ANNEX A

STATEMENT OF WORK

FOR THE

JOINT TERMINAL ATTACK CONTROLLER VIRTUAL TRAINING SYSTEM

NOTICE

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

AVIS

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1.0 SCOPE

1.1 Purpose

1.1.1 The purpose of this Statement of Work (SOW) is to define the work required to design, build, test and deliver the Joint Terminal Attack Controller Virtual Training System (JTAC VTS), as described in the JTAC VTS System Requirements Specification (SRS) (Appendix A1.0).

1.2 Background

1.2.1 The JTAC VTS will support the training required to force generate accredited Joint Terminal Attack Controllers (JTAC). In order to achieve accreditation JTAC must meet the requirements identified in Joint Terminal Attack Controller (JTAC) (Ground) Memorandum of Agreement (MOA). This document identifies a mix of real life and virtual drills and stipulates the standards to be met for accreditation. It also identifies the required capabilities of any virtual training system to be used in the accreditation process. At present, the Canadian Armed Forces do not have a virtual training capability that meets the accreditation requirements. The current system known as the Interim Forward Observer Officer/Forward Air Controller System (IFFS) uses technologies that cannot be updated to meet the latest standards.

1.2.2 Currently the CAF cannot force generate accredited JTAC within its own capabilities. Limited accreditation is achieved through the use of allied simulation facilities, but this is both expensive and reliant on allies freeing up some of their own capacity. This solution is not tenable in the long term. JTAC VTS aims to address this shortcoming by procuring a number of simulators that meet the accreditation criteria and deploying them to units responsible for force generating JTAC. These are:

1.2.2.1 5 Canadian Division Support Base (CDSB) Gagetown;

1.2.2.2 2 CDSB Valcartier:

1.2.2.3 3 CDSB Shilo; and

1.2.2.4 4 CDSB Petawawa.

1.2.3 The JTAC MOA identifies two different versions of the virtual trainers; a non-deployable static version that is used in a classroom setting, and a deployable version that can be used to enhance other forms of field training and exercises. The initial JTAC VTS solution will require the design, development, production and delivery of the static classroom version.

1.3 Intended Use

1.3.1 Static Installations. It is intended that two JTAC VTS static systems will be installed at and operated by the Royal Canadian Artillery School (RCAS) for initial JTAC Operator training; for the training and accreditation of JTAC Instructors; and training and accreditation of JTAC Evaluators. Additionally, one system will be installed at each of the three Regular Force (Reg F) Close Support Artillery Regiments for ongoing continuation training.

1.4 Constraints

1.4.1 The JTAC VTS static systems will replace the IFFS systems at RCAS and at the Regiments. They will be installed in the same rooms and have access to the same facilities as the IFFS. The JTAC VTS is constrained by this infrastructure. JTAC VTS static installations must not require modifications to be made to the existing infrastructure.

1.5 Timelines

1.5.1 The Canadian Armed Forces (CAF) have an immediate need to force generate accredited JTAC and intend to procure the following number of system(s) one (1) Joint Terminal Attact Controller Virtual Training System (JTAC VTS) Static to 5 CDSB Gagetown as soon as possible. Costed options for four (4) additional Joint Terminal Attact Controller Virtual Training System (JTAC VTS) and costed options for six (6) Joint Terminal Attact Controller Virtual Training System (JTAC VTS) Portable. These costed options to include both the procurement and sustainment of the JTAC VTS for 2CDSB Valcartier, 4CDSB Petawawa and 3 CDSB Shilo, with the later quantities being delivered on an as-and–when requested basis.

1.6 Concept of Operations

1.6.1 It is intended that trained CAF personnel from the holding units operate the JTAC VTS. Operators are to be trained to set-up, initiate, operate and close down the system. The CAF operators will lead all training activities and all after actions will be completed by them.

1.7 Concept of Support

1.7.1 The concept of support is intended to meet two different ends. The first is the immediate need to ensure that the JTAC VTS installations are available and performing as intended to conduct training. The second is longer term It is imperative that the JTAC VTS retain the capability to force generate accredited JTAC. There is an expectation that software will need periodic patching and that continuous advances in simulation technology will drive changing standards to be met by simulators compliant with JTAC accreditation. For these reasons the JTAC VTS concept of support will address the need for the following maintenance types:

1.7.1.1 **Preventive Maintenance:** Actions performed, as scheduled activities required assuring that the system continues to operate correctly in its environment. Preventive maintenance is normally associated with hardware and includes replacement of items that have reached the end of their specified service life.

1.7.1.2 **Adaptive Maintenance:** Effort that is initiated by changes in the environment in which the system must operate (e.g. Commercial Off the Shelf (COTS) operating system patches and service packs).

1.7.1.3 **Corrective Maintenance:** Unscheduled maintenance necessitated by unexpected system or component performance (e.g., faults or errors).

1.7.1.4 **Perfective Maintenance:** All changes, insertions, deletions, modifications, enhancements and extensions made to meet the evolving or expanding needs of the user. This will include changes driven by the need to retain JTAC accreditation.

1.7.2 These maintenance types will be delivered across the following maintenance levels:

1.7.2.1 **First Line Maintenance:** This involves inspection of the equipment and simple Preventive and Corrective Maintenance in the operational environment, performed by Operators. First Line Maintenance is performed at this level IAW the Original Equipment Manufacturer (OEM) maintenance recommendations.

1.7.2.2 **Second Line Maintenance:** This involves Preventive and Corrective Maintenance and removal or replacement of major assemblies at the operational site. Second Line Maintenance covers, but is not limited to major component replacements, installation of software (patches or new releases), mechanical repairs, limited overhaul, alignments and/or calibration Work using stocked spare components. Second Line Maintenance also provides configuration and test support.

1.7.2.3 **Third Line Maintenance:** It involves extensive repair and overhaul (R&O) of equipment, or correction of software problems necessary to restore the JTAC VTS to an operational or accredited state. Typically, Third Line maintenance is performed at the OEM's facility.

1.7.3 Detailed support requirements will be covered in a separate In-Service Support SOW.

1.8 Key Roles

1.8.1 The following paragraphs identify the key Department of National Defence (DND) roles with responsibility for delivery, operation and support of the JTAC VTS:

1.8.1.1 Operational Authority. Canadian Army Doctrine and Training Centre (CADTC) is the Operational Authority (OA). As such, it is responsible for identifying the requirements identified in this Contract. It is also responsible for monitoring JTAC accreditation requirements as they develop, in order to provide direction to the Technical Authority and user communities with the intent of keeping JTAC VTS fit for purpose.

1.8.1.2 Technical Authority. Director Combat Support Equipment Management 7-2 (DCSEM) is the Technical Authority (TA). As such, it is responsible for the generation of this SOW, verification of all deliveries against the requirements of this SOW. It is also responsible as the Life Cycle Material Manager (LCMM) for the through life in-service support of JTAC VTS.

1.8.1.3 Contracting Authority. PSPC is the Contracting Authority (CA). As such, it is responsible for all aspects of the management of this contract.

1.9 Acronyms and Abbreviations

1.9.1 A detailed list of all acronyms and abbreviations are detail in Appendix A4.0.

2.0 APPLICABLE DOCUMENTS

2.1 References

2.1.1 Whereas mentioned, the following Standards must be used for the preparation of deliverables to the extent specified in this SOW at A4.0.

2.2 Order of Precedence

2.2.1 In the event of a conflict between the content in this SOW and the referenced documents, this SOW's content will take precedence.

2.3 Official Language Requirements

2.3.1 The Contractor must provide all publications intended for use by the JTAC VTS user community i.e. instructors, Trainees and maintainers, in both English and French.

2.3.2 The Contractor must keep both the English and Canadian French versions of bilingual user publications up to date and make changes simultaneously to both versions.

2.3.3 The Contractor must have user publications translated by certified translators, such as members of an authorized provincial association of translators, to ensure the translated text's quality.

2.3.4 The Contractor must ensure all translations are consistent with approved DND terminology. Approved terminology sources, in order of priority, are as follows:

2.3.4.1 Canadian Oxford Dictionary Second Edition (for English);

2.3.4.2 Le Petit Robert Edition 2017 (for French); and

2.3.4.3 Termium, PSPC Translation Bureau Linguistic Data Bank (http://www.termiumplus.gc.ca /);

2.3.5 The Contractor must review and accept responsibility for the validity of all (both their own and all sub-Contractors) information found in the Technical Publications.

2.4 Data Deliverable Format

2.4.1 Unless otherwise specified as a specific requirement, the Contractor must deliver all the soft copies of data deliverables in formats compatible with the office software currently in use by the DND as listed:

2.4.1.1 IBM® Engineering Requirements Management DOORS®;

2.4.1.2 Microsoft (MS) Windows 10 Enterprise Operating System (OS), Service Pack 1;

2.4.1.3 MS Edge 2019Edge;

2.4.1.4 MS Office Professional Plus 2013 (Word, Excel, Access, PowerPoint, and Outlook);

2.4.1.5 Google Chrome;

2.4.1.6 Foxit PhantomPDF Version 10;

2.4.1.7 Adobe Acrobat Reader 2017; and

2.4.1.8 7-Zip, V19.00.

2.4.2 Those compatible formats must allow the files to be recognized, opened, and viewed or read in their intended form and format using DND's office software, along with allowing the user to modify, select, copy and paste information from the files to other DND office software files.

3.0 PROJECT MANAGEMENT

3.1 Project Management Program

3.1.1 The Contractor must designate a Project Manager with the responsibilities to coordinate, execute, and manage the Contractor's project management activities for the Contract. The Contractor's Project Manager must have the total responsibility for all works required under the Contract.

3.1.2 The Contractor's Project Manager must be the primary point of contact between the Contractor, the DND Technical Authority and the PSPC Contracting Authority for all issues related to the Contract.

3.2 Project Management Plan

3.2.1 The Contractor must provide a Project Management Plan (PMP) IAW Contract Data Requirement List (CDRL) JTAC VTS-PM-001 at Appendix A2.2 (page 100) to ANNEX A and the associated Data Item Deliverable (DID) JTAC VTS-PM-001 at Appendix A3.3 (page 115) to ANNEX A.

3.3 Transition Plan

3.3.1 The Transition Phase of the Contract must be described in general terms, establishing the specific activities and goals of the Phase from delivery phase to in-service support in terms of the Contractor's Organizational structure, processes, and milestones.

3.3.2 The Contractor must provide a Transition Plan IAW CDRL JTAC VTS-PM-002 at Appendix A2.2 (page 100) to ANNEX A and the associated DID JTAC VTS-PM-002 at Appendix A3.4 (page 117) to ANNEX A.

3.4 Intellectual Property Management Plan and List

3.4.1 The Contractor must provide an Intellectual Property (IP) Management Plan and List IAW CDRL JTAC VTS-PM-003 at Appendix A2.2 (page 100) to ANNEX A and the associated DID JTAC VTS-PM-003 at Appendix A3.5 (page 120) to ANNEX A.

3.5 Reports

3.6 Standard Report Format

3.6.1 The Contractor must provide a Standard Report Format IAW CDRL JTAC VTS-PM-004 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-PM-004 at Appendix A3.6 (page 125) to ANNEX A.

3.7 Project Progress Report

3.7.1 The Contractor must provide a Project Progress Report IAW CDRL JTAC VTS-PM-005 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-PM-005 at Appendix A3.7 (page 127) to ANNEX A.

3.8 Significant Incident Report

3.8.1 The Contractor must provide a Significant Incident Report IAW CDRL JTAC VTS-PM-006 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-PM-006 at Appendix A3.8 (page 129) to ANNEX A.

3.9 Project Meetings

3.9.1 General

3.9.1.1 The Contractor must ensure that the necessary data, personnel and facilities are available for each meeting

3.9.1.2 As appropriate, meetings may be held at the Contractor's or DND facilities at the discretion of the Technical Authority.

3.9.1.3 The Contractor's Program Manager must be present at all meetings where it has been determined in advance that a decision may be required at their level of authority. If the Program Manager does not have final approval authority for decision making and changes, then the person that has that final approval authority must also be present at the meeting.

3.9.1.4 The Contractor must provide the Meeting Agenda(s) IAW CDRL JTAC VTS-PM-007 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-PM-007 at Appendix A3.9 (page 131) to ANNEX A.

3.9.1.5 The Contractor must provide Presentation Materials IAW CDRL JTAC VTS-PM-008 at Appendix A2.2 (page 100) to ANNEX A and the associated DID JTAC VTS-PM-008 at Appendix A3.10 (page 133) to ANNEX A.

3.9.1.6 The Contractor must record, prepare, and provide the Meeting Minutes of each meeting IAW CDRL JTAC VTS-PM-009 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-PM-009 at Appendix A3.11 (page 135) to ANNEX A.

3.9.1.7 Where the Contractor organizes and/or chairs the meeting or where the Contractor is not a third party to the meeting and is requested to take minutes by DND.

3.9.1.8 The Contractor must not make any change in the interpretation of any portion of the contract through the minutes of a meeting or any

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

3.9.2 Kick-off Meeting

3.9.2.1 The Contractor must hold and chair a Kick-off Meeting (at the Contractor's facility) no later than 21 calendar days after contract award to review and secure a common understanding of the following:

3.9.2.1.1 The requirements of the Contract;

3.9.2.1.2 The requirements of the SOW;

3.9.2.1.3 A general overview of the project, risks, schedule, and communication channels to follow, and

3.9.2.1.4 Other contractual and programmatic issues associated with the project as agreed between the TA, CA, and the Contractor.

3.9.2.2 Refer to Meeting Documentation requirements found at ANNEX A para. 3.9.1.5.

3.9.3 Systems Engineering (SE) Meeting

3.9.3.1 The Contractor must hold and chair the first SE meeting following the closure of the Kick-Off Meeting to:

3.9.3.1.1 Review and secure a common understanding of the requirements expressed in the SE CDRLs and DIDs, the Technical Specification(s), and other referenced specifications; and

3.9.3.1.2 Discuss possible design strategies and concepts and associated risks.

3.9.3.2 If the preliminary design of the JTAC VTS, based on the requirements derived from the Technical Specification(s), is sufficiently advanced and the entry criteria for the Preliminary Design Review (PDR) have been met, as described in ANNEX A para. 4.3.1, the Contractor can request approval by the TA for the PDR occurring along with this meeting.

3.9.3.3 Refer to Meeting Documentation requirements found at ANNEX A para. 3.9.1.5.

3.9.4 Integrated Logistics Support (ILS) Meeting

3.9.4.1 The Contractor must hold and chair an ILS Meeting following the closure of the Kick-Off Meeting (detailed in 3.9.2) to:

3.9.4.1.1 Review and secure a common understanding of the requirements expressed in the ILS CDRLs and DIDs, DND Canadian Forces Technical Orders (CFTO)s and specifications; and,

3.9.4.1.2 Discuss possible sparing strategies and concepts, lowest replaceable units, and lines of maintenance and associated risks.

3.9.4.1.3 Discuss possible strategies for the conduct of Adaptive and Perfective Maintenance.

3.9.4.2 Refer to Meeting Documentation requirements found at ANNEX A para. 3.9.1.5.

3.9.5 Initial Provisioning Conference

3.9.5.1 The Contractor must hold and chair an Initial Provisioning Conference (IPC) in order to establish initial spares quantities and distribution.

3.9.6 Other meetings

3.9.6.1 The Contractor must hold and chair (at the Contractor's facility) additional SE meetings described in ANNEX A para. 4.2.5.

3.9.6.2 The Contractor and the TA may schedule informal reviews, such as teleconferences, video conferences, briefings, and technical interchange meetings, to help achieve the Contract requirements.

4.0 SYSTEMS ENGINEERING

4.1 Overview

4.1.1 The Contractor must perform Systems Engineering (SE) activities and apply SE processes throughout the concept, development, production, utilization, support, and retirement life cycle stages of the JTAC VTS.

4.1.2 The Contractor must define and implement SE processes in conformance with IEEE 15288.1-2014, or equivalent standard, as further described within this document.

4.1.2.1 The Contractor must measure conformance via the outcomes and outputs specified by IEEE 15288.1-2014, or equivalent standard.

4.1.3 The Contractor must define and conduct technical reviews and audits in conformance with IEEE 15288.2-2014 or equivalent standard.

4.1.3.1 The Contractor must measure conformance via the outputs and criteria specified by IEEE 15288.2-2014, or equivalent standard.

4.1.4 The Contractor must use SE processes to define the system's requirements, transform the requirements into an effective product providing the required system functionality, and sustain the product functionality during the production/manufacturing phase.

4.1.5 The Contractor must implement a SE process that will transform all system requirements into a set of lower-level performance requirements that define the system, including the following:

4.1.5.1 The SE process must plan, identify, allocate functional requirements, provide inputs to documentation, and include requirements, design, and implementation reviews.

4.1.5.2 The SE effort must integrate all elements of a multifunctional engineering effort to meet system requirements.

4.1.6 The Contractor must ensure the timely integration of engineering specialties such as reliability, maintainability, supportability, cybersecurity, logistics engineering, human factors engineering, safety, value engineering, standardization, and transportability into design and development.

4.1.7 The Contractor must perform engineering, design activities, and tasks as necessary to support production, installation, integration, test, and acceptance of all hardware components and software delivered.

4.2 Systems Engineering Management

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

4.2.2 System Engineering Management Plan

4.2.2.1 The Contractor must provide a Systems Engineering Management Plan (SEMP) IAW CDRL JTAC VTS-SE-101 at Appendix A2.2 (page 100) and the associated DID JTAC VTS-SE-101 at Appendix A3.12 (page 137) to ANNEX A.

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

4.2.4 Engineering Schedule

4.2.4.1 The Contractor must provide a time-based schedule of engineering activities as part of the Contract Master Schedule (CMS).

4.2.4.2 The Contractor must capture all technical milestones, including system reviews and their critical dependencies in the CMS.

4.2.5 Conduct of Mandated System Reviews

4.2.5.1 The Contractor must conduct all Mandated System Reviews (MSRs) and all Internal System Reviews IAW the approved SEMP.

4.2.5.2 The Contractor must conduct all MSRs at Contractor premises unless otherwise agreed by the TA and CA.

4.2.5.3 Unless otherwise agreed between the parties, the Contractor must not commence an MSR until:

4.2.5.3.1 All data items required by the CDRL to be delivered before the review have been delivered, and the TA considers the data items to be suitable for conducting the review;

4.2.5.3.2 All entry criteria defined in the governing plans for that review have been met;

4.2.5.3.3 All action items from any previous reviews affecting this review have been successfully addressed, or action plans agreed with the TA; and

4.2.5.3.4 All pre-requisite activities defined in the contract have been successfully conducted.

4.2.5.4 Before each MSR, the Contractor must provide an MSR Package for that review IAW CDRL JTAC VTS-SE-102 at Appendix A2.2

(page 100) to ANNEX A, and the associated DID JTAC VTS-SE-102 at Appendix A3.13 (page 145) to ANNEX A.

4.2.5.5 Before each MSR, the Contractor must provide a Meeting Agenda for that review, and following each MSR, provide Meeting Minutes of that review.

4.2.5.6 Before each MSR, the Contractor must provide the MSR Presentation Materials IAW CDRL JTAC VTS-PM-008 at Appendix A2.2 to this SOW and the associated DID JTAC VTS-PM-008 at Appendix A3.10 to this SOW. A Meeting Agenda IAW CDRL JTAC VTS-PM-007 at Appendix A2.2 to this SOW and the associated DID JTAC VTS-PM-007 at Appendix A3.9 to this SOW for that review, and following each MSR, provide Meeting Minutes of that review IAW CDRL JTAC VTS-PM-009 at Appendix A2.2 to this SOW and the associated DID JTAC VTS-PM-009 at Appendix A3.11 to this SOW.

4.2.5.6.1 Refer to Meeting Documentation requirements found at ANNEX A para. 3.9.1.5.

4.2.5.7 The Contractor must ensure that Contractor representatives and subcontractor's representatives participate in each MSR to the subject and objectives of that System Review.

4.2.5.8 The Contractor and the TA must co-chair each MSR.

4.2.5.9 The TA will classify each action item raised during MSRs as either a major or minor action item, considering their impact on MSR's objectives.

4.2.5.10 Unless otherwise agreed between the parties, the Contractor must not exit an MSR until:

4.2.5.10.1 All exit criteria, as defined in the governing plans for that review, have been met;

4.2.5.10.2 All contract plans, schedules, and activities for future phases have been reviewed and confirmed as appropriate, realistic, and achievable with acceptable risk;

4.2.5.10.3 All major action items have been closed;

4.2.5.10.4 All minor action items have been documented and assigned with agreed closure dates; and

4.2.5.10.5 The MSR has achieved its objectives, as defined in the SOW and the governing plans relating to that review.

4.2.5.11 The Contractor must not claim completion for an MSR until both the TA and the Contractor are satisfied that all the exit criteria have been met.

4.2.6 Requirements Traceability Verification Matrix (RTVM)

4.2.7 The Contractor must describe the overall system, its subsystems, and major assemblies while providing performance and design traceability to the System Requirments Specification by providing an Equipment Specification IAW CDRL JTAC VTS-SE-103 at Appendix A2.2 (page 100) to ANNEX A and the associated DID JTAC VTS-SE-103 at Appendix A3.14(page 147) to ANNEX A.

4.2.7.1 The Contractor must provide an RTVM IAW CDRL JTAC VTS-SE-104 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-104 at Appendix A3.15 (page 149) to ANNEX A.

4.2.7.2 The Contractor must utilize the Technical Specification at Appendix A1.0 to ANNEX A to develop the RTVM and demonstrate compliance to the Technical Specification.

4.2.7.3 The Contractor must trace each specification requirement and verification requirement to one or more requirements in the next lower-level specification hierarchy (downward traceability).

4.2.7.4 The Contractor must trace each specification requirement and verification requirement to one or more requirements in the next higher level in the specification hierarchy (upward traceability).

4.2.7.5 The Contractor supplied RVTM must be IBM DOORS compatible so that DND is can maintain its internal database for the life of the JTAC VTS capability.

4.3 System Design

4.3.1 Preliminary Design Review (PDR)

4.3.1.1 The Contractor must conduct an MSR, the PDR, after the preliminary design phase, IAW the approved SEMP.

4.3.1.1.1 The purpose of the PDR is for the Government to formally review the activities and work products generated by the Contractor during the preliminary design stage's performance to develop the allocated baseline and verify that the approach for the system design is ready to proceed into the detailed design phase.

4.3.1.1.2 The Contractor must present and describe the system design and program status.

4.3.1.1.3 The Contractor must include the following topics for discussion and presentation at the PDR:

4.3.1.1.3.1 Proposed hardware sourcing.

4.3.1.1.3.2 Proposed software sourcing:

4.3.1.1.3.3 Proposed Integration plan;

4.3.1.1.3.4 Logistics design aspects and concerns;

4.3.1.1.3.5 Test and evaluation;

4.3.1.1.3.6 Program problem and risk areas recommended solutions, and evaluation of alternatives; and

4.3.1.1.3.7 Updated RTVM

4.3.1.2 PDR Entry Criteria

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

4.3.1.2.1.1 Updated RTVM showing traceability of requirements is available;

4.3.1.2.1.2 Allocated Baseline has been developed;

4.3.1.2.1.3 Risk assessments and risk mitigation plans have been developed;

4.3.1.2.1.4 Reliability and Maintainability (R&M) requirements have been allocated to the design IAW para 4.3.1.2.1.5;

4.3.1.2.1.5 The Contractor must provide a Reliability and Maintainability (R&M) Predictions Data IAW CDRL JTAC VTS-SE-105 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-105 at Appendix A3.16 (page 152) to ANNEX A.

4.3.1.2.1.6 CMS shows the critical path through CDR;

4.3.1.2.1.7 Program technical risk is medium or lower;

4.3.1.2.1.8 Program execution risk is medium or lower;

4.3.1.3 PDR Exit Criteria

4.3.1.3.1 The Contractor must meet the following exit criteria for the PDR to complete:

4.3.1.3.1.1 CDRL items that were part of the PDR entry criteria have been discussed;

4.3.1.3.1.2 Updated RTVM demonstrates forward and backward traceability;

4.3.1.3.1.3 Risk assessments and risk mitigation plans have been discussed. Risks and their respective mitigation plans are in place and manageable for implementation of the functional requirements into a preliminary design;

4.3.1.3.1.4 Program schedule is executable within the anticipated cost and technical risks;

4.3.1.3.1.5 Program is properly staffed;

4.3.1.3.1.6 PDR presentation materials IAW CDRL JTAC VTS-PM-008 at Appendix A2.2 to this SOW and the associated DID JTAC VTS-PM-008 at Appendix A3.10 to this SOW are available;

4.3.1.3.1.7 Per the CMS, an executable schedule has been presented;

4.3.1.3.1.8 Allocated Baseline has been established;

4.3.2 Critical Design Review (CDR)

4.3.2.1 The Contractor must conduct an MSR, the CDR, after the detailed design phase, IAW the approved SEMP.

4.3.2.1.1 The purpose of the CDR is for the Government to review the activities formally and work products generated by the Contractor during the performance of the detail design stage to develop the product baseline and to verify that the building blocks are either ready for further development, adequately defined for procurement, or adequately defined for fabrication.

4.3.2.1.2 The Contractor must present and describe the finalized system design and program status and address the design changes made since the PDR.

4.3.2.1.3 The Contractor must include the following topics for discussion and presentation at the CDR:

4.3.2.1.3.1 Hardware design.

4.3.2.1.3.2 Software design.

4.3.2.1.3.3 Systems integration design.

4.3.2.1.3.4 Electromagnetic Environmental Effects impacts;

4.3.2.1.3.5 R&M and system safety programs progress, including updated R&M predictions and hazards analysis results;

4.3.2.1.3.6 Logistics design aspects and concerns;

4.3.2.1.3.7 Test and evaluation;

4.3.2.1.3.8 Program problem and risk areas recommended solutions, and evaluation of alternatives; and

4.3.2.1.3.9 Updated RTVM.

4.3.2.2 CDR Entry Criteria

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

4.3.2.2.1.1 Updated RTVM showing requirements traceability is available;

4.3.2.2.1.2 Product Baseline has been developed;

4.3.2.2.1.3 Updated risk assessment and risk mitigation plans are available;

4.3.2.2.1.4 Risks and their respective mitigation plans are in place and manageable for implementation of the functional requirements into a final design;

4.3.2.2.1.5 R&M requirements have been addressed in the design;

4.3.2.2.1.6 Trade-off analyses have been completed;

4.3.2.2.1.7 Logistics analysis has been conducted, and plans have been established;

4.3.2.2.1.8 CMS shows the critical path through testing;

4.3.2.3 CDR Exit Criteria

4.3.2.3.1 The Contractor must meet the following exit criteria for the CDR to complete:

4.3.2.3.1.1 CDRL items that were part of the CDR entry criteria have been satisfactorily discussed;

4.3.2.3.1.2 Updated RTVM demonstrates forward and backward traceability.

4.3.2.3.1.3 Updated risk assessments and risk mitigation plans have been satisfactorily discussed. Risks and their respective mitigation plans are in place and manageable for implementation of the functional requirements into a final design;

4.3.2.3.1.4 Program schedule is executable within the anticipated cost and technical risks;

4.3.2.3.1.5 Program is properly staffed;

4.3.2.3.1.6 PDR presentation materials IAW CDRL JTAC VTS-PM-008 at Appendix A2.2 to this SOW and the associated DID JTAC VTS-PM-008 at Appendix A3.10 to this SOW are available;

4.3.2.3.1.7 Per the CMS, an executable schedule has been presented;

4.3.2.3.1.8 Product Baseline has been established;

4.4 System Implementation

4.4.1 Hardware Development

4.4.1.1 The Contractor must document all hardware development processes and procedures in the SEMP for the JTAC VTS.

4.4.1.2 The Contractor must conduct all hardware development activities for the Contract IAW the approved SEMP for the JTAC VTS.

4.4.1.3 The Contractor must integrate and assemble the system hardware that satisfies the Technical Specification Appendices' performance requirements.

4.4.1.4 The Contractor must conduct market surveillance and market investigations to maximize the use of commercial and non-developmental items.

4.4.1.5 The Contractor must apply the systems engineering process during each level of system development (system, subsystem, and component) to provide the best approach, and provide the following:

4.4.1.5.1 Hardware designs and lower-level specifications must be based on performance, cost, industry acceptance, long-term availability, maintainability, supportability, and upgrade potential.

4.4.1.5.2 The design concept must include an open systems approach, which must be based on an engineering and business strategy.

4.4.1.6 The Contractor must choose specifications and standards adopted by industry standards bodies or de facto standards (set by the marketplace) for selected system interfaces, products, practices, and tools.

4.4.1.6.1 The Contractor must document all hardware and interface design changes into the existing Hardware Baseline Document.

4.4.2 Software Development

4.4.2.1 The Contractor must plan and conduct its Software engineering activities IAW the approved SEMP.

4.4.2.2 The Contractor must ensure that approved subcontractors undertaking Software engineering activities conduct those activities IAW the approved SEMP and the contract.

4.4.2.3 The Contractor must design and develop the system software and firmware and must follow industry software engineering best practices.

4.4.2.4 The Contractor must ensure that the design process and developed software must incorporate features that promote:

4.4.2.4.1 Assessment of open source software products;

4.4.2.4.2 Ease of operation;

4.4.2.4.3 Ease of software maintenance;

4.4.2.4.4 Ease of future updates and modifications;

4.4.2.4.5 Fault Tolerance;

4.4.2.4.6 Gender Based Analysis Plus (GBA+); and

4.4.2.4.7 Smart designs that can justify a reduction for documentation.

4.4.2.5 Computer programs and computer data systems must be fully integrated IAW the Technical Specification Appendices of this SOW.

4.4.2.6 The Contractor must conduct market surveillance and market investigations to maximize the use of open-source software, commercial software, and non-developmental software.

4.4.3 System Data Packages & Equipment Lists

4.4.3.1 The Contractor must provide a System Data Packages & Equipment Lists IAW CDRL JTAC VTS-SE-106 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-106 at Appendix A3.17 (page 154) to ANNEX A.

4.5 Specialty Engineering

4.5.1 Growth, Evolution and Obsolescence Program

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

4.5.1.1.1 Technology evolution and Obsolescence issues are appropriately considered in the design of the JTAC VTS;

4.5.1.1.2 Technology evolution and Obsolescence issues are appropriately considered against the evolution of the JTAC MOA and ATP-3.3.2.2 - Joint Terminal Attack Controller Program.

4.5.1.1.3 The Contractor's design, development, and production programs will not deliver equipment that has obsolescence problems at the time of delivery; and

4.5.1.1.4 Solutions for the JTAC VTS minimize Life Cycle Cost when technology evolution and obsolescence issues are considered.

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

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

4.5.2 Human Engineering

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

4.5.2.1.1 Develop or improve human interfaces of the JTAC VTS;

4.5.2.1.2 Achieve required effectiveness of human performance during JTAC VTS operation, maintenance, support, control, and transportation; and

4.5.2.1.3 Make economical demands upon personnel resources, skills, training, and costs.

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

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

4.5.2.4 The Contractor must ensure that Human Engineer program for the JTAC VTS incorporates Gender-Based Analysis Plus and demonstrate how the program incorporates the following:

4.5.2.4.1 The design of training systems and working to reduce the potential of racial and ethnic biases are not being reinforced. For example, in a simulation is the enemy always portrayed as being a member of one ethnic or religious group? The Contractor must demonstrate what steps they are taking to reduce potential biases;

4.5.2.4.2 Human systems integration and human-machine interface design. For example, ensuring that workstations and equipment can accommodate from the 5th percentile of females up to the 95th percentile of males.

4.5.2.4.3 Data collection/performance reporting. The Contractor must report on the effectiveness of mitigation strategies to specific GBA+ identified issues.

4.5.2.4.4 Diversifying job opportunities. The Contractor must demonstrate gender and racial diversity in the workforce is supported in the workforce. This could be the bidder's internal policies as it relates to diversity and inclusion; plans to work with training schools to recruit more women and other underrepresented groups.

4.5.3 Electromagnetic Environmental Effects

4.5.3.1 The Contractor must provide an Electromagnetic Environmental Effects program that ensures that Electromagnetic Environmental Effects is appropriately considered in the design of the JTAC VTS.

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

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

4.5.4 Electromagnetic Interference and Compatibility

4.5.4.1 The JTAC VTS must meet Test lab verification for Industry Canada radio-frequency interference and susceptibility standards (Interference-Causing Equipment Standards (ICES)) or verification against equivalent U.S., European or international standards.

4.5.4.2 Electrical safety: The JTAC VTS electrical equipment must meet Canadian certification from one or more of the following:

4.5.4.2.1 Canadian Standards Association (CSA);

4.5.4.2.2 Underwriter Laboratories of Canada (ULC);

4.5.4.2.3 Warnock Hersey (WH);

4.5.4.2.4 Underwriters' Laboratories, Inc (ULI)

4.5.4.2.5 ETL Testing Laboratories (ETL); or

4.5.4.2.6 MET Laboratories Inc.

4.5.5 System Security

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

4.5.5.1.1 The JTAC VTS must be a PROTECTED B system IAW Annex C Security Requirements Check List.

4.5.5.1.2 Ensure the DND's security obligations are met as they pertain to the confidentiality, availability, and integrity of information processed, stored, and communicated electronically or by similar means by the JTAC VTS;

4.5.5.1.3 Ensure the DND's security obligations and compliance requirements are met as they pertain to the protection of information, control of access to information, and providing an

audit trail of access to the information contained within the JTAC VTS;

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

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

4.5.6 System Cybersecurity

4.5.6.1 The Contractor must provide a Cybersecurity Architectural Design Document IAW CDRL JTAC VTS-SE-107 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-107 at Appendix A3.18 (page 156) to ANNEX A.

5.0 CONFIGURATION MANAGEMENT

5.1 Overview

5.1.1 The Contractor must conduct Configuration Management (CM) activities IAW IEEE 15288.1-2014 and ANSI/EIA-649-C, or equivalent standards, to ensure effective configuration identification, configuration control, change control, and configuration audits for the Work as well as effective management and implementation of engineering changes.

5.2 Configuration Management Planning

5.2.1 The Contractor must address planning for and management of the CM program in the SEMP, IAW DID Configuration Management Plan #

5.2.1.1 The Contractor must provide a Configuration Management Plan IAW CDRL JTAC VTS-SE-108 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-108 at Appendix A3.19 (page 160) to ANNEX A.

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

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

5.3 Configuration Baselines

5.3.1 The Contractor must develop and maintain each of the following Configuration Baselines for the JTAC VTS during the contract:

5.3.1.1 Functional Baseline (FBL);

5.3.1.2 Allocated Baseline (ABL); and

5.3.1.3 Product Baseline (PBL).

5.3.2 Software Version Description Document (SVDD)

5.3.2.1 The Contractor must provide a Software Version Description Document (SVDD) IAW CDRL JTAC VTS-SE-109 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-109 at Appendix A3.20 (page 162) to ANNEX A.

5.3.3 Equipment Breakdown Structure (EBS)

5.3.3.1 The Contractor must provide an Equipment Breakdown Structure (EBS) IAW CDRL JTAC VTS-SE-110 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-110 at Appendix A3.21 (page 165) to ANNEX A.

5.4 Configuration Control

5.4.1 The Contractor must manage configuration changes and Deviations (see para. 7.3.1), including their:

5.4.1.1 Identification;

5.4.1.2 Request and documentation;

5.4.1.3 For configuration changes only, classification as Class I (major change) or Class II (minor change);

5.4.1.4 Evaluation and coordination; and

5.4.1.5 Implementation and verification of the changes;

5.4.2 The Contractor must provide Engineering Change Proposals (ECPs) IAW CDRL JTAC VTS-SE-111 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-111 at Appendix A3.20 (page 162) to ANNEX A, to implement changes to the approved FBL and PBL.

