITEM DESCRIPTION	
1. TITLE **Specification Change Notice (SCN)**	2. IDENTIFICATION NUMBER **DID CM-04**
3. DESCRIPTION The SCN identifies changes to one or more specifications. The change may be invoked within drawings, associated lists and other documentation that will be distributed when the corresponding Engineering Change Proposal (ECP) is approved.	
4. RELATED DOCUMENTS Engineering Change Proposal DID LRF HHTI LR – CM-103	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL CM-104** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. The Contractor must propose the SCN format for approval by DND. 6.2. The Contractor's SCN must document all necessary changes to specifications, drawings, associated lists and other documentation resulting from approval of the corresponding ECP. 6.3. The Contractor's SCN must include the following information: 6.3.1. Introduction information to include as a minimum originator, date, and SCN number; 6.3.2. Related ECP number; 6.3.3. Affected documents; 6.3.4. Affected configuration item; 6.3.5. Description of changes; and 6.3.6. Submitting and approving authorities. 6.4. The Contractor must attach copies of all documents affected by the SCN such as specifications, drawings and associated lists.	

5.5 DID CM-05 – Request for Deviation (RFD) / Request for Waiver (RFW)

DATA ITEM DESCRIPTION	
1. TITLE **Request for Deviation (RFD) / Request for Waiver (RFW)**	2. IDENTIFICATION NUMBER **DID CM-05**
3. DESCRIPTION An RFD and an RFW describe a proposed departure from configuration documentation for a specific number of units or for a specified period of time. The RFD and RFW differ from an engineering change since neither a deviation nor a waiver require a change to configuration documents.	
D-02-006-008/SG-001, The Design Change, Deviation and Waiver Procedure	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL CM-105** **ISS SOW: N/A**

6. **PREPARATION INSTRUCTIONS**

6.1. The Contractor must prepare RFD and RFW in accordance with D-02-006-008/SG-001.

6.2. The RFD and RFW must be submitted using DND Form 675.

6.3. The Contractor must complete the request as follows:

6.4. Block 1. Identify the request as either a waiver (granted after production) or a deviation (granted prior to production).

6.5. Block 1a. Identify whether the request is recurring or not.

6.6. Block 2. Select whether the request is technical or contractual. A contractual request affects cost, delivery, or performance and the request must be approved by someone with contracting authority. A technical request may be approved by the DA.

6.7. Block 3. Choose between major, minor, or critical. A minor request may be approved by the QAR unless the DA specifically retains the approval authority. The DA may hold delegated authority for the approval of emergency, time-critical requests.

6.8. Block 4. These contractor-assigned numbers must run consecutively for each Request within a contract.

6.9. Blocks 5-8. Self-explanatory – enter the contract serial number, contract line item number, prime contractor's name and originating date.

6.10. Block 9. Item description:

6.10.1. Block 9a. Enter the lot, batch and serial number(s) to identify the item(s) covered by the Request.

6.10.2. Block 9b. Enter the item description including NATO Stock Number, part number, or model number affected by the Request.

6.10.3. Block 9c. If the affected item is a part of an intermediate assembly below that of the primary equipment, then enter the intermediate's description, including NATO Stock Number, part number, or model number.

6.10.4. Block 9d. State the effect upon the contract. Enter **Not Applicable** if there is no change.

6.10.5. Block 9e. Offer the cost change per item and the extended cost offered. Enter **Not Applicable** if there is no cost change.

6.10.6. Block 9f. Identify the change to delivery schedule. Enter **Not Applicable** if there is no schedule change.

6.10.7. Block 9j. State the effect upon other systems. Enter Not Applicable if there is no change.

6.11. Block 10. Enter a brief description of the waiver or deviation, list all drawings affected, and enter the Tracking Number(s) of all quality observation form(s). Attach an additional page or pages if Block 10 is too small for the information. Also attach copies of the quality observation form(s) and attach marked up prints for clarity.

6.12. Block 11. Briefly describe why the deviation or waiver is desirable:

6.12.1. Block 12a. If originated by the prime contractor, then enter the date of preparation and leave Block 12b blank. If received from an originator that is not the prime contractor, then enter the date of review by the prime. Include the name of the signatory, the prime contractor's name, and sign in the signature block labelled "Prime Contractor"; and

6.12.2. Block 12 b. If prepared by other than the prime contractor, enter the date of preparation, the name of the signatory, the subcontractor organization's name, and sign in the signature block labelled "Originator (if different from 12a.)". Leave Block 12b blank if the originator is the prime contractor.

6.13. Block 13. Government Authorisations:

6.13.1. Block 13a. The conditions will be set by the person with the authority to approve the Request – the QAR, the CA, or the DA. That person enters all conditions to the granting of the waiver; otherwise the person who can approve the Requests enters Not Applicable within Block 13a.

6.13.2. Block 13b. The QAR either recommends or does not recommend the Request. The QAR provides his or her name, designation, signature and date of signing.

6.13.3. Block 13c. If the Request affects the contract's cost, schedule or performance, then the CA must sign Block 13c. The CA either approves or does not approve the Request by marking the corresponding box within in Block 13c, identifying himself or herself, affixing her or his signature, and dating the form. The CA amends the contract if the Request is approved.

6.13.4. Block 13d. The DA either approves or does not approve the Request from a **technical perspective** by marking the corresponding box within in Block 13d, identifying himself or herself, and affixing her or his signature. Three possibilities then arise:

National Defence / Défense nationale

REQUEST FOR WAIVER or DEVIATION
DEMANDE D'EXEMPTION ou DÉVIATION

4. Waiver or Deviation No. / N° Exemption ou Déviation
5. PWGSC Contract No. / TPSGC N° du contrat
6. Contract Line Item No. / N° d'inscription au contrat
7. Prime Contractor Name / Nom de l'entrepreneur principal
8. Originating Date (dd/mm/yyyy) / Date d'introduction (jj/mm/aaaa)

1. ☐ Waiver / Exemption ☐ Deviation / Déviation
2. ☐ Technical / Technique ☐ Contractual / Contractuel
3. ☐ Major / Majeur ☐ Minor / Secondaire ☐ Critical / Critique

1a. Recurring / Récurrent ☐ yes / oui ☐ no / non

9. **Item Description / Description de l'article :**

9a. Lot No. / N° de lot | Batch No / N° de fabrication | Item Serial No. / N° de série de l'article

9b. Primary Equipment Affected / Équipement primaire affecté

9c. Part or Assembly Impacted / Pièce on assemblage affectée

9d. Impact on the Contract / Impact sur le contrat

9e. Impact on Cost / Impact sur le coût

9f. Impact on Delivery Schedule / Impact sur le calendrier de livraison

9g. Impact on other Systems (ILS, interface & software) / Impact sur autres systèmes (SLI, interface & logiciel)

10. Description of Waiver or Deviation (Non-Conformity) / Description d'exemption on déviation (non-conformité)

11. Reason for Waiver or Deviation (Non-Conformity) / Raison d'exemption on déviation (non-conformité)

12. Originator Signature Block / Bloc de signature de l'auteur

12a. Prime Contractor / entrepreneur principal — Name / Nom (*printed / imprimé*) | Signature | Date (dd/mm/yyyy : jj/mm/aaaa)

12b. Originator / Auteur de la demande (if different from 12a. / si différent de 12a.) — Name / Nom (*printed / imprimé*) | Signature | Date (dd/mm/yyyy : jj/mm/aaaa)

13. Government Authorizations / Autorisations du governement

13a. Conditions to granting Waiver or Deviation / Conditions pour accorder l'exemption ou la déviation

13b. Quality Assurance Representative / Représentant de l'assurance de la qualité

☐ Recommended / Recommandé ☐ Not Recommended / Non-recommendé — Name / Nom (*printed / imprimé*) | Signature | Date (dd/mm/yyyy : jj/mm/aaaa)

13c. Contractual Authority - PWGSC / Autorité contractuelle - TPSGC

☐ Approved / Approuvé ☐ Not Recommended / Non-recommendé — Name / Nom (*printed / imprimé*) | Signature | Date (dd/mm/yyyy : jj/mm/aaaa)

13d. Technical Authority - DND / Autorité technique - MDN

☐ Approved / Approuvé ☐ Not Approved / Non-approuvé — Name / Nom (*printed / imprimé*) | Signature | Date (dd/mm/yyyy : jj/mm/aaaa)

5.6 DID CM-06 – Configuration Status Accounting (CSA) Report

DATA ITEM DESCRIPTION	
1. TITLE **Configuration Status Accounting (CSA) Report**	2. IDENTIFICATION NUMBER **DID CM-06**
3. DESCRIPTION The CSA Report details the information required to effectively manage CIs and provide visibility of CM activities, including the status of deviations, waivers and engineering changes.	
4. RELATED DOCUMENTS The CSA Report relates to all ECPs, RFDs, RFWs, SCNs, and NORs.	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL CM-106** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. The CSA Report must be in the Contractor's format. 6.2. The CSA Report must provide as a minimum the identification of each CI and list all new, outstanding and historical ECPs, RFDs, RFWs, SCNs and NORs including their status against each CI. The report must include but not be limited to: 6.2.1. An ECP index listing the ECPs (number, revision, correction, date raised, title, type, class, status, and cross reference to Subcontractor raised ECP, if applicable) and the CI, part and documentation affected. 6.2.2. A Deviation Index listing the deviations (number, date raised, title, status, and cross reference to subcontractor raised Deviation, if applicable) and their effectivity. 6.2.3. A Waiver Index listing the waivers (number, date raised, title, part affected, status, and cross reference to subcontractor raised waivers, if applicable) and their effectivity. 6.2.4. A SCN index recording all SCNs against a specification. For each specification, the Contractor format index must contain; the spec number, rev, title, the SCN number, associated ECP, date of submission and approval and any other related ECPs/SCN information. 6.2.5. A NOR index listing the NORs (number, date raised, the document number, title and revision of the document affected, associated ECP, date revision authorised, date revision completed).	

5.7 DID CM-07 – Configuration Audit Report (CAR)

DATA ITEM DESCRIPTION	
1. TITLE **Configuration Audit Report (CAR)**	2. IDENTIFICATION NUMBER **DID CM-07**
3. DESCRIPTION The CAR is a document that reports in details the results of the audit. It is provided in accordance with the requirements of the CMP.	
4. RELATED DOCUMENTS The CAR must be in accordance with the CM processes described in the SEMP.	5. CONTRACT REFERENCE **ACQ SOW**: **CDRL CM-107** **ISS SOW: N/A**
6. **PREPARATION INSTRUCTIONS** 6.1. The CAR Report must be in the Contractor's format. 6.2. The CAR must provide, as a minimum, the results of those audits, and a summary of any outstanding action required to rectify gaps found in the audited CI as a result of the audits. It must contain, but not be limited to, the following: 6.2.1. Identification of hardware/software and documentation audited; 6.2.2. Identification of reference documentation used during conduct of the audit; 6.2.3. Identification of the audit agenda; 6.2.4. A list of the personnel involved; and 6.2.5. Action items identified, responsible individuals assigned to each action item and scheduled date of clearing each action item.	

6 Integrated Logistic Support DIDs

6.1 DID LS-01 – Integrated Logistics Support Plan (ILSP)

DATA ITEM DESCRIPTION	
1. TITLE **Integrated Logistics Support Plan (ILSP)**	**2. DATA ITEM NUMBER** **DID LS-01**
3. DESCRIPTION The ILSP describes the methods used by the Contractor to provide ILS. It serves as the principal management and planning document for execution of the ILS program.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-101** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Integrated Logistics Support Plan (ILSP) must address the Contractors methodology for accomplishing all Integrated Logistics Support (ILS) tasks as specified in the contract.

6.1.2. The ILSP may be prepared in the Contractor's preferred format acceptable to DND.

6.1.3. The ILSP subject matter must be broken down into the following sections:

6.1.3.1 Section I – Introduction.

- Define the scope, purpose and application of the ILS Plan, together with applicable definitions, references and related documents and mechanism to amend the plan.

6.1.3.2 Section II – Management/Organization.

- Describe the Contractor's ILS organization, subcontractor's ILS organization management procedures and reporting/ tracking system.
- Identify by name in an ILS Organization chart the Contractor's ILS manager and logistic element managers must:
- Provide a resume of the duties for the ILS manager and each of the logistic element managers.
- The following information must also be provided:
  - Detail responsibility of each ILS element managers including line of authority and functional interface;
  - Identification of subcontractors, including their functional interface; and
  - Description of the method of subcontractor interface, management and control.

6.1.3.3 Section III – Work Breakdown Structure (WBS)/Schedule of Activities and Milestones.

- Provide schedules for the ILS program, including all ILS elements and major milestones as follows:
  - A time-phased workflow diagram supported by a narrative explanation that describes the activities associated with the ILS program; and
  - An integrated schedule of the overall ILS program with key project milestones. This schedule must also demonstrate its consistency with schedules contained in the Project Management Plan and System Engineering Plan.

6.1.3.4 Section IV – Relationships.

- Describe the following relationships:
  - Between the various ILS elements;
  - Between the ILS and the Engineering program; and
  - Between the ILS program and other project programs.

6.1.3.5 Section V – Contractor Support for the Equipment/System and associated equipment.

- Provide detailed overview of the support and support processes to be provided by the Contractor and any subcontractors.
- As a minimum an overview of current and foreseen business processes for the following subjects must be addressed:
  - LSA;
  - Supply support;
  - Special Tools and Test Equipment;
  - Technical Publications;
  - Training development;
  - Training support;
  - Warranty support;
  - Fielding; and
  - Environmental Health and Safety (EHS) Management.

6.1.3.6 Section VI – Supportability Engineering.

- Detail existing support resources and capabilities possessed by the Contractor and any subcontractors.
- As a minimum the following subjects must be addressed:
  - How the Contractor intends to ensure that the systems being designed are supportable;
  - The processes in place that allows ILS and System Engineering to actively engage to achieve a balance between performance, long term support, and cost of ownership; and
  - The processes followed in developing strategies to reduce supportability cost via Commercial Off The Shelf (COTS)/ Military Off The Shelf (MOTS), modularity, Non-Development Item (NDI), special tools and support equipment.

6.2 DID LS-02 – Maintenance Plan

DATA ITEM DESCRIPTION	
1. TITLE **Maintenance Plan**	**2. DATA ITEM NUMBER** **DID LS-02**
3. DESCRIPTION This plan describes the Maintenance Program of the LRF HHTI-LR System. It must be consistent with the Maintenance Support Concept. The Equipment Breakdown Structure (EBS) is a subset of the Maintenance Plan.	
4. RELATED DOCUMENTS **C-04-005-001/AG-B07,** Permissive Repair Schedules (PRSs) and Standard Repair Times (SRTs) **C-04-006-001/AM-001,** Land Maintenance System Lines of Maintenance and Levels of Repair	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-102** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Maintenance Plan must describe the maintenance tasks required to remove/replace Line Replaceable Units (LRUs) and remove/replace and repair Shop Replaceable Units (SRUs) in order to restore the LRF |HHTI-LR to an operational ready condition.

6.1.2. All LRUs and SRUs included in the EBS must be included.

6.1.3. The proposed Maintenance Plan must be based on appropriate supportability analysis techniques to provide the most cost effective maintenance solution.

6.1.4. The Maintenance Plan must include a Permissive Repair Schedule and Standard Repair Time (PRS & SRT) Section. PRS & SRT provides information for maintenance support and planning of the equipment.

6.1.5. As a minimum the Contractor's proposed Maintenance Plan must include a PRS &SRT and the following:

6.1.5.1 Introduction: To include a description of the methods and analyses used to establish the proposed optimized Maintenance Plan.

6.1.5.2 Tubular results to include:

- Identification of the LRU or SRU;
- Identification of any lower level repairable items;
- Failure rate of the LRU or SRU;
- If the LRU or SRU is to be repaired or discarded;
- Required spares (with quantity), consumable and STTE; and
- Expected task frequency.

6.1.6. Permissive Repair Schedule and Standard Repair Time (PRS & SRT)

6.1.6.1 The PRS & SRT must include a breakdown of all maintenance tasks for Operator, Technician, and those that would be completed at the OEM, and must also include the number of hours required to perform the repair tasks, rounded up to the nearest half hour.

6.1.6.2 The Levels of Repair and Lines of Maintenance for the PRS & SRT must be determined using the definitions provided in C-04-006-001/AM-001 and in discussions with DND ILS personnel.

6.2. **GENERAL FORMAT**

6.2.1. The Maintenance Plan must be prepared in the Contractor's format while being in full conformance with the above-stated issue of C-01-100-100/AG-008.

6.2.2. The Maintenance Plan must have the National Defence Index of Documentation (NDID) number, provided to the Contractor by DND, on the top right corner of all the pages.

6.3 DID LS-03 – Sparing Analysis Report

DATA ITEM DESCRIPTION	
1. TITLE **Sparing Analysis Report**	**2. DATA ITEM NUMBER** **DID LS-03**
3. DESCRIPTION Sparing Analysis is performed to determine the optimum selection, quantity and distribution of spares. This report documents the results of Sparing Analysis.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-103** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. This Report must include:

6.1.1.1 Introduction;

- Purpose
- Applicable References
- Definitions and Acronyms

6.1.1.2 Method and Rationale;

- Description of Sparing Analysis Model
- Sparing Analysis Results
  - For Repairable
  - For Consumable

6.1.1.3 Sparing Analysis Results; and

- Maintenance Scenario Data
- For Repairable in each Line Replaceable Unit
  - Item Input Data
  - Results of Sparing Analysis
- For Consumables
  - Input Data
  - Results of Calculations

6.1.1.4 Conclusions and Recommendations.

- For each LRU
  - Recommended buy of Repairable
  - Recommended buy of Consumables
  - The recommended buy of repairable must be broken out as follows:
    a. Recommended quantity first line;
    b. Recommended quantity second line; and
    c. Recommended quantity to support training.

6.4 DID LS-04 – Equipment Data Summary

DATA ITEM DESCRIPTION	
1. TITLE **Equipment Data Summary**	**2. DATA ITEM NUMBER** **DID LS-04**
3. DESCRIPTION The Equipment Data Summary provides technical specifications and descriptive identification data for the equipment, in abbreviated form, suitable for management or staff planning.	
4. RELATED DOCUMENTS **D-01-100-200/SF-000,** Preparation of Equipment Data Summaries **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-104** **ISS SOW CDRL:**

6. **PREPARATION INSTRUCTIONS**

6.1. **CONTENT**

6.1.1. The Equipment Data Summary's content must be as outlined in D-01-100-200/SF-000, with the deviation that only line drawings must be used. Only applicable data points need to be included, i.e. the document must not contain "not applicable" or "n/a" markings.

6.2. **GENERAL FORMAT**

6.2.1. The Equipment Data Summary must be prepared in the Contractor's format while being in full conformance with the above-stated issue of C-01-100/AG-008.

6.2.2. The Equipment Data Summary must have the National Defence Index of Documentation (NDID) number, provided to the Contractor by DND, on the top right corner of all the pages.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted Equipment Data Summary hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm)
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour

6.3.1.2 Bound with white or black spiral PVC coil (such as PLASTIKOIL®).

6.4. **SOFT COPY FORMAT**

6.4.1. The Equipment Data Summary must be provided as a PDF file with searchable text that matches the printed publication's format and layout. Links, bookmarks and thumbnails are to be included in the PDF file. All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.5 DID LS-05 – Provisioning Parts Breakdown (PPB)

DATA ITEM DESCRIPTION	
1. TITLE **Provisioning Parts Breakdown (PPB)**	**2. DATA ITEM NUMBER** **DID LS-05**
3. DESCRIPTION The Provisioning Parts Breakdown (PPB) is a top-down breakdown of the equipment in the configuration in which it is being procured.	
4. RELATED DOCUMENTS **D-01-100-214/SF-000,** Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-105** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The PPB must be prepared IAW in D-01-100-214/SF-000, with modifications listed below.

6.1.2. The following data fields must be added to the PPB:

6.1.2.1 Quantity per End Item (QPEI): Between Fields number 9 and 10, refers to the total number of times the item is used in the whole prime equipment (A-level). This field may contain whatever number of numeric characters needed to show the quantities; and

6.1.2.2 SPTD filename: As the last Field, must contain the line item's applicable SPTD filename. This field may be whatever size adequate to fully show the data therein.

6.1.3. Common fasteners and hardware (items with "Y" indention code) must have an Item Name that describes their key characteristics so that equivalents can be identified from alternate sources, as possible within the mandated field size. Example: "Hex Head Screw M8 x 1.25mm, 30mm Lg, 18-8 SS".

6.1.4. For clarity:

6.1.4.1 Original Equipment Manufacturer's Part Number refers only to the Contractor which DND has contracted to supply the equipment; data from sub-contractors for items that they did not manufacture or do not control are not permitted. This field may be left blank if no data is available, or if it is the same as the Manufacturer's Reference Number (MRN).

6.1.4.2 Quantity per Assembly (QPA) refers to the number of times the item is used in the next higher assembly. For example, a C-level item's QPA will show the number of times it is used in its related B-level assembly, without being multiplied by the number of B-level assemblies.

6.1.4.3 Quantity per Equipment (QPE) refers to the total number of times the item is used in the whole prime equipment (A-level). If that quantity exceeds 99999, the figure will show 99999 in the field, with the true quantity (if known) shown in the Expanded Description field.

6.1.4.4 NATO Commercial and Government Entity (NCAGE) Codes can be searched and requested through the NATO portal: https://eportal.nspa.nato.int/AC135Public/scage/CageList.aspx.

6.1.5. The Source Maintenance and Recoverability (SMR) Codes are used to communicate maintenance and supply instructions to the various logistic support levels and user organizations for the logistic support of systems, equipment, and end items. The PPB SMR Codes must be chosen from the following list:

SMR Field Position	Code	Application/Explanation
First and Second Position Source Codes	PA	Item procured and stocked for anticipated or known usage. Items are normally considered for replenishment
	PC	Item procured and stocked, but is deteriorative in nature.
	PF	Support equipment which will not be stocked, but which will be centrally procured on demand.

	XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly
	XC	Installation drawing, diagram, instruction sheet, or field Service drawing, that is identified by the manufacturers' part number.
Third Position Maintenance Codes	C	Support item is removed, replaced, used by the operator/crew.
	O	Support item is removed, replaced, or used at the Technician Maintenance level.
	K	Repairable item. Item is removed, replaced, or used at contractor facility.
Fourth Position Repair Codes	C	The lowest maintenance activity capable of complete repair of the support item is the operator/crew.
	O	The lowest maintenance activity capable of complete repair of the support item is the Technician Maintenance level.
	K	Repairable support item. Complete repair capability exists at a designated contractor facility.
	Z	Non-repairable.
Fifth Position Recoverability Codes	C	Repairable item. When uneconomically repairable, condemn and disposed by the operator/crew.
	Z	Non-repairable item. When item becomes unserviceable, condemn and disposed of by authorized activity.
	O	Repairable item. When uneconomically repairable, condemn and dispose at organizational activity.
	K	Repairable item. Condemnation and disposal to be performed at contractor facility.

6.2. **GENERAL FORMAT**

6.2.1. The PPB must be prepared as an MS Excel spreadsheet, formatted IAW D-01-100-214/SF-000, taking into account the modifications listed in para 6.1.2 above.

6.6 DID LS-06 – Recommended Spare Parts List (RPSL)

DATA ITEM DESCRIPTION	
1. TITLE **Recommended Spare Parts List (RSPL)**	**2. DATA ITEM NUMBER** **LS-06**
3. DESCRIPTION The RSPL lists all spares recommended, by the Contractor, for procurement. It is used by the crown as a guide for the procurement of spare parts.	
4. RELATED DOCUMENTS **D-01-100-214/SF-000,** Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-106** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. FORMAT

6.1.1. The RSPL data must be provided electronically in the format required for input into the automated supply system as defined in D-01-100-214/SF-000.

6.2. CONTENT

6.2.1. The RSPL must contain the data elements as specified in the attached Table 1.

6.3. TABLE

6.3.1. Table 1 – Provisioning Data Requirements.

DATA FIELDS REQUIRED	RSPL	CBIL
Item Sequence Number (unique sequence no. for each list).	M	M
Indenture Code.	O	NR
Item Name.	M	M
Manufacturer's Reference (manufacture's part) No.	M	M
NSCM/CAGE Code	M	M
OEM's Part Number	R	R
NATO Stock Number	R	R
Quantity Per Assembly	M	NR
Standard Unit Price	M	M
Unit of Issue (UOI)	M	NR
Unit of Measure	NR	M
Reparability Indicator	R	NR
Procurement Lead Time	M	NR
Reference Designation	R	NR
Shelf Life (SL)	R	M
Usage Rate	R	NR
Recommended Buy Quantity	M	M
Source Maintenance and Recoverability (SMR) Code	R	NR

Demilitarization Code (DMC)	R	NR	

Notes:

M = Mandatory R = Required if known O = Optional NR = Not Required

6.7 DID LS-07 – Recommended Support Equipment Requirements List (RSERL)

DATA ITEM DESCRIPTION	
1. TITLE **Recommended Support Equipment Requirement List (RSERL)**	**2. DATA ITEM NUMBER** **DID LS-07**
3. DESCRIPTION This data is required to identify the support equipment needed to operate, maintain, transport and handle the system/equipment and to train personnel.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-107** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. CONTENT

6.1.1. For each required item of Support Equipment include:

6.1.1.1 Support Equipment item name;

6.1.1.2 Support Equipment Reference (Manufacture's Part) Number;

6.1.1.3 NSCM/CAGE Code;

6.1.1.4 NSN (if available);

6.1.1.5 Recommended Buy Quantity);

6.1.1.6 Standard Unit Price; and

6.1.1.7 Date of First Article Delivery.

6.1.2. For complex, expensive or STTE including automatic test equipment include the following:

6.1.2.1 Description, Function and Characteristics of the STTE – Enter the description, function and characteristics of the STTE, describe the SE required to satisfy the functional requirements;

6.1.2.2 Type Activity – Enter the level/type of activity at which the STTE under review will be used: e.g., training site, test site, operational/base, etc.;

6.1.2.3 Maintenance Level for STTE – Enter the level/type at which the proposed STTE will be used: e.g., first line, second line, depot, contractor, or a combination thereof;

6.1.2.4 Calibration Interval – Enter the frequency in months between which the item or STTE must be calibrated;

6.1.2.5 Calibration Procedure – Enter the instruction title/number that specifies the calibration procedure;

6.1.2.6 Calibration Standard – Indicate the requirement for the item or STTE to be calibrated to a standard;

6.1.2.7 Environmental Conditions – Conditions under which the STTE items must be used;

6.1.2.8 Description, Function and Characteristics of STTE – For the description and function of the STTE, describe the support equipment required to satisfy the functional requirements;

6.1.2.9 Type of Technical Publications – Enter the type of publications, which are required to support the proposed item of STTE.

6.1.3. The RSERL may be divided into section as appropriate:

6.1.3.1 Common Hand Tools;

6.1.3.2 Special Purpose Tools;

6.1.3.3 Operation Support Equipment;

6.1.3.4 Maintenance Support Equipment;

6.1.3.5 Calibration Equipment;

6.1.3.6 Technical Publications;

6.1.3.7 Test, Measurement and Diagnostic Equipment (TMDE);

6.1.3.8 Maintenance Jigs and Fixtures;

6.1.3.9 Automatic Test Equipment (ATE) and its Test Program Set;

6.1.3.10 Test and Diagnostic Facility;

6.1.3.11 Computer Resources Support Requirement;

6.1.3.12 Training Support; and

6.1.3.13 Other.

6.8 DID LS-08 – Consumables and Bulk Items List (CBIL)

DATA ITEM DESCRIPTION	
1. TITLE **Consumable and Bulk Item List (CBIL)**	**2. DATA ITEM NUMBER** **DID LS-08**
3. DESCRIPTION This CBIL will be used by the Crown to identify items of consumable hardware, raw material and fabricated items required to support the LRF HHTI-LR at all lines of maintenance.	
4. RELATED DOCUMENTS **D-01-100-214/SF-000**, Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-108** **ISS SOW CDRL:**
6. PREPARATION INSTRUCTIONS **6.1. FORMAT** 6.1.1. The CBIL data must be provided electronically in the format required for input into the automated supply system as defined in D-01-100-214/SF-000 **6.2. CONTENT** 6.2.1. The CBIL must include all consumable hardware, raw material and fabricated items required. The CBIL must contain the data elements as specified in the RSPL (DID LS-06).	

6.9 DID LS-09 – Material Change Notice (MCN)

DATA ITEM DESCRIPTION	
1. TITLE **Material Change Notice (MCN)**	**2. DATA ITEM NUMBER** **DID LS-09**
3. DESCRIPTION The Material Change Notice (MCN) provides the information required whenever there is a change to provisioning documentation.	
4. RELATED DOCUMENTS **MIL-STD-1388-B,** Logistic Support Analyses **GEIA-STD-0007-B,** Logistic Product Data	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-109** **ISS SOW CDRL: SS-201**

6. PREPARATION INSTRUCTIONS

6.1. The MCN must contain the following information:

MANAGEMENT DATA	**ACTION REQUIRED (Check one only)**
Contractor	☐ Delete existing item without replacement
Equipment Name	☐ Add new item
Contract Number	☐ Replace existing item with new item
MCN Sequence Number	☐ Amend existing item
Submitted By	
Approved/Rejected (Crown use only)	Change Authority

DATA FIELD CHANGED	**EXISTING DATA**	**NEW DATA**
- Item Number (unique sequence no.)	_____	_____
- Indenture Code (DED 162 or GEIA 2520)	_____	_____
- Item Name (DED 182 or GEIA 2790)	_____	_____
- Reference (Manufacturer's Part) No. (DED 337 or GEIA 4400)	_____	_____
- NSCM/CAGE Code (DED 046 or GEIA 1520)	_____	_____
- OEM's Part Number (if assigned) (DED 337 or GEIA 4400)	_____	_____
- NATO Stock Number (if assigned) (DED 253 or GEIA 2280)	_____	_____
- Quantity Per Assembly (DED 316 or GEIA 4190)	_____	_____
- Standard Unit Price (DED 490 or GEIA 3990)	_____	_____

- Unit of Issue (UOI) (DED 488 or GEIA 5700)	_____	_____
- Unit of Measure (DED 491 or GEIA 5720)	_____	_____
- Repairability Indicator (REP)	_____	_____
- Government Supplied Material (GSM)	_____	_____
- Procurement Lead Time (PLT)	_____	_____
- Reference Designation (DED 335 or GEIA 4380)	_____	_____
- SMR Code (DED 389 or GEIA 4830)	_____	_____
- Shelf Life (DED 377 or GEIA 4730)	_____	_____
- Usage Rate	_____	_____
- Recommended Buy Quantity (DED 328 - or GEIA 4310)	_____	_____
- Logistics Control Number (LCN) (DED 199 or GEIA 2790)	_____	_____
- Used-On Code (DED 501 or GEIA 5790)	_____	_____

Note: In the table above, for each data element, the information within parenthesis is the Data Element Type number as per MIL-STD-1388- B and GEIA-STD-0007-B.

6.10 DID LS-10 – Provisioning Drawings & Associated Lists

DATA ITEM DESCRIPTION	
1. TITLE **Provisioning Drawings & Associated Lists**	**2. DATA ITEM NUMBER** **DID LS-10**
3. DESCRIPTION Provisioning Drawings & Associated List to define the Product Baseline for in-service configuration management and to provide a source of information to support configuration, maintenance and provisioning analysis activities.	
4. RELATED DOCUMENTS **D-01-100-214/SF-000,** Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-110** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. FORMAT

6.1.1. The Provisioning Drawings & Associated Lists, including Reference Documents, must be provided in accordance with the requirements set out and in the final form specified in Section 10.2.

6.1.2. All drawings must be bilingual (Canadian English and Canadian French).

6.1.3. Applicable Documents:

6.1.3.1 C-01-000-100/AG-004, Production and Acquisition of Engineering Data;

6.1.3.2 D-01-400-002/SF-000, Drawings, Engineering and Associated Lists;

6.1.3.3 ASME Y14.100 dated 2004-01-01, Engineering Drawings Practices;

6.1.3.4 ASME Y14.24 dated 2004, Types and Application of Engineering Drawings;

6.1.3.5 AMSE Y14.34 dated 2002, Associated Lists;

6.1.3.6 ISO 9660 dated 1988, Information Processing – Volume and File Structure of CDROM for Information Interchange;

6.1.3.7 CAN/CSA-Z234.1 dated 2000-12-01, Canadian Metric Practice Guide; and

6.1.3.8 TIFF Revision 6, Adobe Systems Incorporated dated June 3, 1992.

6.2. CONTENT

6.2.1. Drawing Level – The Contractor must deliver top-Level 2 drawings in order to support the PPB (DID LS-05) contents. The Contractor must also deliver exploded view drawings and illustrated parts list in accordance with MIL-PRF-38807C to support maintenance activities and the generation of an "Illustrated Repair Parts Manual and Scale".

6.2.2. DND/CAF Data Lists – Data Lists complete with Cover Sheets are required and must be prepared in accordance with the governing standard and supplied as part of the Provisioning Drawings. Data Lists must be prepared at the item level of assembly.

6.2.3. Reference Documents – Reference documents called up on the provisioning drawings (excepting those, which are government, society and readily available industrial specifications or standards) must be included as part of the provisioning drawings and associated lists.

6.2.4. Contractor Drawings – Existing Contractor drawings must be acceptable provided they meet the requirements of paragraph 3.2 of D-01-400-002/SF-000. In the event that contractor drawings de not meet the specified requirements the contractor must rework the drawings to ensure that the requirements are met.

6.2.5. DND/CAF Drawings – New provisioning Drawings and Associated Lists must be prepared in accordance with the governing Specification/Standard and the clauses set out herein.

6.2.5.1 Drawing Number Allocation – CAF drawing number must be allocated for use on DND/CAF engineering drawings and associated lists (data lists and cover sheets). The allotment must be requested in writing from DSCO (address as specified herein). Requests must specify the quantity of numbers required, the contract number and contract name. Drawing number requests must be sufficiently liberal to prelude the necessity of subsequent requests. Allocated CAF Drawing numbers must be used for this contract only.

6.2.5.2 Technical Data Action Notice (TDAN) – A TDAN must be prepared listing all Drawings and Associated Lists delivered as a result of the contract. A sample TDAN can be provided upon request. The TDAN number for this project will be assigned at Contract Award.

6.2.5.3 Forms – Drawing and Associated List electronic forms must be Government supplied material and obtained by written request to DSCO.

6.2.5.4 Drawing System – The mono-detail drawing system must be used.

6.2.5.5 Drawing Types – The Contractor must provide the necessary types of drawings that will satisfy the sophistication of the specified drawing level and must be subject to the approval of both the DND Technical Authority and DSCO.

6.2.5.6 Parts Lists – Parts lists must be prepared integral with the drawings. On multi-sheet drawings, the parts list must be placed on sheet one (1).

6.2.5.7 Control Drawings – Control drawings as defined in the governing standard must be prepared for commercial items approved for use in the design, which are not defined by Government or nationally recognized industrial specifications and standards.

6.2.5.8 Interface Control Drawings – Interface control drawings must be prepared describing the mechanical and electrical interfaces between sub-systems and components.

6.2.5.9 Family-Tree Drawing(s) – The contractor must prepare a Family-Tree Drawing(s) of the complete configuration of the Provisioning Drawing Package and it must be subject to the approval of both the DND Technical Authority and DSCO.

6.2.5.10 Title / Revision Blocks – Identifiers must be inserted in the Title / Revision Block of each Drawing and Associated List as shown in Table 3.

6.2.5.11 Units of Measure – Units of measure will be in metric, which must comply with Z234.1-00 Canadian Metric Practices Guide.

6.2.6. Integration – The prime Contractor must be fully responsible for the integration of Contractor and DND/CAF Drawings to form a complete Provisioning Drawing Package.

6.2.7. Data Rights – Unless otherwise specified in the Terms and Conditions of the contract, the Government of Canada must have rights in data as set out below.

6.2.7.1 Data Rights Legend – The Contractor must mark all Foreground and Background Provisioning Drawings and Associated lists delivered under this contract with a complete notation indicating the ownership of the rights in the Drawings and Associated lists and the rights granted to Canada in the following legend –

"This document is furnished pursuant to a contract bearing the Serial No XXXXXXX, dated _____ between (Name of Contractor and His Majesty the King in Right of Canada). This document contains Background Intellectual Property (and/or Foreground Intellectual Property - choose as appropriate) as defined in the Contract which may be used only in the manner specified in the Contract."

6.2.7.2 Unlimited Rights (Foreground Data) – The Government of Canada must have unlimited rights in all Provisioning Drawings, Associated Lists and Reference Documents produced or provided as a result of this contract. The Government of Canada must have the right to use, translate into Canada's other official language, duplicate, revise or disclose such technical data, in whole or in part, in any manner and for any purpose whatsoever, and to have or permit others to do so.

6.2.7.3 Limited Rights (Background Data) – The Government of Canada must have limited rights only and must hold in confidence all Existing Provisioning Drawings, Associated Lists and Reference Documents supplied under this contract that bears the Contractor's "Limited Proprietary Rights" restrictive legend. The Government of Canada must have the right to use, translate, duplicate or disclose such technical data, in whole or in part, by or for the Government of Canada, with the express limitation that such technical data must not, without the express written permission of the Contractor furnishing such technical data, be:

- Released or disclosed in whole or in part outside the Government of Canada;
- Used in whole or in part by the Government of Canada for manufacture; and
- Used by a party other than the Government of Canada,

6.2.7.4 Quality Assurance Provisions – Quality of the Provisioning Drawings and Associated Lists delivered on this contract is the responsibility of the contractor and subject to the quality requirements of the contract.

6.2.7.5 Acceptance – Acceptance of the Provisioning Drawings, Associated Lists and Reference Documents for technical content requirements will be the responsibility of the DND Technical Authority. Acceptance of

the Provisioning Drawings, Associated Lists, Reference Documents and Electronic Data Deliverables for format requirements will be DSCO.

6.2.7.6 Interim Deliverables for Acceptance – Purposes Two complete, full-size, print copy sets of the Provisioning Drawings, Associated Lists and Reference Data must be delivered in hard copy form for acceptance purposes (reduced size" print copies may be acceptable provided that they are legible). If the package cannot be accepted, for reasons of either technical content or format, it may be necessary to resubmit the print copy sets.

6.2.7.7 Level 2 – Prototype – Following acceptance of the Level 2 Provisioning Drawings, Associated Lists and Reference Documents, the Level 2 Provisioning Drawings, Associated Lists and Reference Documents must be forwarded to DSCO.

6.2.8. Final Deliverables – Upon acceptance, the Level 2 Provisioning Drawings, Associated Lists and Reference Data must be delivered in soft copy form as outlined herein.

6.2.8.1 Soft Copy Deliverables – must include the Provisioning Drawings, Associated Lists, Reference Data and the associated Metadata in electronic form.

6.2.8.2 Provisioning Drawings – Unless otherwise specified in the individual tasks, Provisioning Drawings must be delivered in the Native format, Vector data and in the distributed format, Raster data. Multi-sheet Drawings must be delivered one sheet per file.

6.2.8.3 Vector data – Must be delivered in their native file format in which the data was originally created.

6.2.8.4 Associated Lists – Must be delivered in the native Microsoft Word file and a PDF file (300 DPI).

6.2.8.5 Reference Documents – Reference Documents must be delivered as a PDF file (300 DPI) or in a format deemed acceptable by the DSCO.

6.2.8.6 TDAN – must be delivered in the native Microsoft Word file and a PDF file (300 DPI). Alternate file formats may be acceptable provided they have been discussed and approved in writing by DSCO. NOTE: One (1) hard copy of the TDAN complete with contractor's signatures must be provided with the final deliverables.

6.2.8.7 Metadata (Capture of Related Information) – Metadata (the data that describes data objects) must be provided for all Provisioning Drawings, Associated Lists and Reference Data deliverables. Metadata records must contain the information in the order shown in Table. Metadata must be delivered as a Microsoft Access database table. Sample Metadata record entries are shown at Figure 4.

6.2.8.8 Database Table – Each delivered image must have a corresponding database record. All records must be entered into a single Microsoft Access database table. Fields without corresponding information must remain blank. The Microsoft Access database file must be named "metadata.mdb".

6.2.8.9 File Formats for Raster Data – Raster data must be Tagged Image File Format in accordance with Adobe Systems Inc. specification "TIFF Revision 6", compressed to CCITT Group 4. Files must be UNTILED and be wholly raster (hybrid files must not be delivered).

6.2.8.10 Pel Density – Raster image pixel element (Pel) density must be 200 dpi.

6.2.8.11 Position of Pels – Position of Pels must be as follows:

- Portrait Data – line progression 270 degrees, Pel path 0 degrees.
- Landscape Data – line progression 270 degrees, Pel path 0 degrees.

6.2.8.12 Image Sizes – Image sizes as outlined in Table 4 are provided as a guide and sizes may vary slightly, but no more than plus or minus one inch (25 mm) in either width or length.

6.2.8.13 Cropping – Images must be cropped such that the provisioning drawing is free from extraneous information. For example, drawing formats having an inside and an outside border must be cropped closely to the outside of the outside border. Drawing formats having only one border, where zone or quadrant identification is outside of that border must be cropped such that the zone information is retained.

6.2.8.14 Skew – Correction In general, skew correction is not required. If the Contractor deems it necessary, correction must be done to 0 degrees and 90 degrees.

6.2.8.15 Despeckling – If any despeckling is required, the Contractor must ensure that data integrity is not compromised by this operation.

6.2.8.16 Image Foreground /Background – Images must be black on white background.

6.2.8.17 File Names/Batch Number Allocation – File names and a batch number must be requested in writing from DSCO. Quantity of file names required must be specified at the time of the request.

6.2.8.18 Media of Delivery – The media form for final delivery of electronic data must be CD-ROM, written in accordance with ISO 9660. (File compression software must not be used.) Each CD-ROM and its case must be labelled or marked in a method of the contractor's choosing. Each label or marking must display the Batch Number, Contract / Task number, TDAN number and the date the CD-ROM was created.

6.2.9. Packaging/Marking/Loss/Damage – Reproducible and non-reproducible data must be preserved, packaged, and marked in accordance with CAF Standard D-LM-008-022/SG-000. Exterior shipping containers must be marked with the contract and TDAN number and in the event of loss or damage while in shipment, the responsibility for replacement must be that of the primary Contractor and must be at the primary Contractor's expense.

6.2.9.1 Mail or Courier Delivery DSCO Deliverables must be forwarded to:

Department of National Defence
National Defence Headquarters,
MGen George R. Pearkes Building,
OTTAWA ON K1A 0K2
Attention – DSCO 5-3-5

6.2.9.2 Inquiries or Visits After contract award, DSCO may be contacted at (819) 994-9352, fax (819) 997-0302. The address is:

Department of National Defence
National Defence Headquarters,
MGen George R. Pearkes Building,
OTTAWA ON K1A 0K2
Attention: DSCO 5-3-5

TABLE 3 - INDEX FIELDS

Order	Field Name	Max Field Length	Field Definition / Description	Example Entry
1	**FILENAME** *(all one word)*	12 (8.3)	Name of electronic file - unique filename for uploading in database. File names will be issued by DTICS 3-2. Alpha characters **must** be uppercase.	**LZ00235.TIF**
2	**BATCHNO** *(all one word)*	8	Batch number - used for uploading files in database. Batch number will be assigned with filenames. Alpha characters **must** be uppercase.	**LZ001**
3	**DOCUMENTNO** *(all one word)*	25	This field **must** contain the document number.	**9775458**
4	**REVISION**	3	Letter or number indicating the revision level. If there is no rev, indicate with dash ("-")	**B**
5	**SHEETNO** *(all one word)*	3	Sheet number x of y. Enter the value of x.	**1**
6	**NOOFSHEETS** *(all one word)*	3	Sheet number x of y. Enter the value of y.	**1**
7	**FRAMENO** *(all one word)*	3	Frame number x of y. Enter the value of x. (This field is applicable only when capturing data from aperture cards.) When field is not applicable, leave blank.	
8	**NOOFFRAMES** *(all one word)*	3	Frame number x of y. Enter the value of y. (This field is applicable only when capturing data from aperture cards.) When field is not applicable, leave blank.	
9	**NSCM**	5	This field **must** contain the NATO Supply Code for Manufacturers (NSCM) of the Owner of the data. (Also known as FSCM, CAGE or NCAGE code.)	**35097**
10	**SIZE**	2	This field contains the document size. -For imperial sizes use A, B, C, D, E, F, G, H, J, K and LE (for legal) -For metric sizes use A4, A3, A2, A1, A0 and B1.	**A2**
11	**ADDITIONALIDENTIFIER** *(all one word)*	10	This open field **must** be used when two (2) or more documents have the same document number but are different documents. e.g. Document 12345,	**DCR 001**

			Document 12345 DCR 001, then "DCR 001" would be entered in this field. When field is not applicable, leave blank.	
12	**DATARIGHTS** *(all one word)*	1	The data rights as specified in the contract. "L" for "LIMITED" or "U" for "UNLIMITED"	**U**
13	**DOCUMENTTITLE** *(all one word)*	240	Title of document. (i.e. Drawing title)	**BRACKET ASSY**
14	**TDANNO** *(all one word)*	12	This field **must** be used to enter the TDAN number assigned for the project.	**034471008**
15	**ERN**	8	This field **must** be used for the Equipment Registration Number. Information **must** be provided if required, otherwise the field may be left blank.	
16	**EAC**	8	This field **must** be used for the Equipment Application Code. Information **must** be provided if required, otherwise the field may be left blank.	
17	**EQUIPMENT**	75	Name of the Equipment. Information **must** be provided if required, otherwise the field may be left blank.	

Table 4 DRAWING SIZES

METRIC DRAWING SIZES			
Drawing Size	W x L (max) (mm)	Pels Per Line	Number of Lines
A4	210 X 297	1656	2344
A3	297 X 420	2344	3312
A2	420 X 594	3312	4680
A1	594 X 841	4680	6624
A0	841 X 1189	6624	9368
B1	707 X 1000	5567	7875
NORTH AMERICAN / IMPERIAL DRAWING SIZES			
Drawing Size	**W x L (max) (inches)**	**Pels Per Line**	**Number of Lines**
A	8.5 x 11	1704	2200
B	11 x 17	2200	3400

C	17 x 22	3400	4400
D	22 x 34	4400	6800
E	34 x 44	6800	8800
F	28 x 40	5600	8000
G	11 x 90	2200	18000
H	28 x 143	5600	28600
J	34 x 176	6800	35200
K	40 x 143	8000	28600
Legal	8.5 x 14	1704	2800

Sample record entries (Metadata) in database table:

(The following table is shown on two lines to suit page width.)

FILENAME	BATCHNO	DOCUMENTNO	REVISION	SHEETNO	NOOFSHEETS	FRAMENO	NOOFFRAMES
LZ000235.TIF	LZ001	9775458	B	1	1	1	1
LZ000236.TIF	LZ001	9775457	-	1	1		

FIGURE 4: Sample Metadata Records

6.11 DID LS-11 – Operator Manual

DATA ITEM DESCRIPTION	
1. TITLE **Operator Manual**	**2. DATA ITEM NUMBER** **DID LS-11**
3. DESCRIPTION The Operator Manual contains all the essential information required to describe the safe and correct operative procedures and operator maintenance associated with the equipment.	
4. RELATED DOCUMENTS **C-01-100-100/AG-005,** Acceptance of Commercial and Foreign Government Publications as Adopted Publications **C-01-100-100/AG-006,** Specification - Writing, Format and Production of Technical Publications **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation **A-LM-505-010/JS-001,** Material Management Instruction - Official Languages Requirements for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-111** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Operator Manual must cover all aspects associated with the operation, care and maintenance, storage as well as personnel and equipment safety of the LRF HHTI-LR. As a minimum, the Operator Manual must address the following:

6.1.1.1 Brief technical description;

6.1.1.2 Data summary (e.g. specifications for the LRF HHTI-LR and LRUs, if applicable);

6.1.1.3 LRF HHTI-LR set-up and mounting procedures;

6.1.1.4 Description of controls;

6.1.1.5 Pre-use testing or inspection;

6.1.1.6 Operating procedures;

6.1.1.7 User maintenance and care, including user preventive maintenance, limited corrective maintenance and consumable replacements;

6.1.1.8 Basic diagnosis and/or fault finding;

6.1.1.9 Storage;

6.1.1.10 Safety, including personnel and equipment;

6.1.1.11 Hazardous material issues associated with the operation and care of the HHTI-LR, including the required procedures for handling and disposing of such materials;

6.1.1.12 Tools used for Operator maintenance; and

6.1.1.13 References to Technical Manual(s) (i.e. OEM COTS/Military off the Shelf (MOTS) pubs required to do in-depth corrective maintenance).

6.1.2. The Operator Manual must be organized in the following manner:

6.1.2.1 The initial front sheets must contain:

- Summation of all WARNING text contained in the document;
- Summation of all CAUTION text contained in the document;
- "Safety Data" table containing a summation of all safety related issues;
- Table of Contents;
- List of Figures;
- List of Tables; and
- How to use this manual (general description of the manual organization etc.).

6.1.2.2 Chapter 1 - General Information

- This chapter must include the following:
- Equipment name and model numbers;
- Purpose of equipment;
- Manufacturer;
- Nomenclature cross reference table (if required);
- List of abbreviations; and
- Picture of figure of the HHTI-LR.

6.1.2.3 Chapter 2 - Equipment Description

- General Characteristics: weight, dimensions, size, performance etc.; and
- Description of HHTI-LR components: insert a picture of the HHTI-LR with a table and an itemized listing of all components contents cross-referenced with the photo contents. Each itemized item must then be described at a high level.

6.1.2.4 Chapter 3 - Operating Instructions

- Operating instructions for the various contents that comprise the LRF HHTI-LR;
- Tables showing operating modes vis-à-vis applicable equipment settings and remarks; and
- Figures or photos to aid with the operation description (when necessary).

6.1.2.5 Chapter 4 - Equipment Set-Up and Interconnection Procedures

- Details of how equipment is to be assembled/mounted for use for all configurations; and
- Figures or photos to aid in procedure description (when necessary).

6.1.2.6 Chapter 5 - LRF HHT-LR Troubleshooting Procedures

6.1.2.7 Chapter 6 - LRF HHTI-LR Operator Maintenance and Cleaning

6.1.2.8 Index

6.2. **GENERAL FORMAT**

6.2.1. The Operator Manual must be bilingual English and French.

6.2.2. The English and French versions must be back to back and upside down to each other so that the one side begins with the English version and the other side begins with the French version.

6.2.3. The manual must have three hard covers:

6.2.3.1 The top (title) page of the manual must represent the cover (top) page of the English version of the manual; and

6.2.3.2 The second hard cover must be a different colour from the top cover and must act as the divider of the English and French versions. This hard cover page must follow immediately after the content (last page) of the English version; and

6.2.3.3 The third hard cover must be the top (title) page of the French version.

6.2.4. The English and French cover sheets must bear the following:

6.2.4.1 DND document configuration number (to be provided by Canada) on the top right hand corner;

6.2.4.2 Picture of the applicable equipment;

6.2.4.3 Document title;

6.2.4.4 Item name (e.g. Basic LRF HHTI-LR) and nomenclature;

6.2.4.5 NSN; and

6.2.4.6 Version Date.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted Operator Manual hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (270 mm x 216 mm) [choose smaller paper size if needed
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour

- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour

6.3.1.2 Bound with white or black spiral coil (PLASTIKOIL®)

6.4. **SOFT COPY FORMAT**

6.4.1. The Operator Manual must be provided as a PDF file with searchable text that matches the printed publication's format and layout. Links, bookmarks and thumbnails are to be included in the PDF file. All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.4.2. Viewing the Operator Manual PDF: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.12 DID LS-12 – Quick Reference Guide

DATA ITEM DESCRIPTION	
1. TITLE **Quick Reference Guide (QRG)**	**2. DATA ITEM NUMBER** **DID LS-12**
3. DESCRIPTION The Quick Reference Guide (QRG) must present an integrated overview of the LRF HHTI-LR as a brief, complete and compact guide in the form of a memory aide.	
4. RELATED DOCUMENTS **C-01-100-100/AG-005,** Acceptance of Commercial and Foreign Government Publications as Adopted Publications **C-01-100-100/AG-006,** Specification - Writing, Format and Production of Technical Publications **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation **A-LM-505-010/JS-001,** Material Management Instruction - Official Languages Requirements for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-112** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **QUICK REFERENCE GUIDE (QRG)**

6.1.1. The LRF HHTI-LR QRG (separate English and French versions) must present an integrated overview of the LRF HHTI-LR as a brief, complete, and compact guide in the form of a memory aide.

6.1.2. It is to be used after initial training and must describe and illustrate the set-up and operation of the equipment, including basic troubleshooting.

6.1.3. The QRG must be weatherproof as it is intended for field use.

6.2. **CONTENT**

6.2.1. The QRG must summarize, through text and illustrations, the mounting, set-up, operation and basic maintenance (troubleshooting) of the LRF HHTI-LR.

6.2.2. The QRG must make reference to the LRF HHTI-LR Operator Manual as the main reference for further details concerning the operation, maintenance, and systems management for the system.

6.2.3. The QRG must summarize EHS issues, including basic procedures for handling and disposing of such materials.

6.2.4. The QRG must not introduce new information and procedures not also described in the Operator Manual, as the Operator Manual is the master document on how to use the equipment.

6.2.5. The QRG must include a cautionary advisory as follows: **"This Quick Reference Guide (QRG) is intended solely for experienced users who have been trained on this equipment and have read and understood its Operator Manual (CFTO# to be supplied by DND). When in doubt, read the Operator Manual before operating this equipment."**

6.2.6. The QRG cautionary advisory must also have, immediately following this text, a brief description of hazards that may result from misuse of the equipment.

6.3. **GENERAL FORMAT**

6.3.1. The QRG must be made with a light grey background with a non-reflective finish. The QRG will be used under various field conditions, which must be taken into account when selecting materials.

6.3.2. The QRG must be relatively small in size, approximately (18 cm wide x 20 cm high x 1 cm deep) in terms of dimensions as it is meant to be carried on the soldier when in the field.

6.4. **HARD COPY FORMAT**

6.4.1. The accepted QRG hard copies must:

6.4.1.1 Be printed on paper with pages of 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour, and bound with white or black spiral coil (PLASTIKOIL®);

6.4.1.2 Contain no more than four (4) sheets;

6.4.1.3	Be produced and printed exclusively in black and white.
6.5.	**SOFT COPY FORMAT**
6.6.	The QRG must be provided as a PDF file with searchable text that matches the printed publication's format and layout. Links, bookmarks and thumbnails are to be included in the PDF file. All references made to a specific paragraph, figure, appendix must be appropriately linked.
6.7.	Viewing the QRG PDF: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.13 DID LS-13 – Maintenance Manual – 1st and 2nd Line

DATA ITEM DESCRIPTION	
1. TITLE **Maintenance Manual – 1st and 2nd Line**	**2. DATA ITEM NUMBER** **DID LS-13**
3. DESCRIPTION The Maintenance Manual - 1st and 2nd Line must describe all User, Level 1 and limited Level 2 maintenance tasks and procedures for all repairable equipment contained in the LRF HHTI-LR System (e.g. LRF HHTI-LR, Tripod, Cables and Battery Charger).	
4. RELATED DOCUMENTS **D-01-100-204/SF-000,** Preparation of Preventive Maintenance Instructions **D-01-100-205/SF-000,** Preparation of Corrective Maintenance Instructions **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-113** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Maintenance Manual –1st and 2nd Line must describe the following as a minimum: Incoming test routines; diagnosis of faults, spare parts removal procedures; re-assembly of equipment; desiccation and/or purging procedures; and outgoing tests.

6.1.2. The Maintenance Manual - 1st and 2nd Line must identify resources, facilities, spare parts (including quantities), consumables, tools and test equipment, workmanship level, test flow charts and any other technical or procedural details required to properly and successfully complete each task.

6.1.3. The Maintenance Manual - 1st and 2nd Line must contain a complete parts list down to the replaceable 1st Line spare parts level and their associated quantities, and with the required reference to the applicable drawings, diagrams, pictures or images.

6.1.4. The Maintenance Manual - 1st and 2nd Line must contain all necessary drawings, diagrams, pictures, images and information in sufficient details and clarity to properly guide the maintainer during the conduct of each maintenance task.

6.1.5. The Maintenance Manual - 1st and 2nd Line must cover all personnel and equipment safety issues associated with the maintenance of the equipment.

6.1.6. The Maintenance Manual - 1st and 2nd Line must cover all hazardous material issues associated with the maintenance of the equipment, including the required procedures for handling and disposing of such materials.

6.1.7. The Maintenance Manual - 1st and 2nd Line must identify all Intellectual Property information applicable to the equipment and supporting data.

6.1.8. "WARNING" headings must be capitalized, in bold, placed in the middle of the page with highlight bars above and below the label. Applicable warning text will be placed immediately below the heading and must be capitalized and bolded.

6.1.9. "CAUTION" headings must be capitalized, in bold, placed in the middle of the page with a solid bar on both sides of the label. Applicable caution text will be placed immediately below the heading and must be capitalized and bolded.

6.1.10. "NOTE" headings must be capitalized, bolded placed in the middle of the page. Applicable note text will be normal size, in bold and placed immediately below the heading.

6.1.11. Warning, caution and notes must be inserted immediately after the applicable text to which they refer.

6.1.12. The Maintenance Manual - 1st and 2nd Line must be organized in the following manner:

6.1.12.1 The initial front sheets must contain:

- "Safety Data" table containing a summation of all safety related issues;

6.1.12.2 Table of Contents;

6.1.12.3 List of Figures;

6.1.12.4 List of Tables;

6.1.12.5 Chapter 1 Introduction

- General (provide a high level description of the LRF HHTI-LR system)
- Warranty Information
- Equipment Characteristics, Capabilities and Features (including applicable Warnings and Cautions)
- Location and Description of Major Components (including equipment breakdown figures and diagrams)
- LRF HHTI-LR System Configuration (description including a system breakdown diagram)
- Equipment Data (tabular form if possible)
- Mechanical Functions
- Optical Functions
- Electrical Functions

6.1.12.6 Chapter 2 Level 1 Maintenance Instruction

- General
- Applicable Documents (list the applicable equipment Operator Manuals as well as equipment specific documents to be supplied by the Contractor. In addition, list the following DND documents:
  - C-66-010-001/VP-000, Optical Fire Control Instruments - Care, Preservation and Storage of Instruments;
  - C-66-010-002/VC-001, Refurbishing of Electro-Mechanical Equipment;
  - C-66-010-003/TP-001, Cleaning Mechanical Components of Instruments;
  - C-66-010-007/TP-001, Cleaning of Optical Elements; and
  - C-66-020-001/NC-000, Inspection Procedures for Electro-Mechanical Equipment.
- Apparatus and Tools (list in tabular form with the following column headings: Item No., National Stock No., Description, Part No., and Quantity)
- Repair Parts (brief description and reference to Chapter 2 which will contain all repair parts data)
- Site and Shelter Requirements
- Inspection and Repair Techniques
- Service Upon Receipt of Material
- Removal and Installation of Components (details removal and installation procedures for each 1st Line part (including applicable figures and diagrams). Each 1st Line task must have its own procedure. Procedures must be subdivided into two (2) headings, Disassembly and Assembly
- Tests and Adjustments (details any test and adjustment required for each piece of equipment to ensure serviceability e.g. desiccation
- Serviceability Check (describes procedures to be used to verify serviceability of repaired item in tabular form. Table must contain the following columns: Item No., Item to Check/Service, Procedure, Not Fully Mission Capable if, Corrective Action
- Troubleshooting (describes procedures to be used to isolate possible malfunctions of the equipment in tabular form. The table must contain the following columns: Item No., Problem, Probable Cause, Corrective Action
- Packing (special packing instructions) if required

6.1.12.7 Chapter 3 Repair Parts and Special Tools List

- General (identify figures and tables applicable to each piece of equipment to be repaired. Include the following:
  - Figures of each repairable equipment. The figures must include an itemized list of the main equipment replaceable components with corresponding numbered arrows pointing to the components on the figure; and

- Tables listing details of the components. (The tables must contain the following columns: Item No., National Stock No., Cage Code, Part Number, DMC, Description and Quantity).

6.1.12.8 Technical Publications must be accompanied by the following Certificates of Compliance (refer to C-01-100-100/AG-006, part 12, section 2).

6.1.12.9 Validation (DND 590) for submission to the TA;

6.1.12.10 TAC; and

6.1.12.11 Compliance (DND 591).

6.2. **GENERAL FORMAT**

6.2.1. The Maintenance Manual - 1st and 2nd Line must be bilingual English and French.

6.2.2. The English and French versions must be back to back and upside down to each other so that the one side begins with the English version and the other side begins with the French version.

6.2.3. The manual must have three hard covers:

6.2.4. The top (title) page of the manual must represent the cover (top) page of the English version of the manual; and

6.2.5. The second hard cover must be a different colour from the top cover and must act as the divider of the English and French versions. This hard cover page must follow immediately after the content (last page) of the English version; and

6.2.6. The third hard cover must be the top (title) page of the French version.

6.2.7. The English and French cover sheets must bear the following:

6.2.8. DND document configuration number (to be provided by Canada) on the top right hand corner;

6.2.9. Picture of the applicable equipment;

6.2.10. Document title;

6.2.11. Item name (e.g. Basic LRF HHTI-LR) and nomenclature;

6.2.12. NSN; and

6.2.13. Version Date.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted Maintenance Manual - 1st and 2nd Line hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm);
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour; and
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour.

6.3.1.2 Bound with white or black spiral PVC coil (such as PLASTIKOIL®)

6.4. **SOFT COPY FORMAT**

6.4.1. The Maintenance Manual - 1st and 2nd Line soft copy format must meet the following:

6.4.1.1 Be a PDF file that matches the printed publication's format and layout. Links, bookmarks, and thumbnails are to be included in the PDF file;

6.4.1.2 All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.4.1.3 Viewing the PDF: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.14 DID LS-14 – Maintenance Manual – 202 WD

DATA ITEM DESCRIPTION	
1. TITLE **Maintenance Manual – 202 WD**	**2. DATA ITEM NUMBER** **DID LS-14**
3. DESCRIPTION The Maintenance Manual – 202 WD must describe Level 2 and limited Level 3 maintenance tasks and procedures for the LRF HHTI-LR System (e.g. LRF HHTI-LR Device only).	
4. RELATED DOCUMENTS **D-01-100-204/SF-000,** Preparation of Preventive Maintenance Instructions **D-01-100-205/SF-000,** Preparation of Corrective Maintenance Instructions **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-114** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Maintenance Manual – 202 WD must describe the following as a minimum: Incoming test routines; diagnosis of faults, spare parts removal/replace procedures; re-assembly of equipment; desiccation and/or purging procedures; and outgoing tests.

6.1.2. The Maintenance Manual – 202 WD must include procedures for the calibration of Special Tools and Test Equipment.

6.1.3. The Maintenance Manual – 202 WD must identify resources, facilities, spare parts (including quantities), consumables, tools and test equipment, workmanship level, test flow charts and any other technical or procedural details required to properly and successfully complete each task.

6.1.4. The Maintenance Manual – 202 WD must contain a complete parts list down to the replaceable 1st, 2nd and limited 3rd Line spare parts level and their associated quantities, and with the required reference to the applicable drawings, diagrams, pictures or images.

6.1.5. The Maintenance Manual – 202 WD must contain all necessary drawings, diagrams, pictures, images and information in sufficient details and clarity to properly guide the maintainer during the conduct of each maintenance task.

6.1.6. The Maintenance Manual – 202 WD must cover all personnel and equipment safety issues associated with the maintenance of the equipment.

6.1.7. The Maintenance Manual – 202 WD must cover all hazardous material issues associated with the maintenance of the equipment, including the required procedures for handling and disposing of such materials.

6.1.8. The Maintenance Manual – 202 WD must identify all Intellectual Property information applicable to the equipment and supporting data.

6.1.9. "WARNING" headings must be capitalized, in bold, placed in the middle of the page with highlight bars above and below the label. Applicable warning text will be placed immediately below the heading and must be capitalized and bolded.

