Transportation Security Administration

ACQUISITION Program Management

QUALIFICATION MANAGEMENT PLAN

FOR THE

CHECKPOINT PROPERTY SCREENING SYSTEM PROGRAM

VERSION 1.0

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Approval

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1 Introduction

The objective of this Qualification Management Plan (QMP) is to define the work necessary for QPL Applicants to have a proposed system in the Checkpoint Property Screening System (CPSS) Program. The Transportation Security Administration (TSA) requires any CPSS used within the United States (US) to be certified and qualified as defined in Federal Acquisition Regulation (FAR) 9.202. This QMP defines the roles and responsibilities for the QPL Applicant as a system proceeds through the Qualification Process. QPL Applicants interested in having a system qualified under the CPSS Qualification Process must successfully meet both the requirements and timelines for each step in the CPSS Qualification Process outlined below; if the QPL Applicant fails to successfully complete any step, the QPL Applicant will be removed from further consideration for qualification.

The CPSS Program will apply an incremental approach to rapidly deploy new technology. TSA will evolve technology to meet its mission by continuing to work within the trade-space established by the thresholds and objectives defined in the Operational Requirements Document (ORD). Incremental enhancement occurs when an additional discrete segment of capability is installed and is in operation following a deployment decision. For each increment, the CPSS Program will establish updates to the existing Functional Requirements Document (FRD) that speaks to the area within the trade-space that meets the incremental enhancements acceptable baseline. CPSS incremental enhancements will be rolled out throughout the project lifecycle and adhere to updated functional requirements that are traceable to the ORD.

TSA will require QPL Applicants to meet the following entrance criteria:

- Present systems that demonstrate capabilities based on the CPSS FRD.
- Although CPSS systems will not initially connect to the TSA Network, CPSS systems must adhere to applicable IT security requirements and meet select Security Technology Integrated Program (STIP) compatibility requirements (e.g. resources and protocols) as defined in the CPSS FRD.

1.1 Qualification Process Overview

The purpose of the Qualification Process is to test and qualify systems to TSA standards, complete full system integration, verify executable manufacturing process, ensure operational supportability with particular attention to minimizing the logistics footprint, implement Human Systems Integration (HSI), ensure affordability and demonstrate system integration, interoperability, safety, and utility. In order to establish and maintain a product baseline, CPSS will incrementally procure technically improved capabilities. TSA can tailor the qualification methodology based on the TSA Acquisition Qualification Policy as required at each QPL Window. This methodology is illustrated in Figure 1 below and culminates with a QPL decision for systems. TSA will not be issuing a request for Qualification Verification Package (QVP), only a Qualification Data Package (QDP) submission.

The system must successfully proceed through Certification Testing (CERT), Qualification Testing (QT) and Initial Operational Test and Evaluation (IOT&E) prior to a QPL decision. Post IOT&E, a satisfactory finding of operational effectiveness, suitability, and cyber resilience,

followed by a favorable DHS programmatic decision will result in that system being placed on the QPL.