5.4.2.1 The Contractor must document all necessary changes to specifications, drawings, and other documentation requiring revision should the ECP be approved, in place of the reference to Specification Change Notices DID JTAC VTS-SE-113 at Appendix A2.22 (page 129) to ANNEX A.

5.4.2.2 Copies of these revisions must be provided for CDRLs already provided to DND, following the original CDRL timelines for review.

5.4.3 As per ACMP-2009, the Contractor must classify an ECP as Class I if:

5.4.3.1 The FBL, once established, is affected to the extent that any of the requirements are not within specified limits or specified tolerances;

5.4.3.2 The PBL, once established, is affected or the change impacts one or more of the following:

5.4.3.2.1 Government Furnished Equipment (GFE);

5.4.3.2.2 Safety (to include safety-critical software);

5.4.3.2.3 Security;

5.4.3.2.4 Deliverable computer software;

5.4.3.2.5 Compatibility or interoperability with interfacing items;

5.4.3.2.6 Delivered operational and maintenance manuals;

5.4.3.2.7 Interchangeability or replaceability; or

5.4.3.2.8 Skills, manning, training, biomedical factors or human engineering design;

5.4.3.3 Any contractual factors are affected, such as costs, guarantees, warranties, deliveries, or scheduled contractual milestones.

5.4.4 The Contractor must classify an ECP as Class II for all changes not classified as Class I. The Contractor will require that the TA reviews Class II changes for concurrence in the classification only.

5.4.4.1 At the TA's request, the Contractor must resubmit a proposed Class II change to a PBL as a proposed Class I change to that PBL.

5.4.5 Software Change Request

5.4.5.1 The Contractor must provide a Software Change Request IAW CDRL JTAC VTS-SE-112 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-112 at Appendix A3.23 (page 173) to ANNEX A.

5.4.6 For any proposed changes to a Configuration Baseline, the Contractor must ensure that all Configuration Baselines will be mutually consistent and compatible.

5.5 Configuration Status Accounting

5.5.1 The Contractor must establish and maintain, IAW the approved SEMP, a Configuration Status Accounting (CSA) system that correlates, stores,

maintains, and provides readily available views of all configuration information relating to those items identified as Configuration Items (CI).

5.5.2 The Contractor must provide CSA Reports, from the Contractor's CSA system, IAW CDRL JTAC VTS-SE-113 at Appendix A2.2 (page 100) to ANNEX A and the associated DID JTAC VTS-SE-113 at Appendix A3.24 (page 176) to ANNEX A, capturing all current change status and change history and the as-designed, as-built, as-delivered and as-modified configuration of all Configuration Items and tracked components of the JTAC VTS.

5.5.2.1 For Computer Software Configuration Items and Computer Software Components, the CSA must include the as-delivered, as-modified, and as-tested configurationas of the latest or current CSA Report IAW DID JTAC VTS-SE-113.

5.6 Configuration Audits

5.6.1 The Contractor must invite the TA, or representatives appointed by the TA, to witness all FCAs and PCAs.

5.6.2 Unless the TA otherwise notifies the Contractor, the TA or appointed representative(s) must witness all Configuration Audits that are conducted for acceptance.

5.6.3 Unless the TA has notified that it will not witness a Configuration Audit IAW para 5.6.2, the Contractor must not conduct that Configuration Audit in the absence of the TA or the appointed representative(s).

5.6.4 Functional Configuration Audit (FCA)

5.6.4.1 The Contractor must conduct an MSR, the FCA, on each JTAC VTS Configuration Item, before delivery, IAW the approved SEMP.

5.6.4.1.1 The objective of the FCA for an item is to demonstrate that the item's actual performance complies with all elements of its specification.

5.6.4.1.2 As part of the FCA for an item, the item's configuration status needs to be established such that all verification activities have been conducted on a known final baseline or one that can adequately trace to the final baseline. The Contractor must review test and other data to verify that the item performs as required by its functional/allocated configuration identification.

5.6.4.1.3 The Contractor must conduct the FCA on the configuration of the item, which is representative (prototype or preproduction) of the configuration to be released for:

5.6.4.1.3.1 Production of the operational inventory quantities, when more than one article is to be produced; or

5.6.4.1.3.2 Acceptance, when only a single article is to be produced.

5.6.4.1.4 When a prototype or preproduction article is not produced, the Contractor must conduct the FCA on the first production article.

5.6.4.1.5 For cases where Configuration Item qualification can only be determined through integrated system testing, FCAs for such Configuration Items will not be considered complete until completion of the integrated testing.

5.6.4.2 FCA Entry Criteria

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

5.6.4.2.1.1 The Contractor has provided the TA with clear identification of the item to be audited, including nomenclature, specification identification number, and Configuration Item number, if applicable;

5.6.4.2.1.2 The Contractor has provided the TA with a current listing of all deviations and waivers against the item, either requested of or approved by DND TA;

5.6.4.2.1.3 The updated RTVM showing allocation of system requirements to the item has been established and is traceable from the system requirement to the item and from the item requirement back to system requirements;

5.6.4.2.1.4 The Contractor has provided the TA with the draft Product Specification for the item;

5.6.4.3 FCA Exit Criteria

5.6.4.3.1 The Contractor must meet the following exit criteria for the FCA to complete:

5.6.4.3.1.1 CDRL items that were part of the FCA entry criteria have been satisfactorily discussed;

5.6.4.3.1.2 The test procedures, reports, and data used by the FCA team have been made a matter of record in the FCA minutes;

5.6.4.3.1.3 All risks identified during the FCA have been documented and analyzed, and the risks with proceeding to the next phase are acceptable to the TA;

5.6.4.3.1.4 An updated RTVM, if required;

5.6.5 Physical Configuration Audit (PCA)

5.6.5.1 The Contractor must conduct an MSR, the PCA, on each JTAC VTS Configuration Item, before delivery, IAW the approved SEMP.

5.6.5.1.1 The objective of the PCA for an item is to:

5.6.5.1.1.1 Confirm that the ‘as-built’ or ‘as-coded’ configuration is consistent with the configuration documentation;

5.6.5.1.1.2 Confirm that the configuration documentation is complete and accurate; and

5.6.5.1.1.3 Establish or verify the PBL for the item.

5.6.5.1.2 The Contractor must perform a detailed audit of engineering drawings, specifications, Technical Data, and tests utilized in the Configuration Item production, including the design documentation, listings, and manuals for software Configuration Items. The review includes an audit of the released engineering documentation and quality control records to ensure the as-built or as-coded configuration is reflected by this documentation.

5.6.5.1.3 The Contractor must conduct a PCA on the first production article of a Configuration Item and those CI’s that are a re-procurement of a Configuration Item already in the inventory.

5.6.5.1.4 Satisfactory completion of a PCA for a Configuration Item results in establishing the Product Baseline for that Configuration Item.

5.6.5.2 PCA Entry Criteria

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

5.6.5.2.1.1 The Contractor has submitted the final draft of the product specification for the Configuration Item to be audited to the TA for review before PCA;

5.6.5.2.1.2 The Contractor has provided the TA with a current listing of all deviations and waivers against the item, either requested of or approved by DND TA;

5.6.5.2.1.3 The Contractor has provided the TA with identification of the Configuration Item to be audited in terms of nomenclature, specification identification number, and Configuration Item number;

5.6.5.2.1.4 The Contractor has provided the TA with drawings, part numbers, and build status of the Configuration Item subject to audit, including serial numbers and software identification;

5.6.5.3 PCA Exit Criteria

5.6.5.3.1 The Contractor must meet the following exit criteria for the PCA to complete:

5.6.5.3.1.1 CDRL items that were part of the PCA entry criteria have been satisfactorily discussed;

5.6.5.3.1.2 All risks identified during the PCA have been documented and analyzed, and the risks with proceeding to the next phase are acceptable to the TA;

5.6.5.3.1.3 Configuration differences between the Configuration Item qualified and the Configuration Item being audited have been made a matter of record in the PCA minutes;

5.6.5.3.1.4 All build records for the Configuration Item confirm that the Configuration Item has been built IAW the drawings and specifications;

6.0 VERIFICATION AND VALIDATION (V&V)

6.1 V&V Management

6.1.1 V&V Planning

6.1.1.1 The Contractor must address planning for and management of the V&V program in the SEMP.

6.1.1.2 The Contractor must conduct all V&V activities for the contract IAW the approved SEMP and approved Acceptance Test Plan and Procedures (ATP&Ps) for each V&V phase, per CDRL JTAC VTS CDRL SE-115 prepared IAW DID JTAC VTS SE-115.

6.1.1.3 The Contractor must provide a System Verification Plan IAW CDRL JTAC VTS-SE-114 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-114 at Appendix A3.25 (page 179) to ANNEX A.

6.1.2 DND Involvement in Acceptance V&V (AV&V)

6.1.2.1 The Contractor must invite the TA, or representatives appointed by the TA, to witness, and participate in, when applicable, all AV&V activities.

6.1.2.2 Unless otherwise notified by the TA, the TA or appointed representative(s) must witness and participate in AV&V activities.

6.1.2.3 Unless the TA has notified that they will not witness an AV&V activity IAW para 6.1.2.2, the Contractor must not conduct that AV&V activity in the absence of TA or appointed representative(s).

6.1.2.4 Unless otherwise agreed in writing by the TA, the Contractor must provide the TA, or representatives appointed by the TA, with at least 60 Calendar Days advance notice of the start date and time of all AV&V activities for the JTAC VTS.

6.1.3 Test Readiness Reviews (TRRs)

6.1.3.1 Before the commencement of each AV&V phase, the Contractor must hold an MSR, a TRR, IAW the approved SEMP, which:

6.1.3.1.1 Confirms the accuracy and completeness of the ATP&Ps for the V&V phase;

6.1.3.1.2 Confirms the status of the applicable Configuration Baseline of the system, item, or process under test;

6.1.3.1.3 Reviews results from preceding test activities, where applicable to the AV&V activity;

6.1.3.1.4 Assures that the relevant Item under Test (IUT) is ready for testing. The IUT may be a CI, group of CIs, subsystem, component, or system;

6.1.3.1.5 Assures that any DND resources required are available and prepared for formal testing; and

6.1.3.1.6 Assures that the Contractor is prepared for formal testing.

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

6.1.3.3 TRR Entry Criteria

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

6.1.3.3.1.1 The status of all design and test documentation for the IUT has been established and declared to the TA;

6.1.3.3.1.2 The updated RTVM showing traceability from IUT requirements to the test procedures and contract test requirements has been established and declared to the TA;

6.1.3.3.1.3 Action items from any previous reviews affecting TRR have been successfully addressed, or action plans agreed with the TA;

6.1.3.4 TRR Exit Criteria

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

6.1.3.4.1.1 All required resources including personnel, equipment, and facilities are available for formal testing;

6.1.3.4.1.2 The IUT and test procedures are deemed to be satisfactory by both the Contractor and the TA to support formal testing;

6.1.3.4.1.3 Plans for the measurement and analysis program for the next AV&V phase have been agreed to by the TA,

including the measures to be collected, associated collection methods, and analysis techniques;

6.1.3.4.1.4 All risks identified during the TRR have been documented and analyzed, and the risks with proceeding to the next phase are acceptable to the TA;

6.1.4 Failure Reporting and Analysis

6.1.4.1 During AV&V of the JTAC VTS elements, the Contractor must establish, maintain and update a Problem Resolution System that:

6.1.4.1.1 collects Failure data (including applicable CI identification and configuration data);

6.1.4.1.2 classifies the Failure Severity IAW the following table:

Failure Severity	Applies if a problem could:
1	a. Prevent the accomplishment of an operational or mission essential capability. b. Jeopardize safety, security, or other requirement designated 'critical'.
2	a. Adversely affects the accomplishment of an operational or mission essential capability, and no workaround solution is known. b. Adversely affect technical, cost, or schedule risks to the Contract or too life-cycle support of the system, and no work-around solution is known.
3	a. Adversely affects the accomplishment of an operational or mission essential capability, but a work-around solution is known. b. Adversely affects technical, cost, or schedule risks to the Contract or the system's life-cycle support, but a work-around solution is known.
4	a. Result in user/operator inconvenience but does not affect a required operational or mission essential capability b. Result in inconveniences for development or support personnel, but does not prevent the accomplishment of those responsibilities
5	any other effect

6.1.4.1.3 Documents the failures and associated failure modes;

6.1.4.1.4 Defines corrective actions;

6.1.4.1.5 Identifies the scope of additional V&V activities required to confirm that the failure has been remedied; and

6.1.4.1.6 Maintains a history of all transactions.

6.1.4.2 The Contractor must provide all facilities and assistance reasonably required by the DND for the DND to access the Problem Resolution System for the duration of the contract.

6.1.4.3 The Contractor must submit for TA approval all corrective actions to address safety-related failures during AV&V that are assigned a Failure Severity classification of either 1 or 2.

6.1.4.4 The Contractor must invite the TA, or representatives appointed by the TA, to witness corrective actions and the closure of failures during AV&V assigned a Failure Severity classification of either 1 or 2.

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

6.1.5 Regression Testing

6.1.5.1 Subject to para. 6.1.5.2, the Contractor must repeat an AV&V activity (i.e., conduct regression testing) if:

6.1.5.1.1 Changes are made to the configuration of a JTAC VTS component after starting an AV&V activity;

6.1.5.1.2 The analysis of test data and the assessment of test results against pass/fail criteria indicate that the item under test has failed to meet its applicable requirements;

6.1.5.1.3 The analysis of test data and the assessment of test results against pass/fail criteria are inconclusive; or

6.1.5.1.4 The Contractor deviates from the ATP&Ps without prior Approval by the TA.

6.1.5.2 The Contractor must demonstrate to the TA's satisfaction that any changes to the configuration does not affect any AV&V activities. Then subject to the TA’s approval of the regression analysis, the Contractor will not be required to repeat that AV&V activity.

6.2 **AV&V**

6.2.1 General

6.2.1.1 The Contractor must conduct AV&V activities on equipment of the same hardware, software, firmware, and data configuration (as applicable) which will require the TA’s approval prior to the commencement of work.

6.2.1.2 The Contractor must confirm that the test environment, all test equipment, and software test tools, if applicable, used for the AV&V of the JTAC VTS are IAW the approved ATP&P.

6.2.1.3 The Contractor must maintain a log during all AV&V activities to record applicable information, including test details, the configuration of the items under test, the ATP&Ps used and any deviations from them, the test results, and any configuration changes and maintenance actions.

6.2.2 Design Acceptance

6.2.2.1 The closure of the AV&V Phases, following the completion and acceptance of the Acceptance Verification and Validation described above, will constitute Design Acceptance.

6.2.2.2 Design Acceptance will be used as a significant planning milestone for the Integrated Logistic Support (ILS) program delivery.

6.2.3 The Contractor must provide ATP&Ps IAW CDRL JTAC VTS-SE-115 at Appendix A2.2 (page 100) to ANNEX A and the associated DID JTAC VTS-SE-115 at Appendix A3.26 (page 182) to ANNEX A, which are necessary for the conduct of AV&V consistent with the approved SEMP.

6.2.4 The Contractor must provide Acceptance Test Reports (ATRs) IAW CDRL JTAC VTS-SE-116 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-116 at Appendix A3.27 (page 186) to ANNEX A, which are necessary for the evaluation of AV&V results, consistent with the approved ATP&Ps.

7.0 QUALITY MANAGEMENT

7.1 Contractor Quality Responsibilities

7.1.1 The Contractor must have a Quality Management System (QMS) <u>based</u> on ISO 9001:2015 ‘Quality Management Systems – Requirements’, or other internationally accepted equivalent standard as agreed by DND Directorate of Quality Assurance (DQA) at Contract Award.

7.2 Quality Pan

7.2.1 The Contractor must maintain and apply the QMS in para 7.1.1 to all phases of the contract.

7.2.2 During the progress of work under the contract, the DQA Quality Assurance Representative (QAR) may perform audit and surveillance activities in relation to the work performed, including any of the following:

7.2.2.1 System Audit;

7.2.2.2 Process Audit; or

7.2.2.3 Product Audit.

7.2.3 The Contractor must provide all facilities and assistance reasonably required by the QAR to perform audit and surveillance activities as described in para 7.2.2.

7.2.4 The Contractor must ensure that all subcontractors have QMS based on ISO 9001:2015 'Quality Management Systems – Requirements', or other internationally accepted equivalent standards appropriate to the work required under the Subcontract.

7.2.5 The Contractor must ensure that all work performed under a Subcontract meets the requirements of the QMS to be applied by the Contractor under para. 7.1.1.

7.3 Non-Conforming Deliveries

7.3.1 If the Contractor seeks to use non-conforming materials or work in the deliveries, the Contractor must follow D-02-006-008/SG-001 the Design Change, Deviation and Waiver Procedure and provide the related and completed form, which will be provided to the Contractor by the QAR when necessary. The following is a summary of the related form:

7.3.2 FORM DND 675 – Request for Waiver or Deviation the Contractor must provide a Request for Deviation (RFD) / Request for Waiver (RFW) IAW CDRL JTAC VTS-SE-117 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-SE-117 at Appendix A3.28 (page 188) to ANNEX A. The Request for Deviation (RFD) / Request for Waiver (RFW)) – is used to request and obtain waivers to permit the acceptance of items, which through error during manufacture, do not conform to the technical data requirements of the contract OR is used to request and obtain authorization for a temporary departure from the technical data requirements of the contract to be incorporated in any number of items being manufactured to the contract.

7.3.2.1.1 Waiver – The written authorization granted after manufacture to permit the acceptance of items that during production or after having been submitted for inspection are found to depart from the contract's technical data requirements but are considered suitable for use "as is" or after approved repair.

7.3.2.1.2 Deviation – Written authorization for a temporary departure, granted before the manufacture of an item, departs from a particular performance or design requirement of a contract, specification, or referenced document, for a specific number of items, a specified service, or a specific period of time. This

departure is NOT recorded in the technical data for future manufacture.

7.3.3 The DND TA may approve or not approve the application for a Waiver or Deviation in its sole and absolute discretion and may provide approval subject to any amendments to, or conditions on, the approval of a Waiver application or Deviation, which are deemed necessary by DND.

7.3.4 Any approval of an application for a Waiver or Deviation will not release the Contractor from the performance of its obligations under the contract, except to the extent specifically set out in the approved application for a Waiver or Deviation.

7.3.5 If an application for a Waiver or Deviation is approved, the Contractor must undertake all actions to rectify the non-conformance IAW the timeframes and any other requirements for such rectification or to meet any conditions specified in the approved application for a Waiver or Deviation.

7.3.6 When the Contractor has rectified the non-conformance(s) in an approved application for a Waiver or Deviation, it must notify the QAR and seek closure of the application for a Waiver or Deviation by submitting, with the notice, evidence to demonstrate that the applicable non-conformance(s) have been rectified.

8.0 INTEGRATED LOGISTICS SUPPORT (ILS)

8.1 Operations Concept

8.1.1 JTAC VTS is to be operated by CAF personnel. In order to achieve this JTAC VTS operators will require:

8.1.1.1 Training. CAF personnel will provide long-term operator training in-house. To this end, the Contractor must provide an initial Operator “train-the-trainer” Course to provide the initial cadre of trained operator trainers. It is likely that the Contractor will be required to repeat the Operator “train-the-trainer” course periodically.

8.1.1.2 Manuals. CAF Operators will require a comprehensive set of user manuals in both English and French.

8.2 Maintenance Concept

8.2.1 The JTAC VTS will be maintained by trained CAF personnel supported by the Contractor. Maintenance training, supply support and manuals in both English and French will be tailored to match the maintenance concept.

8.2.1.1 **Operator Maintenance** – Operators will be required to conduct first line preventive and corrective maintenance. Preventive maintenance tasks will include component cleaning and visual inspection of component condition and cabling. Corrective maintenance tasks may include such activity as system rebooting and periphery replacement. Operator maintenance activities must not require the use of Special Tools and Test Equipment (STTE) Tasks should have a duration of less than one (1) hour.

8.2.1.2 **Technician Maintenance,** CAF technicians will be required to conduct first line and limited second line corrective maintenance and limited second line adaptive maintenance. First line corrective maintenance tasks will include the exchange of failed major components. Second line corrective maintenance tasks could include the replacement and repair of cabling. Limited second line adaptive maintenance tasks will include the installation of software patches and upgrades. Technician maintenance tasks could require the use of STTE and should have a duration of less than four (4) hours.

8.2.2 **Contractor Maintenance** A support contract will require the Contractor to provide third line corrective and adaptive maintenance. Third line corrective maintenance will include the repair of major components and selected LRUs. Third line adaptive maintenance will include the preparation of software service packs for on-site installation by CAF technicians. Evolving

JTAC accreditation requirements will also require the Contractor to undertake Perfective maintenance tasks. AI Contractor maintenance will be undertaken on an as-and-when requested basis.

8.2.3 In-Service Support Plan (ISSP)

8.2.4 The Contractor must provide an In-Service Support Plan (ISSP) IAW -ILS-201 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-201 at Appendix A3.29 (page 190) to this ANNEX A.

8.3 ISS Program

8.3.1 The ISS Program is subject of a separate SOW.

8.4 Material Change Notice

8.4.1 The Contractor must provide a Material Change Notice IAW CDRL JTAC VTS-ILS-202 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-202 at Appendix A3.30 (page 192) to this ANNEX A.

8.5 Safety Data Sheet

8.5.1 The Contractor must provide a Safety Data Sheet (SDS) IAW CDRL JTAC VTS-ILS-203 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-203 at Appendix A3.31 (page 194) to this ANNEX A.

8.6 Sparing Analysis Report

8.6.1 The Contractor must provide a Sparing Analysis Report IAW CDRL JTAC VTS-ILS-204 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-204 at Appendix A3.32 (page 196) to this ANNEX A.

8.7 Supplementary Provisioning Technical Documentation

8.7.1 The Contractor must provide a Supplementary Provisioning Technical Documentation IAW CDRL JTAC VTS-ILS-205 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-205 at Appendix A3.33 (page 198) to this ANNEX A.

8.8 Technical Data Deliverables List

8.8.1 The Contractor must provide a Technical Data Deliverables List IAW CDRL JTAC VTS-ILS-206 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-206 at Appendix A3.34 (page 200) to this ANNEX A.

8.9 Technical Publications Requirements List (TPRL)

8.9.1 The Contractor must provide a Technical Publications Requirements List (TPRL) IAW CDRL JTAC VTS-ILS-207 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-207 at Appendix A3.35 (page 202) to this ANNEX A.

9.0 Training

9.1.1 Canada intends to follow a train-the trainer approach in support of the JTAC VTS. Experienced JTAC-I, as defined in JTAC MOA 2004-01 will be trained to conduct in-house training, aimed at two target audiences.

9.1.2 Basic Users: Basic users will be not be JTAC trained. These users will be trained to conduct identified user maintenance tasks, prepare the system for use and conduct basic system diagnosis and fault finding.

9.1.3 JTAC Users: Qualified JTAC Users will be trained to conduct the operations above as well as to build scenarios and conduct the full range training operations available at the Instructor Station.

9.2 JTAC VTS JTAC-I Train-the-Trainer Training Package

9.2.1 The Contractor must provide a JTAC VTS JTAC-I Train-the-Trainer Training Package IAW CDRL JTAC VTS-ILS-208 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-208 at Appendix A3.36 (page 204) to this ANNEX A.

9.3 Training Sessions

9.3.1 The Contractor must provide an initial Training Session after delivery of the first JTAC VTS.

9.3.1.1 Scheduling of the initial Training Session will be done after contract award and jointly planned between the DND and the Contractor.

9.3.2 The Contractor must provide an initial Training Session consisting of:

9.3.2.1 JTAC VTS JTAC-I Train-the-Trainer Training Session for one (1) to 10 Trainees, with a course length of no more than five (5) days.

9.3.3 The Contractor must provide Training Sessions in English. The instructor(s) must be bilingual to understand and answer questions from Trainees in both official languages, English and Canadian French.

9.3.4 The Contractor must provide instructor(s) that are Subject Matter Experts on the JTAC VTS equipment being provided.

9.3.5 The Contractor must use the approved and accepted JTAC VTS JTAC-I Train-the-Trainer Training Package for the Training Session, and course lessons must follow the content found within that training package.

9.3.6 The Contractor must provide course material listed within the JTAC VTS JTAC-I Train-the-Trainer Training Package CDRL as Issued to Trainees at Training Session(s). All course material and Trainee handouts must be provided in English Canadian French.

9.3.7 The Contractor must use the JTAC VTS and additional training material identified in the JTAC VTS JTAC-I Train-the-Trainer Training Package Instructor Lesson Plan for the Training Session.

9.3.8 The Contractor must provide the additional training material that is listed in the JTAC VTS JTAC-I Train-the-Trainer Training Package Instructor Lesson Plan as 'supplied by the Contractor'.

9.3.9 The Contractor must provide additional JTAC VTS JTAC-I Train-the-Trainer Training Session on an as and when requested basis.

9.3.9.1 Scheduling of additional JTAC VTS JTAC-I Train-the-Trainer Training Session Training Session will be jointly planned between the DND and the Contractor

9.3.10 The Contractor should supplement live training with a series of "how to" videos to be embedded in the Instructor workstations.

10.0 Manuals

10.1 System Manuals

10.1.1 The Contractor must provide User and Maintenance Manuals in both English and French that will allow CAF Operators and Maintainers to support JTAC VTS.

10.1.2 The Contractor must provide a System Manuals IAW CDRL JTAC VTS-ILS-209 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-209 at Appendix A3.37 (page 207) to this ANNEX A.

10.2 Vendor Manuals

10.2.1 In the case of COTS components such as projectors, the Contractor must provide the OEM manuals, a list of such manuals must be included in the System Manual

10.2.2 The Contractor must provide a Vendor Manuals IAW CDRL JTAC VTS-ILS-210 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-210 at Appendix (page) to this ANNEX A.

10.3 Instruments, Decals, Data Plates, and Warnings

10.3.1 The Contractor must deliver all instruments, decals, and data plates marked in metric units.

10.3.2 Where international symbols are not possible, the Contractor must provide bilingual markings in English and Canadian French.

10.4 Government Furnished Equipment

10.4.1 The Contractor must provide a Government Property Report IAW CDRL JTAC VTS-ILS-211 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-211 at Appendix A3.39 (page 211) to this ANNEX A.

10.5 Government Delivery Schedule

10.5.1 The Contractor must provide a Government Delivery Schedule IAW CDRL JTAC VTS-ILS-212 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-212 at Appendix A3.40 (page 213) to this ANNEX A.

10.6 Identification Shipping and Packaging Data

10.6.1 The Contractor must provide an Identification Shipping and Packaging Data IAW CDRL JTAC VTS-ILS-213 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-213 at Appendix A3.41 (page 215) to this ANNEX A.

11.0 ENVIRONMENTAL

11.1 General

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

11.1.2 IAW the Asbestos and asbestos containing products must not be incorporated in any part of the equipment, IAW the Prohibition of Asbestos and Products containing Asbestos Regulations (PAPCAR): (SOR/2018-196).

11.1.3 IAW the Federal Halocarbon Regulations (SOR/2003-289) and the Ozone-depleting Substances and Halocarbon Alternatives Regulations (SOR/2016-137), any halocarbons that are incorporated into the design of equipment, must comply with regulations (SOR/2003-289) and (SOR/2016-137). If such substances must be used, the Contractor must:

11.1.3.1 Inform the Technical Authority by identifying the substance(s).

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

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

11.1.4.1 Inform the Technical Authority by identifying the substance(s).

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

11.1.5 IAW the Polychlorinated Biphenyls (PCBs) that are present in any part of the equipment must comply with the PCB Regulations (SOR/2008-273), if PCBs are present in any part of the equipment, they must comply with the regulation. If such substances must be used, the Contractor must:

11.1.5.1 Inform the Technical Authority by identifying the substance(s).

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

11.1.6 The Contractor must use low-risk chemical products for equipment maintenance and repair where feasible. Low-risk chemical products are defined as those that do not contain substances regulated under the

Canadian Environmental Protection Act, 1999 (CEPA) and listed on Schedule 1 of CEPA.

11.1.7 The Contractor must ensure that all work carried out on DND equipment by staff, or duly appointed subcontractors is completed as follows:

11.1.7.1 Completed using personnel qualified and certified in the scope of work that they are undertaking and,

11.1.7.2 In compliance with all applicable municipal, territorial, provincial, federal environmental protection statutes and regulations.

11.1.8 Prior to the commencement of work the Contractor must have in place an Emergency / Spill Response Plan and also processes and procedures for the identification, management, handling and disposal of all substances, pollutants and material covered by the applicable municipal, territorial, provincial, federal environmental protection statutes and regulations.

11.2 Environmental Management System

11.2.1 The Contractor must implement and maintain an Environmental Management System (EMS), which is consistent with the principles presented in ISO 14001. Certification to this standard is preferred but not mandatory. The Contractor must, however, have a formalized set of procedures and control measures in place to demonstrate environmental compliance and minimize environmental impact of the work.

11.3 EHS Packaging Labels

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

11.3.1.1 The Contractor must clearly identify the contents of the hazardous material with labels, and the SDS must explain what those hazards are.

11.4 Environmental Equipment Assessment (EEA)

11.4.1 The Contractor must prepare and submit an Environmental Equipment Assessment (EEA) IAW CDRL JTAC VTS-ILS-214 at Appendix A2.2 (page 100) to ANNEX A, and the associated DID JTAC VTS-ILS-214 at Appendix A3.42 (page 217) to this ANNEX A. The EEA includes the list of integrated hazardous substances and chemical products incorporated in the equipment design. The EEA must include Safety Data Sheets (SDS) for all hazardous chemical products IAW WHMIS 2015 requirements. The Contractor may provide confidential information in a separate document. Note: Proprietary information will be treated with confidentiality.

11.4.2 The Contractor must update the Equipment Environmental Assessment (EEA) delivered as part of the acquisition contract (conforming to DID JTAC VTS-ILS-221). The EEA includes the list of integrated hazardous substances and chemical products incorporated in the equipment design. Whenever there is a change in those substances and/or chemical products during in-service support, the EEA must be updated accordingly. Change is defined as removing or replacing hazardous substances and/or chemical products identified in the EEA Tables, or the addition of these items not previously listed.

12.0 TECHNICAL REQUIREMENTS

12.1 JTAC VTS Static Installation.

12.1.1 The Contractor must provide JTAC VTS Static installations IAW the requirements defined in SRS.

12.1.2 The Contractor must install JTAC VTS Static installations at the following locations in the quantities and at the timing to be determined by DND:

12.1.2.1 5 Canadian Division Support Base (CDSB) Gagetown;

12.1.2.2 2 CDSB Valcartier:

12.1.2.3 3 CDSB Shilo; and

12.1.2.4 4 CDSB Petawawa

12.2 User Manuals

12.2.1 The Contractor must deliver a complete set of JTAC VTS Static installation User Manuals with each Static installation.

12.3 Spare Parts.

12.3.1 The Contractor must deliver the scaling of spare parts and consumables for as determined at the IPC for each JTAC VTS Static installation concurrent with installation and delivery.

12.3.2 The Contractor must maintain the scaling of spare parts and consumables as determined by the IPC for anticipated levels of as-and-when requested second and third line maintenance.

12.4 Technical Investigations and Engineering Studies.

12.4.1 The Contractor must maintain a capability to conduct Technical investigations and Engineering Studies (TIES) on an as and when requested basis.

12.5 Training

12.5.1 The Contractor must provide the training as detailed in Section 9 of this SOW.

A1.0 APPENDIX: JTAC VTS TECHNICAL SPECIFICATION

REVISION HISTORY

Item	Description	Version	Date	Owner/Author
1	JTAC VTS SRS Draft (Published from DOORS) *	V1 (Original)	27 July 2020	Bruce Douglas/Bruce Harris
2	DCSEM 7 comments	1A	08 August 2020	Bruce Douglas/Harris
3	Merged comments version	2	17 August 2020	Bruce Douglas/Bruce Harris
4	Updated version	3	24 August 2020	Bruce Douglas/Bruce Harris
5	Updated version	3A	01 September 2020	Bruce Douglas/Bruce Harris
6	Changes accepted, most comments addressed and minor revisions (grammar, flow, spelling etc.|)	4	29 September 2020	Bruce Harris
7	All comments addressed. Added changes due to updated JTAC MOA and feedback on missing JTAC MOA requirements	5	02 November 2020	Bruce Harris
8	Revised the technical specification to mitigate the cyber security requirements as well as removing the mobile training kit requirement, as its specifications were not clearly defined to be contracted.	7	7 June 21	Bruce Douglas

This Word version of the SRS was published from the DOORS JTAC VTS SRS module. The module's objects (requirements statements) were derived from:

a. the original IFFS SOR;

b. the original RFP SOW ANNEX A, Appendix 1 – Functional Requirements

c. the updated SOR (deficiencies had been identified in the existing system, and operational requirements improved or added due to those deficiencies);

d. the recognition of simulation technological evolution;

e. the accreditation deficiencies found by the accreditation team;

f. an early draft SRS from Director Land Command Systems Program Management (DLCSPM); and

g. Joint Fire Support Executive Steering Committee (JFS ESC) Action Plan (AP) Memorandum of Agreement (MOA) 2004-01 Joint Terminal Attack Controller (JTAC) (Ground) published 08 Oct 2020;

A1.1 SCOPE

A1.1.1 The purpose of this System Requirement Specification is to define the system specifications to meet DND's requirement for a Joint Terminal Attack Controller Virtual Training System (JTAC VTS).

A1.2 Background

A1.2.1 The JTAC VTS will support the training required to force generate accredited Joint Terminal Attack Controllers (JTAC). In order to achieve accreditation JTAC must meet the requirements identified in JTAC MOA 2004-01. This document identifies a mix of real life and virtual drills and stipulates the standards to be met for accreditation. It also identifies the required capabilities of any virtual training system to be used in the accreditation process. At present, the Canadian Armed Forces do not have a virtual training capability that meets the accreditation requirements. The current system known as the Interim Forward Observer Officer/Forward Air Controller System (IFFS) uses technologies that cannot be updated to meet the latest standards.

A1.2.2 Currently the CAF cannot force generate accredited JTAC within its own capabilities. Limited accreditation is achieved by allied simulation facilities, but this is both expensive and reliant on allies freeing up some of their own capacity. This solution is not tenable in the long term. JTAC VTS aims to address this shortcoming by procuring a number of simulators that meet the accreditation criteria and deploying them to units responsible for force generating JTAC. These are:

A1.2.2.1 5 Canadian Division Support Base (CDSB) Gagetown;

A1.2.2.2 2 CDSB Valcartier:

A1.2.2.3 3 CDSB Shilo; and

A1.2.2.4 4 CDSB Petawawa.

A1.2.3 The JTAC MOA 2004-01 identifies two different versions of the virtual trainers; a non-deployable static version that is used in a classroom setting, and a deployable version that can be used to enhance other forms of field training and exercises. This JTAC VTS SRS identifies the requirements for the static classroom version.

A1.3 High Level Requirements

A1.3.1 The JTAC VTS system is the technical solution that will address the following high-level requirement areas, which will ensure overcoming the capability deficiencies identified in the SOR and meet the detailed operational requirements therein.

A1.3.1.1 Accreditation. The system must be fully accredited to the latest version of the JTAC MOA and ATP 3-09.3for all ratified controls.

A1.3.1.2 Realism and Immersion. The ability for the JTAC VTS to provide a realistic and immersive simulated virtual training environment. Must be accomplished by using emulated in-service equipment, realistic mission scenarios, scaled to individual and collective levels of training.