6.1.10. "CAUTION" headings must be capitalized, in bold, placed in the middle of the page with a solid bar on both sides of the label. Applicable caution text will be placed immediately below the heading and must be capitalized and bolded.

6.1.11. "NOTE" headings must be capitalized, bolded placed in the middle of the page. Applicable note text will be normal size, in bold and placed immediately below the heading.

6.1.12. Warning, caution and notes must be inserted immediately after the applicable text to which they refer.

6.1.13. The Maintenance Manual – 202 WD must be organized in the following manner:

6.1.13.1 The initial front sheets must contain:

- "Safety Data" table containing a summation of all safety related issues;

6.1.13.2 Table of Contents;

6.1.13.3 List of Figures;

6.1.13.4 List of Tables;

6.1.13.5 Chapter 1 - Introduction

- General (provide a high level description of the LRF HHTI-LR system)
- Warranty Information
- Equipment Characteristics, Capabilities and Features (including applicable Warnings and Cautions)
- Location and Description of Major Components (including equipment breakdown figures and diagrams)
- LRF HHTI-LR System Configuration (description including a system breakdown diagram)
- Equipment Data (tabular form if possible)
- Mechanical Functions
- Optical Functions
- Electrical Functions

6.1.13.6 Chapter 2 - Level 2 and limited Level 3 Maintenance Instruction

- General
- Applicable Documents (list the applicable equipment Operator Manuals as well as equipment specific documents to be supplied by the Contractor. In addition, list the following DND documents:
  - C-66-010-001/VP-000, Optical Fire Control Instruments - Care, Preservation and Storage of Instruments;
  - C-66-010-002/VC-001, Refurbishing of Electro-Mechanical Equipment;
  - C-66-010-003/MN-000, Cleaning Mechanical Components of Instruments;
  - C-66-010-007/MN-001, Cleaning of Optical Elements; and
  - C-66-020-001/NC-000, Inspection Procedures for Electro-Mechanical Equipment.
- Apparatus and Tools (list in tabular form with the following column headings: Item No.,
- National Stock No., Description, Part No., and Quantity
- Repair Parts (brief description and reference to Chapter 2 which will contain all repair parts data
- Site and Shelter Requirements
- Inspection and Repair Techniques
- Service Upon Receipt of Material
- Removal and Installation of Components (details removal and installation procedures for each 2nd and 3rd Lines parts (including applicable figures and diagrams). Each 2nd and 3rd Lines task must have its own procedure. Procedures must be subdivided into two (2) headings, Disassembly and Assembly
- Tests and Adjustments (details any test and adjustment required for each piece of equipment to ensure serviceability (e.g. desiccation)
- Serviceability Check (describes procedures to be used to verify serviceability of repaired item in tabular form. Table must contain the following columns: Item No., Item to Check/Service, Procedure, Not Fully Mission Capable if, Corrective Action)
- Troubleshooting (describes procedures to be used to isolate possible malfunctions of the equipment in tabular form. The table must contain the following columns: Item No., Problem, Probable Cause, Corrective Action)
- Packing (special packing instructions if required)

6.1.13.7 Chapter 3 Repair Parts and Special Tools List

- General (identify figures and tables applicable to each piece of equipment to be repaired. Include the following:

- Figures of each repairable equipment. The figures must include an itemized list of the main equipment replaceable components with corresponding numbered arrows pointing to the components on the figure; and
- Tables listing details of the components. (The tables must contain the following columns: Item No., National Stock No., Cage Code, Part Number, DMC, Description and Quantity).

6.1.13.8 Technical Publications must be accompanied by the following Certificates of Compliance (refer to C-01-100-100/AG-006, part 12, section 2):

6.1.13.9 Validation (DND 590) for submission to the TA;

6.1.13.10 TAC; and

6.1.13.11 Compliance (DND 591).

6.2. **GENERAL FORMAT**

6.2.1. The Maintenance Manual – 202 WD must be bilingual English and French.

6.2.2. The English and French versions must be back to back and upside down to each other so that the one side begins with the English version and the other side begins with the French version.

6.2.3. The manual must have three hard covers:

6.2.4. The top (title) page of the manual must represent the cover (top) page of the English version of the manual; and

6.2.5. The second hard cover must be a different colour from the top cover and must act as the divider of the English and French versions. This hard cover page must follow immediately after the content (last page) of the English version; and

6.2.6. The third hard cover must be the top (title) page of the French version.

6.2.7. The English and French cover sheets must bear the following:

6.2.8. DND document configuration number (to be provided by Canada) on the top right hand corner;

6.2.9. Picture of the applicable equipment;

6.2.10. Document title;

6.2.11. Item name (e.g. Basic LRF HHTI-LR) and nomenclature;

6.2.12. NSN; and

6.2.13. Version Date.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted Maintenance Manual – 202 WD hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm);
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour; and
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour.

6.3.1.2 Bound with white or black spiral PVC coil (such as PLASTIKOIL®)

6.4. **SOFT COPY FORMAT**

6.4.1. The Maintenance Manual – 202 WD soft copy format must meet the following:

6.4.1.1 Be a PDF file that matches the printed publication's format and layout. Links, bookmarks, and thumbnails are to be included in the PDF file;

6.4.1.2 All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.4.1.3 Viewing the PDF: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.15 DID LS-15 – Illustrated Parts Manual (IPM)

DATA ITEM DESCRIPTION	
1. TITLE **Illustrated Parts Manual**	**2. DATA ITEM NUMBER** **DID LS-15**
3. DESCRIPTION The Illustrated Parts Manual contains all the necessary information to positively identify all parts of the equipment.	
4. RELATED DOCUMENTS **D-01-100-207/SF-002,** Preparation of Interim Illustrated Parts Manuals for Land Equipment.	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-115** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Illustrated Parts Manual content must be IAW D-01-100-207/SF-002, and the drawings must be sequenced as per the PPB breakdown of assemblies, and a major assembly must be fully broken down before the next major assembly is shown.

6.1.2. The Illustrated Parts Manual must contain illustrations, exploded views, and drawings and associated lists necessary for the proper identification of all parts, assemblies, and special equipment to the lowest replaceable unit IAW the LRF HHTI-LR Maintenance Concept.

6.1.3. The exploded views contained in the Illustrated Parts Manual must amplify the relationship between all parts and assemblies to facilitate repair of the equipment and the replacement of parts and assemblies down to the lowest replaceable unit.

6.1.4. The Illustrated Parts Manual must include the National Defence Index of Documentation (NDID) number (provided to the Contractor by DND) that must be placed on the top right corner of each page of the manual.

6.2. **GENERAL FORMAT**

6.2.1. The format of the Illustrated Parts Manual must be IAW D-01-100-207/SF-002, with the exception that "NCAGE" must be used instead of "NSCM".

6.2.2. The Illustrated Parts Manual must not use photographs as illustrations.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted Illustrated Parts Manual hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm);
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour; and
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour.

6.3.1.2 Bound with white or black spiral PVC coil (such as PLASTIKOIL®)

6.4. **SOFT COPY FORMAT**

6.4.1. The Illustrated Parts Manual soft copy format must be PDF, with searchable text, with pages rotated as needed for normal viewing on screen.

6.4.2. All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.4.3. Viewing the PDF: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.16 DID LS-16 – Operator Training Package

DATA ITEM DESCRIPTION	
1. TITLE **Operator Training Package**	**2. DATA ITEM NUMBER** **DID LS-16**
3. DESCRIPTION The Operator Training Package will be used as the reference material during the Training Sessions, and to facilitate future lesson plan preparation on the operation, Operator maintenance and storage of the equipment.	
4. RELATED DOCUMENTS **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-116** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Operator Training Package course material must include, in the order judged most appropriate by the Contractor, the following subjects:

6.1.1.1 General Description/Equipment Overview;

6.1.1.2 Pre-use testing/inspection;

6.1.1.3 Preparation and set up for use;

6.1.1.4 Use and operation, including operation under emergency, adverse, or abnormal conditions, when applicable;

6.1.1.5 Preparation for travel and handling;

6.1.1.6 Storage, preservation, exercising, and reactivation procedures;

6.1.1.7 Safety and Hazardous material issues;

6.1.1.8 Operator Troubleshooting and testing;

6.1.1.9 Basic diagnosis and fault finding; and,

6.1.1.10 Operator Maintenance IAW the LRF HHTI-LR Maintenance Concept.

6.1.2. The Operator Training Package course material must be amplified by colour illustrations, line drawings, and good quality colour pictures.

6.1.3. The Operator Training Package course material subjects must be approached from the perspective of insert expected student skillset/experience.

6.1.4. The Operator Training Package course material must not present any information that cannot also be found in the Technical Publication Package documents; those documents remain the primary reference for the equipment.

6.1.5. The Operator Training Package must include a Student Handout that includes the course material described above.

6.1.6. The Operator Training Package must include an Instructor Lesson Plan that includes the course material described above, speaker's notes, and outlines the following:

6.1.6.1 Classroom's physical and functional requirements;

6.1.6.2 Field area's physical and functional requirements;

6.1.6.3 Training Session schedule, divided by course material subjects;

6.1.6.4 Instructor/Student ratio for the course material subjects;

6.1.6.5 Training materiel to be supplied by the Contractor; and

6.1.6.6 Training material to be supplied by DND.

6.2. **GENERAL FORMAT**

6.2.1. The Operator Training Package can be prepared in the Contractor's format while using C-01-100-100/AG-008 as guidance.

6.2.2. No Contractor or sub-contractor logo, name, trademark, or other wording or device that may be interpreted as advertising must appear in the publication.

6.2.3. The Operator Training Package Student Handout must have no more than three (3) slides per page of the course material, and have additional space and lines for note taking.

6.2.4. The Operator Training Package Instructor Lesson Plan must have one (1) slide per page of the course material, with the speaker's notes below it.

6.3. **HARD COPY FORMAT**

6.3.1. The Operator Training Package must be furnished in a three (3) ring binder(s) and printed on paper with these characteristics:

6.3.1.1 Weight of no less than 90 g/m2; and

6.3.1.2 Brightness of no less than 96 ISO brightness.

6.4. **SOFT COPY FORMAT**

6.4.1. The Operator Training Package soft copy format must be MS PowerPoint.

6.17 DID LS-17 – Maintenance Training Package – 202 WD

DATA ITEM DESCRIPTION	
1. TITLE **Maintenance Training Package – 202 WD**	**2. DATA ITEM NUMBER** **DID LS-17**
3. DESCRIPTION The Maintenance Training Package – 202 WD will be used as the reference material during the Training Sessions, and to facilitate future lesson plan preparation on the operation, 1st, 2nd and 3rd lines maintenance and storage, preparation for travel, preservation, and handling procedures of the equipment.	
4. RELATED DOCUMENTS **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-117** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Maintenance Training Package – 202 WD course material must include, in the order judged most appropriate by the Contractor, the following subjects:

6.1.1.1 General Description/Equipment Overview;

6.1.1.2 Pre-use testing/inspection;

6.1.1.3 Preparation and set up for use;

6.1.1.4 Use and operation;

6.1.1.5 Storage, preparation for travel, preservation, and handling procedures;

6.1.1.6 Safety and Hazardous material issues;

6.1.1.7 Troubleshooting and testing;

6.1.1.8 Advanced diagnosis and fault finding; and

6.1.1.9 Corrective and preventive maintenance procedures that are particular to the equipment versus general mechanical procedures, IAW the LRF HHTI-LR Maintenance Concept.

6.1.2. The Maintenance Training Package – 202 WD course material must include procedures related to the calibration of Special Tools and Test Equipment.

6.1.3. The Maintenance Training Package – 202 WD course material must be amplified by colour illustrations, line drawings, and good quality colour pictures.

6.1.4. The Maintenance Training Package 202 WD course material subjects must be approached from the perspective of insert expected student skillset/experience.

6.1.5. The Maintenance Training Package 202 WD course material must not present any information that cannot also be found in the Technical Publication Package documents; those documents remain the primary reference for the equipment.

6.1.6. The Maintenance Training Package 202 WD must include a Student Handout that includes the course material described above.

6.1.7. The Maintenance Training Package 202 WD must include an Instructor Lesson Plan that includes the course material described above, speaker's notes, and outlines the following:

6.1.7.1 Classroom's physical and functional requirements;

6.1.7.2 Training Session schedule divided by course material subjects;

6.1.7.3 Instructor/Student ratio for the course material subjects;

6.1.7.4 Training materiel to be supplied by the Contractor; and

6.1.7.5 Training material to be supplied by DND.

6.2. **GENERAL FORMAT**

6.2.1. The Maintenance Training Package can be prepared in the Contractor's format, using C-01-100-100/AG-008 as guidance.

6.2.2. No Contractor or sub-contractor logo, name, trademark, or other wording or device that may be interpreted as advertising must appear in the publication.

6.2.3. The Maintenance Training Package Student Handout must have no more than three (3) slides per page of the course material, and have additional space and lines for note taking.

6.2.4. The Maintenance Training Package Instructor Lesson Plan must have one (1) slide per page of the course material, with the speaker's notes below it.

6.3. **HARD COPY FORMAT**

6.3.1. The Maintenance Training Package must be furnished in a three (3) ring binder(s) and printed on paper with these characteristics:

6.3.1.1 Weight of no less than 90 g/m2; and

6.3.1.2 Brightness of no less than 96 ISO brightness;

6.4. **SOFT COPY FORMAT**

6.4.1. The Maintenance Training Package soft copy format must be MS PowerPoint.

6.18 DID LS-18 – Preservation, Storage and Reactivation Instructions

DATA ITEM DESCRIPTION	
1. TITLE **Preservation, Storage and Reactivation Instructions**	**2. DATA ITEM NUMBER** **DID LS-18**
3. DESCRIPTION The Preservation, Storage and Reactivation Instructions (PSRI) provides guidance for the storage and preservation, in-storage inspections, exercising, and reactivation of equipment.	
4. RELATED DOCUMENTS **D-01-100-211/SF-000** Preservation, Storage and Handling Instructions **C-01-100-100/AG-008** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-118** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The PSRI must contain the necessary data as outlined in D-01-100-211/SF-000, Preservation, Storage and Handling Instructions, **omitting** Annex A, Part 4 – Handling and Shipping.

6.2. **GENERAL FORMAT**

6.2.1. The PSRI must be prepared in the Contractor's format while being in full conformance with the above-stated issue of C-01-100-100/AG-008.

6.2.2. The PSRI must have the National Defence Index of Documentation (NDID) number, provided to the Contractor by DND, on the top right corner of all the pages.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted PSRI hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm)
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour

6.3.1.2 Bound with white or black spiral PVC coil (such as PLASTIKOIL®)

6.4. **SOFT COPY FORMAT**

6.4.1. The PSRI must be provided as a PDF file with searchable text that matches the printed publication's format and layout. Links, bookmarks and thumbnails are to be included in the PDF file. All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.4.2. Viewing the PDF version: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.19 DID LS-19 – Supplementary Provisioning Technical Documentation (SPTD)

DATA ITEM DESCRIPTION	
1. TITLE **Supplementary Provisioning Technical Documentation (SPTD)**	**2. DATA ITEM NUMBER** **DID LS-19**
3. DESCRIPTION The Supplementary Provisioning Technical Documentation (SPTD) fully identifies and describes part(s) that may be catalogued.	
4. RELATED DOCUMENTS **D-01-100-214/SF-000** Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-119** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Supplementary Provisioning Technical Documentation (SPTD) must be provided for each item appearing on the Provisioning Documentation, except for items that only appear on the Interim Spares List, IAW D-01-100-214/SF-000.

6.1.2. The SPTD must include the technical data required for DND to classify and fully describe the item within the NATO codification system, allowing for item identification and cataloguing purposes.

6.1.3. The SPTD must include:

6.1.3.1 Item Name;

6.1.3.2 Reference (Manufacturer's Part) No.; and

6.1.3.3 CAGE Code.

6.1.4. The SPTD must include, as applicable:

6.1.4.1 Configuration - drawing of item; assembly, wiring or schematic drawing; illustrated parts list;

6.1.4.2 Technical specification, including relevant standards;

- Physical characteristics, such as dimensions, tolerances, materials, mandatory processes, surface finish, protective coating;
- Electrical characteristics;
- Performance data, including the environmental and operating conditions under which the item must perform;
- Mounting requirements (if any);
- Special features which contribute to the uniqueness of the item; and
- Commercial catalogue data.

6.1.5. The SPTD must be sequenced in the same order as the provisioning list that it supplements.

6.1.6. The SPTD must include identification of any limitations on the use or publication of any data provided.

6.20 DID LS-20 – Packaging Data

DATA ITEM DESCRIPTION	
1. TITLE **Packaging Data**	**2. DATA ITEM NUMBER** **DID LS-20**
3. DESCRIPTION To identify packaging requirements for items to be shipped to or stored at a Crown facility such as spare parts, bulk items, special tools and test equipment, support equipment, and training equipment.	
4. RELATED DOCUMENTS **D-01-100-214/SF-000** Specification for Preparation of Provisioning Documentation for Canadian Forces Equipment	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-120** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **FORMAT**

6.1.1. The Packaging Data must be provided in electronic form suitable for entry into the DND DRMIS.

6.2. **CONTENT**

6.2.1. The Contractor must provide the following information:

6.2.1.1 Item Identification.

- Item Name;
- Reference (Manufacturer's Part) Number;
- NSCM/CAGE code;
- NSN (if assigned);

6.2.1.2 Packaging Data.

- Unit Weight Packed;
- Unit Size Packed (length, width, depth);
- Unit Weight Unpacked;
- Unit Size Unpacked (length, width, depth);
- Unit Pack Cube (cubic dimensions);
- Packaging Code, (A, B, C);
- Hazardous Code (regulated or non-regulated);
- Special Packaging Instruction; and
- Special Material Content Code.

6.2.1.3 Notes:

- To reduce the need for redundant data, similar items may be grouped with the same packaging data applying to the group; and
- The Canadian Forces Supply System requires size in meter and weight in kilograms.

6.21 DID LS-21 – Identification Plates – Design Template & Populated Designs

DATA ITEM DESCRIPTION	
1. TITLE **Equipment Identification Plate Data and Markings**	**2. DATA ITEM NUMBER** **DID LS-21**
3. DESCRIPTION This data is required to obtain design approval for the manufacturing of Equipment Identification Plates.	
4. RELATED DOCUMENTS **D-02-002-001/SG-001** Canadian Forces Standard - Identification Marking of Canadian Military Property **MIL-HDBK-454A** General Guidelines for Electronic Equipment. **ANSI/AIM BC4-1999** Linear (One-Dimensional) Bar Code Symbologies **MIL-STD 196** Joint Electronics Type Designation System **STANAG 2290 Ed 2** NATO Unique Identification of Items	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-121** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. Each deliverable item must have a Data Plate. The Data Plate must be manufactured and affixed to the unit in accordance with MIL-HDBK-454A and D-02-002-001/SG-001. The Data Plate must contain the following human readable information:

6.1.1.1 Nomenclature (as applicable under MIL-STD 196) or description;

6.1.1.2 Short part description;

6.1.1.3 Customer purchase order;

6.1.1.4 Prime contract number;

6.1.1.5 Serial number;

6.1.1.6 Manufacturing date;

6.1.1.7 Specification number;

6.1.1.8 Part number;

6.1.1.9 NCAGE;

6.1.1.10 NSN; and

6.1.1.11 Bar code.

6.1.2. The data plate must contain a machine readable data complying with the ANSI/AIM BC4 1999, International Symbology Specification - Code 128. The data plate must contain the following with no spaces between:

6.1.2.1 The four character Tactical Asset Configuration Information System (TACIS) serial number prefix in Upper Case only: XXXX (to be supplied by the TACIS Project Office); and

6.1.2.2 The Serial Number identical to the human readable item above.

6.1.3. In addition, equipment must be labelled with a Unique Identifier in accordance with NATO Standardization Agreement (STANAG) 2290 Edition 2.

6.2. **FORMAT**

6.2.1. The data must be provided in accordance with CF Specification D-02-002-001/SG-001 for the following:

6.2.1.1 Prime equipment, spares and electronic components;

6.2.1.2 Support equipment (excluding tools);

6.2.1.3 Training equipment; and

6.2.1.4 Automatic Test Equipment.

6.22 DID LS-22 – Identification Labels for Storage & Shipment and Packaging Codes

DATA ITEM DESCRIPTION	
1. TITLE **Identification Labels for Storage, Shipment and Packaging Codes**	**2. DATA ITEM NUMBER** **DID LS-22**
3. DESCRIPTION The Identification Labels for Storage & Shipment and Packaging Codes (CF271 forms) ensures that the labelling used to identify packages for items procured by DND and shipped to and stored at a Canadian facility comply with CAF specifications. As well, this will allow DND to obtain a complete record of packaging codes for catalogued items of the equipment.	
4. RELATED DOCUMENTS **D-LM-008-011/SF-001** Preparation and Use of Packaging Requirements Codes **D-LM-008-002/SF-001** Specification for Marking for Storage and Shipment **D-01-400-002/SF-000** Specification - Levels of Engineering Drawings **CF271** Form (MS Excel version provided by DND after contract award)	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-122** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT AND GENERAL FORMAT**

6.1.1. The Identification Labels for Storage & Shipment design, populated with the appropriate data, must be provided as Level 1 drawings (see D-01-400-002/SF-000) and include dimensions to show the measurements as defined by D-LM-008-002/SF-001 (example: text size, bar code dimensions).

6.1.2. A separate Packaging Code (CF271 Form) must be provided electronically for each item that:

6.1.2.1 Requires special packaging, packing, or preservation considerations to meet the required protection level (see 8.8.1 of the SOW), as per D-LM-008-011/SF-001 (see Table 1 below); and

6.1.2.2 Has a NATO Stock Number (NSN).

6.1.3. The CF271 forms' file name must correspond to the item listed within, either by its part number or NSN (example: CF271 9422-01-552-8836.xls).

6.2. **HARD COPY FORMAT**

6.2.1. The Identification Labels for Storage & Shipment designs must be printed on paper with these characteristics:

6.2.1.1 Standard US Ledger size (432 mm x 279 mm)

6.2.1.2 Weight of no less than 90 g/m2;

6.2.1.3 Brightness of no less than 96 ISO brightness;

6.3. **SOFT COPY FORMAT**

6.3.1. The Identification Labels for Storage & Shipment designs must be provided as PDF files.

6.3.2. The Identification Labels for Storage & Shipment designs PDFs containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.3.3. The Packaging Codes (CF271 forms) must be provided as MS Excel Spreadsheet files.

NATO STOCK NUMBER (NSN) - NUMÉRO DE NOMENCLATURE DE L'OTAN (NNO)

NSC - CSO	NCB - BNC	NIN - NIA	CARD NO CARTE NO.	U.I. U.D.
			0 4	E A

PACKAGING DATA
DONNÉES D'EMBALLAGE

APPROVAL STAMP
SCEAU D'APPROBATION

ESSENTIAL PRESERVATION AND PACKAGING DATA - DONNÉES ESSENTIELLES - PRÉSERVATION ET EMBALLAGE

SEQ. SUCC.	DM MD	CATEGORY CATÉGORIE	METHOD MÉTHODE	QTY UNIT PACK QTÉ UNITÉ EMBALLAGE	CLEAN NETTOYAGE	PRESV. MAT. MAT. PRÉS.	WRAP MAT. MAT. EMB.	CUSHION AND DUNNAGE BOURRAGE ET FARDAGE	CUSH. THICK. ÉPAISSEUR	UNIT CONT. CONT. UNIT	INTER. QTY QTÉ	INTER. CONT.	LEVEL OF PROT. NIVEAU	MAX WEIGHT CODE CODE POIDS MAX	MAX CUBE CODE CODE VOLUME MAX	UNIT CONTAINER DIMENSIONS DIMENSIONS DU CONTENANT PAR UNITÉ LENGTH LONGUEUR	WIDTH LARGEUR	DEPTH PROFONDEUR	CONT. LEVEL CONT.	UNIT PROC. NO. NO. PROCÉ.	SUPPL. C. D. SUPPL.
			10	1	1	00	YY	L_	A	D4	1	E6	B			8	6	4	B	0	1
18		41 42 43 44 45 46	47 48	49	50	51 52	53	54 55	56	57 58 59	60	61 62	63	64 65	66 67	68 69	70 71	72 73	74	75	76

SEQ. SUCC. SUPPLEMENTAL PACKAGING AND PRESERVATION DATA- DONNÉES SUPPLÉMENTAIRES - PRÉSERVATION ET EMBALLAGE

18	40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80
A	DVB power Adapter will be in a thin paper board box, then wrapped in bubble wrap, and shipped in a cardboard box.
B	
C	
D	

PACKAGING FOR TRANSPORTATION SUPPORT DONNÉES SPÉCIALES EMBALLAGE POUR TRANSPORT

SEQ. SUCC.	SHIPPING CONTAINER DIMENSIONS DU CONTENANT D'EXPÉDITION LENGTH - INCHES LONGUEUR - POUCES	WIDTH - INCHES LARGEUR - POUCES	DIMENSIONS DEPTH - INCHES PROFONDEUR POUCES	SHIPPING CONTAINER WEIGHT DU CONTENANT D'EXPÉDITION WHOLE LBS. LIVRES ENTIÈRES	100 TH 100 E	POIDS SHIPPING CONTAINER CUBE DU CONTENANT D'EXPÉDITION WHOLE CUBE FT. PIED CUBE ENTIER	100 TH 100 E	VOLUME SHIPPING CONTAINER QTY/CTE CONTENANT D'EXPÉDITION	CONT. LEVEL NIVEAU CONT.	TYPE OF CONT. GENRE DE CONT.
X	8	6	4	0	7	0	11	1	B	E6
18	35 36 37 38 39 40 41	42 43	44 45 46 47	48 49 50	51 52 53	54 55 56 57		58 59 60	61	62 63

DETAIL - DÉTAIL	BASIC - DE BASE	INTERMEDIATE INTERMÉDIATE	BULK - EN VRAC
METHOD/LEVEL MÉTHODE/NIVEAU			
CLEANING NETTOYAGE			
DRYING SÉCHAGE			
PRESERVATION PRÉSERVATION			
INITIAL WRAP EMBALLAGE INITIAL			
CUSH/DUNNAGE BOURRAGE/FARDAGE			
CONTAINER CONTENANT			
CUBE VOLUME			
WEIGHT POIDS	0.7 LBS.		
QUANTITY QUANTITÉ	1		

ITEM NAME NOM DE L'ARTICLE	ORIGINATOR - EXPÉDITEUR	DATE
DVB- Power Adapter	Medit Inc.	

SPECIAL INSTRUCTIONS INSTRUCTION SPÉCIALES

CF 271.XLS 4 CFQAR 2004

Table 1: Sample CF271 form

6.23 DID LS-23 – Stowage, Shipping, and Handling Instructions

DATA ITEM DESCRIPTION	
1. TITLE **Stowage, Shipping and Handling Instruction (SSHI)**	**2. DATA ITEM NUMBER** **DID LS-23**
3. DESCRIPTION The Stowage, Shipping, and Handling Instructions (SSHI) manual provides guidance for the safe stowage, shipping and handling of the equipment.	
4. RELATED DOCUMENTS **D-01-100-211/SF-000,** Preservation, Storage and Handling Instructions **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-123** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **FORMAT**

6.1.1. The SSHI must contain the necessary data as outlined in Annex A Part 4 – Handling and Shipping of D-01-100-211/SF-000 for:

6.1.1.1 All standard means of conveyance:

- Stowed on a generic flat trailer;
- Rail transport;
- Maritime transport; and
- Air Transport.

6.1.1.2 All standard means of handling:

- Cranes;
- Military Mobile Maintenance and Recovery Vehicles (TBD);
- Forklifts;

6.1.2. Data common to all means of conveyance and handling need not be repeated and can be grouped in a general section.

6.2. **GENERAL FORMAT**

6.2.1. The SSHI must be prepared in the Contractor's format while being in full conformance with the above-stated issue of C-01-100-100/AG-008.

6.2.2. The SSHI must have the National Defence Index of Documentation (NDID) number, provided to the Contractor by DND, on the top right corner of all the pages.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted SSHI hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm);
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour; and
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour.

6.3.1.2 Bound with white or black spiral PVC coil (such as PLASTIKOIL®)

6.4. **SOFT COPY FORMAT**

6.4.1. The SSHI must be provided as a PDF file with searchable text that matches the printed publication's format and layout. Links, bookmarks and thumbnails are to be included in the PDF file. All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.4.2. Viewing the PDF version: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.24 DID LS-24 – Serial Number Register

DATA ITEM DESCRIPTION	
1. TITLE **Serial Number Register**	**2. DATA ITEM NUMBER** **DID LS-24**
3. DESCRIPTION The Serial Number (SN) Register must contain information relating to the serialization of LRF HHTI-LR equipment and shipment dates.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-124** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. An updated copy of the complete serial number register must be submitted with each shipment.

6.1.2. The serial number register data must be listed in order of shipment dates with the most current shipment date data listed first, then the previous shipment etc.

6.1.3. The following column must be contained in the register (where applicable) as a minimum:

6.1.3.1 Item no;

6.1.3.2 Contract Number;

6.1.3.3 LRF HHTI-LR Serial No.;

6.1.3.4 Shipment Date;

6.1.3.5 Destination (as shown on shipping documents);

6.1.3.6 Contract Line Item Number (CLIN No);

6.1.3.7 Invoice No.; and

6.1.3.8 Item Warranty Expiry Date.

6.1.4. The Contractor may include any other equipment movement information as deemed warranted:

6.2. **GENERAL FORMAT**

6.2.2. The Serial Number Register must be prepared as an MS Excel spreadsheet, formatted IAW D-01-100-214/SF-000.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted Serial Number Register hard copies must be:

6.3.1.1 Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm);
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour; and
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour.

6.4. **SOFT COPY FORMAT**

6.4.1. The Serial Number Register must be provided as an MS Excel Spreadsheet file.

6.25 DID LS-25 – Special Tools & Test Equipment List

DATA ITEM DESCRIPTION	
1. TITLE **Special Tools & Test Equipment List**	**2. DATA ITEM NUMBER** **DID LS-25**
3. DESCRIPTION The Special Tools & Test Equipment (STTE) List provides a list of all Special Tools & Test Equipment that are not in the DND inventory, required to maintain and operate the equipment.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-125** **ISS SOW CDRL:**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The STTE List must include the following for each item listed: 6.1.1.1 Item Name; 6.1.1.2 Reference (Manufacturer's Part) Number; 6.1.1.3 NCAGE; 6.1.1.4 NSN (if available) or SPTD of item (if NSN is not available); 6.1.1.5 Maintenance Level; 6.1.1.6 Recommended Buy Quantity; 6.1.1.7 Standard Unit Price; 6.1.1.8 Date of First Article Delivery; 6.1.1.9 Picture(s) or Drawing(s) of item; and 6.1.1.10 Description and Function of STTE. 6.1.2. The STTE List may be divided into sub-sections such as: 6.1.2.1 Maintenance Support Equipment; 6.1.2.2 Calibration Equipment; 6.1.2.3 Test, Measurement and Diagnostic Equipment; and 6.1.2.4 Computer Resource Support Requirement. 6.2. **GENERAL FORMAT** 6.2.1. The STTE List must be prepared as an MS Excel spreadsheet. 6.2.2. The STTE must be bilingual English and French. 6.3. **SOFT COPY FORMAT** 6.3.1. The STTE List must be provided as an MS Excel Spreadsheet file.	

6.26 DID LS-26 – UID Marking Specifications

DATA ITEM DESCRIPTION	
1. TITLE **UID Marking Specifications**	**2. DATA ITEM NUMBER** **DID LS-26**
3. DESCRIPTION To describe the UID Mark design and specifications for each distinct item type that is subject to UID Marking under the contract.	
4. RELATED DOCUMENTS MIL-STD-130, UID Compliance Labels	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-126** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. Describe which type of marking methodology will be used (i.e. Direct or Indirect Part Making, Data Plate Modification, etc.).

6.1.2. Describe the Imprint Method / Type of Label / Nameplate (i.e., Chemical Etch, Dot Peen, Laser, Thermal Transfer, Ink Jet, Photo Etch, etc.).

6.1.3. Marking Specifications:

6.1.3.1 Identify applicable engineering drawings requiring UID marking;

6.1.3.2 Machine Readable Mark Generation Instructions;

- Define the UID construct method.
- Identify format code, ISO/IEC syntax, and Data Qualifiers contained.
- Identify the Enterprise Identifier (EID) (i.e. Cage, DUNS, or GS1).
- Identify the level of serialization (i.e., Part, Lot, Batch, Enterprise, etc.).
- If using Construct 1 – 18S, identify the sequence number generation process.
- Determine other data elements (if required) in the data matrix symbol (i.e. 30P and 30T).

6.1.3.3 Identify the Human Readable Mark Generation elements to be included on the label. For labels/nameplates, identify which type of material will be used for the creation of the Mark (i.e., Aluminum, Polyacrylic, Metal Foil, Polyester, Polyvinyl, Aluminum Foil, Stainless Steel, etc.);

6.1.3.4 Describe the overall layout of the Mark including:

- Size (Length, Width, Thickness, etc.);
- Shape (Circle, Square, Rectangle, Rounded Corners, etc.);
- Layout/Order (Location of Human and Machine Readable elements);
- Marking Location on Asset;
- Type of Lettering (Font, Font Size, Color, etc.); and
- Attachment Method (Adhesive, Screws, Rivets, Tags, Bag and Tag, Tags and Bands, etc.). For Tag, and Bag/Band and Tag items, provide evidence of why part could not be marked and Government concurrence.

6.27 DID LS-27 – Controlled Goods List

DATA ITEM DESCRIPTION	
1. TITLE **Controlled Goods List**	**2. DATA ITEM NUMBER** **DID LS-27**
3. DESCRIPTION The Controlled Goods List will identify if the end item, components or sub-components of the LRF HHTI-LR are specifically designed or modified for military purpose, and not spared as Controlled or Non-Controlled Goods to facilitate the production of Demilitarization Instructions. For items of US or Canadian origin, Demilitarization Code (DMC) will be provided in the form of a list.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-127** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **FORMAT**

6.1.1. The Controlled Goods list must be in a format of a MS Excel spreadsheet with 5 columns:

6.1.1.1 Item name;

6.1.1.2 Ref para of the Export Control List (ECL) for Canadian origin items;

6.1.1.3 Ref para or the United States Munition List (USML) for US origin Controlled goods;

6.1.1.4 Demilitarization Code (DMC); and

6.1.1.5 Remarks.

6.2. **CONTENT**

6.2.1. The Controlled Goods list spreadsheet must be filled according to the following instructions:

6.2.1.1 For Canadian origin items, Canada's ECL articles that apply in accordance with the *Defence Product Act* (DPA);

6.2.1.2 For US origin dual use, the Export Control Classification Number (ECCN) of the Commerce Control List that applies;

6.2.1.3 For US origin controlled goods also known as defence articles, the USML Category and paragraph that apply in accordance with the International Traffic in Arms Regulations (ITAR);or

6.2.1.4 For any other country than Canada or the USA, the category and article of the Wassenaar Control List that applies.

6.3. **ELECTRONIC FORMAT**

6.3.1. The Controlled Goods List must be submitted on a memory stick, which must be labelled as follows:

6.3.1.1 The project name: LRF HHTI-LR;

6.3.1.2 The contract number: W8476-xxxxxx

6.3.1.3 The Subject Matter: Controlled Goods List;

6.3.1.4 The DID number: DID LS-27;

6.3.1.5 The Revision number; and

6.3.1.6 The date of delivery.

6.28 DID LS-28 – Laser Safety Data Sheet (LSDS)

DATA ITEM DESCRIPTION	
1. TITLE **Laser Safety Data Sheet (LSDS)**	**2. DATA ITEM NUMBER** **DID LS-28**
3. DESCRIPTION The Laser Safety Data Sheet must provide all the necessary data required to operate the laser in a safe manner during training and field operation, and must provide all the information required to ensure to safe operation during training and field operations.	
4. RELATED DOCUMENTS **C-01-100-100/AG-008,** Writer's Guide for Technical Documentation	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-128** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The LSDS must contain the following data elements:

6.1.1.1 Title: Laser Range Finder Handheld thermal Imager Long Range (LRF HHTI-LR) (Insert Military Designation)

- LRF HHTI-LR NSN: (Insert NSN if laser is built into the LRF HHTI-LR. If external and removable, rename to Laser NSN and insert laser NSN);
- OEM Part Number: (Insert OEM P/N).
- NDHQ LCMM: (Leave Blank).
- Manufacturer: (Insert Manufacturer Name).
- System Parameters:
  - Type: (Insert laser type e.g. gallium arsenide (GaAs) laser diode);
  - Wavelength: (Insert laser wavelength);
  - Energy (Q): Insert laser energy at the various operating modes e.g. Aimer, Illuminator;
  - Pulse duration (t): (insert pulse duration for the various operating modes e.g. Aimer, Illuminator; and
  - Emergent beam diameter (a) at the exit aperture: (Insert beam diameter and applicable distances at the various operating) e.g. Aimer, Illuminator.

6.2. **GENERAL FORMAT**

6.2.1. The LSDS must be prepared in the Contractor's format while being in full conformance with the above-stated issue of C-01-100-100/AG-008.

6.2.2. The LSDS must have the National Defence Index of Documentation (NDID) number, provided to the Contractor by DND, on the top right corner of all the pages.

6.3. **HARD COPY FORMAT**

6.3.1. The accepted LSDS hard copies must be:

6.3.1.1. Printed on paper with these characteristics:

- Standard US Letter Size (216 mm x 270 mm);
- Covers: 320-370 g/m2 polyester film (such as Pico Film), matt surface and white colour; and
- Pages: 150-190 g/m2 polyester film (such as Pico Film), matt surface and white colour.

6.3.1.2. Bound with white or black spiral PVC coil (such as PLASTIKOIL®)

6.4. **SOFT COPY FORMAT**

6.4.1. The LSDS must be provided as a PDF file with searchable text that matches the printed publication's format and layout. Links, bookmarks and thumbnails are to be included in the PDF file. All references made to a specific paragraph, figure, appendix must be appropriately linked.

6.4.2.	Viewing the PDF version: pages, regardless of size, containing text and illustrations in landscape, must be rotated for electronic viewing and reading in landscape.

6.29 DID LS-29 – Equipment Environmental Assessment (EEA)

DATA ITEM DESCRIPTION	
1. TITLE **Equipment Environmental Assessment (EEA)**	**2. DATA ITEM NUMBER** **DID LS-29**
3. DESCRIPTION The EEA identifies and documents potential environmental impacts of the equipment over the entire life-cycle and the associated mitigation measures required to reduce or eliminate them.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: LS-129** **ISS SOW CDRL:**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. **Title Page**

6.1.1.1 Equipment Name and NSN (if available).

6.1.1.2 Assessment Contact: Name, title and company name of the author of the EEA.

6.1.2. **Executive Summary**

6.1.2.1 Provide a brief summary of potential environmental impacts and recommended mitigation measures for each life-cycle (test and evaluation following production, operation and maintenance, and demilitarization and disposal).

6.1.3. **Equipment Description**

6.1.3.1 Equipment description: Provide an overview of the equipment and identify each major sub-system as per the Equipment Breakdown Structure.

6.1.3.2 For each major sub-system, identify the following:

- Hazardous substances that are incorporated into the equipment. Provide additional information in tabular form in Table 1.
- Chemical products listed in Table 1.
- Ionizing radiation sources (radioisotopes and x-ray). e.g. Uranium, Radon, plutonium and tritium etc. in Table 2.
- Non-ionizing radiation sources (radiofrequency and lasers) in Table 2.

6.1.3.3 Provide Safety Data Sheets (SDS) that are less than three years old for all chemical products in accordance with WHMIS 2015 requirements in Annex A for all chemical products.

6.1.4. **Environmental Assessment**

6.1.4.1 For each lifecycle phase (test and evaluation following production, operation and maintenance, and demilitarization and disposal) discuss the following:

- Lifecycle activities – Describe anticipated activities (including operator and maintenance tasks that are detailed in Contractor provided Technical Documentation) and identify if any of these activities have the potential to: release a polluting substance to air, water or land (e.g. exhaust emissions, hazardous waste, spills, etc.); impact human health; noise or vibration; and/or alter landscape features. Note: The scope of the EEA excludes activities related to the use of munitions.
- Environmental impacts – Describe the potential environmental impacts identified above.
- Mitigation Measures – Describe mitigation measures to eliminate or reduce identified potential environmental impacts, including those that are part of the design, any warning devices, emission control equipment, spill response, safe handling and disposal procedures, training, PPE, labels on equipment, cautions and warnings in the Technical Documentation, monitoring or inspections, etc.

6.1.5. **Conclusions and Recommendations**

6.1.5.1 Summarize the main environmental impacts and recommended mitigation measures.

6.1.6. **References**

6.1.6.1 List references consulted in the completion of the tables (such as Canadian legislation, DND policies and procedures, technical documentation, etc.).

6.1.7. **Table 1 - Identification of Hazardous Substances and Chemical Products**

Table 1 lists the integrated hazardous substances and chemical products that must be identified, if they are incorporated in the equipment design. The hazardous chemical products must have safety data sheets (SDS) which conform to WHMIS 2015, and must be provided in Annex A.

Integrated Hazardous Substances	**NSN**	**Original OEM Part Number**	**Item Description**	**Location**	**Additional Details**
Arsenic, Cadmium, Chromium VI, Cobalt, Lead, Radioactive metals					
Halocarbons – refrigerant and air-conditioning systems					Type and weight (kg). Global Warming Potential of Hydrofluorocarbons used for refrigerant applications.
Mercury and its compounds					Form of mercury (e.g. liquid, vapour) and weight (mg)
Polychlorinated Biphenyl (PCBs)					Form (liquid or solid), quantity (kg), volume (L) and concentration in ppm
Hazardous Chemical Products (SDS Required)	**NSN**	**Original OEM Part Number**	**Ingredient**	**Chemical Abstract Service Number (CAS#)**	**Controls***
Halocarbons – Fire extinguishing systems					
Halocarbons – In aerosol Products					
Paints and related commodities (CARC and non-CARC)					
Fire-fighting Foams					
Cleaner and Degreasers					
POLs (Petroleum, Oils, Lubricants)					
Adhesives					
Anti-seize					
Corrosion Inhibitor					
Decontaminant					
Detector Kit Chemical substances					

*Controls: Identify if the substance is regulated under the Canadian Environmental Protection Act, targeted in Schedule 1, Toxic Substance List under CEPA and/or subject to the reporting requirements under the National Pollutant Release Inventory (NPRI).

6.1.8. **Table 2 – Identification of radiation sources and batteries**

Table 2 lists the ionizing and non-ionizing radiation sources and batteries.

Categories	NSN	Original OEM Part Number	Item Description	Location*	Additional Details
Non-ionizing radiation					Type of electromagnetic energy (laser, microwave, radio frequency) and strength
Ionizing radiation					Type and quantity or activity level
Batteries					Type

* Identify the system/sub-system where these items are located.

6.1.9. **Annex A – Safety Data Sheets SDS for all chemical products identified in the EEA**

6.2. **FORMAT**

6.2.1. The Contractor may provide confidential information in a separate document. Note: Proprietary information will be treated with confidentiality.

6.30 DID LS-30 – In-Service Support Management Plan (ISSMP) for the LRF HHTI-LR In-Service Support Contract

DATA ITEM DESCRIPTION	
1. TITLE In-Service Support Management Plan (ISSMP)	**2. DATA ITEM NUMBER** DID LS-30 / SM-01
3. DESCRIPTION The LRF HHTI-LR In-Service Support Management Plan is the top-level plan that describes the Contractor's strategy, plans, methodologies and processes for meeting the requirements of the ISS SOW.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** LS-130 **ISS SOW CDRL:** SM-201

6. PREPARATION INSTRUCTIONS

6.1. The data submission may be prepared in the Contractor's format.

6.2. The ISSMP is a stand-alone document that provides sufficient information to enable the reader to understand how various aspects of support must be managed without referring to other documents.

6.3. The ISSMP must define the management processes, administrative procedures and organizational structure that will be used to manage the Contractor's service support work.

6.4. The ISSMP must be a stand-alone document that provides sufficient detail to allow DND to assess the Contractor's understanding of the service support work requirement as well as the Contractor's ability to carry out and manage the service support work to an acceptable level.

6.5. As a minimum, the ISSMP must contain sufficient detail to address the following information requirements:

6.5.1. Summarize the scope of work to be undertaken under the ISS Contract, including the activities to be undertaken by the Contractor and any sub-contractors;

6.5.2. Identify the locations where the work will occur, and describe the corporate capabilities and experience related to work described in the SOW;

6.5.3. Describe any assumptions and constraints, and reference any policies, that will affect delivery of in-service support;

6.5.4. Describe the management arrangements and processes to be used to respond to requirements described in the In-Service Support Management Tasks section of the SOW.

6.5.5. Describe the management arrangements and processes to be used to respond to requirements described in the Secure Document Collaboration Site section of the SOW.

6.5.6. Describe the management arrangements and processes to be used to respond to requirements described in the Quality Management System section of the SOW.

6.5.7. Describe how the Contractor must ensure that the conduct of the work will meet environmental, health and safety requirements and concerns.

6.5.8. Describe the management arrangements and processes to be used to respond to requirements described in the Engineering Support Tasks section of the SOW.

6.5.9. Describe the management arrangements and processes to be used to respond to requirements described in the Repair and Overhaul section of the SOW. Identify other DND systems for which the contractor provides R&O, and include details related to existing processes established to support other DND systems, such as access to DRMIS.

6.5.10. Describe the management arrangements and processes to be used to respond to requirements described in the Supply Support Tasks section of the SOW.

6.5.11. Describe the management arrangements and processes to be used to respond to requirements described in the Training Support section of the SOW.

6.31 DID LS-31 – Site Survey and Gap Analysis Report

DATA ITEM DESCRIPTION	
1. TITLE Site Survey and Gap Analysis Report	**2. DATA ITEM NUMBER** **DID LS-31**
3. DESCRIPTION The Site Survey and Gap Analysis Report provides the result of a site survey and gap analysis conducted on an existing facility. The gap analysis identifies the current capabilities and attributes of the facility, and identifies the changes in these attributes in order to support a defined change in use of the facility.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** LS-131 **ISS SOW CDRL:** N/A

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The site survey report may be prepared in the Contractor's format.

6.1.2. The site survey report must include the following information:

6.1.2.1 Introduction;

- Scope;
- References; and
- Details of site survey, including date, participants and role of each participant.

6.1.2.2 Results of the Site Survey that identify the current state of the facility, including:

- Current capabilities of the 202 WD Clean Room;
- Current layout;
- Current attributes of the 202 WD Clean Room related to HVAC, power, and air quality; and
- Identification of existing installed and available Special Tools and Test Equipment (STTE) that can reasonably support the inspection, repair and testing of both the system for which it was originally installed and LRF HHTI-LR.

6.1.2.3 Generic facility requirements for the inspection, repair and testing of the LRF HHTI-LR, including:

- Clean room attributes related to HVAC, power, and special environmental controls;
- Identification, description, and technical data of STTE required to inspect, repair and test the LRF HHTI-LR; and
- Typical layouts of work areas to support the inspection, repair and testing of the LRF HHTI-LR.

6.1.2.4 Gap Analysis and recommendations, including:

- Summary of gaps to be addressed in order to conduct inspection, repair and testing of the LRF HHTI-LR in the 202 WD Clean Room;
- Proposed location and general layout of LRF HHTI-LR work area in 202 WD Clean Room;
- Modifications generally required to the 202 WD Clean Room in terms of HVAC, power and air quality;
- Identification of existing STTE to be used to support LRF HHTI-LR inspection, repair and test;
- Identification and specification of required Government Furnished Infrastructure (GFI) such as test benches or other furniture;
- Proposed detailed layout of LRF HHTI-LR work area, indicating STTE locations, Government Furnished Infrastructure GFI) such as test benches or other furniture, power and other service requirements for each item of STTE.

6.1.2.5 Any other information that Canada needs in order to modify the 202 WD Clean Room to support LRF HHTI-LR repair.

7 In-Service Support DIDs

With the exception of DID SM-01, the DIDs included in this section are specific to the in-service support contract, and are not called up in the acquisition contract CDRL.

DIDs that are common to both the acquisition contract and the in-service support contract can be found in Sections 3 to 6.

7.1 DID SM-01 – In-Service Support Management Plan

See DID LS-30 – In-Service Support Management Plan (ISSMP) for the LRF HHTI-LR In-Service Support Contract.

7.2 DID SM-02 – Status Report (SR)

DATA ITEM DESCRIPTION	
1. TITLE Status Report (SR)	**2. DATA ITEM NUMBER** DID SM-02
3. DESCRIPTION The LRF HHTI-LR SR is the Contractor's principle statement and explanation of the status of the support provided to DND under the Contract. The SR is requested via a DND 626 Task Authorization Form.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** N/A **ISS SOW CDRL:** SM-202
6. PREPARATION INSTRUCTIONS 6.1. The data submission may be prepared in the Contractor's format. 6.2. As a minimum, the report must contain sufficient detail to address the following information requirements: 6.2.1. The time period covered by the Report; 6.2.2. A summary of the work performed during the reporting period; 6.2.3. A summary of the work expected to be performed during the next reporting period; 6.2.4. Any significant forthcoming events likely to influence the provision of LRF HHTI-LR support; 6.2.5. A list of correspondence that requires a response from the Technical Authority or Contracting Authority which has not yet been received; 6.2.6. An Action Item Register that monitors issues, assigns responsibility, directs action and tracks status, history, and progress; and 6.2.7. A summary report identifying activities in each respective area of support including, but not limited to: 6.2.7.1. Engineering Support – problem reporting, engineering investigations, status of proposed and authorized Engineering Change Proposals, technical data management activities undertaken, including any significant outcomes or recommendations resulting from them; 6.2.7.2. Repair and Overhaul – repair and overhaul activities undertaken and any significant delays or issues encountered, the number and nature of defects or unexpected failure modes, and the results of consequent investigations, the number and types of items declared beyond physical or economic repair; 6.2.7.3. Supply Support – significant trends in demands for particular items, items for which the stock held by the Technical Authority or the Contractor is inadequate, identification of parts and materiel problems with procurement of needed items; 6.2.7.4. Training – status of training provided and any lessons learned.	

7.3 DID ES-01 – Technical Problem Report

DATA ITEM DESCRIPTION	
1. TITLE Technical Problem Report	**2. DATA ITEM NUMBER** DID ES-01
3. DESCRIPTION The purpose of this report is for the Contractor to bring to attention LRF HHTI-LR technical problems.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL: N/A** **ISS SOW CDRL:** ES-201

6. PREPARATION INSTRUCTIONS

6.1. The data submission may be prepared in the Contractor's format. As a minimum, the report must contain sufficient detail to address the following information requirements.

6.2. The report must include the following information:

6.2.1. Problem title, class and priority;

6.2.2. Date originated and originated by;

6.2.3. Assigned Contractor subject matter expert, and date assigned;

6.2.4. Description of the problem;

6.2.5. Impact of the problem on operator safety, system performance, maintenance procedures or other aspect of supportability;

6.2.6. Technical problem corrective action plan;

6.2.7. Identify the associated risks;

6.2.8. Corrective action approval office of primary interest, if known;

6.2.9. Status;

6.2.10. Forecast completion date;

6.2.11. Reasons for delays;

6.2.12. Technical problem workarounds, if needed;

6.2.13. Action taken by management to expedite; and

6.2.14. Links to related technical reports.

7.4 DID ES-02 – Technical Investigation and Engineering Support (TIES) Report

DATA ITEM DESCRIPTION	
1. TITLE Technical Investigation and Engineering Support (TIES) Report	**2. DATA ITEM NUMBER** DID ES-02
3. DESCRIPTION The TIES Report documents the findings related to a specific TIES task.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** N/A **ISS SOW CDRL:** ES-202
6. PREPARATION INSTRUCTIONS 6.1. The data submission may be prepared in the Contractor's format. 6.2. As a minimum, the submission must contain sufficient detail to address the following information requirements: 6.2.1. An executive summary of the objective, scope and findings of the TIES task. 6.2.2. Details of the objective, scope and requirements of the TIES task, as extracted from the related DND 626 Task Authorization. 6.2.3. Findings of the TIES task, with sufficient detail to substantiate the findings. 6.2.4. Recommendations, if applicable.	

7.5 DID RO-01 – Repair and Overhaul Findings Report

DATA ITEM DESCRIPTION	
1. TITLE Repair and Overhaul Findings Report	**2. DATA ITEM NUMBER** DID RO-01
3. DESCRIPTION The purpose of this report is to provide information that can be used to avoid future failures and to identify design or manufacturing weaknesses for LRF HHTI-LR.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** N/A **ISS SOW CDRL:** RO-201
6. PREPARATION INSTRUCTIONS 6.1. The data submission may be prepared in the Contractor's format. 6.2. The Report must provide information about R&O of equipment that can be assessed annually to determine the cause of equipment failures, or to inform the Technical Authority of instances of 'no fault found. 6.3. As a minimum, the report must contain sufficient detail to address the following information requirements: 6.3.1. DRMIS Work Order number; 6.3.2. The R&O event – equipment, date started and complete; 6.3.3. Reason for R&O – due for overhaul; failed, worn or damaged; 6.3.4. Corrective action taken; 6.3.5. Parts replaced; 6.3.6. No fault found instances; and 6.3.7. Recommendations. 6.4. In those instances when the Contractor can find nothing wrong with an item sent to it for repair, the 'No Fault Found' finding must be included so that the root cause can be investigated. For example, the cause could be incorrect operating procedures, an intermittent problem or faulty diagnosis. Also, the problem may only be evident when the equipment is wet, very cold, subjected to electromagnetic interference, etc.	

7.6 DID RO-02 – Annual R&O Performance Report

DATA ITEM DESCRIPTION	
1. TITLE Annual R&O Performance Report	**2. DATA ITEM NUMBER** DID RO-02
3. DESCRIPTION The Annual R&O Performance Report provides a summary data related to repairs and overhauls carried out by the Contractor over a fiscal year (April 1 to March 31).	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** N/A **ISS SOW CDRL:** RO-202
6. PREPARATION INSTRUCTIONS 6.1. The soft copy submission should be in Microsoft Word. 6.2. The Annual R&O Performance Report must contains, but is not limited to, a summary of the following activities: 6.2.1. By NSN, including: 6.2.1.1 Number of items repaired; 6.2.1.2 Average and Variance of Turn-around Time; 6.2.1.3 Average and Variance of Repair Cost; 6.2.1.4 Standard Repair Cost; and 6.2.1.5 Total Repair Cost 6.2.2. For selected R&O components, agreed price change recommendations.	

7.7 DID RO-03 – Annual Government Owned Inventory Report

DATA ITEM DESCRIPTION	
1. TITLE Annual Government Owned Inventory Report	**2. DATA ITEM NUMBER** DID RO-03
3. DESCRIPTION The Annual Government Owned Inventory Report reports on the value of inventory held by the Contractor at year end (March 31) that is owned by Canada.	
4. RELATED DOCUMENTS **A-LM-184-001/JS-001,** Special Instruction for Repair and Overhaul Contractors	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** N/A **ISS SOW CDRL:** RO-203
6. PREPARATION INSTRUCTIONS 6.1. Prepare this document in accordance with Section 15.4 and Annex L of A-LM-184-001/JS-001. 6.2. Solicit advice from NDQAR on what to include and what not to include in this report if the requirement is unclear.	

7.8 DID SS-01 – Obsolescence Management Issues Report (OMIR)

DATA ITEM DESCRIPTION	
1. TITLE Obsolescence Management Issues Report (OMIR)	**2. DATA ITEM NUMBER** DID SS-01
3. DESCRIPTION The Obsolescence Management Issues Report must outline the specifics of a pending issue for those parts that represent the most significant risk in terms of obsolescence.	
4. RELATED DOCUMENTS	**5. CONTRACT REFERENCE** **ACQ SOW CDRL:** N/A **ISS SOW CDRL:** RO-203
6. PREPARATION INSTRUCTIONS 6.1. The OMIR may be prepared in the Contractor's format. 6.2. The OMIR must outline the specifics of issues for those SRUs or component parts that are assessed to have a significant risk of scarcity or obsolescence within a two year look-ahead timeframe. For each part at significant risk of scarcity or obsolescence, the report must contain supporting data and recommendations as follows: 6.2.1. A description of the industry development leading to the scarcity or obsolescence and the impact this will have on the LFR HHTI-LR System supportability; 6.2.2. In most cases, a minimum of three (3) options, as outlined below, and their analysis should be considered. The analysis must include, as appropriate, for each option, the impacts on system performance, support equipment, maintenance procedures, technical data, spares and R&O (if applicable), and an estimated cost of each option. The three (3) options for the analysis are: 6.2.2.1 Option 1: A life-time buy or a buy for a specified duration of support; 6.2.2.2 Option 2: A new source for the item; and 6.2.2.3 Option 3: Redesign or replace the obsolete item with a similar or enhanced item. 6.2.3. The impact of the scarcity or obsolescence on enhancements to the system under study or to other ECPs that may be underway; 6.2.4. The time by which the decision is imperative; and 6.2.5. The Contractor's recommendation.	

APPENDIX 3 TO ANNEX B1

SYSTEM REQUIREMENTS SPECIFICATION (SRS)

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

TABLE OF CONTENTS

1 Scope

1.1 Identification

This System Requirements Specification (SRS) details the technical and performance requirements for a Laser Range Finder - Hand Held Thermal Imager - Long Range (LRF HHTI-LR) System for use by the Canadian Army and Royal Canadian Navy.

1.2 System Overview

The main component of the LRF HHTI-LR System is the Laser Range Finder Handheld Thermal Imager-Long Range (LRF HHTI-LR). The LRF HHTI-LR is a hand-held binocular device with a Laser Range Finder, cooled Thermal Channel and Secondary Channel for day and low light conditions. It is used by soldiers and sailors to enable the timely detection, recognition and identification of objects of interest under varying conditions of light and visibility. The LRF HHTI-LR System provides a capability for the accurate geolocation of targets, and the onwards transmission of target data to other systems. Imagery produced by the LRF HHTI-LR System can be saved and transferred for analysis. The LRF HHTI-LR System will be used by the Canadian Army in the combat arms leader, sniper, reconnaissance and other similar roles. It will be used by the Royal Canadian Navy to enhance general situational awareness, by boarding parties, and for security surveillance when in port.

The LRF HHTI-LR is supported by a number of other components that are required to provide the full functionality of the system. Other equipment components include batteries, a tripod, various accessories to interface The LRF HHTI-LR to other systems and external power sources, pouches for carriage in the field, and containers for storage and logistic transport.

The LRF HHTI-LR System also includes a bespoke software application that provides the functionality that supports the interface between the LRF HHTI-LR and the Integrated Soldier System.

1.3 Document Overview

This document specifies the requirements for each component that together comprise the LRF HHTI-LR System.

Section 1 describes the scope of the document, and provides a high-level system overview of the LRF HHTI-LR System.

Section 2 identifies that documents that are referenced in this SRS for the LRF HHTI-LR System.

Section 3 describes the conceptual configuration of the LRF HHTI-LR System based on a typical equipment breakdown structure of a system that could meet the requirements specified in this document. It should be noted that the requirements of the LRF HHTI-LR System could be satisfied by a system with a different equipment breakdown structure.

Section 4 specifies the requirements associated with the LRF HHTI-LR, the primary component of the system.

Section 5 specifies the requirements of all the other components of the LRF HHTI-LR System that together with The LRF HHTI-LR provide the full functionality of the system.

Section 6 specifies requirements that may be applicable to more than one component of the LRF HHTI-LR System.

Section 7 describes the structure of the SRS in terms of the two primary views in which the SRS is presented, the aim of each view, and the attributes associated with each view.

This document is unclassified, and does not contain Controlled Goods. There are no restrictions related to its use.

2 Referenced Documents

2.1 Canadian Government Documents

A. Health Canada Safety Code 6 (2015) - Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz

B. RSS-102 Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), Issue 5, 2015.

2.2 Canadian Armed Forces (CAF) / Department of National (DND) Defence Documents

C. D-02-002-001/SG-001 - Identification Marking of Canadian Military Property

D. D-80-001-055/SF-001 - Specification for Label, Clothing and Equipment

2.3 United States Department of Defense (DoD) Documents

E. MIL-PRF-62122E - Performance Specification: Cable Assembly, Inter-vehicle Power: Plug, Receptacle, and Adapter

F. MIL-STD-461G - Interface Standard: Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment

G. MIL-STD-810H - Test Method Standard: Environmental Engineering Considerations and Laboratory Tests

H. MIL-STD-1275E - Interface Standard: Characteristics of 28 Volt DC Input Power to Utilization Equipment in Military Vehicles

I. MIL-STD-1472H - Design Criteria Standard: Human Engineering

J. MIL-STD-1474E - Design Criteria Standard: Noise Limits

K. MIL-STD-2500C W/CHANGE 1 National Imagery Transmission Format (NITF) Version 2.1.

L. NWPAN-WP-01112013 - Nett Warrior Interconnect Architecture White Paper, Version 6

2.4 NATO Standardization Agreements and Standards

M. AECTP-230 (Edition 1) - Climatic Conditions

N. AECTP 300 (Edition D, Version 1) Climatic Environmental Tests

O. STANAG 4370 Environmental Testing

P. STANAG 4347 LAND (Edition 1) - Definition of Nominal Static Range Performance for Thermal Imaging Systems

Q. STANAG 4609 NATO Digital Motion Imagery Standard

R. Standard AAITP-08 NATO Unique Identification of Items

2.5 European Union Documents

S. The Low Voltage Directive (LVD) (2014/35/EU)

2.6 Industry Standards and Other References

T. ANSI Z136.1-2014 - American National Standard for Safe Use of Lasers

U. Bluetooth v4.1 Specification

V. IEEE 802.3-2018 - IEEE Standard for Ethernet

W. IEEE 802.11-2020 - IEEE Standard for Information Technology--Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks--Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications

X. MISB 0902 Motion Imagery Sensor Minimum Metadata Set

Y. WGS-84 - World Geodetic System - 1984

3 Conceptual Configuration

3.1 Aim

The conceptual configuration presents an assumed equipment breakdown structure for the LRF HHTI-LR System. It also includes the identification of LRF HHTI-LR System specific software applications that may be installed on external devices that are required to satisfy external interface requirements. It is understood that a compliant system may meet all the mandatory requirements of this specification with a different equipment breakdown structure.

3.2 Identification of Components

3.2.1 Hardware

The assumed Equipment Breakdown Structure for the LRF HHTI-LR System comprises the following components:

- Laser Range Finder - Hand-held Thermal Imager - Long Range (LRF HHTI-LR) (see Section 4)
- Field Kit Storage and Transport Case (see Section 5.1)
- Support Kit Storage and Transport Case (see Section 5.2)
- Field Pouch (see Section 5.4)
- Tripod Pouch (see Section 5.5)
- Accessories Pouch (see Section 5.6)
- External Battery Pack Pouch (see Section 5.7)
- Rechargeable Batteries (see Section 5.9)
- Low Temperature Batteries (see Section 5.10)
- Battery Charger (see Section 5.11)
- Tripod (see Section 5.12)
- Defense Advanced GPS Receiver (DAGR) Interface Cable (see Section 5.13)
- Integrated Soldier System (ISS) Interface Cable (see Section 5.14)
- LRF-LRF HHTI-LR / ISS Battle Management System Interface ATAK Plugins (LIBI AP) (see Section 5.15)
- Ruggedized Tactical Laptop (RTL) Interface Cable (see Section 5.16)
- Ruggedized Flash Drive (see Section 5.17)
- DC Power Cable Assembly (See Section 5.18)
- AC Power Cable Assembly (See Section 5.19)
- External Battery Pack (EBP) (Section 5.20)
- Lens Cleaning Kit (See Section 5.21)
- Operator Manual (See Section 5.22)
- Quick Reference Guide (See Section 5.23)

3.2.2 Software

The LRF HHTI-LR is considered to be a "black box" component of the LRF HHTI-LR System. The requirements related to LRF HHTI-LR software are specified as part of the general performance requirements. (See Section 4)

The LRF HHTI-LR System includes the following bespoke (developmental) software that is required to implement the functionality for the interface between the LRF HHTI-LR and the ISS, and will be installed on the ISS End User Device (EUD) and on the ISS Commander's Tablet:

- LRF-LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP) (see Section 5.15)

This specification is written with the assumption that the LIBI AP functionality will be implemented through the development of one or more ATAK Plugins. An alternative and acceptable solution is to implement LIBI functionality within the LRF HHTI-LR embedded software.