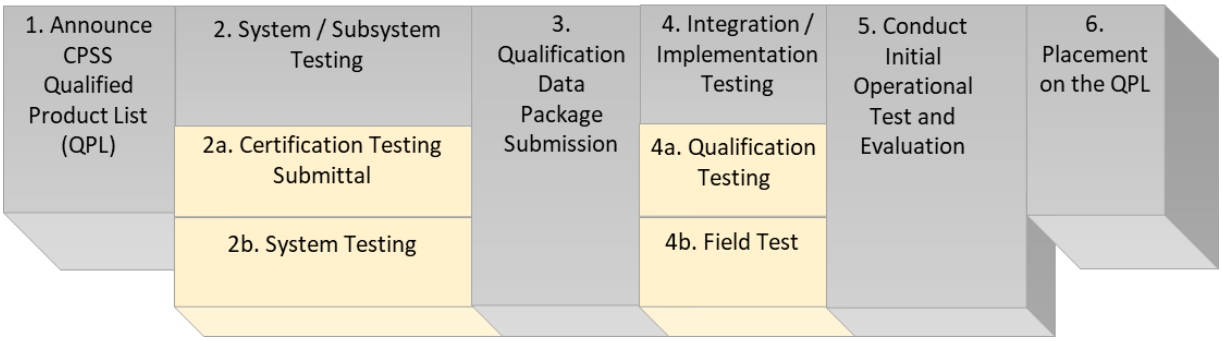

Figure 1: CPSS Qualification Process

1.2 Production Systems

TSA will require production representative systems for at least three (3) test systems: one (1) test system will support Qualification Testing at the TSA Systems Integration Facility (TSIF) and two (2) systems will support Field and IOT&E activities. Upon submitting, a QDP a QPL Applicant may start to deliver and install systems being submitted for Qualification and Field Testing. Qualification and Field Testing activities will not start until the QPL Applicant's QDP is approved. The QPL Applicant shall provide equipment, peripherals, and networking equipment for all production systems as noted within this document. The production systems shall include, but will not be limited to:

1. Providing site-planning guides and installation manuals to prepare a site for installation, integration, and networking, as appropriate.
2. All engineering services to include installation, crating, decommissioning, reinstallation of systems, and ancillary equipment, as needed.
3. Providing site acceptance test plans and procedures.
4. Installation and reinstallation support (as needed) for all test sites.
5. Shipping and rigging of all property as directed by the Government.
6. Providing training as well as training materials.
7. Implementation of all hardware and software upgrades and reconfigurations required for Test and Evaluation (T&E) of all property.
8. Engineering services and proper communications for integration with relevant systems.
9. Providing Test Article Development support, Test Readiness Review (TRR), Site Acceptance Test (SAT), and Integrated Site Acceptance Test (iSAT) support to achieve safe and reliable operational performance.
10. Preventive and corrective maintenance, as needed.

2 Qualification Process Steps and Requirements

This section provides the description of the Qualification Process, requirements, and actions that shall be used to gain qualification of a CPSS system and acceptance onto the QPL.

2.1 Step 1: Announce Qualified Products List (QPL)

When TSA has a specific requirement, TSA will post a notice on FedBizOpps (FBO) opening a QPL Window for QPL Applicants to submit their systems and Qualification Data Packages (QDPs). A QPL Window is the time period when TSA will accept QPL submissions for entry into the Qualification Process.

2.1.1 CPSS Increments

Increments represent the different and increasing capabilities TSA will deploy to airport checkpoints over the life of the CPSS Program. TSA intends to open a new Increment when the TSA makes significant changes to CPSS requirements or the technology changes significantly.

2.1.2 QPL Windows

A QPL Window is the time period when TSA will accept QPL submissions for entry into the Qualification Process. A QPL Window will be opened for each Increment to request QDP submissions.

The QPL Notice will provide, at a minimum, the following information:

a. Increment under which the QPL window is being opened.
b. Instructions to request and access the applicable requirement document(s) and the Qualification Management Plan (QMP)
c. Time period for which the QPL Window will be open
d. General instructions for QPL submission

TSA anticipates conducting annual reviews to verify the need to open future QPL Windows to accommodate increasing capabilities in airport checkpoints over the life of the CPSS Program. DHS Agencies/Components reserve the right to utilize the list of qualified vendors to issue their own contracts and orders.

2.2 Step 2: System/Subsystem Testing

2.2.1 Step 2a: Certification Testing (CERT) Submittal

Certification (CERT) is the formal test that is administered to all candidate systems under the strictest controls possible. CERT consists of three parts: (1) the conventional explosives test, (2) the Home Made Explosives (HMEs) test, and (3) the false alarm test. The CERT team will utilize a standard test article set for the CERT of all CPSS systems. All test articles are scanned by the system as instructed by QPL Applicant operating manuals. During the conduct of CERT, the QPL Applicant may be called upon for technical and maintenance support, as required. However, the QPL Applicant will not be permitted in the immediate test area unless requested by the DHS Transportation Security Laboratory (TSL) Test Director.

All systems seeking qualification under future CPSS QPL Windows will be required to undergo and pass CERT against the Accessible Property Screening System (APSS) detection standard. If an QPL Applicant's system fails the detection or false alarm requirement(s), the QPL Applicant must resubmit for CERT at a future time as coordinated with the TSL.