A1.3.1.3 Effects. The ability for JTAC VTS systems to enable operators to plan and coordinate engagements by joint effectors on the battlefield. Simulated effects must include both munition and non-munition means to bring to bear both lethal and non-lethal effects, allow operators to conduct analysis and prosecute with both precision or area effects, while also enabling the conduct of procedures to minimize unwanted effects (collateral damage, fratricide, etc.).

A1.3.1.4 Flexibility. This includes:

A1.3.1.4.1 The ability to offer force generating units the flexibility on how they will operate and manage their training systems, whether though dedicated contracted operator(s), instructor(s), or trainee-driven options;

A1.3.1.4.2 The ability for all equipment and software of the JTAC VTS Project to be scalable, modular, and task-tailored to meet core missions, as well as capable of being housed within the existing locations of the legacy fleet;

A1.3.1.4.3 The ability for the JTAC VTS operators to build and execute scenarios in geographic locations worldwide, simulate day and night conditions, and all elements and battlefield conditions; and

A1.3.1.4.4 The ability to simulate degraded communications and cyber-contested virtual environments is required to prepare for both modern and future operations.

A1.3.1.5 Training Management. This includes:

A1.3.1.5.1 The ability to load, create, and modify mission scenarios for customized training.

A1.3.1.5.2 The ability to collect, track, and report system usage data and trainee performance metrics.

A1.4 Definitions

A1.4.1 Requirements

A1.4.1.1 Mandatory. A requirement is deemed to be Mandatory (aka Essential) when that requirement must be met for the system be considered compliant with the operational requirements. Mandatory requirements' statements must use the word "must".

A1.4.1.2 Desirable. A requirement is deemed to be Desirable when that requirement does not need to be met for the system be considered compliant. A desirable is usually related to a Mandatory requirement and provides if met more capability than demanded by the Mandatory requirements. Desirable requirements' statements must use the word "should".

A1.4.2 Personnel

A1.4.2.1 Instructor. Instructor are qualified and experienced personnel who will build and operate scenarios, manage the system usage, generate After Action Reports (AARs) and other related reports and returns, and ultimately assess trainee performance.

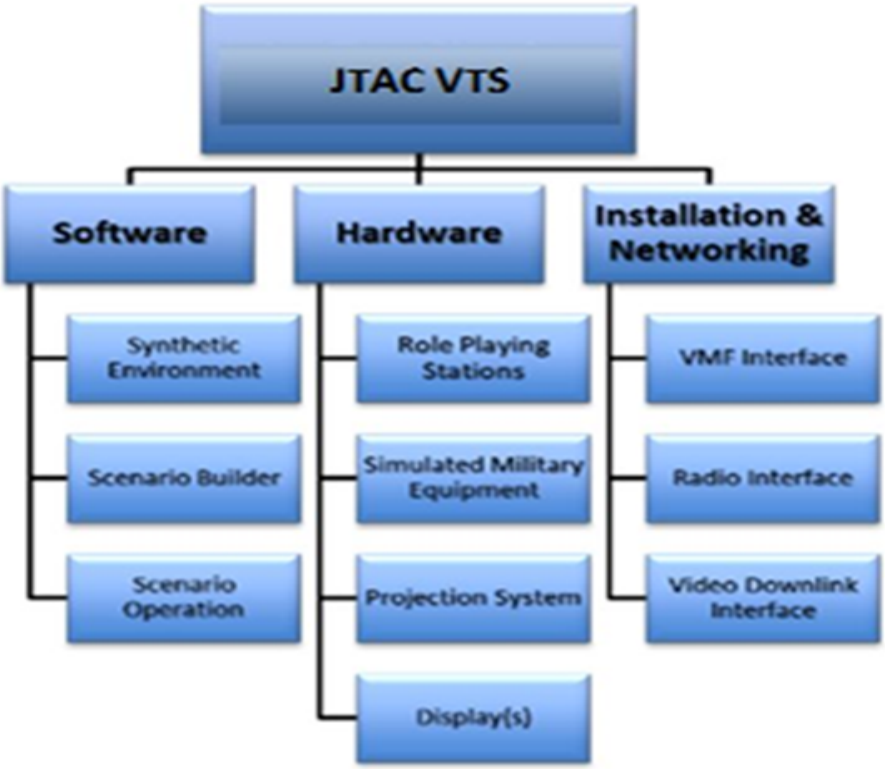
A1.4.2.2 Trainee. Trainees are Specialist Canadian Army (CA) personnel who will interact with the system to develop or reinforce competencies, by seeking qualification, certification, continuity training, or professional development.

A1.4.2.3 Maintainer. Maintainers are DND and/or Industry personnel, who will conduct Second Line specialist maintenance and prepare items for shipping to and from Third Line maintenance facilities, and personnel at third and possibly fourth line maintenance facilities.

A1.5 System Component Requirements

A1.5.1 System. The term "system" used in this SRS is the JTAC VTS (both fixed and mobile elements).

A1.5.2 System Element. The system elements are the fixed and mobile JTAC simulators.



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system, subsystem or equipment is in a specified operable and committable state at the start of a mission, when the mission is called for at an unknown (in other words, random) time.

A1.5.9 Operational Availability. Operational availability is a measurement of how long a system has been available to be used when compared with how long it should have been available to be used. (Op Avail = Mean Time Between Failures (MTBF) / (MTBF + Mean Time to Repair (MTTR)).

A1.6 System Functional Requirements

A1.6.1 General Requirements

A1.6.1.1 The system must be a fit-for-purpose training system, capable of providing Canadian Army Joint Terminal Attack Controllers (JTACs) with a robust and stable synthetic environment to interact with, in the performance of simulated Close Air Support (CAS) and Surface-to-Surface fire support missions.

A1.6.1.2 The Contractor must evaluate proposed equipment for security vulnerabilities. Where possible, the Communications Security Establishment (CSE)'s Common Criteria approved products should be used.

A1.6.1.3 The System must be designed to provide access only to authorized users (at a minimum this must include a user name and visually hidden password.

A1.6.1.4 The System must detect and log all successful and unsuccessful logins and maintain a record of such for at least 1 month.

A1.6.1.5 The System must be configured to employ malicious code protection at information system entry and exit points and at workstations and servers to detect and eradicate malicious code.

A1.6.1.6 The system must be a fully accredited system under the JTAC MOA and ATP 3-09.3 for the controls identified in this SRS. These are:

A1.6.1.6.1 Type 2 controls;

A1.6.1.6.2 Type 3 controls;

A1.6.1.6.3 Bombs on Coordinate (BOC) controls;

A1.6.1.6.4 Fixed Wing controls;

A1.6.1.6.5 Rotary Wing controls;

A1.6.1.6.6 Laser controls;

A1.6.1.6.7 Infrared (IR) Pointer controls;

A1.6.1.6.8 Remote Observer controls;

A1.6.1.6.9 Video Downlink controls;

A1.6.1.6.10 Suppression of Enemy Air Defence (SEAD) controls;

A1.6.1.6.11 Urban controls;

A1.6.1.6.12 Forward Air Controller (Airborne) (FAC(A)) controls;

A1.6.1.6.13 Night controls; and

A1.6.1.6.14 VMF Digitally Aided Close Air Support (DACAS) controls.

A1.6.1.7 The system must be based upon proven, fielded equipment that is in-service with a North Atlantic Treaty Organization (NATO) or American, British, Australian military partner.

A1.6.1.8 The system should be a fully accredited system under the JTAC MOA and ATP 3.09 for Type 1 controls.

A1.6.1.9 The system must include the capability to perform fires in the synthetic environment.

A1.6.1.10 The system must include the capability to perform Surface-to-Surface fires in the synthetic environment.

A1.6.1.11 The system must include the capability to perform Air-to-Surface fires in the synthetic environment.

A1.6.1.12 The system must be of sufficient fidelity to fully meet and maintain the minimum requirements of the JTAC MOA JTAC Simulation System Accreditation Criteria in Table C.2.).

A1.6.1.13 The system should be of sufficient fidelity to fully meet all the desired requirements of the JTAC MOA in Table C.2 and NATO HQ AIRCOM FAC Standardization Team (FST} Standard Operating Procedure (SOP) Simulator Assessment Checklist. JTAC Simulation System Accreditation Criteria.

A1.6.1.14 The system must be designed so that the instructors are able to monitor the trainee's actions, both visually and audibly in real time.

A1.6.1.15 The system must be designed such that a minimum of one (1) trainee are able to interact with the simulator, with full freedom of movement at the centre point of the display.

A1.6.1.16 The system should be capable of conducting the following mission types:

A1.6.1.16.1 DACAS missions identified in this SRS;

A1.6.1.16.2 Cursor-on-Target (COT) DACAS missions;

A1.6.1.16.3 Link-16 DACAS missions; and

A1.6.1.16.4 Network Enabled Weapons (NEW) DACAS missions.

A1.6.1.17 The system must allow the instructor and the trainee to observe and correct indirect fire fall of shot from rockets, artillery, mortars, and Naval Surface Fire Support (NSFS) out to ranges of at least 4,500m from the observer.

A1.6.1.18 The system must prevent loss of data that is collected prior to an unplanned loss of simulator control (for example, inadvertent shutdown, power failure, software glitch).

A1.6.1.19 The system must have at least one set of SME per simulator.

A1.7 Installation

A1.7.1 Fixed Installation.

A1.7.1.1 The system must be installed as a fixed installation in the locations currently occupied by the IFFS.

A1.7.1.2 The system should be able to achieve Type 1 control accreditation.

A1.7.1.3 If the system can achieve Type 1 control accreditation, it must fit within the infrastructure (physical layout and power availability) at ASC-G/RCAS – Canadian Forces Base (CFB) Gagetown.

A1.7.1.3.1 5 Canadian Division Support Base (CDSB) Gagetown:

A1.7.1.3.1.1 Building J7, Room(s) 216 and 216A, LxWxH: 13.79m x 9.93m x 2.59m; HVAC: 222000 BTU/Hr; Electrical: 45kVA120/208V. To be confirmed with vendor through site survey of the infrastructure.

A1.7.1.3.2 2 CDSB Valcartier: To be confirmed with vendor through site survey of the infrastructure when and as required.

A1.7.1.3.3 3 CDSB Shilo: To be confirmed with vendor through site survey of the infrastructure when and as required.; and

A1.7.1.3.4 4 CDSB Petawawa: To be confirmed with vendor through site survey of the infrastructure when and as required.

A1.7.1.4 The system fixed installations must use a display with a horizontal field of view of a minimum of 180 degrees from the trainee's perspective.

A1.7.1.5 The system fixed installations must have an immersive, realistic audio environment that meets the minimum fidelity requirements outlined in the JTAC MOA in Table C.2 JTAC Simulation System Accreditation Criteria and NATO HQ AIRCOM FAC Standardization Team (FST} Standard Operating Procedure (SOP) Simulator Assessment Checklist, including full surround sound.

A1.7.1.6 The system's fixed installations must utilize infrared projector technology for all night operations to facilitate the use of a Night Vision Device (NVD) by the user, rather than simulated NVDs (note that trainees will be in Full Fighting Order).

A1.8 Role Playing Stations

A1.8.1 The system must include, as a minimum, dedicated role playing stations in each installation, as detailed below:

A1.8.1.1 Instructor Station. The Instructor Station must allow the Instructor to perform full administrative, dynamic control of the synthetic environment while building and running a scenario.

A1.8.1.2 Trainee Station. The Trainee Station must:

A1.8.1.2.1 Allow the Trainee to traverse the terrain and pan their viewpoint of their virtual entity within the synthetic environment.

A1.8.1.2.2 Include a gamepad to allow a trainee to traverse the terrain and pan their viewpoint of their virtual entity within the synthetic environment.

A1.8.1.2.3 Be capable of inhabiting any entity within the synthetic environment as required (despite the dedicated naming).

A1.8.1.2.4 Be capable of duplicating the view or role of any other station, including mirroring and sharing views simultaneously (Note: Only the original inhabitant of the view can control, and that any other inhabitant can monitor the perspective only).

A1.8.1.3 Video Downlink (VDL) Station. The VDL Station must transmit the targeting pod feed of any selected aircraft to an external VDL transceiver, explained further in Section A1.18.

A1.8.1.3.1 The VDL Station must include a control stick to allow the VDL Station Operator and or the Instructor Station Operator to control the targeting pod of the selected aircraft.

A1.8.1.4 Pilot Station.

A1.8.1.5 The Pilot Station must be able to:

A1.8.1.5.1 View “sparkle” pattern target marks (target correlation by system or the operator).

A1.8.1.5.2 View “snake” pattern target marks (target correlation by system or the operator).

A1.8.1.5.3 View “rope” pattern target marks (target correlation by system or the operator).

A1.8.1.5.4 View "pulse" pattern target marks (target correlation by system or the operator).

A1.8.1.5.5 (Note: Pattern Target Marks are defined as:

A1.8.1.5.6 Sparkle - Mark/marking target by infrared (IR) pointer;

A1.8.1.5.7 Snake - Oscillate an IR pointer in a figure eight about a target;

A1.8.1.5.8 Rope - Circling an IR pointer around an aircraft to help the aircraft identify the friendly ground position; and

A1.8.1.5.9 Pulse - Illuminate/illuminating a position with flashing IR energy)

A1.8.1.6 The Pilot Station should:

A1.8.1.6.1 Have the capability to perform manual control of any selected aircraft operating within the synthetic environment.

A1.8.1.6.2 Include a Hands On Throttle and Stick (HOTAS) controller to allow a user to pilot an inhabited aircraft entity within the synthetic environment.

A1.8.1.6.3 At the Gagetown location, the system should be capable of connecting multiple role-playing stations to a scenario simultaneously and locally to enable multiple users or scalable SME within the same scenario.

A1.8.1.6.4 The system must be scalable and modular, allowing additional role-playing stations to be added or removed as required to customize layout and/or expand with additional roles, within the existing infrastructure of the JTAC VTS site locations.

A1.9 Scenario Builder and the Synthetic Environment

A1.9.1 The system must include a robust Scenario Builder capability for a user to create unique synthetic environments using a user-friendly interface.

A1.9.2 The system Scenario Builder must allow the user to add to the scenario the predesigned entities detailed below:

A1.9.2.1 Military and civilian aircraft entities.

A1.9.2.2 Military and civilian ground vehicle entities.

A1.9.2.3 Military and civilian waterborne vehicle entities.

A1.9.2.4 Military and civilian personnel entities.

A1.9.2.5 Military and civilian structure entities.

A1.9.2.6 Road entities.

A1.9.2.7 Animal entities.

A1.9.3 Fixed Wing Aircraft. The system Scenario Builder must at the minimum, simulate the fixed-wing aircraft detailed below:

A1.9.3.1 F/A-18 Hornet;

A1.9.3.2 F/A-18 Super Hornet;

A1.9.3.3 F-16 Viper;

A1.9.3.4 Mirage 2000;

A1.9.3.5 A-10 Thunderbolt II;

A1.9.3.6 AC-130 Variants, including the Spectre/Spooky/Stinger II/Ghostrider Gunships;

A1.9.3.7 B-52 Stratofortress;

A1.9.3.8 B1 Lancer; and

A1.9.3.9 F-35 Lightning II.

A1.9.4 Rotary Wing Aircraft. The system Scenario Builder must simulate, at a minimum, the rotary-wing aircraft (including flight paths, munition drops, munitions firings, and impacts) as detailed below:

A1.9.4.1 AH-64 Apache;

A1.9.4.2 AH-1 Cobra;

A1.9.4.3 OH-58 Kiowa; and

A1.9.4.4 UH-60 Black Hawk,

A1.9.5 Remotely Piloted Aircraft System. The system Scenario Builder should simulate the Remotely Piloted Aircraft System (RPAS) (this includes flight paths, munition drops, munitions firings, and impacts) as detailed below:

A1.9.5.1 Micro RPAS;

A1.9.5.2 Mini RPAS;

A1.9.5.3 MQ-1 Predator; and

A1.9.5.4 MQ-9 Reaper.

A1.9.6 Unmanned Aerial Vehicles. The system Scenario Builder should simulate the Unmanned Aerial Vehicles (UAVs) (including flight paths, munition drops, munitions firings, and impacts) as detailed below:

A1.9.6.1 Micro RPAS;

A1.9.6.2 Mini RPAS;

A1.9.6.3 RQ-4 Global Hawk; and

A1.9.6.4 Heron.

A1.9.7 Pods and Targeting.

A1.9.7.1 The system Scenario Builder must simulate the Aircraft Pods and Targeting equipment (including connectivity and data transfers) as detailed below:

A1.9.7.1.1 AN/AAQ-28(V) LITENING air-based targeting pod; and

A1.9.7.1.2 AN/AAQ-33 Sniper Advanced Targeting Pod air-based targeting pod.

A1.9.7.2 The system Scenario Builder should simulate the Aircraft Pods and Targeting equipment (including connectivity and data transfers) as detailed below:

A1.9.7.2.1 AN/ASQ-228 Advanced Targeting Forward-Looking Infrared; and

A1.9.7.2.2 Multi-Spectral Targeting System.

A1.9.8 Anti-Aircraft Weapons.

A1.9.8.1 The system Scenario Builder must simulate anti-aircraft weapons, their munitions and their behaviors against target entities.

A1.9.8.2 The system Scenario Builder should simulate the anti-aircraft weapons as detailed below.

A1.9.8.2.1 Anti-aircraft Gun, ZSU-23-4 Shilka.

A1.9.8.2.2 SA-7 Grail;

A1.9.8.2.3 SA-14 Gremlin;

A1.9.8.2.4 SA-18 Grouse;

A1.9.8.2.5 SA-16 Gimlet;

A1.9.8.2.6 Stinger FIM-92;

A1.9.8.2.7 2S6; and

A1.9.8.2.8 SA-6 Gainful.

A1.10 Customization

A1.10.1 The system Scenario Builder must, at a minimum, permit the customization of entities placed in the synthetic environment, for the attributes detailed below:

A1.10.1.1 The allegiance of the entities;

A1.10.1.2 The rules of engagement of the entities;

A1.10.1.3 The status of the entities; and

A1.10.1.4 Allow the user to define specific automatic behavior for the mobile entities in the scenario.

A1.10.2 The system Scenario Builder should allow the user to define specific automatic behavior for:

A1.10.2.1 Mobile entities in the scenario using Routes;

A1.10.2.2 Mobile entities in the scenario using Waypoints;

A1.10.2.3 Mobile entities in the scenario using Triggers; and

A1.10.2.4 Mobile entities in the scenario using Conditions.

A1.10.3 The system Scenario Builder must, at a minimum, allow the user to set the waypoint types detailed below:

A1.10.3.1 The Move waypoint type;

A1.10.3.2 The Loiter/orbit waypoint type; and

A1.10.3.3 The Attack waypoint type.

A1.10.4 The system Scenario Builder must allow the user to set both automatic and manually executed triggers (for example, conditions or time based).

A1.10.5 The system Scenario Builder must allow the user to set repeating patrol patterns for entities within the synthetic environment.

A1.10.6 The system Scenario Builder should allow the user to set entity actions to be executed by trigger or waypoint as detailed below.

A1.10.6.1 Embarking/disembarking a vehicle;

A1.10.6.2 Planting an Improvised Explosive Device (IED), to be executed by trigger or waypoint;

A1.10.6.3 Fast rope from a rotary-wing aircraft (in other words, rapid descent of personnel from the aircraft);

A1.10.6.4 Hover; and

A1.10.6.5 Attack.

A1.10.7 The system Scenario Builder must allow the user to combine multiple similar entities into groups.

A1.10.8 The system Scenario Builder must, at a minimum, allow the selection and display of a physical distribution type for a user-selected group/formation as detailed below:

A1.10.8.1 The selection and display of a column;

A1.10.8.2 The selection and display of a line;

A1.10.8.3 The selection and display of a vee; and

A1.10.8.4 The selection and display of an echelon right/left.

A1.10.9 The system Scenario Builder should automatically generate cities, towns and villages based on a defined population, developmental level, culture and geography.

A1.10.10 The system Scenario Builder should include prebuilt groups of entities as detailed below:

A1.10.10.1 Cities, towns and villages;

A1.10.10.2 Airports;

A1.10.10.3 Military installations;

A1.10.10.4 Power facilities; and

A1.10.10.5 Industrial complexes.

A1.10.11 The system must include prewritten scenarios to support the execution of the controls noted in this SRS (Section A1.9)

A1.10.12 The system must be capable of generating entities sufficient in number and type to facilitate the full scope of military scenarios (major combat operations).

A1.10.13 The system must be capable of building (or selecting) and of running a scenario with a minimum of 200 externally generated simultaneous entities.

A1.10.14 The system must be capable of providing natural obscuration in the scenarios, hindering observation of targets, aircraft, weapons effects, and other entities when appropriate (depressions, terrain masking, etc.). For example, entities can be masked by manmade structures (buildings, vehicles), elevated terrain features (mountains, hills), low terrain features (valleys, reverse slope, depressions), vegetation (trees, brush).

A1.10.15 The system should have a recording capability, to allow effective After Action Review (AAR) sessions.).

A1.10.16 The system Scenario Builder must allow for the export of saved scenarios.

A1.10.17 The system should be capable of conducting war-gaming.

A1.10.18 The system should be capable of conducting mission rehearsals.

A1.10.19 The system should be capable of conducting experimentation.

A1.10.20 The system must be capable, at a minimum, of importing geo-typical maps portraying various environment types found across the globe, as detailed below:

A1.10.20.1 Geo-typical maps portraying Urban areas;

A1.10.20.2 Geo-typical maps portraying Jungles;

A1.10.20.3 Geo-typical maps portraying Forests;

A1.10.20.4 Deserts;

A1.10.20.5 Mountains;

A1.10.20.6 Plains;

A1.10.20.7 Arctic regions;

A1.10.20.8 Marshlands; and

A1.10.20.9 Swamps.

A1.10.21 The system should include geo-specific maps that accurately reflect flora, fauna, and man-made features of real world locations.

A1.10.22 The system should include geo-specific maps portraying major Canadian Army training areas as detailed below:

A1.10.22.1 CFB Gagetown;

A1.10.22.2 CFB Petawawa;

A1.10.22.3 CFB Shilo;

A1.10.22.4 CFB Suffield;

A1.10.22.5 CFB Valcartier;

A1.10.22.6 CFB Wainwright; and

A1.10.22.7 Cold Lake Air Weapons Range.

A1.10.23 The system must be capable of creating exportable (in open formats) two-dimensional (2D) tactical and topographical maps.

A1.10.24 The system must be able to render visible entities in different light conditions.

A1.10.25 The system must be able to render entities visible using light amplification or thermal energy sensors.

A1.10.26 The system must be able to display a smooth transition between differences in terrain elevation in order to avoid sharp and unnatural edges.

A1.10.27 The system should be able to display the Military Grid Reference System (MGRS) overlay to users.

A1.10.28 The system should be able to display Latitude/Longitude overlay to users.

A1.10.29 The system's entities in the synthetic environment must continue to automatically and realistically operate, displace, and interact with the synthetic environment as per realistic patterns of life using artificial intelligence, when entities are not inhabited by a role playing station.

A1.11 Scenario Operation

A1.11.1 The system Instructor must have the ability to perform all functions dynamically during the execution of a scenario without the requirement to restart the system or scenario.

A1.11.2 The system Instructor must have the ability to modify all pre-existing entities and behaviors dynamically during the execution of a scenario (without the requirement to restart the system or scenario).

A1.11.3 The system Instructor must have the ability to dynamically alter the time-of-day of the synthetic environment.

A1.11.4 The system must realistically replicate the following:

A1.11.4.1 The time of day and the shadowing consistent with sun angles and location;

A1.11.4.2 The moon’s phase, consistent with the system time of day and date;

A1.11.4.3 The stars representation, consistent with the time of day and date;

A1.11.4.4 A full range of visibility (200 feet to unrestricted); and

A1.11.4.5 Visibility in fog.

A1.11.5 The system Instructor must have the ability to:

A1.11.5.1 Dynamically alter the weather patterns of the synthetic environment; and

A1.11.5.2 Accelerate, decelerate or pause the passage of time within the synthetic environment.

A1.11.6 The system's synthetic environment must simulate the air environment in which the airborne entities normally operate.

A1.11.7 The system should have options for meteorological conditions (based upon randomization and realistic modelling).

A1.11.8 The system must replicate:

A1.11.8.1 Varying cloud heights (in 500ft increments); and

A1.11.8.2 Scattered clouds, selectable in percentage of the entire sky.

A1.11.9 The system should be capable of feature terrain generation as follows:

A1.11.9.1 Visually rich feature terrain generation for any location in the world;

A1.11.9.2 Generation based upon open standards; and

A1.11.9.3 Low-latency navigation.

A1.11.10 The system must allow the dynamic entry at the Instructor Station of:

A1.11.10.1 All relevant fields of a voice Game Plan and Close Air Support 9-Line Briefing, IAW ATP-3-09.3, to allow selected fixed-wing aircraft (single, multiple) to automatically execute a Close Air Support engagement IAW ATP-3-09.3;

A1.11.10.2 A Rotary-Wing Close Air Support 5-Line Briefing, IAW ATP-3-09.3, to allow selected rotary-wing aircraft (single, multiple) to automatically execute a Close Air Support engagement IAW ATP-3-09.3;

A1.11.10.3 All relevant fields of a Special Operations Forces Gunship Call For Fire, IAW ATP-3-09.3, to allow a selected AC-130 gunship to automatically execute a Close Air Support engagement IAW ATP-3-09.3; and

A1.11.10.4 The system must allow at a minimum the dynamic entry at the Instructor Station of all relevant fields of a Call For Fire (CFF) IAW ATP-3-09.3 and ATP 3-09.32 to allow a selected indirect fire entity or group to automatically execute a fire mission.

A1.11.11 The system CFF interface must be IAW B-GL-371-004/FP-001.

A1.11.12 The system should be able to display a CAF CFF interface IAW, B-GL-371-004/FP-001 and ATP 3-09.32.

A1.11.13 The system's CFF interface should display:

A1.11.13.1 Observer's Identification.

A1.11.13.2 Warning Orders.

A1.11.13.3 Location of Target.

A1.11.13.4 Direction.

A1.11.13.5 Description of Target.

A1.11.13.6 Type of Engagement.

A1.11.13.7 Trajectory

A1.11.13.8 Ammunition.

A1.11.13.9 Distribution of Fire.

A1.11.13.10 At My Command.

A1.11.13.11 Method of Adjustment or Order for FFE.

A1.11.14 The system must allow the Instructor to dynamically alter the flight path of an aircraft that is executing a CAS or Gunship CFF engagement.

A1.11.15 The system Instructor must, at a minimum, have options for introducing error into both CAS and CFF engagement, as detailed below:

A1.11.15.1 The Hit target;

A1.11.15.2 The Miss target (long/cardinal direction, distance);

A1.11.15.3 The Miss target (short/cardinal direction, distance);

A1.11.15.4 The Miss target (left/cardinal direction, distance); and

A1.11.15.5 The Miss target (right/cardinal direction, distance).

A1.11.16 The system Instructor must have the ability to dynamically create, destroy and repair any entity within the synthetic environment, using accurate projectile damage modelling.

A1.11.17 When not inhabited by a role-playing station, entities in the synthetic environment must operate and interact with the synthetic environment automatically and realistically, using Artificial Intelligence (AI).

A1.11.18 The system must provide the option to alternate between first-person and third-person perspectives of all entities in the synthetic environment when inhabited at a role-playing station.

A1.11.19 The VDL Station must allow the user to snap the inhabited targeting pod to a point of interest through the manual input of grid coordinates.

A1.11.20 The system must be able to display all man-made features (buildings, bridges, roads, etc.) and entity models (military and civilian vehicles,

weapons systems, people, etc.) consistent with real world representations and behavior.

A1.11.21 The system must be able to display all man-made features (buildings, bridges, roads, etc.) and entity models scaled appropriately to facilitate detection, identification, location and engagement of targets.

A1.11.22 Targetable Models.

A1.11.22.1 The system must have targetable models.

A1.11.22.2 The system's targetable models must have a damage states as detailed below:

A1.11.22.2.1 Intact (no visible damage) damage state.

A1.11.22.2.2 Damaged damage state (overall structure intact with visible damage to wheels/tracks, turret, guns/missiles, etc.).

A1.11.22.2.3 Destroyed damage state (model structure severely damaged, smoking hulls, etc.).

A1.11.22.3 The system must display weapons effects on moving vehicles such that the vehicles must cease motion when attacked, to indicate a mobility kill.

A1.11.22.4 The system must have scalable entities to include common Five Eyes Intelligence Alliance (FVEY) members consisting of AUS, CAN, NZ, UK, and USA. As well including Soviet-era vehicle fleets and joint effectors (as individual entities, and up to formed groups; both static and mobile).

A1.11.22.5 The system should be able to support the generation of Canadian-specific entities (vehicles, weapons, equipment, etc.) into the simulator environment, as detailed below:

A1.11.22.5.1 LAV 6 entities.

A1.11.22.5.2 Leopard 2A4/6 entities.

A1.11.22.5.3 Tactical Armoured Patrol Vehicle (TAPV) entities.

A1.11.22.5.4 M113 entities.

A1.11.22.5.5 G-Wagon entities.

A1.11.22.5.6 Medium Support Vehicle System entities.

A1.11.22.5.7 C7 Rifle entities.

A1.11.22.5.8 C9 Light Machine Gun (LMG) entities.

A1.11.22.5.9 C6 General Purpose Machine Gun (GPMG) entities.

A1.11.22.5.10 84mm Carl Gustav entities.

A1.11.22.5.11 M72 Light Anti-Armour Weapon (LAW) entities.

A1.11.22.5.12 C16 Automatic Grenade Launcher (AGL) entities.

A1.11.22.5.13 Canadian CADPAT/Multi-Cam uniform entities.

A1.11.22.5.14 Canadian Flag (low and high-visibility) entities.

A1.11.22.5.15 Patches (JTAC IFF) entities.

A1.11.23 Ground Entity Models.

A1.11.23.1 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to detect, recognize, and identify, in Day Visual Unaided conditions (3 meter high target), at the ranges from the trainee as detailed in this SRS (minimum acceptable).

A1.11.23.2 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to detect them at 2400 metres in Day Visual Unaided conditions.

A1.11.23.3 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to recognize them at 900 metres in Day Visual Unaided conditions.

A1.11.23.4 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to identify them at 600 metres in Day Visual Unaided conditions.

A1.11.23.5 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to detect, recognize, and identify, in Day Visual Aided conditions, at the ranges from the trainee as detailed in this SRS (minimum acceptable).

A1.11.23.6 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to Detect them at 6,000 metres in Day Visual Aided conditions.

A1.11.23.7 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to Recognize them at 4,000 metres in Day Visual Aided conditions.

A1.11.23.8 The system' ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to identify them at 2000 metres in Day Visual Aided conditions.

A1.11.23.9 The system's ground entity models must have sufficient detail (size, shape, colour, resolution) to permit trainees to detect, recognize and identify, in Night Aided conditions (NVG or thermal imager) at the minimum acceptable ranges from the trainee as detailed below:

A1.11.23.9.1 Detect them at 1,000 metres in Night Aided conditions; and

A1.11.23.9.2 Recognize them at 500 metres in Night Aided conditions.

A1.11.24 Aircraft Models.

A1.11.24.1 The system's aircraft models while in flight, must have sufficient detail (size, shape, resolution) to permit trainees to detect, recognize and identify for Day Visual Unaided conditions at the ranges from the trainee as detailed in this SRS (minimum acceptable);

A1.11.24.2 The system's aircraft models while in flight, must have sufficient detail (size, shape, resolution) to permit trainees to detect them at a minimum of six nautical miles (~11000) metres in Day Visual Unaided conditions;

A1.11.24.3 The system's aircraft models while in flight, must have sufficient detail (size, shape, resolution) to permit trainees to determine direction of aircraft flight at a minimum of six nautical miles (~11000) metres in Day Visual Unaided conditions; and

A1.11.24.4 The system's aircraft models while in flight must have sufficient detail (size, shape, resolution) to permit trainees to identify aircraft at a minimum of four nautical miles (~7400) metres in Day Visual Unaided conditions.

A1.11.25 Sounds.

A1.11.25.1 The system must emulate sounds consistent with the natural and man-made simulations (with an accurate representation of Doppler shift) for the effects detailed in this SRS;

A1.11.25.2 The system must emulate explosion sounds consistent with the size of weapon (minimum distinction -> small, medium, large weapons);

A1.11.25.3 The system must emulate delays and intensity of sound propagation consistent with range and size of detonations (time from flash; intensity of the "bang");

A1.11.25.4 The system's machine entity sounds must be representative of actual military and civilian equipment; and

A1.11.25.5 The system's cultural sounds must be consistent with normal sounds produced by the environment.

A1.11.26 Weapon Effects.

A1.11.26.1 The system must have the ability to emulate weapons effects and second order effects that are proportional in size and visual effect, to inflicted damage consistent with current in-service weapons for the effects detailed below:

A1.11.26.1.1 Blast effects (visible explosions, fire proportional to weapon size) that are proportional in size and visual effect, consistent with current in-service weapons;

A1.11.26.1.2 Damage effects (structural damage, casualties proportional to weapon size and effects), consistent with current in-service weapons;

A1.11.26.1.3 Collateral effects (structural damage, casualties proportional to weapon size and effects) consistent with current in-service weapons; and

A1.11.26.1.4 Smoke and fire effects from munition impacts consistent with current in-service weapons with accurately modeled persistence and dissipation as determined by prevailing wind velocity.

A1.11.27 Second Order Effects.

A1.11.27.1 The system must simulate second order effects of engagements (explosions, smoke, battlefield obscurants) as detailed below:

A1.11.27.1.1 Engagement of Fire;

A1.11.27.1.2 Engagement of Smoke;

A1.11.27.1.3 Engagement of Explosions; and

A1.11.27.1.4 Engagement of Dust.

A1.11.27.2 The system must have aviation weapons deliveries that are consistent with current aircraft Tactics, Techniques and Procedures (TTPs) for the characteristics detailed in this SRS.

A1.11.28 Aviation Weapons Deliveries.

A1.11.28.1 The system must have aircraft models capable of realistic weapons Standard Configuration Load (SCL).

A1.11.28.2 The system must replicate aircraft dropping bombs.

A1.11.28.3 The system must have bomb flight paths that are physics based.

A1.11.28.4 The system must replicate aircraft employing forward firing weapons (rockets, guns, missiles).

A1.11.28.5 The system must have rotary wing aircraft capable of off-axis engagements (as appropriate).

A1.11.28.6 The system must permit the system operator to abort attacks, based on an abort call from the JTAC, or due to failure to provide proper clearance in a timely manner.

A1.11.28.7 The system must have the ability to facilitate realistic time and spatial relationships required for airspace de-confliction and integration of air-to-surface fires during the conduct of a CAS mission, and to produce negative feedback when control measures are not employed correctly (e.g. midair collisions) for the missions detailed below:

A1.11.28.7.1 CAS Time-On-Target (TOT) missions; and

A1.11.28.7.2 CAS Time-To-Target (TTT) mission.

A1.11.28.8 The system must have the ability to produce negative feedback when control measures are not employed correctly (e.g. midair collisions) for:

A1.11.28.8.1 CAS Time-On-Target (TOT) missions; and

A1.11.28.8.2 CAS Time-To-Target (TTT) mission.