3.3 Identification of Interfaces

The LRF HHTI-LR System requires the following interfaces to achieve full system functionality:

- Defense Advanced GPS Receiver Interface (see Section 4.4.2)
- Integrated Soldier System Interface (see Section 4.4.3)
- Ruggedized Tactical Laptop Interface (see Section 4.4.4)
- Ruggedized Flash Drive Interface (see Section 4.4.5)
- Generic Interfaces - Bluetooth Connectivity (see Section 4.4.6)
- Generic Interfaces - Wireless Connectivity (see Section 4.4.7)
- External DC Power Source Interface (see Section 4.4.8)
- AC Power Source Interface (see Section 4.4.9)
- Tripod Interface (see Section 4.4.10)

4 LRF HHTI-LR Requirements

4.1 Required States and Modes

4.1.1 Operational Mode

The operational mode is the normal mode of operation of the LRF HHTI-LR. The operational mode is entered once all start-up routines are complete.

The LRF HHTI-LR must have an Operational Mode, in which full functionality is available in response to user input.

The LRF HHTI-LR must enter the Operational Mode within six minutes of turning it on at a temperature of 20 degrees Celsius, starting with the LRF HHTI-LR at ambient temperature.

4.1.2 Standby Mode

The Standby Mode allows the LRF HHTI-LR to conserve power when not being actively used by the operator.

The LRF HHTI-LR must have a Standby Mode.

The LRF HHTI-LR must transition from the Operational Mode to the Standby Mode in response to user input.

The LRF HHTI-LR must transition from the Standby Mode to the Operational Mode in response to user input.

The LRF HHTI-LR must transition to a fully functional state in the Operational Mode from the Standby Mode within 30 seconds of the user input.

4.1.3 Emergency Mode

The Emergency Mode allows the operator to transition the LRF HHTI-LR from the Field Carriage Mode, as described in Section 6.1.2, to The Emergency Mode where it can be used as quickly as possible. In the Emergency Mode, start-up routines may be skipped, and full performance may not be available to the user.

The LRF HHTI-LR must have an Emergency Mode.

When in the Emergency Mode, the LRF HHTI-LR must provide the user with display functionality using the Secondary Channel within thirty-seconds of initiating start-up at a nominal temperature of 20 degrees Celsius.

4.2 System Maturity Requirements

4.2.1 Application

System maturity requirements are applicable to the LRF HHTI-LR, with the exception of those parts of the LRF HHTI-LR that are replaceable as a first level maintenance task and that do not require the seal of the LRF HHTI-LR to be broken, such as eye-cups, lens covers, shoulder strap and hand straps.

4.2.2 Intent

It is Canada's intent to procure a Military Off-the-Shelf LRF HHTI-LR that is proven and in-service with another military force. Canada will not require any changes to the hardware components that comprise the LRF HHTI-LR. However, due to language and interface requirements, a Canada-specific version of some LRF HHTI-LR software modules may be required.

4.2.3 System Maturity

System maturity is measured in terms of Technology Readiness Level (TRL). TRLs are defined by Innovation, Science and Economic Development Canada (ISED).

On or before the closing date and time identified in the formal RFP solicitation on the CanadaBuys website, the LRF HHTI-LR must have reached Technological Readiness Level (TRL) 8: Actual technology completed and qualified through tests and demonstrations, as defined by ISED.

4.3 Capability Requirements

4.3.1 Geolocation of User and Targets

4.3.1.1 Geolocation of User

The LRF HHTI-LR must have an Internal GPS receiver.

The Internal GPS must have a localization accuracy (CEP 50) of 5 metres or less under open skies.

When not interfaced to an external GPS receiver, the LRF HHTI-LR must determine the geolocation of the user from geolocation data sourced from the internal GPS receiver.

When interfaced to an external GPS receiver, The LRF HHTI-LR must determine the geolocation of the user from geolocation data sourced from the external GPS receiver.

The LRF HHTI-LR geolocation data of the user must include grid coordinates and elevation above sea level.

4.3.1.2 Geolocation of Targets

The LRF HHTI-LR must measure the azimuth of the target determined by the axis defined by the reticle with a one sigma accuracy of twenty five NATO mils or better.

The LRF HHTI-LR must measure the angle of sight between horizontal and the target determined by the axis defined by the reticle with a one sigma accuracy of ten NATO mils or better.

4.3.1.3 Laser Range Finder

The LRF HHTI-LR must have a Laser Range Finder (LRF).

The LRF HHTI-LR LRF must be rated as a Class 1 Laser at the output aperture, determined in accordance with ANSI Z136.1 - 2014, American National Standard for Safe Use of Lasers.

The LRF HHTI-LR must, using the LRF, measure the range to a target in response to user input.

The LRF HHTI-LR must, using the Thermal Channel and LRF, measure ranges to a static 2.3 metres by 2.3 metres target with an albedo of R=0.2 positioned perpendicular to the line of sight with a one sigma accuracy of 1.5 metres for ranges between 50 metres and up to 6,000 metres under conditions with an atmospheric extinction rate of 0.11/km.

The LRF HHTI-LR must, using the Secondary Channel and LRF, measure ranges to a static 2.3 metres by 2.3 metres target with an albedo of R=0.2 positioned perpendicular to the line of sight with a one sigma accuracy of 1.5 metres for ranges between 50 metres and up to 6,000 metres under conditions with an atmospheric extinction rate of 0.11/km.

The LRF HHTI-LR LRF should have a range gating function to prevent the display of an anomalous range resulting from an intervening crest or other feature between the user and target.

The LRF HHTI-LR geolocation data of the target must include grid coordinates and elevation.

The LRF HHTI-LR LRF must have a rate of fire of at least six laser range measurements per minute.

When the LRF HHTI-LR is fired, the LRF HHTI-LR must create a Lased Target file containing target geolocation data.

The Lased Target file must be compatible with the Cursor on Target (CoT) schema.

When the LRF HHTI-LR is fired, the LRF HHTI-LR must create a still image of the display in accordance with Section 4.3.9 Saving of Images.

The LRF HHTI-LR must store at least the last five target files obtained by the LRF in onboard memory for recall by the user and for exporting to other devices.

4.3.2 Holistic System Performance - Detection, Recognition and Identification (DRI)

The terms Detection, Recognition, and Identification are used as defined in NATO AAP-6 NATO Glossary of Terms and Definitions (English and French):

Detection: The discovery by any means of the presence of a person, object or phenomenon of potential military significance.

Recognition: The determination of the nature or a detected person, object or phenomenon, and possibly its class or type. This may include the determination of an individual within a particular class or type.

Identification: The process of attaining an accurate characterization of a detected entity by any act or means so that high confidence real-time decisions, including weapons engagement, can be made.

4.3.2.1 DRI in Operational Environments at Night

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of detection under operational conditions at night.

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of recognition under operational conditions at night. < rated >

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of identification under operational conditions at night. < rated >

4.3.2.2 DRI in Operational Environments at Dusk / Dawn

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of detection under operational conditions during periods of dusk and dawn.

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of recognition under operational conditions during periods of dusk and dawn. < rated >

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of identification under operational conditions during periods of dusk and dawn. < rated >

4.3.2.3 DRI in Operational Environments during Day-time

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of detection under operational conditions between sunrise and sunset.

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of recognition under operational conditions between sunrise and sunset. < rated >

Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of identification under operational conditions between sunrise and sunset. < rated >

4.3.3 Thermal Channel

4.3.3.1 General

The LRF HHTI-LR must include a Thermal Channel.

The LRF HHTI-LR Thermal Channel must operate in the 3 micrometre to 5 micrometre Medium Wave Infrared spectral band.

4.3.3.2 Detection, Recognition and Identification (DRI)

4.3.3.2.1 Static Range Performance - Vehicle Sized Targets - STANAG 4347 - Quality Engineering Test Establishment (QETE) Testing

The Thermal Channel of the LRF HHTI-LR must have a static detection range for vehicle sized targets of at least 10.0 kilometres, as derived from the Minimum Resolvable Temperature Difference (MRTD) measured in accordance with STANAG 4347 at QETE. < rated >

The Thermal Channel of the LRF HHTI-LR must have a static recognition range for vehicle sized targets of at least 3.5 kilometres, as derived from the MRTD measured in accordance with STANAG 4347 at QETE. < rated >

The Thermal Channel of the LRF HHTI-LR must have a static identification range for vehicle sized targets of at least 1.8 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >

4.3.3.2.2 Static Range Performance - Person Sized Targets -STANAG 4347 - QETE Testing

The Thermal Channel of the LRF HHTI-LR must have a static detection range for person sized targets of at least 5.5 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >

The Thermal Channel of the LRF HHTI-LR must have a static recognition range for person sized targets of at least 2.0 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >

The Thermal Channel of the LRF HHTI-LR must have a static identification range for person sized targets of at least 1.0 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >

4.3.3.3 Detection of Bullet Swirls

As a bullet passes through the atmosphere, it produces a temporary curved cylinder of heated air that follows the trajectory of the bullet. The differences in air temperature are detected and displayed the standard way that differences in temperature are detected and displayed using the LRF HHTI-LR Thermal Channel. While the heated air disipates quickly, the resultant "bullet swirl" on the display can be used by a spotter to direct the fire of a sniper.

The LRF HHTI-LR Thermal Channel, when offset no more than one metre from the axis of the barrel of the sniper rifle, must detect the bullet swirl of a non-tracer 7.62 x 51mm NATO round as it traverses through the range of 300 metres to 800 metres, such that the thermal signature of the bullet swirl on the display is visible to the user.

4.3.3.4 Focus

The LRF HHTI-LR Thermal Channel must adjust the focus within a range from 50 metres to infinity in response to input from the user.

4.3.3.5 Magnification and Field of View

The LRF HHTI-LR Thermal Channel must have adjustable magnification and Field of View (FOV) that is integral to the optical path.

The LRF HHTI-LR Thermal Channel magnification and field of view settings must be adjustable to balance the achievement of detection, recognition and identification requirements with providing a field of view that provides the user with maximum situational awareness.

The LRF HHTI-LR Thermal Channel FOV must be adjustable to display an FOV equal to or greater than fourteen degrees in the horizontal direction and ten degrees in the vertical direction.

4.3.3.6 Image Processing and Enhancement

4.3.3.6.1 Refresh Rate

The LRF HHTI-LR Thermal Channel must have a frame refresh rate of 25 hertz or greater.

4.3.3.6.2 Image Polarity

The LRF HHTI-LR must display the thermal image using white-hot / black-cold image polarity.

The LRF HHTI-LR must display the thermal image using black-hot / white-cold image polarity.

The LRF HHTI-LR must toggle between white-hot / black cold image polarity and black-hot / white-cold image polarity and vice-versa in response to user input.

4.3.3.6.3 Contrast and Gain Settings

The LRF HHTI-LR must have automatic gain control (AGC) mode.

In AGC mode, the LRF HHTI-LR must adjust the contrast and brightness in response to user input on a sliding scale emphasizing the background or emphasizing small targets.

4.3.3.6.4 Thermal Pulses in Field of View

The LRF HHTI-LR must regain full display functionality within five-seconds of exposure to sudden thermal pulses such as muzzle flashes and explosions.

4.3.4 Secondary Channel

There are three main performance goals of the Secondary Channel:

- to provide the user with increased situational awareness by presenting a field of view where the contents are better intuitively understood than presented using just a Thermal Channel
- to enhance the performance of the LRF HHTI-LR in terms of DRI over and above the capability provided by the Thermal Channel alone
- to allow the user to aim the LRF HHTI-LR before using the Laser Range Finder during daytime, low light or other conditions where the Secondary Channel provides a superior situational awareness compared to the Thermal Channel.

Requirements related to the secondary channel may be satisfied by a single channel or a combination of channels that exclude the thermal channel.

4.3.4.1 General

The LRF HHTI-LR must have a Secondary Channel.

The operating spectrum of the Secondary Channel must include the visible spectrum.

4.3.4.2 Detection, Recognition and Identification

4.3.4.2.1 Static Range Performance - Vehicle Sized Targets - QETE Testing

The Secondary Channel of the LRF HHTI-LR must have a static detection range for vehicle sized targets of at least 7.0 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >

The Secondary Channel of the LRF HHTI-LR must have a static recognition range for vehicle sized targets of at least 3.5 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >

The Secondary Channel of the LRF HHTI-LR must have a static identification range for vehicle sized targets of at least 1.8 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >

4.3.4.2.2 Static Range Performance - Person Sized Targets - QETE Testing

The Secondary Channel of the LRF HHTI-LR must have a static detection range for person sized targets of at least 3.8 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >

The Secondary Channel of the LRF HHTI-LR must have a static recognition range for person sized targets of at least 2.0 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >

The Secondary Channel of the LRF HHTI-LR must have a static identification range for person sized targets of at least 1.0 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >

4.3.5 Laser Pointer

The Laser Pointer is used to indicate targets to soldiers and sailors equipped with night vision devices that use image intensification technologies under low light conditions. There is no intent to use the Laser Pointer as a designator for smart munitions, or as an area illuminator.

The LRF HHTI-LR must have a Laser Pointer (LP).

The LRF HHTI-LR LP must emit in the wavelength range from 810 nanometres to 850 nanometres.

The LRF HHTI-LR LP must have a beam divergence that is 0.8 NATO mils or less.

The LRF HHTI-LR LP should be rated as a Class 3B Laser at the output aperture, determined in accordance with ANSI Z136.1 - 2014.

If the LRF HHTI-LR LP is rated as a Class 3B Laser at the output aperture, is should include a means of attenuating the output of the laser such that it can be operated as a Class 1 Laser.

If the LRF HHTI-LR LP is rated as a Class 3B Laser at the output aperture, determined in accordance with ANSI Z136.1 - 2014, and cannot be attenuated to operate as a Class 1 laser, it must have a means of disabling the Laser Pointer in a manner that cannot be overridden by the user.

4.3.6 SeeSpot Capability

The LRF HHITI-LR should detect reflections from Laser Aiming Devices and Laser Pointers that operate at wavelengths between 810 nanometres and 850 nanometres.

The LRF HHITI-LR should detect reflections from Laser Designators for Guided Munitions that operate at 1064 nanometres.

4.3.7 Image Processing

4.3.7.1 Image Stability

The LRF HHTI-LR must stabilize the image to be displayed electronically to reduce blur caused by shaking or vibration.

4.3.7.2 Image Magnification

The LRF HHTI-LR must magnify the processed image by a factor of two or more in response to user input.

4.3.7.3 Image Fusion Mode

The LRF HHTI-LR must have an image fusion mode.

When in image fusion mode, the LRF HHTI-LR should combine the images of the Thermal Channel and Secondary channel in a way that the user perceives as increasing the probability of target detection,

recognition and identification compared to the use of the Thermal Channel and Secondary Channel separately.

When in image fusion mode, the LRF HHTI-LR should combine the images of the Thermal Channel and Secondary Channel in a way that the user perceives as providing an image that is more intuitive to interpret compared to the use of the Thermal Channel alone.

4.3.8 Display Functionality

4.3.8.1 Display Characteristics

The LRF HHTI-LR must have an integral display for direct viewing by the user.

The LRF HHTI-LR must display the processed image from the Thermal Channel on the display using the full screen in response to user input.

The LRF HHTI-LR must display the processed image from the Secondary Channel on the display using the full screen in response to user input.

The LRF HHTI-LR must display the processed image from the Image Fusion Mode on the display using the full screen in response to user input.

The LRF HHTI-LR should have a split screen display.

The LRF HHTI-LR should display the processed image from the Thermal Channel on one half of the display and the processed image from the Secondary Channel on the other half of the display in response to user input.

The LRF HHTI-LR must have a binocular display for the user to view the display with both eyes simultaneously.

The LRF HHTI-LR must have a colour display.

4.3.8.2 Reticle Overlay

The LRF HHTI-LR must electronically generate a viewing reticle that is overlaid on the displayed image.

The viewing reticle must indicate the line of sight of the LRF.

The viewing reticle must be centred in the display.

The viewing reticle must be in the form of a mil dot or micrometric pattern in azimuth and angle of sight.

The calibration of the viewing reticle mil dot or micrometric pattern must be indicated on the display to the user, in terms of mils between dots or hash marks.

The LRF HHTI-LR must toggle the displayed viewing reticle off and on in response to user input.

The displayed viewing reticle must be adjustable for brightness in response to user input.

On activation of the laser range finder or laser pointer, the LRF HHTI-LR should change the attributes of the viewing reticle to give the user an indication of the applicable activation.

The requirements specified above in this section are not applicable to a direct optical view secondary channel, should the LRF HHTI-LR be equipped with a direct optical view.

4.3.8.3 Text and Icon Overlay

4.3.8.3.1 Language

The LRF HHTI-LR must display all text in the language configured by the user, as specified in Section 4.5.1 User Language.

4.3.8.3.2 System Status

The LRF HHTI-LR display must indicate the state of charge of the internal battery.

The LRF HHTI-LR display must indicate whether or not the internal batteries are charging.

The LRF HHTI-LR display must indicate whether or not Bluetooth Connectivity is activated.

The LRF HHTI-LR display must indicate whether or not Wireless Connectivity is activated.

The LRF HHTI-LR display must indicate whether or not DAGR Connectivity is activated.

The LRF HHTI-LR display must indicate whether or not the interface to an ISS BMS is active.

4.3.8.3.3 System Configuration

The LRF HHTI-LR display must indicate the magnification level of the original image, i.e. 2x, 4x etc.

4.3.8.3.4 Geolocation of User

The LRF HHTI-LR must display the geolocation grid coordinates of the user using the configured grid system, as specified in Section 4.5.2 Grid System.

The LRF HHTI-LR must display the geolocation elevation of the user using the configured distance and elevation notation, as specified in Section 4.5.4 Distance and Elevation Notation.

The LRF HHTI-LR must stop the display of the geolocation of the user in response to user input.

The LRF HHTI-LR must restore the display of the geolocation of the user in response to user input.

4.3.8.3.5 Geolocation of Observed Targets

The LRF HHTI-LR must continuously display the azimuth of the reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.

The LRF HHTI-LR must continuously display the angle of sight of the reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.

4.3.8.3.6 Geolocation of LRF Targets

Geolocation data of LRF targets consists of range, azimuth and angle of sight of the target relative to the user, and grid coordinates and elevation of the target.

The LRF HHTI-LR must display the geolocation data of the LRF target immediately after the target is subject to the laser pulse.

The LRF HHTI-LR must display the range of the LRF target, using the configured distance and elevation notation, as specified in Section 4.5.4 Distance and Elevation Notation.

The LRF HHTI-LR must display the geolocation grid coordinates of the LRF target using the configured grid system, as specified in Section 4.5.2 Grid System.

The LRF HHTI-LR must display the geolocation elevation of the LRF target, using the configured distance and elevation notation, as specified in Section 4.5.4 Distance and Elevation Notation.

The LRF HHTI-LR must display the azimuth of the LRF target, as determined by the centre of the LRF reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.

The LRF HHTI-LR must display the angle of sight of the LRF target, as determined by the centre of the LRF reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.

The LRF HHTI-LR must stop the display of geolocation data of the LRF target in response to user input.

The LRF HHTI-LR must display the geolocation data for the five most recent LRF targets in response to user input.

The LRF HHTI-LR must stop the display of the geolocation data for all but the most recent LRF target in response to user input.

4.3.9 Saving of Images

The LRF HHTI-LR must save a still image of the display, including all overlaid data, icons and reticles, to an image file in response to user input.

Images saved by the LRF HHTI-LR must be compliant with MIL-STD-2500C W/CHANGE 1 National Imagery Transmission Format (NITF) Version 2.1.

Images saved by the LRF HHTI-LR in the NITF format must be compatible with ATAK.

The intent of the requirement for compliance with MIL-STD-2500C is limited to:

Providing a file in a format that can be ingested to NATO Imagery Systems for exploitation

Providing sufficient metadata to support cataloguing of the file and providing information related to time stamp and sensor location, direction and field of view

The image subheader segment of the NITF image file must include an approximate geographic location for the purposes of cataloguing, based on sensor location, direction and field of view.

The LRF HHTI-LR must download image files selected by the user to an external device in response to user input.

4.3.10 Saving of Video

The LRF HHTI-LR must save a video file of the display, including all overlaid data, icons and reticles, in response to user input.

Video saved by the LRF HHTI-LR must be compliant with STANAG 4609 Digital Motion Imagery Standard.

Video saved by the LRF HHTI-LR must be compliant with MISB 0902 Motion Imagery Sensor Minimum Metadata Set.

The intent of the requirement for compliance with STANAG 4609 and MISB 0902 is limited to:

- Providing a file in a format that can be ingested to NATO Motion Imagery Systems for exploitation
- Providing sufficient metadata in the KLV Tags to support cataloguing of the file and providing information related to time stamp and sensor location, direction and field of view

Video saved by the LRF HHTI-LR must be compatible with ATAK.

The LRF HHTI-LR must download video files selected by the user to an external device in response to user input.

4.3.11 Video Streaming of Display Content

The LRF HHTI-LR must provide a real-time digital video stream to an external device in response to user input.

The LRF HHTI-LR must provide a real time digital video stream that does not affect the ability of the user to exercise full device functionality.

The LRF HHTI-LR real-time video stream must be in a format that is compatible with ATAK streaming video functionality.

4.3.12 Remote Control

The LRF HHTI-LR must be remotely controllable by a third-party device.

When remotely controlled by a third-party device, full functionality of the LRF HHTI-LR must be available to the user through the third-party device.

4.3.13 Picatinny Rail

Requirement Deleted

4.3.14 Power Sources

The normal power source for the LRF HHTI-LR will be Internal Batteries. To provide the user with options for power management, especially during operations in the cold, the user may choose to power the LRF HHTI-LR from an external power source.

4.3.14.1 Internal Batteries

4.3.14.1.1 Rechargeable Battery Power Source

The LRF HHTI-LR must operate using power from Rechargeable Batteries that are housed within the LRF HHTI-LR.

The LRF HHTI-LR must continuously operate for a minimum of two hours and thirty minutes in the Operational Mode at 20 degrees Celsius using power only from the installed Rechargeable Batteries, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life. < rated >

4.3.14.1.2 Low Temperature Battery Power Source

In order to meet requirements for operation at low temperatures, a Low Temperature Battery, different from the Rechargeable Battery described above, may be required. The internal Low Temperature Batteries may be either rechargeable or non-rechargeable.

The LRF HHTI-LR should operate using power from Low Temperature Batteries that are housed within the LRF HHTI-LR.

The LRF HHTI-LR should continuously operate for a minimum of two hours and thirty minutes in the Operational Mode at minus 32 degrees Celsius using power only from installed Low Temperature Batteries, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.

4.3.14.1.3 Internal Recharging Capability

The LRF HHTI-LR must recharge the Internal Batteries if they are Rechargeable Batteries and the LRF HHTI-LR is connected to an exterior power source.

The LRF HHTI-LR must not attempt to recharge the Internal Batteries if they are Non-Rechargeable Batteries and the LRF HHTI-LR is connected to an exterior power source.

4.3.14.1.4 Battery Housing and Internal Connection

The LRF HHTI-LR battery housing must allow the user to change batteries without using tools.

The LRF HHTI-LR battery housing must allow the user to change batteries under conditions of total darkness.

The LRF HHTI-LR must include protection against batteries that are installed incorrectly by the user.

The LRF HHTI-LR must determine the state of charge of the Internal Batteries.

4.3.14.2 External Power Sources

4.3.14.2.1 External Power Sources - Common Requirements

When connected to an external power source, the LRF HHTI-LR must not draw current from Internal Batteries.

4.3.14.2.2 External DC Power Sources

The LRF HHTI-LR must operate using power from a military vehicle 24 V DC electrical system.

The LRF HHTI-LR must operate using power from a commercial vehicle 12 V DC electrical system.

The LRF HHTI-LR must operate using power from an external Conformal Wearable Battery (CWB).

The LRF HHTI-LR must operate using power from the LRF HHTI-LR EBP as specified in Section 5.20 External Battery Pack.

Requirements related to the LRF HHTI-LR / External DC Power Sources Interface are specified in Section 4.4.8 External DC Power Source Interface.

4.3.14.2.3 AC Power Source

The LRF HHTI-LR must operate using power from North American 110/120 VAC 60 hertz power source.

The LRF HHTI-LR must operate using power from a European 220/240 VAC 50 hertz power source.

Requirements related to the AC Power Source Interface are specified in Section 4.4.9 AC Power Source Interface.

4.4 External Interface Requirements

4.4.1 Interface Identification

See Section 3.3 Identification of Interfaces.

4.4.2 Defense Advanced GPS Receiver (DAGR) Interface

4.4.2.1 DAGR Description

The AN/PSN-13A Defense Advanced GPS Receiver (DAGR), NSN 5825-01-526-4783, is a hand-held GPS receiver in-service with the Canadian Army.

The DAGR has fixed interface characteristics. The DAGR will not be modified to support the achievement of DAGR Interface requirements.

4.4.2.2 LRF HHTI-LR / DAGR Interface Functional Requirements

The LRF HHTI-LR must be compatible with the DAGR.

The LRF HHTI-LR must interface with the DAGR using the DAGR Interface Cable.

Requirements for the DAGR Interface Cable are specified in Section 5.13 DAGR Interface Cable.

When a DAGR is connected to the LRF HHTI-LR, the LRF HHTI-LR must continually update user geolocation data using geolocation data received from the DAGR.

When a DAGR is connected to the LRF HHTI-LR, the LRF HHTI-LR must update current time and date data using time and date data received from the DAGR.

4.4.3 Integrated Soldier System (ISS) Interface

4.4.3.1 ISS Overview

The Integrated Soldier System (ISS) is a collection of soldier-worn devices that provides integrated functionality to the soldier related to tactical radio, situational awareness and battle planning. Devices are networked using a data and power distribution hub. Connected devices may include:

- Multichannel Handheld Radio
- Secure Radio
- End User Device (EUD) (Smartphone)
- Commander's Tablet
- DAGR

- Land Warrior Battery
- Auxiliary Power or second Land Warrior Battery
- LRF HHTI-LR

The ISS in a basic configuration is in-service with the Canadian Army. The ISS is being incrementally upgraded to take advantage of technological advances and to increase the level of integration between what have previously been independent devices.

The EUD and Commander's Tablet are Android devices that use the Android Team Awareness Kit (ATAK). A soldier will be equipped with either an EUD or Commander's Tablet, but not both.

The ATAK-based software resident on the ISS EUD or Commander's tablet to which the LRF HHTI-LR will interface is referred to as the ISS Battle Management Software (BMS).

The specific ATAK plugins that will reside on the ISS EUD or Commander's tablet that are required to provide the functionality to support the interface between the LRF HHTI-LR and the ISS BMS are referred to as the LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP).

The devices that comprise the ISS are connected through the ISS Hub. The connectors on the ISS hub comply with NWPAN-WP-01112013 Version 6. The two in-service hubs are the Glenair STAR-PAN™ II Hub and the Glenair STAR-PAN™ VI Hub.

The ISS configuration to which the LRF HHTI-LR will interface is evolving. The requirements listed in this section are therefore expected to evolve.

4.4.3.2 LRF HHTI-LR / ISS Interface - Intent

The intent of the LRF HHTI-LR / ISS Interface is to provide the following functionality:

- The ISS can provide user geolocation data to the LRF HHTI-LR, via the EUD or Commander's Tablet, sourced from a connected radio;
- The ISS can provide user geolocation data to the LRF HHTI-LR, via the EUD or Commander's Tablet, sourced from the connected AN/PSN-13A DAGR;
- Realtime geo-orientation data related to the LRF HHTI-LR can be displayed on the EUD or Commander's Tablet, including range bearing line, field of view and maximum detection ranges for vehicle and person-sized targets;
- Image and video files can be downloaded from the LRF HHTI-LR to the ISS BMS for viewing on the EUD or Commander's Tablet;
- The content of the LRF HHTI-LR display can be streamed to the EUD or Commander's tablet in real-time;
- The LRF HHTI-LR can be manipulated remotely by the user using an application on the EUD or Commander's tablet; and
- When a target is subject to the Laser Range Finder pulse functionality of the LRF HHTI-LR, target geolocation data can be passed to the ISS BMS to be further used in generating contract reports, fire missions, etc.

The functionality of the interface will be provided through a collection of LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP), resident on the ISS EUD. The LIBI AP will be developed by the LRF HHTI-LR contractor, and may comprise bespoke or exiting ATAK plug-ins, or a combination thereof.

The functionality of the LIBI AP will be determined by this specification, and through the cooperative development of an ICD led by the LRF HHTI-LR contractor with the participation of the DND ISS ATAK team. Requirements for the LIBI AP are in Section 5.15 LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP).

4.4.3.3 LRF HHTI-LR / ISS Interface Connectivity Requirements

The LRF HHTI-LR must be compatible with the ISS.

The LRF HHTI-LR must interface with the ISS BMS using the ISS Interface Cable.

Requirements for the ISS Interface Cable are specified in Section 5.14 ISS Interface Cable.

The LRF HHTI-LR must interface with the ISS BMS using a Wireless connection.

Data passed from the LRF HHTI-LR to the ISS BMS must be compliant with the Cursor on Target (CoT) schema.

4.4.3.4 LRF HHTI-LR / ISS Interface Functional Requirements

Requirements for the LRF HHTI-LR / ISS BMS Interface application (LIBI AP) are specified in Section 5.15 LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP)

4.4.3.4.1 Configurable Attributes of LRF HHTI-LR

When connected to the ISS, the LRF HHTI-LR must provide configurable attributes of the LRF HHTI-LR to the ISS BMS / LIBI AP as described in Section 4.5.5.1 ISS BMS Interface - Configurable Attributes.

4.4.3.4.2 Geo-orientation of LRF HHTI-LR

When connected to the ISS, the LRF HHTI-LR must provide continuous update of geo-orientation data to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.

LRF HHTI-LR Geo-orientation data must include:

- Location in Longitude and Latitude:
- Elevation;
- Azimuth;
- Angle of sight; and
- Field of view of active channel.

4.4.3.4.3 Images

When connected to the ISS and an image is saved, the LRF HHTI-LR must send the image to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.

4.4.3.4.4 Video

When connected to the ISS and a video is saved, the LRF HHTI-LR must send the video to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.

4.4.3.4.5 Lased Target Geolocation Data

When connected to the ISS and a lased target geolocation data is saved, the LRF HHTI-LR must send the lased target geolocation data to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.

4.4.3.4.6 Streaming Video

When connected to the ISS, the LRF HHTI-LR must start streaming video to the ISS BMS / LIBI AP in response to user action on the LRF HHTI-LR.

When connected to the ISS, the LRF HHTI-LR must stop streaming video to the ISS BMS / LIBI AP in response to user action on the LRF HHTI-LR.

When connected to the ISS, the LRF HHTI-LR must stream video to the ISS BMS / LIBI AP in response to a start streaming video request from the LIBI AP.

When connected to the ISS, the LRF HHTI-LR must stop streaming video to the LIBI AP in response to a stop streaming video request from the LIBI AP.

4.4.3.4.7 Remote Control

When connected to the ISS, the LRF HHTI-LR must be remotely controllable in response to user actions on the LIBI AP.

When connected to the ISS, full functionality of the LRF HHTI-LR must be available to the user through user actions on the LIBI AP.

4.4.3.4.8 File Management

When connected to the ISS, the LRF HHTI-LR must download imagery files from the LRF HHTI-LR to the LIBI AP in response to a file download command from the LIBI AP.

When connected to the ISS, the LRF HHTI-LR must delete imagery files resident on the LRF HHTI-LR in response to a file deletion command from the LIBI AP.

When connected to the ISS, the LRF HHTI-LR must download target data files from the LRF HHTI-LR to the LIBI AP in response to a file download command from the LIBI AP.

When connected to the ISS, the LRF HHTI-LR must delete target geolocation files resident on the LRF HHTI-LR in response to a file deletion command initiated by the LIBI AP.

4.4.4 Ruggedized Tactical Laptop (RTL) Interface

4.4.4.1 RTL Description

The current in-service RTL is the CF33 Mk2 Panasonic Toughbook. The CF33 uses the Windows 10 Pro (64 bit) operating system. The CF33 has the following characteristics:

- USB 3.0 (x 3) and USB 2.0 (x 1) ports
- Bluetooth v4.1 + EDR (Class 1)
- Intel Dual band Wireless – AC 8265 802.11a/b/g/n/ac
- SD card (SDXC) and Nano-SIM
- HDMI Type A port

The CF33 is used operationally in an unclassified domain.

The RTL has fixed interface characteristics. The RTL hardware will not be modified to support the achievement of RTL Interface requirements.

Additional COTS software applications that are required to satisfy the interface requirements may be added RTL application software baseline.

4.4.4.2 LRF HHTI-LR / RTL Interface Functional Requirements

The LRF HHTI-LR must be compatible with the RTL.

The LRF HHTI-LR must interface with the RTL using the RTL Interface Cable.

Requirements for the RTL Interface Cable are specified in Section 5.16 RTL Interface Cable.

The LRF HHTI-LR must download image files selected by the user from the LRF HHTI-LR to the RTL in response to user input.

The LRF HHTI-LR must download video files selected by the user from the LRF HHTI-LR to the RTL in response to user input.

The LRF HHTI-LR must stream live video output of the LRF HHTI-LR display for display on the RTL display.

4.4.4.3 LRF HHTI-LR / RTL Interface - Bluetooth Proof of Concept

The LRF HHTI-LR must interface with the RTL using Bluetooth.

The LRF HHTI-LR must download an image file selected by the user from the LRF HHTI-LR to the RTL over Bluetooth in response to user input.

4.4.5 Ruggedized Flash Drive (RFD) Interface

4.4.5.1 LRF HHTI-LR / RFD Interface Functional Requirements

The RFD is described in Section 5.17 Ruggedized Flash Drive (RFD).

The LRF HHTI-LR must be compatible with the RFD.

The LRF HHTI-LR must download image files selected by the user from the LRF HHTI-LR to the RFD in response to user input on the LRF HHTI-LR.

The LRF HHTI-LR must download video files selected by the user from the LRF HHTI-LR to the RFD in response to user input on the LRF HHTI-LR.

The LRF HHTI-LR must delete all files stored on the RFD in response to user input on the LRF HHTI-LR.

The LRF HHTI-LR must delete files selected by the user that are stored on the RFD in response to user input on the LRF HHTI-LR.

4.4.5.2 LRF HHTI-LR / RFD Interface Physical Requirements

The LRF HHTI-LR must physically connect to the RFD using a USB 2.0 compliant connection.

The LRF HHTI-LR must include all hardware components required to physically connect the LRF HHTI-LR to the RFD.

If a cable is required to connect the LRF HHTI-LR to the RFD, then the LRF HHTI-LR RFD Interface Cable must support the interface functionality described in Section 4.4.5.1 LRF HHTI-LR / RFD Interface Functional Requirements.

If a cable is required to connect the LRF HHTI-LR to the RFD, then the LRF HHTI-LR RFD Interface Cable must meet the cabling requirements specified in Section 6.2 Common Cable Requirements.

4.4.5.3 RFD / RTL Interface Functional Requirements

The RFD must download image files selected by the user from the RFD to the RTL in response to user input on the RTL.

The RFD must download video files selected by the user from the RFD to the RTL in response to user input on the RTL.

The RFD must delete all files stored on the RFD in response to user input on the RTL.

The RFD must delete files selected by the user that are stored on the RFD in response to user input on the RTL.

4.4.6 Generic Interfaces - Bluetooth Connectivity

4.4.6.1 Bluetooth Connectivity Description

The CA is developing policies related to the use of Bluetooth connectivity between devices in an operational environment. LRF HHTI-LR Bluetooth connectivity provides flexibility for future use.

For proof-of-concept purposes, requirements for Bluetooth connectivity will use the RTL described in Section 4.4.4 Ruggedized Tactical Laptop (RTL) Interface.

4.4.6.2 Bluetooth Connectivity Functional Requirements

The LRF HHTI-LR must include Bluetooth connectivity.

The LRF HHTI-LR Bluetooth connectivity must be compatible with devices that implement Bluetooth Version 4.1, as described in the Bluetooth V4.1 Specification.

When the LRF HHTI-LR is turned on, Bluetooth connectivity must be fully deactivated as a default state in all modes.

The LRF HHTI-LR must activate Bluetooth connectivity in response to user input.

The LRF HHTI-LR must fully deactivate Bluetooth connectivity in response to user input.

4.4.6.3 Bluetooth Connectivity Interface Requirements

The LRF HHTI-LR must connect to the RTL using a Bluetooth connection.

The LRF HHTI-LR Bluetooth connectivity must support the functional requirements specified in Section 4.4.4.3 LRF HHTI-LR / RTL Interface - Bluetooth Proof of Concept.

4.4.7 Generic Interfaces - Wireless Connectivity

4.4.7.1 Wireless Connectivity Description

The CA is developing policies related to the use of wireless connectivity between devices in an operational environment. LRF HHTI-LR wireless connectivity provides flexibility for future use.

For proof-of-concept purposes, requirements for wireless connectivity will use the RTL described in Section 4.4.3 Integrated Soldier System (ISS) Interface.

4.4.7.2 Wireless Connectivity Functional Requirements

The LRF HHTI-LR must include wireless connectivity.

The LRF HHTI-LR wireless connectivity must be compatible with devices that implement the IEEE 802.11ac protocol.

When the LRF HHTI-LR is turned on, Wireless connectivity must be fully deactivated as a default state in all modes.

The LRF HHTI-LR must activate wireless connectivity in response to user input.

The LRF HHTI-LR must fully deactivate wireless connectivity in response to user input.

4.4.7.3 Wireless Connectivity Interface Requirements

The LRF HHTI-LR must connect to the ISS using a Wireless connection.

The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.2 Geo-orientation of LRF HHTI-LR.

The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.3 Images.

The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.4 Video.

The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.5 Lased Target Geolocation Data.

The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.6 Streaming Video.

The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.7 Remote Control.

The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.8 File Management.

4.4.8 External DC Power Source Interface

The LRF HHTI-LR must be compatible with 24 V DC military vehicle electrical systems that are compliant with MIL-STD-1275E when powered through the DC Power Cable Assembly.

The LRF HHTI-LR must connect to a 24 V DC military vehicle electrical system using the DC Power Cable Assembly.

The LRF HHTI-LR must be compatible with 12 V DC commercial vehicle electrical systems when powered through the DC Power Cable Assembly.

The LRF HHTI-LR must connect to a 12 V DC commercial vehicle electrical system using the DC Power Cable Assembly.

The LRF HHTI-LR must be compatible with CWBs when powered through the DC Power Cable Assembly.

The LRF HHTI-LR must connect to a CWB using the DC Power Cable Assembly.

Requirements related to the DC Power Cable Assembly are specified in Section 5.18 DC Power Cable Assembly.

4.4.9 AC Power Source Interface

The LRF HHTI-LR must be compatible with a North American 110/120 VAC 60 hertz power source, when powered through the AC Power Cable Assembly.

The LRF HHTI-LR must connect to a North American 110/120 VAC 60 hertz power source using the AC Power Cable Assembly.

The LRF HHTI-LR must be compatible with a European 220/240 VAC 50 hertz power source, when powered through the AC Power Cable Assembly.

The LRF HHTI-LR must connect to a European 220/240 VAC 50 hertz power source using the AC Power Cable Assembly.

Requirements related to the AC Power Cable Assembly are specified in Section 5.19 AC Power Cable Assembly.

4.4.10 Tripod Interface

4.4.10.1 LRF HHTI-LR Tripod

The LRF HHTI-LR must include a physical interface for mounting the LRF HHTI-LR on the LRF HHTI-LR Tripod specified in Section 5.12 Tripod.

The LRF HHTI-LR must be compatible with the LRF HHTI-LR Tripod.

4.4.10.2 SAFRAN Vectronix SST3-1 Mini-tripod

The SAFRAN Vectronix SST3-1 Mini-tripod 664868, NSN 1290-01-455-9410, is in-service with the Canadian Army and is used as a tripod supporting the in-service SAFRAN Vector binoculars.

The LRF HHTI-LR must include a physical interface for mounting the LRF HHTI-LR on a SAFRAN Vectronix SST3-1 Mini-tripod.

The LRF HHTI-LR must be compatible with the Vectronix SST3-1 Mini-tripod.

4.5 Adaptation Requirements

4.5.1 User Language

The LRF HHTI-LR must display all textual information to the user in the English language in response to user input.

The LRF HHTI-LR must display all textual information to the user in the French language in response to user input.

The LRF HHTI-LR must automatically save the language of display of textual information selected by the user and display all textual information using the same language the next time the LRF HHTI-LR is turned on.

4.5.2 Grid System

The LRF HHTI-LR must be configurable to display geolocation data using different grids defined in accordance with the World Geodetic System 1984 (WGS-84) datum.

The LRF HHTI-LR must be configurable by the user to display geolocation data using the WGS-84 Universal Transverse Mercator (UTM) grid system.

The LRF HHTI-LR must be configurable by the user to display geolocation data using the WGS-84 Military Grid Reference System (MGRS) grid system.

The LRF HHTI-LR must be configurable by the user to display geolocation data using the WGS-84 Latitude and Longitude grid system.

The LRF HHTI-LR must use the grid system configured by the user for displaying user and target geolocation data.

The LRF HHTI-LR must save the grid system selected by the user and present geolocation data using the same grid system the next time the LRF HHTI-LR is turned on.

4.5.3 Directional Notation

The LRF HHTI-LR must be configurable to display directional data (azimuth and angle of sight) in accordance with different directional notations.

The LRF HHTI-LR must be configurable by the user to display directional data using the NATO mils system, where a circle is divided into 6,400 mils.

The LRF HHTI-LR must be configurable by the user to display directional data using the degrees / minutes / seconds (DMS) system.

The LRF HHTI-LR must use the same directional notation selected by the user to display azimuth and angle of sight data.

The LRF HHTI-LR must save the directional notation system selected by the user and display directional data using the same directional notation system the next time the LRF HHTI-LR is turned on.

4.5.4 Distance and Elevation Notation

The LRF HHTI-LR must be configurable to display distance and elevation data in accordance with different distance notations.

The LRF HHTI-LR must be configurable to display distance and elevation data in metres.

The LRF HHTI-LR must be configurable to display distance and elevation data in feet.

The LRF HHTI-LR must save the last distance and elevation notation system selected by the user and display distance and elevation data using the same distance and elevation notation system the next time the LRF HHTI-LR is turned on.

4.5.5 ISS BMS Interface

4.5.5.1 ISS BMS Interface - Configurable Attributes

The LRF HHTI-LR must be configurable to store a local identifier used in the Sensor Name.

The LRF HHTI-LR must be configurable to store the Sensor Range Length corresponding to the maximum detection range of a vehicle-sized target using the Thermal Channel.

The LRF HHTI-LR must be configurable to store the Sensor Range Length corresponding to the maximum detection range of a person-sized target using the Thermal Channel.

4.5.5.2 ISS BMS Interface - Configurable Behaviours

The LRF HHTI-LR must be configurable to automate the initiation of sending streamed geo-orientation data to the ISS BMS in terms of always send, send after user confirmation or don't send.

The LRF HHTI-LR must be configurable to automate the sending of saved images to the ISS BMS in terms of always send, send after user confirmation or don't send.

The LRF HHTI-LR must be configurable to automate the sending of saved video to the ISS BMS in terms of always send, send after user confirmation or don't send.

4.6 Environment, Health and Safety Requirements

4.6.1 General Hazards

The LRF HHTI-LR, excluding the LRF HHTI-LR Internal Batteries, must not present any environmental, health or system safety hazards of a Catastrophic or Critical mishap severity.

The LRF HHTI-LR, excluding the LRF HHTI-LR Internal Batteries, must not present a Catastrophic or Critical hazard to the operator and surrounding environment even when so damaged that it allows the ingress of water or egress of internal substances.

Mitigation against general hazards involving Internal Batteries is implemented through specifications in Section 5.9 Rechargeable Batteries and Section 5.10 Low Temperature Batteries.

Requirements related to the mitigation of battery hazards are embedded in the specifications for Internal Batteries in Section 4.3.14.1 Internal Batteries.

4.6.2 Thermal Contact Hazards

The LRF HHTI-LR must not expose operators during normal operation to surface temperatures greater than those identified in MIL-STD-1472H Section 5.7.5.9 Thermal contact hazards for prolonged contact.

4.6.3 Dangerous Material Hazards

The LRF HHTI-LR must not contain any Polychlorinated Biphenyls (PCBs), halocarbons or asbestos.

4.6.4 Handling Hazards

The LRF HHTI-LR must bear no sharp, raw, or rough edges that present a risk of cuts or abrasions to the operator.

4.6.5 Radio Frequency Hazards

The HHTI-LR must comply with the Specific Absorption Rate (SAR) requirements for the Controlled Environment of Health Canada Safety Code 6 2015, for the protection against the Effects of Electromagnetic Radiation to Personnel (HERP).

4.7 Security and Privacy Requirements

4.7.1 Visibility

The LRF HHTI-LR must prevent emission of light from the eyepieces when the LRF HHTI-LR is operational.

The LRF HHTI-LR must not emit any light from external surfaces during operation.

4.7.2 Audibility

The LRF HHTI-LR must, when in the Operational Mode and after cool-down has been completed, be inaudible at a distance of 30 metres, tested in accordance with MIL-STD-1474E at the Level I aural non-detectability limits.

The LRF HHTI-LR must have no audible alarms.

The LRF HHTI-LR must have no audible indicators.

4.7.3 Deletion of Imagery Files and LRF Target Data

There may be situations where the user is forced to abandon the LRF HHTI-LR or where it may fall into enemy hands.

The LRF HHTI-LR must delete, without potential for recovery, all image files, all video files, all data related to LRF targets, and all other data that is generated during use of the LRF HHTI-LR in response to user input.

4.8 System Quality Factors

4.8.1 Reliability

The LRF HHTI-LR must have a mission Mean Time Between Critical Failures (MTBCF) of at least 1,200 hours when used in ambient air temperatures of 18 degrees Celsius to 28 degrees Celsius.

4.8.2 Maintainability

The support and maintenance concept for the LRF HHTI-LR System is described in LRF HHTI-LR Support and Maintenance Concept document.

4.8.2.1 Modularity

The LRF HHTI-LR must be designed for the modular replacement of components.

4.8.2.2 Built-In Test Function

The LRF HHTI-LR must have a Built-In Test (BIT) function.

The BIT function must operate continuously while the LRF HHTI-LR is transitioning from the off state to the Operational State.

The BIT function must operate continuously while the LRF HHTI-LR is in the Operational Mode.

The BIT function must detect and display faults.

The fault information displayed by the BIT function must provide the user with information on the associated loss of functionality.

The fault information displayed by the BIT function must provide the user and maintainer with an indication of required maintenance actions.

4.8.2.3 User Maintenance

In accordance with the LRF HHTI-LR Support and Maintenance Concept, it is expected that user maintenance tasks will include activities such as:

- Changing Internal Batteries
- Cleaning of optical surfaces using the Lens Cleaning Kit
- Cleaning of exterior surfaces of the HHTI-LR

LRF HHTI-LR user maintenance tasks must not require Special Tools and Test Equipment (STTE), other than the Lens Cleaning Kit.

LRF HHTI-LR user maintenance tasks must be carried out by a user wearing Cold Wet Weather Gloves.

LRF HHTI-LR user maintenance tasks must be carried out by a user with bare hands.

4.8.2.4 First Level Maintenance

In accordance with the LRF HHTI-LR Support and Maintenance Concept, first level maintenance tasks will include user maintenance task plus:

- servicing and cleaning
- nitrogen purging
- preliminary diagnosis of faults
- corrective maintenance tasks of a minor nature
- replacement of broken eyecups, straps, and lens covers

The term "minor nature" infers short duration (less than four hours to return the equipment to service) and relatively simple repairs. Level one maintenance tasks are generally performed without Special Tools and Test Equipment (STTE) and require no special facilities.

LRF HHTI-LR first level maintenance tasks must not require Special Tools and Test Equipment (STTE), other than the Lens Cleaning Kit, or nitrogen purging equipment.

LRF HHTI-LR first level maintenance tasks must be feasible under field conditions.

4.8.2.5 Second Level Maintenance - Second Line Maintenance Organization

In accordance with the LRF HHTI-LR Support and Maintenance Concept, second line maintenance organizations will conduct user maintenance tasks, first level maintenance tasks and the following second level tasks:

- nitrogen purging
- fault diagnosis
- software updates

LRF HHTI-LR second level maintenance tasks undertaken by second line maintenance organizations must be feasible under field conditions.

LRF HHTI-LR software must be updateable as a first level maintenance activity.

4.9 Design and Construction Constraints

4.9.1 Physical Characteristics

4.9.1.1 Mass

The LRF HHTI-LR, including Internal Batteries, must have a mass of less than 2.75 kilograms. < rated >

4.9.1.2 Colour and Finish

The LRF HHTI-LR must have an external colour of NATO Coyote Brown or similar colour approved by the TA prior to production.

The LRF HHTI-LR must have a finish that is dull or flat without shine.

4.9.1.3 Moisture Seal

The LRF HHTI-LR must be sealed to prevent infiltration of moisture.

The LRF HHTI-LR must have a means of purging the interior of the device with an inert gas to remove moisture.

4.9.1.4 Lens Covers

The LRF HHTI-LR must have Lens Covers that protect the objective optical surfaces when the LRF HHTI-LR is not in use.

When the Lens Covers are removed from the objective optical surfaces when the LRF HHTI-LR is in use, the Lens Covers must remain attached to the LRF HHTI-LR.

The lens covers must be replaceable as a first level maintenance task.

4.9.1.5 Eye Cups

The LRF HHTI-LR must have Eye Cups.

The Eye Cups must minimize the escape of light from the display when the user is looking at the display and the user is in contact with the Eye Cups.

The Eye Cups must prevent the escape of light from the display when the LRF HHTI-LR is operating, but the user is not in contact with the Eye Cups.

The Eye Cups must be compatible with a user wearing ballistic eyewear, NSN 8465-20-001-4355.

The Eye Cups must be compatible with a user wearing the C5 AirBoss Low Burden Mask, NSNs 4240-20-011-8190, -8191, -8192, -8193 and 4240-20-012-6039, -6040, -6041, -6042.

The Eye Cups must have a feel and texture that is soft, flexible and comfortable to the user.

4.9.1.6 Shoulder Strap

The LRF HHTI-LR must have an adjustable Shoulder Strap.

The Shoulder Strap must be configured so that the user can carry the LRF HHTI-LR with the Shoulder Strap around the user's neck.

The Shoulder Strap must be configured so that the user can carry the LRF HHTI-LR with the Shoulder Strap hung on the user's shoulder and the LRF HHTI-LR resting against the same side of the body.

The Shoulder Strap must be configured so that the user can carry the LRF HHTI-LR with the Shoulder Strap on one shoulder and the LRF HHTI-LR resting on the other side of the body.

The Shoulder Strap must be at least 1.5 centimetres in width.

The Shoulder Strap must be padded in the section of the Shoulder Strap that is resting on the part of the user's body that is bearing the weight of the LRF HHTI-LR.

The Shoulder Strap must be comfortable to the user when carrying the LRF HHTI-LR using the Shoulder Strap over a distance of five kilometres.

The Shoulder Strap must be replaceable as a first level maintenance task.

4.9.1.7 Hand Straps

The LRF HHTI-LR must have one or more Hand Straps.

The Hand Straps must assist the user to hold the LRF HHTI-LR when in operational use.

The Hand Straps must be strong enough so that the LRF HHTI-LR can be carried using one Hand Strap.

4.10 Human Factors Engineering Requirements

4.10.1 Compatibility with Diversity of Users

4.10.1.1 Interpupillary Distance

The LRF HHTI-LR must be compatible with the 5th to 95th percentile of interpupillary distances of male sailors and combat arms soldiers serving in the Canadian Armed Forces.

The LRF HHTI-LR must be compatible with the 5th to 95th percentile of interpupillary distances of female sailors and combat arms soldiers serving in the Canadian Armed Forces.

4.10.1.2 Visual Accuity

The focus of the thermal channel of the LRF HHTI-LR must be adjustable to present a sharp image to users with a Canadian Armed Forces V3 or better vision category, as defined in Appendix 1 to Annex A to CFP 154 Canadian Armed Forces Medical Standards.

The focus of the secondary channel of the LRF HHTI-LR must be adjustable to present a sharp image to users with a Canadian Armed Forces V3 or better vision category, as defined in Appendix 1 to Annex A to CFP 154 Canadian Armed Forces Medical Standards.

4.10.1.3 Hand Size

The LRF HHTI-LR must be compatible with differences in hand size found in the 5th to 95th percentile of male sailors and combat arms soldiers serving in the Canadian Armed Forces.

The LRF HHTI-LR must be compatible with differences in hand size found in the 5th to 95th percentile of female sailors and combat arms soldiers serving in the Canadian Armed Forces.

4.10.2 Compatibility with Clothing and Equipment

4.10.2.1 Gloves

The LRF HHTI-LR must be compatible with a user wearing Cold Wet Weather Gloves, NSN 8415-21-920-9019.

Assembly of the LRF HHTI-LR into a configuration where the LRF HHTI-LR is mounted on the Tripod and interfaced to an external power source must be compatible with a user wearing Cold Wet Weather Gloves and without the use of special tools.

The LRF HHTI-LR must be acceptable to users wearing Cold Wet Weather Gloves in operational conditions.

4.10.2.2 CM735 Ballistic Helmet

The LRF HHTI-LR must be compatible with a user wearing a CM735 Ballistic Helmet, NSN 8470-21-912-7719.

The LRF HHTI-LR must be acceptable to users wearing a CM735 Ballistic Helmet in operational conditions.

4.10.2.3 Ballistic Eyewear

The LRF HHTI-LR must be compatible with a user wearing Ballistic Eyewear, NSN 8465-20-001-4355.

The LRF HHTI-LR must be acceptable to users wearing Ballistic Eyewear in operational conditions.

4.10.2.4 C5 AirBoss Low Burden Mask

The LRF HHTI-LR must be compatible with a user wearing a C5 AirBoss Low Burden Mask (CBRN mask), NSNs 4240-20-011-8190, -8191, -8192, -8193 and 4240-20-012-6039, -6040, -6041, -6042.

The LRF HHTI-LR must be acceptable to soldiers wearing a C5 AirBoss Low Burden Mask in operational conditions.

4.10.2.5 Operational Clothing and Equipment

The LRF HHTI-LR must be acceptable to soldiers wearing operational clothing and equipped with the Modular Load Carrying System and the Integrated Soldier System in operational conditions.

4.10.3 Compatibility with Use under Conditions of Darkness

The LRF HHTI-LR must have external controls whose arrangement, size and shape can be identified and manipulated by the user using only the sense of touch.

The LRF HHTI-LR must have external controls whose arrangement, size and shape can be identified and manipulated by the user using only the sense of touch while wearing Cold Wet Weather Gloves.

During conditions of total darkness, assembly of the LRF HHTI-LR into a configuration where the LRF HHTI-LR is mounted on the Tripod and interfaced to an external power source must be compatible with a user wearing Cold Wet Weather Gloves and without the use of special tools.

4.10.4 Functionality and Ease of Use

4.10.4.1 Primary Functions

The functionality and ease of use of the LRF HHTI-LR related to the maintenance of a high level of situational awareness, scanning of an area of interest, and speed of detection, recognition and identification of targets must be acceptable to users under operational conditions. < rated >

The functionality and ease of use of the LRF HHTI-LR related to the detection, recognition and identification of targets using the Secondary Channel must be acceptable to users under operational conditions. < rated >

The functionality and ease of use of the LRF HHTI-LR related to the geolocation of targets using the Laser Range Finder must be acceptable to users under operational conditions. < rated >

The functionality and ease of use of the LRF HHTI-LR to use the observation of bullet swirls with the thermal channel to adjust fire must be acceptable to users under operational conditions in the following scenario:

- The LRF HHTI-LR thermal channel is offset no more than one metre from the axis of the rifle barrel; and
- A 7.62 x 51mm NATO non-tracer round is fired at a target at 800 metres

The functionality and ease of use of the LRF HHTI-LR to use the observation of bullet swirls with the thermal channel to adjust fire should be acceptable to users under operational conditions in the following scenario:

- The LRF HHTI-LR thermal channel is offset up to ten metres from the axis of the rifle barrel; and
- A 7.62 x 51mm NATO non-tracer round is fired at a target at 800 metres

< rated >

The functionality and ease of use of the LRF HHTI-LR related to the display of data on the display must be acceptable to users under operational conditions. < rated >

The functionality and ease of use of the LRF HHTI-LR related to the saving and storage of images and videos must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to the adaptation of the system to fit user and mission attributes at the start of a mission must be acceptable to users under operational conditions.

4.10.4.2 External Interfaces

The functionality and ease of use of the LRF HHTI-LR related to establishing an interface with a DAGR must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to establishing an interface with the ISS must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to using the LIBI AP installed on the ISS EUD and Commander's Tablet must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising the interface with a Ruggedized Tactical Laptop and must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising an interface with a Ruggedized Flash Drive must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising a Wireless interface with an external device must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising a Bluetooth interface with an external device must be acceptable to users under operational conditions.

4.10.4.3 External Power Sources

The functionality and ease of use of the LRF HHTI-LR related to sourcing power from a military vehicle 24 V electrical system must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to sourcing power from a civilian vehicle 12 V electrical system must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to sourcing power from an AC Power Source must be acceptable to users under operational conditions.

4.10.4.4 Menu Structures and Commands

The functionality and ease of use of the LRF HHTI-LR related to navigation through English language menu structures and commands must be acceptable to users under operational conditions.

The functionality and ease of use of the LRF HHTI-LR related to navigation through French language menu structures and commands must be acceptable to users under operational conditions.

4.10.5 Human Machine Interface

When used in the Operational mode, the LRF HHTI-LR physical controls (including buttons, knobs, toggle switches, joy sticks or other controls) used in the human machine interface must be accessible by the user without the necessity of moving a hand in a way that affects the stability of the device.

The LRF HHTI-LR must have physical controls that are positioned such that their manipulation does not interfere with continuous surveillance by the user when the LRF HHTI-LR is being held in two hands.

The LRF HHTI-LR must have an external, easily accessible, non-menu-driven physical control for switching between the Thermal Channel and the Secondary Channel.

The LRF HHTI-LR must have an external, easily accessible, non-menu-driven physical control for adjusting magnification.

The LRF HHTI-LR must have an external, easily accessible, non-menu-driven physical control for reversing image polarity of the thermal channel display.

The LRF HHTI-LR should have an external, easily accessible, non-menu-driven physical control for firing the laser when using the Laser Range Finder.

The LRF HHTI-LR must prevent accidental firing of the Laser Range Finder.

The LRF HHTI-LR should have an external, easily accessible, non-menu-driven physical control for firing the Laser Pointer.

The LRF HHTI-LR must prevent accidental firing of the Laser Pointer.

4.11 Product Serialization

The LRF HHTI-LR must be a serialized item.

The LRF HHTI-LR serialization must satisfy the requirements specified in Section 6.5.2 Serialized Items.

5 System - Other Component Requirements

5.1 Field Kit Storage and Transport Case

The Field Kit Storage and Transport Case is used to store and transport the components of the LRF HHTI-LR System that are carried within the Field Pouch. The Field Kit Storage and Transport Case will also be used for transportation of the LRF HHTI-LR (within the Field Pouch) between maintenance and supply organization, and for return of the LRF HHTI-LR to the OEM for repair and overhaul purposes.

Batteries may be stored in the Field Kit Storage and Transport Case, but not within the LRF HHTI-LR or within the Field Pouch themselves.

The LRF HHTI-LR System must include a Field Storage and Transport Case.

The Field Kit Storage and Transport Case must be configured to store a Field Pouch that is loaded with the components of the LRF HHTI-LR System that are normally carried within the Field Pouch.

Components of the LRF HHTI-LR System that are normally carried within the Field Pouch are identified in Section 5.4 Field Pouch.

The Field Kit Storage and Transport Case must be configured to store Internal Batteries that support 24 hours of continuous use of the LRF HHTI-LR.

The configuration of the Field Kit Storage and Transport Case to store batteries must not create any hazards related to long term battery storage.

5.2 Support Kit Storage and Transport Case

The Support Kit Storage and Transport Case is used to store and transport the components of the LRF HHTI-LR System that are carried within the Tripod Pouch and Accessories Pouch. Batteries may be stored in the Support Kit Storage and Transport Cases but not within pouches themselves.

The LRF HHTI-LR System must include a Support Kit Storage and Transport Case.

The Support Kit Storage and Transport Case must be configured to store a Tripod Pouch that is loaded with the components of the LRF HHTI-LR System that are normally carried within the Tripod Pouch.

Components of the LRF HHTI-LR System that are normally carried within the Tripod Pouch are identified in Section 5.5 Tripod Pouch.

The Support Kit Storage and Transport Case must be configured to store an Accessories Pouch that is loaded with the components of the LRF HHTI-LR System that are normally carried within the Accessories Pouch.

Components of the LRF HHTI-LR System that are normally carried within the Accessories Pouch are identified in Section 5.6 Accessories Pouch.

The Support Kit Storage and Transport Case must be configured to store an External Battery Pack Pouch that contains the External Battery Pack.

The Support Kit Storage and Transport Case must be configured to store Rechargeable Batteries that support 24 hours of continuous use of the LRF HHTI-LR.

The configuration of the Support Kit Storage and Transport Case to store batteries must not create any hazards related to long term battery storage.

5.3 Storage and Transport Cases - Common Requirements

The requirements specified in this section are applicable to both the Field Storage and Transport Case and the Support Kit Storage and Transport Case.

The Storage and Transport Cases must have a rigid exoskeleton.

The Storage and Transport Case must be stable and secure against sliding and collapse when stacked with other Storage and Transport Cases.

The Storage and Transport Cases must have a gasket that provides a sealed environment when the lid is closed.

The Storage and Transport Cases must include a depressurization valve.

The Storage and Transport Cases must include a means for the user to secure the contents of the case with a padlock.

The Storage and Transport Cases must have two handholds that facilitate one-person, two-handed lifting, carrying and stacking actions when fully loaded with LRF HHTI-LR System components.

The Storage and Transport Cases must have one handhold that facilitates one-person, one-handed carrying (suitcase style) when fully loaded with LRF HHTI-LR System components.

The Storage and Transport Cases should minimize volume and mass to facilitate handling by one person.

The Storage and Transport Cases must have an exterior colour of black or coyote brown.

The Storage and Transport Cases must have a finish that is dull or flat without shine.

The Storage and Transport Cases must be serialized items.

The Storage and Transport Cases must comply with the requirements for serialized items specified in Section 6.5.2 Serialized Items.

The Storage and Transport Cases must have a highly visible marking as applicable:

- LRF HHTI-LR Field Kit - nnn
- LRF HHTI-LR Support KIt - nnn

where nnn corresponds to the unique numbering component of the serialization.

The purpose of this additional marking is to allow rapid identification of of each system during acceptance on delivery, and when retrieving systems from a storage facility.

5.4 Field Pouch

5.4.1 Field Pouch General Requirements

The LRF HHTI-LR System must include a Field Pouch.

The Field Pouch must comply with the Common Pouch Requirements specified in Section 5.8.

The Field Pouch must be of semi-rigid construction.

The Field Pouch must protect the LRF HHTI-LR from shock and vibration associated with dismounted soldier operations.