Upon successful completion of CERT, the TSA will provide the QPL Applicant a Certification Letter that identifies the system baseline and level of certification that is achieved. Also, the Government will add the system to a Certification Database that will identify both the system baseline that has been certified and the certification level achieved as a means to record compliance with 49 U.S.C. § 44913 explosives detection certification.

The systems shall have the same configurations with respect to components that could affect detection performance, including system hardware, software, and tuning parameters after the completion of CERT. No system modifications will be allowed after the completion of certification testing without the written approval from the Government.

2.2.2 Step 2b: System Testing

The QPL Applicant shall conduct internal system testing in accordance with the QPL Applicant System Test Plans and Procedures. The QPL Applicant shall procure or fabricate any special test articles and instrumentation for such tests. The QPL Applicant is responsible for contacting, communicating expectations, and acquiring results or reporting documentation for any third party testing utilized during the System Testing phase. The QPL Applicant must verify that any third party testers utilized are reputable and industry leaders in the field of verification. It is the QPL Applicant's responsibility to ensure the testing adequately verifies the requirement and that the data and documentation provided by the third party tester is thorough and complete.

During the execution of Step 2b: System / Subsystem Testing, the QPL Applicant shall identify all hardware and software defects and deficiencies found as a result of Step 2b: System / Subsystem Testing (internal QPL Applicant testing), and generate a Change Request package. The QPL Applicant shall submit all change packages to CPSSComms@tsa.dhs.gov in accordance with the APM Configuration Management Plan (Rev E) and Office Security Capabilities (OSC) Configuration Management Guidance Version 2; June 30, 2015.

2.3 Step 3: Qualification Data Package (QDP) Submission

The QPL Applicant shall generate a QDP for submission into the TSA Qualification Process; if accepted by TSA, the QPL Applicant system will continue into Step 4: Integration / Implementation Testing of the TSA Qualification Process.

In the QDP, the QPL Applicant shall provide all test data, evaluation tools (including simulations) and results to TSA for performance evaluation and to assist in the QDP acceptance decision. The QPL Applicant shall document any major issues experienced during QPL Applicant System Testing and document any system modifications which could impact previously completed, ongoing, or upcoming test events. TSA will review System Test results as part of reviewing and accepting the QDP.

The QPL Applicant's QDP must contain the required information and be presented in a manner that is clear, concise, and unambiguous, following the Data Item Description (DID). The QPL

Applicants must use proprietary and Sensitive Security Information (SSI) markings according to standard marking procedures. SSI must be handled according to the requirements of 49 Part 1520. The TSA Systems Integration Facility (TSIF) has instituted procedures to safeguard proprietary data that are used during CPSS QDP evaluation. The QDP will become a part of the official records of compliance testing for each system submitted.

The level of substantiation that needs to be submitted for each requirement is outlined in the CPSS FRD. Complete identification of the systems used to collect the substantiation data must be provided in the QDP and match the system being proposed for TSA testing. This includes:

a) Model number(s) of equipment tested.
b) Serial number(s) of equipment tested.
c) Software version(s), including reconstruction and inspection software components.
d) Firmware version(s), if applicable.
e) An inventory of hardware Configuration Items (CIs), software CIs, and firmware CIs with configuration identification as instructed through the Master Configuration Item List (MCIL) section.
f) Identification of all configurable and adjustable parameters and adaptation data used to tailor the system, as well as their settings and values. Adaptation data refers to variables used to configure or adjust the system to specific environments or uses. Unless required by the tests, all tests shall be conducted with the same parameter and adaptation settings. If changes to calibration settings or variable parameters are required, these must be clearly indicated along with an explanation for the changes.
g) Provide the United States equivalent if substantiation calls out European standards.

The QDP shall contain System Requirements, Architecture Documentation and Cybersecurity Documentation, a Life Cycle Support Concept, MCIL, cybersecurity information of the QPL Applicant development/test environment, and additional configuration management documentation, as detailed throughout this document. As a clarification, the cyber testing scope will assume an adversary with physical access to all CPSS systems (with varying access to system software). Though, cybersecurity information of the QPL Applicant development/test environment is requested, the TSA Test and Evaluation (T&E) scope will not consist of cyber testing in the QPL Applicant facility. The QDP shall also contain the Test Reports from QPL Applicant System / Subsystem Testing as verification of system readiness to proceed into independent Government T&E.