A1.11.28.9 The system must simulate, as a minimum, the aircraft-delivered munitions detailed below:

A1.11.28.9.1 20mm munition;

A1.11.28.9.2 30mm munition;

A1.11.28.9.3 MK-82 (500 lbs.) munition;

A1.11.28.9.4 MK-83 (1000 lbs.) munition;

A1.11.28.9.5 MK-84 (2000 lbs.) munition;

A1.11.28.9.6 GBU-12 (500 lbs.) munition;

A1.11.28.9.7 GBU-14 (1000 lbs.) munition;

A1.11.28.9.8 GBU-16 (2000 lbs.) munition;

A1.11.28.9.9 GBU-31 (2000 lbs.) munition;

A1.11.28.9.10 GBU-32 (1000 lbs.) munition;

A1.11.28.9.11 GBU-38 all variants (500 lbs.) munition;

A1.11.28.9.12 GBU-49 (500 lbs.) munition;

A1.11.28.9.13 GBU-54 LJDAM munition;

A1.11.28.9.14 LUU-19 munition;

A1.11.28.9.15 Rocket pods (HE and Smoke) munition;

A1.11.28.9.16 AGM-65 (12in) Maverick munition;

A1.11.28.9.17 AGM-114 Hellfire munition; and

A1.11.28.9.18 GBU-39 (250 lbs.) Small Diameter Bomb (SDB).

A1.11.29 Effects.

A1.11.29.1 The system must facilitate the visual marking of CAS targets with air and indirect delivered fire systems with the effects below:

A1.11.29.1.1 Volume and duration of smoke closely replicating fielded weapons (IAW their weapons manuals); and

A1.11.29.1.2 Marking effects (e.g. smoke, dust) behaving appropriately when influenced by the environmental factors (e.g. drift based on wind direction and speed).

A1.11.29.2 The user must be able to determine range and bearing from a mark to the target to facilitate aircrew target acquisition.

A1.11.29.3 The system must emulate High Explosive (HE), smoke, and illumination effects for surface-to-surface fires as detailed below:

A1.11.29.3.1 Rockets;

A1.11.29.3.2 Artillery;

A1.11.29.3.3 Mortars; and

A1.11.29.3.4 NSFS.

A1.11.30 Ballistics.

A1.11.30.1 The system should display the ballistic paths of all weapons and munitions of effector entities within the system (Note: The display of ballistics paths should be selectable on/off).

A1.11.30.2 The system should emulate field artillery fire at point of origin, ballistic flight, and impacts for the platforms detailed below:

A1.11.30.2.1 The 155mm platforms as detailed below:

A1.11.30.2.1.1 M777 Lightweight Towed Howitzer;

A1.11.30.2.1.2 M198;

A1.11.30.2.1.3 M109A6 Paladin;

A1.11.30.2.1.4 K9 Thunder; and

A1.11.30.2.1.5 AS90.

A1.11.30.2.2 The 152mm platforms as detailed below:

A1.11.30.2.2.1 D-20;

A1.11.30.2.2.2 2S3M;

A1.11.30.2.2.3 2S5; and

A1.11.30.2.2.4 2S19.

A1.11.30.2.3 The 122mm platforms as detailed below:

A1.11.30.2.3.1 D-30 or D-30A; and

A1.11.30.2.3.2 2S1.

A1.11.30.2.4 The 105mm platforms as detailed in this SRS.

A1.11.30.2.4.1 M119;

A1.11.30.2.4.2 C3; and

A1.11.30.2.4.3 LG1.

A1.11.31 Artillery Munitions.

A1.11.31.1 The system should emulate the firing, ballistics, and effects of the artillery munitions, with fusing options for airburst, point detonating, and delay as detailed below:

A1.11.31.1.1 The 155mm artillery munition detailed below:

A1.11.31.1.1.1 M795 HE 155mm;

A1.11.31.1.1.2 M107HE 155mm;

A1.11.31.1.1.3 M549 ER HE 155mm;

A1.11.31.1.1.4 M982 Excalibur 155mm; and

A1.11.31.1.1.5 M485A2 155mm.

A1.11.31.1.1.6 The 152mm artillery munitions detailed below:

A1.11.31.1.1.6.1 OF32 or OF96 HE 152mm; and

A1.11.31.1.1.6.2 OF72 or OF91 HE 152mm.

A1.11.31.1.2 The 122mm artillery munitions detailed below:

A1.11.31.1.2.1.1 OF-81 or OF-462 or 3OF56 or OF-843 or Type 843 122mm;

A1.11.31.1.2.1.2 S-463 Illumination 122mm; and

A1.11.31.1.2.1.3 D-462 Smoke 122mm.

A1.11.31.1.2.2 The 105mm artillery munitions detailed below:

A1.11.31.1.2.2.1 M1 HE 105mm; and

A1.11.31.1.2.2.2 M314A3 Illumination 105mm.

A1.11.32 Rocket Artillery.

A1.11.32.1 The system should emulate rocket artillery launches, ballistic flight, and impacts for the platforms as detailed below:

A1.11.32.1.1 M270 Multiple Launch Rocket System (MLRS).

A1.11.32.1.2 M142 High-Mobility Artillery Rocket System (HIMARS).

A1.11.32.1.3 BM-12 / Type 63 (107mm).

A1.11.32.1.4 BM-21 GRAD (120mm).

A1.11.32.1.5 BM-27 Uragan / 9P140 (220mm).

A1.11.32.1.6 BM-30 Smerch / 9A52-2 (300mm).

A1.11.32.2 The system should emulate the firing, ballistics, and effects of the rocket munitions with fuzing options for airburst, point detonating, and delay as detailed below:

A1.11.32.2.1.1 M26 Dual-Purpose Improved Conventional Munitions (DPICM) munition.

A1.11.32.2.1.2 M26A1 Extended Range Rocket (ERR) munition.

A1.11.32.2.1.3 M26A2 ERR munition with M77/M85 sub-munitions.

A1.11.32.2.1.4 M30 Guided MLRS (GMLRS) DPICM munition.

A1.11.32.2.1.5 M31A1 GMLRS Unitary munition.

A1.11.32.2.1.6 M39/MGM-140 (Army Tactical Missile System) ATACMS munition.

A1.11.32.2.1.7 9M28 Series (120mm HE) munition.

A1.11.32.2.1.8 9M27 Series (220mm HE) munition.

A1.11.32.2.1.9 9M55 or 9M529 Series (300mm HE) munition.

A1.11.33 Mortars.

A1.11.33.1 The system should emulate mortar fire at point of origin, ballistic flight, and impacts for the platforms as detailed below:

A1.11.33.2 L16 (81mm);

A1.11.33.3 82-BM-37/M1937 or 82-PM-41/M1941 or Type 52 (82mm);

A1.11.33.4 M120 (120mm); and

A1.11.33.5 2S9 (120mm).

A1.11.33.6 The system should emulate the firing, ballistics, and effects of the following mortar munitions to include fuzing options for airburst, point detonating, and delay as detailed below:

A1.11.33.7 The 81mm munitions as detailed below:

A1.11.33.7.1 C70A2 HE 81mm;

A1.11.33.7.2 C105 Illumination 81mm;

A1.11.33.7.3 C146 Red Phosphorous 81mm; and

A1.11.33.7.4 O-832D HE 82mm munition.

A1.11.33.8 The 120mm munitions as detailed below:

A1.11.33.8.1 M933 or M934 or M934A1 HE 120mm;

A1.11.33.8.2 M930 Illumination 120mm; and

A1.11.33.8.3 M929 WP Smoke 120mm.

A1.11.34 NSFS.

A1.11.34.1 The system should simulate NSFS for the platforms as detailed below:

A1.11.34.1.1 United States Navy (USN) / Royal Australian Navy (RAN) - Mark 45 (5”54 and 5”62) guns;

A1.11.34.1.2 USN / Australian Navy - Mark 75 (76mm) gun;

A1.11.34.1.3 Royal Canadian Navy (RCN) Halifax Class Frigates - MK2 70 and MK3 110 Bofors (57mm) guns;

A1.11.34.1.4 RCN Harpoon Missile (PGM); and

A1.11.34.1.5 RCN Canadian Surface Combatant (127mm) gun.

A1.11.35 MTO Information. The system must have the capability to produce and transmit message to observer (MTO) information (to include time of flight (TOF), maximum ordinate, and Angle-Target, as required).

A1.11.36 CEP.

A1.11.36.1 The system should simulate circular error probabilities (CEP) and various distribution/sheaf of fire as detailed below:

A1.11.36.1.1 Circular distribution of fire (with modifiable radius metric);

A1.11.36.1.2 Converge;

A1.11.36.1.3 Parallel/linear (in range or lateral);

A1.11.36.1.4 Multi-aim point; and

A1.11.37 Fire Missions.

A1.11.37.1 The system should simulate the fire mission types and special procedures (IAW Canadian fires doctrine) as detailed below:

A1.11.37.1.1 Area Neutralization;

A1.11.37.1.2 Danger Close;

A1.11.37.1.3 Destruction;

A1.11.37.1.4 Smoke; and

A1.11.37.1.5 Mark (smoke or illumination).

A1.11.37.2 The system should simulate the Special Procedures (SP) fire missions as detailed below:

A1.11.37.2.1 Linear;

A1.11.37.2.2 Deliberate Smoke (Canada) or Quick Smoke (US);

A1.11.37.2.3 Illumination;

A1.11.37.2.4 Remote Anti-Armor Mine System (RAAMS); and

A1.11.37.2.5 Dual-Purpose Improved Conventional Munition (DPICM) / Improved Conventional Munitions (ICM).

A1.11.37.3 The system should simulate the fire mission Precision Guided Munitions (PGM) (e.g. Excalibur).

A1.11.37.4 The system should simulate the fire mission Laser Point.

A1.11.37.5 The system should simulate the fire mission Coordinated Illumination.

A1.11.38 Entity Behaviors.

A1.11.38.1 The system should have the capability to simulate non-lethal effects applied to entity behaviors using AI, to include the behaviors as detailed below:

A1.11.38.1.1 Fleeing the engagement area;

A1.11.38.1.2 Dispersing;

A1.11.38.1.3 Taking cover;

A1.11.38.1.4 Ceasing activity;

A1.11.38.1.5 Displaying confusion/disorientation;

A1.11.38.1.6 Reporting visual or audible detections;

A1.11.38.1.7 Loss of communications and coordination of groups;

A1.11.38.1.8 Rendering first aid to casualties;

A1.11.38.1.9 Reinforcing; and

A1.11.38.1.10 Counter-attacking.

A1.12 Instructional Control and Monitoring.

A1.12.1 Training Information.

A1.12.1.1 The system must be capable of creating training information.

A1.12.1.1.1 Notes:

A1.12.1.1.1.1 JTAC training and evaluation records may be held on an electronic. However, the system must be capable of producing a hard copy of individual JTAC records and contain the information as detailed in the JTAC MOA.

A1.12.1.1.1.2 Any JTAC training and evaluation records created by the system must not be stored on the system but held on a removable medium.

A1.12.1.2 The system must be capable of creating individual trainee information logs.

A1.12.1.3 The system must be capable of creating individual trainee training history.

A1.12.1.4 The system must be capable of creating individual trainee progress reports.

A1.12.1.5 The system must be capable of maintaining training information as described in this SRS for a period of at least two years.

A1.12.1.6 The system must have the ability to collect and report trainee performance analytics relating to engagement efficiency and accuracy.

A1.12.2 Feedback Capability.

A1.12.2.1 The system should provide instructional control and monitoring capabilities in order to be able to objectively provide soldier feedback and progression based upon the capture and automatic statistical analysis of individual trainee metrics, as detailed below:

A1.12.2.1.1 Number of targets detected.

A1.12.2.1.2 Number of rounds fired/munitions dropped.

A1.12.2.1.3 Number of target hits.

A1.12.2.1.4 Number of target misses.

A1.12.2.1.5 Target location deviations.

A1.12.2.1.6 Time from first possible observation of the target to actual observation of the target.

A1.12.2.1.7 Time from target observation to laser measurement.

A1.12.2.1.8 Time from laser fired to the first shot.

A1.12.2.1.9 Time from first shot to target effect achieved (suppressed, neutralized, or destroyed).

A1.12.3 Reports.

A1.12.3.1 The system must be capable of generating training history and progress reports for both individuals and organizations (for example: course serials, units, formations).

A1.12.3.2 The training history and progress reports for both individuals and organizations must be able to be accurately, and without loss, transferable to Government of Canada (GoC) software (Excel, MS Word).

A1.12.3.3 The system should be capable of printing reports and documents, in support of training and administration.

A1.12.3.4 The system must have the capability for the storage and retrieval of all users' information and statistical metrics, for a period of at least one year.

A1.12.3.5 Training history and progress reports data may only be stored on removable media.

A1.12.3.6 The system must not automatically delete stored information (instructors must be in control of this process).

A1.12.3.7 The system must have the capability to record and report system usage data (hourly, daily, weekly, annual, and lifetime usage).

A1.12.4 Video Capability.

A1.12.4.1 The system must have embedded video playback capability, with the operator able to pause, play, fast-forward, rewind, and mark recorded training.

A1.12.4.2 The video will be stored for purposes of the specific training scenario - long-term storage is not required. Outputs may be used in trainee reports and then deleted when directed.

A1.12.4.3 The system must have the capability to select, annotate, and export video sequences from replays in three dimensional (3D) stealth and 2D tactical maps, with the related communications and sound (radio, intercom, and combat sounds included).

A1.12.4.4 The system must be able to provide users and operators be able to adopt a free-look or entity viewpoint during video playback, from different perspectives.

A1.12.5 Communications and Templates.

A1.12.5.1 The system must provide the instructor with the capability to monitor all trainees' communications.

A1.12.5.2 The system must provide the instructor with the capability to relocate the trainee's location and associated GPS coordinates to anywhere within the synthetic environment.

A1.12.5.3 The system must have the capability to conduct voice CFF using, at a minimum, Canadian, ABCANZ, and NATO templates that are available and modifiable within the user interface as detailed below:

A1.12.5.3.1 CAS 9 Liner template;

A1.12.5.3.2 5 Liner: Gunship and Close Combat Attack (CCA) template; and

A1.12.5.3.3 JFIRES (US) Call for Fire template.

A1.12.5.4 The system should have the capability to conduct digital and voice CFF using, at a minimum, Canadian, ABCANZ, and NATO templates presented and modifiable within the user interface as detailed below:

A1.12.5.4.1 Canadian Call for Fire template;

A1.12.5.4.2 Canadian Engagement Report template;

A1.12.5.4.3 Canadian Availability Report template;

A1.12.5.4.4 NATO Request for Fire template;

A1.12.5.4.5 Naval Guns up Ready to Fire (GURF) Report template; and

A1.12.5.4.6 Naval Gunfire Support Report Form template.

A1.12.5.5 The system must be capable of displaying a Naval Surface Fire Support CFF user interface IAW ATP-4F.

A1.12.5.6 The system should have the ability to produce proforma and conduct a Hasty Troop Commander and Battery Commander Fire Plan as per Canadian Doctrine IAW B-GL-371-002/FP-001 and B-GL-371-004/FP-001.

A1.12.5.7 The system must provide the means for a request or CFF to be approved or denied.

A1.12.5.8 The system should have the capability to conduct 3D Fire Support Coordination Measure (FSCM) and Airspace Coordination Measure (ASCM) de-confliction (to include but not be limited to visualize restrictive and permissive measures; toggle on and off/activate and deactivate; flag violations).

A1.12.5.9 The system must be capable of visually depicting laser safety zones.

A1.13 Simulated Military Equipment (SME)

A1.13.1 The system must include physical SME, to allow the trainee to interact with the synthetic environment in a manner consistent with real-world equipment. The system SME is largely defined by the requirements of JTAC MOA Table C.2 JTAC Simulation System Accreditation Criteria.

A1.13.2 SME General.

A1.13.2.1 The system SME must be co-located geographically within the synthetic environment with the entity inhabited at the Trainee Station.

A1.13.2.2 The system must allow all pieces of SME to operate simultaneously.

A1.13.2.3 The system SME should be constructed using molded bodies, rather than 3D printed bodies, to accurately simulate the feel of real-world equipment.

A1.13.2.4 The system SME should have motion tracking in six degrees of freedom.

A1.13.2.5 The system must permit a user at any role-playing station to view the perspective of any piece of SME listed in this SRS on their role-playing station's screen.

A1.13.2.6 The system must have SME that are equivalent to in-service with a NATO or ABCANZ nation.

A1.13.2.7 The system should have the capability to be expandable, to be able to incorporate future tactical equipment.

A1.13.3 SME Characteristics.

A1.13.3.1 The system SME must accurately model the operation and performance characteristics of their real-world counterparts as detailed below:

A1.13.3.1.1 Form Factor;

A1.13.3.1.2 User Interface;

A1.13.3.1.3 Optical Clarity;

A1.13.3.1.4 Infrared Capability;

A1.13.3.1.5 Magnification; and

A1.13.3.1.6 Range.

A1.13.3.2 The system's SME must be connected using either wireless or wired connections.

A1.13.3.3 The system's SME should be designed such that the SMEs are capable of operation using either of the system's wireless and wired connections.

A1.13.3.4 The system SME optical devices must provide sufficient eye relief to remain fully functional if the user is wearing corrective eyewear (glasses).

A1.13.4 SME Laser Devices.

A1.13.4.1 The system SME laser devices must allow the trainee to (as applicable) laser designate, laser mark or obtain distance and direction to a target within the synthetic environment, from the perspective of the trainee’s position within the synthetic environment.

A1.13.4.2 The system SME laser devices must have a Laser-Target-Line (LTL) that is visible to any other entity in the synthetic environment using the appropriate optical equipment.

A1.13.4.3 The system must include an SME Laser Target Designator (LTD).

A1.13.4.4 The SME LTD must be modelled after a man-portable LTD in use by NATO militaries.

A1.13.4.5 The SME LTD should be modelled after the Leonardo Type-163.

A1.13.4.6 The system must include an SME Laser Range Finder (LRF).

A1.13.4.7 The SME LRF must be modelled after the Safran Vectronix Vector 21.

A1.13.4.8 The SME LRF should be modelled after the Newcon Optik LRM 3500M-35C.

A1.13.4.9 The system must include an SME Handheld Laser Pointer (HLP).

A1.13.4.10 The SME HLP must be modelled after an HLP in use by NATO militaries.

A1.13.4.11 The SME HLP should be modelled after the IZLID 1000P.

A1.13.4.12 The system must include an SME Thermal Imaging Optic (TIO) modelled after a TIO in use by NATO militaries.

A1.13.5 Other SME Devices.

A1.13.5.1 The system must include SME Binoculars modelled after binoculars in use by NATO militaries.

A1.13.5.1.1 The system's SME Binoculars must include a mil scale reticle pattern.

A1.13.5.2 The system's SME Global Positioning System must provide a user with the information/capability as detailed below:

A1.13.5.2.1 The system must provide an SME Global Positioning System (GPS) with form, fit, and function based on the Rockwell Collins Defence Advanced GPS Receiver (DAGR);

A1.13.5.2.2 The system must provide a means to spoof GPS devices (DAGR, DACAS) in the immediate area of the system to show their position as that of the entity inhabited at the Trainee Station within the synthetic environment;

A1.13.5.2.3 The system SME GPS system must show its position consistent with that of the entity inhabited at the Trainee Station within the synthetic environment;

A1.13.5.2.4 If applicable, the system SME DAGR must be capable of outputting its position to an external device through an accurately simulated J1 or J2 port; and

A1.13.5.2.5 The system must have an emulated or simulated replica Global Positioning System (GPS) that corresponds to a WGS-84 or newer military mapping datum database, and map products used in the training simulation.

A1.13.5.3 The system should provide an SME compass.

A1.13.5.4 The system must provide the user with accurate directional measurements within the synthetic environment.

A1.13.5.5 The system should provide an on-screen compass at the Trainee Station.

A1.13.5.6 The system should provide an SME Personal Weapon (PW) modelled after the C8 (M4 Family of Weapons (FOW)), with a mounted optical sight with low power magnification.

A1.14 Projection System

A1.14.1 The system's Projection System must have an output at a minimum resolution of 4K.

A1.14.2 The system's Projection System must project a minimum of a 180° horizontal field of view to the trainee.

A1.14.3 The system's Projection System should project a 270° horizontal field of view to the trainee.

A1.14.4 The system's Projection System must project a minimum of a 40° vertical field of view to the trainee.

A1.14.5 The system's Projection System should project a vertical field of view ranging from -30 degrees to +70 degrees, to the trainee.

A1.14.6 The system's Projection System will have a refresh rate of the displayed images to permit panning the battlefield such that no visual anomalies or perceivable latency as experienced by the trainee is minimized IAW industry display standards.

A1.15 Displays

A1.15.1 The system's displays must display a minimum of a 180° field of view to the trainee.

A1.15.2 The system's displays should display a minimum of a 270° field of view to the trainee.

A1.15.3 The system's displays must use image blending and warping technology to ensure a seamless image between intersecting projector fields of view.

A1.15.4 The system's displays must provide realistic display of entities in line with current generation gaming engine quality.

A1.15.5 The system's displays must reproduce directional 3D sound consistent with the location of the source.

A1.15.6 The system's displays must have a visual range within the simulation of at least 12,000 m.

A1.15.7 The system's displays must include correlated day vision, night vision, and thermal representations.

A1.15.8 The system's displays should feature a user toggle to swap between correlated day vision, night vision, and thermal spectrum representations.

A1.15.9 The system's displays must present multi-spectral views and images to replicate real-world characteristics of that spectrum and the specific characteristics of the simulated device.

A1.15.10 The system's displays must be able to simulate optical properties, such as magnification and the use of reticules.

A1.15.11 The system's displays' operation must be sensitive to those environmental conditions that affect visibility (including, but not limited to, weather, obscurants, and time of day).

A1.15.12 The system's displays must be able to accurately display environmental conditions (including, but not limited to light and weather conditions for all seasons).

A1.15.13 The system's displays must be able to present synchronized images across all stations, including SME sensor feeds, as well as the instructor and trainee stations.

A1.16 VMF Interface

A1.16.1 The system must connect via Radio Frequency Over the Air (RF OTA) to an external Digitally Aided Close Air Support (DACAS) system, using Variable Message Format (VMF).

A1.16.2 The system must allow for the performance of DACAS missions, IAW United States Joint Fire Support (JFS) Executive Steering Committee (ESC) Coordinated Implementation (CI) Change Control Board (CCB) Engineering Change Proposals (ECP) 1 and, United States Joint Fire Support (JFS) Executive Steering Committee (ESC) Coordinated Implementation (CI) Change Control Board (CCB) Engineering Change Proposals (ECP) 2 and DACAS JT TTP.

A1.16.3 The system must support VMF messaging as defined by the standards detailed in this SRS, hereafter referred to as the B/D1/D1 VMF stack.

A1.16.3.1 The system must support VMF messaging as defined by MIL-STD-6017B (standard).

A1.16.3.2 The system must support VMF messaging as defined by MIL-STD-2045-47001D1 (header).

A1.16.3.3 The system must support VMF messaging as defined by MIL-STD-188-220D1 (bearer).

A1.16.4 The system VMF Interface must operate from the Instructor Station.

A1.16.5 The system must be capable of using the radios as detailed below (provided as Government Furnished Equipment (GFE)) to connect to the external DACAS system:

A1.16.5.1 PRC-152A; and

A1.16.5.2 PRC-117G.

A1.16.6 The system should support DACAS ECP 1 baseline VMF messages as detailed below:

A1.16.6.1 VMF message K05.1 Position Report (Rx).

A1.16.6.2 VMF message K01.1 Free Text Message (Tx/Rx).

A1.16.6.3 VMF message K02.34 Aircraft On-Station (Tx).

A1.16.6.4 VMF message K02.33 Close Air Support Aircrew Briefing (Rx).

A1.16.6.5 VMF message WILCO/CANTCO (Tx).

A1.16.6.6 VMF messageK02.35 Aircraft Depart Initial Point (Tx).

A1.16.6.7 VMF message K02.59 Request for K02.57 Aircraft Attack Position and Target Designation (Rx).

A1.16.6.8 VMF message K02.57 Aircraft Attack Position and Target Designation (Tx).

A1.16.6.9 VMF message K02.28 Close Air Support Mission Battle Damage Assessment (Rx).

A1.16.7 The system must transmit the K02.35 Aircraft Depart Initial Point message automatically (if the message type is supported), upon the aircraft passing in the synthetic environment, the Initial Point specified in the K02.33 Close Air Support Aircrew Briefing.

A1.16.8 The system must respond to the K02.59 Request for K02.57 Aircraft Attack Position and Target Designation automatically (if the message type is supported), IAW the directions provided in the K02.59 message.

A1.16.9 The system should be capable of transmitting a K02.28 Close Air Support Mission Battle Damage Assessment message.

A1.16.10 When transmitting, the system must automatically populate relevant data fields in each message, consistent with the state of the scenario, including the information as detailed below:

A1.16.10.1 cause the K02.34 Aircraft On Station message to automatically populate with the current load-out of the selected aircraft.

A1.16.10.2 cause the K02.57 Aircraft Attack Position and Target Designation message to automatically populate with the selected aircraft's position and sensor point of interest within the synthetic world.

A1.16.11 Upon receipt of a message, the system must implement relevant information from the connected DACAS system into the synthetic environment, including the information detailed in this SRS.

A1.16.12 Upon receipt of a message, the system must plot the DACAS system's position on the Instructor's station, consistent with the position given in the K05.1 Position Report.

A1.16.13 The system must route the strike aircraft's approach and egress path IAW the information received in the K02.33 Close Air Support Aircrew Briefing message, as detailed below:

A1.16.13.1.1 Initial Point information received in the K02.33 Close Air Support Aircrew Briefing message.

A1.16.13.1.2 Offset information received in the K02.33 Close Air Support Aircrew Briefing message.

A1.16.13.1.3 Final attack heading information received in the K02.33 Close Air Support Aircrew Briefing message.

A1.16.13.1.4 Egress information received in the K02.33 Close Air Support Aircrew Briefing message.

A1.16.14 The system must allow the instructor to manually transmit all VMF messages noted in this section, except where explicitly stated otherwise in this SRS.

A1.17 Radio Interface

A1.17.1 The system must include a simulated push-to-talk radio interface between the trainee, Instructor, and any other non-AI entity within the synthetic environment.

A1.17.2 The system simulated radio system should emulate the PRC-152A and PRC-117G user interface.

A1.17.3 The system simulated radio system should emulate the AN/PRC-163 user interface.

A1.17.4 The system simulated radio system must accurately reflect the configuration and operation of the real-world PRC-152A and PRC-117G.

A1.17.5 The system simulated radio system should accurately reflect the configuration and operation of the AN/PRC-163.

A1.18 Video Downlink Interface

A1.18.1 The system VDL interface must operate from the VDL Station.

A1.19 Non-Functional Requirements

A1.20 Availability

A1.20.1 The system elements must be both accessible and capable of 24/7 operation.

A1.20.2 The system elements are expected to operate on an irregular schedule in support of the hosting unit's training plan.

A1.20.3 The system elements must be able to operate continuously for eight hours per day.

A1.20.4 The system elements should be able to operate continuously for twenty-four hours.

A1.20.5 The system elements must be able to support continuous operations in support of lengthy command post or computer assisted exercises for up to seven (7) days.

A1.20.6 The system Design Availability must be no less than 95%.

A1.20.7 The system must have the ability to collect and report system performance analytics to include at a minimum system element usage and system component usage.

A1.21 Reliability

A1.21.1 The system must be reliable, with a relatively low failure rate, with no more than one unplanned outage per week, with a MTBF of 10,005 minutes, based on 24/7 operational cycle, an average planned outage of no more than 60 minutes per week, and with a MTTR as defined in this SRS.

A1.22 Maintainability

A1.22.1 The system elements must have a Mean Time to Repair (MTTR) of no more than 15 minutes.

A1.22.2 The system elements must be repairable by instructors or local maintenance personnel (First Line).

A1.22.3 Second and Third Line repairs must be accomplished within 30 days.

A1.22.4 Routine maintenance checks should be automated as much as possible in order to reduce the requirement for user monitoring.

A1.22.5 The system must have automated Built in Test (BIT) with error report generation capability.

A1.23 Health & Safety

A1.23.1 The system must not compromise health, safety, or the effective use of the simulator.

A1.23.2 The system must be safe to operate and maintain throughout its lifecycle.

A1.23.3 The system must conform to Canadian safety and health regulations, such as laser safety.

A1.23.4 The system must be designed such that sustained and peak physical burdens (such as weight, eyestrain) and mental demands on the trainees are minimized.

A1.23.5 The system design must ensure that the level of electromagnetic emissions experienced by the trainee’s remains within the limits specified in Canadian Health and Safety guidelines.

A1.23.6 The system's design must be such that trainees and instructors will not experience a steady state interior noise level in excess of 85 dB(A) IAW MIL-STD-1474, Requirement 1, Category D (the level measurements to be at both the instructor and operators' ear location in position of normal system use.

A1.23.7 The system must be designed to control the transmission of vibration to trainees IAW MIL-STD-1472G.

A1.24 Survivability

A1.24.1 The system will not deploy operationally.

A1.24.2 The system elements must be able to function within the climate, humidity, dust, and static electricity control levels of the existing facilities.

A1.24.3 If the system elements are capable of being networked with other system elements or other virtual trainers, they all must be resistant to cyber-attacks including but not limited to hacking, denial of service, and intrusion.

A1.24.4 The system elements and components must be sufficiently robust to not fail during training (see Reliability and Availability sections above).

A1.24.5 The system must be provided with protection in the event of power failures or power fluctuations/surges for all hardware components and associated equipment.

A1.24.6 It is expected that the simulator may be used for extended periods of time (eight (8) hour training days, five (5) times per week, 45 weeks per year).

A1.25 Environmental

A1.25.1 The system elements will be used indoors, within the existing infrastructure for each location (physical layout and power availability).

A1.25.2 The system elements must be capable of operation in a temperature environment of +5 degrees C to +35 degrees C.

A1.25.3 The system elements must be capable of operation and storage in non-condensing humidity conditions, between 20 and 85 percent.

A1.25.4 The system elements must operate within five (5) hours after having been removed from storage in a temperature environment of –15 degrees C to + 35 degrees C.

A1.25.5 The system elements must be capable of operation using the standard North American system (110 volts, 60 Hertz, single phase).

A1.25.6 Loss of power must not cause corruption of the computer's simulation programs or operating system.

A1.25.7 The system elements must be protected against normal commercial power fluctuations (surges and spikes).

A1.25.8 The simulation programs and operating system used by the system elements computers must be protected against corruption in the event of a loss of power.

A1.26 Human Factors

A1.26.1 The system must have been designed taking the guidelines of MIL-STD-1472G and Mil-HDBK 759C (Notice-2) into consideration.

A1.26.2 The system must be operable by the 5th to 95th percentile of the CAF personnel.

A2.0 APPENDIX: CONTRACT DATA REQUIREMENTS LIST

A2.1 Management and Explanation of the CDRL

A2.1.1 Management of Data Items

A2.1.1.1 The Contractor must review, update and deliver amendments, or confirm the continuing accuracy of data items annotated with a maintenance period, IAW the CDRL.

A2.1.1.2 The Contractor must deliver amended, reissued, or resubmitted data items to the location(s) and in the format and quantities specified in the CDRL for the initial submission of the data items.

A2.1.2 Explanation of the CDRL

A2.1.2.1 **CDRL Line Number** – This field provides the unique sequential number that identifies each data item within different functional groups (e.g., PM-001, SE-101, & ILS-201).

A2.1.2.2 **CDRL Title** – This field identifies the title of the data item.

A2.1.2.3 **SOW Para Ref** – This field shows the paragraph in the SOW where the data item is stipulated. There may be multiple references to the data item in the SOW, but generally, only the first (or one) reference is shown in the CDRL.

A2.1.2.4 **Version** – This field identifies the delivery of a data item during its lifecycle (i.e., draft, final).

A2.1.2.5 **Delivery Schedule** – This field specifies the date(s) and events by which the data item must be delivered. The date of delivery applies to all delivery locations and quantities unless otherwise specified. Following are some of the abbreviations and symbols used with this column:

A2.1.2.5.1 ‘KO’ means the Kick-Off Meeting date;

A2.1.2.5.2 Numerals indicate the number of Calendar Days unless specified otherwise;

A2.1.2.5.3 ‘(+)’ means after the specified date or event; and

A2.1.2.5.4 ‘(-)‘ means before the specified date or event.

A2.1.2.5.5 If a data item is required to be delivered before an event having a duration of greater than one day, the delivery date

must be calculated from the first day of that event. If a data item is required to be delivered after an event having a duration of greater than one day, the delivery date must be calculated from the last day of that event.

A2.1.2.6 **Quantity** – This field specifies the total number of data items to be delivered to the associated delivery location(s), including the number of hard (H) and soft (S) copies. When both hard and soft copies are requested, the action copy will be indicated in the note's column.

A2.1.2.7 **Addressee** – This field shows the DND representative's short title to whom the hard and soft copies of the data items must be delivered. The action hard copy of the data item must be delivered to the first nominated location in this field.

A2.1.2.8 **Data Item Description Reference** – This field identifies the DID with which the data item must comply.

A2.1.2.9 **DND Action Period** – This field defines the number of Calendar Days available to the DND to action the data item and respond to the Contractor if it requires a response.

A2.1.2.9.1 The period begins upon the date the action copy of the data item is received at the first nominated addressee.

A2.1.2.9.2 The action period applies to all deliveries, including first deliveries, amendments, and re-issues. If a data item is delivered earlier than the first delivery date shown in the CDRL, the DND TA is not obliged to action it until after that date. If the action period states 'by MSR' for a data item delivered before a Mandated System Review (MSR), the action period ends when the minutes for that MSR are approved.

A2.1.2.10 **DND Action Required** – This field indicates the purpose for which the data item is being submitted to the DND TA, either for Review, Approval, or Acceptance.

A2.1.2.11 **Maintenance** – This field specifies either the timings or the time intervals after each delivery. The Contractor must review the data item, and either has its continuing accuracy status confirmed in writing or be updated and reissued. The Maintenance column does not apply to draft or preliminary versions of data items. The following abbreviations and codes apply to this column:

A2.1.2.11.1 xM – every x calendar months;

A2.1.2.11.2 R – to enable it to be considered at each MSR set out in the System Engineering program;

A2.1.2.11.3 SA – to enable it to be provided to conduct Acceptance of each System;

A2.1.2.11.4 FA – to enable it to be provided for Final Acceptance; and

A2.1.2.11.5 NA or blank – not applicable.

A2.1.2.12 Notes: Where necessary, additional explanatory information relating to a CDRL data item is provided in this column.

