REQUEST FOR INFORMATION (RFI)

W8485-175274

TACTICAL INTEGRATED COMMAND, CONTROL AND COMMUNICATIONS (TIC3) AIR PROJECT

LINE OF EFFORT 4 – DEPLOYABLE TACTICAL DATA LINK (TDL) GROUND ENTRY STATION (GES)

1. **Purpose**

   1.1. Public Services and Procurement Canada (PSPC) is requesting Industry feedback regarding the Deployable Tactical Data Link (TDL) Ground Entry Station (GES) requirements as part of the Line of Effort 4 (LoE4) of the TIC3 Air Project. These requirements and their specification are detailed in the accompanied Draft-RFI as listed in the Annexes and applicable Appendixes provided herewith. The requirements as described in the Draft-RFI packages will be fulfilled for Government of Canada on behest of the Department of National Defence.

   1.2. The objectives of this RFI are to:

      a. Gage industry's interest and appraise potential bidders for the Line of Effort 4 requirements;

      b. Collect information with respect to the technical feasibility of the requirements.

      c. Seek industry feedback in order to streamline the Line of Effort 4 technical specifications and to finalize the development of the Request for Proposal to be published in the near future;

      d. Seek substantive costing information from industry for budgetary approval purposes; and

      e. Facilitate in-depth engagements with potential bidders.

   1.3. Important notes to all respondents, interested parties and potential bidders:

      a. This RFI including the Draft-RFI packages provided herewith are neither a call for tender nor a Request for Proposal (RFP).

      b. No agreement or contract for the procurement of the requirements described herein will be entered into solely as a result of this RFI. The issuance of this RFI is not to be considered in any way as a commitment by Canada nor as authority to potential Respondents to undertake any work that could be charged to Canada.

      c. This RFI is not to be considered as a commitment to issue a subsequent solicitation or award contract(s) for the work described herein. Canada does not intend to award a contract on the basis of this notice or otherwise pay for the information solicited. Any and

all expenses incurred by the Respondent in pursuing this opportunity, including the provision of information and potential visits, are at the Respondent's sole risk and expense.

d. Any discussions on this subject with project staff representing DND, PSPC, any other Government of Canada representative or other personnel involved in project activities, must not be construed as an offer to purchase or as a commitment by Canada.

e. Respondents may provide documents / information / data collected as commercial-in-confidence (and if identified as such, will be treated accordingly by Canada). However, Canada reserves the right to use the information to assist them in drafting performance specifications and for budgetary purposes in consultation with both national and international stakeholders. Requirements are subject to change, which may be as a result of information provided in response to this RFI. Participants are advised that any information submitted to Canada in response to this RFI may or may not be used by Canada in the development of the subsequent RFP.

f. Respondents are encouraged to clearly identify, in writing, in the information they share with Canada, any information they feel is commercial-in-confidence, proprietary, third party, or personal. Please note that Canada may be obligated by law (e.g. in response to a request under the Access to Information and Privacy Act) to disclose proprietary or commercially-sensitive information concerning a Respondent (for more information: http://laws-lois.justice.gc.ca/eng/acts/a-1/).

g. Respondents are asked to identify, in writing, if their response, or any part of their response, is subject to the Controlled Goods Regulations.

h. Participation in this RFI is encouraged. There will be no shortlisting of potential suppliers for the purposes of undertaking any future work as a result of this RFI. Similarly, participation in this RFI is not a condition or prerequisite for the participation in any potential subsequent solicitation.

2. **Background Information**

2.1. To achieve the improvement of both global Situational Awareness (SA) and Command and Control (C2) effectiveness, the Royal Canadian Air Force (RCAF) has updated, and continues to modernize its assets to ensure the required capabilities, especially the tactical communication equipment need to be adequate for carrying out the assigned missions and operations. However, the enhancement requires more than just advanced technologies for the deployed assets, but equally for the tactical communication infrastructures, including TDL backbone behind them. The deployable TDL solution has been proposed to improve the tactical communication of domestic and expeditionary operations. The solution is a Link-16 and Link-22 capable C2 system that will be deployed and operated by RCAF deployable units.

2.2. The TIC3 Air Project is currently planning on delivering its requirements through 4 Lines of Effort (LoE) each with its own independent technical specifications and Statement of Work. These LoEs are as follows:

Respect ✦ Intégrité ✦ Excellence ✦ Leadership

Au service du
GOUVERNEMENT,
au service des
CANADIENS.

    a. LoE 1: Ground Air Ground (G/A/G) Radios;

    b. LoE 2: Fixed Tactical Data Link (TDL) Ground Entry Point (GEP);

    c. LoE 3: Fixed GEP and Deployable Streaming Video (SV);

    d. LoE 4: Deployable TDL Ground Entry Station (GES).

2.3. This RFI is limited to LoE4 – Deployable TDL GES only.

3. Schedule

3.1. The following schedule should be utilized as a baseline for engagement under this RFI:

RFI release:	03 March 2022
Response to the Detailed Cost Estimate (DCE):	05 August 2022
Closing date:	30 December 2022

3.2. Canada may modify the above timeline as required.

4. Response to the RFI

4.1. No prices to be submitted in any section of this RFI.

4.2. The RFI is intended to be a consultative process to help determine the capability of industry to satisfy the project requirements and seek substantive cost estimates for budgetary approval purposes. As such Annex K, the Acquisition Detailed Cost Estimate (DCE) and Annex L, the In-Service Support Detailed Cost Estimate (DCE) are the only documents for which a response from industry is expected. All other Draft-RFI Annexes and their appendices requires **NO responses from the industry and are released to support continual engagement through** this RFI.

4.3. There are no requirements on format or nature of expected feedback from the industry.

4.4. Interaction between Industry and Government may include limited product overviews and demonstration.

5. Potential Scope and Constraints

5.1 This RFI is not subject to the Controlled Goods Program, however any resulting competitive process may be. For information pertaining to the Controlled Goods Program, please refer to the Public Services and Procurement Canada (http://ssi-iss.tpsgc-pwgsc.gc.ca/dmccgd/ index-eng.html) website.

5.2. There are no security requirements associated with this RFI, however, there may be security requirements associated with any resulting competitive procurement process. Additional information on the security requirements will be communicated on https://buyandsell.gc.ca/ as part of the upcoming competitive procurement process.

5.3. Should Industry require information on personnel and organization security screening or security clauses, please refer to the Canadian Industrial Security Directorate (CISD), Industrial

Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Canada

Respect ◆ Intégrité ◆ Excellence ◆ Leadership

Au service du
GOUVERNEMENT,
au service des
CANADIENS.

and Security Program of Public Services and Procurement Canada (http://ssi-iss.tpsgc-pwgsc.gc.ca/index-eng.html) website.

5.4. Any additional information on the potential scope and constraints will be communicated on https://buyandsell.gc.ca/ as part of any competitive process.

5.5. Legislation, Trade Agreements, and Government Policies

The following is a list of some legislation and government policies that may govern the near future competitive procurement process:

a)D   Defense Production Act (DPA)

b)C   Controlled Goods Program (CGP)

c)F   Federal Contractors Program for Employment Equity (FCP-EE)

d)G   Government Contract Regulations (GCR)

e)P   PSPC Policy on Green Procurement

Any additional information pertaining to Legislation and Government Policies will be communicated on https://buyandsell.gc.ca/ as they become available throughout the period of this RFI or as part of any resulting competitive procurement process.

6.   PSPC Contracting Authority

6.1. Correspondence must be directed, in writing, to the PWGSC Contract Authority identified below:

Oscar Garate

Contracting Authority

Public Services and Procurement Canada

E-mail: oscar.garate@pwgsc.gc.ca

Phone: 873-355-3354

7.   List of Annexes

Annex A – Draft Statement of Work – Acquisition

Appendix A1 – Draft System Specifications

Appendix A2 – Draft Contract Data Requirement List

Appendix A3 – Draft Data Item Description

Appendix A4 – Draft Government Furnished Equipment

Appendix A5 – Draft Priority of Delivery

Annex B – Draft Statement of Work – In Service Support

Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Canada

ANNEX A

ACQUISITION
STATEMENT OF WORK (SOW)

DEPLOYABLE DATA LINK GROUND ENTRY STATION

TABLE OF CONTENTS

1 SCOPE

1.1 Introduction

1.1.1 Product Acquisition

1. This Statement of Work (SOW) defines the work required for the production, delivery, and initial support of the Deployable Tactical Data Link (TDL) Ground Entry Station (GES).

1.1.2 TIC3 Air Project

1. The Deployable TDL GES is an integral solution that will be implemented and integrated as part of the Tactical Integrated Command Control Communications (TIC3) Air Project to deliver an extended and flexible TDL exchange supporting expeditionary and/or domestic operations.

2. The TDL GES solution will enable the integration of the tactical information into an integrated and cohesive Recognized Air Picture (RAP) in a timely manner.

3. The Deployable TDL GES will equally allow for the improvement of the global situational awareness picture, with advanced air picture fusion and management capabilities, in support of airspace surveillance and air defense operations.

1.2 Background

1.2.1 Operational Requirements

1. To achieve the improvement of both global Situational Awareness (SA) and Command and Control (C2) effectiveness, the Royal Canadian Air Force (RCAF) continues to modernize its assets to ensure the tactical communication equipment is adequate for carrying out the assigned missions and/or operations.

2. However, the enhancement requires more than just advanced technologies for the deployed assets, but equally for the tactical communication network, including ground TDL stations supporting them. Unfortunately, essential elements and components of these communication systems have either exceeded their operational life expectancy, are extremely limited, or non-existent.

3. To address these deficiencies, the RCAF will upgrade its tactical communication equipment and TDL network.

1.2.2 Command, Control and Communications

1. The TIC3 Air Project will provide critical command, control and communications systems that will support the Canadian Armed Forces (CAF) and RCAF in carrying out full spectrum operations.

2. Regardless of the assigned mission, TIC3 Air Project delivery will enable the chain of command to gain relevant SA, to support the Commander in making effective decisions, and will support RCAF units in responding to the Commander's direction in a timely manner.

1.3 Overview

1.3.1 Domestic and Expeditionary Operational Capability

1. The Deployable TDL GES is designed and implemented to support domestic and expeditionary operations. The solution is a Link-16 and Link-22 capable C2 system that will

be deployed and operated by RCAF deployable units. The Deployable TDL GES will provide the compilation and dissemination of the Local Air Picture (LAP) and Recognized Air Picture (RAP) in support of domestic and expeditionary operations.

2 WORK REQUIREMENTS

2.1 System Deliverables

The Supplier must deliver the Deployable TDL GES solution as described in Appendix A1 – *System Performance Specification*, and in accordance with the following terms and conditions:

2.1.1 Priority

The Supplier must deliver the Deployable TDL GES's capabilities in accordance with Appendix A2 – *Priorities of Delivery*, and based on the following agreements:

1. Initial Deliverable Capabilities (IDC). Capabilities that must be fully operational and delivered no later than 12 months after the Contract award.

2. Final Deliverable Capabilities (FDC). Capabilities that must be fully operational and delivered no later than 18 months after the Contract award.

2.1.2 Operational System

1. The Supplier must deliver 5 Deployable TDL GES.

2. The Supplier must allow for optional purchase of additional Deployable TDL GES.

2.1.3 System Integration

The integration of delivered systems will be performed by Department of National Defense (DND) personnel, however, the Supplier is expected to provide the following supports and services:

1. The Supplier must provide on-site support to DND personnel for the installation and integration of delivered Deployable TDL GES at the following locations:

   a. Trenton, ON – 8 Air Communications and Control Squadron (8 ACCS);

   b. Bagotville, QC – 12 Esquadron Radar (12 ER);

   c. Cold Lake, AB – 42 Radar Squadron (42 RS);

   d. Greenwood, NS – Deployable Mission Support Center – East (DMSC-E); and

   e. Comox, BC – Deployable Mission Support Center – West (DMSC-W).

2. The Supplier must provide on-call support, to DND personnel for the integration of delivered systems. The support will be on an as-required basis with a lead time from the request reception, to less than 24 hours.

2.1.4 Operational Restriction and Vulnerability

1. The Supplier must deliver the Deployable TDL GES solution with no operating restriction on its use by Canadian Armed Forces (CAF) / DND.

2. The Supplier must document the approach to implement Canadian Cyber Incident Response Centre's (CCIR's) top 4 strategies to mitigate targeted cyber intrusion in accordance with CDRL, DID ACQ-CS-001.
3. The Supplier must document, maintain and deliver the Continuous Monitoring Plan in accordance with CDRL, DID ACQ-CS-002.
4. The Supplier must document, maintain and deliver the Incident Response Plan in accordance with CDRL, DID ACQ-CS-003.

2.1.5 Assumptions

Canada will ensure the following infrastructures will be available for the integration of Deployable TDL GES:

1. Electrical power for Deployable TDL GES will come from the Canadian power grid through the associated facility's electrical distribution system or by on-site generators and it will support the Alternative Current (AC) drawn by the delivered system.

2. The Deployable TDL GES will be installed and operated in an area equipped with Heating, Ventilation, and Air Conditioning (HVAC) system.

3. An Ethernet Internet Protocol (IP) based network point-of-presence will be provided at each site as the primary means of exchanging information between the Deployable TDL GESs, CADS, and other headquarters as required.

4. A single Public Switched Telephone Network (PSTN) line will be provided at each site to be used as a secondary means of exchanging information between the Deployable TDL GESs, CADS and other headquarters as required.

2.2 Government Supplied Materiel, Equipment, and Information

Canada will provide Government Furnished Equipment (GFE) as identified in the specifications attached at, Appendix A3 – *Government Furnished Equipment*, for on-site testing and integration.

2.3 Project Management

2.3.1 Project Management Plan (PMP)

1. The Supplier must establish and maintain a Project Management Plan (PMP) in accordance with Contract Data Requirement List (CDRL) / Data Item Description (DID) ACQ-PP-001 to coordinate all plans and activities required, including the implementation roadmap, to meet the requirements of this SOW.

2.3.2 Project Related Meetings

1. The Supplier must conduct all meetings in person, unless agreed to otherwise in coordination with the DND Project Authority (PA) to conduct remote meetings by using secure conferencing applications.

2. The Meeting Agendas and recording of the Meeting Minutes and action items must be managed in accordance with CDRL/DID ACQ-PM-001 and CDRL/DID ACQ-PM-002, respectively.

3. <u>Contract Award Meeting</u>. The Supplier must conduct a meeting with project personnel at the Supplier's facility within 30 days after Contract award to discuss schedule and work, as well as milestones and deliverables.

4. <u>Progress Review Meetings</u>. The Supplier must conduct a Progress Review Meeting (PRM) with project personnel, at the Supplier's facility on a schedule agreed to by Canada and the Supplier, to provide updates on the following:

   a. Project Schedule;
   b. Project Risk Register;
   c. Action Items and Issues;
   d. Other matters that arise; and
   e. Possibly, any design and technical review meetings required.

5. <u>Unexpected Meetings</u>. Other meetings may be requested by the Supplier, Contracting Authority (CA) or the Technical Authority (TA) when issues arise that need to be solved. Upon agreement between all parties that such a meeting is required, the Supplier must participate in the unscheduled meeting.

6. <u>Project Close-out (PCO) Meeting</u>. The Supplier must host a meeting after the last Deployable TDL GES system delivery is complete at a time mutually agreed to by Canada and the Supplier to discuss outstanding issues.

2.3.3   Reports

1. The Supplier must prepare and submit to the TA a monthly Progress Report, in the Supplier's format.

2. The Supplier must prepare and submit a Final Report at the end of the Contract as per CDRL/DID ACQ-PM-003.

2.4   System Engineering

2.4.1   System Design Specifications

1. The Supplier must prepare and submit, in their own format, the System Design Specifications (SDS) Document for Deployable TDL GES system as per CDRL/DID ACQ-SE-001.

2. The SDS must include and not limited to the following:

   a. Product Description;
   b. System Architecture;
   c. Sub-components Connection Diagram; and
   d. System Interface Control Document (ICD) of each data communication and processing sub-component.

2.4.2   System Requirements Review

1. A System/Software Requirement Review (SRR) must be conducted prior to the implementation of all requirements in Appendix A1 – *System Performance Specifications* for which the Supplier does not already have an existing solution at Contract award, to ensure that the Supplier's proposed solution are thoroughly understood by all parties and that appropriate verification methods are identified.