The Field Pouch must be configured to allow the user to turn the LRF HHTI-LR on or off without opening the Field Pouch or removing the LRF HHTI-LR from the Field Pouch. < TBC >

The Field Pouch must permit BlueTooth communication between the LRF HHTI-LR and the ISS EUD when the LRF HHTI-LR is stored in the Field Pouch. < TBC >

The Field Pouch must permit Wireless communication between the LRF HHTI-LR and the ISS EUD when the LRF HHTI-LR is stored in the Field Pouch. < TBC >

5.4.2 Field Pouch Compartmentalization Requirements

The Field Pouch must have compartments to carry all of the following LRF HHTI-LR System Components:

- LRF HHTI-LR
- Lens Cleaning Kit
- Ruggedized Flash Drive
- RFD Interface Cable (if applicable to design)
- Quick Reference Guide
- Operator Manual
- Rechargeable Batteries for twenty-four hours of continuous operation of the LRF HHTI-LR
- Any adapters that may be required to mount the LRF HHTI-LR on a SAFRAN Vectronix SST3-1 Tripod

The Field Pouch must be compartmentalized to facilitate rapid access to components that may be required by the user.

The Field Pouch Lens Cleaning Kit compartment must be located on the outside of the Field Pouch.

The Field Pouch's RFD compartment must be easily accessible to the LRF HHTI-LR Operator.

The Field Pouch RFD compartment must protect the RFD from damage or degradation of performance from water, blowing dirt and/or dust.

The Field Pouch Battery compartment(s) must be located on the outside of the Field Pouch.

The Field Pouch Battery compartment(s) must protect batteries from damage or degradation of performance from water, blowing dirt and/or dust.

When worn in backpack mode, the compartments of the Field Pouch must be accessible to a fellow operator to remove and replace all carried components.

5.4.3 Field Pouch Carriage Requirements

5.4.3.1 Backpack Mode

The Field Pouch must include two backpack shoulder straps that allow the Field Pouch to be carried on the operator's back.

The backpack shoulder straps must be constructed with side release buckles.

The backpack shoulder straps must be adjustable.

The Field Pouch must have a sleeve located on the back so that the shoulder straps can be tucked away behind the sleeve to prevent catching on other objects.

5.4.3.2 Sling Mode

The Field Pouch must include an adjustable Sling Shoulder Strap.

The Field Pouch Shoulder Strap must be configurable so that the user can carry the LRF HHTI-LR with the Shoulder Strap around the user's neck.

The Field Pouch Shoulder Strap must be configurable so that the user can carry the LRF HHTI-LR with the Shoulder Strap hung on the user's shoulder and the LRF HHTI-LR resting against the same side of the body.

The Field Pouch Shoulder Strap must be configurable so that the user can carry the LRF HHTI-LR with the Shoulder Strap on one shoulder and the LRF HHTI-LR carried resting on the other side of the body.

The Shoulder Strap must be at least 1.5 centimetres in width.

The Shoulder Strap must be padded in the section of the Shoulder Strap that is resting on the part of the user's body that is bearing the weight of the LRF HHTI-LR.

The Shoulder Strap must be comfortable to the user when carrying the LRF HHTI-LR using the Shoulder Strap over a distance of five kilometres.

5.4.4 Field Pouch Attachment Requirements

The Field Pouch must include an attachment method that allows the Field Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).

The Field Pouch must include PALS webbing to allow the attachment of the Tripod Pouch such that the Tripod Pouch is held below the LRF HHTI-LR Field Pouch when carried.

The Field Pouch must include PALS webbing to allow the attachment of small pouches or small items of equipment carried by soldiers, and to allow it to be attached to other load carrying equipment.

5.5 Tripod Pouch

5.5.1 Tripod Pouch General Requirements

The LRF HHTI-LR System must include a Tripod Pouch.

The Tripod Pouch must comply with the Common Pouch Requirements specified in Section 5.8.

The Tripod Pouch must be large enough to carry the Tripod in a collapsed state.

5.5.2 Tripod Pouch Compartmentalization Requirements

The Tripod Pouch must have separate compartments for the Tripod and for any adapters or other items that are necessary to mount the LRF HHTI-LR and SAFRAN Vector Binoculars on the Tripod.

5.5.3 Tripod Pouch Attachment Requirements

The Tripod Pouch must include an attachment method that allows the Tripod Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).

The Tripod Pouch must include PALS webbing to allow the attachment of small pouches or small items of equipment carried by soldiers, and to allow it to be attached to other load carrying equipment.

The Tripod Pouch must have a means of attachment to the Field Pouch such that the Tripod Pouch is held below the Field Pouch when carried.

5.6 Accessories Pouch

5.6.1 Accessories Pouch General Requirements

The LRF HHTI-LR System must include an Accessories Pouch.

The Accessories Pouch must comply with the Common Pouch Requirements specified in Section 5.8.

The Accessories Pouch must carry all of the following LRF HHTI-LR System components:

- Battery Charger and Battery Charger Cables
- DAGR Interface Cable
- DC Power Cable Assembly
- AC Power Cable Assembly
- ISS Interface Cable
- RTL Interface Cable
- Rechargeable Batteries for twenty-four hours of continuous operation of the LRF HHTI-LR

5.6.2 Accessories Pouch Compartmentalization Requirements

The Accessories Pouch must be compartmentalized to facilitate rapid access to components that may be required by the user.

The Accessories Pouch Battery compartment(s) must protect batteries from damage or degradation of performance from water, blowing dirt and/or dust.

5.6.3 Accessories Pouch Carriage Requirements

The accessories pouch must have an adjustable shoulder strap or sling which allows for carrying over one shoulder.

5.6.4 Accessories Pouch Attachment Requirements

The Accessories Pouch must include an attachment method that allows the Tripod Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).

The Accessories Pouch must include PALS webbing to allow the attachment of small pouches or small items of equipment carried by soldiers, and to allow it to be attached to other load carrying equipment.

5.7 External Battery Pack Pouch

The LRF HHTI-LR System must include an EBP Pouch.

The EBB Pouch must comply with the Common Pouch Requirements specified in Section 5.8.

The EPB Pouch must carry the EPB.

The EPB Pouch must allow the use of the EPB as an external power source for the the LRF HHTI-LR while the EPB is in the EPB pouch.

The EPB Pouch must carry Low Temperature Batteries for twenty-four hours of continuous operation of the LRF HHTI-LR at -32 degrees Celsius.

The EBP Pouch must include a means of attaching the Pouch to the underside of the Tripod while the EBP within the pouch is powering the LRF HHTI-LR.

The EBP Pouch must include an attachment method that allows the Tripod Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).

5.8 Pouches - Common Requirements

5.8.1 Physical Requirements

Pouches must protect the contents of the pouches from dirt, dust and sand.

Pouches must be resistant to wear and tear associated with dismounted soldier operations.

Pouches must incorporate drain holes with grommets.

External pouch compartments must incorporate drain holes with grommets.

5.8.2 Materials and Components

5.8.2.1 Textiles

The Pouch shell fabric must be textured, 500 Denier (500D) Class 3, high tenacity nylon in accordance with MIL-DTL-32439.

The Pouch shell fabric must meet all spectral reflectance requirements specified in MIL-DTL 32439, para. 3.7 for Coyote 498.

The Pouch shell fabric color must be Coyote 498, (FED-STD-595C #20150), or equivalent approved by the TA prior to production.

5.8.2.2 Webbing

In order to achieve commonality of components across various soldier system equipment, pouch webbing must be either 15 mm or 25mm in width.

The webbing must be nylon, textile woven, conforming to MIL-W-17337F Class 2 or A-A-55301 (Mil-W-43668) Type III nylon webbing.

The webbing color must be Coyote 498, (FED-STD-595C #20150) or a color that is a good visual match the overall color of the Pouch.

5.8.2.3 Thread

The thread must be 100% bonded nylon, lubricated, 3-ply, 720 Denier or 70 tex conforming to MIL-SPEC A-A-59826, Class A, Type II or equivalent.

The thread color must be Coyote 498, (FED-STD-595C #20150) or a color that is a good visual match to the overall color of the Pouch.

5.8.2.4 Buckles

5.8.2.5 General

The buckles must be easily operated, engaged and disengaged with one hand operation when wearing gloves equivalent in texture and thickness to the soldier's Cold Wet Weather Gloves with 0.9 mm thick leather.

Pouch buckles must be equivalent in terms of form, fit and function (with the exception of colour) of buckles used in the construction of NSN 8465-20-000-2774 Small Pack, Load Carrying System, CADPAT (TW).

Buckle colour must be Coyote 498, (FED-STD-595C #20150) or a color that is a good visual match the overall color of the Pouch.

Buckles must be manufactured using DuPont™ Delrin® 500AL NC010 Acetal Resin or equivalent.

5.8.2.6 Field Replaceable Buckles

Where sewn-on female buckles are used, the Pouch must include a loose field-replaceable female buckle as a spare part.

The field-replaceable female buckle must be compatible with the male buckle.

The field-replaceable buckle must be readily installable by hand by the user when wearing gloves equivalent in texture and thickness to the soldier's Temperate Combat Gloves (0.9 mm leather), without modification to the buckle or to the item it is being installed on, and without the use of tools or other materials.

5.8.2.7 Slide Fasteners

The design of the slide fastener closures must provide for ease of access and resistance to water and environmental contaminants.

The colour of the slide fasteners must be dull, non-reflective and match the overall colour of the Pouch.

Zipper pulls, complete with cording, must be added to the sliders of the slide fasteners.

The finished length of the zipper pull assembly, with cording and pull assembled and attached to slider, must be a minimum of 7 cm.

5.8.2.8 Alternative Materials and Components

Alternate materials and components may be used if approval is obtained from the Technical Authority.

5.8.3 Marking and Labelling

5.8.3.1 Labels, Textile

Labels must be in accordance with Specification D-80-001-055/SF-001 Specification for Label, Clothing and Equipment.

Labels must be Type I and be made of polyester or nylon.

All label instructions must be in both official languages of Canada.

The marking and care information on the label must be legible and in indelible black ink.

Labels must bear care instructions and labelling symbology in accordance with CAN/CGSB-86.1 Care Labelling of Textiles.

Label alphanumeric formats must be in characters no less than 3.2 mm and not more than 6.4 mm.

The font and layout must be such that the labels are clearly legible, comprehensible and logically organized.

The colour of all fabric labels must be a good visual match to Coyote Brown.

5.8.3.2 Identification Information

Labels must include the following nomenclature in both official languages of Canada:

a. Contract No. / Numéro du contrat;

b. I/D (user identification) Line / Ligne pour l'identité du soldat;

c. Nomenclature / Nomenclature;

d. NSN / NNO;

e. Month and Year of Manufacture / Date de fabrication, année, et mois; and

f. Care Instructions / Instructions d'entretien.

5.8.3.3 Care Instructions

Care instructions must be in both official languages of Canada as follows:

English	***French***	***Care Symbol***
Wash gently by hand in water not exceeding 40 °C	Lavage à la main, à l'eau d'une température maximale de 40 °C	
Do not bleach	Ne pas utiliser d'agents de blanchiment	
Hang up the soaking wet article to “drip” dry	Suspendre l'article complètement mouillé pour séchage par égouttage	
Do not iron or press	Ne pas repasser ni presser	
Do not dry-clean	Ne pas nettoyer à sec	

5.8.3.4 Label Location and Application

Labels must be applied to the interior of the pouch.

The location of the label must be easily accessible to the user for viewing.

The label must be sewn around all edges.

5.8.3.5 Manufacturer Branding/labelling

Manufacturer/Supplier branding or product names must not be used on or attached to the Pouches.

5.8.4 Workmanship

Pouches must be free of manufacturing defects.

A defect will be interpreted as any irregularity that would diminish product performance or user acceptance beyond the levels established at any point during the bid evaluation or the Contract. Visible irregularities can be considered defects when clearly visible from a distance of one metre or more.

5.9 Rechargeable Batteries

The LRF HHTI-LR System must include Rechargeable Batteries.

The Rechargeable Batteries must be lithium-ion batteries.

The Rechargeable Batteries must be used internally within the LRF HHTI-LR.

The Rechargeable Batteries must be compatible with the LRF HHTI-LR.

The Rechargeable Batteries must be compatible with the LRF HHTI-LR System Battery Recharger.

Requirements related to powering of the LRF HHTI-LR by Rechargeable Batteries are specified in Section 4.3.14.1.1 Rechargeable Battery Power Source.

5.10 Low Temperature Batteries

The LRF HHTI-LR System should include Low Temperature Batteries.

The requirements in this section below can be considered mandatory if the LRF HHTI-LR System includes Low Temperature Batteries.

The Low Temperature Batteries must be used internally within the LRF HHTI-LP.

The Low Temperature Batteries must be compatible with the LRF HHTI-LR.

IF the Low Temperature Batteries are non-rechargeable, they must be lithium batteries.

If the Low Temperature Batteries are non-rechargeable, they must have a shelf life of at least ten years.

If the Low Temperature Batteries are rechargeable, then the Low Temperature Batteries must be lithium-ion batteries.

If the Low Temperature Batteries are Rechargeable, they must be compatible with the LRF HHTI-LR System Battery Recharger.

Requirements related to powering of the LRF HHTI-LR by Low Temperature Batteries are specified in Section 4.3.14.1.2 Low Temperature Battery Power Source.

5.11 Battery Charger

The Battery Chargers will be used within a sheltered area, not open to rain or snow.

If the Rechargeable Batteries are of a type that is already in-service in the Canadian Army, and a suitable Battery Charger is also already in-service, then the Battery Charger may be reclassified as GFE.

5.11.1 Battery Charger Requirements

The LRF HHTI-LR System must include a Battery Charger.

The Battery Charger must recharge one or more sets of Rechargeable Batteries simultaneously.

The Battery Charger must be certified by an organization accredited by the Standards Council of Canada and bear either the CSA mark or a ULC mark.

The Battery Charger must comply with the European Low Voltage Directive 2014/35/EU and bear the CE mark or equivalent.

5.11.2 Battery Charger 110/120 VAC Power Source

The Battery Charger must be powered by 110/120 VAC (60 hertz).

The Battery Charger must include a power cable that connects the Battery Charger to a standard North American NEMA 5-15R receptacle.

The Battery Charger must recharge one or more sets of Rechargeable Batteries in four hours or less when powered by 110/120 VAC (60 hertz).

The 110 VAC power cable and any integral power converters must be certified by an organization accredited by the Standards Council of Canada and bear either the CSA mark or an ULC mark.

5.11.3 Battery Charger 220/240 VAC Power Source

The Battery Charger must be powered by 220/240 VAC (50 hertz).

The Battery Charger must include a power cable that connects the Battery Charger to a European 220/240 VAC receptacle using a Europlug.

The Battery Charger must recharge two or more sets of Rechargeable Batteries in four hours or less when powered by 220/240 VAC (50 hertz).

The 220/240 VAC power cable and any integral power converters must comply with the European Low Voltage Directive 2014/35/EU and bear the CE mark or equivalent.

5.11.4 Battery Charger DC Power Source

The Battery Charger must be powered by a military vehicle 24 V DC power source.

The Battery Charger must use the DC Power Cable Assembly to connect to a military vehicle 24 V DC power source.

The Battery Charger must recharge two or more sets of Rechargeable Batteries in four hours or less when powered by a military vehicle 24 V DC power source.

The Battery Charger must be powered by a commercial vehicle 12 V DC power source.

The Battery Charger must use the DC Power Cable Assembly to connect to a commercial vehicle 12 V DC power source.

The Battery Charger must recharge two or more sets of Rechargeable Batteries in four hours or less when powered by a commercial vehicle 12 V DC power source.

Requirements related to the DC Power Cable Assembly are specified in Section 5.18 DC Power Cable Assembly.

5.11.5 Product Serialization

The Battery Charger must be a serialized item.

The Battery Charger serialization must satisfy the requirements specified in Section 6.5.2 Serialized Items.

5.12 Tripod

The primary purpose of the Tripod is to provide a stable platform for using the LRF HHTI-LR where the weight of the LRF HHTI-LR is not borne by the user. In order to minimize the equipment carried in the field, the Tripod may also be used to provide a stable platform for other equipment such as the SAFRAN Vector Binocular and other equipment that may be operated by users in a forward observer, reconnaissance or sniper role.

5.12.1 Tripod Physical Characteristics

The LRF HHTI-LR System must include a Tripod.

The Tripod must be adjustable in height such that the LRF HHTI-LR can be operated by a standing user with the tripod set-up on the same surface as the user.

The Tripod must be adjustable in height such that the LRF HHTI-LR can be operated by a kneeling user with the tripod set-up on the same surface as the user.

The Tripod must be adjustable in height such that the LRF HHTI-LR can be operated by a prone user with the tripod set-up on the same surface as the user.

The Tripod must include a means of holding the EBP Pouch below the plate where the LRF HHTI-LR attaches to the Tripod.

The Tripod must be collapsible for the purposes of carrying the Tripod in the Tripod Pouch.

The Tripod must support a mounted mass of at least 4.0 kilograms without damage to the Tripod.

The Tripod must have a mass of no more than 2.5 kilograms.

The Tripod must be non-magnetic.

5.12.2 LRF HHTI-LR / Tripod Interface

The Tripod must include a physical interface for mounting the LRF HHTI-LR on the Tripod.

The Tripod must be compatible with the LRF HHTI-LR.

The physical interface between the Tripod and the LRF HHTI-LR must have a quick connect and quick disconnect mechanism that does not require the use of tools to mount or remove the LRF HHTI-LR.

5.12.3 Tripod / SAFRAN Vector Binoculars Interface

The Tripod must include a physical interface for mounting a SAFRAN Vector Binoculars < specification TBD > on the Tripod.

The Tripod must be compatible with the SAFRAN Vector Binoculars < specification TBD >.

The physical interface between the Tripod and the SAFRAN Vector Binoculars must have a quick connect and quick disconnect mechanism that does not require the use of tools to mount or remove the Vector Binoculars.

5.12.4 Tripod Capability Requirements when LRF HHTI-LR is Mounted

The Tripod must be adjustable in azimuth such that the mounted LRF HHTI-LR can be traversed to any angle of azimuth without restriction.

The Tripod must be adjustable in angle of sight such that the mounted LRF HHTI-LR can be elevated or depressed from the horizontal to any setting in a range of minus 400 mils or greater in depression to 400 mils or greater in elevation.

5.12.5 Product Serialization

The Tripod must be a serialized item.

The Tripod serialization must satisfy the requirements specified in Section 6.5.2 Serialized Items.

5.13 DAGR Interface Cable

The LRF HHTI-LR System must include a DAGR Interface Cable to connect the LRF HHTI-LR to the DAGR.

The DAGR Interface Cable must be compatible with the LRF HHTI-LR.

The DAGR Interface Cable must be compatible with the DAGR.

The DAGR Interface Cable must support the interface functionality described in Section 4.4.2.2 LRF HHTI-LR / DAGR Interface Functional Requirements.

The DAGR Interface Cable must be compatible with the ISS Hub.

The DAGR Interface Cable must include an adaptor to connect the DAGR to a PAN port on the ISS Hub.

The DAGR Interface Cable must meet the cabling requirements specified in Section 6.2 Common Cable Requirements.

5.14 ISS Interface Cable

The LRF HHTI-LR System must include an ISS Interface Cable to connect the LRF HHTI-LR to a Personal Area Network (PAN) port on the ISS Hub.

The ISS Interface Cable must be compatible with the LRF HHTI-LR.

The ISS Interface Cable must be compatible with the ISS.

The ISS Interface Cable must connect to a PAN port on the ISS Hub using a connector compliant with NWPAN-WP-01112013.

The ISS Interface Cable must support the interface functionality described in Section 4.4.3.4 LRF HHTI-LR / ISS Interface Functional Requirements.

The ISS Interface Cable must meet the cabling requirements specified in Section 6.2 Common Cable Requirements.

5.15 LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP)

5.15.1 General

The LRF HHTI-LR System must include software that comprises a collection of LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP) that is installed on the ISS EUD and on the ISS Commanders Tablet.

The LIBI AP must be compatible with ATAK Version 4.8.1.

The LIBI AP must comply with the LRF HHTI-LR / ISS BMS ICD (to be developed).

The LIBI AP is a developmental item that will be integrated into an ATAK environment. The AUF and Commander's Tablet hardware on which the LIBI AP will be installed will not be modified to support the achievement of LRF HHTI-LR / ISS interface requirements.

5.15.2 Management Functions

The LIBI AP must sense when an LRF HHTI-LR is connected to the ISS Hub.

The LIBI AP must display the status of connection to an LRF HHTI-LR.

5.15.3 User Geolocation Data

The ISS BMS maintains user geolocation data sourced from either a connected DAGR or connected radio.

The LIBI AP must provide current user geolocation data to the LRF HHTI-LR.

The LIBI AP must provide user geolocation data sourced from a connected DAGR to the LRF HHTI-LR in preference to geolocation data sourced from a connected radio.

5.15.4 LRF HHTI-LR Geo-orientation Data

On receipt of Geo-orientation data from the LRF HHTI-LR, the LIBI AP must create or update a Sensor icon representing the LRF HHTI-LR based on the geo-orientation data.

The LIBI AP must update following attributes of the Sensor icon representing the LRF HHTI-LR from data received from the LRF HHTI-LR:

- Name
- Sensor Location
- Sensor Range Length
- Direction
- Field of View

When the connection to the LRF HHTI-LR is lost, the LIBI AP must remove the Sensor icon representing the LRF HHTI-LR.

5.15.5 Lased Target Files

On receipt of a lased target file from the LRF HHTI-LR, the LIBI AP must create or update a Lased Target icon based on the geo-location data in the lased target file.

On receipt of an image file from the LRF HHTI-LR that is related to the lased target, the LIBI AP must attach the image file to the Lased Target icon.

5.15.6 Image Files

On receipt of an image file from the LRF HHTI-LR, the LIBI AP must save the image file on the ISS BMS.

On receipt of an image file from the LRF HHTI-LR that is not related to a lased target, the LIBI AP must attach the image file to the Sensor icon associated with the LRF HHTI-LR.

The image files received from the LRF HHTI-LR and saved to the ISS BMS must be viewable using standard ATAK image viewing functionality.

The image files received from the LRF HHTI-LR and saved to the ISS BMS must be editable using standard ATAK image editing functionality.

The image files received from the LRF HHTI-LR and saved to the ISS BMS must be manageable using standard ATAK file management functionality.

5.15.7 Video Files

On receipt of a video file from the LRF HHTI-LR, the LIBI AP must save the video file on the ISS BMS.

On receipt of a video file from the LRF HHTI-LR, the LIBI AP must attach the video file to the Sensor icon associated with the LRF HHTI-LR.

The video files received from the LRF HHTI-LR and saved to the ISS BMS must be viewable using standard ATAK video viewing functionality.

The video files received from the LRF HHTI-LR and saved to the ISS BMS must be editable using standard ATAK video editing functionality.

The video files received from the LRF HHTI-LR and saved to the ISS BMS must be manageable using standard ATAK file management functionality.

5.15.8 Streaming Video

The LIBI AP must initiate a new video stream from the LRF HHTI-LR in response to user input on the ISS BMS / LIBI AP.

On initiation of streaming video from the LRF HHTI-LR, the LIBI AP must attach the streaming video to the Sensor icon associated with the LRF HHTI-LR.

Video streams coming from the LRF HHTI-LR into the ISS BMS must be viewable using standard ATAK streaming video functionality.

Files related to video streams coming from the LRF HHTI-LR into the ISS BMS must be manageable using standard ATAK file management functionality.

5.15.9 Remote Control

The LIBI AP must replicate all human-machine interface functions of the LRF HHTI-LR such that the LRF HHTI-LR can be remotely controlled using the LIBI AP.

The LIBI AP must provide remote control functionality while the video stream from the LRF HHTI-LR is being displayed on the ISS BMS / LBI AP.

5.16 RTL Interface Cable

The LRF HHTI-LR System must include an RTL Interface Cable to connect the LRF HHTI-LR to the RTL.

The RTL Interface Cable must be compatible with the LRF HHTI-LR.

The RTL Interface Cable must be compatible with the RTL.

The RTL Interface Cable must be at least two metres in length.

The RTL Interface Cable must support the interface functionality described in Section 4.4.4.2 LRF HHTI-LR / RTL Interface Functional Requirements.

The RTL Interface Cable must meet the cabling requirements specified Section 6.2 Common Cable Requirements.

5.17 Ruggedized Flash Drive (RFD)

5.17.1 RFD Description

The RFD is an unencrypted ruggedized flash drive (also referred to as a "ruggedized USB Stick") used in the field by dismounted soldiers to transfer image, video and other data files between various devices in the operational unclassified domain. At this time, there is no standardized RFD in-service with the Canadian Army. In the context of operations using LRF HHTI-LR, it is intended that image and video files would be downloaded onto the RFD, and then delivered to a Command Post (CP). In the CP, the files would be downloaded to an RTL or other compatible device for further analysis.

Should the CA adopt a standard RFD, these requirements may evolve such that the RFD is no longer integral to the LRF HHTI-LR, but is simply an external system to which the LRF HHTI-LR must interface.

5.17.2 RFD Requirements

The LRF HHTI-LR must include an RFD.

The RFD must be compatible with the LRF HHTI-LR.

The RFD must be compatible with the Ruggedized Tactical Laptop (RTL).

The RFD must be external to the LRF HHTI-LR.

The RFD must be a USB Version 3.0 or higher device.

The RFD must have a USB Type C male connector.

The RFD must have a storage capacity of 128 GB or more.

The RFD must have a read speed of 150 MB/sec or faster.

5.18 DC Power Cable Assembly

It is intended that the DC Power Cable Assembly be used to power the LRF HHTI-LR and to power the Battery Charger, but not both at the same time.

The LRF HHTI-LR System must include a DC Power cable assembly.

The DC Power Cable Assembly must include power converters and adapters necessary to power the LRF HHTI-LR.

The DC Power Cable Assembly must include power converters and adapters necessary to power the Battery Charger.

The DC Power Cable Assembly must be compatible with the LRF HHTI-LR.

The DC Power Cable Assembly must be compatible with the Battery Charger.

The DC Power Cable Assembly must be compatible with a military vehicle 24 V DC electrical system that is compliant with MIL-STD-1275E.

The DC Power Cable Assembly must be compatible with a standard NATO slave receptacle on a vehicle that complies with MIL-PRF-62122E.

The DC Power Cable Assembly must be compatible with a Size B power outlet in a commercial vehicle that complies with ANSI/SAE J563 Standard for 12 Volt Cigarette Lighters, Power Outlets, and Accessory Plugs.

The DC Power Cable Assembly must be compatible with a CWB that implements connectors compliant with NWPAN-WP-01112013.

The DC Power Cable Assembly must be at least four metres in length.

If the DC Power Cable Assembly includes a power converter, then the length of the two associated cables (from LRF HHTI-LR to converter and from converter to plug for external power source) must be at least two metres in length each.

The DC Power Cable Assembly must include a two-meter extension to enable the user to extend the total length of the DC Power Cable Assembly to over six metres.

The DC Power Cable Assembly must satisfy the common cable requirements specified in Section 6.2 Common Cable Requirements.

5.19 AC Power Cable Assembly

It is intended that the AC Power Cable Assembly be used to power the LRF HHTI-LR and to power the Battery Charger, but not both at the same time.

The LRF HHTI-LR System must include an AC Power Cable Assembly.

The AC Power Cable Assembly must include power converters and adapters necessary to power the LRF HHTI-LR.

The AC Power Cable Assembly must include power converters and adapters necessary to power the Battery Charger.

The AC Power Cable Assembly must be compatible with the LRF HHTI-LR.

The AC Power Cable Assembly must be compatible with the Battery Charger.

The AC Power Cable Assembly must be compatible with a European 220/240 VAC 50 hertz power source.

The AC Power Cable Assembly must be compatible with a North American 110/120 VAC 60 hertz power source.

The AC Power Cable Assembly must connect the LRF HHTI-LR to a standard North American 110/120 VAC NEMA 5-15R receptacle.

The AC Power Cable Assembly must connect the LRF HHTI-LR to a standard European 220/240 VAC power receptacle using a Europlug.

The AC Power Cable Assembly must be at least four metres in length.

If the AC Power Cable Assembly includes a power converter, then the length of the two associated cables (from LRF HHTI-LR to converter and from converter to AC power receptacle) must be at least two metres in length each.

The AC Power Cable Assembly must satisfy the common cable requirements specified in Section 6.2 Common Cable Requirements.

Requirements related to powering of the LRF HHTI-LR by an AC power source are specified in Section 4.3.14.2.3 AC Power Source.

5.20 External Battery Pack

The LRF HHTI-LR System must include an External Battery Pack (EBP)

The EBP will be carried in the EPB Pouch. See Section 5.7 for related requirements.

The EBP must accept commercial AA batteries.

Using the EBP with Energizer Recharge® rechargeable AA batteries, the LRF HHTI-LR must continuously operate for a minimum of six hours in the Operational Mode at 20 degrees Celsius using power only from the EBP, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.

Using the EBP with Energizer® Ultimate Lithium non-rechargeable AA batteries, the LRF HHTI-LR must continuously operate for a minimum of four hours in the Operational Mode at minus 32 degrees Celsius using power only from the EBP, with no battery change, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.

The EBP must permit the user to change batteries under field conditions without the use of special tools.

The EBP must indicate the state of charge of the batteries contained within in response to user action.

The EBP must connect to the LRF HHTI-LR using the DC Power Cable Assembly (see Section 5.18).

The connection between the EBP and DC Power Cable Assembly must be physically secure such when carried in a pouch or pocket, the EBP will not inadvertantly disconnect from the DC Power Cable Assembly.

The EBP should be black with a dull finish.

The EPB must be certified by an organization accredited by the Standards Council of Canada and bear either the CSA mark or a ULC mark.

The EPB must comply with the European Low Voltage Directive 2014/35/EU and bear the CE mark or equivalent.

5.21 Lens Cleaning Kit

The CAF has a standardized lens cleaning kit in-service, NSN 1240-20-004-3852. The LRF HHTI-LR System Lens Cleaning Kit may be specific to the LRF HHTI-LR, or it may be determined that this component is GFE.

The LRF HHTI-LR System must include a Lens Cleaning Kit.

The Lens Cleaning Kit must include cleaning tools and consumables that are required to clean, de-fog and de-ice the exterior optical surfaces of the LRF HHTI-LR.

5.22 Operator Manual

The LRF HHTI-LR System must have an Operator Manual.

Requirement for the Operator Manual are specified in the LRF HHTI-LR Data Item Descriptions document DID LS-11 Operator Manual.

5.23 Quick Reference Guide

The LRF HHTI-LR System must have a Quick Reference Guide.

Requirements for the Quick Reference Guide are specified are specified in the LRF HHTI-LR Data Item Descriptions document DID LS-12 Quick Reference Guide.

6 LRF HHTI-LR System - Common System Requirements

6.1 Required States and Modes

6.1.1 Transport and Storage Mode

In the Transport and Storage Mode, all components of the LRF HHTI-LR System are stored within the Field Kit Storage and Transport Case and the Support Kit Storage and Transport Case. In the Transport and Storage mode, batteries are removed from the LRF HHTI-LR. Depending on the operational situation, batteries may be stored within the two storage and transport cases, or may be stored elsewhere.

The storage configuration of LRF HHTI-LR System components within the storage and transport cases is described in:

- Section 5.1 Field Kit Storage and Transport Case
- Section 5.2 Support Kit Storage and Transport Case

The LRF HHTI-LR System must have a Transport and Storage Mode.

6.1.2 Field Carriage Mode

In the Field Carriage Mode, all components of the LRF HHTI-LR System (with the exception of the two storage and transport cases) are distributed between the Field Pouch, Tripod Pouch, and Accessories Pouch. In the Field Carriage Mode, Internal Batteries are loaded in the LRF HHTI-LR, and the LRF HHTI-LR is not turned on.

The configuration and distribution of LRF HHTI-LR System components between the four pouches is described in:

- Section 5.4 Field Pouch
- Section 5.5 Tripod Pouch
- Section 5.6 Accessories Pouch
- Section 5.7 External Battery Pack Pouch

The LRF HHTI-LR System must have a Field Carriage Mode.

The LRF HHTI-LR System, when carried in the Field Carriage Mode, must be acceptable to soldiers in operational clothing equipped with the Modular Load Carrying System.

6.2 Common Cable Requirements

6.2.1 Functional Requirements

LRF HHTI-LR System cables must comply with recognized military standards applicable to the use of the cable and the environment in which it is used.

6.2.2 Cable Marking

6.2.2.1 Functional Cable Marker Tags

LRF HHTI-LR System cables must have Functional Cable Marker Tags.

Functional Cable Marker Tags must be located at each end of the cable.

Functional Cable Marker Tags must identify the cable based on function, for example "LRF HHTI-LR / ISS Interface Cable".

6.2.2.2 Catalogue Cable Marker Tags

LRF HHTI-LR System cables must have Catalogue Cable Marker Tags.

Catalogue Cable Marker Tags must be located at each end of the cable.

If the cable is over five metres in length, Catalogue Cable Marker Tags must be located at three metre intervals along the cable.

Catalogue Cable Marker Tags must include the following information as indicated on the Cable Assembly Drawing associated with the cable:

a. NATO Stock Number.

b. Cable number followed by length in millimetres.

c. Part Number.

d. Manufacturer's NSCM Code or CAGE Code

6.2.2.3 Cable Marker Tags - Common Requirements

Cable marker tags must have a white solid background plastic identification marker tube or sleeve printed in dark contrasting ink using a character height not smaller than 2 millimetres.

Cable marker tags must be covered and protected by clear heat shrink tubing.

6.3 System Environment Requirements

6.3.1 General

The LRF HHTI-LR System must meet all performance requirements in this SRS without incurring physical damage and without degradation of performance of the LRF HHTI-LR System and its sub-systems (including any supplied interface cables/connections to Government Supplied Material (GSM) and Government Furnished Equipment (GFE)) during and after exposure to any combination of the meteorological and induced climatic conditions that can be found within the geographic climatic regions identified in this SRS and described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

6.3.2 Climatic / Natural Environments

6.3.2.1 Operation - High Temperature

The LRF HHTI-LR System must operate without physical damage and without degradation of performance in all high temperature environments associated with the A3, A2 and A1 (+49°C max) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2./1

6.3.2.2 Storage - High Temperature

The LRF HHTI-LR System must be transported and stored without physical damage and without degradation of performance in all high temperature environments associated with the A3, A2, and A1 (+71°C max) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

6.3.2.3 Operation - Low Temperature

The LRF HHTI-LR System must operate without physical damage and without degradation of performance in all low temperature environments associated with the C0 and C1 (-32°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

The LRF HHTI-LR System should operate without physical damage and without degradation of performance in all low temperature environments associated with the C0, C1, C2 and C3 (-51°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

6.3.2.4 Storage - Low Temperature

The LRF HHTI-LR System must be transported and stored without physical damage and without degradation of performance in all low temperature environments associated with the C0 and C1 (-32°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

The LRF HHTI-LR System should be transported and stored without physical damage and without degradation of performance in all low temperature environments associated with the C0, C1, C2 and C3 (-51°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

6.3.2.5 Temperature Shock

The LRF HHTI-LR System must operate without physical damage and without degradation of performance under conditions of rapid changes in ambient air temperature as encountered during movements between in-door controlled temperature environments to out-door environments that are at either high temperature (+49°C) and low temperature (-32°C) extremes.

The LRF HHTI-LR System must not require any physical modifications or preparations in advance of encountering a temperature shock and must be fully operable during and following the temperature shock.

6.3.2.6 Solar Radiation (Sunshine)

The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance in all solar radiation conditions associated with the A3, A2, and A1 climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

6.3.2.7 Rain

The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance in conditions of blowing Steady-State (1.7 mm/min) rain up Extreme (14 mm/min) rain conditions as described in NATO STANAG 4370, AECTP 300, Method 310.

6.3.2.8 Icing / Freezing Rain

The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance following removal of ice accretion on the product's surfaces from freezing rain and other cold water spray conditions, up to a Light (6 mm) loading as described in NATO STANAG 4370, AECTP 300, Method 311.

The LRF HHTI-LR System must allow the removal of ice from the LRF HHTI-LR System surfaces using hands or hand-held mechanical tools, such as ice-scrapers, without causing physical damage to the system.

6.3.2.9 Frost and Condensation

The LRF HHTI-LR System must not be physically damaged and must not be degraded in performance following conditions of frost and condensation formation on the product's surfaces in any stored, transported or operating configuration.

6.3.2.10 Humidity

The LRF HHTI-LR System must operate without physical damage and without degradation of performance in all high humidity environments associated with the B1, B2 and B3 climatic regions as described in STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.

6.3.2.11 Blowing Sand and Dust

The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance in environments with airborne fine dust particulates, as described in STANAG 4370, AECTP 300, Ed. 3, Method 313, Procedure I.

The LRF HHTI-LR System must be stored, transported and operate following exposure to blowing sand (with lens protection in place) without physical damage and without degradation of performance in environments with blowing, large particle sand, as described in STANAG 4370, AECTP 300, Ed. 3, Method 313, Procedure II.

6.3.2.12 Salt Fog

The LRF HHTI-LR System must operate without physical damage and without degradation of performance in salt laden atmospheric environments as described in MIL-STD-810H, Method 509.7.

6.3.2.13 Fungus

The LRF HHTI-LR System must not contain materials that are susceptible to fungus growth.

6.3.3 Induced Environments

6.3.3.1 Shock

The LRF HHTI-LR System must operate without physical damage and without degradation of performance following shocks associated with dismounted soldier operations that occur while the system is in the Field Carriage mode.

The LRF HHTI-LR System must operate without physical damage and without degradation of performance following a transit drop while the system is in the Field Carriage mode.

6.3.3.2 Transport Vibration

The LRF HHTI-LR System must operate without physical damage and without degradation of performance following exposure to the vibrations associated with transport in Ground Vehicles when configured in the field carriage mode.

The LRF HHTI-LR System must operate without physical damage and without degradation of performance following exposure to the vibrations associated with transport in Ground Vehicles when configured in the storage and transport mode.

6.3.3.3 Immersion

The LRF HHTI-LR System must operate without physical damage and without degradation of performance following immersion under water in any stored, transported or operating configuration to a depth of not less than 1 meter below the water surface for a duration of not less than 30 minutes.

The LRF HHTI-LR System must not require any physical preparations or modifications in advance of being immersed and must be fully operable immediately following the immersion without any preparations or drying.

6.3.3.4 Low Pressure (Altitude)

The LRF HHTI-LR System must be stored, transported and operated without physical damage and without degradation of performance in all low ambient air pressure environments from sea level to 4,572 m (15,000 ft) pressure-altitude above sea-level.

6.3.3.5 Contamination by Fluids

The LRF HHTI-LR System must operate without damage and without degradation of performance following occasional exposure to small amounts of the following contaminating fluids:

- Weapon cleaning solvents;
- Body fluids;
- Sea water;
- Road salt mixtures;
- Reactive Skin Decontaminant Lotion (RSDL); and
- Petroleum, Oil and Lubricant (POL) products.

6.3.4 Electromagnetic Environmental Effects (E3)

6.3.4.1 Electric Field, Radiated Emissions

The LRF HHTI-LR System must control radiated fields necessary to operate with the other collocated systems when operated in ground applications in an Army environment.

The LRF HHTI-LR System must control radiated fields necessary to operate with the other collocated systems when operated above deck on a surface ship.

6.3.4.2 Electric Field, Radiated Susceptibility

The LRF HHTI-LR System must operate without physical damage and without degradation of performance when subjected to radiated electric fields, when operated in ground applications in an Army environment.

6.3.4.3 Electrostatic Discharge

The LRF HHTI-LR System must operate without physical damage and without degradation of performance when subjected to personnel-borne electrostatic discharge.

6.4 Design and Construction Constraints

6.4.1 Assembly for Operation

Starting from the Field Carriage Mode, the LRF HHTI-LR System must be assembled ready for operational use on the Tripod by a trained user in darkness in less than five minutes.

6.5 Product Marking, Serialization and Nameplates

6.5.1 Product Marking and Nameplates

All LRF HHTI-LR System components must have nameplates or product markings in accordance with D-02-002-001/SG-001 Identification Marking of Canadian Military Property.

6.5.2 Serialized Items

6.5.2.1 Product Marking, Serialization and Nameplates

LRF HHTI-LRS serialized items must be assigned a Unique Item Identifier (UII) in accordance with NATO Standard AAITP-08.

LRF HHTI-LRS serialized items nameplate or product marking must include the UII in human-readable form.

LRF HHTI-LRS serialized items nameplate or product marking must include the UII Mark in machine readable data carrier form in accordance with NATO Standard AAITP-08.

7 SRS Views

7.1 General

This SRS is maintained using the IBM Rational DOORS application. The LRF HHTI-LR SRS module can be found in the DND DOORS Production instance at 002 - ADM MAT / DGLEPM / DSSPM / NVSM / PM / Projects / HHTI-LR.

In support of the LRF HHTI-LR Acquisition and In-Service Support contracts, the contents of the SRS module are exported in two views:

- Requirements Verification Matrix View
- Requirements Text View

7.2 Requirements Verification Matrix View

7.2.1 Purpose

The RVM view is the contractual view of the SRS. It specifies the requirements for the LRF HHTI-LR System. For each requirement, it specified how satisfaction of the requirement will be verified.

The RVM view defines the Functional Baseline for the LRF HHTI-LR System in the context of configuration management.

The RVM view is presented in a tabular format, and is published as a Microsoft Excel spreadsheet.

7.2.2 Attributes

7.2.2.1 Object Text

The Object Text attribute contains the primary content for the object. All other attributes are determined in context of the Object Text.

7.2.2.2 Object Number

The Object Number attribute is the legal-style hierarchical identifier of the object in the context of the object hierarchy. The object number identifying an object may change as the object hierarchy changes.

7.2.2.3 Unique ID

The Unique ID attribute is a unique integer identifier assigned to an object at the time of its creation. The Unique ID for an object will not change as the object hierarchy changes.

7.2.2.4 Object Type

The Object Type attribute determines the class of the object. It can be assigned one of the classes as follows:

Title. The object is a heading in the document hierarchy.

Information. The object contains contextual information to enable the reader to better understand the context of the requirement. Requirements objects should be read in conjunction with associated information objects.

Mandatory Requirement. The object is a mandatory requirement.

Mandatory Requirement (rated). The object is a mandatory requirement that has a mandatory performance level. Performance above the mandatory level will result in a higher technical score during bid evaluation.

Desirable Requirement. The object is a desirable requirement. It provides visibility of DND's vision for future enhancements or optional capabilities that could be included in the functional baseline of the system if the functionality exists.

Desirable Requirement (rated). The object is a desirable requirement that does not have a mandatory performance level. However, the performance related to the requirement will be determined during bid evaluation and included in the technical score.

7.2.2.5 Compliance Required at Bid Submission

The Compliance Required at Bid Submission attribute is applicable to Mandatory Requirement and Mandatory Requirement (rated) object types where the requirement is associated with a MOTS / COTS component of the system that is not expected to change in configuration between the time of bid evaluation and the First Article Acceptance Test. The settings for this attribute are defined as follows:

Yes. The requirement must be satisfied by the bidder's proposed system at the time of bid submission. The requirement may be subject to verification during the bid evaluation process.

No. The requirement does not need to be satisfied by the bidder's proposed system at the time of bid submission. The requirement will not be subject to verification during the bid evaluation process.

Yes - LRF HHTI-LR only, excluding other system requirements. This setting applies to system-level requirements where compliance at the time of bid submission is only applicable to the LRF HHTI-LR device itself, and not to the rest of the system. Examples include system-level environmental requirements.

N/A - Info Only. Compliance at the time of bid submission is not applicable to the object, as the object is not a requirement.

7.2.2.6 Post Award Verification Event

7.2.2.6.1 Verification Events

Verification of each requirement after contract award may occur at one or more verification events:

- Prototype Verification (Prototype);
- System Acceptance Test (SAT); and
- First Article Acceptance Test (FAAT).

Details of these verification events can be found in the LRF HHTI-LR Acquisition Statement of Work.

7.2.2.6.2 Means of Verification

Refer to the LRF HHTI-LR RAGL for definitions of the following means of verification associated with a verification event:

- Inspection;
- Demonstration;
- Analysis - Test Report;
- Analysis - Evidence; and
- User Acceptance Performance Evaluation (UAPE).

Test - QETE is a means of verification in which testing is conducted by DND's Quality Engineering Test Establishment (QETE).

7.2.2.6.3 Other Attribute Values

Settings for this attribute not defined above are defined as follows:

Not verified post contract award. The context of the requirement is such that once verified during bid evaluation, there is no perceived benefit to re-verifying that the requirement has been satisfied post contract award.

N/A if config is unchanged from IBS, otherwise... If the configuration of the component of the system to which the requirement applies is unchanged from its configuration at the time of bid submission, re-

verification of the requirement will generally not be required. If the configuration changes, the required verification events are listed.

7.2.2.7 Post Award Verification Criteria

The Post Award Verification Criteria attribute provides supporting criteria to the contractor as to how the requirement must be verified. The criteria may include direction on specific tests that must be applied, or tailoring to be applied to standard tests.

Definitions of "Standard" verification criteria are as follows:

Standard for Inspection. The Contractor provides the item subject to verification to the Technical Authority (TA) for inspection. Verification requires acceptance by the TA that the requirement has been met.

Standard for Demonstration. The item subject to verification is provided to the Technical Authority (TA) for demonstration. The Contractor leads the TA through the steps necessary to demonstrate that the requirement has been met. Verification requires acceptance by the TA that the requirement has been met.

Standard for Analysis - Evidence. The contractor provides written analysis to present evidence that the requirement has been met. Verification requires acceptance by the TA that the requirement has been met. Where specific requirements for the evidence to be provided is included in the verification criteria, the evidence provided must be in accordance with the specific requirements.

Standard for Analysis - Test. The contractor provides written analysis to present evidence that the requirement has been met. The evidence must include a Test Report prepared by an independent test organization. Verification requires acceptance by the TA that the requirement has been met. Where specific requirements for the testing to be conducted is included in the verification criteria, the testing must be conducted in accordance with the specific requirements.

7.3 Requirements Text View

7.3.1 Purpose

The requirements text view provides a summary view of requirements that excludes the detailed content on how each requirement will be verified. It is provided as an overview of requirements for situational awareness purposes only.

The requirements text view is presented without the use of tables. It is published as a Microsoft Word document.

7.3.2 Attributes

The requirements text view contains the Object Text attribute only. For headings, the Object Text includes the hierarchical Object Number. For text under a heading, the Object Number is not included.

Object Numbers for text and Unique IDs of objects are available in the RVM view.

APPENDIX 4 TO ANNEX B1

MISSION PROFILE – BATTERY LIFE

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

1 Introduction

1.1 Identification

This Mission Profile – Battery Life document provides supporting information to the System Requirements Specification (SRS) for the Laser Range Finder – Hand Held Thermal Imager – Long Range (LRF HHTI-LR). It defines a specific mission profile for the use of the LRF HHTI-LR to support the determination of how long it can operate on internal battery power without changing batteries.

1.2 Intended Use

The Mission Profile – Battery Life will be used to determine compliance with the following requirements in the SRS:

> 4.3.14.1.1.0-2. The LRF HHTI-LR must continuously operate for a minimum of two hours and thirty minutes in the Operational Mode at 20 degrees Celsius using power only from the installed Rechargeable Batteries, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.
>
> 4.3.14.1.2.0-3. The LRF HHTI-LR should continuously operate for a minimum of two hours and thirty minutes in the Operational Mode at minus 32 degrees Celsius using power only from installed Low Temperature Batteries, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.

The Mission Profile – Battery Life is also used to determine how long the LRF HHTI-LR can operate using internal battery power under defined environmental conditions without changing internal batteries.

2 Mission Profile

2.1 Environmental Conditions

The mission profile simulates the use of the system outdoors, protected from precipitation. For test purposes, the system is used in a controlled environment with the temperature stabilized to within plus or minus two degrees Celsius of the temperature specified in the requirement.

2.2 Operational Scenario

The mission profile simulates the continuous observation from a static observation post of an area of interest by two observers using one LRF HHTI-LR.

2.3 System Configuration and State at Start-up

The LRF HHTI-LR (with no internal batteries installed) and one set of un-installed fully charged internal batteries are placed in the temperature-controlled environment at the required test temperature a minimum of eight hours before the events described below. The LRF HHTI-LR objective lens cover(s) are intalled.

2.4 Events

The functionality of the LRF HHTI-LR is exercised by a user in accordance with the following schedule of events.

2.4.1 Start-up

The user takes the following actions on start-up at the beginning of the evaluation:

a. Insert a set of fully charged batteries into the LRF HHTI-LR.

b. Remove the objective lens cover)s).

c. Turn on the LRF HHTI-LR.

d. Start the timer for the events.

e. Once in the Operational Mode following a normal detector cool-down period, configure the LRF HHTI-LR so that the device does not enter the Standby Mode.

2.4.2 Continuous Operation Until System Failure

The LRF HHTI-LR is continuously operated in accordance with the hourly cycle described below until system failure occurs. System failure is defined as one or more of the following conditions:

- The image from the thermal channel, secondary channel or fusion mode is no longer correctly displayed on the display
- Overlays of geolocation data, reticles, system status are no longer correctly displayed
- The magnification or field of view of the thermal channel can no longer be adjusted
- The user can no longer switch between the thermal channel and secondary channel
- The Laser Range Finder no longer operates correctly
- The LRF HHTI-LR menu no longer works correctly
- Any function of the LRF HHTI-LR no longer works as expected

2.4.3 Operating Cycle

The LRF HHTI-LR thermal channel set to the widest field of view is the default channel for continuous observation.

Once every fifteen minutes, the user verifies that no degradation of system performance related to display functionality is observed.

The user takes the following actions in response to simulated events every fifteen minutes, starting fifteen minutes after the LRF HHTI-LR is turned on:

a. A heat signature of a possible object of interest is detected.

b. Zoom in to the maximum magnification of the thermal channel to attempt to identify the object of interest and observe for twenty seconds.

c. Switch to the secondary channel, zoom in to the maximum magnification, and observe for twenty seconds.

d. Activate the laser range finder and lase the object of interest.

e. The object is no longer of interest. Zoom out to the widest field of view setting in the secondary channel.

f. Switch to the thermal channel and zoom back out to the widest field of view setting.

2.4.4 System Failure

Once system failure occurs, record the elapsed time since the start of the test, and note the indication of system failure.

2.4.5 Test Interruption

Interruptions to the Operating Cycle may be required for test personnel breaks or other unforeseen test interruptions. As long as the required environmental conditions are maintained, the LRF HHTI-LR will be maintained in its powered-on status during any interruption to Operating Cycle. Any test interruption time will be included in the calculation of the total elapsed time since the start of the test until system failure.

APPENDIX 5 TO ANNEX B1

REQUIREMENTS VERIFICATION MATRIX (RVM)

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1	**1**	**Scope**	Heading			
7	**1.1**	**Identification**	Heading			
1316	1.1.0-1	This System Requirements Specification (SRS) details the technical and performance requirements for a Laser Range Finder - Hand Held Thermal Imager - Long Range (LRF HHTI-LR) System for use by the Canadian Army and Royal Canadian Navy.	Information			
8	**1.2**	**System Overview**	Heading			
1317	1.2.0-1	The main component of the LRF HHTI-LR System is the Laser Range Finder Handheld Thermal Imager- Long Range (LRF HHTI-LR). The LRF HHTI-LR is a hand-held binocular device with a Laser Range Finder, cooled Thermal Channel and Secondary Channel for day and low light conditions. It is used by soldiers and sailors to enable the timely detection, recognition and identification of objects of interest under varying conditions of light and visibility. The LRF HHTI-LR System provides a capability for the accurate geolocation of targets, and the onwards transmission of target data to other systems. Imagery produced by the LRF HHTI-LR System can be saved and transferred for analysis. The LRF HHTI-LR System will be used by the Canadian Army in the combat arms leader, sniper, reconnaissance and other similar roles. It will be used by the Royal Canadian Navy to enhance general situational awareness, by boarding parties, and for security surveillance when in port.	Information			
1318	1.2.0-2	The LRF HHTI-LR is supported by a number of other components that are required to provide the full functionality of the system. Other equipment components include batteries, a tripod, various accessories to interface The LRF HHTI-LR to other systems and external power sources, pouches for carriage in the field, and containers for storage and logistic transport.	Information			
1336	1.2.0-3	The LRF HHTI-LR System also includes a bespoke software application that provides the functionality that supports the interface between the LRF HHTI-LR and the Integrated Soldier System.	Information			
9	**1.3**	**Document Overview**	Heading			
1322	1.3.0-1	This document specifies the requirements for each component that together comprise the LRF HHTI-LR System.	Information			
1329	1.3.0-2	Section 1 describes the scope of the document, and provides a high-level system overview of the LRF HHTI-LR System.	Information			
1330	1.3.0-3	Section 2 identifies that documents that are referenced in this SRS for the LRF HHTI-LR System.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1331	1.3.0-4	Section 3 describes the conceptual configuration of the LRF HHTI-LR System based on a typical equipment breakdown structure of a system that could meet the requirements specified in this document. It should be noted that the requirements of the LRF HHTI-LR System could be satisfied by a system with a different equipment breakdown structure.	Information			
1335	1.3.0-5	Section 4 specifies the requirements associated with the LRF HHTI-LR, the primary component of the system.	Information			
1332	1.3.0-6	Section 5 specifies the requirements of all the other components of the LRF HHTI-LR System that together with The LRF HHTI-LR provide the full functionality of the system.	Information			
1333	1.3.0-7	Section 6 specifies requirements that may be applicable to more than one component of the LRF HHTI-LR System.	Information			
2674	1.3.0-8	Section 7 describes the structure of the SRS in terms of the two primary views in which the SRS is presented, the aim of each view, and the attributes associated with each view.	Information			
1323	1.3.0-9	This document is unclassified, and does not contain Controlled Goods. There are no restrictions related to its use.	Information			
2	**2**	**Referenced Documents**	Heading			
1645	**2.1**	**Canadian Government Documents**	Heading			
1646	2.1.0-1	A. Health Canada Safety Code 6 (2015) - Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz	Information			
2561	2.1.0-2	B. RSS-102 Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), Issue 5, 2015.	Information			
1345	**2.2**	**Canadian Armed Forces (CAF) / Department of National (DND) Defence Documents**	Heading			
1423	2.2.0-1	C. D-02-002-001/SG-001 - Identification Marking of Canadian Military Property	Information			
1828	2.2.0-2	D. D-80-001-055/SF-001 - Specification for Label, Clothing and Equipment	Information			
1404	**2.3**	**United States Department of Defense (DoD) Documents**	Heading			
1371	2.3.0-1	E. MIL-PRF-62122E - Performance Specification: Cable Assembly, Inter-vehicle Power: Plug, Receptacle, and Adapter	Information			
1346	2.3.0-2	F. MIL-STD-461G - Interface Standard: Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment	Information			
1347	2.3.0-3	G. MIL-STD-810H - Test Method Standard: Environmental Engineering Considerations and Laboratory Tests	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1407	2.3.0-4	H. MIL-STD-1275E - Interface Standard: Characteristics of 28 Volt DC Input Power to Utilization Equipment in Military Vehicles	Information			
1417	2.3.0-5	I. MIL-STD-1472H - Design Criteria Standard: Human Engineering	Information			
1418	2.3.0-6	J. MIL-STD-1474E - Design Criteria Standard: Noise Limits	Information			
2576	2.3.0-7	K. MIL-STD-2500C W/CHANGE 1 National Imagery Transmission Format (NITF) Version 2.1.	Information			
1410	2.3.0-8	L. NWPAN-WP-01112013 - Nett Warrior Interconnect Architecture White Paper, Version 6	Information			
1405	**2.4**	**NATO Standardization Agreements and Standards**	Heading			
1557	2.4.0-1	M. AECTP-230 (Edition 1) - Climatic Conditions	Information			
1558	2.4.0-2	N. AECTP 300 (Edition D, Version 1) Climatic Environmental Tests	Information			
1559	2.4.0-3	O. STANAG 4370 Environmental Testing	Information			
1372	2.4.0-4	P. STANAG 4347 LAND (Edition 1) - Definition of Nominal Static Range Performance for Thermal Imaging Systems	Information			
2577	2.4.0-5	Q. STANAG 4609 NATO Digital Motion Imagery Standard	Information			
1542	2.4.0-6	R. Standard AAITP-08 NATO Unique Identification of Items	Information			
1419	**2.5**	**European Union Documents**	Heading			
1422	2.5.0-1	S. The Low Voltage Directive (LVD) (2014/35/EU)	Information			
1406	**2.6**	**Industry Standards and Other References**	Heading			
1411	2.6.0-1	T. ANSI Z136.1-2014 - American National Standard for Safe Use of Lasers	Information			
1447	2.6.0-2	U. Bluetooth v4.1 Specification	Information			
1412	2.6.0-3	V. IEEE 802.3-2018 - IEEE Standard for Ethernet	Information			
1413	2.6.0-4	W. IEEE 802.11-2020 - IEEE Standard for Information Technology--Telecommunications and Information Exchange Between Systems - Local and Metropolitan Area Networks--Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications	Information			
2715	2.6.0-5	X. MISB 0902 Motion Imagery Sensor Minimum Metadata Set	Information			
1416	2.6.0-6	Y. WGS-84 - World Geodetic System - 1984	Information			
3	**3**	**Conceptual Configuration**	Heading			
10	**3.1**	**Aim**	Heading			
240	3.1.0-1	The conceptual configuration presents an assumed equipment breakdown structure for the LRF HHTI-LR System. It also includes the identification of LRF HHTI-LR System specific software applications that may be installed on external devices that are required to satisfy external interface requirements. It is understood that a compliant system may meet all the mandatory requirements of this specification with a different equipment breakdown structure.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
11	**3.2**	**Identification of Components**	Heading			
1340	**3.2.1**	**Hardware**	Heading			
19	3.2.1.0-1	The assumed Equipment Breakdown Structure for the LRF HHTI-LR System comprises the following components: • Laser Range Finder - Hand-held Thermal Imager - Long Range (LRF HHTI-LR) (see Section 4) • Field Kit Storage and Transport Case (see Section 5.1) • Support Kit Storage and Transport Case (see Section 5.2) • Field Pouch (see Section 5.4) • Tripod Pouch (see Section 5.5) • Accessories Pouch (see Section 5.6) • External Battery Pack Pouch (see Section 5.7) • Rechargeable Batteries (see Section 5.9) • Low Temperature Batteries (see Section 5.10) • Battery Charger (see Section 5.11) • Tripod (see Section 5.12) • Defense Advanced GPS Receiver (DAGR) Interface Cable (see Section 5.13) • Integrated Soldier System (ISS) Interface Cable (see Section 5.14) • LRF-LRF HHTI-LR / ISS Battle Management System Interface ATAK Plugins (LIBI AP) (see Section 5.15) • Ruggedized Tactical Laptop (RTL) Interface Cable (see Section 5.16) • Ruggedized Flash Drive (see Section 5.17) • DC Power Cable Assembly (See Section 5.18) • AC Power Cable Assembly (See Section 5.19) • External Battery Pack (EBP) (Section 5.20) • Lens Cleaning Kit (See Section 5.21) • Operator Manual (See Section 5.22) • Quick Reference Guide (See Section 5.23)	Information			
1341	**3.2.2**	**Software**	Heading			
1339	3.2.2.0-1	The LRF HHTI-LR is considered to be a "black box" component of the LRF HHTI-LR System. The requirements related to LRF HHTI-LR software are specified as part of the general performance requirements. (See Section 4)	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
20	3.2.2.0-2	The LRF HHTI-LR System includes the following bespoke (developmental) software that is required to implement the functionality for the interface between the LRF HHTI-LR and the ISS, and will be installed on the ISS End User Device (EUD) and on the ISS Commander's Tablet: LRF-LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP) (see Section 5.15)	Information			
2739	3.2.2.0-3	This specification is written with the assumption that the LIBI AP functionality will be implemented through the development of one or more ATAK Plugins. An alternative and acceptable solution is to implement LIBI functionality within the LRF HHTI-LR embedded software.	Information			
13	**3.3**	**Identification of Interfaces**	Heading			
1342	3.3.0-1	The LRF HHTI-LR System requires the following interfaces to achieve full system functionality: • Defense Advanced GPS Receiver Interface (see Section 4.4.2) • Integrated Soldier System Interface (see Section 4.4.3) • Ruggedized Tactical Laptop Interface (see Section 4.4.4) • Ruggedized Flash Drive Interface (see Section 4.4.5) • Generic Interfaces - Bluetooth Connectivity (see Section 4.4.6) • Generic Interfaces - Wireless Connectivity (see Section 4.4.7) • External DC Power Source Interface (see Section 4.4.8) • AC Power Source Interface (see Section 4.4.9) • Tripod Interface (see Section 4.4.10)	Information			
4	**4**	**LRF HHTI-LR Requirements**	Heading			
14	**4.1**	**Required States and Modes**	Heading			
440	**4.1.1**	**Operational Mode**	Heading			
441	4.1.1.0-1	The operational mode is the normal mode of operation of the LRF HHTI-LR. The operational mode is entered once all start-up routines are complete.	Information			
1548	4.1.1.0-2	The LRF HHTI-LR must have an Operational Mode, in which full functionality is available in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
442	4.1.1.0-3	The LRF HHTI-LR must enter the Operational Mode within six minutes of turning it on at a temperature of 20 degrees Celsius, starting with the LRF HHTI-LR at ambient temperature.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
274	**4.1.2**	**Standby Mode**	Heading			
293	4.1.2.0-1	The Standby Mode allows the LRF HHTI-LR to conserve power when not being actively used by the operator.	Information			
292	4.1.2.0-2	The LRF HHTI-LR must have a Standby Mode.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
296	4.1.2.0-3	The LRF HHTI-LR must transition from the Operational Mode to the Standby Mode in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
294	4.1.2.0-4	The LRF HHTI-LR must transition from the Standby Mode to the Operational Mode in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
295	4.1.2.0-5	The LRF HHTI-LR must transition to a fully functional state in the Operational Mode from the Standby Mode within 30 seconds of the user input.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
297	**4.1.3**	**Emergency Mode**	Heading			
299	4.1.3.0-1	The Emergency Mode allows the operator to transition the LRF HHTI-LR from the Field Carriage Mode, as described in Section 6.1.2, to The Emergency Mode where it can be used as quickly as possible. In the Emergency Mode, start-up routines may be skipped, and full performance may not be available to the user.	Information			
298	4.1.3.0-2	The LRF HHTI-LR must have an Emergency Mode.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
303	4.1.3.0-3	When in the Emergency Mode, the LRF HHTI-LR must provide the user with display functionality using the Secondary Channel within thirty-seconds of initiating start-up at a nominal temperature of 20 degrees Celsius.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
241	**4.2**	**System Maturity Requirements**	Heading			
242	**4.2.1**	**Application**	Heading			
1324	4.2.1.0-1	System maturity requirements are applicable to the LRF HHTI-LR, with the exception of those parts of the LRF HHTI-LR that are replaceable as a first level maintenance task and that do not require the seal of the LRF HHTI-LR to be broken, such as eye-cups, lens covers, shoulder strap and hand straps.	Information			
1325	**4.2.2**	**Intent**	Heading			
1326	4.2.2.0-1	It is Canada's intent to procure a Military Off-the-Shelf LRF HHTI-LR that is proven and in-service with another military force. Canada will not require any changes to the hardware components that comprise the LRF HHTI-LR. However, due to language and interface requirements, a Canada-specific version of some LRF HHTI-LR software modules may be required.	Information			
1327	**4.2.3**	**System Maturity**	Heading			
1655	4.2.3.0-1	System maturity is measured in terms of Technology Readiness Level (TRL). TRLs are defined by Innovation, Science and Economic Development Canada (ISED).	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1328	4.2.3.0-2	On or before the closing date and time identified in the formal RFP solicitation on the CanadaBuys website, the LRF HHTI-LR must have reached Technological Readiness Level (TRL) 8: Actual technology completed and qualified through tests and demonstrations, as defined by ISED.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
16	**4.3**	**Capability Requirements**	Heading			
1562	**4.3.1**	**Geolocation of User and Targets**	Heading			
338	**4.3.1.1**	**Geolocation of User**	Heading			
446	4.3.1.1.0-1	The LRF HHTI-LR must have an Internal GPS receiver.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
1564	4.3.1.1.0-2	The Internal GPS must have a localization accuracy (CEP 50) of 5 metres or less under open skies.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
339	4.3.1.1.0-3	When not interfaced to an external GPS receiver, the LRF HHTI-LR must determine the geolocation of the user from geolocation data sourced from the internal GPS receiver.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1556	4.3.1.1.0-4	When interfaced to an external GPS receiver, The LRF HHTI-LR must determine the geolocation of the user from geolocation data sourced from the external GPS receiver.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1442	4.3.1.1.0-5	The LRF HHTI-LR geolocation data of the user must include grid coordinates and elevation above sea level.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
444	**4.3.1.2**	**Geolocation of Targets**	Heading			
335	4.3.1.2.0-1	The LRF HHTI-LR must measure the azimuth of the target determined by the axis defined by the reticle with a one sigma accuracy of twenty five NATO mils or better.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
336	4.3.1.2.0-2	The LRF HHTI-LR must measure the angle of sight between horizontal and the target determined by the axis defined by the reticle with a one sigma accuracy of ten NATO mils or better.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
319	**4.3.1.3**	**Laser Range Finder**	Heading			
321	4.3.1.3.0-1	The LRF HHTI-LR must have a Laser Range Finder (LRF).	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
322	4.3.1.3.0-2	The LRF HHTI-LR LRF must be rated as a Class 1 Laser at the output aperture, determined in accordance with ANSI Z136.1 - 2014, American National Standard for Safe Use of Lasers.	Mandatory Requirement	Yes	FAAT - Test QETE	Results of laser safety characterization and analysis undertaken at QETE verify that the laser range finder is Class 1 in accordance with ANSI Z136.1 - 2014.
328	4.3.1.3.0-3	The LRF HHTI-LR must, using the LRF, measure the range to a target in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1656	4.3.1.3.0-4	The LRF HHTI-LR must, using the Thermal Channel and LRF, measure ranges to a static 2.3 metres by 2.3 metres target with an albedo of R=0.2 positioned perpendicular to the line of sight with a one sigma accuracy of 1.5 metres for ranges between 50 metres and up to 6,000 metres under conditions with an atmospheric extinction rate of 0.11/km.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2529	4.3.1.3.0-5	The LRF HHTI-LR must, using the Secondary Channel and LRF, measure ranges to a static 2.3 metres by 2.3 metres target with an albedo of R=0.2 positioned perpendicular to the line of sight with a one sigma accuracy of 1.5 metres for ranges between 50 metres and up to 6,000 metres under conditions with an atmospheric extinction rate of 0.11/km.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
326	4.3.1.3.0-6	The LRF HHTI-LR LRF should have a range gating function to prevent the display of an anomalous range resulting from an intervening crest or other feature between the user and target.	Desirable Requirement	Not Applicable	Not verified post contract award	Standard for Demonstration.
1443	4.3.1.3.0-7	The LRF HHTI-LR geolocation data of the target must include grid coordinates and elevation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1563	4.3.1.3.0-8	The LRF HHTI-LR LRF must have a rate of fire of at least six laser range measurements per minute.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2615	4.3.1.3.0-9	When the LRF HHTI-LR is fired, the LRF HHTI-LR must create a Lased Target file containing target geolocation data.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2651	4.3.1.3.0-10	The Lased Target file must be compatible with the Cursor on Target (CoT) schema.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2618	4.3.1.3.0-11	When the LRF HHTI-LR is fired, the LRF HHTI-LR must create a still image of the display in accordance with Section 4.3.9 Saving of Images.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
541	4.3.1.3.0-12	The LRF HHTI-LR must store at least the last five target files obtained by the LRF in onboard memory for recall by the user and for exporting to other devices.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2548	**4.3.2**	**Holistic System Performance - Detection, Recognition and Identification (DRI)**	Heading			
1567	4.3.2.0-1	The terms Detection, Recognition, and Identification are used as defined in NATO AAP-6 NATO Glossary of Terms and Definitions (English and French):	Information			
1568	4.3.2.0-1.0-1	Detection: The discovery by any means of the presence of a person, object or phenomenon of potential military significance.	Information			
1569	4.3.2.0-1.0-2	Recognition: The determination of the nature or a detected person, object or phenomenon, and possibly its class or type. This may include the determination of an individual within a particular class or type.	Information			
1570	4.3.2.0-1.0-3	Identification: The process of attaining an accurate characterization of a detected entity by any act or means so that high confidence real-time decisions, including weapons engagement, can be made.	Information			
2549	**4.3.2.1**	**DRI in Operational Environments at Night**	Heading			
2550	4.3.2.1.0-1	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of detection under operational conditions at night.	Desirable Requirement	Not Applicable	SAT - UAPE	Standard for UAPE
2551	4.3.2.1.0-2	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of recognition under operational conditions at night. < rated >	Desirable Requirement (rated)	Not Applicable	SAT - UAPE	Standard for UAPE
2552	4.3.2.1.0-3	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of identification under operational conditions at night. < rated >	Desirable Requirement (rated)	Not Applicable	SAT - UAPE	Standard for UAPE
2553	**4.3.2.2**	**DRI in Operational Environments at Dusk / Dawn**	Heading			
2554	4.3.2.2.0-1	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of detection under operational conditions during periods of dusk and dawn.	Desirable Requirement	Not Applicable	SAT - UAPE	Standard for UAPE
2555	4.3.2.2.0-2	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of recognition under operational conditions during periods of dusk and dawn. < rated >	Desirable Requirement (rated)	Not Applicable	SAT - UAPE	Standard for UAPE