The QDP will be evaluated by the Government for thoroughness and adequacy to enter into independent Government T&E. Once approved, the QDP is the design basis in which the system baseline is established by the Physical Configuration Audit (PCA) for the remainder of the Qualification Process.

2.3.1 System Requirements, Architecture Documentation, and Cybersecurity Documentation

The QPL Applicant shall provide a detailed discussion of system requirements, including all mission level requirements, all driving requirements, and all functional requirements deemed

significant to the architecture and design of the proposed system provided in the QDP. The requirements shall be based on the CPSS FRD. The documentation shall identify any system changes made based on the results from System / Subsystem Testing, and to meet the TSA CPSS requirements as defined in the FRD.

2.3.1.1 System / Subsystem Specification

The QPL Applicant shall generate the System / Subsystem Specification (A-Specification). The QPL Applicant shall perform required analyses, modeling and simulation, functional allocation, and flow down of requirements from the FRD to the A-Specification. The A-Specifications shall include a traceability matrix with rationale that traces each requirement in the A-Specification to the requirement in the FRD.

The QPL Applicant shall provide an assessment of system performance against the FRD. Each assessment must include a clear description for the basis of the assessment, *e.g.*, simulated, modeled, predicted, measured, etc. In addition to the assessment, the QPL Applicant shall provide the threshold value for the requirement, a flow-down to A-Specifications and budgets, and any additional justification necessary to support its derivation.

2.3.1.2 System Level Architecture and Design

The QPL Applicant shall provide a description of the overall system level architecture and design. This description shall include a discussion of the overall capability of the system, and integration of the system's subsystems, and external systems.

The QPL Applicant shall provide a Systems Architecture Document. The Systems Architecture Document shall contain the context, operation, functions, interfaces and activities of the system and integration with any external systems.

The Systems Architecture Document shall also contain operationally-oriented diagrams that describe the functionality of the system using Unified Modeling Language (UML) and Systems Modeling Language (SysML). The operational activity and sequence diagrams shall contain information on the following:

a) Complete description of all operational activities;
b) Mapping of operational activities to subsystem;
c) Identification of driving system throughput and timing (stated in the context of operational requirements);
d) Identification of parallelism or sequential operation;
e) Concurrent operations support, including overload processing;
f) Supporting context of Software CIs; and
g) Complete data flow that depicts all the subsystems and the communication between those subsystems.

Further, the QPL Applicant shall develop products that describe the context, functions, and resource flows of the system. The products shall be focused on external data exchanges and resource. The QPL Applicant products shall be explicitly linked to lower level architecture

products contained in the System / Subsystem Specifications (A-Specifications), which details internal system operations and interactions.

The System Architecture Document shall include the following subsection hardware and software descriptions:

1) **Hardware Description**: The QPL Applicant shall provide a detailed description of the hardware design. This description shall include a discussion of the adequacy of the system design in meeting the allocated requirements.
   a) **Detection Subsystems**: The QPL Applicant shall provide a detailed discussion of all aspects of the proposed detection design. At a minimum, the detailed discussion shall include performance projections and requirements for the overall detection subsystem.
   b) **Other Subsystems**: The QPL Applicant shall provide a detailed discussion of all aspects of other subsystems that includes at a minimum a comprehensive system design description, requirements and performance projections.
   c) **System Calibration Approach**: The QPL Applicant shall provide a detailed description, requirements, and performance projections of the system calibration approaches, including:
      i) Calibration.
      ii) Subsystem Calibration and Synchronization.
      iii) Reference Target Calibration.
2) **Interfaces**: The QPL Applicant shall describe each of the interfaces to the external support systems (power, mechanical, and cooling (both liquid and air)). Any special requirements relative to the site design also shall be included.
3) **Key Trades**: The QPL Applicant shall identify and discuss any key trades that were done in the synthesis of the system. Technical rationale shall be provided. For areas where a trade is not complete, the QPL Applicant shall identify the path forward and any risk associated with the open trade.
4) **Software Description**: The QPL Applicant shall provide a description of the overall system software concept, including architecture and interfaces. The QPL Applicant shall describe each of the major drivers to the software development. The QPL Applicant shall describe the partitioning of the software elements, including the interfaces between each element. This description shall discuss the adequacy of the software design in meeting the allocated requirements. Also, the QPL Applicant shall provide a detailed description of the following functions:
   a) Detection management.
   b) Signal processing.
   c) Data processing.
   d) User Interfaces.
   e) Machine Control.