A2.2 CDRL Item List

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
JTAC VTS-PM-001	Project Management Plan	Para. 3.2.1 (pg. 13)	Draft	Bid Proposal	1S	TA, PA, CA	JTAC VTS-PM-001	21	Review		
			Revised	KO (+) 28							
			Revised or Final	DND Comments (+) 14	1S	TA, CA	App. A3.3 (pg. 115)	7	Review or Acceptance		
JTAC VTS-PM-002	Transition Plan	Para. 3.3.2 (pg. 13)		KO (+) 120	1S	TA, CA	JTAC VTS-PM-002 A3.4 (pg. 117)	21	Review or Acceptance		
JTAC VTS-PM-003	Standard Report Format	Para 3.71 (pg.13)	NA	NA	NA	NA	JTAC VTS-PM-003 App. A3.6 (pg.125)	NA	NA	NA	NA
JTAC VTS-PM-004	Intellectual Property Management Plan & List	Para. 3.4.1 (pg.13)	Final	KO (+) 90	1S	TA, CA, PA	JTAC VTS-PM-004 A3.5 (pg. 120)	7	Review or Acceptance		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
JTAC VTS-PM-005	Project Progress Report	Para 3.7.1 (pg.14)	Draft	KO (+) 28	1S	TA, CA	JTAC VTS-PM-005	21	Review		
			Revised	DND Comments (+) 7	1S	TA, CA, PA,	App. A3.7 (pg. 127	7	Review or Acceptance		
			Final	Monthly	1S	TA, CA, PA,		7	Review		
JTAC VTS-PM-006	Significant Incident Report	Para. 3.8.1 (pg. 14)		As required	1S	TA	JTAC VTS-PM-006 App. A3.8 (pg. 129)	7	Acceptance		
JTAC VTS-PM-007	Meeting Agenda	Para. 3.9.1.4 (pg. 14)	Draft	Meeting Date (-) 7	1S	CA, TA, PA	JTAC VTS-PM-007	5	Review		
			Revised	Meeting Date (-)1	1S	CA, TA, PA	App. A3.9 (pg. 131)				
			Final	Meeting Date	1H	CA, TA, PA			Acceptance		
JTAC VTS-PM-008	Presentation Materials	Para. 3.9.1.5 (pg. 14)	Final	Meeting Date (-) 7	1S	CA, TA, PA	JTAC VTS-PM-008 A3.10 (pg. 133)				

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
JTAC VTS-PM-009	Meeting Minutes	Para3.9.1.6 (pg. 14)	Draft	Meeting Date (+) 7	1S	CA, TA, PA	JTAC VTS-PM-009	7	Review		
			Revised or Final	DND Comments (+) 7	1S	CA, TA, PA	App. A3.11 (pg. 135)	7	Review or Acceptance		
JTAC VTS-SE-101	Systems Engineering Management Plan	Para. 4.2.2.1 (pg. 18)	Draft	KO (+) 28	1S	TA	JTAC VTS-SE-101	21	Review		
			Revised or Final	DND Comments (+) 14	1S	TA, CA	App. A3.12 (pg. 137)	7	Review or Acceptance	3M	
JTAC VTS-SE-102	Mandated System Review Package	Para. 4.2.5.4 (pg. 18)	Draft	MSR Meeting (-) 28	1S	TA	JTAC VTS-SE-102	14	Review		
			Revised	MSR Meeting	1S	TA	App. A3.13 (pg. 145)	7	Review		The revised MSR Package for presentation and discussion at the MSR meeting.

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
			Revised or Final	DND Comments (+) 7	1S	TA		7	Review or Acceptance		
JTAC VTS-SE-103	Equipment Specification	Para. 4.2.7 (pg. 20)	Draft	MSR Meeting (-) 21	1S	TA	JTAC VTS-SE-103	14	Review		
			Revised	MSR Meeting	1S	TA	App. A3.14 (pg. 147)	7	Review or Acceptance		
			Revised	DND Comments (+) 7	1S	TA		7			
			Revised or Final	Once the Acceptance Test Reports are accepted	1S	TA		7			
JTAC VTS-SE-104	Requirements Traceability Verification Matrix	Para. 4.2.7.1 (pg. 20)	Draft	MSR Meeting (-) 21	1S	TA	JTAC VTS-SE-104	14	Review		
			Revised	MSR Meeting	1S	TA	App. A3.15 (pg. 149)	7	Review		The revised RTVM for presentation

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
											and discussion at
											the MSR Meeting.
			Revised	DND Comments (+) 7	1S	TA		7	Review		
			Revised or Final	Once the Acceptance Test Reports are accepted	1S	TA		7	Review or Acceptance		
JTAC VTS-SE-105	Reliability and Maintainability (R&M) Predictions Data	Para. 4.3.1.2.1.5 (pg. 21)	Draft	PDR Meeting (-) 21	1S	TA	JTAC VTS-SE-105	14	Review		
			Revised	PDR Meeting	1S	TA	App. A3.16 (pg.152).	7	Review or Acceptance		
			Final	PDR Meeting (+) 42	1S	TA		14			
JTAC VTS-SE-106	System Data Packages &	Para. 4.4.3.1 (pg. 26)	Draft –	CDR Meeting (-) 21	1S	TA	JTAC VTS-SE-106	14	Review		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
	Equipment Lists										
			Revised	CDR Meeting	1S	TA	App. A3.17 (pg. 154)	7	Review or Acceptance		
			Draft –	PCA Meeting (-) 21	1S	TA		14	Review		
			Revised	PCA Meeting	1S	TA		7	Review or Acceptance		
			Revised or Final	DND Comments (+) 14	1S	TA		7	Review or Acceptance		
JTAC VTS-SE-107	Cybersecurity Architectural Design Document	Para. 4.5.6.1 (pg. 29)	Draft	KO (+) 28	1S	TA	JTAC VTS-SE-107 App. A3.18 (pg. 156)	21	Review		
			Revised or Final	DND Comments (+) 14	1S	TA		7	Review or Acceptance		
JTAC VTS-SE-108	Configuration Management Plan	Para. 5.2.1.1 (pg.29)	Draft	KO (+) 28	1S	TA	JTAC VTS-SE-108	21	Review		
			Revised or Final	DND Comments (+) 14	1S	TA	App. A3.19 (pg. 160)	7	Review or Acceptance		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
JTAC VTS-SE-109	Software Version Description Document (SVDD)	Para. 5.3.2.1 (pg.30)	Draft	KO (+) 28	1S	TA	JTAC VTS-SE-109	14	Review		
			Revised or Final	DND Comments (+) 14	1S	TA	App A3.20 (pg. 162)	7	Review or Acceptance		
+			Updated	As required	1S	TA		7			
JTAC VTS-SE-110	Equipment Breakdown Structure (EBS)	Para. 5.3.3.1 pg.(30)	Draft	CDR Meeting (-) 21	1S	TA	JTAC VTS-SE-110	14	Review		
			Revised	CDR Meeting	1S	TA	App. A3.21 (pg. 165	7	Review or Acceptance		
			Final	CDR Meeting (+) 42	1S	TA		7			
JTAC VTS-SE-111	Engineering Change Proposal	Para. 5.4.2 (pg. 30)	Draft	As required	1S	TA, CA	JTAC VTS-SE-111	14	Review		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
			Revised or Final	DND Comments (+) 7	1S	TA, CA	App. A3.20 (pg. 162)	7	Review or Acceptance		
JTAC VTS-SE-112	Software Change Request	Para. 5.4.5.1 (pg. 32)	Draft	As required	1S	TA, CA	JTAC VTS-SE-112	14	Review		
			Revised or Final	DND Comments (+) 7	1S	TA	App.A3.23 (pg. 173)	7	Review or Acceptance		
JTAC VTS-SE-113	Configuration Status Accounting Report	Para. 5.5.2 (pg. 32)	Draft	CDR Meeting (+) 28	1S	TA	JTAC VTS-SE-113	14	Review		
			Revised or Final	DND Comments (+) 14	1S	TA	App. A3.24 (pg. 176)	7	Review or Acceptance	2M	
JTAC VTS-SE-114	System Verification Plan	Para. 6.1.1.3 (pg. 36)	Draft	TRR Meeting (-)28	1S	TA	JTAC VTS-SE-114	14			
			Revised	TRR Meeting	1S	TA	App. A3.25 (pg. 179)	7			

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
			Revised or Final	DND Comments (+) 7	1S	TA		7			
JTAC VTS-SE-115	Acceptance Test Plan and Procedures	Para. 6.2.3 (pg. 40)	Draft	TRR Meeting (-) 28	1S	TA	JTAC VTS-SE-115	14	Review		
			Revised	TRR Meeting	1S	TA	App. A3.26 (pg. 182)	7	Review		Revised package for presentation and discussion at the TRR Meeting.
			Revised or Final	DND Comments (+) 7	1S	TA		7	Review or Acceptance		
JTAC VTS-SE-116	Acceptance Test Reports	Para. 6.2.4 (pg. 40)	Draft	Acceptance Verification (+) 7	1S	TA	JTAC VTS-SE-116	14	Review		
			Revised or Final	DND Comments (+) 14	1S	TA	App. A3.27 (pg. 186)	14	Review or Acceptance		
JTAC VTS-SE-117	Request for Deviation (RFD) /	Para. 7.3.2 (pg. 41)	Draft	Acceptance Verification (+) 7	1S	TA	JTAC VTS-SE-117	7	Review		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
	Request for Waiver (RFW)						App. A3.28 (pg. 188)				
			Revised or Final	DND Comments (+) 14	1S	TA		14	Review or Acceptance		
JTAC VTS-ILS-201	In-Service Support Plan (ISSP)	Para. 8.2.3 (pg. 44)	Draft	KO/KO (+) 28	1S	TA	JTAC VTS-ILS-201 App. A3.29 (pg. 190)	14	Review		
			Revised or Final	DND Comments (+) 14	1S	TA		14	Review or Acceptance		
JTAC VTS-ILS-202	Material Change Notice	Para. 8.4.1 (pg. 44)	As required	As required	1S	TA	JTAC VTS-ILS-202 App. A3.30 (pg. 192)	7	Acceptance		
JTAC VTS-ILS-203	Safety Data Sheet	Para. 8.5.1 (pg. 44)	Final	KO (+) 60	1S	TA	JTAC VTS-ILS-203 App. A3.31 (pg. 194)	7	Acceptance		
JTAC VTS-ILS-204	Sparing Analysis Report	Para. 8.6.1 (pg. 44)	Final	KO (+) 60	1S	TA	JTAC VTS-ILS-204 App. A3.32 (pg. 196)	14	Acceptance		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
JTAC VTS-ILS-205	Supplementary Provisioning Technical Documentation	Para. 8.7.1(pg. 44)	Final	KO (+) 60	1S	TA	JTAC VTS-ILS-205 App. A3.33 (pg.198)	14	Acceptance		
JTAC VTS-ILS-206	Technical Data Deliverables List	Para. 8.8.1 (pg. 44)	Final	KO (+) 60	1S	TA	JTAC VTS-ILS-206 App. A3.34 (pg. 200)	14	Acceptance		
JTAC VTS-ILS-207	Technical Publications Requirements List	Para. 8.9.1 (pg. 45)	Final	KO (+) 60	1S	TA	JTAC VTS-ILS-207 App. 202 (pg.202)	14	Acceptance		
JTAC VTS-ILS-208	JTAC VTS -I Train- the-Trainer Training Package	Para. 9.2.1(pg. 45	Draft	[KO (+) 28	1S	TA	JTAC VTS-ILS-208 App. A3.36 (pg. 204)	60	Review		
			Revised or Final	DND Comments (+) 60	1S	TA		30	Review or Acceptance		
JTAC VTS-ILS-209	System Manuals	Para. 10.1.2 (pg. 46)	Draft	[KO (+) 28	1S	TA	JTAC VTS-ILS-209 App. A3.37 (pg. 207)	60	Review		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
			Revised or Final	DND Comments (+) 60	1S	TA		30	Review or Acceptance		
JTAC VTS-ILS-210	Vendor Manuals	Para. 10.2.2 (pg. 46)		[KO (+) 28	1S		JTAC VTS-ILS-210 A3.38 (pg. 209)	21			
JTAC VTS-ILS-211	Government Property Report	Para. 10.4.1(pg. 47)	Draft	[KO (+) 28	1S	TA	JTAC VTS-ILS-211 App. A3.39 (pg. 211)	14	Review		
			Revised or Final	DND Comments (+) 30	1S	TA		7	Review or Acceptance		
			Annually		1S	TA		7	Acceptance		
JTAC VTS-ILS-212	Government Delivery Schedule	Para. 10.5.1(pg. 47)	Draft	KO (+) 28	1S	TA	JTAC VTS-ILS-212 App. A3.40 (pg. 213)	60	Review		
			Revised or Final	DND Comments (+) 30	1S	TA		30	Review or Acceptance		

CDRL #	CDRL Title	SOW Para Ref	Version	Delivery Schedule	Qty	Addressee	DID # and Ref	DND Action Period	DND Action Required	Maint	Notes
JTAC VTS-ILS-213	Identification Shipping and Packaging Data	Para. 10.6.1 (pg. 47)	As required	DND (+) 7	1S	TA	JTAC VTS-ILS-213 App. A3.41 (pg. 215)	7	Acceptance		
JTAC VTS-ILS-214	Environmental Equipment Assessment	Para. 11.4.1 (pg. 49)	Draft	KO (+) 28	1S	TA	JTAC VTS-ILS-214 App. A3.42 (pg. 217)	14	Review		
			Revised or Final	DND Comments (+) 30	1S	TA		7	Review or Acceptance		

A3.0 APPENDIX: DATA ITEM DESCRIPTION

A3.1 Data Deliverable Format

A3.1.1 Unless otherwise specified as a specific requirement, the Contractor must deliver all the soft copies of data deliverables in formats compatible with the office software currently in use by the DND as listed:

A3.1.1.1 Microsoft (MS) Windows 7 Enterprise Operating System (OS), Service Pack 1;

A3.1.1.2 MS Internet Explorer (IE) 9.0 with 256 Bit Encryption;

A3.1.1.3 MS Office Professional Plus 2013 (Word, Excel, Access, PowerPoint, and Outlook);

A3.1.1.4 Adobe Acrobat X; and

A3.1.1.5 WinZip 8.1 SR-1;

A3.2 DID Table Definitions

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

BLOCK 1 – TITLE
The title of the data item for the DID.

BLOCK 2 - IDENTIFICATION NUMBER
The Data Item Description (DID) number, consisting of a sequential three-digit number and prefixed with an abbreviation code to uniquely identify the DID. Note that the 001-099 series is reserved for Project Management (PM) DIDs, the 101-199 series is reserved for Systems Engineering (SE) DIDs, and the 201-299 series is reserved for Integrated Logistics Support (ILS) DIDs. The abbreviation codes used for the prefix are:

"PM" for Project Management
"SE" for Systems Engineering
"ILS" for Integrated Logistics Support

BLOCK 3 - DESCRIPTION
Provides a general description of the data content requirements.

BLOCK 4 – RELATED DOCUMENT(S)
Provides a listing of the related documents and specifications associated with and required to produce this DID.

BLOCK 5 - CONTRACT REFERENCE

The specific paragraph numbers from the Contract Statement of Work and CDRL help identify the work effort associated with the data item.

BLOCK 6 - PREPARATION INSTRUCTIONS

Provides the preparation instructions for the content and format requirements for the DID.

A3.3 DID – Project Management Plan

DATA ITEM DESCRIPTION	
1. TITLE **Project Management Plan (PMP)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-001**
3. DESCRIPTION The Project Management Plan (PMP) is the top-level plan that describes the Contractor's strategy, plans, methodologies, and processes for meeting the Contract's requirements.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 3.2.1 (pg. 13)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The PMP must describe the management processes, administrative procedures, and organizational structure used to manage the work of the Contractor. 6.1.2. The PMP must further detail the practices and procedures for project scheduling, planning, organizing, directing, executing, communicating, reporting, managing risk, managing environmental health and safety issues and impacts, managing information, and closing action items for all Work required by the Contract. 6.1.3. The PMP must address in detail the above points through the following: 6.1.3.1. Overview: 6.1.3.1.1. Purpose, Background, Scope, and Objectives; 6.1.3.1.2. Assumptions, Constraints, and Risks; 6.1.3.1.3. All Project Deliverables; 6.1.3.1.4. Organization Summary; and 6.1.3.1.5. Schedule Summary. 6.1.3.2. Organization: 6.1.3.2.1. Project Management Organizational Chart, consisting of internal and external organizations as it pertains to this Contract; 6.1.3.3. Management Processes: 6.1.3.3.1. Project Management Approach and Procedures;	

6.1.3.3.2. Schedule Control;

6.1.3.3.3. Quality Assurance;

6.1.3.3.4. Reporting;

6.1.3.3.5. Communications;

6.1.3.3.6. Risk Management;

6.1.3.3.7. Environmental, Health and Safety Issues Management;

6.1.3.3.8. Information Management (IM); and

6.1.3.3.9. Change Control Processes.

6.2. **SOFT COPY FORMAT**

6.2.1. The PMP must be submitted as a PDF file type.

6.2.2. **Soft Copy format submission size below 7MB** – The PMP PDF may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-PM-001 – PMP – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB -** The PMP PDF must be submitted on a USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. PMP;

6.2.3.3. JTAC VTS-PM-001;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.4 DID – Transition Plan

DATA ITEM DESCRIPTION	
1. TITLE **Transition Plan**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-002**
3. DESCRIPTION The JTAC VTS Transition Plan describes how the Contractor plans to seamlessly transition materials, services and information control into in-service support (in-service support which will be conducted IAW the JTAC VTS In-Service Support Statement of Work as part of the JTAC VTS In-Service Support contract under the authority of DND), for the systems, capabilities, materials, information and knowledge established as a result of the JTAC VTS Acquisition contract	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 3.3.2 (pg. 13)** **CDRL**: **App. A2.2(pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The Transition Plan must address activities needed to ensure that the Contractor is ready in all respects for maintaining the JTAC VTS deliverables and all associated equipment systems delivered under acquisition, and most specifically the needs for those to be transitioned to in-service support, including both Contractor and DND elements of in-service support. The plan must address concepts such as how the capability and capacity will be established for the provision of support from first contract or system deliveries until completion of last deliveries, including to the end of the transition periods between the acquisition and in-service contracts. The plan must also describe how systems will be transitioned from acquisition control into in-service support control, through a process with Canada's acceptance, for each system or delivery and the transition of each specific acquisition project controlled item and service into in-service support control. 6.1.2. The Transition Plan must also describe and address the following: 6.1.2.1. how the Contractor will execute plans, processes, requirements and work during lead-up to Transition; 6.1.2.2. how the Contractor plans to ramp up their in-service capacity to support all JTAC VTS delivered systems and associated equipment under in-service	

support, in parallel with a ramp-down of interim support (pre-transition) provided under acquisition;

6.1.2.3. the sequencing, scalability, and geographical location for all support activities;

6.1.2.4. the problem reporting and risk management processes which will identify In-service Support Start-up Support and interim Acquisition Support deficiencies, risks, issues, gaps and make recommendations for their mitigation and resolution in order to achieve Transition;

6.1.2.5. coordination of meetings with Canada during Transition;

6.1.2.6. readiness measures to be used in lead-up to transition to ensure the Contractor is establishing various services as required IAW the ISS SOW including timelines for when resources will be put in place and details regarding access requirements to Canada's facilities;

6.1.2.7. readiness measures to be used in lead-up to transition to ensure the Contractor has demonstrated their capability, capacity and support services to support the JTAC VTS;

6.1.2.8. plans to address how the Contractor will ensure alignment with JTAC VTS Program Management elements, DND Formations and assigned Units, so that Services can be planned and delivered efficiently;

6.1.2.9. transition of required Integrated Logistic Support (ILS) materials and information including technical data and training materials;

6.1.2.10. transition of DND training capability from Initial Operational Capability (IOC) to achievement of Full Operational Capability (FOC); and

6.1.2.11. transition of the Contractor’s linked Electronic Information Environment / Collaborative Environment electronic data exchange systems to the In-Service Support Contract.

6.2. GENERAL FORMAT

6.2.1. This DID must be submitted IAW the SOW Section 3.3 unless otherwise amplified herein.

6.2.2. The layout and content formatting structure of this DID must be determined by the Contractor unless otherwise specified herein.

6.3. SOFT COPY FORMAT

6.3.1. The Transition Plan must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Transition Plan PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-PM-002 – Transition Plan – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** - The Transition Plan PDF must be submitted on CD or DVD media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Transition Plan;

6.3.3.3. JTAC VTS-PM-002;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.5 DID – Intellectual Property Management Plan & List

DATA ITEM DESCRIPTION	
1. TITLE **Intellectual Property Management Plan & List (IPMPL)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-003**
3. DESCRIPTION The Intellectual Property Management Plan & List (IPMPL) defines the Contractor's plans, processes and responsibilities for meeting the IP requirements of the Contract and defines the IP management activities related to the Contract. The IPMPL also identifies and lists all Contractor, sub-Contractor, Third Party and DND Foreground Information and Background Information IP and Technical Data that is relevant to the Contract, and all limitations with respect to the IP and Technical Data.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 3.4.1 (pg. 13)** **CDRL**: **App. A2.2(pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. Section A - Management and Monitoring of the IP portfolio – The IPMPL must include the following information: 6.1.1.1. Policies and processes affecting the management of IP, particularly in respect to the creation, acquisition, identification, labelling, ownership, protection and licensing of IP; 6.1.1.2. Organizational structures responsible for managing IP, showing applicable business units including all sub-Contractors, and their relationships to one another and to the DND; 6.1.1.3. Personnel responsible for managing IP; 6.1.1.4. The roles and responsibilities of the various organisations, business units and personnel involved in the management of IP; 6.1.1.5. Tools including software management applications used to manage IP, and 6.1.1.6. Process to deal with IP issues and disputes. 6.1.2. Section B – Intellectual Property List	

6.1.2.1. The IP List may be prepared using the Contractor's own format, however all the required information for the IPMPL (see the tables below to show format) must be provided for the Foreground Information and Background Information IP and listed separately. For all such IP the following information is required:

6.1.2.1.1. Column A – Document Number – Document or publication index number.

6.1.2.1.2. Column B – Revision Level – Version number, date or other revision tracking indication.

6.1.2.1.3. Column C – Document Title.

6.1.2.1.4. Column D – IP Registration Number/Detail (if applicable) – Format: <country of registration> <type of IP> <registration number>. Type of IP could be a copyright, patent, registered design, e.g. Canada Patent No.2,097,125

6.1.2.1.5. Column E – Date of Issue.

6.1.2.1.6. Column F – Originator – Company name and address.

6.1.2.1.7. Column G – Current Owner (if different from originator) – Company name and address.

6.1.2.1.8. Column H – Limitations on the IP (Usage and Licensed Rights).

6.1.2.1.9. Usage: Full explanation of the extent, justification and impact of each limitation on Canada's use of the licensed IP must be specified including details of all activities planned to alleviate the impact of the limitation.

6.1.2.1.10. Licensed Rights: Each item listed in the IP List must include specification of limitations on licence terms as applicable. These may include:

6.1.2.1.10.1. jurisdiction;

6.1.2.1.10.2. sole/exclusive/non-exclusive;

6.1.2.1.10.3. sub-licensing;

6.1.2.1.10.4. (ir)revocable;

6.1.2.1.10.5. events triggering IP rights and access to Technical Data (e.g., termination or expiration of contract);

6.1.2.1.10.6. term (perpetual, sunrise/sunset);

6.1.2.1.10.7. geographic (worldwide, in Canada);

6.1.2.1.10.8. royalty-free, fees, royalties, minimum sales; and

6.1.2.1.10.9. other IP arrangements:

6.1.2.1.11. IP/Technical Data arrangements that are subject to other contract arrangements or right of first offer to the Contractor, sub-Contractor or third party; or

6.1.2.1.12. IP/Technical Data arrangements directly between Canada and sub-Contractors, Canadian or foreign.

6.1.2.1.13. Column I – Technical Data Arrangements – Each item in the IP List must include specification of Technical Data arrangements; detailed in the relevant deeds, to secure access to Technical Data that satisfies the DND's IP requirements. This will include, for each IP item:

6.1.2.1.14. Technical Data that will be delivered immediately;

6.1.2.1.15. Technical Data that will be available/configuration controlled in escrow;

6.1.2.1.16. Technical Data that will be available/configuration controlled by the Contractor; and

6.1.2.1.17. Technical Data that will be available/configuration controlled by each sub-Contractor/third party.

6.1.2.1.18. Column J – IP Transition – Each item listed in the IP List must specify how the status of IP rights and access to Technical Data will be recorded and transitioned to future Contractors and sub-Contractors/third parties.

6.1.2.1.19. Column K – Export Approval – Each item in the IP List must specify export approval requirements where relevant, including Source Code and Software Design Data. Evidence of the Contractor's ability to export the required items, and details of all restrictions on the use of that material must both be provided.

6.1.2.1.20. The IP List must include the Background Information IP related to the equipment that the Contractor does NOT own and CANNOT provide Canada access to. For all such Background Information IP the following information is required:

6.1.2.1.21. Column A – Document Number – Document or publication index number.

6.1.2.1.22. Column B – (if available/releasable) Revision Level – Version number, date or other revision tracking indication.

6.1.2.1.23. Column C – (if available/releasable) Document Title

6.1.2.1.24. Column D – (if available/releasable) IP Registration Number/Detail (if applicable) – Format: <country of registration> <type of IP> <registration number>. Type of IP could be a copyright, patent, registered design, e.g. Canada Patent No.2,097,125

6.1.2.1.25. Column E – (if available/releasable) Date of Issue.

6.1.2.1.26. Column F – (if available/releasable) Originator – Company name and address.

6.1.2.1.27. Column G – Current Owner (if different from originator) – Company name and address.

6.1.2.1.28. Column H – Brief Description – A brief description of the Background Information IP must be provided for those items where the requested information in Column A to Column F inclusive, is not provided.

6.1.3. See tables below.

Document Number	Revision Level	Document Title	IP Registration Number/Detail	Date of Issue	Originator	Current Owner (if different from Originator)	Limitations on the IP*		Technical Data Arrangements	IP Transition	Export Approval
							Usage	Licensed Rights			
(A)	(B)	I	(D)	I	(F)	(G)	(H)	(H)	(I)	(J)	(K)

*Note: Where no change or modifications are made to the contract terms, insert N/A in column H

6.2. **GENERAL FORMAT**

6.2.1. The IPMPL must be prepared as

6.3. **SOFT COPY FORMAT**

6.3.1. The IPMPL must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The IPMPL PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-PM-003 – IPMPL – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The IPMPL PDF must be submitted on CD or DVD media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. IPMPL;

6.3.3.3. JTAC VTS-PM-003;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.6 DID – Standard Report Format

DATA ITEM DESCRIPTION	
1. TITLE **Standard Report Format**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-004**
3. DESCRIPTION The Standard Report Format describes the structure for formal reports that the Contractor prepares.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW: Para. 3.4.1 (pg. 13)** **CDRL: App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Contractor must use a standard format for reports prepared for the Crown.

6.1.2. The Contractor's report must consist of the following:

6.1.2.1. Title Page. The title page must contain the following information:

6.1.2.2. Title: list the name of the report

6.1.2.3. Contract No: state the contract number

6.1.2.4. CDRL No: identify the CDRL

6.1.2.5. Prepared For: state the name of the Project Management Office

6.1.2.6. Prepared By: state the Contractor's name and address

6.1.2.7. Approved by: provide a signature block for the Project Management Office

6.1.2.8. Authenticated By: provide a signature block for Contractor approval signature(s)

6.1.3. Table of Contents. The Table of Contents must list the title and page number of each titled paragraph and subparagraph, figure, table, and appendix.

6.1.4. Document Control Log. The Document Control Log must contain three columns: Revision, Date, and Reason for the Change.

6.1.5. Revision Record. The Revision Record must contain a listing of pages and their revision status.

6.1.6. Subject Matter. This part contains the subject matter of the report.

6.1.7. Notes.

6.1.7.1. This part should contain any general information that aids in understanding the document, such as background information and a glossary.

6.1.7.2. This part should include an alphabetical listing of all acronyms, abbreviations, and their meanings as used in the report.

6.1.8. Appendices.

6.1.8.1. Each appendix must be referenced in the report's main body where the data would normally have been provided.

6.1.8.2. Appendices may be used to provide information published separately for convenience in document maintenance, such as charts and classified data.

6.1.8.3. Appendices may be bound as separate documents for ease of handling.

A3.7 DID – Project Progress Report

DATA ITEM DESCRIPTION	
1. TITLE **Project Progress Report**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-005**
3. DESCRIPTION The Project Progress Report summarizes the Contractor's progress regarding the project milestones, schedules, plans, and deliverable end items. It provides the status of the work accomplished concerning the plan, highlights problem areas, and the corrective actions to resolve any issues.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 3.7.1 (pg. 14)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The Contractor must propose the Project Progress Report format for approval by DND. 6.1.2. The Project Progress Report must include the following: 6.1.2.1. An executive summary which covers significant elements of the report; 6.1.2.2. The Project Master Schedule with progress up to the last day of the reporting period; 6.1.2.3. Identification/update of risks; 6.1.2.4. Project performance assessment, progress, problem areas, and any work-around plans; 6.1.2.5. Update of progress for major subcontracts; 6.1.2.6. Production status against each major deliverable, the time phase of significant stages of production and the time phase of testing, validation, and verification, demonstration, and acceptance activities; 6.1.2.7. Status report on data Deliverable End Items as called up in the Contract Data Requirements List (CDRL); 6.1.2.8. Status of Engineering Change Proposals (ECPs), Deviation and Waiver requests where applicable;	

6.1.2.9. Financial review;

6.1.2.10. Action items outstanding; and

6.1.2.11. Any other areas of concern, interest, or importance.

6.2. **GENERAL FORMAT**

6.2.1. The Project Progress Report must be prepared as MS Office Suite Product

6.3. **SOFT COPY FORMAT**

6.3.1. The Project Progress Report must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Project Progress Report PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-PM-005 – Project Progress Report – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** - The Project Progress Report] PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Project Progress Report;

6.3.3.3. JTAC VTS-PM-005;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.8 DID – Significant Incident Report

DATA ITEM DESCRIPTION	
1. TITLE **Significant Incident Report**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-006**
3. DESCRIPTION The Significant Incident Report is to be used by the Contractor to notify DND of any event that may severely impact the project.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW: Para. 3.8.1 (pg. 14)** **CDRL: App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Contractor must propose the Significant Incident Report format for approval by DND.

6.1.2. The Significant Incident Report must be provided immediately upon the occurrence of any of the following situations:

6.1.2.1. A significant technical, logistical, or quality problem;

6.1.2.2. Significant schedule slippage or cost increase;

6.1.2.3. Safety incidents; and

6.1.2.4. Damage to the equipment to be delivered or Government Furnished Equipment (GFE).

6.1.3. The Significant Incident Report must contain the following:

6.1.3.1. The report number;

6.1.3.2. A brief description of the problem;

6.1.3.3. Action being taken to rectify the incident; and

6.1.3.4. Any additional significant information.

6.2. **GENERAL FORMAT**

6.2.1. The Significant Incident Report must be prepared as

6.3. **SOFT COPY FORMAT**

6.3.1. The Significant Incident Report must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Significant Incident Report PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-PM-006 – Significant Incident Report – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The Significant Incident Report PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Significant Incident Report;

6.3.3.3. JTAC VTS-PM-006;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.9 DID – Meeting Agenda

DATA ITEM DESCRIPTION	
1. TITLE **Meeting Agenda**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-007**
3. DESCRIPTION The Meeting Agenda contains the venue information and identifies the discussion items to be covered at meetings.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW: Para. 3.9.1.4 (pg. 14** **CDRL: App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Meeting Agenda must set forth the venue, identify all requirements, and list the discussion items to be covered at the meeting.

6.1.2. Venue. The Meeting Agenda must address the venue as follows:

6.1.2.1. Meeting Identification Number;

6.1.2.2. Purpose;

6.1.2.3. Date, time and location; and

6.1.2.4. Attendees.

6.1.3. Discussion items. The Meeting Agenda must address the discussion items through the following sections:

6.1.3.1. Opening Remarks;

6.1.3.2. Agenda Review;

6.1.3.3. Review of Previous Minutes;

6.1.3.4. Opened Discussion Items;

6.1.3.5. New Discussion Items;

6.1.3.6. Review of Action Items;

6.1.3.7. Next Venue; and

6.1.3.8. Closing Remarks.

6.2. SOFT COPY FORMAT

6.2.1. The Meeting Agenda must be submitted as an MS Word file type.

6.2.2. The Meeting Agenda MS Word document must be submitted via email (submission size not to exceed 7MB) as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-PM-007 – Meeting Agenda – [Rev #] – [Date of Issue]

A3.10 DID – Meeting Presentation Materials

DATA ITEM DESCRIPTION	
1. TITLE **Meeting Presentation Materials**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-008**
3. DESCRIPTION The Presentation Materials must consist of handouts or slides to be used as supplementary or supporting material during meetings.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 3.9.1.5 (pg. 14)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. This document must contain the presentation material, assembled by the Contractor, for all meetings where the Contractor is required to present or lead any portion of the meeting.

6.1.2. This document must normally consist appropriately formatted material to be used to convey information effectively and efficiently during meetings.

6.1.3. Specific presentation material content is subject to discussion between Canada and Contractor.

6.2. **GENERAL FORMAT**

6.2.1. The Meeting Presentation Materials may be prepared in the Contractor's preferred format acceptable to DND.

6.3. **SOFT COPY FORMAT**

6.3.1. The Meeting Presentation Materials must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Meeting Presentation Materials PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-PM-008 – Meeting Presentation Materials – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The Meeting Presentation Materials PDF must be submitted on CD or DVD media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Meeting Presentation Materials;

6.3.3.3. JTAC VTS-PM-008;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.11 DID – Meeting Minutes

DATA ITEM DESCRIPTION	
1. TITLE **Meeting Minutes**	2. IDENTIFICATION NUMBER **DID JTAC VTS-PM-009**
3. DESCRIPTION The Meeting Minutes contains detailed records of proceedings, discussions, decisions, and action items from meetings.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW: Para. 3.9.1.6 (pg. 14** **CDRL: App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Meeting Minutes must contain the detailed records of proceedings, discussions, decisions, and action items from the meeting and be presented through the following sections:

6.1.1.1. General – consisting of meeting identification number, purpose, date, time, and location;

6.1.1.2. Attendees, consisting of the organization each person represents and the identification of the Chairperson(s);

6.1.1.3. Opening Remarks;

6.1.1.4. **Action Item Report** - used to monitor issues, assign responsibility, direct action, and track status, history, and progress, and must consist of:

6.1.1.4.1. Item #; date initiated; required action; assigned actionee; target completion date; cross-reference to all related action items.

6.1.1.4.2. Action Item Report must be **updated** with each meeting and must consist of:

6.1.1.4.2.1. Action Item current status and the actual date completed;

6.1.1.5. Next Venue;

6.1.1.6. Closing Remarks;

6.2. **SOFT COPY FORMAT**

6.2.1. The Meeting Minutes must be submitted as a PDF file type.

6.2.2. The Meeting Minutes PDF must be submitted via email (submission size not to exceed 7MB) as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-PM-009 – Meeting Minutes – [Rev #] – [Date of Issue]

A3.12 DID – Systems Engineering Management Plan

DATA ITEM DESCRIPTION	
1. TITLE **Systems Engineering Management Plan (SEMP)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-101**
3. DESCRIPTION The SEMP describes the Contractor's strategy, plans, methodologies, and processes to manage a fully integrated engineering program IAW the contract. The SEMP describes the relationships between concurrent and sequential activities to demonstrate that a fully integrated engineering program has been achieved.	
4. RELATED DOCUMENTS **IEEE 15288.1**, *IEEE Standard for Application of Systems Engineering on Defense Programs* **IEEE 15288.2**, *IEEE Standard for Technical Reviews and Audits on Defense Programs* **ANSI/EIA-649-C**, *Configuration Management Standard*	5. CONTRACT REFERENCE **SOW**: **Para. 4.2.2.1 (pg. 18)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. **Engineering Management** 6.1.1.1. The SEMP must define the engineering organization for the contract, including the key engineering positions and the partitioning of engineering efforts between the various Contractor and subcontractor organizations. 6.1.1.2. The SEMP must describe how technical effort will be coordinated to meet cost, schedule, and performance objectives. 6.1.1.3. The SEMP must summarise planned personnel needs, applicable to the various phases of the contract, by discipline and level of expertise. 6.1.1.4. The SEMP must identify the standards (e.g., IEEE 15288 and ANSI/EIA-649-C) to be utilized by the Contractor and subcontractors to undertake the Systems Engineering, software, Configuration Management (CM), and Verification activities, including the proposed tailoring of those standards to meet requirements of the contract. 6.1.1.5. The SEMP Management/Organization portion must describe the Contractor's systems engineering organization, responsibilities, terms of reference, internal operating relationships within the company, external working relationships with subcontractors, management relationships, management procedures, and supporting and tracking system.	