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2556	4.3.2.2.0-3	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of identification under operational conditions during periods of dusk and dawn. < rated >	Desirable Requirement (rated)	Not Applicable	SAT - UAPE	Standard for UAPE
2557	**4.3.2.3**	**DRI in Operational Environments during Day-time**	Heading			
2558	4.3.2.3.0-1	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of detection under operational conditions between sunrise and sunset.	Desirable Requirement	Not Applicable	SAT - UAPE	Standard for UAPE
2559	4.3.2.3.0-2	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of recognition under operational conditions between sunrise and sunset. < rated >	Desirable Requirement (rated)	Not Applicable	SAT - UAPE	Standard for UAPE
2560	4.3.2.3.0-3	Through optimization of holistic system performance, the LRF HHTI-LR should, for a trained user, optimize the probability of identification under operational conditions between sunrise and sunset. < rated >	Desirable Requirement (rated)	Not Applicable	SAT - UAPE	Standard for UAPE
306	**4.3.3**	**Thermal Channel**	Heading			
1546	**4.3.3.1**	**General**	Heading			
1565	4.3.3.1.0-1	The LRF HHTI-LR must include a Thermal Channel.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1547	4.3.3.1.0-2	The LRF HHTI-LR Thermal Channel must operate in the 3 micrometre to 5 micrometre Medium Wave Infrared spectral band.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
276	**4.3.3.2**	**Detection, Recognition and Identification (DRI)**	Heading			
1172	**4.3.3.2.1**	**Static Range Performance - Vehicle Sized Targets - STANAG 4347 - Quality Engineering Test Establishment (QETE) Testing**	Heading			
1173	4.3.3.2.1.0-1	The Thermal Channel of the LRF HHTI-LR must have a static detection range for vehicle sized targets of at least 10.0 kilometres, as derived from the Minimum Resolvable Temperature Difference (MRTD) measured in accordance with STANAG 4347 at QETE. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 02 Thermal Channel Static Range Performance - Vehicle Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1175	4.3.3.2.1.0-2	The Thermal Channel of the LRF HHTI-LR must have a static recognition range for vehicle sized targets of at least 3.5 kilometres, as derived from the MRTD measured in accordance with STANAG 4347 at QETE. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 02 Thermal Channel Static Range Performance - Vehicle Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
1177	4.3.3.2.1.0-3	The Thermal Channel of the LRF HHTI-LR must have a static identification range for vehicle sized targets of at least 1.8 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 02 Thermal Channel Static Range Performance - Vehicle Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
1179	**4.3.3.2.2**	**Static Range Performance - Person Sized Targets -STANAG 4347 - QETE Testing**	Heading			
1180	4.3.3.2.2.0-1	The Thermal Channel of the LRF HHTI-LR must have a static detection range for person sized targets of at least 5.5 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 03 Thermal Channel Static Range Performance - Person Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
1182	4.3.3.2.2.0-2	The Thermal Channel of the LRF HHTI-LR must have a static recognition range for person sized targets of at least 2.0 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 03 Thermal Channel Static Range Performance - Person Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1184	4.3.3.2.2.0-3	The Thermal Channel of the LRF HHTI-LR must have a static identification range for person sized targets of at least 1.0 kilometres, as derived from MRTD measured in accordance with STANAG 4347 at QETE. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 03 Thermal Channel Static Range Performance - Person Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
1711	**4.3.3.3**	**Detection of Bullet Swirls**	Heading			
2738	4.3.3.3.0-1	As a bullet passes through the atmosphere, it produces a temporary curved cylinder of heated air that follows the trajectory of the bullet. The differences in air temperature are detected and displayed the standard way that differences in temperature are detected and displayed using the LRF HHTI-LR Thermal Channel. While the heated air disipates quickly, the resultant "bullet swirl" on the display can be used by a spotter to direct the fire of a sniper.	Information			
1712	4.3.3.3.0-2	The LRF HHTI-LR Thermal Channel, when offset no more than one metre from the axis of the barrel of the sniper rifle, must detect the bullet swirl of a non-tracer 7.62 x 51mm NATO round as it traverses through the range of 300 metres to 800 metres, such that the thermal signature of the bullet swirl on the display is visible to the user.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
307	**4.3.3.4**	**Focus**	Heading			
312	4.3.3.4.0-1	The LRF HHTI-LR Thermal Channel must adjust the focus within a range from 50 metres to infinity in response to input from the user.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
308	**4.3.3.5**	**Magnification and Field of View**	Heading			
1658	4.3.3.5.0-1	The LRF HHTI-LR Thermal Channel must have adjustable magnification and Field of View (FOV) that is integral to the optical path.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
413	4.3.3.5.0-2	The LRF HHTI-LR Thermal Channel magnification and field of view settings must be adjustable to balance the achievement of detection, recognition and identification requirements with providing a field of view that provides the user with maximum situational awareness.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
420	4.3.3.5.0-3	The LRF HHTI-LR Thermal Channel FOV must be adjustable to display an FOV equal to or greater than fourteen degrees in the horizontal direction and ten degrees in the vertical direction.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
311	**4.3.3.6**	**Image Processing and Enhancement**	Heading			
422	**4.3.3.6.1**	**Refresh Rate**	Heading			
424	4.3.3.6.1.0-1	The LRF HHTI-LR Thermal Channel must have a frame refresh rate of 25 hertz or greater.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
479	**4.3.3.6.2**	**Image Polarity**	Heading			
481	4.3.3.6.2.0-1	The LRF HHTI-LR must display the thermal image using white-hot / black-cold image polarity.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
482	4.3.3.6.2.0-2	The LRF HHTI-LR must display the thermal image using black-hot / white-cold image polarity.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
480	4.3.3.6.2.0-3	The LRF HHTI-LR must toggle between white-hot / black cold image polarity and black-hot / white-cold image polarity and vice-versa in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
429	**4.3.3.6.3**	**Contrast and Gain Settings**	Heading			
430	4.3.3.6.3.0-1	The LRF HHTI-LR must have automatic gain control (AGC) mode.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
452	4.3.3.6.3.0-2	In AGC mode, the LRF HHTI-LR must adjust the contrast and brightness in response to user input on a sliding scale emphasizing the background or emphasizing small targets.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
304	**4.3.3.6.4**	**Thermal Pulses in Field of View**	Heading			
305	4.3.3.6.4.0-1	The LRF HHTI-LR must regain full display functionality within five-seconds of exposure to sudden thermal pulses such as muzzle flashes and explosions.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1064	**4.3.4**	**Secondary Channel**	Heading			
1065	4.3.4.0-1	There are three main performance goals of the Secondary Channel: • to provide the user with increased situational awareness by presenting a field of view where the contents are better intuitively understood than presented using just a Thermal Channel • to enhance the performance of the LRF HHTI-LR in terms of DRI over and above the capability provided by the Thermal Channel alone • to allow the user to aim the LRF HHTI-LR before using the Laser Range Finder during daytime, low light or other conditions where the Secondary Channel provides a superior situational awareness compared to the Thermal Channel. Requirements related to the secondary channel may be satisfied by a single channel or a combination of channels that exclude the thermal channel.	Information			
1583	**4.3.4.1**	**General**	Heading			
1066	4.3.4.1.0-1	The LRF HHTI-LR must have a Secondary Channel.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1676	4.3.4.1.0-2	The operating spectrum of the Secondary Channel must include the visible spectrum.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1585	**4.3.4.2**	**Detection, Recognition and Identification**	Heading			
1668	**4.3.4.2.1**	**Static Range Performance - Vehicle Sized Targets - QETE Testing**	Heading			
1669	4.3.4.2.1.0-1	The Secondary Channel of the LRF HHTI-LR must have a static detection range for vehicle sized targets of at least 7.0 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 04 Secondary Channel Static Range Performance - Vehicle Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1670	4.3.4.2.1.0-2	The Secondary Channel of the LRF HHTI-LR must have a static recognition range for vehicle sized targets of at least 3.5 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 04 Secondary Channel Static Range Performance - Vehicle Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
1671	4.3.4.2.1.0-3	The Secondary Channel of the LRF HHTI-LR must have a static identification range for vehicle sized targets of at least 1.8 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 04 Secondary Channel Static Range Performance - Vehicle Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
1672	**4.3.4.2.2**	**Static Range Performance - Person Sized Targets - QETE Testing**	Heading			
1673	4.3.4.2.2.0-1	The Secondary Channel of the LRF HHTI-LR must have a static detection range for person sized targets of at least 3.8 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 05 Secondary Channel Static Range Performance - Person Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
1674	4.3.4.2.2.0-2	The Secondary Channel of the LRF HHTI-LR must have a static recognition range for person sized targets of at least 2.0 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 05 Secondary Channel Static Range Performance - Person Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1675	4.3.4.2.2.0-3	The Secondary Channel of the LRF HHTI-LR must have a static identification range for person sized targets of at least 1.0 kilometres, determined in accordance with QETE DRI performance test methodologies. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of Test QETE 05 Secondary Channel Static Range Performance - Person Sized Targets of QETE Test Plan and Procedures verify that the requirement has been met.
753	**4.3.5**	**Laser Pointer**	Heading			
752	4.3.5.0-1	The Laser Pointer is used to indicate targets to soldiers and sailors equipped with night vision devices that use image intensification technologies under low light conditions. There is no intent to use the Laser Pointer as a designator for smart munitions, or as an area illuminator.	Information			
507	4.3.5.0-2	The LRF HHTI-LR must have a Laser Pointer (LP).	Mandatory Requirement	No	SAT - Demonstration FAAT - Test QETE FAAT - Demonstration	Standard for Demonstration. Results of laser safety characterization and analysis undertaken at QETE verify that the attributes of the laser pointer conform with the content of the Laser Safety Data Sheet
509	4.3.5.0-3	The LRF HHTI-LR LP must emit in the wavelength range from 810 nanometres to 850 nanometres.	Mandatory Requirement	No	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
1591	4.3.5.0-4	The LRF HHTI-LR LP must have a beam divergence that is 0.8 NATO mils or less.	Mandatory Requirement	No	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2677	4.3.5.0-5	The LRF HHTI-LR LP should be rated as a Class 3B Laser at the output aperture, determined in accordance with ANSI Z136.1 - 2014.	Desirable Requirement (rated)	Not Applicable	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Test Report FAAT - Analysis - Test Report	Standard for Analysis - Test.
512	4.3.5.0-6	If the LRF HHTI-LR LP is rated as a Class 3B Laser at the output aperture, is should include a means of attenuating the output of the laser such that it can be operated as a Class 1 Laser.	Desirable Requirement (rated)	Not Applicable	FAAT - Test QETE	Results of laser safety characterization and analysis undertaken at QETE verify the Class of the Laser Pointer in accordance with ANSI Z136.1 - 2014.
2751	4.3.5.0-7	If the LRF HHTI-LR LP is rated as a Class 3B Laser at the output aperture, determined in accordance with ANSI Z136.1 - 2014, and cannot be attenuated to operate as a Class 1 laser, it must have a means of disabling the Laser Pointer in a manner that cannot be overridden by the user.	Mandatory Requirement	No	SAT - Demonstration FAAT - Test QETE	Standard for Demonstration. Results of laser safety characterization and analysis undertaken at QETE verify that the requirement is satisfied.
1664	**4.3.6**	**SeeSpot Capability**	Heading			
1069	4.3.6.0-1	The LRF HHITI-LR should detect reflections from Laser Aiming Devices and Laser Pointers that operate at wavelengths between 810 nanometres and 850 nanometres.	Desirable Requirement (rated)	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2680	4.3.6.0-2	The LRF HHITI-LR should detect reflections from Laser Designators for Guided Munitions that operate at 1064 nanometres.	Desirable Requirement (rated)	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1733	**4.3.7**	**Image Processing**	Heading			
1594	**4.3.7.1**	**Image Stability**	Heading			
451	4.3.7.1.0-1	The LRF HHTI-LR must stabilize the image to be displayed electronically to reduce blur caused by shaking or vibration.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1734	**4.3.7.2**	**Image Magnification**	Heading			
1729	4.3.7.2.0-1	The LRF HHTI-LR must magnify the processed image by a factor of two or more in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
470	**4.3.7.3**	**Image Fusion Mode**	Heading			
471	4.3.7.3.0-1	The LRF HHTI-LR must have an image fusion mode.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1731	4.3.7.3.0-2	When in image fusion mode, the LRF HHTI-LR should combine the images of the Thermal Channel and Secondary channel in a way that the user perceives as increasing the probability of target detection, recognition and identification compared to the use of the Thermal Channel and Secondary Channel separately.	Desirable Requirement (rated)	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1732	4.3.7.3.0-3	When in image fusion mode, the LRF HHTI-LR should combine the images of the Thermal Channel and Secondary Channel in a way that the user perceives as providing an image that is more intuitive to interpret compared to the use of the Thermal Channel alone.	Desirable Requirement (rated)	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
317	**4.3.8**	**Display Functionality**	Heading			
484	**4.3.8.1**	**Display Characteristics**	Heading			
485	4.3.8.1.0-1	The LRF HHTI-LR must have an integral display for direct viewing by the user.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
521	4.3.8.1.0-2	The LRF HHTI-LR must display the processed image from the Thermal Channel on the display using the full screen in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1168	4.3.8.1.0-3	The LRF HHTI-LR must display the processed image from the Secondary Channel on the display using the full screen in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1735	4.3.8.1.0-4	The LRF HHTI-LR must display the processed image from the Image Fusion Mode on the display using the full screen in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1167	4.3.8.1.0-5	The LRF HHTI-LR should have a split screen display.	Desirable Requirement	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1169	4.3.8.1.0-6	The LRF HHTI-LR should display the processed image from the Thermal Channel on one half of the display and the processed image from the Secondary Channel on the other half of the display in response to user input.	Desirable Requirement (rated)	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
486	4.3.8.1.0-7	The LRF HHTI-LR must have a binocular display for the user to view the display with both eyes simultaneously.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
760	4.3.8.1.0-8	The LRF HHTI-LR must have a colour display.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
337	**4.3.8.2**	**Reticle Overlay**	Heading			
383	4.3.8.2.0-1	The LRF HHTI-LR must electronically generate a viewing reticle that is overlaid on the displayed image.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1577	4.3.8.2.0-2	The viewing reticle must indicate the line of sight of the LRF.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1578	4.3.8.2.0-3	The viewing reticle must be centred in the display.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
387	4.3.8.2.0-4	The viewing reticle must be in the form of a mil dot or micrometric pattern in azimuth and angle of sight.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
389	4.3.8.2.0-5	The calibration of the viewing reticle mil dot or micrometric pattern must be indicated on the display to the user, in terms of mils between dots or hash marks.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
384	4.3.8.2.0-6	The LRF HHTI-LR must toggle the displayed viewing reticle off and on in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
402	4.3.8.2.0-7	The displayed viewing reticle must be adjustable for brightness in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1728	4.3.8.2.0-8	On activation of the laser range finder or laser pointer, the LRF HHTI-LR should change the attributes of the viewing reticle to give the user an indication of the applicable activation.	Desirable Requirement	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1727	4.3.8.2.0-9	The requirements specified above in this section are not applicable to a direct optical view secondary channel, should the LRF HHTI-LR be equipped with a direct optical view.	Information			
483	**4.3.8.3**	**Text and Icon Overlay**	Heading			
497	**4.3.8.3.1**	**Language**	Heading			
498	4.3.8.3.1.0-1	The LRF HHTI-LR must display all text in the language configured by the user, as specified in Section 4.5.1 User Language.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
495	**4.3.8.3.2**	**System Status**	Heading			
487	4.3.8.3.2.0-1	The LRF HHTI-LR display must indicate the state of charge of the internal battery.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1433	4.3.8.3.2.0-2	The LRF HHTI-LR display must indicate whether or not the internal batteries are charging.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1448	4.3.8.3.2.0-3	The LRF HHTI-LR display must indicate whether or not Bluetooth Connectivity is activated.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1449	4.3.8.3.2.0-4	The LRF HHTI-LR display must indicate whether or not Wireless Connectivity is activated.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1450	4.3.8.3.2.0-5	The LRF HHTI-LR display must indicate whether or not DAGR Connectivity is activated.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1751	4.3.8.3.2.0-6	The LRF HHTI-LR display must indicate whether or not the interface to an ISS BMS is active.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1575	**4.3.8.3.3**	**System Configuration**	Heading			
1576	4.3.8.3.3.0-1	The LRF HHTI-LR display must indicate the magnification level of the original image, i.e. 2x, 4x etc.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
496	**4.3.8.3.4**	**Geolocation of User**	Heading			
344	4.3.8.3.4.0-1	The LRF HHTI-LR must display the geolocation grid coordinates of the user using the configured grid system, as specified in Section 4.5.2 Grid System.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1444	4.3.8.3.4.0-2	The LRF HHTI-LR must display the geolocation elevation of the user using the configured distance and elevation notation, as specified in Section 4.5.4 Distance and Elevation Notation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
493	4.3.8.3.4.0-3	The LRF HHTI-LR must stop the display of the geolocation of the user in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
494	4.3.8.3.4.0-4	The LRF HHTI-LR must restore the display of the geolocation of the user in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
492	**4.3.8.3.5**	**Geolocation of Observed Targets**	Heading			
499	4.3.8.3.5.0-1	The LRF HHTI-LR must continuously display the azimuth of the reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
526	4.3.8.3.5.0-2	The LRF HHTI-LR must continuously display the angle of sight of the reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
500	**4.3.8.3.6**	**Geolocation of LRF Targets**	Heading			
545	4.3.8.3.6.0-1	Geolocation data of LRF targets consists of range, azimuth and angle of sight of the target relative to the user, and grid coordinates and elevation of the target.	Information			
546	4.3.8.3.6.0-2	The LRF HHTI-LR must display the geolocation data of the LRF target immediately after the target is subject to the laser pulse.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
524	4.3.8.3.6.0-3	The LRF HHTI-LR must display the range of the LRF target, using the configured distance and elevation notation, as specified in Section 4.5.4 Distance and Elevation Notation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
538	4.3.8.3.6.0-4	The LRF HHTI-LR must display the geolocation grid coordinates of the LRF target using the configured grid system, as specified in Section 4.5.2 Grid System.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
759	4.3.8.3.6.0-5	The LRF HHTI-LR must display the geolocation elevation of the LRF target, using the configured distance and elevation notation, as specified in Section 4.5.4 Distance and Elevation Notation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
523	4.3.8.3.6.0-6	The LRF HHTI-LR must display the azimuth of the LRF target, as determined by the centre of the LRF reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
525	4.3.8.3.6.0-7	The LRF HHTI-LR must display the angle of sight of the LRF target, as determined by the centre of the LRF reticle, using the configured directional notation, as specified in Section 4.5.3 Directional Notation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
547	4.3.8.3.6.0-8	The LRF HHTI-LR must stop the display of geolocation data of the LRF target in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
542	4.3.8.3.6.0-9	The LRF HHTI-LR must display the geolocation data for the five most recent LRF targets in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
543	4.3.8.3.6.0-10	The LRF HHTI-LR must stop the display of the geolocation data for all but the most recent LRF target in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
428	**4.3.9**	**Saving of Images**	Heading			
473	4.3.9.0-1	The LRF HHTI-LR must save a still image of the display, including all overlaid data, icons and reticles, to an image file in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
611	4.3.9.0-2	Images saved by the LRF HHTI-LR must be compliant with MIL-STD-2500C W/CHANGE 1 National Imagery Transmission Format (NITF) Version 2.1.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1446	4.3.9.0-3	Images saved by the LRF HHTI-LR in the NITF format must be compatible with ATAK.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2716	4.3.9.0-4	The intent of the requirement for compliance with MIL-STD-2500C is limited to: Providing a file in a format that can be ingested to NATO Imagery Systems for exploitation Providing sufficient metadata to support cataloguing of the file and providing information related to time stamp and sensor location, direction and field of view	Information			
2686	4.3.9.0-5	The image subheader segment of the NITF image file must include an approximate geographic location for the purposes of cataloguing, based on sensor location, direction and field of view.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2607	4.3.9.0-6	The LRF HHTI-LR must download image files selected by the user to an external device in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2594	**4.3.10**	**Saving of Video**	Heading			
474	4.3.10.0-1	The LRF HHTI-LR must save a video file of the display, including all overlaid data, icons and reticles, in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
612	4.3.10.0-2	Video saved by the LRF HHTI-LR must be compliant with STANAG 4609 Digital Motion Imagery Standard.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2714	4.3.10.0-3	Video saved by the LRF HHTI-LR must be compliant with MISB 0902 Motion Imagery Sensor Minimum Metadata Set.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2713	4.3.10.0-4	The intent of the requirement for compliance with STANAG 4609 and MISB 0902 is limited to: • Providing a file in a format that can be ingested to NATO Motion Imagery Systems for exploitation • Providing sufficient metadata in the KLV Tags to support cataloguing of the file and providing information related to time stamp and sensor location, direction and field of view	Information			
2575	4.3.10.0-5	Video saved by the LRF HHTI-LR must be compatible with ATAK.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
605	4.3.10.0-6	The LRF HHTI-LR must download video files selected by the user to an external device in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
761	**4.3.11**	**Video Streaming of Display Content**	Heading			
762	4.3.11.0-1	The LRF HHTI-LR must provide a real-time digital video stream to an external device in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
763	4.3.11.0-2	The LRF HHTI-LR must provide a real time digital video stream that does not affect the ability of the user to exercise full device functionality.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
765	4.3.11.0-3	The LRF HHTI-LR real-time video stream must be in a format that is compatible with ATAK streaming video functionality.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1529	**4.3.12**	**Remote Control**	Heading			
1530	4.3.12.0-1	The LRF HHTI-LR must be remotely controllable by a third-party device.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1531	4.3.12.0-2	When remotely controlled by a third-party device, full functionality of the LRF HHTI-LR must be available to the user through the third-party device.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
764	**4.3.13**	**Picatinny Rail**	Heading			
897	4.3.13.0-1	Requirement Deleted	Information			
771	**4.3.14**	**Power Sources**	Heading			
774	4.3.14.0-1	The normal power source for the LRF HHTI-LR will be Internal Batteries. To provide the user with options for power management, especially during operations in the cold, the user may choose to power the LRF HHTI-LR from an external power source.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
772	**4.3.14.1**	**Internal Batteries**	Heading			
784	**4.3.14.1.1**	**Rechargeable Battery Power Source**	Heading			
773	4.3.14.1.1.0-1	The LRF HHTI-LR must operate using power from Rechargeable Batteries that are housed within the LRF HHTI-LR.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
794	4.3.14.1.1.0-2	The LRF HHTI-LR must continuously operate for a minimum of two hours and thirty minutes in the Operational Mode at 20 degrees Celsius using power only from the installed Rechargeable Batteries, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life. < rated >	Mandatory Requirement (rated)	Yes	FAAT - Test QETE	Results of testing conducted by QETE verify that the requirement has been met.
778	**4.3.14.1.2**	**Low Temperature Battery Power Source**	Heading			
779	4.3.14.1.2.0-1	In order to meet requirements for operation at low temperatures, a Low Temperature Battery, different from the Rechargeable Battery described above, may be required. The internal Low Temperature Batteries may be either rechargeable or non-rechargeable.	Information			
1755	4.3.14.1.2.0-2	The LRF HHTI-LR should operate using power from Low Temperature Batteries that are housed within the LRF HHTI-LR.	Desirable Requirement	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
800	4.3.14.1.2.0-3	The LRF HHTI-LR should continuously operate for a minimum of two hours and thirty minutes in the Operational Mode at minus 32 degrees Celsius using power only from installed Low Temperature Batteries, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.	Desirable Requirement	Not Applicable	Not verified post contract award	
806	**4.3.14.1.3**	**Internal Recharging Capability**	Heading			
807	4.3.14.1.3.0-1	The LRF HHTI-LR must recharge the Internal Batteries if they are Rechargeable Batteries and the LRF HHTI-LR is connected to an exterior power source.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1161	4.3.14.1.3.0-2	The LRF HHTI-LR must not attempt to recharge the Internal Batteries if they are Non-Rechargeable Batteries and the LRF HHTI-LR is connected to an exterior power source.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
785	**4.3.14.1.4**	**Battery Housing and Internal Connection**	Heading			
786	4.3.14.1.4.0-1	The LRF HHTI-LR battery housing must allow the user to change batteries without using tools.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
805	4.3.14.1.4.0-2	The LRF HHTI-LR battery housing must allow the user to change batteries under conditions of total darkness.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
802	4.3.14.1.4.0-3	The LRF HHTI-LR must include protection against batteries that are installed incorrectly by the user.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
815	4.3.14.1.4.0-4	The LRF HHTI-LR must determine the state of charge of the Internal Batteries.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
775	**4.3.14.2**	**External Power Sources**	Heading			
849	**4.3.14.2.1**	**External Power Sources - Common Requirements**	Heading			
813	4.3.14.2.1.0-1	When connected to an external power source, the LRF HHTI-LR must not draw current from Internal Batteries.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
847	**4.3.14.2.2**	**External DC Power Sources**	Heading			
1527	4.3.14.2.2.0-1	The LRF HHTI-LR must operate using power from a military vehicle 24 V DC electrical system.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1739	4.3.14.2.2.0-2	The LRF HHTI-LR must operate using power from a commercial vehicle 12 V DC electrical system.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1742	4.3.14.2.2.0-3	The LRF HHTI-LR must operate using power from an external Conformal Wearable Battery (CWB).	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2690	4.3.14.2.2.0-4	The LRF HHTI-LR must operate using power from the LRF HHTI-LR EBP as specified in Section 5.20 External Battery Pack.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
852	4.3.14.2.2.0-5	Requirements related to the LRF HHTI-LR / External DC Power Sources Interface are specified in Section 4.4.8 External DC Power Source Interface.	Information			
1121	**4.3.14.2.3**	**AC Power Source**	Heading			
1122	4.3.14.2.3.0-1	The LRF HHTI-LR must operate using power from North American 110/120 VAC 60 hertz power source.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1123	4.3.14.2.3.0-2	The LRF HHTI-LR must operate using power from a European 220/240 VAC 50 hertz power source.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1124	4.3.14.2.3.0-3	Requirements related to the AC Power Source Interface are specified in Section 4.4.9 AC Power Source Interface.	Information			
17	**4.4**	**External Interface Requirements**	Heading			
67	**4.4.1**	**Interface Identification**	Heading			
1343	4.4.1.0-1	See Section 3.3 Identification of Interfaces.	Information			
45	**4.4.2**	**Defense Advanced GPS Receiver (DAGR) Interface**	Heading			
561	**4.4.2.1**	**DAGR Description**	Heading			
49	4.4.2.1.0-1	The AN/PSN-13A Defense Advanced GPS Receiver (DAGR), NSN 5825-01-526-4783, is a hand-held GPS receiver in-service with the Canadian Army.	Information			
563	4.4.2.1.0-2	The DAGR has fixed interface characteristics. The DAGR will not be modified to support the achievement of DAGR Interface requirements.	Information			
562	**4.4.2.2**	**LRF HHTI-LR / DAGR Interface Functional Requirements**	Heading			
553	4.4.2.2.0-1	The LRF HHTI-LR must be compatible with the DAGR.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1055	4.4.2.2.0-2	The LRF HHTI-LR must interface with the DAGR using the DAGR Interface Cable.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1056	4.4.2.2.0-3	Requirements for the DAGR Interface Cable are specified in Section 5.13 DAGR Interface Cable.	Information			
555	4.4.2.2.0-4	When a DAGR is connected to the LRF HHTI-LR, the LRF HHTI-LR must continually update user geolocation data using geolocation data received from the DAGR.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
556	4.4.2.2.0-5	When a DAGR is connected to the LRF HHTI-LR, the LRF HHTI-LR must update current time and date data using time and date data received from the DAGR.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
200	**4.4.3**	**Integrated Soldier System (ISS) Interface**	Heading			
662	**4.4.3.1**	**ISS Overview**	Heading			
201	4.4.3.1.0-1	The Integrated Soldier System (ISS) is a collection of soldier-worn devices that provides integrated functionality to the soldier related to tactical radio, situational awareness and battle planning. Devices are networked using a data and power distribution hub. Connected devices may include: • Multichannel Handheld Radio • Secure Radio • End User Device (EUD) (Smartphone) • Commander's Tablet • DAGR • Land Warrior Battery • Auxiliary Power or second Land Warrior Battery • LRF HHTI-LR	Information			
672	4.4.3.1.0-2	The ISS in a basic configuration is in-service with the Canadian Army. The ISS is being incrementally upgraded to take advantage of technological advances and to increase the level of integration between what have previously been independent devices.	Information			
678	4.4.3.1.0-3	The EUD and Commander's Tablet are Android devices that use the Android Team Awareness Kit (ATAK). A soldier will be equipped with either an EUD or Commander's Tablet, but not both.	Information			
696	4.4.3.1.0-4	The ATAK-based software resident on the ISS EUD or Commander's tablet to which the LRF HHTI-LR will interface is referred to as the ISS Battle Management Software (BMS).	Information			
2578	4.4.3.1.0-5	The specific ATAK plugins that will reside on the ISS EUD or Commander's tablet that are required to provide the functionality to support the interface between the LRF HHTI-LR and the ISS BMS are referred to as the LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP).	Information			
708	4.4.3.1.0-6	The devices that comprise the ISS are connected through the ISS Hub. The connectors on the ISS hub comply with NWPAN-WP-01112013 Version 6. The two in-service hubs are the Glenair STAR-PAN™ II Hub and the Glenair STAR-PAN™ VI Hub.	Information			
673	4.4.3.1.0-7	The ISS configuration to which the LRF HHTI-LR will interface is evolving. The requirements listed in this section are therefore expected to evolve.	Information			
663	**4.4.3.2**	**LRF HHTI-LR / ISS Interface - Intent**	Heading			
667	4.4.3.2.0-1	The intent of the LRF HHTI-LR / ISS Interface is to provide the following functionality:	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2580	4.4.3.2.0-1.0-1	• The ISS can provide user geolocation data to the LRF HHTI-LR, via the EUD or Commander's Tablet, sourced from a connected radio;	Information			
2581	4.4.3.2.0-1.0-2	• The ISS can provide user geolocation data to the LRF HHTI-LR, via the EUD or Commander's Tablet, sourced from the connected AN/PSN-13A DAGR;	Information			
2587	4.4.3.2.0-1.0-3	• Realtime geo-orientation data related to the LRF HHTI-LR can be displayed on the EUD or Commander's Tablet, including range bearing line, field of view and maximum detection ranges for vehicle and person-sized targets;	Information			
2582	4.4.3.2.0-1.0-4	• Image and video files can be downloaded from the LRF HHTI-LR to the ISS BMS for viewing on the EUD or Commander's Tablet;	Information			
2583	4.4.3.2.0-1.0-5	• The content of the LRF HHTI-LR display can be streamed to the EUD or Commander's tablet in real-time;	Information			
2585	4.4.3.2.0-1.0-6	• The LRF HHTI-LR can be manipulated remotely by the user using an application on the EUD or Commander's tablet; and	Information			
2584	4.4.3.2.0-1.0-7	• When a target is subject to the Laser Range Finder pulse functionality of the LRF HHTI-LR, target geolocation data can be passed to the ISS BMS to be further used in generating contract reports, fire missions, etc.	Information			
679	4.4.3.2.0-2	The functionality of the interface will be provided through a collection of LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP), resident on the ISS EUD. The LIBI AP will be developed by the LRF HHTI-LR contractor, and may comprise bespoke or exiting ATAK plug-ins, or a combination thereof.	Information			
2539	4.4.3.2.0-3	The functionality of the LIBI AP will be determined by this specification, and through the cooperative development of an ICD led by the LRF HHTI-LR contractor with the participation of the DND ISS ATAK team. Requirements for the LIBI AP are in Section 5.15 LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP).	Information			
674	**4.4.3.3**	**LRF HHTI-LR / ISS Interface Connectivity Requirements**	Heading			
751	4.4.3.3.0-1	The LRF HHTI-LR must be compatible with the ISS.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1059	4.4.3.3.0-2	The LRF HHTI-LR must interface with the ISS BMS using the ISS Interface Cable.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1061	4.4.3.3.0-3	Requirements for the ISS Interface Cable are specified in Section 5.14 ISS Interface Cable.	Information			
2543	4.4.3.3.0-4	The LRF HHTI-LR must interface with the ISS BMS using a Wireless connection.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2588	4.4.3.3.0-5	Data passed from the LRF HHTI-LR to the ISS BMS must be compliant with the Cursor on Target (CoT) schema.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2544	**4.4.3.4**	**LRF HHTI-LR / ISS Interface Functional Requirements**	Heading			
1298	4.4.3.4.0-1	Requirements for the LRF HHTI-LR / ISS BMS Interface application (LIBI AP) are specified in Section 5.15 LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP)	Information			
2629	**4.4.3.4.1**	**Configurable Attributes of LRF HHTI-LR**	Heading			
2631	4.4.3.4.1.0-1	When connected to the ISS, the LRF HHTI-LR must provide configurable attributes of the LRF HHTI-LR to the ISS BMS / LIBI AP as described in Section 4.5.5.1 ISS BMS Interface - Configurable Attributes.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2565	**4.4.3.4.2**	**Geo-orientation of LRF HHTI-LR**	Heading			
2566	4.4.3.4.2.0-1	When connected to the ISS, the LRF HHTI-LR must provide continuous update of geo-orientation data to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2567	4.4.3.4.2.0-2	LRF HHTI-LR Geo-orientation data must include: • Location in Longitude and Latitude: • Elevation; • Azimuth; • Angle of sight; and • Field of view of active channel.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2589	**4.4.3.4.3**	**Images**	Heading			
2634	4.4.3.4.3.0-1	When connected to the ISS and an image is saved, the LRF HHTI-LR must send the image to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2635	**4.4.3.4.4**	**Video**	Heading			
2636	4.4.3.4.4.0-1	When connected to the ISS and a video is saved, the LRF HHTI-LR must send the video to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2562	**4.4.3.4.5**	**Lased Target Geolocation Data**	Heading			
2637	4.4.3.4.5.0-1	When connected to the ISS and a lased target geolocation data is saved, the LRF HHTI-LR must send the lased target geolocation data to the ISS BMS / LIBI AP in accordance with the configured interface behaviour, as specified in Section 4.5.5.2 ISS BMS Interface - Configured Behaviours.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2563	**4.4.3.4.6**	**Streaming Video**	Heading			
2573	4.4.3.4.6.0-1	When connected to the ISS, the LRF HHTI-LR must start streaming video to the ISS BMS / LIBI AP in response to user action on the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2638	4.4.3.4.6.0-2	When connected to the ISS, the LRF HHTI-LR must stop streaming video to the ISS BMS / LIBI AP in response to user action on the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2571	4.4.3.4.6.0-3	When connected to the ISS, the LRF HHTI-LR must stream video to the ISS BMS / LIBI AP in response to a start streaming video request from the LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2572	4.4.3.4.6.0-4	When connected to the ISS, the LRF HHTI-LR must stop streaming video to the LIBI AP in response to a stop streaming video request from the LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2658	**4.4.3.4.7**	**Remote Control**	Heading			
2659	4.4.3.4.7.0-1	When connected to the ISS, the LRF HHTI-LR must be remotely controllable in response to user actions on the LIBI AP.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2660	4.4.3.4.7.0-2	When connected to the ISS, full functionality of the LRF HHTI-LR must be available to the user through user actions on the LIBI AP.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2564	**4.4.3.4.8**	**File Management**	Heading			
2547	4.4.3.4.8.0-1	When connected to the ISS, the LRF HHTI-LR must download imagery files from the LRF HHTI-LR to the LIBI AP in response to a file download command from the LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2568	4.4.3.4.8.0-2	When connected to the ISS, the LRF HHTI-LR must delete imagery files resident on the LRF HHTI-LR in response to a file deletion command from the LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2569	4.4.3.4.8.0-3	When connected to the ISS, the LRF HHTI-LR must download target data files from the LRF HHTI-LR to the LIBI AP in response to a file download command from the LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2570	4.4.3.4.8.0-4	When connected to the ISS, the LRF HHTI-LR must delete target geolocation files resident on the LRF HHTI-LR in response to a file deletion command initiated by the LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
566	**4.4.4**	**Ruggedized Tactical Laptop (RTL) Interface**	Heading			
567	**4.4.4.1**	**RTL Description**	Heading			
576	4.4.4.1.0-1	The current in-service RTL is the CF33 Mk2 Panasonic Toughbook. The CF33 uses the Windows 10 Pro (64 bit) operating system. The CF33 has the following characteristics: • USB 3.0 (x 3) and USB 2.0 (x 1) ports • Bluetooth v4.1 + EDR (Class 1) • Intel Dual band Wireless – AC 8265 802.11a/b/g/n/ac • SD card (SDXC) and Nano-SIM • HDMI Type A port The CF33 is used operationally in an unclassified domain.	Information			
658	4.4.4.1.0-2	The RTL has fixed interface characteristics. The RTL hardware will not be modified to support the achievement of RTL Interface requirements. Additional COTS software applications that are required to satisfy the interface requirements may be added RTL application software baseline.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
568	**4.4.4.2**	**LRF HHTI-LR / RTL Interface Functional Requirements**	Heading			
577	4.4.4.2.0-1	The LRF HHTI-LR must be compatible with the RTL.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1062	4.4.4.2.0-2	The LRF HHTI-LR must interface with the RTL using the RTL Interface Cable.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1063	4.4.4.2.0-3	Requirements for the RTL Interface Cable are specified in Section 5.16 RTL Interface Cable.	Information			
578	4.4.4.2.0-4	The LRF HHTI-LR must download image files selected by the user from the LRF HHTI-LR to the RTL in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
579	4.4.4.2.0-5	The LRF HHTI-LR must download video files selected by the user from the LRF HHTI-LR to the RTL in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
580	4.4.4.2.0-6	The LRF HHTI-LR must stream live video output of the LRF HHTI-LR display for display on the RTL display.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2746	**4.4.4.3**	**LRF HHTI-LR / RTL Interface - Bluetooth Proof of Concept**	Heading			
2747	4.4.4.3.0-1	The LRF HHTI-LR must interface with the RTL using Bluetooth.	Mandatory Requirement	No		
2748	4.4.4.3.0-2	The LRF HHTI-LR must download an image file selected by the user from the LRF HHTI-LR to the RTL over Bluetooth in response to user input.	Mandatory Requirement	No		
569	**4.4.5**	**Ruggedized Flash Drive (RFD) Interface**	Heading			
571	**4.4.5.1**	**LRF HHTI-LR / RFD Interface Functional Requirements**	Heading			
1428	4.4.5.1.0-1	The RFD is described in Section 5.17 Ruggedized Flash Drive (RFD).	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
589	4.4.5.1.0-2	The LRF HHTI-LR must be compatible with the RFD.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
600	4.4.5.1.0-3	The LRF HHTI-LR must download image files selected by the user from the LRF HHTI-LR to the RFD in response to user input on the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
601	4.4.5.1.0-4	The LRF HHTI-LR must download video files selected by the user from the LRF HHTI-LR to the RFD in response to user input on the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
602	4.4.5.1.0-5	The LRF HHTI-LR must delete all files stored on the RFD in response to user input on the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
603	4.4.5.1.0-6	The LRF HHTI-LR must delete files selected by the user that are stored on the RFD in response to user input on the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
587	**4.4.5.2**	**LRF HHTI-LR / RFD Interface Physical Requirements**	Heading			
616	4.4.5.2.0-1	The LRF HHTI-LR must physically connect to the RFD using a USB 2.0 compliant connection.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
617	4.4.5.2.0-2	The LRF HHTI-LR must include all hardware components required to physically connect the LRF HHTI-LR to the RFD.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
618	4.4.5.2.0-3	If a cable is required to connect the LRF HHTI-LR to the RFD, then the LRF HHTI-LR RFD Interface Cable must support the interface functionality described in Section 4.4.5.1 LRF HHTI-LR / RFD Interface Functional Requirements.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
619	4.4.5.2.0-4	If a cable is required to connect the LRF HHTI-LR to the RFD, then the LRF HHTI-LR RFD Interface Cable must meet the cabling requirements specified in Section 6.2 Common Cable Requirements.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
607	**4.4.5.3**	**RFD / RTL Interface Functional Requirements**	Heading			
608	4.4.5.3.0-1	The RFD must download image files selected by the user from the RFD to the RTL in response to user input on the RTL.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
610	4.4.5.3.0-2	The RFD must download video files selected by the user from the RFD to the RTL in response to user input on the RTL.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
614	4.4.5.3.0-3	The RFD must delete all files stored on the RFD in response to user input on the RTL.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
615	4.4.5.3.0-4	The RFD must delete files selected by the user that are stored on the RFD in response to user input on the RTL.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
575	**4.4.6**	**Generic Interfaces - Bluetooth Connectivity**	Heading			
626	**4.4.6.1**	**Bluetooth Connectivity Description**	Heading			
630	4.4.6.1.0-1	The CA is developing policies related to the use of Bluetooth connectivity between devices in an operational environment. LRF HHTI-LR Bluetooth connectivity provides flexibility for future use. For proof-of-concept purposes, requirements for Bluetooth connectivity will use the RTL described in Section 4.4.4 Ruggedized Tactical Laptop (RTL) Interface.	Information			
627	**4.4.6.2**	**Bluetooth Connectivity Functional Requirements**	Heading			
637	4.4.6.2.0-1	The LRF HHTI-LR must include Bluetooth connectivity.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
638	4.4.6.2.0-2	The LRF HHTI-LR Bluetooth connectivity must be compatible with devices that implement Bluetooth Version 4.1, as described in the Bluetooth V4.1 Specification.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
639	4.4.6.2.0-3	When the LRF HHTI-LR is turned on, Bluetooth connectivity must be fully deactivated as a default state in all modes.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
641	4.4.6.2.0-4	The LRF HHTI-LR must activate Bluetooth connectivity in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
642	4.4.6.2.0-5	The LRF HHTI-LR must fully deactivate Bluetooth connectivity in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
643	**4.4.6.3**	**Bluetooth Connectivity Interface Requirements**	Heading			
631	4.4.6.3.0-1	The LRF HHTI-LR must connect to the RTL using a Bluetooth connection.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
634	4.4.6.3.0-2	The LRF HHTI-LR Bluetooth connectivity must support the functional requirements specified in Section 4.4.4.3 LRF HHTI-LR / RTL Interface - Bluetooth Proof of Concept.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
625	**4.4.7**	**Generic Interfaces - Wireless Connectivity**	Heading			
628	**4.4.7.1**	**Wireless Connectivity Description**	Heading			
645	4.4.7.1.0-1	The CA is developing policies related to the use of wireless connectivity between devices in an operational environment. LRF HHTI-LR wireless connectivity provides flexibility for future use. For proof-of-concept purposes, requirements for wireless connectivity will use the RTL described in Section 4.4.3 Integrated Soldier System (ISS) Interface.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
646	**4.4.7.2**	**Wireless Connectivity Functional Requirements**	Heading			
647	4.4.7.2.0-1	The LRF HHTI-LR must include wireless connectivity.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
648	4.4.7.2.0-2	The LRF HHTI-LR wireless connectivity must be compatible with devices that implement the IEEE 802.11ac protocol.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
649	4.4.7.2.0-3	When the LRF HHTI-LR is turned on, Wireless connectivity must be fully deactivated as a default state in all modes.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
650	4.4.7.2.0-4	The LRF HHTI-LR must activate wireless connectivity in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
651	4.4.7.2.0-5	The LRF HHTI-LR must fully deactivate wireless connectivity in response to user input.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
652	**4.4.7.3**	**Wireless Connectivity Interface Requirements**	Heading			
653	4.4.7.3.0-1	The LRF HHTI-LR must connect to the ISS using a Wireless connection.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
657	4.4.7.3.0-2	The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.2 Geo-orientation of LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
654	4.4.7.3.0-3	The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.3 Images.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
655	4.4.7.3.0-4	The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.4 Video.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
656	4.4.7.3.0-5	The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.5 Lased Target Geolocation Data.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2684	4.4.7.3.0-6	The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.6 Streaming Video.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1754	4.4.7.3.0-7	The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.7 Remote Control.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2682	4.4.7.3.0-8	The LRF HHTI-LR Wireless connectivity must support the LRF HHTI-LR / ISS Interface functional requirements specified in Section 4.4.3.4.8 File Management.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
776	**4.4.8**	**External DC Power Source Interface**	Heading			
859	4.4.8.0-1	The LRF HHTI-LR must be compatible with 24 V DC military vehicle electrical systems that are compliant with MIL-STD-1275E when powered through the DC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
858	4.4.8.0-2	The LRF HHTI-LR must connect to a 24 V DC military vehicle electrical system using the DC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1740	4.4.8.0-3	The LRF HHTI-LR must be compatible with 12 V DC commercial vehicle electrical systems when powered through the DC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1741	4.4.8.0-4	The LRF HHTI-LR must connect to a 12 V DC commercial vehicle electrical system using the DC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1743	4.4.8.0-5	The LRF HHTI-LR must be compatible with CWBs when powered through the DC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1744	4.4.8.0-6	The LRF HHTI-LR must connect to a CWB using the DC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
861	4.4.8.0-7	Requirements related to the DC Power Cable Assembly are specified in Section 5.18 DC Power Cable Assembly.	Information			
1189	**4.4.9**	**AC Power Source Interface**	Heading			
1191	4.4.9.0-1	The LRF HHTI-LR must be compatible with a North American 110/120 VAC 60 hertz power source, when powered through the AC Power Cable Assembly.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1194	4.4.9.0-2	The LRF HHTI-LR must connect to a North American 110/120 VAC 60 hertz power source using the AC Power Cable Assembly.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1196	4.4.9.0-3	The LRF HHTI-LR must be compatible with a European 220/240 VAC 50 hertz power source, when powered through the AC Power Cable Assembly.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1197	4.4.9.0-4	The LRF HHTI-LR must connect to a European 220/240 VAC 50 hertz power source using the AC Power Cable Assembly.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1195	4.4.9.0-5	Requirements related to the AC Power Cable Assembly are specified in Section 5.19 AC Power Cable Assembly.	Information			
933	**4.4.10**	**Tripod Interface**	Heading			
934	**4.4.10.1**	**LRF HHTI-LR Tripod**	Heading			
936	4.4.10.1.0-1	The LRF HHTI-LR must include a physical interface for mounting the LRF HHTI-LR on the LRF HHTI-LR Tripod specified in Section 5.12 Tripod.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
937	4.4.10.1.0-2	The LRF HHTI-LR must be compatible with the LRF HHTI-LR Tripod.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
938	**4.4.10.2**	**SAFRAN Vectronix SST3-1 Mini-tripod**	Heading			
941	4.4.10.2.0-1	The SAFRAN Vectronix SST3-1 Mini-tripod 664868, NSN 1290-01-455-9410, is in-service with the Canadian Army and is used as a tripod supporting the in-service SAFRAN Vector binoculars.	Information			
939	4.4.10.2.0-2	The LRF HHTI-LR must include a physical interface for mounting the LRF HHTI-LR on a SAFRAN Vectronix SST3-1 Mini-tripod.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
940	4.4.10.2.0-3	The LRF HHTI-LR must be compatible with the Vectronix SST3-1 Mini-tripod.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
121	**4.5**	**Adaptation Requirements**	Heading			
418	**4.5.1**	**User Language**	Heading			
459	4.5.1.0-1	The LRF HHTI-LR must display all textual information to the user in the English language in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
460	4.5.1.0-2	The LRF HHTI-LR must display all textual information to the user in the French language in response to user input.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
462	4.5.1.0-3	The LRF HHTI-LR must automatically save the language of display of textual information selected by the user and display all textual information using the same language the next time the LRF HHTI-LR is turned on.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2720	4.5.2	Grid System				
2721	4.5.2.0-1	The LRF HHTI-LR must be configurable to display geolocation data using different grids defined in accordance with the World Geodetic System 1984 (WGS-84) datum.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2727	4.5.2.0-2	The LRF HHTI-LR must be configurable by the user to display geolocation data using the WGS-84 Universal Transverse Mercator (UTM) grid system.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2725	4.5.2.0-3	The LRF HHTI-LR must be configurable by the user to display geolocation data using the WGS-84 Military Grid Reference System (MGRS) grid system.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2728	4.5.2.0-4	The LRF HHTI-LR must be configurable by the user to display geolocation data using the WGS-84 Latitude and Longitude grid system.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2731	4.5.2.0-5	The LRF HHTI-LR must use the grid system configured by the user for displaying user and target geolocation data.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2733	4.5.2.0-6	The LRF HHTI-LR must save the grid system selected by the user and present geolocation data using the same grid system the next time the LRF HHTI-LR is turned on.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
367	**4.5.3**	**Directional Notation**	Heading			
368	4.5.3.0-1	The LRF HHTI-LR must be configurable to display directional data (azimuth and angle of sight) in accordance with different directional notations.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
370	4.5.3.0-2	The LRF HHTI-LR must be configurable by the user to display directional data using the NATO mils system, where a circle is divided into 6,400 mils.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
373	4.5.3.0-3	The LRF HHTI-LR must be configurable by the user to display directional data using the degrees / minutes / seconds (DMS) system.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
369	4.5.3.0-4	The LRF HHTI-LR must use the same directional notation selected by the user to display azimuth and angle of sight data.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
371	4.5.3.0-5	The LRF HHTI-LR must save the directional notation system selected by the user and display directional data using the same directional notation system the next time the LRF HHTI-LR is turned on.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1437	**4.5.4**	**Distance and Elevation Notation**	Heading			
1438	4.5.4.0-1	The LRF HHTI-LR must be configurable to display distance and elevation data in accordance with different distance notations.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1439	4.5.4.0-2	The LRF HHTI-LR must be configurable to display distance and elevation data in metres.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1440	4.5.4.0-3	The LRF HHTI-LR must be configurable to display distance and elevation data in feet.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1441	4.5.4.0-4	The LRF HHTI-LR must save the last distance and elevation notation system selected by the user and display distance and elevation data using the same distance and elevation notation system the next time the LRF HHTI-LR is turned on.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2619	**4.5.5**	**ISS BMS Interface**	Heading			
2632	**4.5.5.1**	**ISS BMS Interface - Configurable Attributes**	Heading			
2621	4.5.5.1.0-1	The LRF HHTI-LR must be configurable to store a local identifier used in the Sensor Name.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2622	4.5.5.1.0-2	The LRF HHTI-LR must be configurable to store the Sensor Range Length corresponding to the maximum detection range of a vehicle-sized target using the Thermal Channel.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2623	4.5.5.1.0-3	The LRF HHTI-LR must be configurable to store the Sensor Range Length corresponding to the maximum detection range of a person-sized target using the Thermal Channel.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2633	**4.5.5.2**	**ISS BMS Interface - Configurable Behaviours**	Heading			
2628	4.5.5.2.0-1	The LRF HHTI-LR must be configurable to automate the initiation of sending streamed geo-orientation data to the ISS BMS in terms of always send, send after user confirmation or don't send.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2625	4.5.5.2.0-2	The LRF HHTI-LR must be configurable to automate the sending of saved images to the ISS BMS in terms of always send, send after user confirmation or don't send.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2626	4.5.5.2.0-3	The LRF HHTI-LR must be configurable to automate the sending of saved video to the ISS BMS in terms of always send, send after user confirmation or don't send.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
123	**4.6**	**Environment, Health and Safety Requirements**	Heading			
248	**4.6.1**	**General Hazards**	Heading			
249	4.6.1.0-1	The LRF HHTI-LR, excluding the LRF HHTI-LR Internal Batteries, must not present any environmental, health or system safety hazards of a Catastrophic or Critical mishap severity.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
251	4.6.1.0-2	The LRF HHTI-LR, excluding the LRF HHTI-LR Internal Batteries, must not present a Catastrophic or Critical hazard to the operator and surrounding environment even when so damaged that it allows the ingress of water or egress of internal substances.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
252	4.6.1.0-3	Mitigation against general hazards involving Internal Batteries is implemented through specifications in Section 5.9 Rechargeable Batteries and Section 5.10 Low Temperature Batteries.	Information			
256	4.6.1.0-3.0-1	Requirements related to the mitigation of battery hazards are embedded in the specifications for Internal Batteries in Section 4.3.14.1 Internal Batteries.	Information			
253	**4.6.2**	**Thermal Contact Hazards**	Heading			
257	4.6.2.0-1	The LRF HHTI-LR must not expose operators during normal operation to surface temperatures greater than those identified in MIL-STD-1472H Section 5.7.5.9 Thermal contact hazards for prolonged contact.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
255	**4.6.3**	**Dangerous Material Hazards**	Heading			
259	4.6.3.0-1	The LRF HHTI-LR must not contain any Polychlorinated Biphenyls (PCBs), halocarbons or asbestos.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
260	**4.6.4**	**Handling Hazards**	Heading			
262	4.6.4.0-1	The LRF HHTI-LR must bear no sharp, raw, or rough edges that present a risk of cuts or abrasions to the operator.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1641	**4.6.5**	**Radio Frequency Hazards**	Heading			
1647	4.6.5.0-1	The HHTI-LR must comply with the Specific Absorption Rate (SAR) requirements for the Controlled Environment of Health Canada Safety Code 6 2015, for the protection against the Effects of Electromagnetic Radiation to Personnel (HERP).	Mandatory Requirement	Yes	FAAT - Test QETE	Results of SAR testing in accordance with test QETE 01 < TBD > of QETE Test Plan and Procedures at QETE verify that the requirement has been met.
125	**4.7**	**Security and Privacy Requirements**	Heading			
878	**4.7.1**	**Visibility**	Heading			
879	4.7.1.0-1	The LRF HHTI-LR must prevent emission of light from the eyepieces when the LRF HHTI-LR is operational.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
880	4.7.1.0-2	The LRF HHTI-LR must not emit any light from external surfaces during operation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
436	**4.7.2**	**Audibility**	Heading			
437	4.7.2.0-1	The LRF HHTI-LR must, when in the Operational Mode and after cool-down has been completed, be inaudible at a distance of 30 metres, tested in accordance with MIL-STD-1474E at the Level I aural non-detectability limits.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Test Report	Standard for Analysis - Test Report. Test IAW MIL-STD-1474E, Appendix C using: - Limit Category of Level I aural non-detectability limits - A minimum distance of 30 metres at which non-detectability is required - LRF HHTI-LR is installed on the tripod - LRF HHTI-LR in the Operational Mode after cool down has been completed
884	4.7.2.0-2	The LRF HHTI-LR must have no audible alarms.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
885	4.7.2.0-3	The LRF HHTI-LR must have no audible indicators.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
766	**4.7.3**	**Deletion of Imagery Files and LRF Target Data**	Heading			
767	4.7.3.0-1	There may be situations where the user is forced to abandon the LRF HHTI-LR or where it may fall into enemy hands.	Information			
768	4.7.3.0-2	The LRF HHTI-LR must delete, without potential for recovery, all image files, all video files, all data related to LRF targets, and all other data that is generated during use of the LRF HHTI-LR in response to user input.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
139	**4.8**	**System Quality Factors**	Heading			
1225	**4.8.1**	**Reliability**	Heading			
1227	4.8.1.0-1	The LRF HHTI-LR must have a mission Mean Time Between Critical Failures (MTBCF) of at least 1,200 hours when used in ambient air temperatures of 18 degrees Celsius to 28 degrees Celsius.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence. Provide estimated, lab measured or field measured values of MTBCF. Describe the methods used to determine and verify MTBCF.
1226	**4.8.2**	**Maintainability**	Heading			
1243	4.8.2.0-1	The support and maintenance concept for the LRF HHTI-LR System is described in LRF HHTI-LR Support and Maintenance Concept document.	Information			
1237	**4.8.2.1**	**Modularity**	Heading			
1238	4.8.2.1.0-1	The LRF HHTI-LR must be designed for the modular replacement of components.	Mandatory Requirement	Yes	Not verified post contract award	N/A - not verified post contract award.
1234	**4.8.2.2**	**Built-In Test Function**	Heading			
1228	4.8.2.2.0-1	The LRF HHTI-LR must have a Built-In Test (BIT) function.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1229	4.8.2.2.0-2	The BIT function must operate continuously while the LRF HHTI-LR is transitioning from the off state to the Operational State.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1232	4.8.2.2.0-3	The BIT function must operate continuously while the LRF HHTI-LR is in the Operational Mode.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1230	4.8.2.2.0-4	The BIT function must detect and display faults.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1231	4.8.2.2.0-5	The fault information displayed by the BIT function must provide the user with information on the associated loss of functionality.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1233	4.8.2.2.0-6	The fault information displayed by the BIT function must provide the user and maintainer with an indication of required maintenance actions.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1235	**4.8.2.3**	**User Maintenance**	Heading			
1245	4.8.2.3.0-1	In accordance with the LRF HHTI-LR Support and Maintenance Concept, it is expected that user maintenance tasks will include activities such as: • Changing Internal Batteries • Cleaning of optical surfaces using the Lens Cleaning Kit • Cleaning of exterior surfaces of the HHTI-LR	Information			
1236	4.8.2.3.0-2	LRF HHTI-LR user maintenance tasks must not require Special Tools and Test Equipment (STTE), other than the Lens Cleaning Kit.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1242	4.8.2.3.0-3	LRF HHTI-LR user maintenance tasks must be carried out by a user wearing Cold Wet Weather Gloves.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1592	4.8.2.3.0-4	LRF HHTI-LR user maintenance tasks must be carried out by a user with bare hands.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1239	**4.8.2.4**	**First Level Maintenance**	Heading			
1248	4.8.2.4.0-1	In accordance with the LRF HHTI-LR Support and Maintenance Concept, first level maintenance tasks will include user maintenance task plus: • servicing and cleaning • nitrogen purging • preliminary diagnosis of faults • corrective maintenance tasks of a minor nature • replacement of broken eyecups, straps, and lens covers The term “minor nature” infers short duration (less than four hours to return the equipment to service) and relatively simple repairs. Level one maintenance tasks are generally performed without Special Tools and Test Equipment (STTE) and require no special facilities.	Information			
1240	4.8.2.4.0-2	LRF HHTI-LR first level maintenance tasks must not require Special Tools and Test Equipment (STTE), other than the Lens Cleaning Kit, or nitrogen purging equipment.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1244	4.8.2.4.0-3	LRF HHTI-LR first level maintenance tasks must be feasible under field conditions.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1715	**4.8.2.5**	**Second Level Maintenance - Second Line Maintenance Organization**	Heading			
1716	4.8.2.5.0-1	In accordance with the LRF HHTI-LR Support and Maintenance Concept, second line maintenance organizations will conduct user maintenance tasks, first level maintenance tasks and the following second level tasks: • nitrogen purging • fault diagnosis • software updates	Information			
1721	4.8.2.5.0-2	LRF HHTI-LR second level maintenance tasks undertaken by second line maintenance organizations must be feasible under field conditions.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1636	4.8.2.5.0-3	LRF HHTI-LR software must be updateable as a first level maintenance activity.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
141	**4.9**	**Design and Construction Constraints**	Heading			
464	**4.9.1**	**Physical Characteristics**	Heading			
881	**4.9.1.1**	**Mass**	Heading			
465	4.9.1.1.0-1	The LRF HHTI-LR, including Internal Batteries, must have a mass of less than 2.75 kilograms. < rated >	Mandatory Requirement (rated)	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Test Report	Standard for Analysis - Test Report. Configuration of the LRF HHTI-LR at the time of measurement of mass must include: - All internal components required to satisfy the LRF HHTI-LR Capability Requirements (Section 4.3) - Internal batteries (Section 4.3.14.1) - Lens Covers (Section 4.9.1.4) - Eye Cups (Section 4.9.1.5) - Hand Straps (Section 4.9.1.7) - No external interface cabling - If applicable, an add-on Afocal lens that increases system DRI performance
882	**4.9.1.2**	**Colour and Finish**	Heading			
883	4.9.1.2.0-1	The LRF HHTI-LR must have an external colour of NATO Coyote Brown or similar colour approved by the TA prior to production.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1451	4.9.1.2.0-2	The LRF HHTI-LR must have a finish that is dull or flat without shine.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1117	**4.9.1.3**	**Moisture Seal**	Heading			
1118	4.9.1.3.0-1	The LRF HHTI-LR must be sealed to prevent infiltration of moisture.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
1120	4.9.1.3.0-2	The LRF HHTI-LR must have a means of purging the interior of the device with an inert gas to remove moisture.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1203	**4.9.1.4**	**Lens Covers**	Heading			
1204	4.9.1.4.0-1	The LRF HHTI-LR must have Lens Covers that protect the objective optical surfaces when the LRF HHTI-LR is not in use.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1205	4.9.1.4.0-2	When the Lens Covers are removed from the objective optical surfaces when the LRF HHTI-LR is in use, the Lens Covers must remain attached to the LRF HHTI-LR.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1206	4.9.1.4.0-3	The lens covers must be replaceable as a first level maintenance task.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1214	**4.9.1.5**	**Eye Cups**	Heading			
1215	4.9.1.5.0-1	The LRF HHTI-LR must have Eye Cups.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1219	4.9.1.5.0-2	The Eye Cups must minimize the escape of light from the display when the user is looking at the display and the user is in contact with the Eye Cups.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1220	4.9.1.5.0-3	The Eye Cups must prevent the escape of light from the display when the LRF HHTI-LR is operating, but the user is not in contact with the Eye Cups.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1221	4.9.1.5.0-4	The Eye Cups must be compatible with a user wearing ballistic eyewear, NSN 8465-20-001-4355.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1222	4.9.1.5.0-5	The Eye Cups must be compatible with a user wearing the C5 AirBoss Low Burden Mask, NSNs 4240-20-011-8190, -8191, -8192, -8193 and 4240-20-012-6039, -6040, -6041, -6042.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1223	4.9.1.5.0-6	The Eye Cups must have a feel and texture that is soft, flexible and comfortable to the user.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
887	**4.9.1.6**	**Shoulder Strap**	Heading			
888	4.9.1.6.0-1	The LRF HHTI-LR must have an adjustable Shoulder Strap.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
891	4.9.1.6.0-2	The Shoulder Strap must be configured so that the user can carry the LRF HHTI-LR with the Shoulder Strap around the user's neck.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
893	4.9.1.6.0-3	The Shoulder Strap must be configured so that the user can carry the LRF HHTI-LR with the Shoulder Strap hung on the user's shoulder and the LRF HHTI-LR resting against the same side of the body.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
894	4.9.1.6.0-4	The Shoulder Strap must be configured so that the user can carry the LRF HHTI-LR with the Shoulder Strap on one shoulder and the LRF HHTI-LR resting on the other side of the body.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
889	4.9.1.6.0-5	The Shoulder Strap must be at least 1.5 centimetres in width.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
895	4.9.1.6.0-6	The Shoulder Strap must be padded in the section of the Shoulder Strap that is resting on the part of the user's body that is bearing the weight of the LRF HHTI-LR.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
892	4.9.1.6.0-7	The Shoulder Strap must be comfortable to the user when carrying the LRF HHTI-LR using the Shoulder Strap over a distance of five kilometres.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1207	4.9.1.6.0-8	The Shoulder Strap must be replaceable as a first level maintenance task.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1208	**4.9.1.7**	**Hand Straps**	Heading			
1209	4.9.1.7.0-1	The LRF HHTI-LR must have one or more Hand Straps.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1210	4.9.1.7.0-2	The Hand Straps must assist the user to hold the LRF HHTI-LR when in operational use.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1211	4.9.1.7.0-3	The Hand Straps must be strong enough so that the LRF HHTI-LR can be carried using one Hand Strap.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
149	**4.10**	**Human Factors Engineering Requirements**	Heading			
150	**4.10.1**	**Compatibility with Diversity of Users**	Heading			
1254	**4.10.1.1**	**Interpupillary Distance**	Heading			
1259	4.10.1.1.0-1	The LRF HHTI-LR must be compatible with the 5th to 95th percentile of interpupillary distances of male sailors and combat arms soldiers serving in the Canadian Armed Forces.	Mandatory Requirement	Yes	Not verified post contract award	
1261	4.10.1.1.0-2	The LRF HHTI-LR must be compatible with the 5th to 95th percentile of interpupillary distances of female sailors and combat arms soldiers serving in the Canadian Armed Forces.	Mandatory Requirement	Yes	Not verified post contract award	