5) **Key Architectural Products**: The QPL Applicant shall provide a description of the process utilized to capture the system design into the software designs to the element level. A discussion of the activity and sequence diagrams shall be included.
6) **Algorithm Mapping**: The QPL Applicant shall provide a detailed mapping of the functions to the software elements. The QPL Applicant shall identify its proposed key algorithms. The QPL Applicant shall describe its key algorithms including any benchmarks and modeling results.
7) **Signal Processing Software**: The QPL Applicant shall provide a description of the proposed Signal Processing Software. This includes a description of algorithms, algorithm performance, benchmarking results, as well as extrapolation and relevance to the operational design. The QPL Applicant shall provide a description of work required to demonstrate this capability in the operational software environment.

2.3.1.3 Cybersecurity Documentation

As part of the QDP package submission, the QPL Applicant shall provide a list of documents and artifacts to support evaluation and compliance against cybersecurity requirements. Specifically, this includes, but is not limited to:

1.) Vulnerability scan test results (e.g., Nessus scans or similar) and scanner tool configuration (e.g., version, plugins, etc.)

2.) Data flow diagram between system subcomponent(s)

3.) Network diagram

4.) Logical Design Document/Logical Data Model diagram

5.) All organizational, physical, and information assurance security policies and procedures

2.3.2 System Integration Approach

The QPL Applicant shall discuss the approach that will be followed for integration of the system internally and externally to identified System of Systems (SoS), if applicable (applicability is defined as the ability to integrate to functionality and capabilities not limited to: Automated Conveyance Systems and network connectivity to external systems such as STIP). Although CPSS systems will not initially connect to the TSA STIP Network, systems will need to meet minimum STIP resource and protocol requirements as defined in the FRD. When applicable, the QPL Applicant shall discuss integration of each element's interface, as well as the testing necessary to validate the integration of the system as a whole and within the SoS. The QPL Applicant shall discuss any risks that have been identified with this integration.

2.3.3 Electromagnetic Interoperability (EMI) / Electromagnetic Compatibility (EMC) and Hazard of Electromagnetic Radiation to Personnel (HERP) CONOPS

The QPL Applicant shall provide a description of the design features, algorithms and other methods used to ensure Electromagnetic Interoperability (EMI) / Electromagnetic Compatibility (EMC) and minimization or elimination of Hazard of Electromagnetic Radiation to Personnel

(HERP) with other TSA assets. The effect of these assets on the QPL Applicant's proposed system and vice versa shall be described.

The QPL Applicant shall provide an Environment Safety and Occupational Health (ESOH) assessment that includes data, studies, and reports necessary to demonstrate full compliance with all Federal, State, and Local environmental laws including any known potential compliance issues associated with the system manufacturing, testing, operations, and disposal. This includes, but not limited to EMC, Electromagnetic Vulnerability (EMV), Electrostatic Discharge (ESD), Radiation Hazards (RADHAZ), electromagnetic fields, and intentional EMI and lightning.

2.3.4 Life Cycle Support Concept

The QPL Applicant shall discuss the concept that will be followed to meet the Reliability, Maintainability, and Availability (RMA) requirements identified in the FRD. The QPL Applicant shall discuss the design features in the system architecture that support the RMA requirements. The QPL Applicant shall identify the life cycle support philosophy, including Failure Detection (FD) / Fault Isolation(FI) Approach, Maintenance Tempo, Reliability Growth, and Sustainment. The QPL Applicant shall discuss the approach to minimize Total Ownership Cost (TOC).