2. The Supplier must produce a SRR Report as per CDRL/DID ACQ-SE-002.

2.4.3 Preliminary Design Review

1. A Preliminary Design Review (PDR) must be held to review the conceptual design of all requirements in Appendix A1 – *System Performance Specifications* for which the Supplier does not already have an existing solution at Contract award, to ensure that the planned technical approach will meet the requirements.

2. The Supplier must produce a PDR Report as per CDRL/DID ACQ-SE-003.

2.4.4 Critical Design Review

1. A critical Design Review (CDR) must be held to review the detailed design of all requirements in Appendix A1 – *System Performance Specifications* for which the Supplier does not already have an existing solution at Contract award, to ensure that the design implementation has met the requirements.

2. The Supplier must produce a CDR Report as per CDRL/DID ACQ-SE-004.

2.4.5 Factory Acceptance Test

1. The Supplier must perform a Factory Acceptance Test (FAT) in a lab environment or live scenario for all pre-release Deployable TDL GES updates.

2. FAT must include the following activities which are open to TA and Project Management Office (PMO) participation:

   a. Meeting to discuss on the Test Plan as per CDRL/DID ACQ-TD-001;
   b. Tests execution, including regression tests for all minor/major changes; and
   c. Meeting to discuss the Test Report as CDRL/DID ACQ-TD-002.

2.4.6 Site Acceptance Test (SAT)

1. The Supplier must perform Site Acceptance Test (SAT) through live demonstration of first article Deployable TDL GES.

2. Live demonstration must be conducted in venues where interoperability and compatibility can be demonstrated through participating of Joint and allied platforms or simulators.

3. SAT must include the following activities requiring TA/PMO participation:

   a. Meeting to discuss on the Test Plan as per CDRL/DID ACQ-TD-003;
   b. Tests coordination and execution; and
   c. Meeting to discuss the Test Report as CDRL/DID ACQ-TD-004.

2.5 Integrated Logistics Support (ILS)

2.5.1 Drawings, Associated Lists, and Cataloguing

1. Deployable TDL GES and its constituent components, including reusable shipping and storage containers supplied by the Supplier to support operation, training, and maintenance, must be catalogued in the DND system.

2. Where the equivalent products have already been catalogued under a North Atlantic Treaty Organization (NATO) Stock Number (NSN), the Supplier must provide information which identifies the items to the satisfaction of DND allowing for Canadian Armed Forces (CAF) adoption of those existing NSN.

3. Where accountable hardware and software items do not already have Unique Item Identifiers (UII), the Supplier must assign and affix UIIs to these items for their codification and cataloguing.

4. Where items have not already been catalogued, the Supplier must provide the technical documentation required for their codification and cataloguing. This technical documentation must include a Level 1 drawing package which conforms to the standards of D-01-400-001/SG000, Engineering Drawings Practices.

2.5.2 Operation and Technical Publications

1. The Supplier must provide technical publications and documentation to enable RCAF technicians to safely and effectively operate and maintain the Deployable TDL GES.

2. The technical publications and documents must include the following:

   a. Detailed Operating Instructions in English (and French if available);
   b. Operating Limitations in English (and French if available);
   c. Emergency Procedure documentation in English (and French if available);
   d. Maintenance Instructions, supporting manuals and documentation required for preventative and corrective maintenance in English (and French if available); and
   e. Interface Control Documents (ICD) of external hardware and software interfaces in English (and French if available).

2.5.3 Initial Cadre Training (ICT)

1. Training Course. The Supplier must design the following Deployable TDL GES courses to teach all operator functions, basic fault finding and corrective maintenance procedures:

   a. Deployable TDL GES Operator Course. The course curriculum must be sufficient to train a new user to operate the Deployable TDL GES correctly and independently.

   b. Deployable TDL GES Maintainer Course. The course curriculum must be sufficient to train a new technician to maintain the Deployable TDL GES correctly and independently.

2. Training Package. The Supplier must submit to the PA a training package for each course, inclusive of training presentations and Recommended Training Materials List (RTML) in accordance with CDRL/DID ACQ-ILS-001 and following specifications:

   a. The training package must be received by PA no later than 4 weeks before that course.
   b. The RTML must include training material, training aids, and any other equipment that would be necessary for the conduct of Deployable TDL GES Operator and Maintainer courses as appropriate.
   c. The training package must be in English (and French if available).; and
   d. Canada must have an irrevocable, unlimited distribution license within the RCAF to the training materials.

3. Conduct Training

   a. The Supplier must provide the Operator Training on the initial delivery of Deployable TDL GES, and on any significant technology update, including new capability and functionality.

(i) The Supplier must conduct one serial of Deployable TDL GES Operator training per the Deployable TDL GES Operator training package for up to 12 RCAF personnel as an initial "Train the trainer" course.

(ii) The Operator training must be conducted at a location mutually agreeable to the PA and the Supplier, no later than 4 weeks after the delivery of the Deployable TDL GES and/or new capabilities.

(iii) When requested, the Supplier must conduct additional serials of Deployable TDL GES Operator training per the Deployable TDL GES Operator training package for up to 12 RCAF personnel at the time and location mutually agreeable to the PA and the Supplier.

b. The Supplier must provide the Maintainer Training on the initial delivery of Deployable TDL GES, and on any significant technology update, including new capabilities and functionalities.

(i) The Supplier must conduct one serial of Deployable TDL GES Maintainer training per the Deployable TDL GES Maintainer training package for up to 12 RCAF personnel as an initial "train the trainer" course.

(ii) The Maintainer training must be conducted at a location mutually agreeable to the PA and the Supplier, no later than 4 weeks after the delivery of the Deployable TDL GES and/or new capabilities.

(iii) When requested, the Supplier must conduct additional serials of Deployable TDL GES Maintainer training per the Deployable TDL GES Maintainer training package for up to 12 RCAF personnel at the time and location mutually agreeable to the PA and the Supplier.

4. <u>Training Assistance/Support</u>.

a. The Supplier must provide professional support and materials for two or more serials of RCAF-run Deployable TDL GES Operator and Maintainer courses (when requested) at a time and location that is mutually agreeable to Canada and the Supplier.

b. The last serial of training must be completed no later than 12 months after the final delivery of the Deployable TDL GES.

2.5.4 Web-Based Training.

1. The Supplier must provide an interactive, logical and structured Web-Based Training (WBT) tutorial to guide the users, at their own pace, in the following:

a. Deployable TDL GES functions and features; and
b. First Line Maintenance of Deployable TDL GES.

2. The WBT must provide a separate training tutorial for each of the operations and maintenance training tutorials.

3. The WBT must be capable of being run through a browser on a PC or Mac computer operating system.

4. The Supplier must deliver the Operator and Maintainer WBT with an unlimited number of seat-licenses

APPENDIX A1

SYSTEM PERFORMANCE SPECIFICATIONS

DEPLOYABLE DATA LINK GROUND ENTRY STATION

TABLE OF CONTENTS

1 SCOPE

1.1 Introduction

1.1.1 Product Acquisition

1. This Statement of Work (SOW) defines the work required for the production, delivery, and initial support of the Deployable Tactical Data Link (TDL) Ground Entry Station (GES).

1.1.2 TIC3 Air Project

1. The Deployable TDL GES is an integral solution that will be implemented and integrated as part of the Tactical Integrated Command Control Communications (TIC3) Air Project to deliver an extended and flexible TDL exchange supporting expeditionary and/or domestic operations.

2. The TDL GES solution will enable the integration of the tactical information into an integrated and cohesive Recognized Air Picture (RAP) in a timely manner.

3. The Deployable TDL GES will equally allow for the improvement of the global situational awareness picture, with advanced air picture fusion and management capabilities, in support of airspace surveillance and air defense operations.

1.2 Background

1.2.1 Operational Requirements

1. To achieve the improvement of both global Situational Awareness (SA) and Command and Control (C2) effectiveness, the Royal Canadian Air Force (RCAF) continues to modernize its assets to ensure the tactical communication equipment is adequate for carrying out the assigned missions and/or operations.

2. However, the enhancement requires more than just advanced technologies for the deployed assets, but equally for the tactical communication network, including ground TDL stations supporting them. Unfortunately, essential elements and components of these communication systems have either exceeded their operational life expectancy, are extremely limited, or non-existent.

3. To address these deficiencies, the RCAF will upgrade its tactical communication equipment and TDL network.

1.2.2 Command, Control and Communications

1. The TIC3 Air Project will provide critical command, control and communications systems that will support the Canadian Armed Forces (CAF) and RCAF in carrying out full spectrum operations.

2. Regardless of the assigned mission, TIC3 Air Project delivery will enable the chain of command to gain relevant SA, to support the Commander in making effective decisions, and will support RCAF units in responding to the Commander's direction in a timely manner.

1.3 Overview

1.3.1 Domestic and Expeditionary Operational Capability

1. The Deployable TDL GES is designed and implemented to support domestic and expeditionary operations. The solution is a Link-16 and Link-22 capable C2 system that will be deployed and operated by RCAF deployable units. The Deployable TDL GES will provide the compilation and dissemination of the Local Air Picture (LAP) and Recognized Air Picture (RAP) in support of domestic and expeditionary operations.

2   SYSTEM DESCRIPTION

2.1   Systems Definition

2.1.1   Deployable Ground Entry Station (GES)

1. Deployable TDL GES; henceforth, referred to as 'Deployable site', is a Link-16 and Link-22 capable C2 system that will be deployed and operated by RCAF deployable units.
2. The Deployable TDL GES will provide the compilation and dissemination of Local Air Picture (LAP) and Recognized Air Picture (RAP) in support of domestic and expeditionary operations.

2.2   Concept of Employment (CONEMP) Overview

2.2.1   Modes of Operation

1. Deployable TDL GES will provide the RCAF with flexibility and dynamicity in its TDL operation. The Deployable TDL GES will be deployed domestically in austere environment to fill the TDL network gap and maintain communications between CADS and TDL capable assets in the remote area.
2. Deployable TDL GES will be used in the expeditionary mission to enable the SA and C2 information exchange with coalition and Joint Task Forces on the TDL network, and to provide airspace control and monitoring capabilities.
3. Deployable TDL GES may be operated conjunctly with the air surveillance radar to generate and disseminate the LAP contributing to the enhancement of the global air situational awareness picture.
4. Deployable TDL GES can be operated as the TDL forwarder / bridge which is capable of maintaining the communication with beyond line-of-sight (BLOS) assets through it's the Link-22 interface. Each Deployable TDL GES will be provided with required communication terminals and all ancillary and supporting equipment to operate on both Link-16 and Link-22 networks.
5. Deployable TDL GES will be equipped with secured data encryption devices which allow for the exchange of TDL information over the existing Ethernet IP based (TDL WAN, CSNI or SATCOM) and serial (PSTN) communication infrastructure.

2.3   Concept of Operation (CONOPS) Overview

2.3.1   Deployed TDL GES Operation

1. The Deployable TDL GES will be physically operated as a direct C2 participant on both Link-16 and Link-22 networks with the following capabilities:
   a. Recognized Air Picture (RAP) Compilation and Management;
   b. Airspace Control and Management; and
   c. Air assets Control and Management.
2. The Deployable TDL GES will enable the forwarding of TDL messages between Link-16 and Link-22 networks. It also allow for the forwarding of TDL messages received from Link-16 and Link-22 networks to the indirect participants on JREAP interface through a primary Ethernet IP based link, either by terrestrial means or SATCOM, and a secondary serial communication line, typically provided by the PSTN. The information exchange on these means is secured by the Type 1 Encryption Device (T1ED).
3. When being connected to an Airspace Surveillance Radar, the Deployable TDL GES will perform the aerial objects tracking, LAP compilation and dissemination on TDL network.
4. The Deployable TDL GES would be operable 24/7 for prolonged periods. All operational keys for cryptographic devices will be loaded manually by the operator.

3 SYSTEMS REQUIREMENTS

> **IMPORTANT**. *Within the Deployable TDL GEP SOW document, when the symbol "/" (slash) being used as the separator of possibilities, it must be interpreted as a dynamic choice of <u>any</u> or <u>combining</u> of those stated possibilities, depending on the context logic".*
>
> *<u>Example</u>:*
>
> *"The system must be equipped with an ON/OFF button" - It's a single 2-state button, it can be any of those states (ON or OFF) at a time and not both of them at the same time.*
>
> *"The system must be equipped with a 10/100 Ethernet Interface". The 10 Mbps option is included the 100 Mbps option (combining).*

3.1 Operational Capabilities

As part of proposed solution, the following capabilities will need to be implemented and integrated for the delivered Deployable TDL GES:

3.1.1 Network Time Server

The Network Time Server (NTS) will provide the accurate GPS-based time reference for equipment and time sensitive systems on the local area network (LAN). The NTS will have the following specifications:

1. The NTS must be a self-contained system with the following communication interfaces:
   a. RJ45 Ethernet;
   b. RS-232; and
   c. RS-422.

2. The NTS must allow for the configuration of the time zone offsets and daylight saving time (DST).

3. The NTS must provide an Ethernet IP-based Simple Network Management Protocol (SNMP) interface for the configuration, monitoring and control of systems and operational parameters.

4. The NTS must provide a Web-based interface for the configuration, monitoring and control of systems and operational parameters.

5. The NTS must allow for the synchronization of system clock to the external National Marine Electronics Association (NMEA) 0183 compatible Global Positioning System (GPS) through the RS-232/422 interface.

6. The NTS must allow for the reception of the standard 5V at 20mA pulse per second (1-PPS) which is used as the synchronization signal.

7. The NTS must allow for the synchronization of system clock to the Have Quick/1PPS clock master through the serial interface.

8. The NTS must be equipped with an internal high-stability quartz crystal oscillator which maintains time during loss of external time source within ±0.15µs per day

9. The NTS must act as the time server, supporting NTPv3 and later, which allows networked equipment to synchronize with its internal clock through the system's Ethernet interface.

10. The NTS must provide at least 2 Have Quick time code outputs.

11. The NTS must provide the configurable IRIG A, IRIG B, IRIG E and IRIG G time code outputs.

12. The NTS must provide configurable 5V and 10V into 50Ω synchronization signal (pulse) at a frequency of 1Hz through its 1-PPS outputs.

13. The NTS must allow for the visualization of system status by LEDs display at the front of the unit.

14. The NTS: must comply with following environmental specifications:

    a. Accept the direct current input in the range of 12 to 48 VDC.

    b. Accept the universal 120/240VAC, 50/60Hz input.

    c. Mount in a standard 19" wide rack.

    d. Mount within a standard 24" deep rack.

    e. Not exceed 1 rack unit in height.

    f. Be operable at maximum capacity within the following temperature and humidity range:

        (i) The ambient temperature from -10 to +50 degrees Celsius; and

        (ii) Humidity range of from 10 to 90% (non-condensing).range.

    g. Tolerate, without damage, the following storage temperature and humidity range:

        (i) Ambient Temperature: From -35 to +70 degrees Celsius; and

        (ii) Relative Humidity range from 10% to 90% (non-condensing).

15. Th e NTS must be mounted in the ruggedized and transportable case.

3.1.2 Secure Communication Gateway

The Secure Communication Gateway (SCG) will provide the data encryption, IP packet filtering and routing services for the Wide Area Network (WAN) communication interface. This capability will allow the Deployable TDL GES to securely exchange tactical information across a secure WAN and/or the Commercial/Public Internet. The SCG solution will implement the following system requirements:

1. T he SCG solution must integrate National Security Agency (NSA) certified Type 1 Encryption Device (T1ED) which is recognized and widely used within Defense network. The T1ED is GFE.