6.1.2. **Systems Engineering Process**

6.1.2.1. The SEMP must define the tailored application of the Contractor's Systems Engineering process to the activities of the contract, including:

6.1.2.1.1. the major products and increments to be delivered;

6.1.2.1.2. the major outcomes to be achieved;

6.1.2.1.3. the major Systems Engineering tools that will be used for the Contract;

6.1.2.1.4. the methods for documentation and control of engineering and technical information, including expected specifications and Configuration Baselines;

6.1.2.1.5. the methods and tools for analysis and validation of system requirements;

6.1.2.1.6. the required implementation tasks, including the integration and assembly of the system; and

6.1.2.1.7. the approach, methods, procedures, and tools for systems analysis and control, including establishing and maintaining requirements traceability.

6.1.3. **Technical Risk Management**

6.1.3.1. The SEMP must describe the risk-management strategies associated with any global, engineering-related risks.

6.1.4. **Software Development and Management**

6.1.4.1. The SEMP must define the tailored application of the Contractor's software processes to the activities of the Contract, including:

6.1.4.1.1. the management of software development activities undertaken by subcontractors; and

6.1.4.1.2. the development of software being undertaken by the Contractor.

6.1.5. **System Reviews**

6.1.5.1. The SEMP must describe the approach planned to establish and conduct all System Reviews (i.e., Mandated System Reviews and Internal System Reviews) required under the contract.

6.1.5.2. For each engineering-related System Review, the SEMP must describe the relationship between the System Review and other engineering program activities.

6.1.5.3. Based on the SOW requirements for System Reviews and the Contractor's internal processes, the SEMP must detail the following information for each of the engineering-related System Reviews:

6.1.5.3.1. organizations and individuals involved in the review and their specific review responsibilities;

6.1.5.3.2. proposed review venue;

6.1.5.3.3. review objectives;

6.1.5.3.4. pre-requisites for the conduct of the review (i.e., entry criteria);

6.1.5.3.5. actions to be addressed during the System Review, including the documentation to be reviewed;

6.1.5.3.6. essential review completion criteria (i.e., exit criteria); and

6.1.5.3.7. applicable Milestone criteria specified in the contract.

6.1.6. **Growth, Evolution, and Obsolescence**

6.1.6.1. The SEMP must, for the Contractor's growth, evolution, and Obsolescence program:

6.1.6.1.1. describe the technical measures and methods to be used to identify and assess candidate elements, including hardware and software items, and the primary candidate elements to be addressed under by program;

6.1.6.1.2. describe the application of design aspects (e.g., modularity and ‘open architectures’) to improve system growth, facilitate evolution, and counter Obsolescence;

6.1.6.1.3. identify the steps to be undertaken during the acquisition phase to balance technological maturity and Obsolescence risks, and solutions to minimize the complexity (and cost) of through-life upgrades; and

6.1.6.1.4. identify the steps to be undertaken during the support phase to maintain effective and supportable equipment configurations and the expected need for upgrades.

6.1.7. **Human Engineering**

6.1.7.1. The SEMP must, for the Contractor's Human Engineering program:

6.1.7.1.1. identify the standards to be used and that have been used for COTS / MOTS items, and describe the application of those standards to meet the Human Engineering requirements of the system;

6.1.7.1.2. the activities, including system functional requirements analysis, equipment design, and procedures development activities, to be undertaken to meet the Human Engineering required under the contract; and

6.1.7.1.3. the verification methods to be applied for the Human Engineering program.

6.1.8. **Electromagnetic Environmental Effects**

6.1.8.1. The SEMP must, for the Contractor's Electromagnetic Environmental Effects (E3) program:

6.1.8.1.1. identify the standards to be used, and describe the application of those standards to meet the E3 program required under the Contract;

6.1.8.1.2. identify the E3-related requirements applicable to the system, including certification and regulatory requirements, and describe the approach to ensure that the requirements are met and to obtain all applicable certifications; and

6.1.8.1.3. describe the V&V methods to be applied for the E3 program.

6.1.9. **System Security**

6.1.9.1. The SEMP must, for the Contractor's system security program:

6.1.9.1.1. identify the security-related requirements applicable to the system;

6.1.9.1.2. describe the approach to ensure that the security-related requirements are met and to obtain any applicable certifications; and

6.1.9.1.3. describe the method(s) to verify that the system security-related requirements have been met.

6.1.10. **Configuration Management**

6.1.10.1. The SEMP must describe the Contractor’s CM methodology, processes, and activities for meeting the CM requirements of the contract, including:

6.1.10.1.1. the approach planned to establish and maintain Configuration Control and audit of identified system products and processes;

6.1.10.1.2. the requirements for establishing Configuration Baselines and the documentation to be used to define each baseline; and

6.1.10.1.3. the approach planned to establish and maintain control of external and internal interfaces.

6.1.10.2. Configuration Identification

6.1.10.2.1. Selection of Configuration Items

6.1.10.2.1.1. The SEMP must define the procedures for selecting CIs and detail the criteria used for their selection. By inclusion or reference, the SEMP must define the list of CIs and their respective specifications and other defining top-level documentation.

6.1.10.2.2. Configuration Baselines

6.1.10.2.2.1. The SEMP must define the requirements for establishing Configuration Baselines and include:

6.1.10.2.2.1.1. the procedures for the establishment of, at least, the Functional, Allocated and Product Baselines; and

6.1.10.2.2.1.2. the documentation to be used to define each Configuration Baseline.

6.1.10.2.3. Engineering Release

6.1.10.2.3.1. The SEMP must define the procedures for issuing approved configuration documentation, and amendments to this documentation, to functional activities (e.g., manufacturing, logistics, and acquisition) within the Contractor's organization.

6.1.10.2.4. Configuration Control

6.1.10.2.4.1. The SEMP must define the procedures, including DND involvement, and associated documentation for processing the following:

6.1.10.2.4.1.1. classification of changes, and the level of authority for change approval/concurrence;

6.1.10.2.4.1.2. Contractual change requests;

6.1.10.2.4.1.3. Major Changes;

6.1.10.2.4.1.4. Minor Changes;

6.1.10.2.4.1.5. requests for Deviations/Waivers; and

6.1.10.2.4.1.6. Specification Change Notices.

6.1.10.3. Configuration Status Accounting (CSA)

6.1.10.3.1. The SEMP must define the procedures for CSA, including:

6.1.10.3.1.1. methods for collecting, recording, processing, and maintaining the data required to provide accounting information status through reports on the CSA database.

6.1.10.3.1.2. a complete description of the CSA database for the areas related to:

6.1.10.3.1.2.1. the identification of the currently approved configuration documentation and configuration identifiers associated with each CI;

6.1.10.3.1.2.2. the status of proposed engineering changes from initiation to implementation;

6.1.10.3.1.2.3. the results of configuration audits, and the status and disposition of discrepancies;

6.1.10.3.1.2.4. the status of requests for deviations;

6.1.10.3.1.2.5. the ability to trace changes from the baseline documentation of each CI; and

6.1.10.3.1.2.6. the effectiveness and installation status of configuration changes to all CI's.

6.1.10.4. Configuration Audits

6.1.10.4.1. The SEMP must:

6.1.10.4.1.1. describe the Contractor's methodology and processes to establish and conduct Physical Configuration Audits (PCA);

6.1.10.4.1.2. describe the plans, procedures, documentation, and schedules for the audits; and

6.1.10.4.1.3. describe the format for reporting results of in-process audits.

6.1.10.5. Subcontractor Control

6.1.10.5.1. The SEMP must define the methods used to ensure that subcontractors comply with the contract's Configuration Management requirements.

6.1.11. **Verification**

6.1.11.1. The SEMP must, for the Contractor's Verification program:

6.1.11.1.1. describe the overall Verification program objectives, activities, and schedule;

6.1.11.1.2. describe the use of the RTVM and the extent to which previous Verification results are proposed to be used for Acceptance Verification purposes;

6.1.11.1.3. describe the process for recording Failure reporting and analysis and the approach to regression testing; and

6.1.11.1.4. identify the requirements for DND Personnel and other resources to conduct the Verification program.

6.1.11.2. Verification Activities

6.1.11.2.1. The SEMP must describe the verification activities to demonstrate that the system offered for acceptance complies with the contract requirements.

6.1.11.2.2. The SEMP must describe all test activities to be included in the verification of the system.

6.1.11.2.3. The SEMP must detail requirements and procedures for the DND provision of resources for and involvement in or witness verification activities.

6.1.11.2.4. Where the Contractor proposes to claim previous verification results as precluding the need for specific verification activities within the Verification program, the SEMP must summarise:

6.1.11.2.4.1. the scope and context of the previous verification activities;

6.1.11.2.4.2. the reasons why the previous results preclude the need for specific verification activities, including how the previous results are valid for the configuration of the system and the intended operational role and environment; and

6.1.11.2.4.3. how the previous verification results will be integrated into the planned verification activities and the RTVM.

6.1.11.3. Flow Diagram

6.1.11.3.1. The SEMP must include an overall flow diagram of the verification program for the system; this flow must be sequentially arranged to include:

6.1.11.3.1.1. all significant verification milestones and efforts in the development phase associated with each class of verification;

6.1.11.3.1.2. hardware and software integration schedules;

6.1.11.3.1.3. requirements for concurrency of verification activities;

6.1.11.3.1.4. the Contractor/subcontractor or group responsible for each verification event; and

6.1.11.3.1.5. any additional information that clarifies the description of the test program.

6.1.11.3.2. The flow diagram must reflect predicted dates for significant milestones.

6.1.11.4. Verification Objectives

6.1.11.4.1. The SEMP must specify the broad objective for each verification phase for the system, and objectives must be specified to verify part or all the system or lower-level specifications (e.g., subsystem specifications).

6.1.11.5. Test Readiness Reviews

6.1.11.5.1. The SEMP must outline the procedures for conducting Test Readiness Reviews (TRRs).

6.1.11.6. Failure and Corrective Action Management

6.1.11.6.1. The SEMP must describe the Problem Resolution System used to collect Failure data for the system and identify when it will be established.

6.1.11.6.2. The SEMP must identify the process used to, analyze failures and track the corrective action taken due to a failure and the interaction with the engineering development groups, logistic organization, subcontractors, and the DND.

6.1.11.6.3. The SEMP must identify how regression testing for the system will be managed following test failure or design change throughout the Verification program.

6.2. SOFT COPY FORMAT

6.2.1. The SEMP must be submitted as a PDF file type.

6.2.2. **Soft Copy format submission size below 7MB** – The SEMP may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-101 – SEMP – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB** - The SEMP must be submitted on a USB A USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. SEMP;

6.2.3.3. JTAC VTS-SE-101;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.13 DID – Mandated System Review Package

DATA ITEM DESCRIPTION	
1. TITLE **Mandated System Review (MSR) Package**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-102**
3. DESCRIPTION The purpose of the MSR Package is to allow the Contractor and DND Representatives to prepare for MSRs to gain maximum value from the reviews.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 4.2.5.4 (pg. 18)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The MSR Package must include information to be reviewed and discussed at the specific MSR, including:

6.1.1.1. documentation that is necessary to show that the objectives of the MSR have been satisfied;

6.1.1.2. presentation material on the topics of discussion as described in the SOW;

6.1.1.3. all relevant documents not previously delivered and needed to meet the objectives and entry criteria of the MSR;

6.1.1.4. where applicable to the MSR, status of technical performance measures against expectations; and

6.1.1.5. where applicable to the MSR, current configuration status along with any identified discrepancies in Configuration Baselines.

6.2. **SOFT COPY FORMAT**

6.2.1. The MSR Package must be submitted as a PDF file type.

6.2.2. **Soft Copy format submission size below 7MB** – The MSR Package may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-102 – MSR Package – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB -** The MSR Package must be submitted on a USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. MSR Package;

6.2.3.3. JTAC VTS-SE-102;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.14 DID – Equipment Specification

DATA ITEM DESCRIPTION	
1. TITLE **Equipment Specification**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-103**
3. DESCRIPTION The Equipment Specification describes the overall system, its subsystems, and major assemblies while providing performance and design traceability to the System Requirements Specification (SRS).	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW: Para. 4.2.7(pg. 20)** **CDRL: App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The subject matter section of the Equipment Specification must include, but not be limited to, the following: 6.1.1.1. A detailed description of the total system and each of its subsystems and major assemblies. 6.1.1.2. The description must be consistent with the anticipated Equipment Breakdown Structure; 6.1.1.3. A detailed description of the integration of the system/subsystems/major assemblies and their relationships. 6.1.1.4. The description must include the use of system block diagrams, where applicable; 6.1.1.5. A detailed performance and design requirements of the system that are traceable back to the SRS; 6.1.1.6. A detailed description of the integration and upgrade activities to meet all the requirements of the SRS; 6.1.1.7. A cross-reference matrix that: 6.1.1.7.1. shows the traceability of each requirement in the Equipment Specification to the applicable requirement(s) of the SRS; 6.1.1.7.2. identifies at least one traceable requirement from the Equipment Specification to every requirement of the SRS;	

6.1.1.7.3. identifies the requirements of the SRS that are not satisfied; and

6.1.1.7.4. describes or references (9.2 f. above) the integration and upgrades to satisfy each of the requirements of Section 2 of the SRS; and

6.1.1.8. Vendor specification sheets for installed, or to be installed, off-the-shelf equipment other than the Government Supplied Materiel (GSM). (MANDATORY – must be filled in).

6.2. **GENERAL FORMAT**

6.2.1. The Equipment Specification must be prepared as a PDF in the Contractors format.

6.3. **SOFT COPY FORMAT**

6.3.1. The Equipment Specification must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Equipment Specification PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-103 – Equipment Specification – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** - The Equipment Specification PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Equipment Specification;

6.3.3.3. JTAC VTS-SE-103;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.15 DID – Requirements Traceability Verification Matrix

DATA ITEM DESCRIPTION	
1. TITLE **Requirements Traceability Verification Matrix (RTVM)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-104**
3. DESCRIPTION The RTVM provides bidirectional traceability from high-level system performance requirements to the lowest-level requirements. The RTVM shows the traceability and allocation of the specification tree requirements (i.e., performance specification, detailed specification, subsystem specification, software requirements specification, interface specification, and design documentation). The RTVM is also used to verify how each requirement is verified.	
4. RELATED DOCUMENTS Technical Specification at Appendix A1.0 to ANNEX A	5. CONTRACT REFERENCE **SOW**: **Para. 4.2.7.1 (pg. 20)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The RTVM must provide backwards and forward traceability through multiple levels of design hierarchy (i.e., the RTVM must document each requirement from its source through analysis, design, testing, and acceptance) to assess the impact of potential specification changes. 6.1.2. The RTVM must include the verification criteria for each requirement for testing purposes. 6.1.3. <u>For the PDR and CDR</u>, the RTVM must contain the following: 6.1.3.1. **Architecture Description Page**: Include a detailed description of the RTVM, show relationships, and define all the terms, acronyms used in the RTVM fields. 6.1.3.2. **Unique Identification:** A unique identifier for each requirement; 6.1.3.3. **Requirement Source & Reference:** The paragraph number and requirement statement (or a summary of the requirement to provide context); 6.1.3.4. **Requirement Allocation**: Enter the specific system, subsystem, hardware item, component, Computer Software Configuration Item, Computer Software Component, and Computer Software Unit that each	

requirement has been allocated. System-level requirements must be allocated to all Configuration Items defined for the system.

6.1.3.5. **Form of End Product**: Enter the form and maturity level of the end product used for verification. For example, the form can be the system, subsystem, unit level, software configuration Item, and the maturity level can be the prototype, first production article, or final configuration item.

6.1.3.6. **Verification Method**: For each requirement, enter the verification method as follows:

6.1.3.6.1. “Certification” – Two forms of Certification are possible: - the first would be from a 3rd party recognized association of technical knowledge and expertise in the functional area being sought, and the second from an "in house" qualified expert that would certify that the standards are met IAW their testing or investigation and is attesting to their professional opinion.

6.1.3.6.2. “Analysis” – An element of verification that uses established technical or mathematical models or simulations, algorithms, charts, graphs, circuit diagrams, or other scientific principles and procedures to provide evidence that stated requirements were met.

6.1.3.6.3. “Inspection” – An element of verification that is generally non-destructive and typically includes the use of sight, hearing, smell, touch, and taste; simple physical manipulation; and mechanical and electrical gauging and measurement.

6.1.3.6.4. “Demonstration” – An element of verification that involves the actual operation of an item to provide evidence that the required functions were accomplished under specific scenarios. The items may be instrumented, and performance monitored.

6.1.3.6.5. “Test” – An element of verification in which scientific principles and procedures are applied to determine the properties or functional capabilities of items.

6.1.3.7. **Description of Verification:** A brief description of the verification method, intended as a vehicle for early agreement by both parties to define the scope of the verification activities.

6.1.3.8. **Comments:** Enter explanatory notes as required.

6.1.4. <u>For the TRR and after completion of the Acceptance Verification (and ATRs)</u>, the RTVM must contain the following:

6.1.4.1. **Verification Document**: Enter the document number, title, and date of the verification document that contains the verification method.

6.1.4.2. **Verification Document Paragraph**: Enter the verification document paragraph number that provides the verification method.

6.1.4.3. **Verification Procedure**: Enter the verification procedure section and verification procedure step(s) that provides the verification method for each requirement.

6.1.4.4. **Other Tests**: Enter the names of other tests conducted before verification of the requirement, where the requirement is being tested.

6.1.4.5. **Verification Results**: Enter the results of the verification for each requirement. Did the system under test conform to the requirement? (Yes, No).

6.1.4.6. **Corrective Actions**: Enter all corrective actions that are taken and the results of the corrective actions.

6.1.4.7. **Comments**: Enter explanatory notes as required.

6.2. SOFT COPY FORMAT

6.2.1. The RTVM must be in an electronic relational database DOORS 9.5 format that can be manipulated to show bidirectional requirements traceability and track the verification of each requirement.

6.2.2. **Soft Copy format submission size below 7MB** – The RTVM may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-104 – RTVM – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB -** The RTVM must be submitted on a USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. RTVM;

6.2.3.3. JTAC VTS-SE-104;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.16 DID – Reliability and Maintainability (R&M) Predictions Data

DATA ITEM DESCRIPTION	
1. TITLE **Reliability and Maintainability (R&M) Predictions Data**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-105**
3. DESCRIPTION The R&M Predictions Data provides the baseline reliability and maintainability data for the equipment/system.	
4. RELATED DOCUMENTS GEIA-STD-0007-B, Logistics Product Data	5. CONTRACT REFERENCE **SOW**: **Para. 4.3.1.2.1.5 (pg. 21)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Contractor must propose the R&M Predictions Data format for approval by DND.

6.1.2. The Contractor must include the following within the R&M Predictions Data:

6.1.2.1. Inherent Availability (GEIA 2560)

6.1.2.2. Failure Rate (GEIA 2240)

6.1.2.3. Means of Detection (GEIA 3370)

6.1.2.4. Built-In-Test Detectability Level Percentage (GEIA 1360)

6.1.2.5. Fault Isolation (concerning Ambiguity Groups) (GEIA 2260)

6.1.2.6. Maximum Time to Repair (GEIA 3170)

6.1.2.7. Percentile (Maximum time to repair achieved) (GEIA 3880)

6.1.2.8. Mean Time To Repair (GEIA 3360)

6.1.2.9. Mean Time Between Failures (GEIA 3270)

6.1.2.10. Mean Time Between Maintenance Actions (GEIA 3280)

6.1.2.11. Mean Time Between Maintenance Induced (GEIA 3290)

6.1.2.12. Mean Time Between Maintenance No Defect (GEIA 3310)

6.1.2.13. Mean Time Between Preventive Maintenance (GEIA 3300)

6.1.2.14. Measurement Base (GEIA 3380)

6.1.2.15. Mean Time Between Removals (GEIA 3340)

6.1.2.16. Wear out Life (GEIA 5820)

6.1.3. The encoding of the data elements must be IAW GEIA-STD-0007-B; the information within parenthesis is the Data Type number for the particular data element.

6.1.4. The quality of the data, i.e., predicted, measured, or actual, must be indicated for the R&M Predictions Data provided.

6.2. **GENERAL FORMAT**

6.2.1. The Reliability and Maintainability (R&M) Predictions Data must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Reliability and Maintainability (R&M) Predictions Data must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Reliability and Maintainability (R&M) Predictions Data PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-105 – Reliability and Maintainability (R&M) Predictions Data – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The Reliability and Maintainability (R&M) Predictions Data PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Reliability and Maintainability (R&M) Predictions Data;

6.3.3.3. JTAC VTS-SE-105;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.17 DID – System Data Packages & Equipment Lists

DATA ITEM DESCRIPTION	
1. TITLE **System Data Packages & Equipment Lists**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-106**
3. DESCRIPTION The System Data Packages and Equipment List must be comprised of all the technical details for hardware, software and data to be delivered for the JTAC VTS and a full list of all equipment procured for the JTAC VTS as a matter of record denoting which items in the equipment list are sensitive or controlled items as well as which are consumables.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 4.4.3.1 (pg. 26)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The System Data Packages must contain all information required to develop NATO Stock Numbers (NSN) for entry into the Canadian Forces Supply System (CFSS) for cataloguing. The exact information required will be determined by the Life Cycle Materiel Manager (LCMM) during the design and will include, at a minimum, the following information for each item / equipment: 6.1.2. 6.1.1.1. Sensitive or Controlled Good; 6.1.3. 6.1.1.2. Item Name; 6.1.4. 6.1.1.3. Manufacturer; 6.1.5. 6.1.1.4. CAGE Code 6.1.6. 6.1.1.5. Model Number; 6.1.7. 6.1.1.6. Part Number; 6.1.8. 6.1.1.7. Serial Number; 6.1.9. 6.1.1.8. Options associated with the equipment; 6.1.10. 6.1.1.9. Description; 6.1.11. 6.1.1.10. Physical dimensions (H x W x L); 6.1.12. 6.1.1.11. Weight;	

6.1.13. 6.1.1.12. Physical location;

6.1.14. 6.1.1.13. Replacement Cost;

6.1.15. 6.1.1.14. Drawings and/or photographs; and

6.1.16. 6.1.1.15. High-level assembly drawings.

6.2. **SOFT COPY FORMAT**

6.2.1. 6.2.1. The System Data Packages & Equipment List may be in the Contractor's preferred format acceptable to DND.

6.2.2. **Soft Copy format submission size below 7MB** – The Engineering Drawings and Associated Lists may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-106 – Engineering Drawings and Associated Lists – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB** - The Engineering Drawings and Associated Lists must be submitted on a USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. Engineering Drawings and Associated Lists;

6.2.3.3. JTAC VTS-SE-106;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.18 DID – Cybersecurity Architectural Design Document (CADD)

DATA ITEM DESCRIPTION	
1. TITLE **Cybersecurity Architectural Design Document (CADD)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-107**
3. DESCRIPTION The purpose of the Cybersecurity Architectural Design Document (CADD) is to describe the Cybersecurity Architecture required to meet the System Cybersecurity Requirements for the JTAC VTS.	
4. RELATED DOCUMENTS A) NIST 800-160 Vol 1 version 2 B) DNDAFv1.8.1 C) UAFv1.1 D) NAFv4 E) ISO/IEC/IEEE 42010:2011 Systems and software engineering — Architecture description F) ISO/IEC/IEEE 15288.1:2014 Standard for Application of Systems Engineering on Defense Programs G) ISO/IEC/IEEE 15288.2:2014 Standard for Technical Reviews and Audits on Defense Programs Additional information to assist in the application of the data item and potential interdependencies with other DIDs. System Architecture, views and viewpoints (where available) Architecture, views and viewpoints (where available) System Requirements System Cybersecurity Requirements	5. CONTRACT REFERENCE **SOW**: **Para. 4.5.6.1 (pg.29)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The Cybersecurity Architectural Design Document (CADD) document describes the representative cybersecurity architecture of the system. The CADD may be included as part of the SEMP DID - JTAC VTS-SE-117. 6.1.2. The CADD must include an overview with a summary of the purpose of this document including security or privacy considerations. 6.1.3. System Scope	

6.1.3.1. The CADD must refer to or include system identification information which may include:

6.1.3.1.1. Identification numbers;

6.1.3.1.2. Titles;

6.1.3.1.3. Version numbers; and

6.1.3.1.4. Release numbers.

6.1.3.2. The CADD must refer to or include the following content as applicable:

6.1.3.2.1. conceptual and logical System Breakdown Structure identifying functional elements needing protection;

6.1.3.2.2. threat model used in defining CS threat context;

6.1.3.2.3. system context diagram clearly identifying external connections and interfaces, and considerations for related vulnerability mitigations;

6.1.3.2.4. System Internal Interfaces Description;

6.1.3.2.5. HW/Network diagram;

6.1.3.2.6. SW to HW host allocation;

6.1.3.2.7. Communications Links (description and diagram);

6.1.3.2.8. functional flow block diagram; end-to-end data flow or ICD;

6.1.3.2.9. data schemas for messaging and persistence and identification of data needing to be protected, partitioned or segregated;

6.1.3.2.10. system use cases to illustrate the behavioural aspects of the System;

6.1.3.2.11. state models identifying, when applicable, secure modes of the system and where applicable the need to isolate parts of the system in different runtime elements;

6.1.3.2.12. the trust relationships between system elements and between the system and external systems as may be applicable; and

6.1.3.2.13. CS Architectural Views and Models at the logical level.

6.1.3.3. System Overview

6.1.3.3.1. The CADD must specify which Architectural Frameworks and Architecture Description Languages (e.g. UML, SysML) will be used to specify the Security Architecture Views and Models. The Architectural Frameworks selected may be a hybrid of more than one framework such as DNDAF, UAF, NAF, etc.

6.1.3.3.2. The CADD must specify which Architectural tool(s) and reporting format will be used to maintain the CADD views and models.

6.1.3.3.3. In the development of the CADD, the output from ref A, section 3.4.4 Architecture Definition Process activities and tasks must be considered and tailored to the level of details that System Architecture is performed on the project.

6.1.3.3.4. The CADD must include consideration of cybersecurity concerns listed at Ref. A, Table F-1: Taxonomy of Security Design Principles.

6.1.3.3.5. The CADD must identify additional Cybersecurity System Requirements resulting from the architecture definition process.

6.2. GENERAL FORMAT

6.2.1. The Cybersecurity Architectural Design Document (CADD) may be prepared in the Contractor‘s format following a Cybersecurity Architecture Definition process as defined in NIST 800-160 v1.

6.2.2. Change History

6.2.2.1. Cybersecurity Architectural Document (CADD) must include a change history summary section which contains the following:

6.2.2.1.1. a clear and unique version/revision identifier for each submission or resubmission CADD;

6.2.2.1.2. clear identification of revisions or amendments within the document from its previous submission; and

6.2.2.1.3. rationale for the revisions and amendments.

6.2.2.2. All the above revisions / amendments must be clearly identified within the document by using suitable change tracking features or configuration management such as "Track Changes", side bars, etc.

6.3. SOFT COPY FORMAT

6.3.1. The CADD must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The CADD PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-107 – CADD – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The CADD PDF must be submitted on CD or DVD media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. CADD;

6.3.3.3. JTAC VTS-SE-107;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.19 DID – Configuration Management Plan

DATA ITEM DESCRIPTION	
1. TITLE **Configuration Management Plan**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-108**
3. DESCRIPTION The CMP describes the configuration management (CM) program, including the methods, procedures, and controls used to assure effective configuration identification, change control, status accounting, and audits of the configuration.	
4. RELATED DOCUMENTS ACMP-2009-SRD-41 Examples of CM Plan Requirements GEIA-HB-649 CM Standard Implementation Guide Standard Report Format DID	5. CONTRACT REFERENCE **SOW**: **Para. 5.2.1.1(pg. 29** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Contractor must prepare the CMP IAW the related documents at para 4 of this DID.

6.1.2. General defence system definition and scope;

6.1.3. Description of activities and procedures for each major CM function;

6.1.4. Organization, roles, responsibilities, and resources;

6.1.5. Definition of terms;

6.1.6. Programmatic and organizational interfaces;

6.1.7. Deliverables, milestones, and schedules; and

6.1.8. Subcontract flow-down requirements.

6.2. **GENERAL FORMAT**

6.2.1. The Configuration Management Plan must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Configuration Management Plan must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Configuration Management Plan PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-108 – Configuration Management Plan – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The Configuration Management Plan PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Configuration Management Plan;

6.3.3.3. JTAC VTS-SE-108;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.20 DID – Software Version Description Document (SVDD)

DATA ITEM DESCRIPTION	
1. TITLE **Software Version Description Document (SVDD)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-109**
3. DESCRIPTION The Software Version Description Document (SVDD) identifies and describes a software version comprising one or more CSCIs. It is used to release, track and control software versions. The SVDD applies to the software's initial release, subsequent Block Changes or releases, and any site-specific variants of the software.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 5.3.2.1 (pg. 30)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. This DID is not meant to be restrictive and may be tailored by the Contractor with the Technical Authority's agreement. The resulting document may be prepared in Contractor's format and must contain sufficient detail to address the following subjects fully:

6.1.2. **Identification**

6.1.2.1. Software system title

6.1.2.2. Variant ID – Identify the applicable software system variant or adaptation (e.g., French or English)

6.1.2.3. Block Change or release number – Identify the software Block Change or release number applicable to the above variant

6.1.2.4. Release date

6.1.3. **Security Classification** – State the security level of the software version.

6.1.4. **Applicability** – Identify the system to which the software version applies.

6.1.4.1. Applicable System – Copy the System Abstract paragraph from the System Overview (SOV) document to establish the system context and applicability

6.1.4.2. Target platform – Identify the specific computing platform or class of platforms to which the relevant Block Change or version is applicable

6.1.5. **Version Description**

6.1.5.1. Inventory of materials released – List all physical distribution media and associated documentation for the software being released. Use titles, identifying numbers, dates, version numbers, and release numbers, as applicable. Indicate any applicable restrictions regarding licensing, duplication, and security considerations

6.1.5.2. Inventory of software contents – For each physical distribution medium, list the computer files contained thereon. Include the file names, versions, dates, and any other pertinent information

6.1.5.3. Target platform configuration – Specify the required configuration of the target platform before this software version can be installed and executed, or reference a hardware specification document

6.1.5.4. Adaptation data – For the initial software release, describe the site-specific data or customizations featured in this software version, corresponding to the target platform above. For subsequent releases, describe any changes to the site-specific data

6.1.5.5. Installation and check-out instructions – Give detailed instructions on:

6.1.5.5.1. How to install this software release on the target platform

6.1.5.5.2. How to determine whether the installed software is working properly

6.1.5.5.3. Point-of-contact in case difficulties are encountered with the software installation

6.1.5.5.4. Applicable security, privacy, or safety precautions

6.1.5.6. Disposal instructions – What to do with the previously released software version after this version has been successfully installed. Include security considerations if applicable

6.1.5.7. Changes installed – Describe the changes, which have been implemented in the current software version as compared to the previous one. These software changes may include both enhancements as well as fault fixes. This paragraph does not apply to the initial release of the software

6.1.5.8. Possible problems and known errors – Identify any possible problems or known errors in the software version, including:

6.1.5.8.1. How to avoid the relevant errors

6.1.5.8.2. How to recognize and recover from the consequences of the errors

6.1.5.8.3. What is being done to correct the problems permanently, and when a resolution can be expected

6.1.5.9. Related documents – List any other documents, which apply to the software version being released, but which are physically not included in this

release. Indicate the document titles, document numbers, version numbers, version dates, and publication source

6.1.6. **Supplementary Notes** – Any additional information about the software version, which may facilitate installer or user understanding (e.g. acronyms, definitions, background information, and rationale).

6.2. **GENERAL FORMAT**

6.2.1. The Software Version Description Document (SVDD) must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Software Version Description Document (SVDD) must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Software Version Description Document (SVDD) PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-109 – Software Version Description Document (SVDD) – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The Software Version Description Document (SVDD)PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Software Version Description Document (SVDD);

6.3.3.3. JTAC VTS-SE-109;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.21 DID – Equipment Breakdown Structure (EBS)

DATA ITEM DESCRIPTION	
1. TITLE **Equipment Breakdown Structure (EBS)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-110**
3. DESCRIPTION The EBS decomposes a system into discrete elements for purposes of; • identifying candidates for logistics analysis as detailed in the Logistics Support Analysis (LSA) Plan; • identifying configuration items as detailed in the CM Plan; and • identifying those items used within another system. This common item list will be used by the Technical Authority to rationalize test requirements and to identify common repair parts.	
4. RELATED DOCUMENTS Standard Report Format DID JTAC VTS-PM-009	5. CONTRACT REFERENCE **SOW**: **Para. 5.3.3.1 (pg. 30)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The Contractor must structure the EBS Report IAW the format specified by the Standard Report Format DID JTAC VTS-PM-009. 6.1.2. The Contractor must list the following under the Subject Matter part of the EBS Report: 6.1.2.1. The EBS in a family tree format; 6.1.2.2. The relationship of items which combine to perform the same function; and 6.1.2.3. Items used in other systems. 6.2. **GENERAL FORMAT** 6.2.1. The Equipment Breakdown Structure (EBS)] must be prepared as a PDF. 6.3. **SOFT COPY FORMAT** 6.3.1. The Equipment Breakdown Structure (EBS) must be submitted as a PDF file type.	

6.3.2. **Soft Copy format submission size below 7MB** – The Equipment Breakdown Structure (EBS)] PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-110 – Equipment Breakdown Structure (EBS) – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The Equipment Breakdown Structure (EBS) PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Equipment Breakdown Structure (EBS);

6.3.3.3. JTAC VTS-SE-110;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.22 DID – Engineering Change Proposal

DATA ITEM DESCRIPTION	
1. TITLE **Engineering Change Proposal (ECP)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-111**
3. DESCRIPTION An ECP is a request for authorization to make changes to an approved baseline. An ECP includes the documentation both to describe and to substantiate the engineering change.	
4. RELATED DOCUMENTS **ACMP-2009** – *Guidance on Configuration Management*	5. CONTRACT REFERENCE **SOW**: **Para. 5.4.2 (pg. 30)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The following refers to the ECP form following this DID.

6.1.2. **Block 1**. The Contractor must enter the submittal date of the ECP.

6.1.3. **Block 2**. The Contractor must enter the originating organization's name, address and contact information.

6.1.4. **Block 3**. The Contractor must classify the ECP IAW ACMP-2009 and enter the class of ECP as either "Class I" or "Class II".

6.1.5. **Block 4**. The Contractor must use at least one of the following codes to classify the ECP:

6.1.5.1. B – Functional Baseline, Allocated Baseline or Product Baseline changed from established baseline;

6.1.5.2. C – Compatibility with interfacing items;

6.1.5.3. D – Delivered operational or maintenance manuals require change;

6.1.5.4. G – Government Furnished Equipment affected;

6.1.5.5. I – Interchangeability or replaceability affected;

6.1.5.6. O – Operational or logistics support change;

6.1.5.7. P – Personnel skills, manning, training or human factors engineering;

6.1.5.8. S – Safety or security; or

6.1.5.9. Z – Contractual item such as cost or schedule.

6.1.6. **Block 5**. The Contractor must recommend the priority for processing the ECP from the following:

6.1.6.1. E - Emergency. Vital modification is required to rectify a condition that may result in a serious hazard to personnel or equipment or seriously compromise national security. ECP to be actioned within 24 hours.