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1688	**4.10.1.2**	**Visual Accuity**	Heading			
1689	4.10.1.2.0-1	The focus of the thermal channel of the LRF HHTI-LR must be adjustable to present a sharp image to users with a Canadian Armed Forces V3 or better vision category, as defined in Appendix 1 to Annex A to CFP 154 Canadian Armed Forces Medical Standards.	Mandatory Requirement	Yes	Not verified post contract award	
1690	4.10.1.2.0-2	The focus of the secondary channel of the LRF HHTI-LR must be adjustable to present a sharp image to users with a Canadian Armed Forces V3 or better vision category, as defined in Appendix 1 to Annex A to CFP 154 Canadian Armed Forces Medical Standards.	Mandatory Requirement	Yes	Not verified post contract award	
1255	**4.10.1.3**	**Hand Size**	Heading			
1252	4.10.1.3-1	The LRF HHTI-LR must be compatible with differences in hand size found in the 5th to 95th percentile of male sailors and combat arms soldiers serving in the Canadian Armed Forces.	Mandatory Requirement	Yes	Not verified post contract award	
1262	4.10.1.3-2	The LRF HHTI-LR must be compatible with differences in hand size found in the 5th to 95th percentile of female sailors and combat arms soldiers serving in the Canadian Armed Forces.	Mandatory Requirement	Yes	Not verified post contract award SAT - Analysis - Evidence	
463	**4.10.2**	**Compatibility with Clothing and Equipment**	Heading			
1256	**4.10.2.1**	**Gloves**	Heading			
1263	4.10.2.1.0-1	The LRF HHTI-LR must be compatible with a user wearing Cold Wet Weather Gloves, NSN 8415-21-920-9019.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1269	4.10.2.1.0-2	Assembly of the LRF HHTI-LR into a configuration where the LRF HHTI-LR is mounted on the Tripod and interfaced to an external power source must be compatible with a user wearing Cold Wet Weather Gloves and without the use of special tools.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1264	4.10.2.1.0-3	The LRF HHTI-LR must be acceptable to users wearing Cold Wet Weather Gloves in operational conditions.	Mandatory Requirement	Yes	SAT - UAPE	Standard for UAPE.
1258	**4.10.2.2**	**CM735 Ballistic Helmet**	Heading			
1266	4.10.2.2.0-1	The LRF HHTI-LR must be compatible with a user wearing a CM735 Ballistic Helmet, NSN 8470-21-912-7719.	Mandatory Requirement	Yes	SAT - UAPE	Standard for UAPE.
1268	4.10.2.2.0-2	The LRF HHTI-LR must be acceptable to users wearing a CM735 Ballistic Helmet in operational conditions.	Mandatory Requirement	Yes	SAT - UAPE	Standard for UAPE.
1260	**4.10.2.3**	**Ballistic Eyewear**	Heading			
1271	4.10.2.3.0-1	The LRF HHTI-LR must be compatible with a user wearing Ballistic Eyewear, NSN 8465-20-001-4355.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
1272	4.10.2.3.0-2	The LRF HHTI-LR must be acceptable to users wearing Ballistic Eyewear in operational conditions.	Mandatory Requirement	Yes	SAT - UAPE	Standard for UAPE.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1267	**4.10.2.4**	**C5 AirBoss Low Burden Mask**	Heading			
1273	4.10.2.4.0-1	The LRF HHTI-LR must be compatible with a user wearing a C5 AirBoss Low Burden Mask (CBRN mask), NSNs 4240-20-011-8190, -8191, -8192, -8193 and 4240-20-012-6039, -6040, -6041, -6042.	Mandatory Requirement	No	SAT - Demonstration	Standard for Demonstration.
1274	4.10.2.4.0-2	The LRF HHTI-LR must be acceptable to soldiers wearing a C5 AirBoss Low Burden Mask in operational conditions.	Mandatory Requirement	No	SAT - UAPE	Standard for UAPE.
1257	**4.10.2.5**	**Operational Clothing and Equipment**	Heading			
1275	4.10.2.5.0-1	The LRF HHTI-LR must be acceptable to soldiers wearing operational clothing and equipped with the Modular Load Carrying System and the Integrated Soldier System in operational conditions.	Mandatory Requirement	Yes	SAT - UAPE	Standard for UAPE.
1250	**4.10.3**	**Compatibility with Use under Conditions of Darkness**	Heading			
1278	4.10.3.0-1	The LRF HHTI-LR must have external controls whose arrangement, size and shape can be identified and manipulated by the user using only the sense of touch.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
1279	4.10.3.0-2	The LRF HHTI-LR must have external controls whose arrangement, size and shape can be identified and manipulated by the user using only the sense of touch while wearing Cold Wet Weather Gloves.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
1280	4.10.3.0-3	During conditions of total darkness, assembly of the LRF HHTI-LR into a configuration where the LRF HHTI-LR is mounted on the Tripod and interfaced to an external power source must be compatible with a user wearing Cold Wet Weather Gloves and without the use of special tools.	Mandatory Requirement	Yes	SAT - Demonstration	Standard for Demonstration.
1251	**4.10.4**	**Functionality and Ease of Use**	Heading			
1303	**4.10.4.1**	**Primary Functions**	Heading			
1663	4.10.4.1.0-1	The functionality and ease of use of the LRF HHTI-LR related to the maintenance of a high level of situational awareness, scanning of an area of interest, and speed of detection, recognition and identification of targets must be acceptable to users under operational conditions. < rated >	Mandatory Requirement (rated)	Yes	SAT - UAPE	Standard for UAPE.
1285	4.10.4.1.0-2	The functionality and ease of use of the LRF HHTI-LR related to the detection, recognition and identification of targets using the Secondary Channel must be acceptable to users under operational conditions. < rated >	Mandatory Requirement (rated)	Yes	SAT - UAPE	Standard for UAPE.
1284	4.10.4.1.0-3	The functionality and ease of use of the LRF HHTI-LR related to the geolocation of targets using the Laser Range Finder must be acceptable to users under operational conditions. < rated >	Mandatory Requirement (rated)	Yes	SAT - UAPE	Standard for UAPE.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1713	4.10.4.1.0-4	The functionality and ease of use of the LRF HHTI-LR to use the observation of bullet swirls with the thermal channel to adjust fire must be acceptable to users under operational conditions in the following scenario: • The LRF HHTI-LR thermal channel is offset no more than one metre from the axis of the rifle barrel; and • A 7.62 x 51mm NATO non-tracer round is fired at a target at 800 metres	Mandatory Requirement	Yes	SAT - UAPE	Standard for UAPE.
2737	4.10.4.1.0-5	The functionality and ease of use of the LRF HHTI-LR to use the observation of bullet swirls with the thermal channel to adjust fire should be acceptable to users under operational conditions in the following scenario: • The LRF HHTI-LR thermal channel is offset up to ten metres from the axis of the rifle barrel; and • A 7.62 x 51mm NATO non-tracer round is fired at a target at 800 metres < rated >	Desirable Requirement (rated)	Not Applicable	SAT - UAPE	Standard for UAPE.
1283	4.10.4.1.0-6	The functionality and ease of use of the LRF HHTI-LR related to the display of data on the display must be acceptable to users under operational conditions. < rated >	Mandatory Requirement (rated)	Yes	SAT - UAPE	Standard for UAPE.
1289	4.10.4.1.0-7	The functionality and ease of use of the LRF HHTI-LR related to the saving and storage of images and videos must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1281	4.10.4.1.0-8	The functionality and ease of use of the LRF HHTI-LR related to the adaptation of the system to fit user and mission attributes at the start of a mission must be acceptable to users under operational conditions.	Mandatory Requirement	No	SAT - UAPE	Standard for UAPE.
1302	**4.10.4.2**	**External Interfaces**	Heading			
1288	4.10.4.2.0-1	The functionality and ease of use of the LRF HHTI-LR related to establishing an interface with a DAGR must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1295	4.10.4.2.0-2	The functionality and ease of use of the LRF HHTI-LR related to establishing an interface with the ISS must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1294	4.10.4.2.0-3	The functionality and ease of use of the LRF HHTI-LR related to using the LIBI AP installed on the ISS EUD and Commander's Tablet must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1293	4.10.4.2.0-4	The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising the interface with a Ruggedized Tactical Laptop and must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1292	4.10.4.2.0-5	The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising an interface with a Ruggedized Flash Drive must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1287	4.10.4.2.0-6	The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising a Wireless interface with an external device must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1452	4.10.4.2.0-7	The functionality and ease of use of the LRF HHTI-LR related to establishing and exercising a Bluetooth interface with an external device must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1301	**4.10.4.3**	**External Power Sources**	Heading			
1300	4.10.4.3.0-1	The functionality and ease of use of the LRF HHTI-LR related to sourcing power from a military vehicle 24 V electrical system must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1814	4.10.4.3.0-2	The functionality and ease of use of the LRF HHTI-LR related to sourcing power from a civilian vehicle 12 V electrical system must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1299	4.10.4.3.0-3	The functionality and ease of use of the LRF HHTI-LR related to sourcing power from an AC Power Source must be acceptable to users under operational conditions.	Mandatory Requirement	Yes	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1304	**4.10.4.4**	**Menu Structures and Commands**	Heading			
1306	4.10.4.4.0-1	The functionality and ease of use of the LRF HHTI-LR related to navigation through English language menu structures and commands must be acceptable to users under operational conditions.	Mandatory Requirement	Yes	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1307	4.10.4.4.0-2	The functionality and ease of use of the LRF HHTI-LR related to navigation through French language menu structures and commands must be acceptable to users under operational conditions.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1253	**4.10.5**	**Human Machine Interface**	Heading			
1571	4.10.5.0-1	When used in the Operational mode, the LRF HHTI-LR physical controls (including buttons, knobs, toggle switches, joy sticks or other controls) used in the human machine interface must be accessible by the user without the necessity of moving a hand in a way that affects the stability of the device.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
1602	4.10.5.0-2	The LRF HHTI-LR must have physical controls that are positioned such that their manipulation does not interfere with continuous surveillance by the user when the LRF HHTI-LR is being held in two hands.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1605	4.10.5.0-3	The LRF HHTI-LR must have an external, easily accessible, non-menu-driven physical control for switching between the Thermal Channel and the Secondary Channel.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
1311	4.10.5.0-4	The LRF HHTI-LR must have an external, easily accessible, non-menu-driven physical control for adjusting magnification.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
1313	4.10.5.0-5	The LRF HHTI-LR must have an external, easily accessible, non-menu-driven physical control for reversing image polarity of the thermal channel display.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
1312	4.10.5.0-6	The LRF HHTI-LR should have an external, easily accessible, non-menu-driven physical control for firing the laser when using the Laser Range Finder.	Desirable Requirement	Not Applicable	Not verified post contract award	Standard for Demonstration.
2718	4.10.5.0-7	The LRF HHTI-LR must prevent accidental firing of the Laser Range Finder.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1707	4.10.5.0-8	The LRF HHTI-LR should have an external, easily accessible, non-menu-driven physical control for firing the Laser Pointer.	Mandatory Requirement	No	N/A if config is unchanged from IBS, otherwise... SAT - Demonstration	Standard for Demonstration.
1604	4.10.5.0-9	The LRF HHTI-LR must prevent accidental firing of the Laser Pointer.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1538	**4.11**	**Product Serialization**	Heading			
1541	4.11.0-1	The LRF HHTI-LR must be a serialized item.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.
1543	4.11.0-2	The LRF HHTI-LR serialization must satisfy the requirements specified in Section 6.5.2 Serialized Items.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
808	**5**	**System - Other Component Requirements**	Heading			
999	**5.1**	**Field Kit Storage and Transport Case**	Heading			
1006	5.1.0-1	The Field Kit Storage and Transport Case is used to store and transport the components of the LRF HHTI-LR System that are carried within the Field Pouch. The Field Kit Storage and Transport Case will also be used for transportation of the LRF HHTI-LR (within the Field Pouch) between maintenance and supply organization, and for return of the LRF HHTI-LR to the OEM for repair and overhaul purposes. Batteries may be stored in the Field Kit Storage and Transport Case, but not within the LRF HHTI-LR or within the Field Pouch themselves.	Information			
1004	5.1.0-2	The LRF HHTI-LR System must include a Field Storage and Transport Case.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1005	5.1.0-3	The Field Kit Storage and Transport Case must be configured to store a Field Pouch that is loaded with the components of the LRF HHTI-LR System that are normally carried within the Field Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1154	5.1.0-4	Components of the LRF HHTI-LR System that are normally carried within the Field Pouch are identified in Section 5.4 Field Pouch.	Information			
1007	5.1.0-5	The Field Kit Storage and Transport Case must be configured to store Internal Batteries that support 24 hours of continuous use of the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1153	5.1.0-6	The configuration of the Field Kit Storage and Transport Case to store batteries must not create any hazards related to long term battery storage.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1145	**5.2**	**Support Kit Storage and Transport Case**	Heading			
1146	5.2.0-1	The Support Kit Storage and Transport Case is used to store and transport the components of the LRF HHTI-LR System that are carried within the Tripod Pouch and Accessories Pouch. Batteries may be stored in the Support Kit Storage and Transport Cases but not within pouches themselves.	Information			
1147	5.2.0-2	The LRF HHTI-LR System must include a Support Kit Storage and Transport Case.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1149	5.2.0-3	The Support Kit Storage and Transport Case must be configured to store a Tripod Pouch that is loaded with the components of the LRF HHTI-LR System that are normally carried within the Tripod Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1155	5.2.0-4	Components of the LRF HHTI-LR System that are normally carried within the Tripod Pouch are identified in Section 5.5 Tripod Pouch.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1156	5.2.0-5	The Support Kit Storage and Transport Case must be configured to store an Accessories Pouch that is loaded with the components of the LRF HHTI-LR System that are normally carried within the Accessories Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1157	5.2.0-6	Components of the LRF HHTI-LR System that are normally carried within the Accessories Pouch are identified in Section 5.6 Accessories Pouch.	Information			
2734	5.2.0-7	The Support Kit Storage and Transport Case must be configured to store an External Battery Pack Pouch that contains the External Battery Pack.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1150	5.2.0-8	The Support Kit Storage and Transport Case must be configured to store Rechargeable Batteries that support 24 hours of continuous use of the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1159	5.2.0-9	The configuration of the Support Kit Storage and Transport Case to store batteries must not create any hazards related to long term battery storage.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1126	**5.3**	**Storage and Transport Cases - Common Requirements**	Heading			
1127	5.3.0-1	The requirements specified in this section are applicable to both the Field Storage and Transport Case and the Support Kit Storage and Transport Case.	Information			
1129	5.3.0-2	The Storage and Transport Cases must have a rigid exoskeleton.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1133	5.3.0-3	The Storage and Transport Case must be stable and secure against sliding and collapse when stacked with other Storage and Transport Cases.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1134	5.3.0-4	The Storage and Transport Cases must have a gasket that provides a sealed environment when the lid is closed.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1135	5.3.0-5	The Storage and Transport Cases must include a depressurization valve.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1136	5.3.0-6	The Storage and Transport Cases must include a means for the user to secure the contents of the case with a padlock.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1137	5.3.0-7	The Storage and Transport Cases must have two handholds that facilitate one-person, two-handed lifting, carrying and stacking actions when fully loaded with LRF HHTI-LR System components.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1138	5.3.0-8	The Storage and Transport Cases must have one handhold that facilitates one-person, one-handed carrying (suitcase style) when fully loaded with LRF HHTI-LR System components.	Mandatory Requirement	No	Prototype - Inspection SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1139	5.3.0-9	The Storage and Transport Cases should minimize volume and mass to facilitate handling by one person.	Desirable Requirement	Not Applicable	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1141	5.3.0-10	The Storage and Transport Cases must have an exterior colour of black or coyote brown.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1454	5.3.0-11	The Storage and Transport Cases must have a finish that is dull or flat without shine.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2740	5.3.0-12	The Storage and Transport Cases must be serialized items.	Mandatory Requirement	No		
2741	5.3.0-13	The Storage and Transport Cases must comply with the requirements for serialized items specified in Section 6.5.2 Serialized Items.	Mandatory Requirement	No		
2742	5.3.0-14	The Storage and Transport Cases must have a highly visible marking as applicable: • LRF HHTI-LR Field Kit - nnn • LRF HHTI-LR Support KIt - nnn where nnn corresponds to the unique numbering component of the serialization.	Mandatory Requirement	No		
2744	5.3.0-15	The purpose of this additional marking is to allow rapid identification of of each system during acceptance on delivery, and when retrieving systems from a storage facility.	Information			
1000	**5.4**	**Field Pouch**	Heading			
1038	**5.4.1**	**Field Pouch General Requirements**	Heading			
1020	5.4.1.0-1	The LRF HHTI-LR System must include a Field Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1847	5.4.1.0-2	The Field Pouch must comply with the Common Pouch Requirements specified in Section 5.8.	Mandatory Requirement	No	See referenced requirements	See reference requirements
1021	5.4.1.0-3	The Field Pouch must be of semi-rigid construction.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1812	5.4.1.0-4	The Field Pouch must protect the LRF HHTI-LR from shock and vibration associated with dismounted soldier operations.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2531	5.4.1.0-5	The Field Pouch must be configured to allow the user to turn the LRF HHTI-LR on or off without opening the Field Pouch or removing the LRF HHTI-LR from the Field Pouch. < TBC >	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1833	5.4.1.0-6	The Field Pouch must permit BlueTooth communication between the LRF HHTI-LR and the ISS EUD when the LRF HHTI-LR is stored in the Field Pouch. < TBC >	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1838	5.4.1.0-7	The Field Pouch must permit Wireless communication between the LRF HHTI-LR and the ISS EUD when the LRF HHTI-LR is stored in the Field Pouch. < TBC >	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1821	**5.4.2**	**Field Pouch Compartmentalization Requirements**	Heading			
1022	5.4.2.0-1	The Field Pouch must have compartments to carry all of the following LRF HHTI-LR System Components: • LRF HHTI-LR • Lens Cleaning Kit • Ruggedized Flash Drive • RFD Interface Cable (if applicable to design) • Quick Reference Guide • Operator Manual • Rechargeable Batteries for twenty-four hours of continuous operation of the LRF HHTI-LR • Any adapters that may be required to mount the LRF HHTI-LR on a SAFRAN Vectronix SST3-1 Tripod	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1453	5.4.2.0-2	The Field Pouch must be compartmentalized to facilitate rapid access to components that may be required by the user.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1831	5.4.2.0-3	The Field Pouch Lens Cleaning Kit compartment must be located on the outside of the Field Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1835	5.4.2.0-4	The Field Pouch's RFD compartment must be easily accessible to the LRF HHTI-LR Operator.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1839	5.4.2.0-5	The Field Pouch RFD compartment must protect the RFD from damage or degradation of performance from water, blowing dirt and/or dust.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1840	5.4.2.0-6	The Field Pouch Battery compartment(s) must be located on the outside of the Field Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1841	5.4.2.0-7	The Field Pouch Battery compartment(s) must protect batteries from damage or degradation of performance from water, blowing dirt and/or dust.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1834	5.4.2.0-8	When worn in backpack mode, the compartments of the Field Pouch must be accessible to a fellow operator to remove and replace all carried components.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1030	**5.4.3**	**Field Pouch Carriage Requirements**	Heading			
1842	**5.4.3.1**	**Backpack Mode**	Heading			
1843	5.4.3.1.0-1	The Field Pouch must include two backpack shoulder straps that allow the Field Pouch to be carried on the operator's back.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1844	5.4.3.1.0-2	The backpack shoulder straps must be constructed with side release buckles.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2507	5.4.3.1.0-3	The backpack shoulder straps must be adjustable.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1845	5.4.3.1.0-4	The Field Pouch must have a sleeve located on the back so that the shoulder straps can be tucked away behind the sleeve to prevent catching on other objects.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1846	**5.4.3.2**	**Sling Mode**	Heading			
1031	5.4.3.2-1	The Field Pouch must include an adjustable Sling Shoulder Strap.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1032	5.4.3.2-2	The Field Pouch Shoulder Strap must be configurable so that the user can carry the LRF HHTI-LR with the Shoulder Strap around the user's neck.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1033	5.4.3.2-3	The Field Pouch Shoulder Strap must be configurable so that the user can carry the LRF HHTI-LR with the Shoulder Strap hung on the user's shoulder and the LRF HHTI-LR resting against the same side of the body.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1034	5.4.3.2-4	The Field Pouch Shoulder Strap must be configurable so that the user can carry the LRF HHTI-LR with the Shoulder Strap on one shoulder and the LRF HHTI-LR carried resting on the other side of the body.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1035	5.4.3.2-5	The Shoulder Strap must be at least 1.5 centimetres in width.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1036	5.4.3.2-6	The Shoulder Strap must be padded in the section of the Shoulder Strap that is resting on the part of the user's body that is bearing the weight of the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1037	5.4.3.2-7	The Shoulder Strap must be comfortable to the user when carrying the LRF HHTI-LR using the Shoulder Strap over a distance of five kilometres.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1823	**5.4.4**	**Field Pouch Attachment Requirements**	Heading			
1023	5.4.4.0-1	The Field Pouch must include an attachment method that allows the Field Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1026	5.4.4.0-2	The Field Pouch must include PALS webbing to allow the attachment of the Tripod Pouch such that the Tripod Pouch is held below the LRF HHTI-LR Field Pouch when carried.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1816	5.4.4.0-3	The Field Pouch must include PALS webbing to allow the attachment of small pouches or small items of equipment carried by soldiers, and to allow it to be attached to other load carrying equipment.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
943	**5.5**	**Tripod Pouch**	Heading			
1848	**5.5.1**	**Tripod Pouch General Requirements**	Heading			
944	5.5.1.0-1	The LRF HHTI-LR System must include a Tripod Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1853	5.5.1.0-2	The Tripod Pouch must comply with the Common Pouch Requirements specified in Section 5.8.	Mandatory Requirement	No	See referenced requirements	See reference requirements
945	5.5.1.0-3	The Tripod Pouch must be large enough to carry the Tripod in a collapsed state.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1849	**5.5.2**	**Tripod Pouch Compartmentalization Requirements**	Heading			
975	5.5.2.0-1	The Tripod Pouch must have separate compartments for the Tripod and for any adapters or other items that are necessary to mount the LRF HHTI-LR and SAFRAN Vector Binoculars on the Tripod.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1850	**5.5.3**	**Tripod Pouch Attachment Requirements**	Heading			
1040	5.5.3.0-1	The Tripod Pouch must include an attachment method that allows the Tripod Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1851	5.5.3.0-2	The Tripod Pouch must include PALS webbing to allow the attachment of small pouches or small items of equipment carried by soldiers, and to allow it to be attached to other load carrying equipment.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1041	5.5.3.0-3	The Tripod Pouch must have a means of attachment to the Field Pouch such that the Tripod Pouch is held below the Field Pouch when carried.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1045	**5.6**	**Accessories Pouch**	Heading			
1855	**5.6.1**	**Accessories Pouch General Requirements**	Heading			
1046	5.6.1.0-1	The LRF HHTI-LR System must include an Accessories Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1854	5.6.1.0-2	The Accessories Pouch must comply with the Common Pouch Requirements specified in Section 5.8.	Mandatory Requirement	No	See referenced requirements	See reference requirements
1054	5.6.1.0-3	The Accessories Pouch must carry all of the following LRF HHTI-LR System components: • Battery Charger and Battery Charger Cables • DAGR Interface Cable • DC Power Cable Assembly • AC Power Cable Assembly • ISS Interface Cable • RTL Interface Cable • Rechargeable Batteries for twenty-four hours of continuous operation of the LRF HHTI-LR	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1856	**5.6.2**	**Accessories Pouch Compartmentalization Requirements**	Heading			
1048	5.6.2.0-1	The Accessories Pouch must be compartmentalized to facilitate rapid access to components that may be required by the user.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1862	5.6.2.0-2	The Accessories Pouch Battery compartment(s) must protect batteries from damage or degradation of performance from water, blowing dirt and/or dust.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1858	**5.6.3**	**Accessories Pouch Carriage Requirements**	Heading			
1859	5.6.3.0-1	The accessories pouch must have an adjustable shoulder strap or sling which allows for carrying over one shoulder.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1857	**5.6.4**	**Accessories Pouch Attachment Requirements**	Heading			
1863	5.6.4-1	The Accessories Pouch must include an attachment method that allows the Tripod Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1864	5.6.4-2	The Accessories Pouch must include PALS webbing to allow the attachment of small pouches or small items of equipment carried by soldiers, and to allow it to be attached to other load carrying equipment.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2705	5.7	External Battery Pack Pouch				
2707	5.7.0-1	The LRF HHTI-LR System must include an EBP Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2704	5.7.0-2	The EBB Pouch must comply with the Common Pouch Requirements specified in Section 5.8.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2708	5.7.0-3	The EPB Pouch must carry the EPB.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2736	5.7.0-4	The EPB Pouch must allow the use of the EPB as an external power source for the the LRF HHTI-LR while the EPB is in the EPB pouch.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2735	5.7.0-5	The EPB Pouch must carry Low Temperature Batteries for twenty-four hours of continuous operation of the LRF HHTI-LR at -32 degrees Celsius.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2702	5.7.0-6	The EBP Pouch must include a means of attaching the Pouch to the underside of the Tripod while the EBP within the pouch is powering the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2703	5.7.0-7	The EBP Pouch must include an attachment method that allows the Tripod Pouch to be attached to a modular load carrying system that utilizes the Pouch Attachment Ladder System (PALS).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2309	**5.8**	**Pouches - Common Requirements**	Heading			
2484	**5.8.1**	**Physical Requirements**	Heading			
2485	5.8.1.0-1	Pouches must protect the contents of the pouches from dirt, dust and sand.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2486	5.8.1.0-2	Pouches must be resistant to wear and tear associated with dismounted soldier operations.	Mandatory Requirement	No	Prototype - Inspection Prototype - UAPE SAT - Inspection SAT - UAPE FAAT - Inspection	Standard for Inspection. Standard for UAPE.
2505	5.8.1.0-3	Pouches must incorporate drain holes with grommets.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2506	5.8.1.0-4	External pouch compartments must incorporate drain holes with grommets.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2311	**5.8.2**	**Materials and Components**	Heading			
2312	**5.8.2.1**	**Textiles**	Heading			
2511	5.8.2.1.0-1	The Pouch shell fabric must be textured, 500 Denier (500D) Class 3, high tenacity nylon in accordance with MIL-DTL-32439.	Mandatory Requirement	No	Prototype - Analysis - Evidence Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Analysis - Evidence. Standard for Inspection.
2510	5.8.2.1.0-2	The Pouch shell fabric must meet all spectral reflectance requirements specified in MIL-DTL 32439, para. 3.7 for Coyote 498.	Mandatory Requirement	No	Prototype - Analysis - Evidence Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Analysis - Evidence. Standard for Inspection.
2313	5.8.2.1.0-3	The Pouch shell fabric color must be Coyote 498, (FED-STD-595C #20150), or equivalent approved by the TA prior to production.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2489	**5.8.2.2**	**Webbing**	Heading			
2490	5.8.2.2.0-1	In order to achieve commonality of components across various soldier system equipment, pouch webbing must be either 15 mm or 25mm in width.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2512	5.8.2.2.0-2	The webbing must be nylon, textile woven, conforming to MIL-W-17337F Class 2 or A-A-55301 (Mil-W-43668) Type III nylon webbing.	Mandatory Requirement	No	Prototype - Analysis - Evidence Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Analysis - Evidence. Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2513	5.8.2.2.0-3	The webbing color must be Coyote 498, (FED-STD-595C #20150) or a color that is a good visual match the overall color of the Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2514	**5.8.2.3**	**Thread**	Heading			
2515	5.8.2.3.0-1	The thread must be 100% bonded nylon, lubricated, 3-ply, 720 Denier or 70 tex conforming to MIL-SPEC A-A-59826, Class A, Type II or equivalent.	Mandatory Requirement	No	Prototype - Analysis - Evidence Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Analysis - Evidence. Standard for Inspection.
2516	5.8.2.3.0-2	The thread color must be Coyote 498, (FED-STD-595C #20150) or a color that is a good visual match to the overall color of the Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2316	**5.8.2.4**	**Buckles**	Heading			
2508	**5.8.2.4.1**	**General**	Heading			
2332	5.8.2.4.1-1	The buckles must be easily operated, engaged and disengaged with one hand operation when wearing gloves equivalent in texture and thickness to the soldier's Cold Wet Weather Gloves with 0.9 mm thick leather.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2319	5.8.2.4.1-2	Pouch buckles must be equivalent in terms of form, fit and function (with the exception of colour) of buckles used in the construction of NSN 8465-20-000-2774 Small Pack, Load Carrying System, CADPAT (TW).	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2329	5.8.2.4.1-3	Buckle colour must be Coyote 498, (FED-STD-595C #20150) or a color that is a good visual match the overall color of the Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2334	5.8.2.4.1-4	Buckles must be manufactured using DuPont™ Delrin® 500AL NC010 Acetal Resin or equivalent.	Mandatory Requirement	No	Prototype - Analysis - Evidence Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Analysis - Evidence. Standard for Inspection.
2339	**5.8.2.4.2**	**Field Replaceable Buckles**	Heading			
2520	5.8.2.4.2.0-1	Where sewn-on female buckles are used, the Pouch must include a loose field-replaceable female buckle as a spare part.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2522	5.8.2.4.2.0-2	The field-replaceable female buckle must be compatible with the male buckle.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2341	5.8.2.4.2.0-3	The field-replaceable buckle must be readily installable by hand by the user when wearing gloves equivalent in texture and thickness to the soldier's Temperate Combat Gloves (0.9 mm leather), without modification to the buckle or to the item it is being installed on, and without the use of tools or other materials.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2517	**5.8.2.5**	**Slide Fasteners**	Heading			
2509	5.8.2.5.0-1	The design of the slide fastener closures must provide for ease of access and resistance to water and environmental contaminants.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2519	5.8.2.5.0-2	The colour of the slide fasteners must be dull, non-reflective and match the overall colour of the Pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2350	5.8.2.5.0-3	Zipper pulls, complete with cording, must be added to the sliders of the slide fasteners.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2492	5.8.2.5.0-4	The finished length of the zipper pull assembly, with cording and pull assembled and attached to slider, must be a minimum of 7 cm.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2523	**5.8.2.6**	**Alternative Materials and Components**	Heading			
2464	5.8.2.6.0-1	Alternate materials and components may be used if approval is obtained from the Technical Authority.	Information			
2355	**5.8.3**	**Marking and Labelling**	Heading			
2356	**5.8.3.1**	**Labels, Textile**	Heading			
2357	5.8.3.1.0-1	Labels must be in accordance with Specification D-80-001-055/SF-001 Specification for Label, Clothing and Equipment.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2494	5.8.3.1.0-2	Labels must be Type I and be made of polyester or nylon.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2495	5.8.3.1.0-3	All label instructions must be in both official languages of Canada.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2496	5.8.3.1.0-4	The marking and care information on the label must be legible and in indelible black ink.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2497	5.8.3.1.0-5	Labels must bear care instructions and labelling symbology in accordance with CAN/CGSB-86.1 Care Labelling of Textiles.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2498	5.8.3.1.0-6	Label alphanumeric formats must be in characters no less than 3.2 mm and not more than 6.4 mm.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2499	5.8.3.1.0-7	The font and layout must be such that the labels are clearly legible, comprehensible and logically organized.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2358	5.8.3.1.0-8	The colour of all fabric labels must be a good visual match to Coyote Brown.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2359	**5.8.3.2**	**Identification Information**	Heading			
2360	5.8.3.2.0-1	Labels must include the following nomenclature in both official languages of Canada:	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2361	5.8.3.2.0-1.0-1	a. Contract No. / Numéro du contrat;	Mandatory Requirement	No	See parent requirement	See parent requirement
2362	5.8.3.2.0-1.0-2	b. I/D (user identification) Line / Ligne pour l'identité du soldat;	Mandatory Requirement	No	See parent requirement	See parent requirement
2363	5.8.3.2.0-1.0-3	c. Nomenclature / Nomenclature;	Mandatory Requirement	No	See parent requirement	See parent requirement
2364	5.8.3.2.0-1.0-4	d. NSN / NNO;	Mandatory Requirement	No	See parent requirement	See parent requirement
2366	5.8.3.2.0-1.0-5	e. Month and Year of Manufacture / Date de fabrication, année, et mois; and	Mandatory Requirement	No	See parent requirement	See parent requirement
2367	5.8.3.2.0-1.0-6	f. Care Instructions / Instructions d'entretien.	Mandatory Requirement	No	See parent requirement	See parent requirement

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2368	**5.8.3.3**	**Care Instructions**	Heading			
2369	5.8.3.3.0-1	Care instructions must be in both official languages of Canada as follows: ***English*** / ***French*** / ***Care Symbol*** Wash gently by hand in water not exceeding 40 °C / Lavage à la main, à l'eau d'une température maximale de 40 °C Do not bleach / Ne pas utiliser d'agents de blanchiment Hang up the soaking wet article to "drip" dry / Suspendre l'article complètement mouillé pour séchage par égouttage Do not iron or press / Ne pas repasser ni presser Do not dry-clean / Ne pas nettoyer à sec	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2402	**5.8.3.4**	**Label Location and Application**	Heading			
2403	5.8.3.4.0-1	Labels must be applied to the interior of the pouch.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2524	5.8.3.4.0-2	The location of the label must be easily accessible to the user for viewing.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2525	5.8.3.4.0-3	The label must be sewn around all edges.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2433	**5.8.3.5**	**Manufacturer Branding/labelling**	Heading			
2434	5.8.3.5.0-1	Manufacturer/Supplier branding or product names must not be used on or attached to the Pouches.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2438	**5.8.4**	**Workmanship**	Heading			
2439	5.8.4.0-1	Pouches must be free of manufacturing defects.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
2440	5.8.4.0-2	A defect will be interpreted as any irregularity that would diminish product performance or user acceptance beyond the levels established at any point during the bid evaluation or the Contract. Visible irregularities can be considered defects when clearly visible from a distance of one metre or more.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
819	**5.9**	**Rechargeable Batteries**	Heading			
782	5.9.0-1	The LRF HHTI-LR System must include Rechargeable Batteries.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1455	5.9.0-2	The Rechargeable Batteries must be lithium-ion batteries.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
1456	5.9.0-3	The Rechargeable Batteries must be used internally within the LRF HHTI-LR.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
822	5.9.0-4	The Rechargeable Batteries must be compatible with the LRF HHTI-LR.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
843	5.9.0-5	The Rechargeable Batteries must be compatible with the LRF HHTI-LR System Battery Recharger.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
845	5.9.0-6	Requirements related to powering of the LRF HHTI-LR by Rechargeable Batteries are specified in Section 4.3.14.1.1 Rechargeable Battery Power Source.	Information			
827	**5.10**	**Low Temperature Batteries**	Heading			
828	5.10.0-1	The LRF HHTI-LR System should include Low Temperature Batteries.	Desirable Requirement	Not Applicable	SAT - Inspection FAAT - Inspection	Standard for Inspection.
2750	5.10.0-2	The requirements n this section belowcan be considered mandatory if if the LRF HHTI-LR System includes Low Temperature Batteries.	Information			
1458	5.10.0-3	The Low Temperature Batteries must be used internally within the LRF HHTI-LP.	Desirable Requirement	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
844	5.10.0-4	The Low Temperature Batteries must be compatible with the LRF HHTI-LR.	Desirable Requirement	Not Applicable	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1457	5.10.0-5	IF the Low Temperature Batteries are non-rechargeable, they must be lithium batteries.	Desirable Requirement	Not Applicable	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
874	5.10.0-6	If the Low Temperature Batteries are non-rechargeable, they must have a shelf life of at least ten years.	Desirable Requirement	Not Applicable	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
1758	5.10.0-7	If the Low Temperature Batteries are rechargeable, then the Low Temperature Batteries must be lithium-ion batteries.	Desirable Requirement	Not Applicable	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
1760	5.10.0-8	If the Low Temperature Batteries are Rechargeable, they must be compatible with the LRF HHTI-LR System Battery Recharger.	Desirable Requirement	Not Applicable	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
846	5.10.0-9	Requirements related to powering of the LRF HHTI-LR by Low Temperature Batteries are specified in Section 4.3.14.1.2 Low Temperature Battery Power Source.	Information			
816	**5.11**	**Battery Charger**	Heading			
921	5.11.0-1	The Battery Chargers will be used within a sheltered area, not open to rain or snow.	Information			
978	5.11.0-2	If the Rechargeable Batteries are of a type that is already in-service in the Canadian Army, and a suitable Battery Charger is also already in-service, then the Battery Charger may be reclassified as GFE.	Information			
911	**5.11.1**	**Battery Charger Requirements**	Heading			
873	5.11.1.0-1	The LRF HHTI-LR System must include a Battery Charger.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
905	5.11.1.0-2	The Battery Charger must recharge one or more sets of Rechargeable Batteries simultaneously.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
931	5.11.1.0-3	The Battery Charger must be certified by an organization accredited by the Standards Council of Canada and bear either the CSA mark or a ULC mark.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
932	5.11.1.0-4	The Battery Charger must comply with the European Low Voltage Directive 2014/35/EU and bear the CE mark or equivalent.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
912	**5.11.2**	**Battery Charger 110/120 VAC Power Source**	Heading			
907	5.11.2.0-1	The Battery Charger must be powered by 110/120 VAC (60 hertz).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
918	5.11.2.0-2	The Battery Charger must include a power cable that connects the Battery Charger to a standard North American NEMA 5-15R receptacle.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
906	5.11.2.0-3	The Battery Charger must recharge one or more sets of Rechargeable Batteries in four hours or less when powered by 110/120 VAC (60 hertz).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
914	5.11.2.0-4	The 110 VAC power cable and any integral power converters must be certified by an organization accredited by the Standards Council of Canada and bear either the CSA mark or an ULC mark.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
916	**5.11.3**	**Battery Charger 220/240 VAC Power Source**	Heading			
917	5.11.3.0-1	The Battery Charger must be powered by 220/240 VAC (50 hertz).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
913	5.11.3.0-2	The Battery Charger must include a power cable that connects the Battery Charger to a European 220/240 VAC receptacle using a Europlug.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
919	5.11.3.0-3	The Battery Charger must recharge two or more sets of Rechargeable Batteries in four hours or less when powered by 220/240 VAC (50 hertz).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
920	5.11.3.0-4	The 220/240 VAC power cable and any integral power converters must comply with the European Low Voltage Directive 2014/35/EU and bear the CE mark or equivalent.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
922	**5.11.4**	**Battery Charger DC Power Source**	Heading			
923	5.11.4.0-1	The Battery Charger must be powered by a military vehicle 24 V DC power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
924	5.11.4.0-2	The Battery Charger must use the DC Power Cable Assembly to connect to a military vehicle 24 V DC power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
925	5.11.4.0-3	The Battery Charger must recharge two or more sets of Rechargeable Batteries in four hours or less when powered by a military vehicle 24 V DC power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1736	5.11.4.0-4	The Battery Charger must be powered by a commercial vehicle 12 V DC power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1737	5.11.4.0-5	The Battery Charger must use the DC Power Cable Assembly to connect to a commercial vehicle 12 V DC power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1738	5.11.4.0-6	The Battery Charger must recharge two or more sets of Rechargeable Batteries in four hours or less when powered by a commercial vehicle 12 V DC power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1459	5.11.4.0-7	Requirements related to the DC Power Cable Assembly are specified in Section 5.18 DC Power Cable Assembly.	Information			
1703	**5.11.5**	**Product Serialization**	Heading			
1704	5.11.5.0-1	The Battery Charger must be a serialized item.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.
1705	5.11.5.0-2	The Battery Charger serialization must satisfy the requirements specified in Section 6.5.2 Serialized Items.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.
942	**5.12**	**Tripod**	Heading			
958	5.12.0-1	The primary purpose of the Tripod is to provide a stable platform for using the LRF HHTI-LR where the weight of the LRF HHTI-LR is not borne by the user. In order to minimize the equipment carried in the field, the Tripod may also be used to provide a stable platform for other equipment such as the SAFRAN Vector Binocular and other equipment that may be operated by users in a forward observer, reconnaissance or sniper role.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
956	**5.12.1**	**Tripod Physical Characteristics**	Heading			
977	5.12.1.0-1	The LRF HHTI-LR System must include a Tripod.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
948	5.12.1.0-2	The Tripod must be adjustable in height such that the LRF HHTI-LR can be operated by a standing user with the tripod set-up on the same surface as the user.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
950	5.12.1.0-3	The Tripod must be adjustable in height such that the LRF HHTI-LR can be operated by a kneeling user with the tripod set-up on the same surface as the user.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
949	5.12.1.0-4	The Tripod must be adjustable in height such that the LRF HHTI-LR can be operated by a prone user with the tripod set-up on the same surface as the user.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2706	5.12.1.0-5	The Tripod must include a means of holding the EBP Pouch below the plate where the LRF HHTI-LR attaches to the Tripod.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
968	5.12.1.0-6	The Tripod must be collapsible for the purposes of carrying the Tripod in the Tripod Pouch.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
969	5.12.1.0-7	The Tripod must support a mounted mass of at least 4.0 kilograms without damage to the Tripod.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
970	5.12.1.0-8	The Tripod must have a mass of no more than 2.5 kilograms.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
971	5.12.1.0-9	The Tripod must be non-magnetic.	Mandatory Requirement	Yes	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Evidence	Standard for Analysis - Evidence.
962	**5.12.2**	**LRF HHTI-LR / Tripod Interface**	Heading			
947	5.12.2.0-1	The Tripod must include a physical interface for mounting the LRF HHTI-LR on the Tripod.	Mandatory Requirement	Yes	SAT - Inspection FAAT - Inspection	Standard for Inspection.
946	5.12.2.0-2	The Tripod must be compatible with the LRF HHTI-LR.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
953	5.12.2.0-3	The physical interface between the Tripod and the LRF HHTI-LR must have a quick connect and quick disconnect mechanism that does not require the use of tools to mount or remove the LRF HHTI-LR.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
963	**5.12.3**	**Tripod / SAFRAN Vector Binoculars Interface**	Heading			
964	5.12.3.0-1	The Tripod must include a physical interface for mounting a SAFRAN Vector Binoculars < specification TBD > on the Tripod.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
965	5.12.3.0-2	The Tripod must be compatible with the SAFRAN Vector Binoculars < specification TBD >.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
959	5.12.3.0-3	The physical interface between the Tripod and the SAFRAN Vector Binoculars must have a quick connect and quick disconnect mechanism that does not require the use of tools to mount or remove the Vector Binoculars.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
954	**5.12.4**	**Tripod Capability Requirements when LRF HHTI-LR is Mounted**	Heading			
952	5.12.4.0-1	The Tripod must be adjustable in azimuth such that the mounted LRF HHTI-LR can be traversed to any angle of azimuth without restriction.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
951	5.12.4.0-2	The Tripod must be adjustable in angle of sight such that the mounted LRF HHTI-LR can be elevated or depressed from the horizontal to any setting in a range of minus 400 mils or greater in depression to 400 mils or greater in elevation.	Mandatory Requirement	Yes	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1700	**5.12.5**	**Product Serialization**	Heading			
1701	5.12.5.0-1	The Tripod must be a serialized item.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.
1702	5.12.5.0-2	The Tripod serialization must satisfy the requirements specified in Section 6.5.2 Serialized Items.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.
558	**5.13**	**DAGR Interface Cable**	Heading			
700	5.13.0-1	The LRF HHTI-LR System must include a DAGR Interface Cable to connect the LRF HHTI-LR to the DAGR.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
703	5.13.0-2	The DAGR Interface Cable must be compatible with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
704	5.13.0-3	The DAGR Interface Cable must be compatible with the DAGR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
701	5.13.0-4	The DAGR Interface Cable must support the interface functionality described in Section 4.4.2.2 LRF HHTI-LR / DAGR Interface Functional Requirements.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1536	5.13.0-5	The DAGR Interface Cable must be compatible with the ISS Hub.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1537	5.13.0-6	The DAGR Interface Cable must include an adaptor to connect the DAGR to a PAN port on the ISS Hub.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
702	5.13.0-7	The DAGR Interface Cable must meet the cabling requirements specified in Section 6.2 Common Cable Requirements.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
660	**5.14**	**ISS Interface Cable**	Heading			
691	5.14.0-1	The LRF HHTI-LR System must include an ISS Interface Cable to connect the LRF HHTI-LR to a Personal Area Network (PAN) port on the ISS Hub.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
705	5.14.0-2	The ISS Interface Cable must be compatible with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
706	5.14.0-3	The ISS Interface Cable must be compatible with the ISS.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
707	5.14.0-4	The ISS Interface Cable must connect to a PAN port on the ISS Hub using a connector compliant with NWPAN-WP-01112013.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
692	5.14.0-5	The ISS Interface Cable must support the interface functionality described in Section 4.4.3.4 LRF HHTI-LR / ISS Interface Functional Requirements.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
711	5.14.0-6	The ISS Interface Cable must meet the cabling requirements specified in Section 6.2 Common Cable Requirements.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
565	**5.15**	**LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP)**	Heading			
1296	**5.15.1**	**General**	Heading			
675	5.15.1.0-1	The LRF HHTI-LR System must include software that comprises a collection of LRF HHTI-LR / ISS BMS Interface ATAK Plugins (LIBI AP) that is installed on the ISS EUD and on the ISS Commanders Tablet.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
677	5.15.1.0-2	The LIBI AP must be compatible with ATAK Version 4.8.1.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
682	5.15.1.0-3	The LIBI AP must comply with the LRF HHTI-LR / ISS BMS ICD (to be developed).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
747	5.15.1.0-4	The LIBI AP is a developmental item that will be integrated into an ATAK environment. The AUF and Commander's Tablet hardware on which the LIBI AP will be installed will not be modified to support the achievement of LRF HHTI-LR / ISS interface requirements.	Information			
683	**5.15.2**	**Management Functions**	Heading			
684	5.15.2.0-1	The LIBI AP must sense when an LRF HHTI-LR is connected to the ISS Hub.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
693	5.15.2.0-2	The LIBI AP must display the status of connection to an LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
694	**5.15.3**	**User Geolocation Data**	Heading			
695	5.15.3.0-1	The ISS BMS maintains user geolocation data sourced from either a connected DAGR or connected radio.	Information			
697	5.15.3.0-2	The LIBI AP must provide current user geolocation data to the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1750	5.15.3.0-3	The LIBI AP must provide user geolocation data sourced from a connected DAGR to the LRF HHTI-LR in preference to geolocation data sourced from a connected radio.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2639	**5.15.4**	**LRF HHTI-LR Geo-orientation Data**	Heading			
2640	5.15.4.0-1	On receipt of Geo-orientation data from the LRF HHTI-LR, the LIBI AP must create or update a Sensor icon representing the LRF HHTI-LR based on the geo-orientation data.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2641	5.15.4.0-2	The LIBI AP must update following attributes of the Sensor icon representing the LRF HHTI-LR from data received from the LRF HHTI-LR: • Name • Sensor Location • Sensor Range Length • Direction • Field of View	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2645	5.15.4.0-3	When the connection to the LRF HHTI-LR is lost, the LIBI AP must remove the Sensor icon representing the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
715	**5.15.5**	**Lased Target Files**	Heading			
2672	5.15.5.0-1	On receipt of a lased target file from the LRF HHTI-LR, the LIBI AP must create or update a Lased Target icon based on the geo-location data in the lased target file.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2673	5.15.5.0-2	On receipt of an image file from the LRF HHTI-LR that is related to the lased target, the LIBI AP must attach the image file to the Lased Target icon.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2643	**5.15.6**	**Image Files**	Heading			
2644	5.15.6.0-1	On receipt of an image file from the LRF HHTI-LR, the LIBI AP must save the image file on the ISS BMS.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2647	5.15.6.0-2	On receipt of an image file from the LRF HHTI-LR that is not related to a lased target, the LIBI AP must attach the image file to the Sensor icon associated with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2661	5.15.6.0-3	The image files received from the LRF HHTI-LR and saved to the ISS BMS must be viewable using standard ATAK image viewing functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2662	5.15.6.0-4	The image files received from the LRF HHTI-LR and saved to the ISS BMS must be editable using standard ATAK image editing functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2665	5.15.6.0-5	The image files received from the LRF HHTI-LR and saved to the ISS BMS must be manageable using standard ATAK file management functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2648	**5.15.7**	**Video Files**	Heading			
2649	5.15.7.0-1	On receipt of a video file from the LRF HHTI-LR, the LIBI AP must save the video file on the ISS BMS.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2650	5.15.7.0-2	On receipt of a video file from the LRF HHTI-LR, the LIBI AP must attach the video file to the Sensor icon associated with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2663	5.15.7.0-3	The video files received from the LRF HHTI-LR and saved to the ISS BMS must be viewable using standard ATAK video viewing functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2664	5.15.7.0-4	The video files received from the LRF HHTI-LR and saved to the ISS BMS must be editable using standard ATAK video editing functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2666	5.15.7.0-5	The video files received from the LRF HHTI-LR and saved to the ISS BMS must be manageable using standard ATAK file management functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
713	**5.15.8**	**Streaming Video**	Heading			
742	5.15.8.0-1	The LIBI AP must initiate a new video stream from the LRF HHTI-LR in response to user input on the ISS BMS / LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2667	5.15.8.0-2	On initiation of streaming video from the LRF HHTI-LR, the LIBI AP must attach the streaming video to the Sensor icon associated with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2668	5.15.8.0-3	Video streams coming from the LRF HHTI-LR into the ISS BMS must be viewable using standard ATAK streaming video functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2669	5.15.8.0-4	Files related to video streams coming from the LRF HHTI-LR into the ISS BMS must be manageable using standard ATAK file management functionality.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
714	**5.15.9**	**Remote Control**	Heading			
745	5.15.9.0-1	The LIBI AP must replicate all human-machine interface functions of the LRF HHTI-LR such that the LRF HHTI-LR can be remotely controlled using the LIBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2670	5.15.9.0-2	The LIBI AP must provide remote control functionality while the video stream from the LRF HHTI-LR is being displayed on the ISS BMS / LBI AP.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
581	**5.16**	**RTL Interface Cable**	Heading			
582	5.16.0-1	The LRF HHTI-LR System must include an RTL Interface Cable to connect the LRF HHTI-LR to the RTL.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
709	5.16.0-2	The RTL Interface Cable must be compatible with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
710	5.16.0-3	The RTL Interface Cable must be compatible with the RTL.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1496	5.16.0-4	The RTL Interface Cable must be at least two metres in length.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
584	5.16.0-5	The RTL Interface Cable must support the interface functionality described in Section 4.4.4.2 LRF HHTI-LR / RTL Interface Functional Requirements.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
583	5.16.0-6	The RTL Interface Cable must meet the cabling requirements specified Section 6.2 Common Cable Requirements.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1424	**5.17**	**Ruggedized Flash Drive (RFD)**	Heading			
1425	**5.17.1**	**RFD Description**	Heading			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1426	5.17.1.0-1	The RFD is an unencrypted ruggedized flash drive (also referred to as a "ruggedized USB Stick") used in the field by dismounted soldiers to transfer image, video and other data files between various devices in the operational unclassified domain. At this time, there is no standardized RFD in-service with the Canadian Army. In the context of operations using LRF HHTI-LR, it is intended that image and video files would be downloaded onto the RFD, and then delivered to a Command Post (CP). In the CP, the files would be downloaded to an RTL or other compatible device for further analysis.	Information			
1427	5.17.1.0-2	Should the CA adopt a standard RFD, these requirements may evolve such that the RFD is no longer integral to the LRF HHTI-LR, but is simply an external system to which the LRF HHTI-LR must interface.	Information			
594	**5.17.2**	**RFD Requirements**	Heading			
586	5.17.2.0-1	The LRF HHTI-LR must include an RFD.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1429	5.17.2.0-2	The RFD must be compatible with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1430	5.17.2.0-3	The RFD must be compatible with the Ruggedized Tactical Laptop (RTL).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
595	5.17.2.0-4	The RFD must be external to the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
590	5.17.2.0-5	The RFD must be a USB Version 3.0 or higher device.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
588	5.17.2.0-6	The RFD must have a USB Type C male connector.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
596	5.17.2.0-7	The RFD must have a storage capacity of 128 GB or more.	Mandatory Requirement	No	Prototype - Analysis - Evidence SAT - Inspection FAAT - Inspection	Standard for Analysis - Evidence. Standard for Inspection.
597	5.17.2.0-8	The RFD must have a read speed of 150 MB/sec or faster.	Mandatory Requirement	No	SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
862	**5.18**	**DC Power Cable Assembly**	Heading			
1749	5.18.0-1	It is intended that the DC Power Cable Assembly be used to power the LRF HHTI-LR and to power the Battery Charger, but not both at the same time.	Information			
863	5.18.0-2	The LRF HHTI-LR System must include a DC Power cable assembly.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
896	5.18.0-3	The DC Power Cable Assembly must include power converters and adapters necessary to power the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1498	5.18.0-4	The DC Power Cable Assembly must include power converters and adapters necessary to power the Battery Charger.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
866	5.18.0-5	The DC Power Cable Assembly must be compatible with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
929	5.18.0-6	The DC Power Cable Assembly must be compatible with the Battery Charger.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
867	5.18.0-7	The DC Power Cable Assembly must be compatible with a military vehicle 24 V DC electrical system that is compliant with MIL-STD-1275E.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
864	5.18.0-8	The DC Power Cable Assembly must be compatible with a standard NATO slave receptacle on a vehicle that complies with MIL-PRF-62122E.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1630	5.18.0-9	The DC Power Cable Assembly must be compatible with a Size B power outlet in a commercial vehicle that complies with ANSI/SAE J563 Standard for 12 Volt Cigarette Lighters, Power Outlets, and Accessory Plugs.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1747	5.18.0-10	The DC Power Cable Assembly must be compatible with a CWB that implements connectors compliant with NWPAN-WP-01112013.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
870	5.18.0-11	The DC Power Cable Assembly must be at least four metres in length.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
871	5.18.0-12	If the DC Power Cable Assembly includes a power converter, then the length of the two associated cables (from LRF HHTI-LR to converter and from converter to plug for external power source) must be at least two metres in length each.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1748	5.18.0-13	The DC Power Cable Assembly must include a two-meter extension to enable the user to extend the total length of the DC Power Cable Assembly to over six metres.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
872	5.18.0-14	The DC Power Cable Assembly must satisfy the common cable requirements specified in Section 6.2 Common Cable Requirements.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1098	**5.19**	**AC Power Cable Assembly**	Heading			
1099	5.19.0-1	It is intended that the AC Power Cable Assembly be used to power the LRF HHTI-LR and to power the Battery Charger, but not both at the same time.	Information			
1100	5.19.0-2	The LRF HHTI-LR System must include an AC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1101	5.19.0-3	The AC Power Cable Assembly must include power converters and adapters necessary to power the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1499	5.19.0-4	The AC Power Cable Assembly must include power converters and adapters necessary to power the Battery Charger.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1102	5.19.0-5	The AC Power Cable Assembly must be compatible with the LRF HHTI-LR.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1103	5.19.0-6	The AC Power Cable Assembly must be compatible with the Battery Charger.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1104	5.19.0-7	The AC Power Cable Assembly must be compatible with a European 220/240 VAC 50 hertz power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1111	5.19.0-8	The AC Power Cable Assembly must be compatible with a North American 110/120 VAC 60 hertz power source.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1105	5.19.0-9	The AC Power Cable Assembly must connect the LRF HHTI-LR to a standard North American 110/120 VAC NEMA 5-15R receptacle.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1106	5.19.0-10	The AC Power Cable Assembly must connect the LRF HHTI-LR to a standard European 220/240 VAC power receptacle using a Europlug.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1107	5.19.0-11	The AC Power Cable Assembly must be at least four metres in length.	Mandatory Requirement	No	Prototype - Demonstration SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1108	5.19.0-12	If the AC Power Cable Assembly includes a power converter, then the length of the two associated cables (from LRF HHTI-LR to converter and from converter to AC power receptacle) must be at least two metres in length each.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1109	5.19.0-13	The AC Power Cable Assembly must satisfy the common cable requirements specified in Section 6.2 Common Cable Requirements.	Mandatory Requirement	No	See referenced requirements	See referenced requirements.
1110	5.19.0-14	Requirements related to powering of the LRF HHTI-LR by an AC power source are specified in Section 4.3.14.2.3 AC Power Source.	Information			
2689	**5.20**	**External Battery Pack**	Heading			
2712	5.20.0-1	The LRF HHTI-LR System must include an External Battery Pack (EBP)	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2701	5.20.0-2	The EBP will be carried in the EPB Pouch. See Section 5.7 for related requirements.	Information			
2691	5.20.0-3	The EBP must accept commercial AA batteries.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2694	5.20.0-4	Using the EBP with Energizer Recharge® rechargeable AA batteries, the LRF HHTI-LR must continuously operate for a minimum of six hours in the Operational Mode at 20 degrees Celsius using power only from the EBP, with no battery change, and with no recharging of the batteries, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2695	5.20.0-5	Using the EBP with Energizer® Ultimate Lithium non-rechargeable AA batteries, the LRF HHTI-LR must continuously operate for a minimum of four hours in the Operational Mode at minus 32 degrees Celsius using power only from the EBP, with no battery change, while being operated in accordance with the LRF HHTI-LR Mission Profile - Battery Life.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2696	5.20.0-6	The EBP must permit the user to change batteries under field conditions without the use of special tools.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
2697	5.20.0-7	The EBP must indicate the state of charge of the batteries contained within in response to user action.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2698	5.20.0-8	The EBP must connect to the LRF HHTI-LR using the DC Power Cable Assembly (see Section 5.18).	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2699	5.20.0-9	The connection between the EBP and DC Power Cable Assembly must be physically secure such when carried in a pouch or pocket, the EBP will not inadvertantly disconnect from the DC Power Cable Assembly.	Mandatory Requirement	No	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2700	5.20.0-10	The EBP should be black with a dull finish.	Desirable Requirement	Not Applicable	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
2709	5.20.0-11	The EPB must be certified by an organization accredited by the Standards Council of Canada and bear either the CSA mark or a ULC mark.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
2710	5.20.0-12	The EPB must comply with the European Low Voltage Directive 2014/35/EU and bear the CE mark or equivalent.	Mandatory Requirement	No	SAT - Inspection FAAT - Inspection	Standard for Inspection.
1112	**5.21**	**Lens Cleaning Kit**	Heading			
1160	5.21.0-1	The CAF has a standardized lens cleaning kit in-service, NSN 1240-20-004-3852. The LRF HHTI-LR System Lens Cleaning Kit may be specific to the LRF HHTI-LR, or it may be determined that this component is GFE.	Information			
1114	5.21.0-2	The LRF HHTI-LR System must include a Lens Cleaning Kit.	Mandatory Requirement	Yes	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1115	5.21.0-3	The Lens Cleaning Kit must include cleaning tools and consumables that are required to clean, de-fog and de-ice the exterior optical surfaces of the LRF HHTI-LR.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1198	**5.22**	**Operator Manual**	Heading			
1116	5.22.0-1	The LRF HHTI-LR System must have an Operator Manual.	Mandatory Requirement	Yes	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1199	5.22.0-2	Requirement for the Operator Manual are specified in the LRF HHTI-LR Data Item Descriptions document DID LS-11 Operator Manual.	Information			
1200	**5.23**	**Quick Reference Guide**	Heading			
1201	5.23.0-1	The LRF HHTI-LR System must have a Quick Reference Guide.	Mandatory Requirement	Yes	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1202	5.23.0-2	Requirements for the Quick Reference Guide are specified are specified in the LRF HHTI-LR Data Item Descriptions document DID LS-12 Quick Reference Guide.	Information			
809	**6**	**LRF HHTI-LR System - Common System Requirements**	Heading			
972	**6.1**	**Required States and Modes**	Heading			
973	**6.1.1**	**Transport and Storage Mode**	Heading			
1379	6.1.1.0-1	In the Transport and Storage Mode, all components of the LRF HHTI-LR System are stored within the Field Kit Storage and Transport Case and the Support Kit Storage and Transport Case. In the Transport and Storage mode, batteries are removed from the LRF HHTI-LR. Depending on the operational situation, batteries may be stored within the two storage and transport cases, or may be stored elsewhere. The storage configuration of LRF HHTI-LR System components within the storage and transport cases is described in: • Section 5.1 Field Kit Storage and Transport Case • Section 5.2 Support Kit Storage and Transport Case	Information			
1378	6.1.1.0-2	The LRF HHTI-LR System must have a Transport and Storage Mode.	Mandatory Requirement	Yes	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
974	**6.1.2**	**Field Carriage Mode**	Heading			
1381	6.1.2.0-1	In the Field Carriage Mode, all components of the LRF HHTI-LR System (with the exception of the two storage and transport cases) are distributed between the Field Pouch, Tripod Pouch, and Accessories Pouch. In the Field Carriage Mode, Internal Batteries are loaded in the LRF HHTI-LR, and the LRF HHTI-LR is not turned on. The configuration and distribution of LRF HHTI-LR System components between the four pouches is described in: • Section 5.4 Field Pouch • Section 5.5 Tripod Pouch • Section 5.6 Accessories Pouch • Section 5.7 External Battery Pack Pouch	Information			
1382	6.1.2.0-2	The LRF HHTI-LR System must have a Field Carriage Mode.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1757	6.1.2.0-3	The LRF HHTI-LR System, when carried in the Field Carriage Mode, must be acceptable to soldiers in operational clothing equipped with the Modular Load Carrying System.	Mandatory Requirement	No	Prototype - UAPE SAT - UAPE	Standard for UAPE.
1057	**6.2**	**Common Cable Requirements**	Heading			
1113	**6.2.1**	**Functional Requirements**	Heading			
1058	6.2.1.0-1	LRF HHTI-LR System cables must comply with recognized military standards applicable to the use of the cable and the environment in which it is used.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1385	**6.2.2**	**Cable Marking**	Heading			
1388	**6.2.2.1**	**Functional Cable Marker Tags**	Heading			
1396	6.2.2.1.0-1	LRF HHTI-LR System cables must have Functional Cable Marker Tags.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1397	6.2.2.1.0-2	Functional Cable Marker Tags must be located at each end of the cable.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1398	6.2.2.1.0-3	Functional Cable Marker Tags must identify the cable based on function, for example "LRF HHTI-LR / ISS Interface Cable".	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1389	**6.2.2.2**	**Catalogue Cable Marker Tags**	Heading			
1386	6.2.2.2.0-1	LRF HHTI-LR System cables must have Catalogue Cable Marker Tags.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1393	6.2.2.2.0-2	Catalogue Cable Marker Tags must be located at each end of the cable.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1395	6.2.2.2.0-3	If the cable is over five metres in length, Catalogue Cable Marker Tags must be located at three metre intervals along the cable.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1394	6.2.2.2.0-4	Catalogue Cable Marker Tags must include the following information as indicated on the Cable Assembly Drawing associated with the cable: a. NATO Stock Number. b. Cable number followed by length in millimetres. c. Part Number. d. Manufacturer's NSCM Code or CAGE Code	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1391	**6.2.2.3**	**Cable Marker Tags - Common Requirements**	Heading			
1387	6.2.2.3-1	Cable marker tags must have a white solid background plastic identification marker tube or sleeve printed in dark contrasting ink using a character height not smaller than 2 millimetres.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1392	6.2.2.3-2	Cable marker tags must be covered and protected by clear heat shrink tubing.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
127	**6.3**	**System Environment Requirements**	Heading			
1608	**6.3.1**	**General**	Heading			
1609	6.3.1.0-1	The LRF HHTI-LR System must meet all performance requirements in this SRS without incurring physical damage and without degradation of performance of the LRF HHTI-LR System and its sub-systems (including any supplied interface cables/connections to Government Supplied Material (GSM) and Government Furnished Equipment (GFE)) during and after exposure to any combination of the meteorological and induced climatic conditions that can be found within the geographic climatic regions identified in this SRS and described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Mandatory Requirement	No	Prototype - Inspection Prototype - Demonstration Prototype - UAPE SAT - Inspection SAT - Demonstration SAT - UAPE FAAT - Test QETE FAAT - Inspection FAAT - Demonstration	The satisfaction of performance requirements thoughout all verification events is sufficient evidence that this requirement has been met.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
173	**6.3.2**	**Climatic / Natural Environments**	Heading			
174	**6.3.2.1**	**Operation - High Temperature**	Heading			
175	6.3.2.1.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance in all high temperature environments associated with the A3, A2 and A1 (+49°C max) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2./1	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Test Report FAAT - Analysis - Test Report	Standard for Analysis - Evidence. Provide a test report demonstrating that the LRF HHTI-LR was tested in accordance with MIL-STD-810H, Method 501.7 “High Temperature”, Procedure II “Operation”, using a “constant temperature exposure” at +49oC (+/- 2oC), or a “cycling temperature exposure” following the A1 “Hot Dry” ambient profile, or an Equivalent Test Method. The test report must describe the “operational checkout” of the LRF HHTI-LR that was completed during the test and must demonstrate that the proposed LRF HHTI-LR completed all testing without physical damage or degradation of performance.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
176	**6.3.2.2**	**Storage - High Temperature**	Heading			
177	6.3.2.2.0-1	The LRF HHTI-LR System must be transported and stored without physical damage and without degradation of performance in all high temperature environments associated with the A3, A2, and A1 (+71°C max) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
178	**6.3.2.3**	**Operation - Low Temperature**	Heading			
180	6.3.2.3.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance in all low temperature environments associated with the C0 and C1 (-32°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	FAAT - Test QETE	Results of Test < TBD > of QETE Test Plan and Procedures verify that the requirement has been met.
182	6.3.2.3.0-2	The LRF HHTI-LR System should operate without physical damage and without degradation of performance in all low temperature environments associated with the C0, C1, C2 and C3 (-51°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Desirable Requirement	Not Applicable	Not verified post contract award	N/A - not verified post contract award.
179	**6.3.2.4**	**Storage - Low Temperature**	Heading			
186	6.3.2.4.0-1	The LRF HHTI-LR System must be transported and stored without physical damage and without degradation of performance in all low temperature environments associated with the C0 and C1 (-32°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
188	6.3.2.4.0-2	The LRF HHTI-LR System should be transported and stored without physical damage and without degradation of performance in all low temperature environments associated with the C0, C1, C2 and C3 (-51°C min) climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Desirable Requirement	Not Applicable	Not verified post contract award	N/A - not verified post contract award.
193	**6.3.2.5**	**Temperature Shock**	Heading			
194	6.3.2.5.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance under conditions of rapid changes in ambient air temperature as encountered during movements between in-door controlled temperature environments to out-door environments that are at either high temperature (+49°C) and low temperature (-32°C) extremes.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
1620	6.3.2.5.0-2	The LRF HHTI-LR System must not require any physical modifications or preparations in advance of encountering a temperature shock and must be fully operable during and following the temperature shock.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
206	**6.3.2.6**	**Solar Radiation (Sunshine)**	Heading			
227	6.3.2.6.0-1	The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance in all solar radiation conditions associated with the A3, A2, and A1 climatic regions as described in NATO STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
207	**6.3.2.7**	**Rain**	Heading			
228	6.3.2.7.0-1	The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance in conditions of blowing Steady-State (1.7 mm/min) rain up Extreme (14 mm/min) rain conditions as described in NATO STANAG 4370, AECTP 300, Method 310.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
265	**6.3.2.8**	**Icing / Freezing Rain**	Heading			
266	6.3.2.8.0-1	The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance following removal of ice accretion on the product's surfaces from freezing rain and other cold water spray conditions, up to a Light (6 mm) loading as described in NATO STANAG 4370, AECTP 300, Method 311.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
267	6.3.2.8.0-2	The LRF HHTI-LR System must allow the removal of ice from the LRF HHTI-LR System surfaces using hands or hand-held mechanical tools, such as ice-scrapers, without causing physical damage to the system.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
1613	**6.3.2.9**	**Frost and Condensation**	Heading			
1614	6.3.2.9.0-1	The LRF HHTI-LR System must not be physically damaged and must not be degraded in performance following conditions of frost and condensation formation on the product's surfaces in any stored, transported or operating configuration.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
205	**6.3.2.10**	**Humidity**	Heading			
229	6.3.2.10.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance in all high humidity environments associated with the B1, B2 and B3 climatic regions as described in STANAG 4370, AECTP 200, AECTP 230, Leaflet 2311/1 and Leaflet 2311/2.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
208	**6.3.2.11**	**Blowing Sand and Dust**	Heading			
230	6.3.2.11.0-1	The LRF HHTI-LR System must be stored, transported and operate without physical damage and without degradation of performance in environments with airborne fine dust particulates, as described in STANAG 4370, AECTP 300, Ed. 3, Method 313, Procedure I.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1638	6.3.2.11.0-2	The LRF HHTI-LR System must be stored, transported and operate following exposure to blowing sand (with lens protection in place) without physical damage and without degradation of performance in environments with blowing, large particle sand, as described in STANAG 4370, AECTP 300, Ed. 3, Method 313, Procedure II.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
209	**6.3.2.12**	**Salt Fog**	Heading			
232	6.3.2.12.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance in salt laden atmospheric environments as described in MIL-STD-810H, Method 509.7.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
210	**6.3.2.13**	**Fungus**	Heading			
231	6.3.2.13.0-1	The LRF HHTI-LR System must not contain materials that are susceptible to fungus growth.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
213	**6.3.3**	**Induced Environments**	Heading			
214	**6.3.3.1**	**Shock**	Heading			
1657	6.3.3.1.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance following shocks associated with dismounted soldier operations that occur while the system is in the Field Carriage mode.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	SAT - UAPE FAAT - UAPE	Standard for UAPE.
234	6.3.3.1.0-2	The LRF HHTI-LR System must operate without physical damage and without degradation of performance following a transit drop while the system is in the Field Carriage mode.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	FAAT - Test QETE	Results of QETE Testing verify that the requirement has been met. Testing will be conducted in accordance with MIL STD 810H Method 516.8 Procedure IV – Transit Drop or Equivalent Test Method to demonstrate compliance to this requirement. Testing will occur with the system in the field carriage mode, with a drop of 1.2 metres.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
215	**6.3.3.2**	**Transport Vibration**	Heading			
235	6.3.3.2.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance following exposure to the vibrations associated with transport in Ground Vehicles when configured in the field carriage mode.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
1654	6.3.3.2.0-2	The LRF HHTI-LR System must operate without physical damage and without degradation of performance following exposure to the vibrations associated with transport in Ground Vehicles when configured in the storage and transport mode.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
216	**6.3.3.3**	**Immersion**	Heading			
236	6.3.3.3.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance following immersion under water in any stored, transported or operating configuration to a depth of not less than 1 meter below the water surface for a duration of not less than 30 minutes.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
1617	6.3.3.3.0-2	The LRF HHTI-LR System must not require any physical preparations or modifications in advance of being immersed and must be fully operable immediately following the immersion without any preparations or drying.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
217	**6.3.3.4**	**Low Pressure (Altitude)**	Heading			
268	6.3.3.4.0-1	The LRF HHTI-LR System must be stored, transported and operated without physical damage and without degradation of performance in all low ambient air pressure environments from sea level to 4,572 m (15,000 ft) pressure-altitude above sea-level.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.
219	**6.3.3.5**	**Contamination by Fluids**	Heading			
239	6.3.3.5.0-1	The LRF HHTI-LR System must operate without damage and without degradation of performance following occasional exposure to small amounts of the following contaminating fluids: • Weapon cleaning solvents; • Body fluids; • Sea water; • Road salt mixtures; • Reactive Skin Decontaminant Lotion (RSDL); and • Petroleum, Oil and Lubricant (POL) products.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
220	**6.3.4**	**Electromagnetic Environmental Effects (E3)**	Heading			
221	**6.3.4.1**	**Electric Field, Radiated Emissions**	Heading			
243	6.3.4.1.0-1	The LRF HHTI-LR System must control radiated fields necessary to operate with the other collocated systems when operated in ground applications in an Army environment.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Test Report FAAT - Analysis - Test Report	Standard for Analysis - Test. Provide a test report detailing test setup, execution and results for protocol RE102 of MIL-STD-461G against limit lines for Ground, Army environments.
2679	6.3.4.1.0-2	The LRF HHTI-LR System must control radiated fields necessary to operate with the other collocated systems when operated above deck on a surface ship.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Test Report FAAT - Analysis - Test Report	Standard for Analysis - Test. Provide a test report detailing test setup, execution and results for protocol RE102 of MIL-STD-461G against limit lines for Ground, Army environments.
244	**6.3.4.2**	**Electric Field, Radiated Susceptibility**	Heading			
245	6.3.4.2.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance when subjected to radiated electric fields, when operated in ground applications in an Army environment.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	N/A if config is unchanged from IBS, otherwise... SAT - Analysis - Test Report FAAT - Analysis - Test Report	Standard for Analysis - Test. Provide a test report detailing test setup, execution and results for protocol RS103 of MIL-STD-461G against limit lines for Ground, Army environments.
223	**6.3.4.3**	**Electrostatic Discharge**	Heading			
247	6.3.4.3.0-1	The LRF HHTI-LR System must operate without physical damage and without degradation of performance when subjected to personnel-borne electrostatic discharge.	Mandatory Requirement	Yes - LRF HHTI-LR only, excluding other system components	Not verified post contract award	N/A - not verified post contract award.