2. T he SCG solution must include a WAN entry router (WER). with the following functionalities and characteristics:

    a. The WER must have at least 2 built-in 10/100/1000 Ethernet network interfaces for WAN/LAN communication, and each of them must support both RJ45 and SFP-based connection, allowing fiber or copper connectivity.

    b. T he WER must have at least 2 10/100/1000 Ethernet RJ45 ports for LAN communication.

    c. T he WER must have the aggregate throughput of at least 200 Mbps.

    d. The WER must provide a USB-based console access for the router configuration.

    e. The WER must allow for the configuration of packet routing between network interfaces.

    f. T he WER must allow for the configuration of network address translation (NAT) on WAN interfaces.

g. The WER must allow for the configuration of virtual local area network (VLAN) on LAN interfaces.

h. The WER must support the following data communication and routing protocols: IPv4/IPv6, Static routes, RIP/RIPv2, OSPF, Enhanced IGRP, BGP, BGP Router Reflector, IGMPv3, PIM sparse mode/source specific multicast (SSM), RVSP, ACL, DHCP, DNS, RADIUS, Distance Vector Multicast Routing Protocol (DVMRP), IPv4-to-IPv6 Multicast, MPLS, Layer 2/Layer 3 VPN, IP sec, Layer 2 Tunnelling Protocol version 3 (L2TPv3).

i. The WER must support the following data encapsulations: Generic routing encapsulation (GRE), Ethernet, 802.1q VLAN, Point-to-Point Protocol (PPP), Multilink Point-to-Point Protocol (MLPPP), Frame Relay, Multilink Frame Relay (MLFR) (FR.15 and FR.16), High-Level Data Link Control (HDLC), Serial (RS-232, RS-449, X.21, V.35, and EIA-530) and PPP over Ethernet (PPPoE).

j. The WER must implement the following data encryption algorithms: AES-256 (in CBC and GCM modes).

k. The WER must implement the following authentication algorithms: RSA (748/1024/2048 bit), ECDSA (256/384 bit).

l. The WER must implement the following data integrity validation algorithms: SHA-256, SHA-384, SHA-512.

m. The WER must comply with the following electromagnetic compatibility (EMC) regulations: 47 CFR Part 15, ICES-003 Class A and CISPR 32 Class A.

n. The WER. must comply with following environmental specifications:

    (i)   Accept a 100-240VAC, 50/60Hz input.

    (ii)   Be mountable within a standard 19" wide per 24" deep rack.

    (iii)   Not exceed 1 rack unit in height.

    (iv)   Be operable at full capacity within the following temperature and humidity range:

        (1.) Ambient temperature: From 0 to +40 degrees Celsius; and

        (2.) Relative Humidity range from 5% to 85% (non-condensing).

    (v)   Tolerate, without damage, the following storage temperature and humidity conditions:

        (1.) Ambient temperature: From -35 to +70 degrees Celsius; and

        (2.) Relative Humidity: From 5% to 90% (non-condensing).

    (vi)   Be compliant with the ingress protection IP52 rating.

    (vii)   Have any fitted air intake and exhaust ports at either the front and/or rear panels only, to allowing the stacking of other rack equipment above and below.

3. The SCG must include a commercial grade local traffic router (LTR). with the following functionalities and characteristic:

a. The LTR must have at least 8 10/100/1000 Ethernet routing interfaces for LAN communication.

b. The LTR must have the aggregate throughput of at least 500 Mbps.

c. The LTR must provide a USB-based console access for the router configuration.

d. The LTR should provide a Web-based configuration and monitoring interface.

e. The LTR must allow for the configuration of packet routing between interfaces.

f. The LTR must allow for the configuration of firewall and packet filter on each interface.

g. The LTR must allow for the configuration of virtual local area network (VLAN) on each interface.

h. The LTR must allow for the multicast packets forwarding and routing.

i. The LTR must comply with the following EMC regulations ICES-003 Class A and CISPR 32 Class A.

j. The LTR must meet the following environmental specifications:

   (i)   Accept a 100-240VAC, 50/60Hz input.

   (ii)   Be mountable within a standard 19" wide per 24" deep rack.

   (iii) Not exceed 1 rack unit in height.

   (iv)   Be operable at full capacity within the temperature and humidity range:

      (1.) Ambient temperature: From -35 to +70 degrees Celsius; and

      (2.) Relative Humidity: From 5% to 85% (non-condensing).

   (v)   Must tolerate, without damage, within the following temperature and humidity range:

      (1.) Ambient temperature: From -35 to +70 degrees Celsius;

      (2.) Relative humidity: From 5% to 90% (non-condensing).

   (vi)   The LTR must be compliant with the ingress protection IP52 rating.

   (vii) The LTR must locate any fitted air intake and exhaust ports at either the front and/or rear panels only, to allowing the stacking of other rack equipment above and below.

4. The SCG solution must include data/network cables, communication equipment and ancillaries that are required for the operation.

5. The SCG must be mounted in the ruggedized and transportable case.

3.1.3 Link-16 Gateway

1. The Link-16 Gateway (L16GW) will enable the deployable unit to participate and exchange tactical data, command control (C2) information on Link-16 network. The L16GW solution is provided as GFE and mainly constituted of the following systems and equipment:

2. The L16GW will include a MIDS JTRS with following ancillaries and supporting equipment:

a. A Cooling Tray with power adapter for use with universal power source 120/240VAC, 50/60Hz.

b. A Power Supply with integrated Converter that is compatible with universal power source 120/240VAC, 50/60Hz.

c. RF cables and RF ports adapters as required.

d. Link-16 Notch Filter.

e. All required interface cables and ancillaries.

3. The L16GW will include an L-Band high gain antenna and a retractable mast.

4. The L16GW will include the Host Platform Conversion (HPC) system with integrated Ethernet/MIL-STD 1553 Interface Adapter.

5. The L16GW will include the MIDS JTRS Control Panel with the Ethernet IP-based tactical and control host interfaces integrated.

6. The L16GW will include the terminal configuration, monitoring and control application.

7. The L16GW will include all materiel and adapters required for the installation of MIDS JTRS, Control Panel, Fan Tray, Power Supply and HPC system.

8. The L16GW will be mounted in 2-man lift ruggedized and transportable case.

3.1.4 Airspace Management Suite

1. The Airspace Management Suite (ASMS) is a software-based solution for the airspace monitoring and management.

2. The ASMS is provided as government supplied materiel (GSM) with following main functionalities:

   a. Local radar tracks processing and dispatching.

   b. Recognized Air Picture (RAP) compilation and sharing.

   c. Tactical airspace monitoring and management.

   d. Friendly air assets control and Air-Ground operation support.

   e. Multiple Data Link processing and forwarding.

3.1.5 Link-22 Gateway

The Link-22 Gateway (L22GW) will enable the tactical data exchange beyond line of sight (BLOS), and provide the Deployable unit a secure and extended communication range over the air without a relay node requirement. The L22GW will give the deployed unit the flexibility of establishing the communication with other military Link-22 capable units (Air, Surface, Subsurface, and Ground-based) while operating outside of the Link-16 network coverage. The L22GW will implement the following requirements:

1. <u>Link-22 Media</u>. The Link-22 High Frequency (HF) and Ultra-High Frequencies (UHF) radios will accommodate both BLOS and line of sight (LOS) communication requirements. Both radios, HF and UHF, will operate in Fixed Frequency (FF) mode. The UHF radio can potentially operate also in EPM mode. The Link-22 Media will be provided as GFE.

   a. The L22GW must integrate and enclose the STANAG 4539 compliant HF radio into the implemented solution to enable the BLOS communication.

   b. The L22GW must integrate and enclose the STANAG 4539 and STANAG 4372 Annex B – Chapter IV compliant UHF radio into the implemented solution to support the LOS communication.

   c. The L22GW must integrate all the RF cables, RF port adapter, antennae and retractable mast that are required to operate the HF FF and UHF FF/EPM.

   d. The L22GW must integrate and enclose all power adapters, data communication cables, support equipment and ancillaries that are required to operate the HF FF and UHF FF/EPM.

2. <u>Signal Processing Controller (SPC)</u>. The SPC provides the error detection and correction, signal modulation/demodulation, and transmission security (TRANSEC). The SPC can be configured to support up to 4 Link-22 HF FF and UHF FF/EPM radios. The SPC will be provided as GFE.

   a. The L22GW must integrate and enclose the SPC into the implemented solution. The provided SPC is compliant with Segment Specification for Signaling Processing Controller (SPC SS) Appendix A and D as well as the Interface Requirement

Specification (IRS) for the LINK-22 Modernized Link Level COMSEC (LLC 7M) Segment of the Link 22 (NILE) System (LLC IRS) as applicable.

    b.T   he L22GW must integrate all power adapters, data communication cables, support equipment and ancillaries that are required to operate the SPC.

3. <u>Link-22 Modernized Link Level COMSEC (LLC 7M)</u>. The LLC 7M is the small form factor Link-22 COMSEC which is developed by USA and only available through the USA's FMS program. The LLC is built with a single encryption/decryption channel and up to 4 independent serial ports (Black) to handle the SPC/radio configuration and monitoring. The LLC 7M will be provided as GFE.

    a. The L22GW must integrate the LLC 7M into the implemented solution.

    b.T   he L22GW must integrate all power adapters, data communication cables, support equipment and ancillaries that are required to operate the LLC 7M.

4. <u>System Network Controller (SNC)</u>. The SNC provides the Network and Transport layers for Link 22, and is therefore responsible for packing tactical and technical messages for onward transmission and delivery to the designated addressee(s). The SNC also allow for the configuration, monitoring and management of the Link-22 networks and/or super network. The SNC will be provided as Government Supplied Materiel (GSM).

    a. The L22GW must integrate the SNC into the implemented solution.

    b.T   he L22GW must integrate all communication interface adapters, data cables, support equipment and ancillaries that are required to operate the SNC.

5. <u>Time of Day (TOD)</u>. The TOD solution provides the accurate GPS-based time reference for the NILE Communication Equipment (NCE) and time sensitive systems. The NTS must be used as the TOD solution to meet the following synchronization requirements:

    a. The TOD must provide the one-way Coordinated Universal Time (UTC) reference input with a precision within ±0.5ms to the SPC through the STANAG 4430 compliant interface.

    b.T   he TOD must provide the one-way UTC reference input with a precision within ±0.5ms to the UHF EPM media through the STANAG 4430 compliant interface.

    c.T   he TOD must provide the UTC reference with a precision within ±50ms to the SNC through the government furnished TOD interface application which is accepting either STANAG 4430 compliant time input or a NTP broadcast.

    d. The TOD must provide the UTC reference with a precision within ±200ms to the DLP and networked systems through the NTPv3 interface.

    e. The L22GW must include all communication interface adapters, data cables, networking equipment and ancillaries that are required to operate the TOD.

6. <u>Data Link Processor (DLP)</u>. The DLP provides the functionalities supporting the configuration of Link-22 communication equipment, tactical messages reception, processing, transmission and forwarding. The implementation of DLP will have the following specifications:

    a. The DLP must be a software based solution running on one of the following Operating System (OS) environments (Virtual Machine is acceptable):

        (i)   Microsoft Windows 10 Enterprise;

        (ii)   Microsoft Windows Server® 2012 R2; and

        (iii)   Red Hat® Enterprise Linux 6.

b. The DLP must implement all tactical functionalities supporting Link-22 in accordance with, unless otherwise specified, the latest edition of STANAG 5522 / ATDLP-5.22(A), SNC Segment Specification (SNC SS), SPC SS and LLC IRS as applicable.

c. The DLP must provide a map-based Graphical User Interface (GUI) with no view plane restrictions (global view) for the system configuration and monitoring.

d. The DLP must provide a map-based GUI for the system operation.

e. The DLP must allow the operator to configure the following coordinate systems which are used for the display of the entities on the map:

(i)   Military Grid Reference System (MGRS); and

(ii)   World Geodetic System 1984 (WGS-84).

f. <u>Tactical Data Processor (TDP) Command Control (C2) Interface</u>. The DLP must allow for exchange of Link-22 tactical messages with a TDP C2 application and remote system through an Ethernet IP-based network and in accordance with the following specifications:

(i)   The DLP must implement the Standard Interface for Multiple Links Evaluation (SIMPLE) protocol in accordance with STANAG 5602.

(ii)   The DLP must allow for establishing the SIMPLE link with a TDP C2 application and/or remote system, using the following Ethernet IP-based communication methods:

1. TCP/IP Server;

2. TCP/IP Client.

(iii)   The DLP must allow for the exchange of Link-22 tactical messages with TDP C2 systems through the SIMPLE link in accordance with STANAG 5602.

(iv)   The DLP must allow for enabling/disabling Link-22 tactical messages transmission and reception through the SIMPLES interface.

g. <u>Data Input Initialization</u>. The DLP must provide an interface which allow for the initialization of operational parameters.

(i)   The DLP should be able to receive the OPTASK Link Message (OLM) through a secure Ethernet IP-based communication interface, and store it in a selected local and network folder.

(ii)   The DLP must allow the operator to configure the own unit Link-22 address using either MGRS or WGS-84 format.

(iii)   The DLP must allow the operator to select the LLC/SPC for each network.

(iv)   The DLP must allow the operator to set the frequencies and transmission power of SPC/Radio.

(v)   The DLP must allow for the extraction and modification of information from an OLM stored in a specified local and network folder, for Link-22 systems and network initialization.

(vi)   The DLP must allow the operator to supply, through the GUI and system interface, all information required for NCE and Link-22 network initialization.

h. The DLP must implement the interface with SNC in accordance with the *Interface Design Description for the Data Link Processing Segment and the System Network Controller* (DLP-SNC IDD), to support all required operations through both Tactical Functional Interface and Control and Status Interface.

i. The DLP must allow the operator to operate on 2 Link-22 networks simultaneously.

j. <u>Systems Initialization</u>. The DLP must allow for the NCE initialization through the SNC Control and Status Interface with, but not limited to, the following operations:

    (i)   The DLP must implement all required logics, messages and functions that enable the SNC initialization.

    (ii)   The DLP must implement all required logics, messages and functions that enable the LLC configuration.

    (iii)   The DLP must implement all required logics, messages and functions that enable the SN Directory initialization and/or update.

k. <u>Network Initialization</u>. The DLP must allow for the Link-22 network initialization, only after the NCE initialization completed, through the SNC Control and Status Interface with, but not limited to, the following operations:

    (i)   The DLP must implement all required logics, messages and functions that enable the Short Network Initialization either by using the Network Cycle Structure (NCS) defined in the OLM or by calculating the NCS based on the Super Network (SN) parameters provided in the OLM.

    (ii)   The DLP must implement all required logics, messages and functions that enable the SPC configuration through the attached LLC.

    (iii)   The DLP must allow for the automatic update of Operational Start Time (OST) in accordance with the '12 hours' rule when the initialization occurs after the planned OST.

    (iv)   The DLP must implement all required logics, messages and functions that allow for the Probing Network Initialization.

    (v)   The DLP must allow the operator to change the input parameters and initiate a new computation of Operational NCS (ONCS).

    (vi)   The DLP must implement the following Late Network Entry (LNE) protocols which allow the operator to initiate the network entry in one of the following situations:

        (1.)   Inactive Join – Unit is currently not an active member on any NILE Network.

        (2.)   Active Join – Unit is already an active member of at least one other NILE Network.

        (3.)   Silent Join – Unit is currently not an active member of any NILE Network and wants to listen to the network without performing any transmission.

l. <u>Systems Management & Monitoring</u>. The DLP must allow for the NCE monitoring and management through the SNC Control and Status Interface with, but not limited to, the following operations:

    (i)   DLP must allow for the operator to change the radio transmission power of a specific radio.

    (ii)   DLP must allow for the operator to activate/deactivate the Radio Silence on a specific network, or in the entire SN.

    (iii)   DLP must allow for receiving and displaying the periodic update of all statistical information from the SNC.

      (iv)   DLP must allow the operator to initiate a request and visualize the management information, including but not limited to the following:

            (1.)   Connectivity Data;

            (2.)   Link Participants;

            (3.)   Media Parameters;

            (4.)   Queued Messages;

            (5.)   SN Directory Updates;

            (6.)   Network Information;

            (7.)   Congestion Indexes;

            (8.)   Capabilities; and

            (9.)   Control & Status Messages.