6.1.6.2. U - Urgent. Urgent modification is required to rectify a condition that results in degraded mission effectiveness. ECP to be actioned within five (5) days.

6.1.6.3. R - Routine. ECP to be actioned within 30 days.

6.1.7. **Block 6**. The Contractor must describe the ECP with the following:

6.1.7.1. No. A unique number consisting of “ECP-Y-NNN”, where:

6.1.7.1.1. Y – C (Contractor) or P (Project Office – DND) indicating ECP originator, and

6.1.7.1.2. NNN - Unique serial number for the ECP;

6.1.7.2. Type – P (Preliminary) or F (Final);

6.1.7.3. Revision – Enter revision indicator to identify version; and

6.1.7.4. SYSTEM DESIGNATION – Identify and describe the system/sub-system affected by the ECP. Include reference to affected configuration identifier(s).

6.1.8. **Block 7.**

6.1.8.1. The Contractor must list all specifications affected by the ECP.

6.1.8.2. The Contractor must list all documents affected by the ECP.

6.1.8.3. The Contractor must submit copies of the affected specifications and documents with the ECP.

6.1.9. **Block 8.**

6.1.9.1. The Contractor must list all drawings affected by the change.

6.1.9.2. The Contractor must submit copies of the affected drawings with the ECP.

6.1.10. **Block 9.** The Contractor must enter a brief title that identifies the ECP.

6.1.11. **Block 10.**

6.1.11.1. The Contractor must describe the engineering change.

6.1.11.2. Supplementary information may be attached to the ECP to describe the proposed change.

6.1.12. **Block 11.**

6.1.12.1. The Contractor must explain the need for the engineering change.

6.1.12.2. The Contractor must explain the benefit to Canada, such as enhanced performance, range, reliability, or maintainability.

6.1.13. **Block 12.**

6.1.13.1. The Contractor must state the contract number affected by the ECP.

6.1.13.2. The Contractor must identify the contract line item number affected by the proposed engineering change.

6.1.14. **Block 13.**

6.1.14.1. The Contractor must indicate the estimated date when change can be incorporated into the production.

6.1.14.2. The Contractor must indicate the planned serial number or lot number upon which the change will be implemented.

6.1.15. **Block 14.**

6.1.15.1. The Contractor must provide the delivery schedule of items incorporating the engineering change.

6.1.15.2. The Contractor must identify if the change is a variance from the current established production and delivery schedule.

6.1.16. **Block 15.**

6.1.16.1. Block 15a. The Contractor must indicate the lot numbers or serial numbers to be retrofitted due to the change.

6.1.16.2. Block 15b. The Contractor must enter details of delivery schedule, quantities, and locations for completing the retrofit due to the change.

6.1.17. **Block 16.** The Contractor must estimate the total cost or savings that results if the ECP is approved.

6.1.18. **Block 17.** The Contractor must identify which configuration items (CI) will change due to the ECP's approval.

6.1.19. **Block 18.** The Contractor must indicate which other CI will be affected by the ECP's approval.

6.1.20. **Block 19.** The Contractor must state whether other Contractors or Government activities will be affected by the ECP.

6.1.21. **Block 20.**

6.1.21.1. The Contractor must describe the performance change that results if the ECP is approved.

6.1.21.2. The Contractor must describe the impact upon performance specifications, including the defined functional and physical interfaces, which would be affected by the ECP.

6.1.22. **Block 21.** The Contractor must describe other effects, such as the effect upon health and safety if the ECP is approved.

6.1.23. **Block 22.** The Contractor must describe the effects of the proposed change upon performance in quantitative terms related to the defence system and CI specifications.

6.1.24. **Block 23.**

6.1.24.1. The Contractor must print the name of the individual authorized to submit the ECP.

6.1.24.2. The Contractors' authorized individual must sign and date the ECP.

6.1.25. **Block 24.**

6.1.25.1. The Contractor must indicate the effects of the proposed engineering change upon configuration identification and contract reference by checking the corresponding box at 24a through 24e.

6.1.25.2. The Contractor must describe the effects upon the product configuration identification and contract specifications with reference to Specification Change Notices (SCNs), Notices of Revision (NORs), or other enclosure(s).

6.1.25.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 24a through 24e.

6.1.26. **Block 25.**

6.1.26.1. The Contractor must indicate the effects of the proposed engineering change upon operational employment by checking the corresponding boxes at blocks 25a through 26j.

6.1.26.2. The Contractor must explain these effects within enclosures.

6.1.26.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 25a through 25j.

6.1.26.4. The Contractor must use quantitative values when reliability and service life are affected. Survivability includes nuclear survivability.

6.1.27. **Block 26.**

6.1.27.1. The Contractor must indicate the effects of the proposed engineering change upon Integrated Logistics Support (ILS) by checking the corresponding boxes at blocks 26a through 26n.

6.1.27.2. The Contractor must explain these effects within enclosures.

6.1.27.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 26a through 26n.

6.1.27.4. The Contractor must indicate the method used to determine ILS plans and items required to support the new configuration.

6.1.28. **Block 27.**

6.1.28.1. The Contractor must indicate other considerations of the proposed engineering change by checking the boxes at blocks 27a through 27i.

6.1.28.2. The Contractor must explain the effects within enclosures.

6.1.28.3. The Contractor must identify the enclosures and their relevant paragraph numbers within the space adjacent to blocks 27a through 27i.

6.1.29. **Block 28.**

6.1.29.1. The Contractor must summarize the alternative solutions considered, such as revisions of operation, maintenance procedures, inspections, servicing requirements, or part replacement schedules.

6.1.29.2. The Contractor must analyze the alternatives and identify the advantages and disadvantages inherent to each alternative.

6.1.29.3. The Contractor must present supporting data with the proposal to authenticate the trade-off analysis if the analysis addresses new concepts or new technology.

6.1.29.4. The Contractor shows the reasons for adopting the alternative proposed by the ECP.

6.1.30. **Block 29.**

6.1.30.1. The Contractor must recommend additional tests, trials, installations, prototypes, fit checks, or other verification that proves the proposed engineering change performs as expected.

6.1.30.2. The Contractor must recommend the test objective, test vehicle(s), and GFE to be used for the verification.

6.1.31. **Block 30.**

6.1.31.1. The Contractor must recommend whether to retrofit the engineering change into accepted items.

6.1.31.2. The Contractor must substantiate the retrofit recommendation with data and a brief description of the action required.

6.1.32. **Block 31.** The Contractor must show the work hours, material costs, and subcontract costs to retrofit the defence system.

6.1.33. **Block 32**. The Contractor must show the work hours required to test the defence system following retrofit.

6.1.34. **Block 33.** The Contractor must state whether to incorporate the proposed change before, after, or concurrently with other approved engineering changes.

6.1.35. **Block 34.**

6.1.35.1. The Contractor must indicate whether one or more Contractor field service representatives (FSR) are required for the retrofit.

6.1.35.2. If “yes” to FSR, then the Contractor must attach a proposed program for Contractor participation.

6.1.36. **Block 35.** The Contractor must estimate the total time period a defence system must be removed from operational service for the retrofit.

6.1.37. **Block 36.**

6.1.37.1. The Contractor must summarize the cumulative effect upon this ECP's performance and previously approved ECPs when design limitations are being approached or exceeded.

6.1.37.2. Consequences of ECP disapproval may be stated within Block 36 or a referenced enclosure.

6.1.38. **Block 37.** The Contractor must request a date for approval by the contracting authority to implement the change.

6.2. **SOFT COPY FORMAT**

6.2.1. The ECP must be submitted as a PDF file type.

6.2.2. **Soft Copy format submission size below 7MB** - The ECP must be submitted via email (submission size not to exceed 7MB) as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-111 – ECP – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB** - The ECP PDF must be submitted on a USB media and be labelled as follows:

6.2.3.1. Joint Terminal Air Controller Virtual Training System

6.2.3.2. ECP;

6.2.3.3. JTAC VTS-SE-116;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.23 DID – Software Change Request

DATA ITEM DESCRIPTION	
1. TITLE **Software Change Request**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-112**
3. DESCRIPTION This DID provides guidance on how to prepare and use a Software Change Request (SCR) form.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 5.4.5.1 (pg. 31)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. This DID is not meant to be restrictive and may be tailored by the Contractor with the Technical Authority's agreement. The resultant document may be prepared in the Contractor's format but must be consistent with the organization's applicable Configuration Management (CM) processes.

6.1.2. **Change Identification** – Record the essential administrative information about the proposed change, such as:

6.1.2.1. SCR identification number allocated;

6.1.2.2. SCR initiation date;

6.1.2.3. SCR title – A descriptive title identifying the objective of the SCR;

6.1.2.4. The SCR originator's name, organization, phone number, and e-mail address;

6.1.2.5. SCR status – This is dependent on the applicable CM process and may have values such as Initiated, Authorized, Implemented, Tested, and Closed Out. The SCR status will change with time;

6.1.2.6. STR identifier – References the System Trouble Report (STR) or similar document, which spawned the relevant SCR;

6.1.2.7. Affected software application name;

6.1.2.8. Affected component name(s) – Identifies all the software components, which may change if the SCR is approved and implemented;

6.1.2.9. SCR type – Identifies the aspects of the system which may be affected by the proposed changes: Requirements, Software, Hardware, Documentation, System;

6.1.2.10. Priority – Indicates the operational importance of the proposed changes. Values can be: Emergency, High, Medium, Low; and

6.1.2.11. The number of attached sheets – Gives the number of attached sheets containing information for which there was insufficient room on the SCR form.

6.1.3. **Requested Change and Justification** – Describes the proposed change and the underlying reasons. Attach additional sheets if required.

6.1.4. **Logged by Change Control** – Identifies the Change Control person who received and logged the relevant SCR.

6.1.5. **Impact Analysis**

6.1.5.1. Assessment of technical impacts of implementing the proposed changes;

6.1.5.2. Assessment of managerial impacts of implementing the proposed changes (i.e., project schedule, cost, and risk); and

6.1.5.3. Summarizes the above impacts as Minor, Moderate, Major.

6.1.6. **CCB Decision** – Records the Configuration Control Board (CCB) decision on how to proceed with the relevant SCR.

6.1.6.1. Possible values can be: Reject, Authorized, Temporary Fix, Defer

6.1.6.2. Decision maker's signature and date

6.1.7. **Record of Software Change Request Implementation**

6.1.7.1. Records the software release in which the proposed change was implemented

6.1.7.2. Describes the implemented changes in detail

6.1.7.3. Developer's signature and date

6.1.8. **Test and Evaluation Verification**

6.1.8.1. Records and describes the results of testing the implemented SCR (i.e., pass or fail)

6.1.8.2. Test Engineer's signature and date

6.1.9. **Closeout by Configuration Management**

6.1.9.1. CM authorized signature and date

6.1.9.2. A controlled electronic equivalent of the signature is acceptable to facilitate full automation

6.2. **GENERAL FORMAT**

6.2.1. The Software Change Request must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Software Change Request must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The Software Change Request PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-112 – Software Change Request – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB -** The Software Change Request PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Software Change Request;

6.3.3.3. JTAC VTS-SE-112;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.24 DID – Configuration Status Accounting Report

DATA ITEM DESCRIPTION	
1. TITLE **Configuration Status Accounting (CSA) Report**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-113**
3. DESCRIPTION The CSA report provides details about the current Configuration Items (CIs), including existing CIs and those being developed under the Contract; documentation and identification numbers relating to those CIs; and changes to the items and their configuration documentation.	
4. RELATED DOCUMENTS **ANSI/EIA-649-C** – *Configuration Management Standard*	5. CONTRACT REFERENCE **SOW**: **Para. 5.5.2 (pg. 32)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The CSA report must include data from the CSA system, including: 6.1.1.1. the identification of the currently approved configuration documentation and configuration identifiers associated with each CI; 6.1.1.2. the status of proposed engineering changes from initiation to implementation; 6.1.1.3. the status and disposition of discrepancies from configuration audits; 6.1.1.4. the status of applications/requests for deviations and waivers; 6.1.1.5. the ability to trace changes from the baseline documentation of each CI; and 6.1.1.6. The effectiveness and installation status of configuration changes to all CIs at all locations. 6.1.2. **Indentured Item List** 6.1.2.1. For each CI, the CSA Report must include an Indentured Item List that illustrates the breakdown structure of subordinate CIs, parts, assemblies, sub-assemblies, and Software, such that the relationships (e.g., where used, next higher assembly) within the product breakdown structure can be clearly understood.	

6.1.2.2. The Indentured Item List must, for each item in the product breakdown structure, include:

6.1.2.2.1. the configuration identifier / product identifier / Unique Item Identifier (UII);

6.1.2.2.2. the nature of the CI (i.e., system, hardware, software);

6.1.2.2.3. the manufacturer's Enterprise Identifier (e.g., Commercial and Government Entity (CAGE) code);

6.1.2.2.4. the manufacturer's reference number/part number for the item;

6.1.2.2.5. an Effectivity identifier, such as a version number, useable on code or other, used to designate that a CI is useable on one or more higher-level CIs or end items; and

6.1.2.2.6. the name of the CI, part, component, assembly, or Software item, as applicable.

6.1.2.3. The product hierarchy in the Indentured Item List must be described to a level of detail that provides the DND with sufficient understanding of the evolving solution and meets life cycle support concepts, supportability, and other goals under the Contact.

6.1.3. **Functional Baseline Report**

6.1.3.1. The CSA Report must include Functional Baseline Reports that list the configuration documentation used to define the FBL for each CI, including:

6.1.3.1.1. requirements specifications (functional, interoperability and interface characteristics and design constraints);

6.1.3.1.2. external interface definition documentation; and

6.1.3.1.3. agreed Verification documentation required to demonstrate the CI's characteristics.

6.1.4. **Product Baseline Report**

6.1.4.1. The CSA Report must include Product Baseline Reports that list the configuration documentation or other information artefacts used to define the PBL for each CI, and which include the following types of documentation:

6.1.4.1.1. specifications for the system and subordinate CIs, including both hardware and software CIs;

6.1.4.1.2. interface control documents;

6.1.4.1.3. engineering and manufacturing drawings and associated lists (e.g., bill of materials, wiring lists, assembly drawings, item quantities);

6.1.4.1.4. design documentation (including, as applicable, software and firmware source code and system, hardware, software, and firmware design documentation);

6.1.4.1.5. computer-aided design, simulation, and modelling files;

6.1.4.1.6. Verification plans, procedures, and reports;

6.1.4.1.7. audit reports, certifications, and associated action items;

6.1.4.1.8. Engineering Change Proposals (ECPs) and requests for deviations/waivers ;

6.1.4.1.9. operation and maintenance manuals;

6.1.4.1.10. recommended spares and support and test equipment; and

6.1.4.1.11. associated training materials.

6.1.4.2. Configuration documentation for the Product Baseline Report must be identified to a level of detail commensurate with the expected Defence activities and support strategy for the product.

6.2. **SOFT COPY FORMAT**

6.2.1. The CSA Report must be submitted as a PDF file type.

6.2.2. **Soft Copy format submission size below 7MB** – The CSA Report may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-113 – CSA Report – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB** - The CSA Report must be submitted on a USB A USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. CSA Report;

6.2.3.3. JTAC VTS-SE-113;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.25 DID – System Verification Plan (SVP)

DATA ITEM DESCRIPTION	
1. TITLE **System Verification Plan**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-114**
3. DESCRIPTION The SVP describes the testing, evaluation, and support provided by the Contractor for all aspects of the equipment/system verification requirements.	
4. RELATED DOCUMENTS Standard Report Format DID JTAC VTS-PM-009 Contractor Master Schedule DID JTAC VTS-PM-009	5. CONTRACT REFERENCE **SOW**: **Para. 6.1.1.3 (pg. 36)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Contractor must structure the SVP IAW the format specified by the Standard Report Format DID JTAC VTS-PM-009.

6.1.2. The Contractor must include the following sections under the Subject Matter part of the SVP:

6.1.3. Section I - General.

6.1.3.1. Section I must define the scope, purpose, and application of the SVP and related documents.

6.1.3.2. Section I must describe how all system verification efforts will be controlled by the System Verification Manager and the plans to ensure that each equipment/system type is tested and evaluated as an integrated system(s).

6.1.3.3. Section I must include a description of how the following tasks will be accomplished:

6.1.3.3.1. Qualification;

6.1.3.3.2. Stowage Trial;

6.1.3.3.3. First Production Article Testing (FPAT) or First Production Article Inspection (FPAI) ;

6.1.3.3.4. Control Tests;

6.1.3.3.5. User Trial.

6.1.3.4. Each of the descriptions from 9.2.1.3 should be attached as separate appendices or sub-plans.

6.1.4. Section II - Elements In Place.

6.1.4.1. Section II must describe which elements and resources of the system verification program are already in place and any additional requirements.

6.1.5. Section III - Major subcontractors.

6.1.5.1. Section III must identify the subcontractors involved in major testing activities and tasks.

6.1.5.2. As a guide, a major activity should be one of those listed within Section I above.

6.1.5.3. Section III must include a description of each subcontractor's area of responsibility and to whom the subcontractor is accountable.

6.1.6. Section IV - Management/Organization.

6.1.6.1. Section IV must describe the Contractor's system verification organization, subcontractor's testing organization (if applicable), management procedures, interfaces, and reporting and tracking systems established to control system verification activities.

6.1.6.2. The organization breakdown must include, but not necessarily be limited to, the management of the activities listed in Section I above.

6.1.6.3. Section IV must identify the Contractor's System Verification Manager, name, and other key personnel.

6.1.6.4. Section IV must provide a statement of project duties for the System Verification Manager.

6.1.7. Section V - Work Breakdown Structure, Schedule of Activities, and Milestones.

6.1.7.1. Section V must include summary tasks and milestone events extracted from the Project Master Schedule DID JTAC VTS-PM-009 to show the time-phased workflow of the system verification tasks, events, deliverables and key inter-dependencies with non-verification areas of the project.

6.1.7.2. Section V must identify the following activities:

6.1.7.2.1. Canada is witnessing testing conducted by the Contractor.

6.1.7.2.2. Canada-conducted tests and user trials supported by the Contractor.

6.1.8. Section VI - Relationships.

6.1.8.1. Section VI must include a description of the following relationships:

6.1.8.1.1. Between the Contractor's various system verification elements and the System Verification Manager.

6.1.8.1.2. Between the Contractor's System Verification Manager and the Project Management, Systems Engineering, and subcontractors (if applicable) programs.

6.1.8.1.3. Between the Contractor's and Canada's test teams.

6.2. GENERAL FORMAT

6.2.1. The System Verification Plan must be prepared as a PDF.

6.3. SOFT COPY FORMAT

6.3.1. The System Verification Plan must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The System Verification Plan PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-114 – System Verification Plan – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** - The System Verification Plan PDF must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. System Verification Plan;

6.3.3.3. JTAC VTS-SE-114;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.26 DID – Acceptance Test Plan and Procedures

DATA ITEM DESCRIPTION	
1. TITLE **Acceptance Test Plan and Procedures (ATP&P)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-115**
3. DESCRIPTION The ATP&P describes the organization, schedule, responsibilities, procedures, and other details necessary for the conduct of the test program, as required under the contract and the approved governing plan for Verification. The activities defined by the ATP&P are used to confirm the quality of the Supplies and that the Contract requirements have been met.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 6.2.3 (pg. 40)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. **Detailed Requirements – Plan** 6.1.1.1. The ATP&P must separately identify each requirement, and in respect of each requirement: 6.1.1.1.1. provide a summary description of the test, including the organization(s) involved in the test and the responsibilities of key individuals; 6.1.1.1.2. reference the RTVM entries that detail which requirements are being tested and whether the test will establish verification of a requirement; 6.1.1.1.3. describe the test article, including test configuration identification; 6.1.1.1.4. detail system configuration and initial conditions for the test; 6.1.1.1.5. identify any limitations, assumptions, and constraints associated with the Verification activity, including any measurements that need to be taken at the time of the Verification activity to record uncontrollable conditions (e.g., ambient temperature); 6.1.1.1.6. identify any location or environmental considerations for the conduct of the Verification activities;	

6.1.1.1.7. state the means, or combination of means, which will be used to verify compliance with the requirement, for example, stand-alone system, integration test;

6.1.1.1.8. identify, with respect to the means stated in 6.1.1.1.7 above, whether the Verification of the requirement will be fully established by either a discrete test, as part of a test of the complete functioning system, or both;

6.1.1.1.9. identify the precursor test activities and the immediate successor test activities covered by a separate ATP&P, as applicable;

6.1.1.1.10. identify the subordinate test procedures that describe the test steps for each test case listed in the ATP&P; and

6.1.1.1.11. include details of the test organization and the significant test equipment, documentation, and facilities required for the conduct of the Verification activity, with cross-references to the applicable test procedures for additional detail.

6.1.1.2. The ATP&P must define the procedures to be undertaken when a test result indicates that the test article has failed and to provide traceability of any investigation or technical follow-up, corrective actions, and retest/regression testing to maintain the integrity of the final results and reports.

6.1.1.3. The ATP&P must list those Acceptance Test Reports (ATRs) that the ATP&P generates.

6.1.1.4. The ATP&P must reference the RTVM that provides traceability of each requirement to test item and test procedures to verify satisfactory compliance.

6.1.2. **Detailed Requirements – Procedures**

6.1.2.1. For each test procedure identified under 6.1.1.1.10 above, the ATP&P must include, using separate annexes for each procedure:

6.1.2.1.1. a description of the scope of the test, including a test method, which must provide a general description of the test activity;

6.1.2.1.2. a description of the configuration of the item(s) under test and initial conditions for the test, including any preparatory requirements or other pre-test activities;

6.1.2.1.3. a description of the test equipment (including the configuration of test equipment), documentation (including details of calibration and certification of test equipment if required), venue and personnel required for the conduct of the test;

6.1.2.1.4. all safety precautions necessary for the performance of the test procedure;

6.1.2.1.5. a description of any data inputs or data files required for the conduct of the test; and

6.1.2.1.6. step-by-step procedures for the performance of the test, in sufficient detail, to identify every action necessary for the conduct of the test, including:

6.1.2.1.6.1. pre-test actions;

6.1.2.1.6.2. any notes, cautions, or warnings that are necessary at each stage of the test procedure;

6.1.2.1.6.3. required operator test input;

6.1.2.1.6.4. expected outcomes or results;

6.1.2.1.6.5. space for recording actual results;

6.1.2.1.6.6. space for comments;

6.1.2.1.6.7. a block for sign-off signatures for all parties present at the test;

6.1.2.1.6.8. a space for recording the configuration of the item(s) under test, including all major hardware and software Configuration Items;

6.1.2.1.6.9. a space for recording all test equipment utilized and the calibration date of the equipment;

6.1.2.1.6.10. if applicable, a space for recording details of test-recording media that will support test analysis; and

6.1.2.1.6.11. a space for recording any post-test actions.

6.1.2.2. In conjunction with each test step, the test procedure must define what measurements, readings, or observations are required for a correct response.

6.1.2.3. As part of the test assessment data, PASS/FAIL criteria or the expected qualitative or quantitative result must also be defined.

6.1.2.4. Where a quantitative result is declared, this must include the allowable tolerance.

6.1.2.5. Where a qualitative result is declared, this must include a description of the expected results of the test.

6.2. **SOFT COPY FORMAT**

6.2.1. The ATP&P must be submitted as a PDF file type.

6.2.2. **Soft Copy format submission size below 7MB** – The ATP&P may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-115 – ATP&P – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB -** The ATP&P must be submitted on a USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. ATP&P;

6.2.3.3. JTAC VTS-SE-115;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.27 DID – Acceptance Test Report

DATA ITEM DESCRIPTION	
1. TITLE **Acceptance Test Report (ATR)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-116**
3. DESCRIPTION The ATR is used to document the results of the system test activity. In particular, the ATR formally documents the results, conclusions, and recommendations of testing conducted according to the governing plan for Verification (e.g., SEMP) and associated Acceptance Test Plan and Procedures (ATP&Ps).	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 6.2.4 (pg. 40)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The ATR must include: 6.1.1.1. data to uniquely identify the Supplies being Verified, which may include: 6.1.1.1.1. item names; 6.1.1.1.2. stock numbers; 6.1.1.1.3. part numbers; 6.1.1.1.4. item quantity; 6.1.1.1.5. serial numbers; and 6.1.1.1.6. configuration status; 6.1.2. references to relevant ATP&P and details of any differences between the ATP&P and the 'as run' test procedure; 6.1.3. reports of the relevant verification results, supported by the applicable raw results/measurement data, calculations, etc., as attachments; 6.1.4. reports on any corrective action found necessary as a result of verification activities and any subsequent re-verification activities required; and 6.1.5. names of the DND representative(s) who witnessed the verification activities, or reference to the authority given to conduct the verification activities without a DND presence.	

6.2. SOFT COPY FORMAT

6.2.1. The ATR must be submitted as a PDF file type.

6.2.2. **Soft Copy format submission size below 7MB** – The ATR may be submitted via email as follows:

6.2.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.2.2.2. Subject Field: JTAC VTS-SE-116 – ATR – [Rev #] – [Date of Issue]

6.2.3. **Soft Copy format submission size at or above 7MB -** The ATR must be submitted on a USB media and be labelled as follows:

6.2.3.1. Joint Terminal Attack Controller Virtual Training System

6.2.3.2. ATR;

6.2.3.3. JTAC VTS-SE-116;

6.2.3.4. The Revision number, and

6.2.3.5. The date of issue.

A3.28 DID – Request for Deviation (RFD) / Request for Waiver (RFW)

DATA ITEM DESCRIPTION	
1. TITLE **Request for Deviation (RFD) / Request for Waiver (RFW)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-SE-117**
3. DESCRIPTION An RFD and an RFW describe a proposed departure from configuration documentation for a specific number of units or for a specified period of time. The RFD and RFW differ from an engineering change since neither a deviation nor a waiver requires a change to configuration documents.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 7.3.2 (pg. 41)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Contractor must prepare RFD and RFW IAW D-02-006-008/SG-001.

6.2. **GENERAL FORMAT**

6.2.1. The RFD and RFW must be submitted using DND Form 675.

6.3. **SOFT COPY FORMAT**

6.3.1. The RFD and RFW must be submitted as a PDF file type.

6.3.2. **Soft Copy format submission size below 7MB** – The RFD and RFW PDF may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-SE-117 – RFD and RFW – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** - The RFD and RFW PDF must be submitted on A USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. RFD and RFW;

6.3.3.3. JTAC VTS-SE-117;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.29 DID – In-Service Support Plan (ISSP)

DATA ITEM DESCRIPTION	
1. TITLE **In-Service Support Plan (ISSP)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-201**
3. DESCRIPTION The JTAC VTS ISSP must define the policies and procedures required to provide in-service support for the JTAC VTS.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 8.2.3 (pg. 44)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The JTAC VTS In-Service Support Plan must include, at a minimum, the following information:

6.1.1.1. System ISS requirements;

6.1.1.2. System ISS tasks;

6.1.1.3. System ISS management;

6.1.1.4. System Maintenance plan;

6.1.1.5. Controlled Goods management;

6.1.1.6. Warranty expiry information;

6.1.1.7. Routine maintenance roles and responsibilities with Standard Operating Procedure (SOPs);

6.1.1.8. System refresh plan System assuming 10 years of operations;

6.1.1.9. Supplies and spares management;

6.1.1.10. Response and resolution timelines:

6.1.1.11. Configuration Control and Configuration Control Board

6.1.1.12. Hazardous material (HazMat) management;

6.1.1.13. System disposal plan; and

6.1.1.14. Health and safety during performance of work.

6.2. **GENERAL FORMAT**

6.2.1. The ISSP must be prepared as a PDF.

6.3. SOFT COPY FORMAT

6.3.1. The ISSP must be provided as

6.3.2. **Soft Copy format submission size below 7MB** – The ISSP may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-201 – ISSP – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The ISSP file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. ISSP

6.3.3.3. JTAC VTS-ILS-201;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.30 DID – Material Change Notice

DATA ITEM DESCRIPTION	
1. TITLE **Material Change Notice**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-202**
3. DESCRIPTION The Material Change Notice (MCN) provides the information required whenever there is a change to provisioning documentation.	
4. RELATED DOCUMENTS DND 2357	5. CONTRACT REFERENCE **SOW**: **Para. 8.4.1 (pg. 44)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The MCN must be completed IAW DND 2357.

6.1.2. Note: In the table above, for each data element, the information within parenthesis is the Data Element Type number as per MIL-STD-1388- B and GEIA-STD-0007-B.

6.2. **GENERAL FORMAT**

6.2.1.1. The Material Change Notice must be prepared using DND 2357 as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Material Change Notice must be provided as

6.3.2. **Soft Copy format submission size below 7MB** – The Material Change Notice may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-202 – Material Change Notice – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Material Change Notice file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Material Change Notice

6.3.3.3. JTAC VTS-ILS-202;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.31 DID – Safety Data Sheet (SDS)

DATA ITEM DESCRIPTION	
1. TITLE **Safety Data Sheet**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-203**
3. DESCRIPTION A Safety Data Sheet (SDS) provides information and instructions on the chemical and physical characteristics of a substance, its hazards and risks, the safe handling requirements, and actions to be taken in the event of a fire, spill, overexposure, or other risks.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 8.5.1 (pg. 44)** **CDRL**: **App. A2.2 (pg. 100**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The SDS is a document containing data relative to a specific product.

6.1.2. The SDS must contain the types of information detailed in the Hazardous Products Act, Hazardous Products Regulations (HPR);

6.1.3. The Hazardous Products Regulations (HPR) specifies 16 sections and their content for the SDS. Schedule 1 within the HPR outlines the section number and heading that must be presented in the specified order.

6.1.4. NOTE: The Canadian Center for Occupational Health and Safety web site provided below (https://www.ccohs.ca/oshanswers/chemicals/whmis_ghs/sds.html) explains and outlines the requirements for the WHMIS – Safety Data Sheet (SDS)

6.2. **GENERAL FORMAT**

6.2.1.1. The Safety Data Sheet must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Safety Data Sheet must be provided as

6.3.2. **Soft Copy format submission size below 7MB** – The Safety Data Sheet may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-203 – Safety Data Sheet – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Safety Data Sheet file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Safety Data Sheet

6.3.3.3. JTAC VTS-ILS-203;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.32 DID – Sparing Analysis Report

DATA ITEM DESCRIPTION	
1. TITLE **Sparing Analysis Report**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-204**
3. DESCRIPTION Sparing Analysis is performed to determine the optimum selection, quantity, and distribution of spares. This report documents the results of the Sparing Analysis.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 8.6.1 (pg. 44)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Sparing Analysis Report may be prepared in the Contractor's preferred format containing sufficient detail to address the information requirements that are acceptable to DND fully.

6.1.2. The Sparing Analysis Report must include the following sections.

6.1.2.1. Introduction

6.1.2.1.1. Purpose

6.1.2.1.2. Applicable References

6.1.2.1.3. Definitions and Acronyms

6.1.2.2. Method and Rationale

6.1.2.2.1. Description of Sparing Analysis Model

6.1.2.2.2. Sparing Analysis Procedure For Repairables

6.1.2.2.3. Sparing Analysis Procedure For Consumables

6.1.2.3. Sparing Analysis Results

6.1.2.3.1. Note: Rather than submitting the extensive data identified in this chapter, the Contractor may provide the DND with access to these data.

6.1.2.3.2. Maintenance Scenario Data

6.1.2.3.3. For Repairables in each Line Replaceable Unit

6.1.2.3.3.1. Item Input Data

6.1.2.3.3.2. Results of Sparing Analysis

6.1.2.3.4. For Consumables in each Line Replaceable Unit

6.1.2.3.4.1. Item Input Data

6.1.2.3.4.2. Results of Calculations

6.1.2.4. Conclusions and Recommendations

6.1.2.4.1. For each Line Replaceable Unit

6.1.2.4.1.1. Recommended buy of Repairables

6.1.2.4.1.2. Recommended buy of Consumables

6.2. GENERAL FORMAT

6.2.1.1. The Sparing Analysis Report must be prepared as a PDF.

6.3. SOFT COPY FORMAT

6.3.1. The Sparing Analysis Report must be provided as

6.3.2. **Soft Copy format submission size below 7MB** – The Sparing Analysis Report may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-204 – Sparing Analysis Report – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Sparing Analysis Report file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System;

6.3.3.2. Sparing Analysis Report;

6.3.3.3. JTAC VTS-ILS-204;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.33 DID – Supplementary Provisioning Technical Documentation (SPTD)

DATA ITEM DESCRIPTION	
1. TITLE **Supplementary Provisioning Technical Documentation**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-205**
3. DESCRIPTION Supplementary Provisioning Technical Documentation (SPTD) uniquely identifies, for cataloguing purposes, each item in each provisioning list that has not already been assigned a NATO Stock Number.	
4. RELATED DOCUMENTS D-01-100-214/SF-000 - SPECIFICATION FOR PREPARATION OF PROVISIONING DOCUMENTATION FOR CANADIAN FORCES EQUIPMENT STANAG 2290 ED. 2, 18 NOV 2010, NATO UNIQUE IDENTIFICATION OF ITEMS	5. CONTRACT REFERENCE **SOW**: **Para. 8.7.1 (pg. 44)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The SPTD must include sufficient data to define each item for cataloguing clearly. 6.1.2. The SPTD must include: 6.1.2.1. Item Name (DED 201 or GEIA 2790); 6.1.2.2. Reference (Manufacturer's Part) No. (DED 337 or GEIA 4400); and 6.1.2.3. CAGE Code (DED 046 or GEIA 1520). 6.1.3. The SPTD must include as applicable: 6.1.3.1. Configuration - drawing of an item; assembly, wiring, or schematic drawing; illustrated parts list 6.1.3.2. Technical specification, including relevant standards 6.1.3.3. Physical characteristics, such as dimensions, tolerances, materials, mandatory processes, surface finish, protective coating; 6.1.3.4. Electrical characteristics; 6.1.3.5. Performance data, including the environmental and operating conditions under which the item must perform; 6.1.3.6. Mounting requirements;	

6.1.3.7. Special features which contribute to the uniqueness of the item; and

6.1.3.8. Commercial catalogue data

6.1.4. The SPTD must be sequenced in the same order as the provisioning list that it supplements.

6.1.5. The SPTD must include identification of any limitations on the use or publication of any data provided.

6.2. **GENERAL FORMAT**

6.2.1.1. The SPTD] must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The SPTD must be provided as

6.3.2. **Soft Copy format submission size below 7MB** – The SPTD may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-205 – SPTD – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The SPTD file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System;

6.3.3.2. SPTD;

6.3.3.3. JTAC VTS-ILS-205;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.34 DID – Technical Data Deliverables List

DATA ITEM DESCRIPTION	
1. TITLE **Technical Data Deliverables List**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-206**
3. DESCRIPTION The Technical Data Deliverables List is a document that lists all Technical Data items required to acquire, operate, manage and support the System/Equipment.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 8.8.1 (pg. 44)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. This DID is not meant to be restrictive and may be tailored by the Contractor with the DND Technical Authority's agreement.

6.1.2. The Technical Data Deliverables List may be prepared in the Contractor's format and must contain sufficient detail to fully address the information requirements.

6.1.3. The Contractor's Technical Data Deliverables List must be prepared in the Contractor's format, acceptable to the technical authority.

6.1.4. The Technical Data Deliverables List must provide a reference index with a description of all Technical Data items required to acquire, operate, manage and support the System/Equipment.

6.1.5. The Technical Data Deliverables List must include for each data item:

6.1.5.1. An identification number and title.

6.1.5.2. A brief description of the data item's intended purpose, delineating its scope and explaining the interfaces and overlaps with other data items.