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1095	**6.4**	**Design and Construction Constraints**	Heading			
1096	**6.4.1**	**Assembly for Operation**	Heading			
1097	6.4.1.0-1	Starting from the Field Carriage Mode, the LRF HHTI-LR System must be assembled ready for operational use on the Tripod by a trained user in darkness in less than five minutes.	Mandatory Requirement	Yes	Prototype - Demonstration SAT - Demonstration FAAT - Demonstration	Standard for Demonstration.
1383	**6.5**	**Product Marking, Serialization and Nameplates**	Heading			
1691	**6.5.1**	**Product Marking and Nameplates**	Heading			
1384	6.5.1.0-1	All LRF HHTI-LR System components must have nameplates or product markings in accordance with D-02-002-001/SG-001 Identification Marking of Canadian Military Property.	Mandatory Requirement	No	Prototype - Inspection SAT - Inspection FAAT - Inspection	Standard for Inspection.
1692	**6.5.2**	**Serialized Items**	Heading			
1694	**6.5.2.1**	**Product Marking, Serialization and Nameplates**	Heading			
1696	6.5.2.1.0-1	LRF HHTI-LRS serialized items must be assigned a Unique Item Identifier (UII) in accordance with NATO Standard AAITP-08.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.
1697	6.5.2.1.0-2	LRF HHTI-LRS serialized items nameplate or product marking must include the UII in human-readable form.	Mandatory Requirement	No	FAAT - Inspection	Standard for Inspection.
1698	6.5.2.1.0-3	LRF HHTI-LRS serialized items nameplate or product marking must include the UII Mark in machine readable data carrier form in accordance with NATO Standard AAITP-08.	Mandatory Requirement	No	FAAT - Demonstration	Standard for Demonstration.
1761	**7**	**SRS Views**	Heading			
1762	**7.1**	**General**	Heading			
1769	7.1.0-1	This SRS is maintained using the IBM Rational DOORS application. The LRF HHTI-LR SRS module can be found in the DND DOORS Production instance at 002 - ADM MAT / DGLEPM / DSSPM / NVSM / PM / Projects / HHTI-LR.	Information			
1770	7.1.0-2	In support of the LRF HHTI-LR Acquisition and In-Service Support contracts, the contents of the SRS module are exported in two views: • Requirements Verification Matrix View • Requirements Text View	Information			
1763	**7.2**	**Requirements Verification Matrix View**	Heading			
1765	**7.2.1**	**Purpose**	Heading			
1771	7.2.1.0-1	The RVM view is the contractual view of the SRS. It specifies the requirements for the LRF HHTI-LR System. For each requirement, it specified how satisfaction of the requirement will be verified.	Information			
1772	7.2.1.0-2	The RVM view defines the Functional Baseline for the LRF HHTI-LR System in the context of configuration management.	Information			
1805	7.2.1.0-3	The RVM view is presented in a tabular format, and is published as a Microsoft Excel spreadsheet.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1766	**7.2.2**	**Attributes**	Heading			
1775	**7.2.2.1**	**Object Text**	Heading			
1811	7.2.2.1.0-1	The Object Text contains the primary content for the object. All other attributes are determined in context of the Object Text.	Information			
1773	**7.2.2.2**	**Object Number**	Heading			
1809	7.2.2.2.0-1	The Object Number attribute is the legal-style hierarchical identifier of the object in the context of the object hierarchy. The object number identifying an object may change as the object hierarchy changes.	Information			
1774	**7.2.2.3**	**Unique ID**	Heading			
1810	7.2.2.3.0-1	The Unique ID attribute is a unique integer identifier assigned to an object at the time of its creation. The Unique ID for an object will not change as the object hierarchy changes.	Information			
1776	**7.2.2.4**	**Object Type**	Heading			
1780	7.2.2.4.0-1	The Object Type attribute determines the class of the object. It can be assigned one of the classes as follows:	Information			
1785	7.2.2.4.0-1.0-1	Title. The object is a heading in the document hierarchy.	Information			
1786	7.2.2.4.0-1.0-2	Information. The object contains contextual information to enable the reader to better understand the context of the requirement. Requirements objects should be read in conjunction with associated information objects.	Information			
1781	7.2.2.4.0-1.0-3	Mandatory Requirement. The object is a mandatory requirement.	Information			
1782	7.2.2.4.0-1.0-4	Mandatory Requirement (rated). The object is a mandatory requirement that has a mandatory performance level. Performance above the mandatory level will result in a higher technical score during bid evaluation.	Information			
1783	7.2.2.4.0-1.0-5	Desirable Requirement. The object is a desirable requirement. It provides visibility of DND's vision for future enhancements or optional capabilities that could be included in the functional baseline of the system if the functionality exists.	Information			
1784	7.2.2.4.0-1.0-6	Desirable Requirement (rated). The object is a desirable requirement that does not have a mandatory performance level. However, the performance related to the requirement will be determined during bid evaluation and included in the technical score.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1777	**7.2.2.5**	**Compliance Required at Bid Submission**	Heading			
1787	7.2.2.5.0-1	The Compliance Required at Bid Submission attribute is applicable to Mandatory Requirement and Mandatory Requirement (rated) object types where the requirement is associated with a MOTS / COTS component of the system that is not expected to change in configuration between the time of bid evaluation and the First Article Acceptance Test. The settings for this attribute are defined as follows:	Information			
1788	7.2.2.5.0-1.0-1	Yes. The requirement must be satisfied by the bidder's proposed system at the time of bid submission. The requirement may be subject to verification during the bid evaluation process.	Information			
1789	7.2.2.5.0-1.0-2	No. The requirement does not need to be satisfied by the bidder's proposed system at the time of bid submission. The requirement will not be subject to verification during the bid evaluation process.	Information			
1790	7.2.2.5.0-1.0-3	Yes - LRF HHTI-LR only, excluding other system requirements. This setting applies to system-level requirements where compliance at the time of bid submission is only applicable to the LRF HHTI-LR device itself, and not to the rest of the system. Examples include system-level environmental requirements.	Information			
1791	7.2.2.5.0-1.0-4	N/A - Info Only. Compliance at the time of bid submission is not applicable to the object, as the object is not a requirement.	Information			
1778	**7.2.2.6**	**Post Award Verification Event**	Heading			
1792	**7.2.2.6.1**	**Verification Events**	Heading			
1796	7.2.2.6.1.0-1	Verification of each requirement after contract award may occur at one or more verification events: • Prototype Verification (Prototype); • System Acceptance Test (SAT); and • First Article Acceptance Test (FAAT).	Information			
1797	7.2.2.6.1.0-2	Details of these verification events can be found in the LRF HHTI-LR Acquisition Statement of Work.	Information			
1793	**7.2.2.6.2**	**Means of Verification**	Heading			
1795	7.2.2.6.2.0-1	Refer to the LRF HHTI-LR RAGL for definitions of the following means of verification associated with a verification event: • Inspection; • Demonstration; • Analysis - Test Report; • Analysis - Evidence; and • User Acceptance Performance Evaluation (UAPE).	Information			
1799	7.2.2.6.2.0-2	Test - QETE is a means of verification in which testing is conducted by DND's Quality Engineering Test Establishment (QETE).	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1794	**7.2.2.6.3**	**Other Attribute Values**	Heading			
1798	7.2.2.6.3.0-1	Settings for this attribute not defined above are defined as follows:	Information			
1800	7.2.2.6.3.0-2	Not verified post contract award. The context of the requirement is such that once verified during bid evaluation, there is no perceived benefit to re-verifying that the requirement has been satisfied post contract award.	Information			
1801	7.2.2.6.3.0-3	N/A if config is unchanged from IBS, otherwise... If the configuration of the component of the system to which the requirement applies is unchanged from its configuration at the time of bid submission, re-verification of the requirement will generally not be required. If the configuration changes, the required verification events are listed.	Information			
1779	**7.2.2.7**	**Post Award Verification Criteria**	Heading			
1802	7.2.2.7.0-1	The Post Award Verification Criteria attribute provides supporting criteria to the contractor as to how the requirement must be verified. The criteria may include direction on specific tests that must be applied, or tailoring to be applied to standard tests.	Information			
2532	7.2.2.7.0-2	Definitions of "Standard" verification criteria are as follows:	Information			
2533	7.2.2.7.0-3	Standard for Inspection. The Contractor provides the item subject to verification to the Technical Authority (TA) for inspection. Verification requires acceptance by the TA that the requirement has been met.	Information			
2534	7.2.2.7.0-4	Standard for Demonstration. The item subject to verification is provided to the Technical Authority (TA) for demonstration. The Contractor leads the TA through the steps necessary to demonstrate that the requirement has been met. Verification requires acceptance by the TA that the requirement has been met.	Information			
2535	7.2.2.7.0-5	Standard for Analysis - Evidence. The contractor provides written analysis to present evidence that the requirement has been met. Verification requires acceptance by the TA that the requirement has been met. Where specific requirements for the evidence to be provided is included in the verification criteria, the evidence provided must be in accordance with the specific requirements.	Information			
2536	7.2.2.7.0-6	Standard for Analysis - Test. The contractor provides written analysis to present evidence that the requirement has been met. The evidence must include a Test Report prepared by an independent test organization. Verification requires acceptance by the TA that the requirement has been met. Where specific requirements for the testing to be conducted is included in the verification criteria, the testing must be conducted in accordance with the specific requirements.	Information			

Unique ID	Object Number	Object Text	Object Type	Compliance Required at Bid Submission	Post-Award Verification Event	Post-Award Verification Criteria
1764	**7.3**	**Requirements Text View**	Heading			
1767	**7.3.1**	**Purpose**	Heading			
1804	7.3.1.0-1	The requirements text view provides a summary view of requirements that excludes the detailed content on how each requirement will be verified. It is provided as an overview of requirements for situational awareness purposes only.	Information			
1808	7.3.1.0-2	The requirements text view is presented without the use of tables. It is published as a Microsoft Word document.	Information			
1768	**7.3.2**	**Attributes**	Heading			
1806	7.3.2.0-1	The requirements text view contains the Object Text attribute only. For headings, the Object Text includes the hierarchical Object Number. For text under a heading, the Object Number is not included.	Information			
1807	7.3.2.0-2	Object Numbers for text and Unique IDs of objects are available in the RVM view.	Information			

APPENDIX 6 TO ANNEX B1

SUPPORT AND MAINTENANCE CONCEPT

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

TABLE OF CONTENTS

1 Introduction

1.1 Scope

This document describes the overall support and maintenance concept for the Laser Range Finder Handheld Thermal Imager Long Range (LRF HHTI-LR) System.

1.2 Purpose

This document provides context and information about how the LRF HHTI-LR will be supported and maintained throughout its lifecycle in the context of the Department of National Defence (DND) / Canadian Armed Forces (CAF) Material Acquisition and Support (MAS) environment.

The target audience of this document includes the supporting government of Canada and contractor organizations identified in Section 3 Support Organizations.

2 System Overview

2.1 Intended Use

The LRF HHTI-LR system will provide the Canadian Armed Forces (CAF) with hand-held capability(ies) to detect, recognize and identify of objects of interest under varying conditions of light and visibility. The system will provide the capability to accurately geolocate targets and transmit target(s) data to other systems. Imagery produced by the LRF HHTI-LR System will be saved and transferred for analysis. The system will be used by the Canadian Army in the combat arms leader, sniper, reconnaissance and other similar roles. It will be used by the Royal Canadian Navy to enhance general situational awareness, by boarding parties, and for security surveillance when in port.

2.2 Prime Mission System

The LRF HHTI-LR prime mission system is organized to be stored and transported in two separate cases, to be confirmed within the scope of the LRF HHTI-LR acquisition contract.

The LRF HHTI-LR Field Kit with Case comprises the following components:

- Field Kit Storage and Transport Case;
- Field Pouch, containing:
    - LRF HHTI-LR, including internal batteries and LRF HHTI-LR embedded software;
    - Ruggedized Flash Drive with (if required) interface cable;
    - Lens Cleaning Kit;
    - Bilingual Operator Manual; and
    - Bilingual Quick Reference Guide;
- Space for internal rechargeable batteries for 24 hours of operation of the LRF HHTI-LR

The LRF HHTI-LR Support Kit with Case comprises the following components:

- Support Kit Storage and Transport Case;
- Tripod Pouch with Tripod;
- External Battery Pack Pouch with External Battery Pack;
- Accessories Pouch, containing:
    - Battery Charger and Battery Charger cable assembly;
    - Data Interface Cable Assemblies; and
    - Power Cable Assemblies.
- Space for internal rechargeable batteries for 24 hours of operation of the LRF HHTI-LR

The LRF HHTI-LR System includes a collection of ATAK plugins that is required to implement the functionality for the interface between the LRF HHTI-LR and the Integrated Soldier System (ISS) Battle Management System (BMS). The LRF HHTI-LR / ISS BMS ATK plugins (LIBI AP) will be installed on the ISS End User Device (EUD) and on the ISS Commander's Tablet.

2.3 Support System

The detailed configuration of the LRF HHTI-LR Support System will be determined within the scope of the LRF HHTI-LR acquisition contract.

The LRF HHTI-LR Support System may include, as required, the following Special Tools and Test Equipment that would be used at first and second line maintenance units:

- Nitrogen Purging Adapter;
- Device to upgrade LRF HHTI-LR embedded software; and
- Fault identification and analysis tools.

The LRF HHT-LR Support System will include the special tools and test equipment required to conduct second level maintenance of the LRF HHTI-LR at 202 Workshop Depot.

3 Support Organizations

The following identifies the principle organizations involved in support of the LRF HHTI-LR:

a. Night Vision System Modernization (NVSM) Project / Director Soldier Systems Program Management (DSSPM) 7 – Will provide the planning, system engineering (SE), integrated logistic support management (ILSM), coordination, direction and overall project management (PM) for the LRF HHTI-LR until the system has been successfully fielded, integrated and supporting activities established;

b. LRF HHTI-LR Equipment Management Team (EMT), located within DSSPM 3 - Will be the primary LRF HHTI-LR Life Cycle Material Manager (LCMM) to whom all Life Cycle Maintenance issues are routed after handover from the NVSM Project. Involvement of any other LCMM organizations (and their responsibilities) will be at the discretion of DSSPM 3;

c. Combat Training Centre (CTC) Gagetown – Initial Cadre Training (ICT) for operators will be given to CTC Gagetown personnel. They, in turn, will establish the in-house training courses and provide required training to the rest of the CF on a required basis;

d. Operators – Will perform operator's maintenance on the equipment;

e. Electronic-Optronic (EO) Technicians - Will perform all level one maintenance on the equipment;

f. Director of Land Requirements (DLR) – Will be the primary User representative for the CAF, and User representative for the Canadian Army (CA) throughout the equipment's life cycle;

g. Director of Naval Requirements (DNR) – Will be the User representative for the Royal Canadian Navy (RCN) throughout the equipment's life cycle;

h. Director Supply Chain Operation (DSCO) – Will provide guidance and support in cataloguing, technical data & publications and initial provisioning (IP);

i. Base/Army Support Unit (ASU) Maintenance and National Support Element (NSE) organizations – Will provide the facilities and personnel to perform equipment specific level one and limited level two maintenance activities;

j. 202 Workshop Depot (202 WD) – Will provide the facilities and personnel to perform LRF HHTI-LR level two maintenance activities, limited to the replacement of shop replaceable units (SRUs);

k. 25 Canadian Forces Supply Depot (25 CFSD) – Will be the central storage facility for LRF HHTI-LR in support of deployed operations as well as the central distribution/collection facility for all items returned/received from the Contractor;

l. Acquisition Contractor – Will assist in the establishment of the integrated logistic support infrastructure required to support the system in service, and provide repairs under warranty; and

m. In-Service Support (ISS) Contractor (same contractor as for Acquisition) - Will provide LRF HHTI-LR repair, configuration and obsolescence management.

4 Maintenance Support

4.1 Overview

Operators and Integral Support will perform preventive and simple corrective maintenance activities that do not require the LRF HHTI-LR to be opened or the use of special tools. LRF HHTI-LR units requiring maintenance beyond the simple corrective maintenance activities or requiring the LRF HHTI-LR unit to be opened will be sent to 202 Workshop Depot (202 WD) or to the Contractor for repair under the In-Service Support Contract.

All other LRF HHTI-LR system repairable equipment (e.g., tripod, battery charger, cables, soft/hard cases) are expected to be repaired without the need of Special Tools and Test Equipment (STTE). As such, Contractor maintenance on these items is not anticipated unless under special circumstances.

The LRF HHTI-LR may require desiccant check and replacement at intervals specified by the Original Equipment Manufacturer (OEM). LRF HHTI-LRs in prolonged storage will need to be subjected to periodic desiccant status check. No other preventive maintenance checks or services are anticipated while the LRF HHTI-LR is in storage. However, the Contractor will identify any periodic maintenance activities required while the LRF HHTI-LR systems are under storage.

The LRF HHTI-LR incorporates internal self-calibration capabilities. DND is not expected to perform limited, if any, calibration activity.

4.2 Definitions

Definitions for specific terms used in this document are:

a. Shop Replaceable Unit (SRU) – A module or assembly that is replaced by the second level or higher maintenance organization or by the Contractor. It is normally located inside the LRF HHTI-LR and requires the LRF HHTI-LR to be opened (e.g., circuit card, cooler/detector, optics);

a. Level One Spares (1st Line Spares) – All LRF HHTI-LR system equipment (e.g., LRF HHTI-LR imager, tripod, battery charger etc.) and spare parts (e.g., eyecup, lens cap, straps etc.) that can be replaced by DND level one maintenance without opening the LRF HHTI-LR imager;

b. Integral Support - The immediate support provided to a unit to perform level one maintenance activities;

c. First Line Maintenance Organisation – A fist line maintenance organization is normally the first organization to which the user liaises with. It principally performs level one maintenance tasks by unit operators and maintenance personnel (maximums – operator one hour and technician four hours);

d. Level One Maintenance - Tasks that include operator maintenance and preventive maintenance such as servicing and cleaning as well as preliminary diagnosis of faults and corrective maintenance tasks of a minor nature. The term "minor nature" infers short duration (less than four hours) and relatively simple repairs. Level one maintenance tasks are generally performed without Special Tools and Test Equipment (STTE) and require no special facilities. Level one maintenance will include the replacement of first line spare parts;

e. Second Line Maintenance Organization – A second line maintenance organization principally performs level two and limited level three maintenance tasks (maximum – 12 hours for mobile repair teams and 24 hours for other tasks);

f. Level Two Maintenance – Tasks that include level two maintenance activities as well as activities required beyond level one in order to bring an item to full serviceable condition. Level two includes corrective maintenance by repair or replacement of parts and assemblies, limited only by time (limited to 24 hours); and

g. Contractor Maintenance (Level Two and above) – Tasks that include level one maintenance activities as well as activities required beyond level one in order to bring an item to full serviceable condition. Contractor maintenance will typically involve the replacement and repair of SRUs.

4.3 Maintenance Conducted by DND

4.3.1 LRF HHTI-LR

Operators and Integral Support will perform preventive and simple level one maintenance operations that do not require the LRF HHTI-LR to be opened or the use of special tools typical tasks include: replacement of eyecups, straps, optic covers, connector covers, verifying system fault status using Built-In-Test (BIT), System purging and desiccant replacement etc. DND may perform software upgrades if it can be easily performed using DND provided computer/laptop computer.

LRF HHTI-LRs requiring maintenance beyond the level one maintenance activities described above or requiring the LRF HHTI-LRs to be opened will be sent to a CAF second line maintenance unit. The second line maintenance unit will confirm the existence of the fault, and forward the faulty system, through DND's supply system, to either:

- The acquisition contractor, if the system is still covered by warranty; or
- To 202 WD, if the warranty period has expired.

A faulty LRF HHTI-LR will be placed in its hard storage/transport case when sent for repair. For ease of accountability and control, the hard storage/transport case will also contain the field pouch, operator manual, user guide and cleaning kit when sent to 202 WD or the Contractor for maintenance.

4.3.2 LRF HHTI-LR System Accessories

All other LRF HHTI-LR system repairable accessories (e.g., tripod, battery charger etc.) are expected to be repaired by DND without the need of special tools and test equipment, or through repair by replacement. Contractor maintenance on these items is not anticipated unless under special circumstances.

4.3.3 202 Workshop Depot Maintenance

202 WD Depot will conduct second level maintenance actions on LRF HHTI-LR that is beyond the warranty period. 202 WD also perform second level maintenance action as required to return the LRF HHTI-LR to service or transfer the system to the supply system in order to be sent for repair or overhaul at the Contractor facility.

Faulty LRF HHTI-LRs that require the imager to be opened or the use of special tools or test equipment will be sent to 202 WD for repair. The faulty LRF HHTI-LR (including all case kit contents) will be packaged in its hard storage/transport case when sent to 202 WD.

Faulty LRF HHTI-LRs with case may be sent to 202 WD Depot with missing/damaged level one replaceable parts (e.g., hands traps, neck straps, eyecups etc.). In such instances, 202 WD will replace the missing or damaged parts (in addition to repairing any internal faults) so that the LRF HHTI-LR is returned in its full, current and serviceable configuration state.

Upon completion of repairs, the serviceable LRF HHTI-LR will be placed in its hard storage/transport case and returned to 25 CFSD. 202 WD will ensure that any missing case contents normally part of the storage/ transport case holdings (e.g., cleaning kit, field pouch, user guide etc.) are replaced so that the returned LRF HHTI-LR with case contains the full complement of kit items.

4.4 Maintenance Conducted by the Contractor

Faulty LRF HHTI-LRs that require repair beyond 202 WD capability or require overhaul will be packaged in their hard storage/transport case and sent to the Contractor for repair.

Faulty LRF HHTI-LRs with case may be sent to the Contractor with missing/damaged level one replaceable parts (e.g., hands traps, neck straps, eyecups etc.). In such instances, the Contractor will replace the missing or damaged parts (in addition to repairing any internal faults) so that the LRF HHTI-LR is returned in its full, current and serviceable configuration state.

Upon completion of repairs, the serviceable LRF HHTI-LR will be placed in its hard storage/transport case and returned to DND. The Contractor will ensure that any missing case contents normally part of the storage/ transport case holdings (e.g., cleaning kit, field pouch, user guide etc.) are replaced so that the returned LRF HHTI-LR with case contains the full complement of kit items.

The Contractor will also conduct software maintenance as described in Section 4.5 below.

4.5 Software Maintenance

Software maintenance is a very broad activity that included error correction, enhancements of capabilities, deletion of obsolete capabilities, and/or optimization. Any work done to change the software after it is in operation is considered to be maintenance work. The purpose is to keep the effectiveness of software over time. The effectiveness can be enhanced by meeting additional requirements, becoming easier to use, more efficient and employing newer technology.

Software maintenance will be triggered by:

- The Contractor's ongoing product improvement efforts;
- The discovery of defects while the system is under warranty; or
- An Engineering Change Proposal

4.5.1 LRF HHTI-LR Embedded Software / Firmware

The heart of the LRF HHTI-LR System is the firmware and software embedded in the LRF HHTI-LR device. This software provides the user with the functionality related to all of the key performance requirements of the LRF HHTI-LR. While the core functionality of the software can be considered to be MOTS, a "Canadianized" version of the software is required to support:

- English and French users;
- Interfaces that are not standard for the LRF HHTI-LR, such as the interface to the ISS;
- Other required functionality that may differ from the offered software.

Over the life of the system, it is expected that the OEM will issue software updates. In some cases, DND may request software changes required to maintain interfaces with external systems as the external systems evolve. LRF HHTI-LR embedded software updates or software changes will be performed by first line maintenance personnel.

4.5.2 LRF HHTI-LR / ISS BMS Interface ATAK Plug-ins (LIBI AP)

4.5.2.1 ISS-S Overview

The Integrated Soldier System Suite (ISS-S) is a system in use by the Canadian Army that supports the mission of the dismounted soldier by providing situational awareness and better command execution. The basic configuration is composed of an End User Device (EUD), a radio, a network hub and a central

battery. Additional sensors or devices can be added to the ISS such as but not limited to:

- Commander's Tablet;
- DAGR; and
- LRF HHTI-LR

The ISS-S is controlled by the Battle Management System (BMS) software. The BMS software uses the Android Tactical Assault Kit (ATAK) operating environment. All devices that interface with ISS must conform to the ATAK architecture.

4.5.2.2 Android Tactical Assault Kit (ATAK) Overview

ATAK is a United States (US) Government owned collection of applications for Android devices. It provides the user with a number of geolocation, situational awareness, navigation, targeting and communication functions. The use of ATAK software is licensed by the US government, and depending on the version (military, government, or civilian) is restricted to approved user organizations. System-specific ATAK can be developed to provide enhanced functionality, such as the ability to interface with external systems. Further information about ATAK can be found at the US Government site tak.gov.

4.5.2.3 Scope of LIBI AP

The LIBI AP will comprise one or more ATAK plug-ins that will reside on the ISS EUD and Commander's Tablet. The LIBI AP will provide the operator with the following functionality:

- Provide user geolocation data to the LRF-HHTI-LR, sourced from a connected GPS receiver;
- Download image and video files for viewing on the EUD or Commander's Tablet;
- Stream the contents of the LRF HHTI-LR display to the EUD or Commander's tablet in real-time;
- Remote manipulation of the LRF HHTI-LR by the user via the EUD or Commander's tablet; and
- Pass target geolocation resulting from use of the Laser Range Finder functionality of the HHTI-LR to the ISS BMS to be further used in generating contact reports, fire missions, etc.

In order to achieve the functionality described above, the LRF HHTI-LR embedded software must fully integrate with the LIBI AP. This will require cooperation between the following parties:

- LRF HHTI-LR Acquisition Contractor;
- LRF HHTI-LR OEM (if different from the HHTI-LR Acquisition Contractor);
- Developer of the LIBI AP (if different from the HHTI-LR Acquisition Contractor); and
- Developer of the ISS BMS software.

5 Special Tools and Test Equipment

5.1 CAF First and Second Line Maintenance Organizations

Special tools and test equipment will be procured under the Acquisition contract. There are no special tools and test equipment required for operator maintenance.

The LRF HHTI-LR systems will be distributed to Canadian Forces (CF) units and ships in Canada and in operational theaters. Because DND first and second line maintenance actions will be limited to those that do not require the LRF HHTI-LR to be opened, the type of tool required will be limited to a purging adapter, not currently in DND inventory. Approximately 45 of these types of purging adapter will be required to support CF units and organizations that hold and maintain those LRF HHTI-LRs.

DND maintenance organizations may also require, depending on the OEM system, a specialized laptop or similar equipment for uploading new software releases. Depending on the processes and equipment required for conducting software updates, this equipment may be held at first or second line maintenance organizations.

5.2 202 WD Montreal

Significant STTE will be required by 202 WD to conduct second level repairs. It is anticipated that an optical repair table specific to LRF HHTI-LR repairs will be installed and commissioned at 202 WD under the acquisition contract. STTE that is proprietary to the Contractor will be repaired or replaced through the In-Service Support contract. STTE that is not proprietary to the Contractor will be repaired or replaced through existing standing offers where available or through minor procurement action initiated by the DND EMT.

6 Supply Support (Spares and Repair Parts)

6.1 Initial Provisioning of Spare Parts

The initial provisioning of spare parts to support repairs undertaken by DND for the first two years of in-service life will be identified in the Contractor supplied Recommended Spare Parts List (RSPL) and procured under the Acquisition contract. The initial provisioning will include:

- Spare parts to support repair activities conducted by CAF operators and maintainers, such as two spare parts (screws, eyecups etc.)
- Spare system components that are subject to repair by replacement such as Tripods, Battery Chargers, Power Converter, cables, etc.
- Spare LRF HHTI-LR SRUs to support repair activities conducted by 202 WD, such as cooler/detector, circuit card assemblies, power supply assembly, optics etc.

DND will stock spare parts required for first and second level repairs at Depots. A limited quantity of spare parts for first line units will be stocked at their respective Spare Parts Supply Section (SPSS).

Spare parts to support repairs conducted at 202 WD will be stored at the 202 WD repair facility.

6.2 Replenishment of Spare Parts

The EMT will manage the spare parts inventory and procure replenishment items through the In-Service Support contract.

The DND EMT, with input from the Contractor, will manage spare parts to ensure the long-term availability of the LRF HHTI-LR. Follow-on level spare parts to support repairs undertaken by DND for year three and onward will be determined based upon actual usage and spares consumption data.

Sparing levels and failure rates will be reviewed by the DND EMT, 202 WD and the Contractor once per year to determine the scope (if any) for an annual replenishment spares procurement.

6.3 Spare Systems (Op/Log Stock)

DND will procure spare LRF HHTI-LR Systems as Op Stock and Log Stock under the Acquisition contract. The number of spare Op Stock and Log Stock systems will be determined by DLR.

The OP Stock LRF HHTI-LR Systems will be centrally stored and will be used to support deployments and surges in operational use. Op Stock systems may also be used to replace systems send for repair from deployed users.

The Log Stock LRF HHTI-LR Systems will be used for total fleet management. The quantity of Log Stock LRF HHTI-LR Systems will be based on a percentage of the total quantity of systems.

6.4 Spare Parts Required by the Contractor for Repair and Overhaul

In support of repair and overhaul conducted by the Contractor, including those conducted on items under warranty, the Contractor will supply and store their own spare parts and will not have access to DND spare parts for its parts replenishment.

7 Cataloguing

The Acquisition Contractor will prepare provisioning documentation necessary for DND to conduct cataloguing activities required to establish an integrated logistic support environment.

Where a component of the system does not have a NATO Stock Number (NSN), the contractor will provide Supplementary Provisioning Technical Documentation (SPTD) to support cataloguing activities. For items lacking NSNs, DND will apply for the NSN.

The scope of the ISS Contract will include, as a task-based activity, the updating of provisioning documentation as required following the implementation of an Engineering Change Proposal or other modification to the System.

8 Technical Data and Publications

Technical data and publications will be prepared by the Acquisition Contractor.

The scope of the ISS Contract will include, as a task-based activity, the updating of technical data and publications that may be required following the implementation of an Engineering Change Proposal or other modification to the System.

Bilingual operator manuals will be provided for the LRF HHTI-LR system. These manuals will address maintenance activities to be performed by the operator.

Two bilingual maintenance manuals will be provided; one for maintenance carried out by CAF 1st and 2nd line maintenance organizations, and one for repairs carried out at 202 WD.

Maintenance manuals cover preventive and corrective maintenance activities, tests after repair, adjustments and parts lists.

Canadian English and Canadian French versions of all manuals will also be placed on-line on the Defence Resource Management Information System (DRMIS) for easy reference.

9 Personnel Resources

There are no anticipated changes required to CAF / DND personnel numbers as a result of the introduction of the LRF HHTI-LR System into service.

The LRF HHTI-LR is expected to have the highest failure rate of system components. All other components (e.g., tripod, battery charger, cables, soft/hard cases) are either long lived or repair by replacement items. Hence, the LRF HHTI-LR unit is expected to require the highest number of repair activities.

In addition, the quantities of LRF HHTI-LR systems distributed to each CF unit are anticipated to be low. As a result, maintenance personnel requirements at each support unit are expected to be minimal.

10 Training

10.1 Training Packages

Operator and Maintenance – 202 WD Training Packages will be developed within the scope of the Acquisition Contract. These training packages will be used for Initial Cadre Training (ICT) delivered by the Acquisition contractor or by DND/CAF resources, regenerative training, and as a basis of development for other courseware by the CAF.

The scope of the ISS Contract will include, as a task-based activity, the updating of the training packages delivered under the acquisition contract.

10.2 Operator Training

The Acquisition Contractor will provide ICT for operators to Gagetown instructor staff, who will, in turn, train other CAF personnel. The Acquisition Contractor will optionally provide ICT for instructional staff at other CAF locations.

It is not expected that additional DND trainers will be required. Follow-on CAF training will be the responsibility of the CA and the RCN.

The scope of the ISS contract will include, as a task-based activity, the delivery of additional serials of Operator training to CAF units that may receive re-distributed LRF HHTI-LR after the initial fielding of the LRF HHTI-LR fleet.

10.3 Maintenance Training

Canada has assessed that a maintenance training package for 1st and 2nd Line Maintenance Units is not required. CAF Electro-optical technicians have the skills and knowledge to carry out level one maintenance activities on electro-optical devices, including the LRF HHTI-LR.

Training for 202 WD maintenance staff will be provided by the Acquisition Contractor optionally at the Contractor facilities or at 202 WD once STTE has been installed and commissioned.

Regenerative training for 202 maintenance staff may be provided by the ISS Contractor at 202 WD if required.

11 Computer Resources

DND may upgrade the LRF HHTI-LR operating software as a level one maintenance activity but only if the action:

a. Uses a DND provided computer/laptop computer;

b. No additional test/computer equipment is required; and

c. Does not require the LRF HHTI-LR to be opened.

12 Facilities

12.1 Training Facilities

Existing DND training facilities are more than adequate to meet operator and maintenance training needs. Therefore, no additional training facilities are required.

12.2 Maintenance Facilities

Current CAF maintenance facilities are considered to be adequate to perform the limited simple maintenance activities by 1st and 2nd line maintenance organizations. No additional CAF maintenance facilities are required.

The scope of the Acquisition Contract includes the installation and commissioning of STTE at 202 WD's existing optical clean room. 202 WD will perform LRF HHTI-LR level two repairs at this facility.

The Contractor will perform LRF HHTI-LR level two and three repairs, as well as repair and overhaul, at the Contractor's facility. Therefore, Contractor maintenance facility requirements are the responsibility of the Contractor.

12.3 Storage Facilities

Each LRF HHTI-LR System will be packaged in two hard storage/transportation cases. Both hard cases will be designed for ease of storage and stacking.

A maximum of 25 LRF HHTI-LRs systems are expected to be issued to a unit. Total storage space required for the 25 LRF HHTI-LR systems is expected to be minimal. No additional unit storage space will be required.

Log Stock and Op Stock LRF HHTI-LR systems will be stored at 25 CFSD. Current storage facilities are deemed to be adequate and minimal extra storage space will be required.

Special storage facilities (e.g., refrigeration, clean room etc.) will not be required.

13 Equipment Storage

LRF HHTI-LR systems will be stored in their respective hard storage/transportation cases. The ISS Contractor will not be required to store LRF HHTI LR systems, with the exception of temporary storage of equipment sent to the Contractor for R&O.

14 Hazardous and Dangerous Materials

Hazardous material is not expected to be used in the LRF HHTI-LR. However, should hazardous materials be used, the Contractor will identify the material and provide Material Safety Data Sheets (MSDS) for hazardous material identified.

The Contractor will also identify hazardous & dangerous material in their technical publications (e.g., maintenance manual, operator guide, and training material) and during initial cadre training.

15 Packaging, Marking, Handling for Transportation

15.1 Packaging

Protective hard storage/transport cases are included as part of the LRF HHTI-LR system kit contents (see Part B Figure 2). All other LRF HHTI-LR system contents will be packaged in the hard storage/shipping containers for all transportation needs.

The LRF HHTI-LR units being sent for repair will be packaged and transported in its protective hard storage/transport case.

For the packaging of batteries, suppliers must ensure they adhere to all levels of regulations regarding dangerous goods/hazardous products as set forth by federal, provincial and municipal laws, by-laws and acts of Parliament and international laws.

15.2 Marking

Markings for devices placed into stores and for shipment will be in accordance with D-LM-008-002/SF-001, Specification for Marking for Storage and Shipment.

15.3 Handling

Other than normal care when handing electro-optic equipment, additional special handling requirements are not anticipated. However, the Contractor will identify any special handing requirements and provide the necessary handling instructions.

15.4 Transportation

Each LRF HHTI-LR System is transported in two hard storage / transport cases.

LRF HHTI-LRs sent for repair at 202 WD or at the Contractor's facility will be transported in their reusable hard storage / transport cases.

16 In-Service Support Contract

Canada and the Contractor will enter into an ISS Contract where the Contractor will provide LRF HHTI-LR maintenance and support for all repair action in excess of DND performed operator, levels 1 and 2 maintenance activities.

The scope of the In-Service Support contract will cover:

- Repair and overhaul services;
- Supply of spare parts;
- Software Maintenance;
- Technical investigation and engineering support;
- Implementation of Engineering Change Requests;
- Updating of provisioning data, technical data and technical publications;
- Delivery of initial cadre training;
- Obsolescence management; and
- Demilitarization and disposal of equipment deemed beyond economical repair.

APPENDIX 7 TO ANNEX B1

REFERENCES, ACRONYMS, GLOSSARY AND LEXICON

LASER RANGE FINDER - HAND-HELD THERMAL IMAGER - LONG RANGE (LRF HHTI-LR)

ACQUISITION

APPENDICE 7 DE L'ANNEXE B1

RÉFÉRENCES, SIGLES, GLOSSAIRE ET LEXIQUE

TÉLÉMÈTRE LASER – IMAGEUR THERMIQUE PORTATIF DE LONGUE PORTÉE (TL ITP-LP)

ACQUISITION

TABLE OF CONTENTS / TABLE DES MATIÈRES

1 Introduction

1.1 Purpose / But

This appendix provides a central repository for information that supports statements of work and subordinate annexes to HHTI-LR LRF procurement and in-service support contracts.

Il includes:

- References;
- Acronyms;
- Abbreviations;
- Glossary; and
- Lexicon.

Cette annexe fournit un référentiel central pour les informations qui appuient les énoncés de travail et les annexes subordonnées des contrats d'acquisition du TL ITP-LP et de soutien en service.

Il comprend:

- Références;
- Sigles;
- Abbréviations;
- Glossaire; et
- Lexique.

2 References / Références

2.1 Canadian Government Documents / Documents du gouvernement canadien

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
Health Canada Safety Code 6 (2015)	Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz	Limites d'exposition humaine à l'énergie électromagnétique radioélectrique dans la gamme de fréquences de 3 kHz à 300 GHz	System Requirements Specification (SRS) Spécification des exigences du système (SES) Section 4.6.5	Understanding Safety Code 6: Health Canada's radiofrequency exposure guidelines - Canada.ca
RSS-102	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands), Issue 5, 2015	CNR-102 — Conformité des appareils de radiocommunication aux limites d'exposition humaine aux radiofréquences (toutes bandes de fréquences)	SRS / SES Section 4.6.5	RSS-102 — Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands) (canada.ca)

2.2 DND and CAF Technical Publications / Publications techniques du MDN et des FAC

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglaise)***	***Title (French Version)*** ***Titre (version française)***	***Location of Reference*** ***Emplacement de référence***	***Source***
A-LM-184-001/JS-001	Special Instructions for Repair and Overhaul Contractors	Instructions spéciales – Entrepreneurs de réparation et de révision	Statement of Work – In Service Support (SOW ISS) Énoncé de travail - Soutien en service (EDT SES) Data Item Description (DID) / Description d'élément de données (DED) RO-03	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglaise)***	***Title (French Version)*** ***Titre (version française)***	***Location of Reference*** ***Emplacement de référence***	***Source***
A-LM-505-010/JS-001	Material Management Instruction – Official Languages Requirements for Technical Documentation	Instruction de gestion du matériel – Exigences en matière de langues officielles : Documentation technique	DID / DED LS-11, LS-11, LS-12, LS-13, LS-14	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
A-P9-050-000/PT-001	CFITES Manual of Individual Training and Education, Volume 1 Canadian Forces Individual Training and Education System –Introduction & Description	Manuel de l'instruction individuelle et de l'éducation, Volume 1 Système de l'instruction individuelle et de l'éducation des Forces canadiennes, Introduction & Description	SOW – Acquisition (SOW ACQ) / ETD – Acquisition (EDT ACQ) Section 8.9.1	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
A-P9-050-000/PT-002	CFITES Manual of Individual Training and Education, Volume 2 Canadian Forces Individual Training and Education – System needs Assessment	Manuel de l'instruction individuelle et de l'éducation, Volume 2 Système de l'instruction individuelle de l'éducation des Forces canadiennes évaluation des besoins	SOW ACQ / EDT ACQ Section 8.9.2, 8.9.4	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
A-P9-050-000/PT-003	CFITES Canadian Forces Individual Training and Education System – Analysis of Instructional Requirements Volume 3	Système de l'instruction individuelle et de l'éducation des Forces canadiennes – analyse des besoins en instruction volume 3	SOW ACQ / EDT ACQ Section 8.9.2, 8.9.4	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
A-P9-050-000/PT-004	CFITES Manual of Individual Training and Education Vol 4 – Design of Instructional Programmes	Manuel de l'instruction individuelle et de l'éducation Volume 4 – Conception des programmes d'instruction	SOW ACQ / EDT ACQ Section 8.9.2, 8.9.4	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
A-P9-050-000/PT-005	CFITES Manual of Individual Training and Education Volume 5 – Development of Instructional Programmes	Système de l'instruction individuelle et de l'éducation des Forces canadiennes, Volume 5 – Élaboration des programmes d'instruction	SOW ACQ / EDT ACQ Section 8.9.2, 8.9.4	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
B-GL-342-001/FP-000	Land Equipment Management System	Système de gestion de l'équipement terrestre	SOW ISS / EDT SES Section 1.6	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglaise)***	***Title (French Version)*** ***Titre (version française)***	***Location of Reference*** ***Emplacement de référence***	***Source***
C-01-100-100/AG-005	Acceptance of Commercial and Foreign Government Publications as Adopted Publications	Acceptation de publications provenant du commerce et de gouvernements étrangers comme publications adoptées	DID / DED LS-11, LS-12, LS-13, LS-14	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-01-100-100/AG-006	Specification - Writing, Format and Production of Technical Publications	Norme – Rédaction, mise en page et production de publications technique	DID / DED LS-11, LS-12, LS-13, LS-14	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-01-100-100/AG-008	Specifications - Writing Guide for Technical Documentation	Spécification – Guide de rédaction – Documentation technique	DID / DED LS-04, LS-11, LS-12, LS-13, LS-16, LS-17, LS-18, LS-23, LS-28,	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-02-005-009/AM-000	Inspection and Condition of Materiel Returned to and Held in the Supply System	Inspection et évaluation du matériel retourné au système d'approvisionnement et qui y est conservé	SOW ISS / EDT SES Section 7.10	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-02-007-000/AG-001	Controlled Technology Access and Transfer (CTAT) Manual	N/A	SOW ACQ / EDT ACQ Section 8.7	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-02-015-001/AG-000	Policy Procedures and Guidelines – Unsatisfactory Condition Reporting	Politique, procédures et lignes directrices – rapport d'état non satisfaisant	SOW ISS / EDT SES Section 7.5	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-04-005-001/AG-B07	Permissive Repair Schedules (PRSs) and Standard Repair Times (SRTs)	Programme d'entretien autorisé et temps normal de réparation	DID / DED LS-02	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-04-006-001/AM-001	Land Maintenance System Lines of Maintenance and Levels of Repair	Système de maintenance terrestre lignes de maintenance et niveaux de réparation	DID / DED LS-02	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglaise)***	***Title (French Version)*** ***Titre (version française)***	***Location of Reference*** ***Emplacement de référence***	***Source***
C-66-010-001/VP-000	Care Preservation and Storage of Instruments	Soin, conservation et entreposage des instruments	DID / DED LS-13	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-66-010-002/VC-001	Refinishing of Electro-mechanical Equipment	Remise à neuf du matériel électromécanique	DID / DED LS-13	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-66-010-003/TP-001	Cleaning Mechanical Components of Instruments	Nettoyage des composants mécanique d'instruments	DID / DED LS-13	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-66-010-007/TP-001	Cleaning of Optical Elements	Nettoyage des éléments optiques	DID / DED LS-13	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
C-66-020-001/NC-000	Inspection Procedures for Electro-Mechanical Equipment	Procédure d'inspection du matériel opto-électronique	DID / DED LS-13	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-01-002-007/SG-006	Criteria for the selection of Configuration Items	Norme relative aux critères de sélection des éléments de configuration	SOW ACQ / EDT ACQ Section 5.4.1 DID / DED CM-01	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-01-100-200/SF-000	Specification – Preparation of Equipment Data Summaries	Spécification – Rédaction des sommaires sur le matériel	DID / DED LS-04	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-01-100-204/SF-000	Specification – Preparation of Equipment Data Summaries	Spécification – Préparation des instructions de maintenance préventive	DID / DED LS-13, LS-14	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglaise)***	***Title (French Version)*** ***Titre (version française)***	***Location of Reference*** ***Emplacement de référence***	***Source***
D-01-100-205/SF-000	Specification – Preparation of Corrective Maintenance Instructions	Spécification – Rédaction des instructions de maintenance corrective	DID / DED LS-14	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-01-100-207/SF-002	Specification – Preparation of Interim Illustrated Parts Manuals for Land Equipment	Spécification – Préparation des manuels provisoires illustrés de pièces pour les équipements terrestres	DID / DED LS-15	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-01-100-211/SF-000	Preservation, Storage and Handling Instructions	Spécification – La préservation, l'entreposage et la manutention de l'équipement	DID / DED LS-18, LS-23	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-01-100-214/SF-000	Preparation Of Provisioning Documentation for Canadian Armed Forces Equipment	Spécification – Pour la préparation des documents d'approvisionnement en matériel des Forces canadiennes	DID / DED LS-05, LS-06, LS-08, LS-10, LS-19, LS-20, LS-24	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-01-400-002/SF-000	Specification – Levels of Engineering Drawings	Spécifications – Niveau de dessins technique	DID / DED LS-10	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-02-002-001/SG-001	Identification marking of Department of National Defence Materiel	Normes des Forces canadiennes – Identification du matériel appartenant aux Forces canadiennes	SRS / SES Section 6.5.1 DID / DED LS-21	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-02-006-008/SG-001	The Design Change, Deviation & Waiver Procedure (Anglais seulement)	Demande de modification, de dérogation ou de renonciation	DID / DED CM-05	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-80-001-055/SF-001	Specification for Label, Clothing and Equipment	Spécification – étiquette pour vêtements et équipement	SRS / SES Section 5.7.3.1	Available on request from the Contracting Authority (CA)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglaise)***	***Title (French Version)*** ***Titre (version française)***	***Location of Reference*** ***Emplacement de référence***	***Source***
				Disponible sur demande auprès du Autorité contractante (AC)
D-LM-008-002/SF-001	Specification for Marking for Storage and Shipment	Spécification – Marquage des articles à entreposer ou à expédier	DID / DED LS-22	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-LM-008-011/SF-001	Preparation and Use of Packaging Requirements Codes	Préparation et utilisation des codes d'exigence en matière d'emballage	DID / DED LS-22	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
D-LM-008-022/SG-000	Standard for Packaging of Documentation	Not available in French Pas disponible en français	DID / DED LS-10	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)

2.3 DND Forms / Formulaire du MDN et des FAC

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
CF 271	Form (MS Excel version provided by DND after contract award)	Données d'emballage	DID / DED LS-22	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
DND 590	Certificate of Validation Form	Certificat de validation	DID / DED LS-13	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
DND 591	Certificate of Compliance Form	Certificat de conformité	DID / DED LS-13, LS-14	Available on request from the Contracting Authority (CA)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
				Disponible sur demande auprès du Autorité contractante (AC)
DND 626	Task Authorisation Form	Autorisation des tâches	SOW ACQ / EDT ACQ Section 5.5.5, 11 SOW ISS / EDT SES DID / DED SM-02, SM-03	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)
DND 675	Request for Waiver or Deviation	Demande de renonciation ou de dérogation	DID / DED CM-05	Available on request from the Contracting Authority (CA) Disponible sur demande auprès du Autorité contractante (AC)

2.4 United States Department of Defense (DoD) Documents / Documents du Département de la défense des États-Unis (DoD)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
MIL-HDBK-454A	General Guidelines for Electronic Equipment.	Not available in French Pas disponible en français	DID / DED LS-21	MIL-HDBK-454 A GUIDELINES ELECTRONIC EQUIPMENT (everyspec.com)
MIL-PRF-62122E	Performance Specification: Cable Assembly, Inter-Vehicle Power plug, Receptacle and Adapter	Not available in French Pas disponible en français	SRS / SES Section 5.18	MIL-PRF-62122 E CABLE ASSEMBLY INTER-VEHICLE POWER PLUG (everyspec.com)
MIL-PRF-38807C	Performance Specification: Technical Manuals Illustrated Parts Breakdown	Not available in French Pas disponible en français	DID / DED LS-10	MIL-PRF-38807 C ILLUSTRATED PARTS BREAKDOWN (everyspec.com)
MIL-PRF-62122E	Performance Specification: Cable Assembly, Inter-vehicle	Not available in French Pas disponible en français	SRS – LRF HHTI-LR	MIL-PRF-62122 E CABLE ASSEMBLY INTER-VEHICLE POWER PLUG (everyspec.com)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
	Power: Plug, Receptacle, and Adapter			
MIL-STD-130	UID Compliance Labels	Not available in French Pas disponible en français	DID / DED LS-26	MIL-STD-130 N IDENTIFICATION MARKING U.S MILITARY (everyspec.com)
MIL-STD-196	Joint Electronics Type Designation System	Not available in French Pas disponible en français	DID / DED LS-21	MIL-STD-196 G JOINT ELECTRONICS TYPE DESIGNATION SYSTEM (everyspec.com)
MIL-STD-461G	Department of Defense Interface Standards: Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment.	Not available in French Pas disponible en français	SRS / SES Section 6.3.4	MIL-STD-461 G INTERFACE REQUIREMENTS CONTROL INTERFERENCE (everyspec.com)
MIL STD 810H	Environmental Engineering Considerations and Laboratory Tests	Not available in French Pas disponible en français	SRS / SES Section 6.3.2, 6.3.3	MIL-STD-810 H ENVIRONMENTAL ENGINEERING LABORATORY (everyspec.com)
MIL-STD-1275E	Characteristics of 28 Volt DC Input Power to Utilization Equipment in Military Vehicles	Not available in French Pas disponible en français	SRS / SES Section 4.4.9, 5.18	MIL-STD-1275 E INTERFACE CHARACTERISTICS 28 VOLT DC (everyspec.com)
MIL-STD-1388-2B	DOD Requirements for a Logistic Support Analysis Record	Not available in French Pas disponible en français	DID / DED LS-09	MIL-STD-1388-2B REQUIREMENTS A LOGISTIC SUPPORT ANALYSIS (everyspec.com)
MIL-STD-1472H	Design Criteria Standard: Human Engineering	Not available in French Pas disponible en français	SRS / SES Section 4.6.2	MIL-STD-1472 F DESIGN CRITERIA HUMAN ENGINEERING (everyspec.com)
MIL-STD-1474E	Department of Defence Design Criteria Standard - Noise Limits	Not available in French Pas disponible en français	SRS / SES Section 4.7.2	MIL-STD-1474 E DESIGN CRITERIA NOISE LIMITS (everyspec.com)
MIL-STD-2500C W/CHANGE 1	National Imagery Transmission Format, Version 2.1	Not available in French Pas disponible en français	SRS / SES Section 4.3.9	
MIL-PRF-38807C	Performance Specification: Technical Manuals Illustrated Parts Breakdown	Not available in French Pas disponible en français	DID / DED LS-10	MIL-PRF-38807 C ILLUSTRATED PARTS BREAKDOWN (everyspec.com)