      (v)   DLP should allow the operator to initiate the command to zeroize the LLC. The execution result should be displayed.

m.   <u>Network Management</u>. DLP must implement all required logics, messages, protocols and functions that allow the operator to take the role of Network Management Unit (NMU), and perform network management functionalities, including but not limited to the following:

      (i)   Network Performance Monitoring;

      (ii)   NMU Role Management;

      (iii)   Network Parameters Management;

      (iv)   LNE Support;

      (v)   Radio Power Management; and

      (vi)   Network Radio Silence.

n.   <u>Super Network Management</u>. DLP should implement all required logics, messages, protocols and functions that allow the operator to take the role of Super Network Management Unit (SNMU), and perform the following operations accordingly:

      (i)   SNMU Role Management;

      (ii)   Mission Area Sub Network (MASN) Management;

      (iii)   Crypto Key Management;

      (iv)   New Network Creation;

      (v)   Address Management;

      (vi)   LNE Support;

      (vii)   Status Management;

      (viii)   Relay Setting Management;

      (ix)   Super Network Parameter Distribution; and

      (x)   Super Network Radio Silence.

o.   <u>Tactical Operation</u>. DLP must allow for the processing and exchange of tactical information on Link-22 through the SNC Tactical Functional Interface by implementing the following requirements:

      (i)   DLP must implement all required logics, messages, protocols and functions that allow for the transmission, reception and processing of all Link-22 tactical messages required for the following functional areas in accordance

with the latest edition of STANAG 5522 / ATDLP-5.22(A) and its Appendix 1 to Annex B – Minimum Implementation:

(1.) Participant Location and Identification (PLI);

(2.) Air Surveillance;

(3.) Surface (Maritime) Surveillance; and

(4.) Subsurface (Maritime) Surveillance.

(ii) DLP should implement all required logics, messages, protocols and functions that allow for the transmission, reception and processing of all Link-22 tactical messages required for the following functional areas in accordance with the STANAG 5522 Ed.4/ATDLP-5.22(A) and its Appendix 1 to Annex B – Minimum Implementation:

(1.) Land (Ground) Surveillance;

(2.) Electronic Warfare (EW);

(3.) Track/Point Amplification;

(4.) Weapons Coordination and Management;

(5.) Information Management; and

(6.) Space Surveillance.

(iii) DLP must allow for the configuration of the following transmission's Quality of Service (QoS) parameters for each tactical message type:

(1.) Priority (from 1 to 4, 1 is the highest);

(2.) Reliability (Standard, High, Guaranteed);

(3.) Perishability; and

(4.) Indicator Flags (Priority Injection, Radio Silence Override).

(iv) DLP must allow for controlling the transmission of tactical messages based on, but not limited to, the following:

(1.) Message type;

(2.) Source/Originator; and

(3.) Geographic Area.

(v) The DLP must allow for controlling the transmission of tactical messages, based on configured filtering parameters, on each individual Link-22 network interface.

(vi) The DLP must allow for enabling/disabling the transmission and reception of tactical messages on each individual Link-22 network interface.

(vii) The DLP must process and transmit Link-22 tactical messages received from connected TDP C2 systems on Link-22 network.

(viii) The DLP must process and transmit Link-22 tactical messages received from Link-22 network to connected TDP C2 systems.

(ix) The DLP must allow for controlling the transmission of system tracks (tracks received on the SIMPLE interface) based on, but not limited to, the following:

(1.) Track Environment/Category;

(2.) Track Identity;

(3.) Track Source/Originator; and

(4.) Geographic Area.

(x) The DLP must allow for controlling the transmission of system tracks, based on configured filtering parameters, on each individual Link-22 network interface.

(xi) DLP must implement Link-22 tactical functions, including but not limited to, track management, correlation, report responsibility and conflict resolution, for PLI and system tracks report on Link-22 network in accordance with STANAG 5522 Ed.4/ATDLP-5.22(A).

(xii) DLP must allow for the operator to enable/disable the transmission of tracks received from a SIMPLE interface without processing through the track management, correlation, report responsibility and conflict resolution functions.

(xiii) The DLP should implement the procedures for the Change Data Order (CDO) of a track on a Link-22 network in accordance with STANAG 5522 Ed.4/ATDLP-5.22(A).

(xiv) The DLP must maintain and manage a local database with configurable data persistency for tracks and bearing lines.

p. The DLP must be operable on the latest version of the currently supported OS environment.

7. The L22GW must be mounted in 2-man lift ruggedized and transportable cases.

3.2   System Integration

3.2.1   Deployable TDL GES

The delivered solution needs to implement and integrate the following operational capabilities and functionalities:

1. Deployable TDL GES must integrate a suitable workstation or laptop which is provided as GFE for the ASMS operation.

2. Deployable TDL GES must integrate a suitable laptop which is provided as GFE for the DLP/SNC operation.

3. Deployable TDL GES must implement the Network Time Server (NTS) capability requirements.

4. Deployable TDL GES must implement the Secure Communication Gateway (SCG) capability requirements.

5. Deployable TDL GES must integrate the government furnished Link-16 Gateway (L16GW) capability.

6. Deployable TDL GES must implement and integrate the Link-22 Gateway (L22GW) capability requirements.

7. Deployable TDL GES must integrate the government furnished Airspace Management Suite (ASMS) capability.

8. Deployable TDL GES must include materiel, electric and data cables, networking equipment and ancillaries that are required for the integration and operation of implementing capabilities and functionalities

APPENDIX A2

CONTRACT DATA REQUIREMENT LIST

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

Contract Data Requirements List (CDRL) Table Definitions

The following section defines each column found on the CDRL forms:

CDRL NUMBER
The Contract Data Requirements List (CDRL) number, consisting of a sequential three-digit number and prefixed with an abbreviation code, to uniquely identify the CDRL. The abbreviation codes used for the prefix are based on subject areas and are as follows:

PM   Project Management
PP   Project Plan
SE   Systems Engineering
TD   Test and Delivery

The CDRL number is further prefixed with an abbreviation code of where the contract deliverable originates from. The abbreviation codes are as follows:

ACQ   Acquisition Statement of Work (SOW)
ILS   Integrated Logistics Support (ILS)

An example CDRL number would be as follows: ACQ-PM-001

TITLE
The title of the contract deliverable being referred to.

REFERENCE
The specific paragraph number of the Contract Demand, Statement of Work, Request for Proposal, Specification, or other applicable document to assist in identifying the originating location of the contract deliverable.

APPROVAL CODE (APP CODE)
Indicates items of critical data requiring specific advanced written approval, such as test plans, identified by placing an "A" in this field. These data may require submission of a preliminary draft prior to publication of a final document. When a preliminary draft is required, the "Remarks" section must show the length of time for Government approval/disapproval and when final is to be delivered. The "Remarks" section also indicates the extent of the approval requirements, e.g., approval of technical content and/or format.

If advance approval is not required, this block is marked as "N/A".

FREQUENCY
This block indicates the frequency of the delivered data. The following frequency codes are used:

       ANNLY   Annually
       ASGEN   As generated
       ASREQ   As required
       BI-MO   Every 2 months
       BI-WK   Every2 weeks
       DAILY   Daily
       MNTHY   Monthly
       ONE/R   One time with revisions

TWO/R	Two times with revisions
THREE/R	Three times with revisions
OTIME	One time
QRTLY	Quarterly
R/ASR	Revisions as required
SEMIA	Semi-annually
WKLY	Weekly

AS OF DATE
For contract deliverables that are submitted only once, the "as of" date or associated constraint is indicated. The following abbreviations are used for the constraints:

ASGEN	As generated
ASREQ	As required
DACA	Days after contract award
MACA	Months after contract award
DAKOM	Days after kick-off meeting
DARC	Days after receipt of comments
EOM	End of month
EOQ	End of quarter

If the as-of date is not applicable, leave this block blank.

SUBMISSION DATE
The initial submission date or associated constraint for the 1st submission of the contract deliverable is indicated in this block using typical abbreviations as listed above under "As of Date".

DATE OF SUBSEQUENT SUBMISSION
The date(s) of subsequent submission(s) or associated constraint(s) of the contract deliverable is indicated this block. The abbreviations used for the constraints are as listed above under "As of Date". If no subsequent submission or associated are not involved, this block is left blank.

MEDIA & QUANTITY
Indicates the total number of copies (hard copies and soft copies separately) required for both the original submission and for the final submission. If the project has been identified as a Green Procurement project and as such all deliverables will be communicated by using electronic means.

REMARKS
Provides additional or clarifying information.

CDRL NUMBER	TITLE	SOW REFERENCE	APP CODE	FREQUENCY	AS OF DATE	SUBMISSION DATE	DATE OF SUBSEQUENT SUBMISSION	MEDIA & QUANTITY	REMARKS
ACQ-PP-001	Project Management Plan	2.3.1		ONE/R		10 DACA	Kick-off Meeting	Electronic Transmission; e.g., e-mail or drop box	The initial submission will be used for review purpose.
ACQ-PM-001	Meeting Agendas	2.3.2.	A	ASREQ/R	ASREQ	ASREQ	Project Review Meeting	Electronic Transmission; e.g., e-mail or drop box	Meeting agenda must be submitted 10 working days prior to each meeting
ACQ-PM-002	Meeting Minutes	2.3.2.	A	ASREQ/R	ASREQ	ASREQ	Project Review Meeting	Electronic Transmission; e.g., e-mail or drop box	Meeting minutes must be submitted no later than 10 working days after each meeting
ACQ-PM-003	Final Report	2.3.4	A	ASGEN/R		ASGEN	PCO Meeting	Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10 working days before meeting.

CDRL NUMBER	TITLE	SOW REFERENCE	APP CODE	FREQUENCY	AS OF DATE	SUBMISSION DATE	DATE OF SUBSEQUENT SUBMISSION	MEDIA & QUANTITY	REMARKS
ACQ-SE-001	System Design Specification (SDS) Document	2.4.1	A	ONE/R		ASGEN	SAT	Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10 working days before applicable meeting.
ACQ-SE-002	System Requirements Review (SRR) Report	2.4.2	A	ASGEN/R		ASGEN	SRR	Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10 working days after the applicable meeting.
ACQ-SE-003	PDR Report	2.4.3	A	ONCE/R		ASGEN	PDR	Electronic Transmission; e.g., e-mail	Must be submitted for review no later than 5 working days after applicable meeting.
ACQ-SE-004	CDR Report	2.4.4	A	ONCE/R		ASGEN	CDR	Electronic Transmission; e.g., e-mail	Must be submitted for review no later than 5 working days after

CDRL NUMBER	TITLE	SOW REFERENCE	APP CODE	FREQUENCY	AS OF DATE	SUBMISSION DATE	DATE OF SUBSEQUENT SUBMISSION	MEDIA & QUANTITY	REMARKS
									applicable meeting.
ACQ-TD-001	Factory Acceptance Test (FAT) Plan	2.4.5	A	ASGEN/R		ASGEN	FAT	Electronic Transmission; e.g., e-mail	Must be submitted for review no later than 10 working days before applicable meeting.
ACQ-TD-002	Factory Acceptance Test (FAT) Report	2.4.5	A	ASGEN/R		ASGEN		Electronic Transmission; e.g., e-mail	Must be submitted for review no later than 10 working days after the event.
ACQ-TD-003	System Acceptance Test (SAT) Plan	2.4.6.	A	ONE/R		ASGEN	SAT	Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10working days before applicable meeting.

CDRL NUMBER	TITLE	SOW REFERENCE	APP CODE	FREQUENCY	AS OF DATE	SUBMISSION DATE	DATE OF SUBSEQUENT SUBMISSION	MEDIA & QUANTITY	REMARKS
ACQ-TD-004	System Acceptance Test (SAT) Report	2.4.6.	A	ONE/R		ASGEN		Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10working days after the event.
ACQ-CS-001	Cybersecurity Fundamentals Plan	2.1.4	A	ONE/R		ASGEN	FAT	Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10 working days after the event.
ACQ-CS-002	Continuous Monitoring Plan	2.1.4	A	ONE/R		ASGEN	FAT	Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10 working days after the event.
ACQ-CS-003	Incident Response Plan	2.1.4	A	ONE/R		ASGEN	FAT	Electronic Transmission; e.g., e-mail or drop box	Must be submitted for review no later than 10 working days after the event.

APPENDIX A3

DATA ITEM DESCRIPTION

DEPLOYABLE DATA LINK GROUND ENTRY STATION

Deployable TDL GES Data Item Description (DID)

Data Item Description (DID) Form Definitions
The following section defines the various blocks of information found on the Data Item Description (DID) forms:

Block Number	Name	Definition
1	*TITLE*	*The title of the data item for the DID*
2	*IDENTIFICATION NUMBER*	*The Data Item Description (DID) number is the same as the CDRL number*
3	*DESCRIPTION*	*Provides a general description of the data content requirements.*
4	*APPROVAL DATE*	*Indicates the date of the originator's approval of the DID.*
5	*OFFICE OF PRIMARY INTEREST (OPI)*	*The office of primary interest for the review, acceptance and/or approval of the data item*
6	*OFFICE OF COLLATERAL INTEREST*	*The office of collateral interest for the review, acceptance and/or approval of the data item.*
7	*APPLICATION / INTERRELATIONSHIPS*	*Provides the application details and Inter Relationship of the data item to other DIDs or documents.*
8	*ORIGINATOR*	*Indicates the originator's office responsible for the DID.*
9	*REFERENCES*	*Lists the references for of the data item.*
10	*PREPARATION INSTRUCTIONS*	*Provides the preparation instructions, including format and content requirements for the data.*

DID ACQ-PP-001: Project Management Plan

DATA ITEM DESCRIPTION	
1. TITLE: Project Management Plan	**2. ID NUMBER:** ACQ-PP-001

3. DESCRIPTION

The Project Management Plan (PMP) provides an overview of the different project processes and how they fit together to form a totally integrated management system for the project. The PMP must be the master planning document, integrating, summarizing and referencing other project plans and schedules required in this DID and elsewhere in the Contract.

4. APPROVAL DATE At least 5 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A

7. APPLICATION/INTERRELATIONSHIP

Annex A – Statement of Work (SOW), section 2.3.1 *Project Management Plan*

8. ORIGINATOR: PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS:** N/A

10. PREPARATION INSTRUCTIONS

10.1   Format
1. The PMP must be prepared in the Supplier's format, within the constraints imposed herein.
2. The PMP shall contain, but not limited to, the following sections:
   a. Introduction;
   b. Management Organization and Responsibilities; and
   c. Schedule and Milestones.

10.2 Content
1. The PMP must include (but not be limited to) a description of the following:
   a. <u>Introduction</u>. - This section must identify the purpose and the scope of the PMP. References and terminology used in the plan must be clearly defined.
   b. <u>Management Organization and Responsibilities</u>. The Supplier must provide a chart showing the overall project organization. The organization chart must identify, by name, all key management personnel and must clearly indicate lines of responsibility. A narrative description of the responsibilities and related experience of each individual identified must be provided. The Supplier must identify personnel who will interface directly with PSPC and DND. For each individual so indicated, the Supplier must delineate their scope of responsibility and Authority.
   c. <u>Schedule and Milestones</u>. The Supplier must provide a project "Master Milestone Schedule", showing major activities and milestones and include a detailed production and delivery schedule. Codes used in the schedule forms must be clearly defined.

10.3 Additional Information.
The PMP must include any general information that aids in understanding. The PMP must also define any terms and acronyms required to understand the plan.

DID ACQ-PM-001: Meeting Agenda

DATA ITEM DESCRIPTION	
1. TITLE Meeting Agenda	**2. IDENTIFICATION NUMBER** ACQ-PM-001

3. DESCRIPTION

The Meeting Agenda must provide an outline of purpose, objectives and issue areas to be formally discussed at meetings.

4. APPROVAL DATE No later than 10 working days prior to each meeting.	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. GIDEP APPLICABLE** N/A

7. APPLICATION/INTERRELATIONSHIP

Annex A – Statement of Work (SOW), section 2.3.2. *Project Related Meetings*

8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A

10. PREPARATION INSTRUCTIONS

10.1   Format

The Agenda must be prepared in the Supplier's format.

10.2   Content

The Agenda must include the following:

a.   Meeting Identification Number;

b.   Time, date, location and anticipated duration;

c.   Supplier attendees;

d.   Sub-contractor attendees (if required);

e.   The scope, purpose and objectives of the meeting;

f.   Topics to be discussed;

g.   Need for any Government documentation to be presented at the review;

h.   Review and acceptance of the minutes of the previous meeting;

i.   New subject items to be introduced by Supplier and/or Government;

j.   Review of Action Items;

k.   Next Venue; and

l.   Other business.

10.3 Additional Information

The agenda must include any general information that aids in understanding, and must define any terms and acronyms used.