6.1.5.3. Describe any copyrights, proprietary rights, or translation rights that apply to the item.

6.1.5.4. Ownership of the data item.

6.1.5.5. Estimated delivery date.

6.2. **GENERAL FORMAT**

6.2.1.1. The Technical Data Deliverables List must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Technical Data Deliverables List must be provided as a PDF

6.3.2. **Soft Copy format submission size below 7MB** – The Technical Data Deliverables List may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-206 – Technical Data Deliverables List – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Technical Data Deliverables List file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Technical Data Deliverables List

6.3.3.3. JTAC VTS-ILS-206;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.35 DID – Technical Publications Requirements List (TPRL)

DATA ITEM DESCRIPTION	
1. TITLE **Technical Publications Requirements List (TPRL)**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-207**
3. DESCRIPTION The Technical Publications Requirements List (TPRL) provides the required data needed to identify, procure and manage Technical Publications	
4. RELATED DOCUMENTS STANAG 2290 ED. 2, 18 NOV 2010, NATO UNIQUE IDENTIFICATION OF ITEMS	5. CONTRACT REFERENCE **SOW**: **Para. 8.9.1 (pg. 45)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The TPRL must identify required publications in two categories: 6.1.1.1. Existing Publications (that can be used as-is or modified); and 6.1.1.2. New Publications (that must be developed). 6.1.2. The TPRL must contain the following information for each Technical Publication: 6.1.2.1. Technical Manual Title; 6.1.2.2. Technical Manual Number (DED 440 or GEIA); 6.1.2.3. Technical Manual Change Number (DED 436 or GEIA); 6.1.2.4. NSCM/NCAGE Code (DED 046 or GEIA 1520); 6.1.2.5. Line(s) of Maintenance Applicable; 6.1.2.6. Status (use as is, modify, develop); 6.1.2.7. Current Language (English, bilingual, other) (for existing Technical Publications); 6.1.2.8. Media (hard copy, microfiche, electronic) (for existing publications) 6.1.2.9. Owner of Proprietary Right/Copyright; 6.1.2.10. Procurement Lead Time; 6.1.2.11. Technical Manual Development Cost; 6.1.2.12. Translation Cost; and 6.1.2.13. Price Per Book (excluding development cost and translation cost).	

Note: In the listings above, for each data element, the information within parenthesis is the Data Element Type number as per MIL-STD-1388- B and GEIA-STD-0007-B.

6.2. **GENERAL FORMAT**

6.2.1. The Technical Publications Requirements List (TPRL) must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Technical Publications Requirements List (TPRL) must be provided as a PDF.

6.3.2. **Soft Copy format submission size below 7MB** – The Technical Publications Requirements List (TPRL) may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-207 – Technical Publications Requirements List (TPRL)– [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Technical Publications Requirements List (TPRL) file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Technical Publications Requirements List (TPRL)

6.3.3.3. JTAC VTS-ILS-207;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.36 DID – JTAC VTS JTAC-I Train-the-Trainer Training Package

DATA ITEM DESCRIPTION	
1. TITLE **JTAC VTS JTAC-I Train-the-Trainer Training Package**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-208**
3. DESCRIPTION JTAC-I will be the unit subject matter experts on the use and maintenance of the JTAC VTS. The JTAC VTS JTAC-I Train-the-Trainer Training Package will provide the supporting material for the JTAC-I initial training and then subsequently as the reference material to be used by the trained JTAC-I to conduct training at unit level. Individuals completing the JTAC VTS JTAC-I Train-the-Trainer course must be able to: • Train unit personnel to conduct all JTAC VTS user maintenance tasks, prepare the system for use and conduct basic system diagnosis and fault finding. • Train qualified JTAC to build scenarios and conduct the full range training operations available at the Instructor Station.	
4. RELATED DOCUMENTS C-01-100-100/AG-008 Writer's Guide for Technical Documentation	5. CONTRACT REFERENCE **SOW**: **Para. 9.2.1 (pg. 45)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The JTAC VTS JTAC-I Train-the-Trainer Training Package course material must include, in the order judged most appropriate by the Contractor, the following subjects: 6.1.1.1. General Description/Equipment Overview; 6.1.1.2. Pre-use testing/inspection; 6.1.1.3. Preparation and set up for use; 6.1.1.4. Use and operation including scenario construction; 6.1.1.5. Safety and Hazardous material issues; 6.1.1.6. Troubleshooting and testing; 6.1.1.7. Basic diagnosis and fault finding; and, 6.1.1.8. Maintenance. 6.1.2. The JTAC VTS JTAC-I Train-the-Trainer Training Package course material must be amplified where appropriate, with colour illustrations, line drawings, good quality colour pictures and supporting "how to" videos.	

6.1.3. The JTAC VTS JTAC-I Train-the-Trainer Training Package course material subjects must be approached from the perspective that the Trainee experience with this equipment is low.

6.1.4. The JTAC VTS JTAC-I Train-the-Trainer Training Package course material must not present any information that cannot also be found in the Technical Publication Package documents; those documents remain the primary reference for the equipment.

6.1.5. The JTAC VTS JTAC-I Train-the-Trainer Training Package must include a Trainee Handout that includes the course material described above.

6.1.6. The JTAC VTS JTAC-I Train-the-Trainer Training Package must include an Instructor Lesson Plan that includes the course material described above, speaker's notes, and outlines the following:

6.1.6.1. Classroom's physical and functional requirements;

6.1.6.2. Training Session schedule, divided by course material subjects;

6.1.6.3. Instructor/Trainee ratio for the course material subjects;

6.1.6.4. Training material to be supplied by the Contractor;

6.1.6.5. Training material to be supplied by Canada.

6.2. GENERAL FORMAT

6.2.1. The JTAC VTS JTAC-I Train-the-Trainer Training Package can be prepared in the Contractor's format while using C-01-100-100/AG-008 as guidance.

6.2.2. No Contractor or sub-Contractor logo, name, trademark, or other wording or device that may be interpreted as advertising must appear in the publication.

6.2.3. The JTAC VTS JTAC-I Train-the-Trainer Training Package Trainee Handout must have no more than three (3) slides per page of the course material and have additional space and lines for note taking.

6.2.4. The JTAC VTS JTAC-I Train-the-Trainer Training Package Instructor Lesson Plan must have one (1) slide per page of the course material, with the speaker's notes below it.

6.3. SOFT COPY FORMAT

6.3.1. The JTAC VTS JTAC-I Train-the-Trainer Training Package must be provided as a PDF.

6.3.2. **Soft Copy format submission size below 7MB** – The JTAC VTS JTAC-I Train-the-Trainer Training Package may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-208 – JTAC VTS JTAC-I Train-the-Trainer Training Package – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The JTAC VTS JTAC-I Train-the-Trainer Training Package file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System;

6.3.3.2. JTAC VTS JTAC-I Train-the-Trainer Training Package;

6.3.3.3. JTAC VTS-ILS-208;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.37 DID – System Manuals

DATA ITEM DESCRIPTION	
1. TITLE **System Manuals**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-209**
3. DESCRIPTION The System Manual must describe the tasks necessary for installation, configuration, operation and maintenance as well as methods to maintain, repair or replace the hardware for each JTAC VTS sub-system.	
4. RELATED DOCUMENTS C-01-100-100/AG-008 - Writer's Guide for Technical Documentation D-01-100-204/SF-000 - Specification - Preparation Of Preventive Maintenance Instructions D-01-100-205/SF-000 - Specification - Preparation Of Corrective Maintenance Instruction	5. CONTRACT REFERENCE **SOW**: **Para. 10.1.2(pg. 46)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1.1. The System Manuals must cover, at a minimum, the following information: 6.1.1.2. System overview; 6.1.1.3. Subsystem configuration; 6.1.1.4. Sub-system Operation; 6.1.1.5. Maintenance tasks and procedures; 6.1.1.6. Software and hardware maintenance and troubleshooting; 6.1.1.7. Preventive maintenance (PM) including the PM schedule; 6.1.1.8. Corrective maintenance; 6.1.1.9. Escalation model; and	

6.2. System administration tasks.

6.3. **GENERAL FORMAT**

6.3.1. The System Manuals must be prepared in the Contractor's format while being in full conformance with the above-stated references in para 4 Related Documents as a PDF.

6.3.2. The System Manuals must include the National Defence Index of Documentation (NDID) number, provided to the Contractor by DND, which must be placed on the top right corner of all the pages of the manual.

6.4. **SOFT COPY FORMAT**

6.4.1. The System Manuals must be provided as a PDF.

6.4.2. **Soft Copy format submission size below 7MB** – The System Manuals may be submitted via email as follows:

6.4.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.4.2.2. Subject Field: JTAC VTS-ILS-209 – System Manuals – [Rev #] – [Date of Issue]

6.4.3. **Soft Copy format submission size at or above 7MB** – The System Manuals file must be submitted on a USB media and be labelled as follows:

6.4.3.1. Joint Terminal Attack Controller Virtual Training System;

6.4.3.2. System Manuals;

6.4.3.3. JTAC VTS-ILS-209;

6.4.3.4. The Revision number, and

6.4.3.5. The date of issue.

A3.38 DID – Vendor Manuals

DATA ITEM DESCRIPTION	
1. TITLE **Vendor Manuals**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-210**
3. DESCRIPTION The Vendor Manuals must be provided for all Commercial Off-The Shelf (COTS) items purchased for the JTAC VTS and must describe at a high level the technical specifications, user instructions and system requirements for the item.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW: Para. 10.2.2 (pg. 46)** **CDRL: App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The Vendor Manuals must provide at a minimum:

6.1.1.1. all information required to generate a NATO Stock Number (NSN) for hardware;

6.1.1.2. operating system requirements for software (CDRL)

6.1.1.3. .user instructions

6.1.1.4. .maintenance instructions;

6.1.1.5. .Safety instructions.

6.2. **GENERAL FORMAT**

6.2.1. The Vendor Manuals must be the in the Vendor's preferred format acceptable to DND.

6.3. **SOFT COPY FORMAT**

6.3.1. The Vendor Manuals must be provided as a PDF

6.3.2. **Soft Copy format submission size below 7MB** – The Vendor Manuals may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-210 – Vendor Manuals – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Vendor Manuals file must be submitted on CD or DVD media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Vendor Manuals

6.3.3.3. JTAC VTS-ILS-210;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.39 DID – Government Property Report

DATA ITEM DESCRIPTION	
1. TITLE **Government Property Report**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-211**
3. DESCRIPTION The Government Property Report provides records and tracks all Government Furnished Equipment (GFE) and Government Furnish Information (GFI) within the Contractors' possession. The report also details the management of disposition and disposal of the Government Property on Closure of the Contract.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 10.4.1 (pg. 47)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The Government Property Report may be prepared in the Contractor's preferred format containing sufficient detail to fully address the acceptable information requirements to DND. 6.1.2. The report must provide an inventory of GFE and GFI. 6.1.3. The report must include the following information for Government Property in the Contractor's possession: 6.1.3.1. For each item of GFE: 6.1.3.1.1. GFE item number; 6.1.3.1.2. The Contractor's assigned serial number (if applicable); 6.1.3.1.3. A narrative description of the item; 6.1.3.1.4. Manufacturer's Part Number / Manufacturer's Reference Number; 6.1.3.1.5. NSCM; 6.1.3.1.6. NSN; 6.1.3.1.7. Nomenclature; 6.1.3.1.8. The estimated value of the item; 6.1.3.1.9. Location of the item; 6.1.3.1.10. The status and condition of the item; and 6.1.3.1.11. The expected date of the next required re-calibration or overhaul (if required).	

6.1.4. For each item of GFI:

6.1.4.1. GFI item number; and

6.1.4.2. A narrative description of the item.

6.1.5. The report must provide a listing of any shortages in the supply of Government Property. The listing must include Government Property type and item number, quantity short or overdue, and due date.

6.2. **GENERAL FORMAT**

6.2.1.1. The Government Property Report must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Government Property Report must be provided as a PDF.

6.3.2. **Soft Copy format submission size below 7MB** – The Government Property Report may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-211 – Government Property Report – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Government Property Report file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Government Property Report

6.3.3.3. JTAC VTS-ILS-211;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.40 DID – Government Delivery Schedule

DATA ITEM DESCRIPTION	
1. TITLE **Government Delivery Schedule**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-212**
3. DESCRIPTION The Government Delivery Schedule includes all material supplied by the Government to the Contractor for incorporation into a deliverable end item. The Government Delivery Schedule is used to advise DND when Government Supplied Material (GSM) is needed.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 10.5.1(pg. 47)** **CDRL**: **App. A2.2 (pg. 100)**
6. PREPARATION INSTRUCTIONS 6.1. **CONTENT** 6.1.1. The GSM Delivery Schedule must include the following data: 6.1.1.1. INTRODUCTION 6.1.1.1.1. Contractor; 6.1.1.1.2. Contact person; 6.1.1.1.3. Telephone number; and 6.1.1.1.4. The contract for which the GSM is required. 6.1.2. GSM REQUIREMENTS LIST Indicate for each item of GSM: 6.1.2.1. Item Number (unique sequence no. for each list); 6.1.2.2. Item Name (DED 182 or GEIA 2970); 6.1.2.3. NSCM/CAGE Code (DED 046 or GEIA 1520); 6.1.2.4. NATO Stock Number (DED 253 or GEIA 2280); 6.1.2.5. Reference (Manufacturer's Part) Number (DED 337 or GEIA 4400); 6.1.2.6. Quantity Per End Item (DED 317 or GEIA 4210); and 6.1.2.7. GSM Total Quantity Required. 6.1.3. REQUIRED DELIVERY SCHEDULE 6.1.3.1. Required Delivery Schedule 6.1.3.2. Delivery Instructions Note: In the listings above, for each data element, the information within parenthesis is the Data Element Type number as per MIL-STD-1388- B and GEIA-STD-0007-B.	

6.2. GENERAL FORMAT

6.2.1.1. The Government Delivery Schedule must be prepared as a PDF.

6.3. SOFT COPY FORMAT

6.3.1. The Government Delivery Schedule] must be provided as a PDF.

6.3.2. **Soft Copy format submission size below 7MB** – The Government Delivery Schedule may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-212 – Government Delivery Schedule – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Government Delivery Schedule file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System;

6.3.3.2. Government Delivery Schedule;

6.3.3.3. JTAC VTS-ILS-212;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.41 DID – Identification Shipping and Packaging Data

DATA ITEM DESCRIPTION	
1. TITLE **Identification Shipping and Packaging Data**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-213**
3. DESCRIPTION To identify packaging requirements for items to be shipped to or stored at a DND facility (such as spare parts, bulk items, special tools, support equipment, test equipment, and training equipment.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 10.6.1 (pg. 47)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. The MCN must contain the following information:

6.1.2. Item Identification;

6.1.3. Item Name (DED 182 or GEIA 2790);

6.1.4. Reference (Manufacturer's Part) Number (DED 337 or GEIA 4400);

6.1.5. NSCM/NCAGE code (DED 046 or GEIA 1520);

6.1.6. NATO Stock Number (if assigned) (DED 253 or GEIA 2280);

6.1.7. Packaging Data;

6.1.8. Unit Pack Size (length, width, depth) (inches) (DED 496 or GEIA 2890);

6.1.9. Unit Pack Weight (pounds) (DED 497 or GEIA 3190);

6.1.10. Packing Code (A, B, C) (DED 283 or GEIA 3410);

6.1.11. Hazardous Code (Regulated/Non-regulated) (DED 154 or GEIA 2370); and

6.1.12. Special packaging instruction (for items on Special PHST Consideration Items List) (DED 396 or GEIA 4920)

6.1.13. Notes:

6.1.14. In the listings above, for each data element, the information within parenthesis is the Data Element Type number as per MIL-STD-1388- B and GEIA-STD-0007-B.

6.1.15. To reduce the need for redundant data, similar items may be grouped with the same packaging data applying to the group

6.1.16. The Canadian Forces Supply System requires size in meters and weight in kilograms.

6.1.17. To use the special packaging instruction number, the Contractor will need to prepare an enumerated list of instructions, consistent as possible with MIL-STD-2073-1 and -2.

6.1.18. The Equipment Identification Plate Data must be prepared IAW Canadian Forces specification D-02-002-001/SG-001, Identification Marking of Canadian Military Property.

6.2. **GENERAL FORMAT**

6.2.1.1. The Identification Shipping and Packaging Data must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The Identification Shipping and Packaging Data must be provided as a PDF.

6.3.2. **Soft Copy format submission size below 7MB** – The Identification Shipping and Packaging Data may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-213 – Identification Shipping and Packaging Data – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The Identification Shipping and Packaging Data file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. Identification Shipping and Packaging Data

6.3.3.3. JTAC VTS-ILS-213;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A3.42 DID – Environmental Equipment Assessment (EEA)

DATA ITEM DESCRIPTION	
1. TITLE **Environmental Equipment Assessment**	2. IDENTIFICATION NUMBER **DID JTAC VTS-ILS-214**
3. DESCRIPTION The EEA identifies and documents all integrated hazardous substances and hazardous chemical products in the equipment design.	
4. RELATED DOCUMENTS	5. CONTRACT REFERENCE **SOW**: **Para. 11.4.1 (pg. 49)** **CDRL**: **App. A2.2 (pg. 100)**

6. PREPARATION INSTRUCTIONS

6.1. **CONTENT**

6.1.1. This DID is not meant to be restrictive and may be tailored by the Contractor with the Technical Authority's agreement. The resultant document may be prepared in the Contractor's format. When proposing and implementing any tailoring or alternative formatting, the Contractor must ensure that sufficient content and detail are provided to address the requirements contained herein fully.

6.1.2. As a minimum, the EEA must contain the following sections and information:

6.1.2.1. Title Page:

6.1.2.2. Equipment Name and NSN (if available)

6.1.2.3. Originating Directorate: Director Combat Support Equipment Management

6.1.2.4. Director General Land Equipment Program Management (DGLEPM) EEA Registration Number: TBD

6.1.2.5. Assessment Contact: Name, title, and company name of the author of the EEA

6.1.2.6. Executive Summary

6.1.2.6.1. Provide a summary of potential environmental impacts and recommended mitigation measures for each life cycle (test and evaluation following production, operation and maintenance, and demilitarization and disposal).

6.1.2.7. Equipment Description

6.1.2.7.1. Equipment description: Provide an overview of the equipment and identify each major sub-system IAW A3.21 DID - Equipment Breakdown Structure.

6.1.2.7.2. For each major sub-system, identify the following:

6.1.2.7.2.1. Ionizing radiation sources (radioisotopes and x-ray). E.g., Uranium, Radon, plutonium and tritium, etc.

6.1.2.7.2.2. Non-ionizing radiation sources (radiofrequency and lasers); and

6.1.2.7.2.3. Identify hazardous substances that are incorporated into the equipment design. Provide additional information in tabular form.

6.1.2.7.3. Identify hazardous products that are:

6.1.2.7.3.1. Used during manufacturing (i.e., paints/surface treatments, adhesives, lubricants, consumables such as batteries, etc.);

6.1.2.7.3.2. Recommended by the Contractor during the in-service life-cycle phase (i.e., lubricants, cleaners, decontaminants, etc.) or included in the Technical Documentation; and

6.1.2.7.3.3. Provide information in tabular form.

6.1.2.7.4. Provide Safety Data Sheets SDS that is less than three years old for all Chemical Products IAW WHMIS 2015 requirements and A3.31 DID – Safety Data Sheet (SDS) for all hazardous products.

6.1.2.8. Environmental Assessment

6.1.2.8.1. For each lifecycle phase (test and evaluation following production, operation and maintenance, and demilitarization and disposal), discuss the following:

6.1.2.8.1.1. Lifecycle activities: Describe anticipated activities (including operator and maintenance tasks that are detailed in Contractor provided Technical Documentation) and identify if any of these activities have the potential to release a polluting substance to air, water, or land (e.g., exhaust emissions, hazardous waste, spills, etc.); affect human health; noise or vibration; and alter landscape features. Note: The scope of the EEA excludes activities related to the use of munitions.

6.1.2.8.1.2. Environmental impacts: Describe the potential environmental impacts identified above.

6.1.2.8.1.3. Mitigation Measures: Describe mitigation measures to eliminate or reduce identified potential environmental impacts, including those that are part of the design, any warning devices, emission control equipment, spill response, safe handling and disposal procedures, training, PPE, labels on equipment, cautions and warnings in the Technical Documentation, monitoring or inspections, etc.

6.1.2.9. Conclusions and Recommendations

6.1.2.9.1. Summarize the major environmental impacts and recommended mitigation measures.

6.1.2.10. References

6.1.2.10.1. List references consulted in the completion of the EEA (such as Canadian legislation, DND policies, and procedures, technical documentation, etc.)

* Note: Provide information on the presence of other metals, metal coatings, surface treatments, etc., if available and even if regulations are not in existence at the time of the assessment.

6.1.3. Identify the system/sub-system where these items are located. Controls: Identify if the substance is regulated under the Canadian Environmental Protection Act, 1999; targeted in Schedule 1, Toxic Substance List under CEPA and subject to the reporting requirements under the National Pollutant Release Inventory (NPRI).

6.2. **GENERAL FORMAT**

6.2.1. The Environmental Equipment Assessment must be prepared as a PDF.

6.3. **SOFT COPY FORMAT**

6.3.1. The EEA must be provided as

6.3.2. **Soft Copy format submission size below 7MB** – The EEA may be submitted via email as follows:

6.3.2.1. To Field: As per the related CDRL section 9.A. Addressee, as identified in the contract.

6.3.2.2. Subject Field: JTAC VTS-ILS-214 – EEA – [Rev #] – [Date of Issue]

6.3.3. **Soft Copy format submission size at or above 7MB** – The EEA file must be submitted on a USB media and be labelled as follows:

6.3.3.1. Joint Terminal Attack Controller Virtual Training System

6.3.3.2. EEA

6.3.3.3. JTAC VTS-ILS-214;

6.3.3.4. The Revision number, and

6.3.3.5. The date of issue.

A4.0 APPENDIX: REFERENCE AND GLOSSARY

A4.1 General

A4.2 GOVERNMENT FURNISHED INFORMATION

REFERENCE NUMBER	DATED	REFERENCE TITLE
A-FD-005-000/AG-001	2019-08-01	Future Integrated Training Environment Concept Paper (FITE)
A-SJ-100-001/AS-000	2020-02-20	National Defence Security Orders and Directives Chapter 6: Security of Information
B-GL-300-008/FP-001	2010-07-20	Training for Land Operations.
B-GL-371-002/FP-001-	1998-11-30	Duties of the Battery Commander and the Observer
B-GL-371-004/FP-001	1998-12-30	The Duties at the Regimental Headquarters and Gun Position
CAO 24-05	2020-09-11	Canadian Army Order (CAO) 24-05 - Joint Terminal Attack Controller.
C-01-100-100/AG-008	2018-08-31	Writer's Guide For Technical Documentation
C-02-007-000/AG-001	2016-01-01	Controlled Technology Access And Transfer (CTAT) Manual
D-01-100-204/SF-000	2018-08-31	Specification - Preparation Of Preventive Maintenance Instructions
D-01-100-205/SF-000	2000-10-31	Specification - Preparation Of Corrective Maintenance Instruction
D-01-100-207/SF-002	1996-07-12	Specification - Preparation Of Interim Illustrated Parts Manuals For Land Equipment
D-01-100-211/SF-000	1988-12-07	Specification – Preservation, Storage And Handling Instruction
D-01-100-214/SF-000	2020-09-30	Specification - For Preparation Of Provisioning Documentation For Canadian Forces Equipment
D-01-400-001/SG-000	2020-02-28	Standard - Engineering Drawing Practices

REFERENCE NUMBER	DATED	REFERENCE TITLE
D-01-400-002/SF-000	2018-07-31	Specification Levels Of Engineering Drawings
D-02-002-001/SG-001	2003-04-01	Canadian Forces Standard Identification Marking Of Canadian Military Property
D-02-006-008/SG-001	2020-06-08	The Design Change, Deviation And Waiver Procedure
D-LM-008-001/SF-001	1986-06-30	Methods Of Packaging
D-LM-008-002/SF-001	1991-08-01	Specification For Marking For Storage And Shipment
D-LM-008-011/SF-001	1988-11-10	Preparation And Use Of Packaging Requirements Codes
D-LM-008-036/SF-000	2013-12-01	DND Minimum Requirement For Manufacturer's Standard Pack
DACAS JT TTP	2018-06-	Digitally Aided Close Air Support (DACAS) Joint Test (JT) Tactics, Techniques and Procedures (TTP)
		RCAS Naval Fire Support (NFS) Précis ATP-4E Allied Naval Gunfire Support.
	2017-08-09	Simulation System Accreditation for CAF Indirect Fires and Forward Air Control (FAC) Training System that is used by the Royal Canadian Artillery School (RCAS) Joint Terminal Attack Controller (JTAC) Cell for JTAC Training.

A4.3 COMMERCIALLY AVAILABLE

REFERENCE NUMBER	PROMULGATION DATE	REFERENCE TITLE
ACMP-2009	2017-03-06	Guidance On Configuration Management
ANSI/EIA-649-C	2019-02-07	Configuration Management Standard
ASME Y14.100	2017	Engineering Drawing Practices
ASME Y14.24	2020	Types And Applications Of Engineering Drawings

REFERENCE NUMBER	PROMULGATION DATE	REFERENCE TITLE
ASME Y14.34M	1996	Associated Lists
ASTM SI10	2017	American National Standard For Metric Practice
ATP 3-09.3	10 June 2019	Joint Publication Close Air Support
ATP 3-09.32	2019-10-01	JFIRE - Multi-Service Tactics, Techniques, And Procedures For Joint Application Of Firepower
ATP-3.3.2.2	2018 -01	Joint Terminal Attack Controller Program
ATP-4F	2014-10-10	Allied Naval Fire Support
DoD T&E V2	2020-02-10	Department of Defense Cybersecurity Test & Evaluation Guidebook
GEIA-STD-0007-B	2013	Logistics Product Data
HQ AIRCOM FAC FST SOP	2017-01-17	HQ AIRCOM FAC Standardization Team (FST} Standard Operating Procedure (SOP)
IEEE 1012	2016	Standard for System, Software, and Hardware Verification and Validation
IEEE 15288.1	2014-12-10	IEEE Standard For Application Of Systems Engineering On Defense Programs
IEEE 15288.2	2014-12-10	IEEE Standard For Technical Reviews And Audits On Defense Programs
IEEE 15288: [4], Section 6.4.3	2015	System requirements definition process.”
IEEE 29148	2018	International Standard - Systems and software engineering -- Life cycle processes -- Requirements engineering
ISO/IEC 25021	2016	Systems and software engineering - Systems and software Quality Requirements and Evaluation (SQuaRE) - Quality measure elements

REFERENCE NUMBER	PROMULGATION DATE	REFERENCE TITLE
ISO/IEC 25022		Systems and software engineering - Systems and software quality requirements and evaluation (SQuaRE) - Measurement of quality in use
ISO/IEC 25023		Software engineering - Software product Quality Requirements and Evaluation (SQuaRE) - Measurement of system and software Product Quality
ISO/IEC 25024	2015	Systems and software engineering. Systems and software Quality Requirements and Evaluation (SQuaRE). Measurement of data quality
JTAC MOA	2021-03-04	Joint Terminal Attack Controller (JTAC) (Ground) Memorandum Of Agreement (MOA) 2020
MIL-STD-2045-47001D1.		Connectionless Data Transfer Application Layer Standard
MIL-STD-188-220D1.		Digital Message Transfer Device Subsystems
Mil-HDBK 759C		Department of Defense Design Criteria Standard: Design Guidelines. (Notice-2).
MIL-STD-1472G		Department of Defense - Design Criteria Standard - Human Engineering.
MIL-STD-1472G		Department of Defense - Design Criteria Standard - Noise Limits.
MIL-STD-1472G		Department of Defense Human Engineering Design Guidelines.
MIL-STD-461G		Department of Defense Interface Standard Requirements for the Control Of Electromagnetic Interference.
MIL-STD-6017B.		Variable Message Format (VMF)

REFERENCE NUMBER	PROMULGATION DATE	REFERENCE TITLE
SH/OPI/J3/SAO/16-310996/1	2016-01-18	NATO Joint Terminal Attack Controller Accreditation Programme
NEMA IEC 60529	2021-01-01	Degrees Of Protection Provided By Enclosures - IP Code
R.S.C., 1985, C. H-3	1985	Hazardous Products Act
SOR/2003-289	2003	Federal Halocarbon Regulations
SOR/2008-273	2008	PCB Regulations
SOR/2012-285	2012	Prohibition Of Certain Toxic Substances Regulations
SOR/2014-254	2014	Products Containing Mercury Regulations
SOR/2016-137	2016	Ozone-Depleting Substances And Halocarbon Alternatives Regulations
SOR/2018-196	2018	Prohibition Of Asbestos And Products Containing Asbestos Regulations
STANAG 2290 ED. 2	2010-11-18	NATO Unique Identification Of Items
		NATO HQ AIRCOM FAC Standardization Team (FST} Standard Operating Procedure (SOP) Simulator Assessment Checklist.
	2011-01-01	United States Joint Fire Support (JFS) Executive Steering Committee (ESC) Coordinated Implementation (CI) Change Control Board (CCB) Engineering Change Proposals (ECP) 1.
	2011-01-01	United States Joint Fire Support (JFS) Executive Steering Committee (ESC) Coordinated Implementation (CI) Change Control Board (CCB) Engineering Change Proposals (ECP) 2.

A4.4 Acronyms and Abbreviations

Acronym	Definition
2D	Two-Dimensional
3D	Three-Dimensional
AAR	After-Action Review
ABCANZ	American, British, Canadian, Australian, and New Zealand Armies Program
ABL	Allocated Baseline
AGL	Automatic Grenade Launcher
AH	Attack Helicopter
ASCM	Airspace Coordination Measures
ATACMS	Army Tactical Missile System
ATP&P	Acceptance Test Plan and Procedure
ATR	Acceptance Test Report
AV&V	Acceptance Verification and Validation
BIT	Built In Test
BOC	Bombs on Coordinate
CA	Contracting Authority
CADTC	Canadian Army Doctrine and Training Centre
CAF	Canadian Armed Forces
CAGE	Commercial and Government Entity
CAS	Close Air Support
CCA	Close Combat Attack
CDR	Critical Design Review
CDRL	Contract Data Requirements List
CDSB	Canadian Division Support Base
CFB	Canadian Forces Base
CFF	Call for Fire
CFTO	Canadian Forces Technical Order
CI	Configuration Item
CM	Configuration Management
CMS	Contract Master Schedule
COT	Cursor on Target
COTS	Commercial Off-the-shelf
CSA	Configuration Status Accounting
CADD	Cybersecurity Architectural Design Document
DACAS	Digitally Aided Close Air Support
DAGR	Defence Advanced GPS Receiver
DCSEM	Director Combat Support Equipment Management
DGLEPM	Director General Land Equipment Program Management

Acronym	Definition
DID	Data Item Description
DLCSPM	Director Land Command Systems Program Management
DND	Department of National Defence
DPICM	Dual-Purpose Improved Conventional Munition
DQA	Directorate of Quality Assurance
E3	Electromagnetic Environmental Effects
EBS	Equipment Breakdown Structure
ECP	Engineering Change Proposal
EEA	Environmental Equipment Assessment
EHS	Environmental Health and Safety
ESC	Executive Steering Committee
FAC	Forward Air Controller
FAC(A)	Forward Air Controller (Airborne)
FPAI	First Production Article Inspection
FPAT	First Production Article Test
FBL	Functional Baseline
FCA	Functional Configuration Audit
FITE	Future Integrated Training Environment
FOC	Full Operational Capability
FOO	Forward Observation Officer
FOW	Family of Weapons
FSCM	Fire Support Coordination Measure
FST	FAC Standardization Team
FVEY	Five Eyes Intelligence Alliance (AUS, CAN, NZ, UK, and USA)
GBA+	Gender Based Analysis Plus
GFE	Government Furnished Equipment
GFI	Government Furnish Information
GoC	Government of Canada
GPMG	General Purpose Machine Gun
GPS	Global Positioning System
GSM	Government Supplied Material
GURF	Guns Up Ready to Fire
HazMat	Hazardous material
HE	High Explosive
HOTAS	Hands On Throttle and Stick
IAW	In Accordance With
ICM	Improved Conventional Munitions

Acronym	Definition
IED	Improvised Explosive Device
IFFS	Interim Forward Observer Officer/Forward Air Controller System
ILS	Integrated Logistics Support
IOC	Initial Operational Capability
IP	Intellectual Property
IPMPL	Intellectual Property Management Plan & List
IR	Infrared
ISO	International Organization for Standardization
ISS	In-Service Support
ISSP	In-Service Support Plan
IUT	Item Under Test
JFS	Joint Fires Support
JFS ESC	Joint Fire Support Executive Steering Committee
JTAC	Joint Terminal Attack Controller
JTAC VTS	Joint Terminal Attack Controller Virtual Training System
JTAC - I	Joint Terminal Attack Controller - Instructor
LAV	Light Armoured Vehicle
LAW	Light Anti-Armour Weapon
LMG	Light Machine Gun
LRF	Laser Range Finder
LRU	Line Replacement Unit
LSA	Logistics Support Analysis
LTL	Laser-Target-Line
MCN	Material Change Notice
MGRS	Military Grid Reference System
MLRS	Multiple Launch Rocket System
MOA	Memorandum of Agreement
MOTS	Military off the Shelf
MSR	Mandated System Review
NATO	North Atlantic Treaty Organization
NCAGE	NATO Commercial and Government Entity
NDID	NATO Defence Index of Documentation
NEW	Network Enable Weapon
NFS	Naval Fire Support
NSFS	Naval Surface Fire Support
NSN	NATO Stock Number
NVD	Night Vision Device

Acronym	Definition
OEM	Original Equipment Manufacturer
PA	Procurement Authority
PBL	Product Baseline
PCA	Physical Configuration Audit
PDR	Preliminary Design Review
PGM	Precision Guided Munition
PMP	Project Management Plan
PSPC	Public Service and Procurement Canada
PW	Personal Weapon
QAR	Quality Assurance Representative
QMS	Quality Management System
R&M	Reliability and Maintainability
R&O	Repair & Overhaul
RAAMS	Remote Anti-Armor Mine System
RCA	Royal Canadian Artillery
RCAF	Royal Canadian Air Force
RCAS	Royal Canadian Artillery School
RCHA	Royal Canadian Horse Artillery
RCN	Royal Canadian Navy
Reg F	Regular Force
RFD	Request for Deviation
RFP	Request for Proposal
RPAS	Remotely Piloted Aerial System
RTVM	Requirements Traceability Verification Matrix
RFW	Request for Waiver
SCR	Software Change Request
SDS	Safety Data Sheet
SE	Systems Engineering
SEAD	Suppression of Enemy Air Defence
SEMP	System Engineering Management Plan
SME	Simulated Military Equipment
SOP	Standard Operating Procedure
SOV	System Overview
SOW	Statement of Work
SPTD	Supplementary Provisioning Technical Documentation
STR	System Trouble Report
STTE	Special Tools and Test Equipment

Acronym	Definition
SVDD	Software Version Description Document
SVP	System Verification Plan
TA	Technical Authority
TAPV	Tactical Armoured Patrol Vehicle)
TDWG	Training Development Working Group
TIO	Thermal Imaging Optic
TOT	Time on Target
TPRL	Technical Publications Requirements List
TRR	Test Readiness Review
TTP	Tactics, Techniques, and Procedures
TTT	Time to Target
V&V	Verification and Validation
VDL	Video Downlink
VMF	Variable Message Format
WinTAK	Windows Tactical Assault Kit
WP	White Phosphorus