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
MIL-PRF-62122E	Performance Specification: Cable Assembly, Inter-vehicle Power: Plug, Receptacle, and Adapter	Not available in French Pas disponible en français	SRS / SES Section 5.18	MIL-PRF-62122 E CABLE ASSEMBLY INTER-VEHICLE POWER PLUG (everyspec.com)
MISB 0902	Motion Imagery Sensor Minimum Metadata Set	Not available in French Pas disponible en français	SRS / SES	Open Source
NWPAN-WP-01112013	Nett Warrior Interconnect Architecture White Paper, Version 6	Not available in French Pas disponible en français	SRS / SES Section 4.4.3.1, 5.13, 5.18	AD1011122.pdf (dtic.mil)

2.5 NATO Documents / Documents de l'OTAN

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
AAITP-08	NATO Standard – NATO Unique Identification Items	Norme de l'OTAN – Identificateur d'article unique de l'OTAN	SRS / SES Section 6.5.2.1	Open Source
ACMP 2009	NATO Standard - Guidance on Configuration Management	Norme de l'OTAN – Orientation sur la gestion de la configuration	DID / DED CM-03	Open Source
AECTP-230 (Edition 1)	Climatic Condition	Condition climatique	SRS / SES Section 6.3.1, 6.3.2	https://standards.globalspec.com/std/1199785/AECTP-230
AECTP-300 (Edition D, Version 1)	Climatic Environmental Tests	Essais environnementaux et climatiques	SRS / SES Section 6.3.1, 6.3.2	AECTP-300 - 3 CLIMATIC ENVIRONMENTAL TEST (everyspec.com)
NCAGE	NATO Commercial and Government Entity (NCAGE) Codes	Code de l'OTAN d'organisme commercial ou gouvernemental	DID / DED LS-05, LS-21, LS-25	https://www.nato.int/structur/ac/135/welcome.htm
STANAG 2290 AST (Edition 2)	NATO Unique Identification of Items	Identification unique des articles de l'OTAN	DID / DED LS-21	https://www.nato.int/structur/ac/135/welcome.htm

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
STANAG 4347	Definition of Nominal Static Range Performance for Thermal Imaging Systems	Définition des performances nominales de portée statique des systèmes d'imagerie thermique	SRS / SES Section 4.3.3.2	STANAG 4347 NATO STANDARDIZATION AGREEMENT DEFINITION (everyspec.com)
STANAG 4370	Environmental Testing	Essais environnementaux	SRS / SES Section 6.3.1, 6.3.2	Open Source
Standard AAITP-08	NATO Unique Identification if Items	Not available in French Pas disponible en français	SRS / SES Section 6.5.2.1	Open Source

2.6 Industry Standards and other References / Normes de l'industrie et autres références

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
ANSI/AIM BC4-1999	Linear (One-Dimensional) Bar Code Symbologies		DID / DED LS-21	Open Source
ANSI/EIA-649-C	National Consensus Standard for Configuration Management		DID / DED SE-01	Open Source
ANSI Z136.1	American National Standard Institute Standard, Safe Use of Lasers	Not available in French Pas disponible en français	SRS / SES Section 4.3.1.3, 4.3.5	Open Source
ASME Y14.24	Types and Applications of Engineering Drawings	Not available in French Pas disponible en français	DID / DED LS-10	Open Source
ASME Y14.34	Associated Lists	Not available in French Pas disponible en français	DID / DED LS-10	Open Source
ASME Y14.100	Engineering Drawing Practices	Not available in French Pas disponible en français	DID / DED LS-10	Open Source
Bluetooth v4.1	Specification	Not available in French	SRS / SES	Core Specification 4.1 – Bluetooth® Technology Website

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
		Pas disponible en français	Section 4.4.4.1, 4.4.7.2	
CAN/CSA-Z234.1	Canadian Metric Practice Guide	Not available in French Pas disponible en français	DID / DED LS-10	Open Source
CAN/CSA-ISO 10005-05 (R2015)	Quality Management Systems – Guidelines for Quality Plans	Systèmes de gestion de la qualité – Lignes directrices pour les plans de qualité.	DID / DED PM-07	Open Source
CAN/CSA-ISO 9001-16	Quality Management Systems - Requirements	Systèmes de gestion de la qualité – Exigences	DID / DED PM-07	CAN/CSA-ISO 9001:16 (R2020) | Product | CSA Group
EIA649C	Configuration Management Standard	Not available in French Pas disponible en français	SOW ACQ / EDT ACQ Section 5.1 DID / DED SE-01	Open Source
GEIA-STD-0007-B	Logistics Product Data	Not available in French Pas disponible en français	DID / DED LS-09	Open Source
IEEE 802.3-2018	IEEE Standard for Ethernet	Not available in French Pas disponible en français	SRS / SES Section 5.16	Open Source
IEEE 802.11-2020	IEEE Standard for Information Technology--Telecommunications And Information Exchange Between Systems - Local And Metropolitan Area Networks--Specific Requirements - Part 11: Wireless LAN Medium Access Control (MAC) And Physical Layer (PHY) Specifications	Not available in French Pas disponible en français	SRS / SES Section 4.4.4.1, 4.4.8.2	Open Source
IEEE 15288	Standard for Systems and Software Engineering – System Life Cycle Processes	Not available in French Pas disponible en français	DID / DED SE-01	Open Source

Document ID ***ID du document***	***Title (English Version)*** ***Titre (version anglais)***	***Title (French Version)*** ***Titre (version français)***	***Location of Reference*** ***Emplacement de référence***	***Source***
ISO 9001.2015	Quality Management Systems - Requirements	Not available in French Pas disponible en français	SOW ACQ / EDT ACQ Section 7.2 SOW ISS / EDT SES Section 4.2	Open Source
ISO 9660	Information Processing – Volume and File Structure of CD ROM for Information Interchange	Not available in French Pas disponible en français	DID / DED LS-10	Open Source
TERMIUM Plus®	Government of Canada's terminology and linguistic data bank	La banque de données terminologiques et linguistiques du gouvernement du Canada.	SOW ACQ / EDT ACQ Section 2.5 SOW ISS / EDT SES Section 2.8	https://www.btb.termiumplus.gc.ca/tpv2alpha/alpha-eng.html?lang=eng
TIFF Revision 6	TIFF (Tagged Image File Format, Revision 6.0) - A tag-based file format for storing and interchanging raster images	Not available in French Pas disponible en français	DID / DED LS-10	TIFF ª Revision 6.0 - DocsLib
WGS-84	Wold Geodetic System - 1984	Not available in French Pas disponible en français	SRS / SES Section 4.5.2	Foreword.fm (icao.int)

3 Acronyms and Abbreviations / Sigles et abréviations

3.1 English to French / Anglais vers français

Acronyms and Abbreviations	*Definition*	*Sigles et abréviations*	*Définition*
ABL	Allocated Baseline	ABL	Base allouée
ACQ	Acquisition	ACQ	Acquisition
AIR	Action Item Report	RMS	Rapport sur les mesures suivi
ANNLY	Annually	ANNLY	Annuellement
ASREQ	As required	ASREQ	Comme demandé
ATAK	Android Tactical Assault Kit	ATAK	Kit d'assaut tactique Android
BER	Beyond Economical Repair	RNR	Réparation non rentable
BIT	Built in Test	TI	Test intégré
BLR	Beyond Local Repair	NRSP	Non réparable sur place
BMS	Battle Management System	SGC	Système de gestion du combat
CA	Contracting Authority	AC	Autorité contractante
CADPAT	Canadian Disruptive Pattern	DCamC	Dessin de camouflage canadien
CAGE	Commercial And Government Entity Code	CAGE	Code d'entité commerciale et gouvernementale
CAP	Configuration Audit Plan	CAP	Plan de vérification de la configuration
CAR	Configuration Audit Report	CAR	Rapport de vérification de la configuration
CATEU	Canadian Forces Testing and Evaluation Unit	UACEE	Unité de l'Armée Canadienne d'essais et d'évaluation
CBIL	Consumable and Bulk Item List	LACV	Liste d'article consommable et en vrac
CCB	Change Control Board	CCC	Conseil de contrôle des changements
CDRL	Contract Data Requirement List	LDEC	Liste des données Contractuelles
CEIL	Contract End Item List	LEAC	Liste des éléments de fin de contrat
25 CFSD	25 Canadian Forces Supply Depot	25 DAFC	25e Dépôt d'approvisionnement des Forces canadiennes
CF-31	Panasonic Toughbook CF-31	CF-31	Panasonic Toughbook CF-31
CFTO	Canadian Forces Technical Order	ITFC	Instruction technique des Forces Canadienne
CI	Configuration Item	EC	Élément de configuration

Acronyms and Abbreviations	***Definition***	***Sigles et abréviations***	***Définition***
CLIN No	Contract Line-Item Number	CLIN No	Liste des numéros d'article du contrat
CM	Configuration Management	GC	Gestion de la configuration
CNR	Cannot Resolve	CNR	Impossible de séparer
CMP	Configuration Management Plan	PGC	Plan de gestion de la configuration
CoT	Curser on Target	CoT	Curseur sur la cible
COTS	Commercial off the Shelf	COTS	Commercial sur étagère
CSA	Configuration Status Accounting	DEC	Documentation sur l'état de la configuration
CSCI	Computer Software Configuration item	CSCI	Élément de configuration logicielle
CSIL	Contracted Supported Items List	LEPCC	Liste des éléments pris en charge sous contrat
CSRL	Contract Services Requirements List	LESC	Liste des exigences des services contractuels
CTAT	Controlled technology Access and Transfer	ATTC	Accès et transfert de la technologie contrôlée
CWB	Conformal Wearable Battery	BPC	Batterie portable conforme
DAGR	Defence Advanced GPS Receiver	DAGR	Récepteur GPS évolué pour la défense
DID	Data Item Description	DED	Description d'élément de données
DD/DoD	Department of Defense	DoD	Département de la défense
DLR	Director of Land Requirements	DBRT	Directeur – Besoins en ressources terrestres
DM	Data Management	GD	Gestion des données
DND	Department of National Defence	DN	Défense nationale
DNR	Director Naval Requirements	DBM	Directeur – Besoins de la Marine
DMC	Demilitarisation Code	CDM	Codes de démilitarisation
DOORS	Dynamic Object-Oriented Requirements System	DOORS	Dynamic Object-Oriented Requirements System
DRI	Detection, Recognition, and Identification	DRI	Détection, reconnaissance et identification
DRMIS	Defence Resource Management Information System	SIGRD	Système d'information de la gestion des ressources de la défense
EBP	External Battery Pack	BBE	Bloc de batterie externe
EBS	Equipment Breakdown Structure	SRE	Structure de répartition de l'équipement
ECP	Engineering Change Proposal	PMT	Proposition de modification technique

Acronyms and Abbreviations	***Definition***	***Sigles et abréviations***	***Définition***
ECR	Engineering Change Request	DMT	Demande de modification technique
EDS	Equipment Data Summary	EDS	Résumé des données d'équipement
EEA	Equipment Environmental Assessment	EEE	Évaluation environnementale de l'équipement
EMS	Environmental Management System	SGE	Système de gestion de l'environnement
EMT	Equipment Management Team	EGE	Équipe de gestion de l'équipement
EO	Electronic-Optronic	EO	Électronique et optronique
EHS	Environmental Health and Safety	ESS	Environnement, santé et sécurité
EUD	End User Device	AUF	Appareil de l'Utilisateur Final
EVA	Ethylene-Vinyl Acetate	EAV	Éthylène-acétate de vinyle
FAAT	First Article Acceptance Test	EAPA	Essai d'acceptation du premier article
FCA	Functional Configuration Audit	ACF	Audit de la configuration fonctionnelle
FM	Fairness Monitor	SE	Surveillant de l'équité
FOV	Field of View	FOV	Champs de vision
FSR	Field Service Representative	FSR	Représentant détaché
FTP	File Transfer Protocol	FTP	Protocole de transfert de fichiers
GFE	Government-Furnished Equipment	EFG	Équipement fourni par le gouvernement
GQA	Government Quality Assurance	AQG	Assurance de la qualité du gouvernement
GSM	Government Supply Material	BFG	Bien fournis par le gouvernement
HAZMAT	Hazardous Material	HAZMAT	Matière dangereuse
IAIL	Issue and Action Item Log	RPMS	Registre des problèmes et des mesures à suivre
ICD	Interface Control Document	DCI	Document de contrôle des interfaces
ICT	Initial Cadre Training	FMCII	Formation des membres du cadre initial d'instruteur
ILS	Integrated Logistics Support	SLI	Soutien logistique intégré
ILSM	Integrated Logistics Support Manager	GSLI	Gestionnaire de soutien logistique intégré
ILSP	Integrated Logistics Support Plan	PSLI	Plan de soutien logistique intégré
ISED	Innovation, Science and Economic Development	ISDE	Innovation, Sciences et Développement économique
ISO	International Standards Organisation	ISO	Organisation internationale de normalisation

Acronyms and Abbreviations	***Definition***	***Sigles et abréviations***	***Définition***
ISS	In-Service Support	SES	Soutien en service
ISS	Integrated Soldier System	EIS	Équipement intégré du soldat
ISSMP	In-Service Support management Plan	PGSS	Plan de gestion du soutien en service
ISS BMS	Intergrated Soldier System Battle Management System	SGC de l'EIS	Système de gestion du combat de l'équipement intégré du soldat
ITB	Industrial and Technological Benefits	RIT	Retombées industrielles et Technologiques
LAD	Laser Aiming Device	DVL	Dispositif de visée laser
LBO	Last Buy Order	DOA	Dernier ordre d'achat
LCMM	Live Cycle Materiel Manager	GCVM	Gestionnaire du cycle de vie du matériel
LIBI AP	LRF HHTI-LR / ISS BMS Interface ATAK Plugins	PA ITSE	Plugins ATAK de l'interface du TL ITP-LP / SGC de l'EIS
LRF HHTI-LR	Laser Range Finder Handheld Thermal Imager – Long Range	TL ITP-LP	Télémètre laser Imageur thermique portatif – longue portée
LRU	Line Replaceable Unit	LRU	Unité remplaçable au premier échelon
LS	Logistic Support	SL	Soutien logistique
LSA	Logistics Support Analysis	LSA	Analyse du soutien logistique
LSDS	Laser safety Data Sheet	LSDS	Fiche de données de sécurité laser
MCN	Material Change Notice	ACM	Avis de changement des matériels
METC	Munitions Experimental Test Centre	CEEM	Centre d'essais et d'expérimentation en munitions
MGC	Manual Gain Control	CGM	Commande de gain manuelle
MNTHY	Monthly	MNTHY	Mensuelle
MOTS	Military off the Shelf	MOTS	Militaire sur étagère
MPS	Master Project Schedule	PDP	Plan directeur de production
MRC	Maximum Repair Cost	MRC	Coût maximal des réparations
MRC	Minimum Resolvable Contrast	CMS	Contraste minimal séparable
MTBF	Mean Time Between Failure	MTBF	Temps moyen entre pannes
NOR	Notice of Revision	NOR	Avis de révision
MRTD	Minimum Resolvable Temperature Difference	DTMS	Différence de température minimal séparable
NSCM	NATO Supply Code for Manufacturers	NSCM	Code OTAN des fabricants

Acronyms and Abbreviations	***Definition***	***Sigles et abréviations***	***Définition***
NVSM	Night Vision Systems Modernisation	MSVN	Modernisation des systèmes de vision nocturne
OEM	Original Equipment Manufacture	FEO	Fabricant d'équipement d'origine
OMIR	Obsolescence Management Issues Report	RQGO	Rapport des questions de gestion de l'obsolescence
ONE/R	One time plus revisions	ONE/R	Une fois plus révision
OPI	Office of Primary Responsibility	BPR	Bureau de première responsabilité
PA	Procurement Authority	RA	Responsable des approvisionnements
PAPCAR	Prohibition of Asbestos and Products containing Asbestos Regulations	RIAPCA	Règlement interdisant l'amiante et les produits contenant de l'amiante
PCA	Physical Configuration Audit	ACP	Audit de configuration physique
PCB	Polychlorinated Biphenyls	BPC	Biphényles polychlorés
PDF	Portable Document Format	PDF	Format de document portable
PE	Polyethylene	PE	Polyéthylène
PM	Project Management	GP	Gestionnaire de projet
PMO	Project Management Office	BGP	Bureau de gestion de projet
PMP	Project Management Plan	PGP	Plan de gestion de projet
PPB	Provisioning Parts Breakdown	EDA	État détaillé d'approvisionnement
PPE	Personal Protective Equipment	EPI	Équipement de protection individuelle
PRM	Progress Review Meetings	REAT	Réunion de vérification de l'avancement des travaux
PRS	Permissible Repair Schedule	LRP	Liste des réparations permises
PSPC	Public Services and Procurement Canada	SPAC	Services publics et Approvisionnement Canada
PVC	Polyvinyl Chloride	CPV	Chlorure de polyvinyle
P/N	Part Number	N/P	Numéro de pièce
QA	Quality Assurance	AQ	Assurance de la qualité
QAR	Quality Assurance Representative	RAQ	Représentant d'assurance de la qualité
QETE	Quality Engineering Test Establishment	CETQ	Centre d'essais techniques de la qualité
QRG	Quick Reference Guide	GRR	Guide de référence rapide
RCE	Repaire Cost Estimates	ECR	Estimations des coûts de réparation
RFD	Request for Deviation	DD	Demande de dérogation

Acronyms and Abbreviations	***Definition***	***Sigles et abréviations***	***Définition***
RFD	Ruggedized Flash Drive	RFD	Clé USB renforcée
RFP	Request for Proposal	DP	Demande de proposition
RFW	Request for Waiver	RFW	Demande de renonciation
RMA	Repairable Material Account	CMR	Compte de matériel réparable
R&O	Repair and Overhaul	R & R	Réparation et révision
RSDL	Reactive Skin Decontaminant Lotion	RSDL	Lotion décontaminant cutanée réactive
RSERL	Recommended Support Equipment Requirements List	LBESR	Liste des besoins d'équipement de soutien recommandé
RSPL	Recommended Spare Parts List	LPRR	Liste des pièces de rechange recommandées
RTL	Ruggedized Tactical Laptop	RTL	Ordinateur portable tactique et robuste
RTVM	Requirements Traceability and Verification Matrix	MTVE	Matrice de traçabilité et de vérification des exigences
RVM	Requirements Verification Matrix	MVE	Matrice de vérification des exigences
SACC	Standard Acquisition Clauses and Conditions	CCUA	Clauses et conditions uniformisées d'achat
SAR	Sparing Analysis Report	SAR	Rapport d'analyse de pièces de rechange
SAT	System Acceptance Test	EAS	Essai d'acceptation du système
SCN	Specification Change Notice	SCN	Spécification de changement notifié
SDC Site	Secure Document Collaboration Site	Site de CDS	Site de collaboration documentaire sécurisé
SDD	System Design Description	SDD	Description de la conception du système
SDR	System Design Review	ECS	Examen de la conception du système
SE	Systems Engineering	SE	Ingénierie des systèmes
SEM	System Engineering Manager	GIS	Gestionnaire d'ingénierie des systèmes
SEMP	Systems Engineering Management Plan	PGIS	Plan de gestion d'ingénierie des systèmes
SEV	Special Equipment Vehicle	VSE	Véhicule spécialement équipé
SL	Shelf Life	SL	Durée de conservation
SN	Serial Number	NS	Numéro de série
SOR	Statement of Operational Requirement	EBO	Énoncé des besoins opérationnels
SOW	Statement of Work	ÉDT	Énoncé de travail

Acronyms and Abbreviations	***Definition***	***Sigles et abréviations***	***Définition***
SPTD	Supplementary Provisioning Technical Data	DTAS	Documentation technique sur l'approvisionnement supplémentaire (DTAS)
SRCL	Security Requirements Checklist	LVERS	Liste de vérification des exigences relatives à la sécurité
SRR	System Requirement Review	EES	Examen des exigences du système
SRS	System Requirement Specification	SES	Spécification des exigences du système
SRT	Standard Repair Times	TNR	Temps normal de réparation
SSHI	Stowage, Shipping, and Handling Instructions	SSHI	Instruction d'arrimage, d'expédition et de manutention
SST	System Subject to Test	SST	Système soumis au test
STTE	Special tools and Test Equipment	OEES	Outils et équipements d'essai spécialisés
SVDD	Software Version Description	DDVL	Description de la version du logiciel
TA	Technical Authority	AT	Autorité technique
TAT	Turn-Around-Time	DE	Délai d'exécution
Tb	Background Temperature	Tb	Température de fond
TCR	Test Completion Review	RFE	Révision de fin d'essai
TDP	Technical Data Package	EDT	Ensemble de données techniques
TEM	Test & Evaluation Manager	GEE	Gestionnaire des essais et de l'évaluation
TER	Test Evaluation Review	RET	Révision de l'évaluation des tests
TFR	Technical Failure Report	RD	Rapport de défectuosité
TI	Thermal Imagery	IT	Imagerie thermique
TIES	Technical Investigation and Engineering Support	SETI	Soutien d'étude technique et d'ingénierie
TPM	Technical Problem Management	GTP	Gestion des problèmes techniques
TPS	Technical Performance Specification	TPS	Normes de performance technique
TRR	Test Readiness Review	RPE	Révision de la préparation à l'essai
UAPE	User Acceptance Performance Evaluation	EARU	Évaluation de l'acceptation du rendement par les utilisateurs
UCR	Unsatisfactory Condition Report	RENS	Rapport d'état non satisfaisant
UID	Unique Identification Data	UID	Spécification du marquage
UII	Unique Item Identifier	IAU	Identificateur d'article unique
UOI	Unit of Issue	UOI	Unité d'émission

Acronyms and Abbreviations	***Definition***	***Sigles et abréviations***	***Définition***
VP	Value Proposition	PV	Proposition de valeur
WBS	Work Breakdown Structure	SRT	Structure de réparation du travail
WD	Working Day	WD	Jour ouvrable
202 WD	202 Workshop Depot	202 DA	202e Dépôt d'ateliers
WHMIS	Workplace Hazardous Material Information System	SIMDUT	Système d'information sur les matières dangereuses utilisées au travail
WKS	Weeks	WKS	Semaines

3.2 French to English / Français vers Anglais

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
ABL	Base allouée	ABL	Allocated Baseline
AC	Autorité contractante	CA	Contracting Authority
ACF	Audit de la configuration fonctionnelle	FCA	Functional Configuration Audit
ACM	Avis de changement des matériels	MCN	Material Change Notice
ACP	Audit de configuration physique	PCA	Physical Configuration Audit
ACQ	Acquisition	ACQ	Acquisition
ANNLY	Annuellement	ANNLY	Annually
AO	Appel d'offre	RFP	Request for Proposal
AQ	Assurance de la qualité	QA	Quality Assurance
ASL	Analyse du soutien logistique	LSA	Logistics Support Analysis
ASREQ	Comme demandé	ASREQ	As required
AT	Autorité technique	TA	Technical Authority
ATAK	Kit d'assaut tactique Android	ATAK	Android Tactical Assault Kit
ATTC	Accès et transfert de la technologie contrôlée	CTAT	Controlled technology Access and Transfer
BBE	Bloc de batterie externe	EBP	External Battery Pack
BFG	Biens fournis par le gouvernement	GSM	Government-Supplied Material
BGP	Bureau de gestion du projet	PMO	Project Management Office
BPC	Diphényles polychlorés	PCB	Polychlorinated Biphenyls
BPC	Batterie portable conforme	CWB	Conformal Wearable Battery

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
BPR	Bureau de première responsabilité	OPI	Office of Primary Responsibility
CAGE	Code d'entité commerciale et gouvernementale	CAGE	Commercial And Government Entity Code
CAP	Plan de vérification de la configuration	CAP	Configuration Audit Plan
CAR	Rapport de vérification de la configuration	CAR	Configuration Audit Report
CCB	Change Control Board	CCC	Conseil de contrôle des changements
CCC	Conseil de contrôle des changements	CCB	Change Control Board
CCUA	Clauses et conditions uniformisées d'achat	SACC	Standard Acquisition Clauses and Conditions
CDM	Codes de démilitarisation	DMC	Demilitarisation Code
CEEM	Centre d'essais et d'expérimentation en munitions	METC	Munitions Experimental Test Centre
CEIL	Liste des éléments de fin de contrat	CEIL	Contract End Item List
CETQ	Centre d'essais techniques de la qualité	QETE	Quality Engineering Test Establishment
CF-31	Panasonic Toughbook CF-31	CF-31	Panasonic Toughbook CF-31
CI	Élément de configuration	CI	Configuration Item
CLIN No	Liste des numéros d'article du contrat	CLIN No	Contract Line-Item Number
CMS	Contraste minimal séparable	MRC	Minimum Resolvable Contract
CMR	Compte de matériel réparable	RMA	Repairable Material Account
CNR	Impossible de séparer	CNR	Cannot Resolve
CoT	Curseur sur la cible	CoT	Curser on Target
COTS	Commercial sur étagère	COTS	Commercial off the Shelf
CPV	Chlorure de polyvinyle	PVC	Polyvinyl Chloride
CSCI	Élément de configuration logicielle	CSCI	Computer Software Configuration item
202 DA	202e Dépôt d'ateliers	202 WD	202 Workshop Depot
25 DAFC	25e Dépôt d'approvisionnement des Forces canadiennes	25 CFSD	25 Canadian Forces Supply Depot
DAGR	Récepteur GPS évolué pour la défense	DAGR	Defence Advanced GPS Receiver
DBM	Directeur – Besoins de la Marine	DNR	Director Naval Requirement

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
DBRT	Directeur – Besoins en ressources terrestres	DLR	Director of Land Requirements
DCamC	Dessin de camouflage canadien	CADPAT	Canadian Disruptive Pattern
DCI	Document de contrôle des interfaces	ICD	Interface Control Document
DD	Demande de dérogation	RFD	Request for Deviation
DDVL	Description de la version du logiciel	SVDD	Software Version Description
DE	Délai d'exécution	TAT	Turn-Around-Time
DEC	Documentation sur l'état de la configuration	CSA	Configuration Status Accounting
DED	Description d'élément de données	DID	Data Item Description
DMT	Demande de modification technique	ECR	Engineering Change Request
DN	Défense nationale	DND	Department of National Defence
DOA	Dernier ordre d'achat	LBO	Last Buy Order
DoD	Département de la défense	DD/DoD	Department of Defense
DOORS	Dynamic Object-Oriented Requirements System	DOORS	Dynamic Object-Oriented Requirements System
DMT	Demande de modification technique	ECR	Engineering Change Request
DP	Demande de proposition	RFP	Request for proposal
DRI	Détection, reconnaissance et identification	DRI	Detection, Recognition and Identification
DTAS	Documentation technique sur l'approvisionnement supplémentaire (DTAS)	SPTD	Supplementary Provisioning Technical Data
DTMS	Différence de température minimal séparable	MRTD	Minimum Resolvable Temperature Difference
DVL	Dispositif de visée laser	LAD	Laser Aiming Device
EARU	Évaluation de l'acceptation du rendement par les utilisateurs	UAPE	User Acceptance Performance Evaluation
EAS	Essai d'acceptation du système	SAT	System Acceptance Test
EAV	Éthylène-acétate de vinyle	EVA	Ethylene-Vinyl Acetate
EBO	Énoncé des besoins opérationnels	SOR	Statement of Operational Requirement
EC	Élément de configuration	CI	Configuration Item
ECR	Estimations des coûts de réparation	RCE	Repair Cost Estimates

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
ECS	Examen de la conception du système	SDR	System Design Review
ED	État détaillé d'approvisionnement	PPB	Provisioning Parts Breakdown
EDS	Résumé des données d'équipement	EDS	Equipment Data Summary
EDT	Ensemble de données techniques	TDP	Technical Data Package
ÉDT	Énoncé de travail	SOW	Statement of Work
EEE	Évaluation environnementale de l'équipement	EEA	Equipment Environmental Assessment
EES	Examen des exigences du système	SRR	System Requirements Review
EFG	Équipement fourni par le gouvernement	GFE	Government-Furnished Equipment
EGE	Équipe de gestion de l'équipement	EMT	Equipment Management Team
EIS	Équipement intégré du soldat	ISS	Integrated Soldier System
EO	Électronique et optronique	EO	Electronic-Optronic
EFG	Bien fournis par le gouvernement	GSM	Government Supply Material
EPI	Équipement de protection individuelle	PPE	Personal Protective Equipment
ESS	Environnement, santé et sécurité	EHS	Environmental Health and Safety
EUD	Dispositif d'utilisateur final	EUD	End User Device
FAAT	Essai d'acceptation du premier article	FAAT	First Article Acceptance Test
FCA	Audit de la configuration fonctionnelle	FCA	Functional Configuration Audit
FEO	Fabricant d'équipement d'origine	OEM	Original Equipment Manufacture
FMCII	Formation des membres du cadre initial d'instructeurs	ICT	Initial Cadre Training
FOV	Champs de vision	FOV	Field of View
FSR	Représentant détaché	FSR	Field Service Representative
FTP	Protocole de transfert de fichiers	FTP	File Transfer Protocol
GC	Gestion de la configuration	CM	Configuration Management
GCVM	Gestionnaire du cycle de vie du matériel	LCMM	Life Cycle Material Manager
GD	Gestion des données	DM	Data Management
GEE	Gestionnaire des essais et de l'évaluation	TEM	Test & Evaluation Manager
GP	Gestionnaire de projet	PM	Project Management

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
GIS	Gestionnaire d'ingénierie des systèmes	SEM	System Engineering Manager
GPT	Gestion des problèmes techniques	TPM	Technical Problem Management
GQA	Assurance officielle de la qualité	GQA	Government Quality Assurance
GRR	Guide de référence rapide	QRG	Quick Reference Guide
GSLI	Gestionnaire de soutien logistique intégré	ILSM	Integrated Logistics Support Manager
HAZMAT	Matière dangereuse	HAZMAT	Hazardous Material
IAU	Identificateur d'article unique	UII	Unique Item Identifier
PSLE	Plan de soutien logistique intégré	ILSP	Integrated Logistics Support Plan
ISDE	Innovation, sciences et développement économique	ISED	Innovation, Science and Economic Development
ISO	Organisation internationale de normalisation	ISO	International Standards Organisation
IT	Imagerie thermique	TI	Thermal Imagery
ITFC	Instruction technique des Forces Canadienne	CFTO	Canadian Forces Technical Order
LACV	Liste d'article consommable et en vrac	CBIL	Consumable and Bulk Item List
LBESR	Liste des besoins d'équipement de soutien recommandé	RSERL	Recommended Support Equipment Requirements List
LDEC	Liste des données Contractuelles	CDRL	Contract Data Requirement List
LEAC	Liste des éléments de fin de contrat	CEIL	Contract End Items List
LPRR	Liste des pièces de rechange recommandées	RSPL	Recommended Spare Parts List
LRP	Liste des réparations permises	PRS	Permissible Repair Schedule
LRU	Unité remplaçable au premier échelon	LRU	Line Replaceable Unit
LSDS	Fiche de données de sécurité laser	LSDS	Laser safety Data Sheet
LVERS	Liste de vérification des exigences relatives à la sécurité	SRCL	Security Requirements Checklist
CGM	Commande de gain manuelle	MGC	Manual Gain Control
MNTHY	Mensuelle	MNTHY	Monthly
MOTS	Élément militaire standard	MOTS	Military off the Shelf
MRC	Coût maximal des réparations	MRC	Maximum Repair Cost
MSVN	Modernisation des systèmes de vision nocturne	NVSM	Night Vision Systems Modernisation

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
MTBF	Temps moyen entre pannes	MTBF	Mean Time Between Failure
MTVE	Matrice de traçabilité et de vérification des exigences	RTVM	Requirements Traceability and Verification Matrix
MVE	Matrice de vérification des exigences	RVM	Requirements Verification Matrix
N/P	Numéro de pièce	P/N	Part Number
OEES	Outils et équipements d'essai spécialisés	STTE	Special Tools and Test Equipment
NOR	Avis de révision	NOR	Notice of Revision
NRSP	Non réparable sur place	BLR	Beyond Local Repair
NS	Numéro de série	SN	Serial Number
NSCM	Code OTAN des fabricants	NSCM	NATO Supply Code for Manufacturers
ONE/R	Une fois plus révision	ONE/R	One time plus revisions
PDF	Format de document portable	PDF	Portable Document Format
PDP	Plan directeur de production	MPS	Master Project Schedule
PE	Polyéthylène	PE	Polyethylene
PGC	Plan de gestion de la configuration	CMP	Configuration Management Plan
PGDT	Plan de gestion de données techniques	TDMP	Technical Data Management Plan
PGIS	Plan de gestion d'ingénierie des systèmes	SEMP	Systems Engineering Management Plan
PGP	Plan de gestion des projets	PMP	Project Management Plan
PGSS	Plan de gestion de soutien en service	ISSMP	In-Service Support Management Plan
PMT	Proposition de modification technique	ECP	Engineering Change Proposal
PSLI	Plan de soutien logistique intégré	ILSP	Integrated Logistics Support Plan
PV	Proposition de valeur	VP	Value Proposition
R & R	Réparation et révision	R&O	Repair and Overhaul
RA	Responsable des approvisionnements	PA	Procurement Authority
RAQ	Représentant d'assurance de la qualité	QAR	Quality Assurance Representative
RD	Rapport de défectuosité	TFR	Technical Failure Report
REAT	Réunion d'examen de l'avancement des travaux	PRM	Progress Review Meeting
REL	Révision de l'évaluation logistique	LAR	Logistic Assessment Review

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
RENS	Rapport d'état non satisfaisant	UCR	Unsatisfactory Condition Report
RET	Révision de l'évaluation des tests	TER	Test Evaluation Review
RFD	Clé USB renforcée	RFD	Ruggedized Flash Drive
RFE	Révision de fin d'essai	TCR	Test Completion Review
RFW	Demande de renonciation	RFW	Request for Waiver
RIAPCA	Règlement interdisant l'amiante et les produits contenant de l'amiante	PAPCAR	Prohibition of Asbestos and Products containing Asbestos Regulations
RIT	Retombées industrielles et Technologiques	ITB	Industrial and Technological Benefits
RMS	Rapport sur les mesures suivi	AIR	Action Item Report
RNR	Réparation non rentable	BER	Beyond Economical Repair
RPE	Révision de la préparation à l'essai	TRR	Test Readiness Review
RPMS	Registre des problèmes et des mesures à suivre	IAIL	Issue and Action Item Log
RQGO	Rapport des questions de gestion de l'obsolescence	OMIR	Obsolescence Management Issues Report
RSDL	Lotion décontaminante cutanée réactive	RSDL	Reactive Skin Decontaminant Lotion
RTL	Ordinateur portable tactique et robuste	RTL	Ruggedized Tactical Laptop
SAR	Rapport d'analyse de pièces de rechange	SAR	Sparing Analysis Report
SES	Spécification des exigences du système	SRS	System Requirement Specification
SCN	Spécification de changement notifié	SCN	Specification Change Notice
SDR	Examen de la conception du système	SDR	System Design Review
SE	Surveillant de l'équité	FM	Fairness Monitor
SE	Ingénierie des systèmes	SE	Systems Engineering
SES	Soutien en service	ISS	In-Service Support
SES	Spécification des exigences du système	SRS	System Requirement Specification
SETI	Soutien d'étude technique et d'ingénierie	TIES	Technical Investigation and Engineering Support
SGC	Système de gestion du combat	BMS	Battle Management System

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
SGE	Système de gestion de l'environnement	EMS	Environmental Management System
SIGRD	Système d'information de la gestion des ressources de la défense	DRMIS	Defence Resource Management Information System
SIMDUT	Système d'information sur les matières dangereuses utilisées au travail	WHMIS	Workplace Hazardous Material Information System
SL	Soutien logistique	LS	Logistic Support
SL	Durée de conservation	SL	Shelf Life
SLI	Soutien logistique intégré	ILS	Integrated Logistics Support
SPAC	Services publics et Approvisionnement Canada	PSPC	Public Services and Procurement Canada
SRE	Structure de répartition de l'équipement	EBS	Equipment Breakdown Structure
SRT	Structure de réparation du travail	WBS	Work Breakdown Structure
SSHI	Instruction d'arrimage, d'expédition et de manutention	SSHI	Stowage, Shipping, and Handling Instructions
SST	Système soumis au test	SST	System Subject to Test
SVDD	Description de la version du logiciel	SVDD	Software Version Description
TL ITP-LP	Télémètre laser – Imageur thermique portatif de longue portée	LRF HHTI-LR	Laser Range Finder Handheld Thermal Imager - Long Range
TI	Test intégré	BIT	Built in Test
TIES	Recherches et appui techniques	TIES	Technical Investigation and Engineering Support
TNR	Temps normal de réparation	SRT	Standard Repair Times
TPS	Normes de performance technique	TPS	Technical Performance Specification
UACEE	Unité de l'Armée Canadienne d'essais et d'évaluation	CATEU	Canadian Forces Testing and Evaluation Unit
UAPE	Évaluation des performance d'acceptance par les utilisateurs	UAPE	User Acceptance Performance Evaluation
UID	Spécification du marquage	UID	Unique Identification Data
UOI	Unité d'émission	UOI	Unit of Issue
VCP	Vérification de la configuration physique	PCA	Physical Configuration Audit
VSE	Véhicule spécialement équipé	SEV	Special Equipment Vehicle
WD	Jour ouvrable	WD	Working Day

Sigles et abréviations	***Définition***	***Acronyms and Abbreviations***	***Definition***
WKS	Semaines	WKS	Weeks

4 Glossary / Glossaire

The primary glossary for terminology used in this document set is the Government of Canada's terminology and linguistic data bank Termium Plus®. The definition of terms defined below take precedence over the definitions provided in Termium Plus®.	Le glossaire principal de la terminologie utilisée dans cet ensemble de documents est la banque de données terminologiques et linguistiques du gouvernement du Canada Termium Plus®. La définition des termes définis ci-dessous prévaut sur les définitions fournies dans le Termium Plus®.

4.1 Terminology / Definition (English)

Terminology	***Definition***
Analysis - Test	A verification method involving the processing of accumulated data from one or more test reports. A test involves the operation of the system, or a part of the system, using instrumentation or other special test equipment to collect data for later analysis. The test is conducted by an independent testing organization.
Analysis – Evidence	A verification method involving the processing of accumulated data from the results of previously conducted methods of verification, or from the extraction from artifacts of system realization (such as design documentation, component specification sheets, manuals, etc.)
Android Tactical Assault Kit.	It is a smartphone geospatial application originally developed for Android phones and tablets. Tactical uses include mission planning, situation awareness (SA), mission execution, and call for fire solutions.
Built In Test (BIT)	An integral capability of the equipment that provides an on-board test capability to detect, to diagnose, or isolate system failures. The fault detection and, possibly, isolation capability is used for periodic or continuous monitoring of a system's operational health, and for observation and, possibly, diagnosis as a prelude to maintenance action.
CF-31 Laptop	Panasonic Toughbook CF-31
Compatibility	** The suitability of products, processes or services for use together under specific conditions to fulfil relevant requirements without causing unacceptable interactions. Capability of two or more items or components of equipment or material to exist or function in the same system or environment without mutual interference.
Corrective Maintenance	Maintenance actions carried out to restore a defective item to a specified condition.
Demonstration	A verification method involving the operation of the system, or a part of the system, that relies on observable functional operation not requiring the use of instrumentation, special test equipment, or subsequent analysis.
Durability	The ability of an item to survive to the end of its "design life" when it s not subjected to "over-stress" conditions.
Fault Detection	A process which discovers the existence of faults.
Fault Isolation	Where a fault is known to exist, the process of determining the location of a fault to the extent necessary to effect repair.
GUI	Graphical User Interface. Software part of the User Interface that presents icons and visual indicators that the User can select and click using a pointer style

Terminology	***Definition***
	approach. The Graphical User Interface is independent and excludes the physical controls required to move the pointer and activate the selection of the icons.
Inspection	A verification method involving the visual examination of system components, documentation, etc.
Integration for LRF HHTI-LR	** The state of combination or the process of combining into completeness and harmony.
Line Replaceable Unit (LRU)	The LRU is an essential support item which is removed and replaced at field level to restore the LRF HHTI-LR to an operationally ready condition.
Lowest Replaceable Unit (LoRU)	The LoRU is a part, component, or assembly used in the repair of an LRU, when the LRU has failed and has been removed from the LRF HHTI-LR for repair.
Mean Time Between Critical Failures (MTBCF)	It is a measure of mission or functional reliability. Similar to Mean Time Between Failures except that only critical failures are counted. It is a measure of expected time between critical failures. "Minimum acceptable value" means the lower confidence limit of this value, usually taken to be a 90% LCL.
Mean Time Between Failure (MTBF)	A measure of the expected (average) time during which a system will continuously perform within its specified limits under stated conditions. It can be estimated by dividing life units (hours, miles, rounds, etc) accrued during a stated period under stated conditions by the number of failures during the period and is a basic measure of reliability of repairable items. "Minimum acceptable value" means the lower confidence limit of this value, usually taken to be a 90% LCL.
Mean Time to Repair (MTTR)	The average or expected time it takes to repair equipment. It can be estimated by the total elapsed corrective maintenance time divided by the total number of corrective maintenance actions during a given period of time. Typically includes fault isolation, removal and replacement of failed item(s) and checkout.
Operator Maintenance	A subset of Preventive Maintenance carried out by the operator of the system in the operational environment on a periodic basis to ensure the system is in an operable state. Usually limited to system checks, inspection and cleaning.
Preventative Maintenance	Systematic and/or prescribed maintenance intended to reduce the probability of failure.
Qualification	Process of demonstrating whether an entity is capable of fulfilling specified requirements
Recommended Support Equipment	All software and hardware equipment that is recommended by the Contractor to maintain the LRF HHTI-LR in order to meet the requirement of this SOW.
Reliability	The ability of an item to perform its intended function for a specified interval under stated conditions.
Soldier System	Everything worn, carried, and consumed for individual use on the battlefield in a tactical environment.
Standard Ambient Environment	The standard conditions, either outdoor or confined (e.g., temperature and humidity), that characterize the air or other medium that surrounds an item. When the term "standard ambient" is specified use the values shown below. Temperature: 25° ± 10°C Relative humidity: 20 to 80 percent Atmospheric pressure: Site pressure
Start-Up BIT	Start-up BIT is a subset of BIT which is initiated when subsystem electrical power is turned on and terminates before equipment is ready for normal operation. It is

Terminology	***Definition***
	an automatic one-time test sequence that detects and isolates each fault to the corresponding level of maintenance.
Support Equipment	All software and hardware equipment required to sustain the LRF HHTI-LR.
User Acceptance Performance Evaluation	A verification method involving the use of the system or system component by the users under operational or simulated operational conditions to determine that the requirement has been satisfied.

4.2 Terminologie / Définition (français)

Terminologie	***Définition***
Analyse - Preuve	Une méthode de vérification impliquant le traitement des données accumulées à partir des résultats des méthodes de vérification précédemment menées, ou de l'extraction des artefacts de réalisation du système (tels que la documentation de conception, les fiches de spécifications des composants, les manuels, etc.)
Analyse – Test	Une méthode de vérification impliquant le traitement de données accumulées à partir d'un ou plusieurs rapports de test. Un test implique le fonctionnement du système, ou d'une partie du système, à l'aide d'instruments ou d'autres équipements de test spéciaux pour collecter des données en vue d'une analyse ultérieure. Le test est effectué par un organisme de test indépendant.
CF-31 Laptop	Laptop Panasonic Toughbook CF-31
Comtabilité	L'adéquation des produits, processus ou services à être utilisés ensemble dans des conditions spécifiques pour répondre aux exigences pertinentes sans provoquer d'interactions inacceptables. Capacité de deux ou plusieurs éléments ou composants d'équipement ou de matériel à exister ou à fonctionner dans le même système ou environnement sans interférence mutuelle.
Démonstration	Une méthode de vérification impliquant le fonctionnement du système, ou d'une partie du système, qui repose sur un fonctionnement fonctionnel observable ne nécessitant pas l'utilisation d'instruments, d'équipements de test spéciaux ou d'analyses ultérieures.
Détection de fautes	Un processus qui découvre l'existence de défauts.
Durabilité	La capacité d'un article à survivre jusqu'à la fin de sa "durée de vie" lorsqu'il n'est pas soumis à des conditions de "surtension".
Entretien par l'opérateur	Un sous-ensemble de maintenance préventive effectué par l'opérateur du système dans l'environnement opérationnel sur une base périodique pour s'assurer que le système est en état de fonctionnement. Habituellement limité aux vérifications du système, à l'inspection et au nettoyage.
Entretien préventif	Maintenance systématique et/ou prescrite destinée à réduire la probabilité de défaillance.
Environnement ambiant standard	Des conditions standards, extérieures ou confinées (par exemple, température et humidité), qui caractérisent l'air ou un autre milieu qui entoure un article. Lorsque le terme "température ambiante standard" est spécifié, utilisez les valeurs indiquées ci-dessous. Température : 25° ± 10°C Humidité relative : 20 à 80 % Pression atmosphérique : Pression du site

Terminologie	***Définition***
Équipement intégré du soldat (EIS)	L'EIS comprend tout l'équipement acquis par le Canada dans le cadre de PEIS.
Évaluation des performances d'acceptation par les utilisateurs	Une méthode de vérification impliquant l'utilisation du système ou du composant du système par les utilisateurs dans des conditions opérationnelles ou simulées pour déterminer que l'exigence a été satisfaite.
GUI	Interface utilisateur graphique. Partie logicielle de l'interface de l'utilisateur qui présente des icônes et des indicateurs visuels que l'utilisateur peut sélectionner et cliquer à l'aide d'une approche de style pointeur. L'interface de l'utilisateur graphique est indépendante et exclut les commandes physiques nécessaires pour déplacer le pointeur et activer la sélection des icônes.
Inspection	Une méthode de vérification impliquant l'examen visuel des composants du système, de la documentation, etc.
Intégration du TL ITP-LP	Pour TL ITP-LP : 1. L'état de combinaison ou le processus de combinaison dans la plénitude et l'harmonie. 2. En informatique, permet aux données d'un appareil ou d'un logiciel d'être lues ou manipulées par un autre.
Isolement de faute	Lorsqu'un défaut est connu, le processus de détermination de l'emplacement d'un défaut dans la mesure nécessaire pour effectuer la réparation.
Kit d'assaut tactique Android.	Il s'agit d'une application géospatiale pour smartphone développée à l'origine pour les téléphones et tablettes Android. Les utilisations tactiques comprennent la planification de mission, la perception de la situation (SA), l'exécution de mission et l'appel à des solutions de tir.
Maintenance corrective	Actions de maintenance effectuées pour remettre un élément défectueux dans un état spécifié.
Qualification	Processus de démonstration de la capacité d'une entité à satisfaire aux exigences spécifiées
Temps moyen de réparation (MTTR)	Le temps moyen ou prévu qu'il faut pour réparer l'équipement. Il peut être estimé par le temps total de maintenance corrective écoulé divisé par le nombre total d'actions de maintenance corrective pendant une période de temps donnée. Comprend généralement l'identification des pannes, le retrait et le remplacement des éléments défaillants et la vérification.
Temps moyen entre les pannes (MTBF)	Une mesure du temps prévu (moyen) pendant lequel un système fonctionnera en continu dans ses limites spécifiées dans des conditions indiquées. Il peut être estimé en divisant les unités de durée de vie (heures, miles, tours, etc.) accumulées au cours d'une période donnée dans des conditions données par le nombre de pannes au cours de la période et constitue une mesure de base de la fiabilité des éléments réparables. « Valeur minimale acceptable » désigne la limite de confiance inférieure de cette valeur, généralement considérée comme un LCL à 90 %.
Temps moyen entre les pannes critiques (MTBCF)	C'est une mesure de mission ou de fiabilité fonctionnelle. Semblable au temps moyen entre les pannes, sauf que seules les pannes critiques sont comptées. Il s'agit d'une mesure du temps attendu entre les pannes critiques. « Valeur minimale acceptable » désigne la limite de confiance inférieure de cette valeur, généralement considérée comme un LCL à 90 %.
Test intégré (TI)	Capacité intégrale de l'équipement qui fournit une capacité de test embarquée pour détecter, diagnostiquer ou isoler les défaillances du système. La capacité de détection des pannes et, éventuellement, d'isolation est utilisée pour la

Terminologie	***Définition***
	surveillance périodique ou continue de l'état de fonctionnement d'un système, ainsi que pour l'observation et, éventuellement, le diagnostic en prélude à une action de maintenance.
TI de démarrage	Le TI de démarrage est un sous-ensemble de TI qui est lancé lorsque l'alimentation électrique du sous-système est allumée et se termine avant que l'équipement ne soit prêt pour un fonctionnement normal. Il s'agit d'une séquence de test automatique unique qui détecte et isole chaque défaut au niveau de maintenance correspondant.
Unité remplaçable au premier échelon (LRU)	Le LRU est un élément de soutien essentiel qui est retiré et remplacé au niveau d'unité pour remettre le TL ITP-LP dans un état opérationnel.

5 Lexicon / Lexique

The Lexicon provides equivalent Canadian English and Canadian French terms that are to be used in bilingual data deliverables prepared by the Contractor. Terms that appear in Section 3 Acronyms and Abbreviations / are not repeated in the Lexicon. For terminology not included in the lexicon or in the acronyms and abbreviations, refer to the Acquisition SOW Section 2.5 Use of Canadian English and Canadian French in Deliverables.	Le lexique fournit des termes équivalents en anglais canadien et en français canadien qui doivent être utilisés dans les livrables de données bilingues préparés par l'entrepreneur. Les termes qui apparaissent dans la section 3 Sigles et abréviations / ne sont pas répétés dans le Lexique. Pour la terminologie qui n'est pas incluse dans le lexique ou dans les sigles et les abréviations, se reporter à la section 2.5 de l'ÉDT d'acquisition : Utilisation de l'anglais canadien et du français canadien dans les produits livrables.

5.1 English to French Term / Terme anglais au français

English Term / Terme anglais	***French Term / Terme français***
Android Tactical Assault Kit (ATAK)	Kit d'assault tactique Android
Canadian Armed Forces (CAF)	Forces armées canadienne (FAC)
Canadian Environmental Protection Act (CEPA)	Loi canadienne sur la protection de l'environnement (LCPE)
Canadian Forces Base (CFB)	Base des Forces canadiennes (BFC)
Canadian Forces Supply Depot (CFSD)	Dépôt d'approvisionnement des Forces canadiennes (DAFC)
Certificate of Compliance (CofC)	Certificat de conformité (CdC)
Controlled Goods Program (CGP)	Programme des marchandises contrôlées (PMC)
Controlled technology Access and Transfer (CTAT)	Accès et transfert de la technologie contrôlée (ATTC)
Defence Information Network (DIN)	Réseau d'information de la Défense (RID)
Department of Defense (DOD)	Département de la défense (DOD)
Department of national Defence (DND)	Ministère de la Défense national (MDN)
Director general Land Equipment Program Management (DGLEPM)	Directeur général – Gestion du programme d'équipement terrestre (DGGPET)
Director Soldier Systems Program Management (DSSPM)	Directeur, Administration du programme de l'équipement du soldat (DAPES)
Export and Import Permits Act (EIPA)	Loi sur les licences d'exportation et d'importation (LLEI)
Export Control List (ECL)	Liste des marchandises et technologies d'exportation contrôlée (LMTEC)
Field of View (FOV)	Champ de vision (FOV)
File Transfer Protocol (FTP)	Protocole de transfert de fichiers (File Transfer Protocol) (FTP)
Global Positioning System (GPS)	Système de localisation GPS (GPS)
Government Furnished Equipment (GFE)	Équipement fourni par le gouvernement (EFG)
Government Furnished Material (GFM)	Matériel fourni par le gouvernement (MFG)

English Term / Terme anglais	***French Term / Terme français***
Government Supplied material (GSM)	Biens fournis par le gouvernement (BFG)
Individual Protective Equipment (IPE)	Équipement de protection individuelle (EPI)
Innovation Science and Economic Development (ISED)	Innovation, Science et Développement économique Canada (ISDE)
In-Service Support Management Plan (ISSMP)	Plan de gestion du soutien en service (PGSES)
International traffic in Arms Regulation (ITAR)	International traffic in Arms Regulation (ITAR) (USA term)
Line Replaceable Unit (LRU)	Élément remplaçable sur place (Line Remplaçable Unit) (LRU)
Live Cycle Material Manager (LCMM)	Gestionnaire du cycle de vie du matériel (GCVM)
Logistical Stock (Log Stock)	Stock logistique (Stock log)
Long Lead Time (LLT)	Long délai de livraison (LDL)
Master Lesson Plan (MLP)	Plan de leçon principale (PLP)
Material Safety Data Sheet (MSDS)	Fiche signalétique (FS)
Mean Time to Repair (MTTR)	Temps moyen de réparation (TMR)
National Defense Quality Assurance Representative (NQAR)	Représentant de l'assurance de la qualité de la Défense national (RAQDN)
NATO Stock Number (NSN)	Numéro de nomenclature de l'OTAN (NNO)
North Atlantic Treaty Organisation (NATO)	Organisation du traité de l'Atlantique Nord (OTAN)
Office of Primary Interest (OPI)	Bureau de première responsabilité (BPR)
Operational Stock (Op Stock)	Stock opérationnel (Stock op)
Procurement Authority (PA)	Autorité des approvisionnements (AA)
Procurement Lead Time (PLT)	Délai préalable d'approvisionnement (PLT)
Product Baseline (PBL)	Référence de production (PBL)
Project Management Plan (PMP)	Plan de gestion de projet (PMP)
Project Master Schedule (PMS)	Calendrier principal du projet (CPP)
Quality Control (QC)	Contrôle de la qualité (QA)
Quality Control Plan (QCP)	Plan du contrôle de la qualité (PCQ)
Quality Engineering Test Establishment (QETE)	Centre d'essais techniques de la qualité (CETQ)
Quality Management System (QMS)	Système de gestion de la qualité (SGQ)
Reliability and Maintainability (R&M)	Fiabilité et maintenabilité (F et M)
Reliability, Maintainability, Availability (RMA)	Fiabilité, maintenabilité, disponibilité (RMA)
Repair Parts Manual and Scales (MX)	Manuel et barèmes liés aux pièces de rechange (MBPR)
Repairable Material Account (RMA)	Compte du matériel réparable (CMR)
Requirements Verification Matrix (RVM)	Matrice de vérification des exigences (MVE)
Risk Management (RM)	Gestion des risques (RM)

English Term / Terme anglais	***French Term / Terme français***
Risk Management Plan (RMP)	Plan de gestion des risques (PGR)
Royal Canadian Electrical and Mechanical Engineers (RCEME)	Corps du génie électrique et mécanique royal canadien (GEMRC)
Security Requirements Check List (SRCL)	Liste de vérification des exigences relatives à la sécurité (LVES)
Significant Incident Report (SIR)	Rapport d'incident d'importance (RII)
Special Investigation and Technical Studies (SITS)	Enquêtes spéciales et études techniques (ESET)
Special Packaging, Handling, Storage and Transport (SPHST)	Conditionnement, manutention, stockage et transport – spécial (CMST – spécial)
Standard Acquisition Clauses and Conditions (SACC)	Clauses et conditions uniformisées d'achat (CCUA)
Standardization Agreement (per NATO), (STANAG)	Accord de normalisation OTAN (STANAG)
Statement of Work (SOW)	Énoncé de travail (EDT)
Subject Matter Experts (SME)	Expert en la matière (EM)
System Requirements Specification (SRS)	Spécification des exigences du système (SES)
Task Authorization (TA)	Autorisation des taches (AT)
Technical Authority (TA)	Autorité technique (AT)
Technical Data Action Notice (TDAN)	Avis d'action des données techniques (AADT)
Technical Investigation and Engineering Support (TIES)	Recherches et appui techniques (TIES)
Technical Review and Audit (TRA)	Examen et vérification technique (EVT)
Test and evaluation (T&E)	Test et évaluation (T&E)
Test Readiness Review (TRR)	Examen de préparation au test (EPT)
To be determined (TBD)	À déterminer
Training Material for Initial Cadre Training (TM ICT)	Matériel d'instruction pour la formation des membres du cadre initial d'instructeurs (MI FMCII)
Unique Identification (UID)	Identification unique (UID)
User Acceptance Performance Evaluation (UAPE)	Acceptation des performances par l'évaluation des utilisateurs (APEU)
Working Day (WD)	Jour ouvrable (JO)

5.2 French to English Term / Terme français à l'anglais

French Term / Terme français	***English Term / Terme anglais***
À déterminer	To be determined (TBD)
Acceptation des performances par l'évaluation des utilisateurs (APEU)	User Acceptance Performance Evaluation (UAPE)
Accès et transfert de la technologie contrôlée (ATTC)	Controlled technology Access and Transfer (CTAT)
Accord de normalisation OTAN (STANAG)	Standardization Agreement (per NATO), (STANAG)

French Term / Terme français	***English Term / Terme anglais***
Autorisation des taches (AT)	Task Authorization (TA)
Autorité des approvisionnements (AA)	Procurement Authority (PA)
Autorité technique (AT)	Technical Authority (TA)
Avis d'action des données techniques (AADT)	Technical Data Action Notice (TDAN)
Base des Forces canadiennes (BFC)	Canadian Forces Base (CFB)
Biens fournis par le gouvernement (BFG)	Government Supplied material (GSM)
Bureau de première responsabilité (BPR)	Office of Primary Interest (OPI)
Calendrier principal du projet (CPP)	Project Master Schedule (PMS)
Centre d'essais techniques de la qualité (CETQ)	Quality Engineering Test Establishment (QETE)
Certificat de conformité (CdC)	Certificate of Compliance (CofC)
Champ de vision (FOV)	Field of View (FOV)
Clauses et conditions uniformisées d'achat (CCUA)	Standard Acquisition Clauses and Conditions (SACC)
Compte du matériel réparable (CMR)	Repairable Material Account (RMA)
Conditionnement, manutention, stockage et transport – spécial (CMST – spécial)	Special Packaging, Handling, Storage and Transport (SPHST)
Contrôle de la qualité (QA)	Quality Control (QC)
Corps du génie électrique et mécanique royal canadien (GEMRC)	Royal Canadian Electrical and Mechanical Engineers (RCEME)
Délai préalable d'approvisionnement (PLT)	Procurement Lead Time (PLT)
Département de la défense (DOD)	Department of Defense (DOD)
Dépôt d'approvisionnement des Forces canadiennes (DAFC)	Canadian Forces Supply Depot (CFSD)
Directeur général – Gestion du programme d'équipement terrestre (DGGPET)	Director general Land Equipment Program Management (DGLEPM)
Directeur, Administration du programme de l'équipement du soldat (DAPES)	Director Soldier Systems Program Management (DSSPM)
Élément remplaçable sur place (Line Remplaçable Unit) (LRU)	Line Replaceable Unit (LRU)
Énoncé de travail (EDT)	Statement of Work (SOW)
Enquêtes spéciales et études techniques (ESET)	Special Investigation and Technical Studies (SITS)
Équipement de protection individuelle (EPI)	Individual Protective Equipment (IPE)
Équipement fourni par le gouvernement (EFG)	Government Furnished Equipment (GFE)
Examen de préparation au test (EPT)	Test Readiness Review (TRR)
Examen et vérification technique (EVT)	Technical Review and Audit (TRA)
Expert en la matière (EM)	Subject Matter Experts (SME)
Fiabilité et maintenabilité (F et M)	Reliability and Maintainability (R&M)
Fiabilité, maintenabilité, disponibilité (RMA)	Reliability, Maintainability, Availability (RMA)

French Term / Terme français	***English Term / Terme anglais***
Fiche signalétique (FS)	Material Safety Data Sheet (MSDS)
Forces armées canadienne (FAC)	Canadian Armed Forces (CAF)
Gestion des risques (RM)	Risk Management (RM)
Gestionnaire du cycle de vie du matériel (GCVM)	Live Cycle Material Manager (LCMM)
Identification unique (UID)	Unique Identification (UID)
Innovation, Science et Développement économique Canada (ISDE)	Innovation Science and Economic Development (ISED)
International traffic in Arms Regulation (ITAR) (USA term)	International traffic in Arms Regulation (ITAR)
Jour ouvrable (JO)	Working Day (WD)
Kit d'assault tactique Android	Android Tactical Assault Kit (ATAK)
Liste de vérification des exigences relatives à la sécurité (LVES)	Security Requirements Check List (SRCL)
Liste des marchandises et technologies d'exportation contrôlée (LMTEC)	Export Control List (ECL)
Loi canadienne sur la protection de l'environnement (LCPE)	Canadian Environmental Protection Act (CEPA)
Loi sur les licences d'exportation et d'importation (LLEI)	Export and Import Permits Act (EIPA)
Long délai de livraison (LDL)	Long Lead Time (LLT)
Manuel et barèmes liés aux pièces de rechange (MBPR)	Repair Parts Manual and Scales (MX)
Matériel d'instruction pour la formation des membres du cadre initial d'instructeurs (MI FMCII)	Training Material for Initial Cadre Training (TM ICT)
Matériel fourni par le gouvernement (MFG)	Government Furnished Material (GFM)
Matrice de vérification des exigences (MVE)	Requirements Verification Matrix (RVM)
Ministère de la Défense national (MDN)	Department of national Defence (DND)
Numéro de nomenclature de l'OTAN (NNO)	NATO Stock Number (NSN)
Organisation du traité de l'Atlantique Nord (OTAN)	North Atlantic Treaty Organisation (NATO)
Plan de gestion de projet (PMP)	Project Management Plan (PMP)
Plan de gestion des risques (PGR)	Risk Management Plan (RMP)
Plan de gestion du soutien en service (PGSES)	In-Service Support Management Plan (ISSMP)
Plan de leçon principale (PLP)	Master Lesson Plan (MLP)
Plan du contrôle de la qualité (PCQ)	Quality Control Plan (QCP)
Programme des marchandises contrôlées (PMC)	Controlled Goods Program (CGP)
Protocole de transfert de fichiers (File Transfer Protocol) (FTP)	File Transfer Protocol (FTP)
Rapport d'incident d'importance (RII)	Significant Incident Report (SIR)

French Term / Terme français	***English Term / Terme anglais***
Recherches et appui techniques (TIES)	Technical Investigation and Engineering Support (TIES)
Référence de production (PBL)	Product Baseline (PBL)
Représentant de l'assurance de la qualité de la Défense national (RAQDN)	National Defense Quality Assurance Representative (NQAR)
Réseau d'information de la Défense (RID)	Defence Information Network (DIN)
Spécification des exigences du système (SES)	System Requirements Specification (SRS)
Stock logistique (Stock log)	Logistical Stock (Log Stock)
Stock opérationnel (Stock op)	Operational Stock (Op Stock)
Système de gestion de la qualité (SGQ)	Quality Management System (QMS)
Système de localisation GPS (GPS)	Global Positioning System (GPS)
Temps moyen de réparation (TMR)	Mean Time to Repair (MTTR)
Test et évaluation (T&E)	Test and evaluation (T&E)