DID ACQ-PM-002: Meeting Minutes

DATA ITEM DESCRIPTION		
1. TITLE Meeting Minutes	**2. IDENTIFICATION NUMBER** ACQ-PM-002	
3. DESCRIPTION The Meeting Minutes must record significant discussion, actions, decisions, and all pertinent information necessary to provide a complete and accurate record of the proceedings.		
4. APPROVAL DATE No later than 10 working days after each meeting.	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. GIDEP APPLICABLE** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.3.2. *Project Related Meetings*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	

10. PREPARATION INSTRUCTIONS

10.1   Format

1. The Meeting Minutes must be prepared in the Supplier's format.
2. The format of the first report submitted must be subject to approval by the Project Authority, and once approved, must become the standard for future reports.
3. Minutes and associated meeting deliverables are not final versions until formally accepted by the Project Authority.

10.2   Content

1. The minutes must include the following information:

    b.   A copy of the approved agenda;

    c.   A list of all attendees detailing appointment and title;

    d.   A record of discussion of all items tabled and action taken;

    e.   Specific identification of action items arising from discussions, including the name and appointment of each person required to take action on outstanding items and a scheduled time for response;

    f.   The proposed date, time and location of any follow-up meeting;

    g.   Signature blocks for both Supplier and Government responsible representatives;

    h.   Copies of all data and information tabled at the meeting appended to the minutes; and

    i.   The Meeting Minutes must include a disclaimer that the minutes are a record of discussions only and do not constitute approval for contractual changes.

10.3 Additional Information

The minutes must include any general information that aids in understanding and define any terms and acronyms used.

DID ACQ-SE-001: Deployable TDL GES SDS

DATA ITEM DESCRIPTION		
1. TITLE Deployable Tactical Data Link (TDL) Ground Entry Station (GES) System Design Specifications (SDS)		**2. IDENTIFICATION NUMBER** ACQ-SE-001
3. DESCRIPTION The purpose of this deliverable is to provide the Project Authority with the Deployable TDL GES System Design Specifications (SDS) Document.		
4. APPROVAL DATE At least 5 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.1 *System Design Specifications* Appendix A1 – *Systems Performance Specifications*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	

10. PREPARATION INSTRUCTIONS

10.1 Format

The System Design Specifications (SDS) document must be prepared in the Supplier's format.

10.2 Content

1. At a high level the SDS includes description, design and specifications of Deployable TDL GES. Furthermore, the SDS must describe, where applicable, the interface and inter-connectivity, including but not limited to the following:

    a. Systems network architecture

    b. Sub-components connection diagram

    c. Systems network and communication interface description

2. The System Design Specifications must describe the total system and map to DND specifications and include following information:
    a. Description of the system;

    b. Performance and design requirements of the system;

    c. Design constraints;

    d. Safety goals for the design;

    e. Reliability and maintainability requirements of the system;

    f. Environmental requirements of the system; and

    g. Use of any Government Supplied Material (GSM) in the design.

10.3 Additional Information

The report must include any general information that aids in understanding and define any terms and acronyms used.

DID ACQ-SE-002: SOW Requirements Review Report

DATA ITEM DESCRIPTION		
1. TITLE SOW Requirements Review (SRR) Report		**2. IDENTIFICATION NUMBER** ACQ-SE-002
3. DESCRIPTION The purpose of this report is to provide the Project Authority with the Supplier's response to resolve each observation made before or during the SOW Requirements Review (SRR).		
4. APPROVAL DATE Within 5 days after submission	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.2. *System Requirements Review* Appendix A1 – *Systems Performance Specifications*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	

10. PREPARATION INSTRUCTIONS
 	
10.1 Format
 	
The *SRR* Report must be prepared in the Supplier's format.
 	
10.2 Content
 	
    1.   The SRR observation report must include the following for each observation:
 	
        a.   A detailed description of the observation;
 	
        b.   A reference to the origin of the observation;
 	
        c.   Steps taken to address the observation; and
 	
        d.   Steps planned to resolve the observation.
 	
10.3 Additional Information
 	
The report must include any general information that aids understanding, as well as definition of any terms and acronyms used.		

DID ACQ-SE-003: Preliminary Design Review (PDR) Report

DATA ITEM DESCRIPTION		
1. TITLE Preliminary Design Review (PDR) Report	**2. IDENTIFICATION NUMBER** ACQ-SE-003	
3. DESCRIPTION The purpose of this report is to provide the Project Authority with the Supplier's response to resolve each observation made before or during the Preliminary Design Review (PDR).		
4. APPROVAL DATE At least 5 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.3. *Preliminary Design Review* Appendix A1 – *Systems Performance Specifications*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	

10. PREPARATION INSTRUCTIONS
 	
10.1 Format
 	
The *PDR* Report must be prepared in the Supplier's format.
 	
10.2 Content
 	
    1.   The report must include the following for each observation:
 	
        a.   A detailed description of the observation;
 	
        b.   A reference to the origin of the observation;
 	
        c.   Steps taken to address the observation; and
 	
        d.   Steps planned to resolve the observation.
 	
10.3 Additional Information
 	
The report must include any general information that aids in understanding and define any terms and acronyms used.		

DID ACQ-SE-004: Critical Design Review (CDR) Report

DATA ITEM DESCRIPTION		
1. TITLE Critical Design Review (CDR) Report		**2. IDENTIFICATION NUMBER** ACQ-SE-004
3. DESCRIPTION The purpose of this report is to provide the Project Authority with the Supplier's response to resolve each observation made before or during the Critical Design Review (CDR).		
4. APPROVAL DATE At least 5 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.4. *Critical Design Review* Appendix A1 – *Systems Performance Specifications*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	

10. PREPARATION INSTRUCTIONS
 	
10.1 Format
 	
The CDR Report must be prepared in the Supplier's format.
 	
10.2 Content
 	
    1. The report must include the following for each observation:
 	
        a. A detailed description of the observation;
 	
        b. A reference to the origin of the observation;
 	
        c. Steps taken to address the observation; and
 	
        d. Steps planned to resolve the observation.
 	
10.3 Additional Information
 	
The report must include any general information that aids in understanding and define any terms and acronyms used.		

DID ACQ-TD-001: Factory Acceptance Test (FAT) Plan

DATA ITEM DESCRIPTION		
1. TITLE Factory Acceptance Test (FAT) Plan	**2. IDENTIFICATION NUMBER** ACQ-TD-001	
3. DESCRIPTION The FAT Plan is prepared based on Supplier test plan for each type of Deployable TDL GES system or components or sub-systems or integrated system at the factory.		
4. APPROVAL DATE N/A	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.5. *Factory Acceptance Test*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	
10. PREPARATION INSTRUCTIONS **10.1 Format** The FAT Test Plan must be prepared in Supplier's format. **10.2 Content** As per Supplier defined test-procedures, the FAT Test Plan will include various test plans as deemed appropriate by the Supplier, of components and sub-systems to be verified. **10.3 Additional Information** The document must include any general information that aids understanding as well as definition of any terms and acronyms used.		

DID ACQ-TD-002: Factory Acceptance Test (FAT) Report

DATA ITEM DESCRIPTION		
1. TITLE Factory Acceptance Test (FAT) Report	**2. IDENTIFICATION NUMBER** ACQ-TD-002	
3. DESCRIPTION As per Supplier defined test-procedures, the FAT Report will include overall system testing results, where the interaction of all components and sub-systems are verified from the antenna to the IP Port. The FAT Report must include Original Equipment Manufacturer (OEM) test reports for the production of the Deployable TDL GES system.		
4. APPROVAL DATE N/A	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.5. *Factory Acceptance Test*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	
10. PREPARATION INSTRUCTIONS **10.1 Format** The FAT Report must be prepared in Supplier's format. **10.2 Content** As per Supplier defined test-procedures, the FAT report will include overall test results as deemed appropriate by the Supplier, of components and sub-systems that have been verified as laid out in the FAT test plan. **10.3 Additional Information** The report must include any general information that aids understanding as well as definition of any terms and acronyms used in the report.		

DID ACQ-TD-003: Systems Acceptance Test (SAT) Plan

DATA ITEM DESCRIPTION		
1. TITLE: Systems Acceptance Test (SAT) Plan	**2. ID NUMBER:** ACQ-TD-003	
3. DESCRIPTION The System Acceptance Test (SAT) Plan must contain the test cases and test procedures necessary to perform formal qualification testing of each Deployable TDL GES system type and relevant integration test. These tests enable the Project Authority to assess the completion of the Deployable TDL GES system delivery.		
4. APPROVAL DATE At least 10 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.6. *Site Acceptance Test* Appendix A1 – *Systems Performance Specifications*		
8. ORIGINATOR: PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS:** N/A	

10. PREPARATION INSTRUCTIONS

10.1 Format

The SAT plan must be prepared in Supplier's format.

10.2 Content

10.2.1 The SAT plan must include the following information:

1. <u>Overview</u>. Consists of a brief description of the objectives of the SAT plan, including flow diagrams, milestones, personnel participation, and security requirements. This section must include the following:
   a. A functional description of the SAT program using a block diagram portrayal of the functions that must be met to satisfy the total acceptance program;
   b. Milestones and schedule that identify the start and expected completion dates and daily times of each test to be performed;
   c. List of Government and Supplier participation roles and responsibilities. The Supplier must provide an organizational chart showing reporting lines for the planned test;
   d. Any security measures of guidelines to be observed; and
   e. All administration, timings, meeting locations.
2. <u>Master Test List</u>. Lists all tests to be accomplished in the order they are to be performed. This listing must include the following:
   a. Location where the acceptance test is to be performed;
   b. Name and brief description of test to be performed;
3. <u>Equipment List</u>. The equipment list must contain all equipment to be used in the acceptance test. The listing must include all test and support equipment by:
   a. Description;   b. Nomenclature;   and   c. Serial number.
4. <u>Validation Procedure</u>. Details of the procedures that the Supplier will use to validate the test results which includes the following:
   a. Details of the procedures that the Supplier will use to validate the test results;
   b. Details of the procedures that Canada will use to validate the test results; and
   c. Details of the briefing that Canada will receive in order to validate the tests that includes the System configuration, the software configuration and the communication configuration.

10.3 Additional Information

The report must include any general information that aids in understanding and define any terms and acronyms used in the report.

DID ACQ-TD-006: Systems Acceptance Test (SAT) Report

DATA ITEM DESCRIPTION		
1. TITLE Systems Acceptance Test (SAT) Report		**2. IDENTIFICATION NUMBER** ACQ-TD-006
3. DESCRIPTION 1. The System Acceptance Test (SAT) Report must contain the results of measurements and observations from test cases and test procedures necessary to perform formal qualification testing of each Deployable TDL GES system type and relevant integration test. 2. The SAT Reports enable the Project Authority to assess the readiness for delivery of the Deployable TDL GES system.		
4. APPROVAL DATE At least 10 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work (SOW), section 2.4.6. *Site Acceptance Test* Appendix A1 – *Systems Performance Specifications*		
8. ORIGINATOR PMO TIC3 AIR, TDL		**9. APPLICABLE FORMS** N/A
10. PREPARATION INSTRUCTIONS **10.1 Format** The SAT report must be prepared in Supplier's format. **10.2 Content** 1. The System Acceptance Test Report documents the Deployable TDL GES capability type end-to-end performance in accordance with the System Performance Specifications (SPS) documentation. 2. Specifically, the Test Program for the Deployable TDL GES type has been successfully executed and test data results are documented. 3. The Report includes recommended deviation if any, and/or trade-off, and/or risk resolution approach that must be done prior to the Deployable TDL GES type delivery. **10.3 Additional Information** The report must include any general information that aids in understanding and define any terms and acronyms used in the report.		

DID ACQ-ILS-001: Training Package

DATA ITEM DESCRIPTION	
1. TITLE Training Package	**2. IDENTIFICATION NUMBER** ACQ-ILS-001

3. DESCRIPTION		
1. The Deployable TDL GES Training Package consists of all course materials (including website, course schedules, master lesson plans, lesson plans, audio/visual aids and student materials) required for the conduct of the Deployable TDL GES Operator and Maintainer training serials. 2. These materials enable the DND PA to deliver further serials of operator training without the involvement of the Supplier if required. DND therefore reserves the right to modify the contents of the Deployable TDL GES Training Plan for its own use, if required		

4. APPROVAL DATE At least 10 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. GIDEP APPLICABLE** N/A

7. APPLICATION/INTERRELATIONSHIP	
Annex A – Statement of Work (SOW), section 2.5.3.2 *Training Package*	

8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A

10. PREPARATION INSTRUCTIONS

10.1 Format

1. The Training Package must adhere to chapter 4 of:
    1. *"CANADIAN FORCES INDIVIDUAL TRAINING & EDUCATION SYSTEM ANALYSIS OF INSTRUCTIONAL REQUIREMENTS VOLUME 3"*
2. The Training Package must be prepared in the Supplier's format.

10.2 Objectives

1. The Training Package must ensure the Operators are provided the knowledge and skills to correctly and independently deploy, setup, configure and operate the Deployable TDL GES systems and ancillary equipment, monitor system performance, install ancillary parts, close down and redeploy the station if necessary.
2. The Training Package must ensure maintainers are provided the knowledge and skills to correctly and independently perform the duties of the Operator as well as inspect, perform preventative maintenance, troubleshoot, diagnose and correct Deployable TDL GES problems using on-board diagnostics and specialized test equipment.
3. The Training Package must include 2 separate Course Packages each capable of being delivered independently:

    a. Deployable TDL GES Operator

    b. Deployable TDL GES Maintainer

10.3 Content

1. Each Course Package in the Deployable TDL GES Training Package must include all lesson plans, teaching material and a master lesson plan outlining all lesson plans sequence and timing. Course packages may contain identical training modules where technical/procedural overlap exists between between Operator and Maintainer Disciplines.

2. The Lesson Plans must include, but not be limited to, the following:

a. The objectives/main teaching points of the training;
b. The training needs analysis and teaching methodology, (context, lecture / demonstration / practice)
c. Required preparations in advance of training presentations;
d. Required training aides;
e. Composition and quantity of Deployable TDL GES Sub-Systems and Ancillaries needed for training purposes;
f. Training content, sequence and duration – including the flow of exercises and demonstrations so as to make effective use of the students time and instructors' availability;
g. Relevant references and documents;
h. Provisions for capturing lessons learned and proposed modifications to the training based on the critiques received from the participants;
i. Translation of training material;
j. Provisions for updating training material – after each training session, subsequent to DND training validation, and after changes to the Deployable TDL GESs.

10.4 Additional Information

The report must include any general information that aids in understanding and define any terms and acronyms used in the report.

DID ACQ-CS-001: Cybersecurity Fundamentals Plan

DATA ITEM DESCRIPTION	
1. TITLE Cybersecurity Fundamentals Plan	**2. IDENTIFICATION NUMBER** ACQ-CS-001

3. DESCRIPTION

The purpose of the Cybersecurity Fundamentals Plan is to demonstrate how the Supplier will implement the Canadian Cyber Incident Response Centre's (CCIRC's) top 4 strategies to mitigate targeted cyber intrusions.

4. APPROVAL DATE At least 10 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A

7. APPLICATION/INTERRELATIONSHIP

Annex A – Statement of Work, section 2.1.4 *Operational Restriction and Vulnerability*

8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A

10. PREPARATION INSTRUCTIONS

10.1 Format

1. The Cybersecurity Fundamentals Plan must be prepared in the Supplier's format.

10.2 Change History

1. The Cybersecurity Fundamentals Plan must include a change history summary section which contains the following:
   a. A clear and unique version/revision identifier for each submission or resubmission of the Cybersecurity Fundamentals Plan;
   b. Clear identification of revisions or amendments within the document from its previous submission; and
   c. Rationale for the revisions and amendments.
2. All the revisions / amendments must be clearly identified within the document by using suitable change tracking feature in the Office Management Software used to produce the document, e.g. "Track Changes" feature in Microsoft-Word®, side bars etc.

10.3 References

1. Top 4 Strategies to Mitigate Targeted Cyber Intrusions, Canadian Cyber Incident Response Centre, May 2019, https://www.publicsafety.gc.ca/cnt/ntnl-scrt/cbr-scrt/_fl/tp-strtgs-eng.pdf.

10.4 Content

1. The Cybersecurity Fundamentals Plan must document the following:
   a. An application whitelisting plan describing how the system will prevent malicious software and unapproved programs from running.
   b. A description of the patch management process to ensure system software applications and operating systems remain free of known vulnerabilities. At a

minimum, known vulnerabilities are those listed in the MITRE Common Vulnerabilities and Exposure (CVE) database.

    c. An operating system lifecycle management plan to describing how system operating systems will:

        (i.) Remain OEM-supported for security patches at all times during the system lifecycle; and

        (ii.) Remain upgradeable as modern operating system security technology progresses.

    d. A plan to restrict administrative privileges within system software applications and operating systems based on user duties.

    e. A listing of system assets where any items a. through d. will not be present. For each item:

        (i.) Explain why the security control will not be present; and

        (ii.) Present a plan to manage the residual risk.

2. Security categorization of the Cybersecurity Fundamentals Plan deliverable must be performed upon creation of the document, as the Cybersecurity Fundamentals Plan or certain portions could be Protected and/or Classified.

3. Security labelling and marking, as well as handling, storage and transmission of the Cybersecurity Fundamentals Plan must be implemented in accordance with National Defence Security Orders and Directives.

4. In addition to the Security Marking, which is placed in the header and footer of each page, a set of informative statements will be printed on the cover, or first page, of the document and in some cases also on the Verso Page (the back-side of the Title Page or Cover Page) as required. Sections of the document that are classified may identify the classification level of each numbered item (i.e. headings, paragraphs) by placing (U), (C), (S) or (TS) before the text.

10.5 Additional Information

The document must include any general information that aids in understanding and define any terms and acronyms used in the document.

DID ACQ-CS-002: Continuous Monitoring Plan

DATA ITEM DESCRIPTION	
1. TITLE Continuous Monitoring Plan	**2. IDENTIFICATION NUMBER** ACQ-CS-002

3. DESCRIPTION

The purpose of the Continuous Monitoring Plan is to detail the detection and analysis processes, procedures and tools for continuous monitoring. Continuous monitoring activities range from real-time monitoring (E.g. intrusion detection, automated log analysis) to longer-term monitoring (E.g. vulnerability assessment and risk assessment, security audit, etc.), that is normally conducted offline.

4. APPROVAL DATE At least 10 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A

7. APPLICATION/INTERRELATIONSHIP

Annex A – Statement of Work, section 2.1.4 *Operational Restriction and Vulnerability*

8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A

10. PREPARATION INSTRUCTIONS

10.1 Format

1. The Continuous Monitoring Plan must be prepared in the Supplier's format.

10.2 Change History

1. The Continuous Monitoring Plan must include a change history summary section which contains the following:
    a. A clear and unique version/revision identifier for each submission or resubmission of the Continuous Monitoring Plan;
    b. Clear identification of revisions or amendments within the document from its previous submission; and
    c. Rationale for the revisions and amendments.
2. All the revisions / amendments must be clearly identified within the document by using suitable change tracking feature in the Office Management Software used to produce the document, e.g. "Track Changes" feature in Microsoft-Word®, side bars etc.

10.3 Content

1. The Continuous Monitoring Plan must document the following:
    a. Mission criticality statements to be monitored in the continuous security monitoring strategy.
    b. The circumstances, e.g. before or after military operations, triggered by threat intelligence or anomaly detection, and frequencies, e.g. yearly, for monitoring and for ongoing assessment of security, must be established.
    c. The monitoring activities to be conducted must be established and associated with the particular circumstances or frequencies. This includes real-time (E.g. intrusion

detection, automated log analysis) and offline activities (E.g. vulnerability assessment and risk assessment, security audit, etc.).

    d. A plan that includes the resources, tools, conditions (circumstances and frequencies), monitored cybersecurity events, and documentation necessary for each required monitoring activity shall be established.

    e. When identified or detected, the security events are to be analysed, categorized (incidents, vulnerabilities, threats, or events without adverse effects), reported and documented as follow:

        (i.) Incidents must be passed on to incident response;

        (ii.) Threats and vulnerabilities without patches available must have their risks assessed;

        (iii.) The vulnerability matrix and threat reports must be updated;

        (iv.) Mitigation strategies must be proposed for the identified risks; and

        (v.) Risk decisions (accept, avoid, transfer or mitigate) must be taken.

    f. Continuous risk assessment is to be conducted as part of continuous monitoring, including:

        (i.) Determination and planning of the test activities;

        (ii.) Update of the mission criticality statements, when necessary and whenever mission dependencies change and/or new systems are added

        (iii.) Update of the preliminary description of the assets;

        (iv.) Update of the preliminary identification of attack vectors;

        (v.) Update of the threats and vulnerabilities;

        (vi.) Update of the risks;

        (vii.) Proposition of mitigating measures;

        (viii.) Analysis of risks and decisions, and

        (ix.) Update of security documents.

2. Security categorization of the Continuous Monitoring Plan deliverable must be performed upon creation of the document, as the Continuous Monitoring Plan or certain portions could be Protected and/or Classified.

3. Security labelling and marking, as well as handling, storage and transmission of the Continuous Monitoring Plan must be implemented in accordance with National Defence Security Orders and Directives.

4. In addition to the Security Marking, which is placed in the header and footer of each page, a set of informative statements will be printed on the cover, or first page, of the document and in some cases also on the Verso Page (the back-side of the Title Page or Cover Page) as required. Sections of the document that are classified may identify the classification level of each numbered item (i.e. headings, paragraphs) by placing (U), (C), (S) or (TS) before the text.

10.4 Additional Information

The document must include any general information that aids in understanding and define any terms and acronyms used in the document.

DID ACQ-CS-003: Incident Response Plan

DATA ITEM DESCRIPTION		
1. TITLE Incident Response Plan	**2. IDENTIFICATION NUMBER** ACQ-CS-003	
3. DESCRIPTION The purpose of the Incident Response Plan is to detail the processes and procedures for the incident response activity which covers preparation for containment, eradication and recovery, as well as post-incident activity. Military systems should have proper incident containment, eradication, recovery, and post-analysis depending on their mission criticality and the underlying threat related to the incident.		
4. APPROVAL DATE At least 10 working days	**5. OFFICE OF PRIMARY INTEREST** PMO TIC3 AIR	**6. OFFICE of COLLATERAL INTEREST** N/A
7. APPLICATION/INTERRELATIONSHIP Annex A – Statement of Work, section 2.1.4 *Operational Restriction and Vulnerability*		
8. ORIGINATOR PMO TIC3 AIR, TDL	**9. APPLICABLE FORMS** N/A	

10. PREPARATION INSTRUCTIONS
 	
 10.1 Format
 	
 1. The Incident Response Plan must be prepared in the Supplier's format.
 	
 10.2 Change History
 	
 1. The Incident Response Plan must include a change history summary section which contains the following:
   a. A clear and unique version/revision identifier for each submission or resubmission of the Incident Response Plan;
   b. Clear identification of revisions or amendments within the document from its previous submission; and
   c. Rationale for the revisions and amendments.
 2. All the revisions / amendments must be clearly identified within the document by using suitable change tracking feature in the Office Management Software used to produce the document, e.g. "Track Changes" feature in Microsoft-Word®, side bars etc.
 	
 10.3 Content
 	
 1. The Incident Response Plan must document the following:
   a. Includes consideration for:
     (i.) Potential system function losses and their mission impacts from MCAAV report;
     (ii.) Assessed risks like described in risk assessment reports; and
     (iii.) Response constraints (E.g. technology, resources, time, laws and regulations, etc.).
   b. The plan shall include the objectives, procedures, support tools and necessary		

resources to respond to incidents.

   c. Include containment, eradication and recovery objectives:
  - (i.) Objectives on the containment of the impacts of the system function losses must be defined;
  - (ii.) For the threat events identified during risk assessment associated with a persistent access, containment and eradication objectives must be defined; and
  - (iii.) Recovery objectives shall be identified for each system function loss, considering the DND/CAF missions, operations and capabilities that the system function support. Objectives must be defined in terms of mission assurance metrics (E.g. time lapses, percentages, etc.).

   d. Include a post-analysis procedure in which:
  - (i.) Impacts caused by the incident are documented;
  - (ii.) Risks of similar incident happening again are identified and managed;
  - (iii.) Performance of the incident response procedures are measured against the objectives defined in c.; and
  - (iv.) Solutions for improving incident responses are defined when the observed performance does not meet the objectives.

2. Security categorization of the Incident Response Plan deliverable must be performed upon creation of the document, as the Continuous Monitoring Plan or certain portions could be Protected and/or Classified.
3. Security labelling and marking, as well as handling, storage and transmission of the Incident Response Plan must be implemented in accordance with National Defence Security Orders and Directives.
4. In addition to the Security Marking, which is placed in the header and footer of each page, a set of informative statements will be printed on the cover, or first page, of the document and in some cases also on the Verso Page (the back-side of the Title Page or Cover Page) as required. Sections of the document that are classified may identify the classification level of each numbered item (i.e. headings, paragraphs) by placing (U), (C), (S) or (TS) before the text.

10.4 Additional Information

The document must include any general information that aids in understanding and define any terms and acronyms used in the document.

APPENDIX A4

GOVERNMENT FURNISHED EQUIPMENT

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

1 GOVERNMENT FURNISHED EQUIPMENT (GFE)

The following software, systems will be provided by Canada as part of the delivered Deployable TDL GES solution.

1.1 Communication Systems and Materials

1.1.1 Link 16 Equipment
1. Multifunctional Information Distribution System – Joint Tactical Radio System (MIDS JTRS).
2. Radio Frequency (RF) cables and port adapters as required;
3. High gain antenna;
4. Power Supply Module;
5. Fan Tray;
6. All required cables and ancillaries;
7. Link-16 Notch Filter;
8. Host Platform Converter, including Ethernet/MIL-STD 1553 Adapter; and
9. MIDS JTRS Mobile Rack.

1.1.2 Link-22 Equipment
1. System Network Controller (SNC);
2. Link Level COMSEC (LLC);
3. Signal Processing Controller (SPC);
4. Link-22 HF FF Radio, including power supply and fan tray;
5. Link-22 UHF EPM Radio, including power supply and fan tray;
6. All required cables and ancillaries;
7. RF cables and port adapters as required;
8. High Frequency (HF) antennae; and
9. Ultra-High Frequency (UHF) antennae.

1.1.3 Networking Equipment
1. High Assurance Internet Protocol Encryption (HAIPE) device (configured);
2. Secure Communications Interoperability Protocol (SCIP) device (configured);
3. DAGR (configured); and
4. Spoke Kit (for secure SATCOM).

1.2 Workstation and Peripherals

1.2.1 Workstations
1. Computer / laptop

1.3 Site Facility

1.3.1 Equipment Room/Shelter
1. Power Generators;
2. HVAC System;
3. Network drops (TDL WAN/CSNI/Commercial network);
4. PSTN drop; and
5. Power grid.

APPENDIX A5

PRIORITY OF DELIVERY

DEPLOYABLE DATA LINK GROUND ENTRY STATION

1 Prioritization of Deployable TDL GES Capabilities Delivery

The implementation and delivery of the Deployable TDL GES's capabilities as described in the Appendix A1 – *System Performance Specifications* must be based on the assigned priority as presented in the table below.

SPS Requirement #	IDC	FDC	Specification
3.2.1.	√		All 5 systems as defined in Annex A – Statement of Work (SOW) – Only IDC capabilities and functionalities.
		√	FDC capabilities and functionalities.
3.2.1.1.	√		GSM Airspace Management Suite
3.2.1.2.	√		DLP/SNC
3.2.1.3.	√		Integration with Network Time Server (NTS) capability.
3.2.1.4.	√		All mandatory sub-requirements
		√	All rated sub-requirements
3.2.1.5.	√		All sub-requirements
3.2.1.6.	√		All mandatory sub-requirements
		√	All rated sub-requirements
3.2.1.7.	√		Integration with DLP/SNC
3.2.1.8.	√		As per SPS

ANNEX B

IN-SERVICE SUPPORT
STATEMENT OF WORK (SOW)

TACTICAL DATA LINK GROUND ENTRY STATION

TABLE DE CONTENT

1 SCOPE

1.1 Introduction

1.1.1 Product Acquisition

1. This Statement of Work defines the work required for the production, delivery, and initial support of the Deployable Tactical Data Link (TDL) Ground Entry Station (GES).

1.1.2 TIC3 Air Project

1. The Deployable TDL GES is an integral solution that will be implemented and integrated as part of the Tactical Integrated Command Control Communications (TIC3) Air Project to deliver an extended and flexible TDL exchange supporting expeditionary and/or domestic operations.

2. The TDL GES solution will enable the integration of the tactical information into an integrated and cohesive Recognized Air Picture (RAP) in a timely manner.

3. The Deployable TDL GES will equally allow for the improvement of the global situational awareness picture, with advanced air picture fusion and management capabilities, in support of airspace surveillance and air defense operations.

1.2 Background

1.2.1 Operational Requirements

1. To achieve the improvement of both global Situational Awareness (SA) and Command and Control (C2) effectiveness, the Royal Canadian Air Force (RCAF) continues to modernize its assets to ensure the tactical communication equipment is adequate for carrying out the assigned missions and/or operations.

2. However, the enhancement requires more than just advanced technologies for the deployed assets, but equally for the tactical communication network, including ground TDL stations supporting them. Unfortunately, essential elements and components of these communication systems have either exceeded their operational life expectancy, are extremely limited, or non-existent.

3. To address these deficiencies, the RCAF will upgrade its tactical communication equipment and TDL network.

1.2.2 Command, Control and Communications

1. The TIC3 Air Project will provide critical command, control and communications systems that will support the Canadian Armed Forces (CAF) and RCAF in carrying out full spectrum operations.

2. Regardless of the assigned mission, TIC3 Air Project delivery will enable the chain of command to gain relevant SA, to support the Commander in making effective decisions, and will support RCAF units in responding to the Commander's direction in a timely manner.

1.3 Overview

1.3.1 Domestic and Expeditionary Operational Capability

1. The Deployable TDL GES is designed and implemented to support domestic and expeditionary operations. The solution is a Link-16 and Link-22 capable C2 system that will be deployed and operated by RCAF deployable units. The Deployable TDL GES will provide the compilation and dissemination of the Local Air Picture (LAP) and Recognized Air Picture (RAP) in support of domestic and expeditionary operations.

2 WORK REQUIREMENTS

The work to be performed by the Supplier to support the Deployable TDL GES systems is as follows:

2.1 System Sustainment and Support

2.1.1 Deployable TDL GES Purchase Option

1. The Supplier must provide an Option to purchase up to 5 Deployable TDL GES replacement systems.

2.1.2 Systems Repair & Overhaul (R&O) Conditions

1. There will be only limited preventative and corrective maintenance of the Deployable TDL GES equipment by Canada. Therefore, when tasked the Supplier must conduct corrective maintenance of non-GFE systems of Deployable TDL GES. Corrective maintenance is defined in the Fixed TDL GEP R&O context as any work that corrects an issue / defect on the system and returns it to proper working order.

2. The Supplier must perform the required work at the installation site of the identified Deployable TDL GES.

2.1.3 R&O General

1. When tasked the Supplier must repair and/or overhaul only those systems mentioned in the task.

2.1.4 Minimum Standard of Repair

1. Any repairable which has been repaired and/or overhauled, must meet the standards of performance described in the system performance specifications;

2. Any repair requiring specialized skills, techniques, or peculiar methods beyond the scope of the appropriate specification must be based upon the applicable equipment publication, specific technical orders detailing such procedures, or upon information supplied and approved by the TA;

3. Inspection, fault rectification, repair and testing of mechanical or electrical components must be performed in accordance with the Supplier's Standard Repair Policies and Procedures and subject to its QA procedures; and

4. Verification test has been completed after repairs have been completed.

2.1.5 Identification Marking and Labels

1. All equipment assemblies or components, after overhaul or reconditioning, must have the original marking information restored and modification marking performed as per Supplier process.

2.1.6 Submission of Repaired Items

1. Repaired items must bear or be accompanied by the Supplier's furnished Certificate of Conformity or equivalent evidence of work performance in accordance with the Supplier's procedure.

2.1.7 System Software Sustainment

1. The work to be performed by the Supplier to provide the assistance and maintenance for the provided system software is as follows:
   a. <u>Software Maintenance</u>. When tasked the Supplier must provide correction and fixes to any failures prioritizing by severity of the fault.
   b. <u>Software Update</u>. When tasked the Supplier must:
      (i) Perform major software updates when requested;
      (ii) Provide the TA with minor software updates; and
      (iii) Provide documentation and expert support to Canada for Information Assurance and software certification purposes.

2.1.8 General Engineering and Maintenance Services (GEMS)

1. When tasked the Supplier must provide support to Canada to facilitate the effective evaluation, troubleshooting, design, development, prototyping, qualification, modifications and upgrades to the Deployable TDL GES.

2.1.9 Training and Training Support

1. When tasked the Supplier must develop, update and conduct Operator and Maintenance training.
2. The Supplier must also update the Operator and Maintenance training packages in order to maintain currency throughout the life cycle of the Deployable TDL GES.

2.1.10 Software Management

1. <u>Software Design Specifications</u>
   a. The Supplier must maintain and update the Software Design Specifications (SDS) throughout updates of provided system software.
2. <u>Reporting</u>
   a. The Supplier must prepare and submit annual Progress Reports to the TA, in the Supplier's format, for the duration of the Contract.
   b. The Progress Report must include information on the state of the Supplier's software with respect to obsolescence, security, performance and reliability as well as software upgrades and update availability.
3. <u>System Requirements Review</u>
   a. A Software Requirement Review (SRR) must be conducted prior to the implementation of any changes to the provided system software, to ensure that the Supplier's SDS is thoroughly understood by all parties.

4. Configuration Management Plan (CMP)
    a. The Supplier must maintain and update the CMP for the provided system software throughout updates and upgrade.

2.1.11 Technical Support
1. The Supplier must remain responsive to the TA's inquiries during the Supplier's normal business hours. Most inquiries will be made through emails and could include request for quote, technical inquires, preliminary security and runtime fault analysis.

2.2 Government Supplied Materiel, Equipment, and Information

2.2.1 General Provision
1. If and when required, Canada will provide the Supplier with any GSM, GFE, and GFI required to support the In-Service Support of Deployable TDL GES.

2.3 Project Management - Reporting

2.3.1 Progress Report

1. The Supplier must prepare and submit annual Progress Reports to the TA, in the Supplier's format, for the duration of the Contract.

2. The Progress Report must include information on the state of the provided Deployment TDL GES sub-systems compliancy with requirements.

2.4 Recommended Spare Parts List (RSPL)

2.4.1 Line Replacement Unit (LRU) Availability & Pricing
1. The Supplier must provide an RSPL based on the component Mean Time Between Failure (MTBF) or/and historical data.

2. The RSPL must be updated when agreed to between the Supplier and the TA due to changes in items on the list.

3. The RSPL must also contain prices for each item on the list and when applicable, refurbished part prices.

    a. The prices provided must be valid for the determined period as per contract.

    b. Supplier must resubmit the RSPL with updated pricing after the expiry period.

4. The RSPL must also include parts and sub-systems that have been identified for replacement as part of obsolescence management.

2.4.2 LRU Purchasing
1. The Supplier must allow Canada to purchase items identified on the RSPL, at the applicable prices.

ANNEX C

RESERVED

for

BASIS OF PAYMENT

Acquisition

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

ANNEX D

RESERVED

for

BASIS OF PAYMENT

In Service Support

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

ANNEX E

RESERVED

BASIS OF EVALUATION

Financial

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

System Performance Specification (SPS) Compliance

Instructions:

a. Compliance Statement. The Bidder is required to state whether their proposed solution is compliant with each requirement.

b. Compliance Reference. A compliance statement and references are required for each mandatory requirement.

Bidder's Name:

System Performance Specification Mandatory Requirements Compliance Matrix (*Reference to Appendix A1 - Deployable TDL GES System Performance Specification*)		
Deployable TDL GES SPS Para. Number	**Compliance Statement**	**Compliance Reference**
3.1.1.1. & 3.1.1.1.a.	Compliant	
3.1.1.1. & 3.1.1.1.b.	Compliant	
3.1.1.1. & 3.1.1.1.c.	Compliant	
3.1.1.2.	Compliant	
3.1.1.3.	Compliant	
3.1.1.4.	Compliant	
3.1.1.5.	Compliant	
3.1.1.6.	Compliant	
3.1.1.7.	Compliant	
3.1.1.8.	Compliant	
3.1.1.9	Compliant	
3.1.1.10.	Compliant	
3.1.1.11.	Compliant	
3.1.1.12.	Compliant	
3.1.1.13.	Compliant	
3.1.1.14. & 3.1.1.14.a	Compliant	
3.1.1.14. & 3.1.1.14.b	Compliant	
3.1.1.14. & 3.1.1.14.c	Compliant	
3.1.1.14. & 3.1.1.14.d	Compliant	
3.1.1.14. & 3.1.1.14.e	Compliant	
3.1.1.14. & 3.1.1.14.f & 3.1.1.14.f.(i).	Compliant	
3.1.1.14. & 3.1.1.14.f & 3.1.1.14.f.(ii).	Compliant	
3.1.1.14. & 3.1.1.14.g & 3.1.1.14.g.(i).	Compliant	
3.1.1.14. & 3.1.1.14.g & 3.1.1.14.g.(ii).	Compliant	
3.1.1.15.	Compliant	
3.1.2.1.	Compliant	
3.1.2.2.	Compliant	
3.1.2.2. & 3.1.2.2.a	Compliant	
3.1.2.2. & 3.1.2.2.b	Compliant	
3.1.2.2. & 3.1.2.2.c	Compliant	
3.1.2.2. & 3.1.2.2.d	Compliant	
3.1.2.2. & 3.1.2.2.e	Compliant	
3.1.2.2. & 3.1.2.2.f	Compliant	
3.1.2.2. & 3.1.2.2.g	Compliant	
3.1.2.2. & 3.1.2.2.h	Compliant	
3.1.2.2. & 3.1.2.2.i	Compliant	
3.1.2.2. & 3.1.2.2.j	Compliant	
3.1.2.2. & 3.1.2.2.k	Compliant	
3.1.2.2. & 3.1.2.2.l	Compliant	
3.1.2.2. & 3.1.2.2.m	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(i)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(ii)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(iii)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(iv) & 3.1.2.2.n.(iv).(1)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(iv) & 3.1.2.2.n.(iv).(2)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(v) & 3.1.2.2.n.(v).(1)	Compliant	

3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(v) & 3.1.2.2.n.(v).(2)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(vi)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(vii)	Compliant	
3.1.2.2. & 3.1.2.2.n & 3.1.2.2.n.(viii)	Compliant	
3.1.2.3. & 3.1.2.3.a	Compliant	
3.1.2.3. & 3.1.2.3.b	Compliant	
3.1.2.3. & 3.1.2.3.c	Compliant	
3.1.2.3. & 3.1.2.3.d	Compliant	
3.1.2.3. & 3.1.2.3.e	Compliant	
3.1.2.3. & 3.1.2.3.f	Compliant	
3.1.2.3. & 3.1.2.3.g	Compliant	
3.1.2.3. & 3.1.2.3.h	Compliant	
3.1.2.3. & 3.1.2.3.i	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(i)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(ii)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(iii)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(iv) & 3.1.2.3.j.(iv).(1)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(iv) & 3.1.2.3.j.(iv).(2)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(v) & 3.1.2.3.j.(v).(1)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(v) & 3.1.2.3.j.(v).(2)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(vi)	Compliant	
3.1.2.3. & 3.1.2.3.j & 3.1.2.3.j.(vii)	Compliant	
3.1.2.4.	Compliant	
3.1.2.5.	Compliant	
3.1.5.1.a.	Compliant	
3.1.5.1.b.	Compliant	
3.1.5.1.c.	Compliant	
3.1.5.1.d.	Compliant	
3.1.5.2.a.	Compliant	
3.1.5.2.b.	Compliant	
3.1.5.3.a.	Compliant	
3.1.5.3.b.	Compliant	
3.1.5.4.a.	Compliant	
3.1.5.4.b.	Compliant	
3.1.5.5. & 3.1.5.5.a.	Compliant	
3.1.5.5. & 3.1.5.5.b.	Compliant	
3.1.5.5. & 3.1.5.5.c.	Compliant	
3.1.5.5. & 3.1.5.5.d.	Compliant	
3.1.5.5. & 3.1.5.5.e.	Compliant	
3.1.5.6.a & 3.1.5.6.a.(i)	Compliant	
3.1.5.6.a & 3.1.5.6.a.(ii).	Compliant	
3.1.5.6.a & 3.1.5.6.a.(iii).	Compliant	
3.1.5.6.b.	Compliant	
3.1.5.6.c.	Compliant	
3.1.5.6.d.	Compliant	
3.1.5.6.e. & 3.1.5.6.e.(i)	Compliant	
3.1.5.6.e. & 3.1.5.6.e.(ii)	Compliant	
3.1.5.6.f. & 3.1.5.6.f.(i)	Compliant	
3.1.5.6.f. & 3.1.5.6.f.(ii) & 3.1.5.6.f.(ii).1	Compliant	
3.1.5.6.f. & 3.1.5.6.f.(ii) & 3.1.5.6.f.(ii).2	Compliant	
3.1.5.6.f. & 3.1.5.6.f.(iii)	Compliant	
3.1.5.6.f. & 3.1.5.6.f.(iv)	Compliant	
3.1.5.6.g.(i).	Compliant	
3.1.5.6.g.(ii).	Compliant	
3.1.5.6.g.(iii).	Compliant	
3.1.5.6.g.(iv).	Compliant	
3.1.5.6.g.(v).	Compliant	
3.1.5.6.g.(vi).	Compliant	

3.1.5.6.h	Compliant	
3.1.5.6.i	Compliant	
3.1.5.6.j & 3.1.5.6.j.(i)	Compliant	
3.1.5.6.j & 3.1.5.6.j.(ii)	Compliant	
3.1.5.6.j & 3.1.5.6.j.(iii)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(i)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(ii)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(iii)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(iv)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(v)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(vi) & 3.1.5.6.k.(vi).(1)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(vi) & 3.1.5.6.k.(vi).(2)	Compliant	
3.1.5.6.k & 3.1.5.6.k.(vi) & 3.1.5.6.k.(vi).(3)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(i)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(ii)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iii)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(1)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(2)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(3)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(4)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(5)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(6)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(7)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(8)	Compliant	
3.1.5.6.l & 3.1.5.6.l.(iv) & 3.1.5.6.l.(iv).(9)	Compliant	
3.1.5.6.m & 3.1.5.6.m.(i)	Compliant	
3.1.5.6.m & 3.1.5.6.m.(ii)	Compliant	
3.1.5.6.m & 3.1.5.6.m.(iii)	Compliant	
3.1.5.6.m & 3.1.5.6.m.(iv)	Compliant	
3.1.5.6.m & 3.1.5.6.m.(v)	Compliant	
3.1.5.6.m & 3.1.5.6.m.(vi)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(i) & 3.1.5.6.o.(i).(1)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(i) & 3.1.5.6.o.(i).(2)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(i) & 3.1.5.6.o.(i).(3)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(i) & 3.1.5.6.o.(i).(4)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(iii) & 3.1.5.6.o.(iii).(1)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(iii) & 3.1.5.6.o.(iii).(2)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(iii) & 3.1.5.6.o.(iii).(3)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(iii) & 3.1.5.6.o.(iii).(4)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(iv) & 3.1.5.6.o.(iv).(1)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(iv) & 3.1.5.6.o.(iv).(2)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(iv) & 3.1.5.6.o.(iv).(3)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(v)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(vi)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(vii)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(viii)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(ix) & 3.1.5.6.o.(ix).(1)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(ix) & 3.1.5.6.o.(ix).(2)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(ix) & 3.1.5.6.o.(ix).(3)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(ix) & 3.1.5.6.o.(ix).(4)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(x)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(xi)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(xii)	Compliant	
3.1.5.6.o & 3.1.5.6.o.(xiv)	Compliant	
3.1.5.6.p.	Compliant	
3.1.5.7.	Compliant	
3.2.1. & 3.2.1.1	Compliant	
3.2.1. & 3.2.1.2	Compliant	

3.2.1. & 3.2.1.3	Compliant	
3.2.1. & 3.2.1.4	Compliant	
3.2.1. & 3.2.1.5	Compliant	
3.2.1. & 3.2.1.6	Compliant	
3.2.1. & 3.2.1.7	Compliant	
3.2.1. & 3.2.1.8	Compliant	

ANNEX G

DEMONSTRATION PLAN

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

1.D EPLOYABLE TDL GES DEMONSTRATION PLAN

1.1. SCOPE

1.1.1. Purpose

1.I n accordance with RFP's para 4.1.1.4(c) *Phase III: Final Evaluation of the Bid* the Bidder with highest preliminary combined rating (technical merit and price), referred in this document as 'selected Bidder', must be ready to demonstrate, within 10 business days of notification of an invitation for demonstration, the claiming capabilities and functionalities.

1.2. DEMONSTRATION

1.2.1. Planning & Preparation

1.T he Bidders, as part of their bid submission, must provide a demonstration plan that as a minimum outlines the preferred location, setup, methods, scenarios, equipment and software that will be utilized.

1.2.2. Execution

1. The selected Bidder must demonstrate the requirements mentioned in the **Table 1 - Deployable TDL GES Demonstration Requirements** at a mutually agreed location.

2.T he selected Bidder must complete their demonstration in no more than 4 days.

3.T he selected Bidder must perform their demonstration using physical systems onsite. Any form of virtual demonstration (video conference, online meeting, video clips, etc.) from a remote site and/or location will not be accepted, even for a subset of the demonstrating capability or functionality.

4.D emonstration of the selected capabilities/functionalities is considered to be successful, in this context, when for each of the supporting requirements it is shown one of the following states:

a. <u>'Under Development'</u>. A demonstrable requirement is declared in the 'Under Development' state when it's not fully-developed and/or integrated in an existing product and requires some development and integration to bring it to an operational state.

b.' <u>Implemented'</u>. A demonstrable requirement is declared in the 'Implemented' state when it's fully-developed and integrated in an existing and functional product that has not been integrated into the final proposed Deployable TDL GES solution. This can be either third-party product or the bidder's own product that is not currently integrated into a cohesive fully-developed solution, but it must be product that currently exists, and will be integrated as part of the final delivered Deployable TDL GES solution.

c.' <u>Operational'</u>. A demonstrable requirement is declared in the 'Operational' state when it's fully-developed and integrated into the final proposed Deployable TDL GES solution.

Table 1- Deployable TDL GES Demonstration Requirements

Note. The selected Bidder must demonstrate each capability/functionality in accordance with related mandatory and rated requirements outlined in the Appendix A1 - System Performance Specification for which the Bidder has been award technical points.

Demonstration Requirement Number	Description	Deployable TDL GEP SPS Para. Ref. Number
1	The selected Bidder must demonstrate the following functionalities under the Link-22 Gateway (L22GW) capability:	3.1.1
1.1	The DLP must provide a map-based GUI for the system operation	3.1.5.6.d.
1.2	The DLP must allow the operator to configure the following coordinate systems which is used for the display of the entities on the map:	3.1.5.6.e
1.2.1	- Military Grid Reference System (MGRS); and	3.1.5.6.e.(i).
1.2.2	- World Geodetic System 1984 (WGS-84).	3.1.5.6.e.(ii).
1.3	The DLP must allow for establishing the SIMPLE link with a TDP C2 application and/or remote system, using the following Ethernet IP-based communication methods:	3.1.5.6.f.(ii).
1.3.1	- TCP/IP Server; and	3.1.5.6.f.(iii).1.
1.3.2	- TCP/IP Client.	3.1.5.6.f.(iv).2.
1.4	The DLP must allow for the exchange of Link-22 tactical messages with TDP C2 systems through the SIMPLE link in accordance with STANAG 5602.	3.1.5.6.f.(iii).
1.5	The DLP should be able to receive the OPTASK Link Message (OLM) through a secure Ethernet IP-based communication interface, and store it in a specified local and/or network folder.	3.1.5.6.g.(i).
1.6	The DLP must allow the operator to configure the own unit Link-22 address using either MGRS or WGS-84 format.	3.1.5.6.g.(ii).
1.7	The DLP must allow for the operator to select the LLC/SPC for each network.	3.1.5.6.g.(iii).
1.8	The DLP must allow for the extraction and modification of information from an OLM stored in a specified local and/or network folder, for Link-22 systems and network initialization.	3.1.5.6.g.(v).
1.9	The DLP must allow the operator to supply, through the GUI and system interface, all information	3.1.5.6.g.(vi).

	required for Link-22 systems and network initialization.	
1.10	The DLP must allow the operator to operate on 2 Link-22 networks simultaneously.	3.1.5.6.i.
1.11	The DLP must allow for the Link-22 systems initialization through the SNC Control and Status Interface.	3.1.5.6.j. and all sub-requirements
1.12	The DLP must allow for the Link-22 network initialization, only after the Link-22 systems initialization completed, through the SNC Control and Status Interface	3.1.5.6.k. and all sub-requirements
1.13	The DLP must allow for the systems monitoring and management through the SNC Control and Status Interface	3.1.5.6.l. and all sub-requirements
1.14	DLP must implement all required logics, messages, protocols and functions that allow the operator to take the role of Network Management Unit (NMU), and perform all specified operations: 1. Network Performance Monitoring; 2. NMU Role Management; 3. Network Parameters Management; 4. LNE Support; 5. Radio Power Management; and 6. Network Radio Silence.	3.1.5.6.m. and all sub-requirements
1.15	DLP must implement all required logics, messages, protocols and functions that allow for the transmission, reception and processing of all Link-22 tactical messages required for the following functional areas in accordance with the STANAG 5522 Ed.4/ATDLP-5.22(A) and its Appendix 1 to Annex B – Minimum Implementation: 1. Participant Location and Identification (PLI); 2. Air Surveillance; 3. Surface (Maritime) Surveillance; and 4. Subsurface (Maritime) Surveillance.	3.1.5.6.o.(i)., 3.1.5.6.o.(i).1., 3.1.5.6.o.(i).2., 3.1.5.6.o.(i).3., 3.1.5.6.o.(i).4.
1.16	DLP must allow for controlling the transmission of tactical messages based on, as a minimum, the following filtering parameters: 1. Message type; 2. Source/Originator; and 3. Geographic Area.	3.1.5.6.o.(iv)., 3.1.5.6.o.(iv).1., 3.1.5.6.o.(iv).2., 3.1.5.6.o.(iv).3.
1.17	The DLP must process and transmit Link-22 tactical messages received from connected TDP C2 systems on Link-22 network.	3.1.5.6.o.(vii).
1.18	The DLP must process and transmit Link-22 tactical messages received from Link-22 network to connected TDP C2 systems.	3.1.5.6.o.(viii).

1.19	The DLP must allow for controlling the transmission of system tracks based on, as a minimum, the following filtering parameters: 1. Track Environment/Category; 2. Track Identity; 3. Track Source/Originator; and 4. Geographic Area.	3.1.5.6.o.(ix). 3.1.5.6.o.(ix).1. 3.1.5.6.o.(ix).2. 3.1.5.6.o.(ix).3. 3.1.5.6.o.(ix).4.
1.20	DLP must implement Link-22 tactical functions, including but not limited to, track management, correlation, report responsibility and conflict resolution, for PLI and system tracks report on Link-22 network in accordance with STANAG 5522 Ed.4/ATDLP-5.22(A).	3.1.5.6.o.(xi).
1.21	DLP must allow for the operator to enable/disable the transmission of tracks received from a SIMPLE interface without processing through the track management, correlation, report responsibility and conflict resolution functions.	3.1.5.6.o.(xii).

ANNEX H

ABREVIATIONS AND ACRONYMS

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

This section contains the abbreviations and acronyms used in the documents related to Deployable TDL GEP procurement context.

ASMS	Airspace Management Suite
ATDLP	Allied TDL Publication
BGP	Border Gateway Protocol
BLOS	Beyond Line of Sight
C2	Command and Control
CA	Contracting Authority
CADS	Canadian Air Defense Sector headquarters
CAF	Canadian Armed Forces
CDR	Critical Design Review
CDRL	Contract Data Requirement List
CMV	Canadian MIDS Variant
CONEMP	Concept of Employment
CONOP	Concept of Operation
CSNI	Consolidated Secret Network Infrastructure
DAGR	Defense Advanced GPS Receiver
DID	Data Item Description
DLP	Data Link Processor
DND	Department of National Defense
TDL GES	Deployable TDL GEP
EPM	Electronic Protection Measures
FAT	Factory Acceptance Test
FF	Fixed Frequency
FMS	Foreign Military Sale
FDC	Final Deliverable Capabilities
GES	Ground Entry Station
GFE	Government Furbished Equipment
GPS	Global Positioning System
GSM	Government Supplied Materiel
GUI	Graphical User Interface
HF	High Frequency
ICD	Interface Control Documents
ICES	Interference-Causing Equipment Standard
IGMP	Internet Group Management Protocol
IGRP	Interior Gateway Routing Protocol
IDC	Initial Deliverable Capabilities
IP	Internet Protocol (Communication)
	Intellectual Property (Legal/Law)
ISP	Internet Service Provider
ITE	Information Technology Equipment
JREAP	Joint Range Extension Application Protocol

JTRS	Joint Tactical Radio System
JU	JTIDS/MIDS Unit
LAN	Local Area Network
LLC	Link Level COMSEC
LOS	Line of Sight
LTR	Local Traffic Router
MGRS	Military Grid Reference System
MIDS	Multifunctional Information Distribution System
NAT	Network Address Translation
NATO	North Atlantic Treaty Organization
NCE	NILE Communication Equipment
NCS	Network Cycle Structure
NILE	NATO Improved Link Eleven
NMEA	National Marine Electronics Association
NORAD	North American Aerospace Defense Command
NSA	National Security Agency
NTP	Network Time Protocol
OLM	OPTASK Link Message
ONCS	Operational Network Cycle Structure
OSPF	Open Shortest Path First
PDR	Preliminary Design Review
PIM	Protocol Independent Multicast
PMP	Project Management Plan
PPLI	Precise Participation Location Indication
PPS	Pulse Per Second
PRM	Progress Review Meeting
RAP	Recognized Air Picture
RCAF	Royal Canadian Air Force
RIP	Routing Information Protocol
RSVP	Resource Reservation Protocol
SOW	Statement of Work
SA	Situational Awareness
SATCOM	Satellite Communication
SFP	Small Form-factor Pluggable
SN	Super Network
SNC	System Network Controller
SNMP	Simple Network Management Protocol
SPC	Signal Processing Controller
SPS	System Performance Specification
TA	Technical Authority
TDL	Tactical Data Link
TDLWAN	TDL WAN
TIC3	Tactical Integrated Command Control Communications

TOD	Time of Day
TDP	Tactical Data Processor
UHF	Ultra-High Frequency
UII	Unique Item Identifier
UIN	Unique Identification Number
WAN	Wide Area Network
WER	WAN Entry Router

ANNEX I

LIST OF REFERENCE & APPLICABLE DOCUMENTS

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

LIST OF REFERENCE & APPLICABLE DOCUMENTS

[1]   SEGMENT SPECIFICATION FOR SIGNAL PROCESSING CONTROLLER (SPC SS)

[2]   INTERFACE REQUIREMENT SPECIFICATION (IRS) FOR THE LINK-22 MODERNIZED LINK
        LEVEL COMSEC (LLC 7M) SEGMENT OF THE LINK 22 (NILE) SYSTEM (LLC IRS)

[3]   SEGMENT SPECIFICATION FOR THE SYSTEM NETWORK CONTROLLER (SNC SS)

[4]   INTERFACE DESIGN DESCRIPTION FOR THE DATA LINK PROCESSING SEGMENT AND THE
        SYSTEM NETWORK CONTROLLER (DLP-SNC IDD)

[5]   STANAG 4430 – PRECISE TIME AND FREQUENCY INTERFACE STANDARDS FOR MILITARY
        ELECTRONIC SYSTEMS

[6]   STANAG 5522 Ed.6 – TACTICAL DATA LINK – LINK 22 – ATDLP-5.22 Edition B

[7]   ATDLP-5.22 Ed.B (1) – TACTICAL DATA EXCHANGE LINK 22, Ed. B Version 1

[8]   STANAG 5602 – STANDARD INTERFACE FOR MULTIPLE PLATFORM LINK EVALUATION
        (SIMPLE)

[9]   STANAG 4539 – TECHNICAL STANDARDS FOR NON-HOPPING HF COMMUNICATIONS
        WAVEFORMS (RESTRICTED), Ed. A

[10]   STANAG 4372 – SATURN – A FAST FREQUENCY HOPPING ECCM MODE FOR UHF RADIO,
        Ed. A

ANNEX J

RESERVED

SECURITY REQUIREMENT CHECK LIST

DEPLOYABLE TACTICAL DATA LINK GROUND ENTRY STATION

Annex K: DETAILED COST ESTIMATE (DCE) Response to Annex A – Acquisition SOW

BUSINESS NAME:

| 1. The Tactical Integrated Command, Control, and Communications (TIC3 Air) Deployable TDL GES project indicative costing details from industry is required to allow Canada to prepare its documents for the Project Approval. For each activity, Respondents are asked to:

a. provide pricing including margins of accuracy;

b. complete as much information as possible for the activities within this annex; and,

c. explain any associated risks with each activity. | This Response corresponds to **Solution:** _____
(Duplicate this Tab/Table for multiple Solutions.)

NOTE: Please provide your Deployable TDL GES solution for all of Canada's requirements laid out in Annex A at the lowest possible cost breakdown level. If a specific cost element is not provided for any reason, for example because it is included in the price for another item, please provide that explanation within your response. |

ACQUISITION COSTS

Description	Proposed Solution	Accuracy		DCE ($0 for no DCE)
		+ %	- %	
NOTE: If possible, please include average operating costs - Hourly, Annually...etc. Please provide a detailed response.				

Project Management (Annex A SOW - Sub-section 2.3)				
Description	**Proposed Solution and Assumptions if Applicable**	**Accuracy**		**DCE ($0 for no DCE)**
		+ %	- %	

System Engineering (Annex A SOW - Sub-section 2.4)				
Description	**Proposed Solution and Assumptions if Applicable**	**Accuracy**		**DCE ($0 for no DCE)**
		+ %	- %	

Deployable TDL GES Implementation (Annex A - SOW Sub-section 2.1)

Description	Proposed Solution and Assumptions if Applicable	Accuracy		DCE ($0 for no DCE)
		+ %	- %	
Deployable TDL GES Development (As defined in Appendix A1 - SPS Sub-section 3.2.1) - Qty 5 + 5 (optional)				
System Integration Support (Annex A - SOW Sub-section 2.1.3) - Qty 5 + 5+C63 (optional)				
Security (Annex A - SOW Sub-section 2.1.4)				
Cybersecurity Fundamentals Plan				
Continuous Monitoring Plan				
Incident Response Plan				

Integrated Logistics Support (Annex A - SOW Sub-section 2.5)

Description	Proposed Solution and Assumptions if Applicable	Accuracy		DCE ($0 for no DCE)
		+ %	- %	
Drawings, Associated Lists and Cataloguing (Annex A - SOW Sub-section 2.5.1)				

Operational and Technical Publications (Annex A - SOW Sub-section 2.5.2)				
Initial Cadre Training (Annex A - SOW Sub-section 2.5.2)				
Web-based Training (Annex A - SOW Sub-section 2.5.3)				

Annex L: DETAILED COST ESTIMATE (DCE) Response to Annex B – In Service Support SOW

BUSINESS NAME:

1. The Tactical Integrated Command, Control, and Communications (TIC3 Air) Deployable TDL GES project indicative costing details from industry is required to allow Canada to prepare its documents for the Project Approval. For each activity, Respondents are asked to: a. provide pricing including margins of accuracy; b. complete as much information as possible for the activities within this annex; and, c. explain any associated risks with each activity.	This Response corresponds to **Solution:** _____ (Duplicate this Tab/Table for multiple Solutions.) NOTE: Please provide your Deployable TDL GES solution for all of Canada's requirements laid out in Annex A at the lowest possible cost breakdown level. If a specific cost element is not provided for any reason, for example because it is included in the price for another item, please provide that explanation within your response.

IN SERVICE SUPPORT COSTS

Description	Proposed Solution	Accuracy		DCE ($0 for no DCE)
		+ %	- %	
NOTE: If possible, please include average operating costs - Hourly, Annually…etc. Please provide a detailed response.				

Project Management (Annex B SOW - Sub-section 2.3)

Description	Proposed Solution and Assumptions if Applicable	Accuracy		DCE ($0 for no DCE)
		+ %	- %	

Deployable TDL GES Replacement Option (Annex B - SOW Sub-section 2.1.1)

Description	Proposed Solution and Assumptions if Applicable	Accuracy		DCE ($0 for no DCE)
		+ %	- %	

Deployable TDL GES (As defined in Appendix A1 - SPS Sub-section 3.2.1) - Unit Price				

Systems Sustainment and Support (Annex B - SOW Sub-section 2.1. except 2.1.1.)

Description	Proposed Solution and Assumptions if Applicable	Accuracy		DCE ($0 for no DCE)
		+ %	- %	
System Repair & Overhaul (Annex B - SOW Sub-section 2.1.2 to 2.1.6)				
System Software Sustainment (Annex B - SOW Sub-section 2.1.7)				
Software Management (Annex B - SOW Sub-section 2.1.10)				
General Engineering and Maintenance Services (Annex B - SOW Sub-section 2.1.8)				
Training and Training Support (Annex B - SOW Sub-section 2.1.9)				
Technical Support (Annex B - SOW Sub-section 2.1.11)				

Recommended Spare Parts List (Annex B - SOW Sub-section 2.4)

Description	Proposed Solution and Assumptions if Applicable	Accuracy		DCE ($0 for no DCE)
		+ %	- %	

ANNEX M

INDUSTRIAL and TECHNOLOGICAL BENEFITS
(ITB)

TIC3 Air Project

DEPLOYABLE TACTICAL DATA LINK (TDL) GROUND ENTRY STATION (GES)

INDUSTRIAL and TECHNOLOGICAL BENEFITS

Canada is seeking information on economic leveraging opportunities related to TIC3 Air. The Industrial and Technological Benefits (ITB) Policy will apply to the TIC3 Air project. The ITB Policy is Canada's main tool to leverage economic benefit from defence procurement. The policy requires companies that are awarded defence procurement contracts to undertake business activities in Canada equal to the value of the contract. For more information about the ITB Policy, you can visit: www.canada.ca/ITB.

Canada's Defence Policy, *Strong, Secure, Engaged*, has identified investment in Tactical Integrated Command, Control, and Communications, radio cryptography, and other necessary communications systems to be of critical importance to national security, sovereignty and defence. Consistent with this objective, the ITB Policy will seek to develop an approach to maximize economic benefits from this procurement to support the growth of Canada's defence sector and within Canada's Key Industrial Capabilities areas of Cyber Resilience and Defence Systems Integration.

A core element of the ITB Policy is a weighted and rated Value Proposition. The ITB Value Proposition Pillars support the core ITB Policy objectives:
- **Direct Defence Sector Work** - Supports long-term sustainability and growth of Canada's aerospace and defence sectors
- **Canadian Supplier Development** - Support the growth of prime contractors and suppliers in Canada, including small and medium business (SMBs) in all regions of Canada
- **Research and Development** - Enhance innovation through R&D in Canada
- **Exports** - Increase the export potential and international competitiveness of Canadian-based firms
- **Skills Development and Training** - Fill skills and training gaps within the Canadian economy to support a more innovative Canada

Please provide responses to the following questions:

1. Please describe the anticipated level of direct Canadian Content Value related to the requirement. What elements can occur in Canada at this time?

2. Supporting the growth of prime contractors and suppliers in Canada is an objective of the ITB Policy.
   a. What types of opportunities for Canadian suppliers could there be under your solution?
   b. Please provide information on existing relationships that could be leveraged?
   c. Are there opportunities or existing relationships with Small and Medium sized businesses (under 250 employees) in Canada?

3. What opportunities are there to enhance Research and Development in Canada directly or indirectly related to TIC3 Air?

4. Are there any opportunities for Canadian-based companies to participate on exports?

5. Skills development and training plays a vital role in supporting a more innovative Canadian economy:
   a. What potential activities are there for supporting this ITB pillar?
   b. How would activities related to the requirement or in other indirect areas support skills development training?