2.3.5 Master Configuration Item List (MCIL)

The QPL Applicant shall provide a MCIL that establishes and maintains the definitive, current basis for control and status accounting of a system and its designated hardware, software, and firmware CIs throughout its lifecycle. This information is needed to manage and support those items during their lifecycle.

The MCIL shall identify all CIs. All system CIs shall be listed to the Line Replaceable Unit (LRU) level, software to the version level and shall be uniquely identified. LRU is defined as an essential support item removed and replaced at field level to restore an end item to an operationally ready condition. The LRU is to be defined at the lowest possible level that can be failure-isolated and corrected in the field.

Specifically, this document shall include the following information for each CI:

1. Part Name (use official nomenclature)
2. Part Number
3. Part Revision and Version
4. Drawing number (sufficient high level drawings are requested to show each CI)
5. Date and Time Added
6. Date and Time Removed
7. Make and Buy - If Buy, provide manufacturer (3rd Party) name and the part number
8. Primary Function of that CI
9. Part Country of Origin.

As a part is changed by an approved change request, the part number will be changed with a removal and add date and time and the revised MCIL shall be submitted within 5 business days of the change.

2.3.6 Drawing Tree

The QPL Applicant shall provide a drawing tree showing the result of linking both engineering drawing and part lists. This document is a visual representation how materials, components, and sub-assemblies come together to form the end-product. This is necessary especially when QPL Applicants provide Manufacturing Bill of Materials (MBOM). MBOMs do not depict the level in which each end-item rolls into its higher assembly, but depicts how the materials, components, and sub-assemblies are built or assembled. The drawing tree provides TSA the capability to visualize the physical system hierarchy of the as-designed system.

2.3.7 Bill of Materials (BOM)

The QPL Applicant shall provide an indentured Bill of Materials (BOM) for any qualification testing event. This type of BOM provides TSA with the ability to expedite reviews, validate and properly link corresponding documentation requested by TSA in QPL Applicant submitted data packages, and highlight the system's configuration at a single-point and time for testing or demonstrations. Each BOM itself needs to include a revision and effective date to show it is controlled by the QPL Applicant. The BOM format is constrained by the QPL Applicant's Enterprise Resource Planning (ERP) and/or Manufacturing Resource Planning (MRP) Tool, and as a result the format is not government directed, but the necessary elements are directed. The minimum elements are as follows:

1. Nomenclature for each CI (official part name used in QPL Applicant's internal drawings and BOMs).
2. Part number (P/N) of each CI (official P/N used in QPL Applicant's internal BOMs and product labels).
3. Current approved Revision level of each CI.
4. Unit of Measure (UOM).
5. Quantity for each CI.
6. When a component is a buy from the QPL Applicant the BOM may provide manufacturer (third-party) and their part number.
7. Part Country of Origin.

2.3.8 Source Control Documentation (SCD)

Beyond the MCIL, BOM and Drawing tree, the QPL Applicant shall provide four types of source control documents to validate the physical item against the design documentation, including: 1) engineering drawings, 2) components specification sheets, 3) software release notes, and 4) select manuals. These documents provide government assurance the as-delivered physical item(s) is representative of the as-designed system.

2.3.8.1 Engineering Drawings

The QPL Applicant shall provide engineering drawings in English, Standard UOM, and version controlled. The drawings are used to define the designed CIs physical geometry and composition, and may contain component specifications. The QPL Applicant shall generate, maintain and provide a set of CPSS Product Drawings / Models Source Control Drawings / Models and Associated Lists, Special Inspection Equipment Drawings / Models and Associated Lists and Special Tooling Drawings / Models and Associated Lists to support the fabrication, and coding, integration and testing of the subsystems, software and overall CPSS.

In support of drawings / models development, the QPL Applicant shall generate and maintain CPSS Source Control Drawing Approval Requests, Drawing Number Assignment Reports, and proposed Critical Manufacturing Process Descriptions to support the fabrication, coding, integration and testing of the subsystems, software and overall CPSS.

2.3.8.2 Product Specification Sheets

For Commercial-off-the-Shelf (COTS) products, the documents accepted are the third party specifications, as well as a clear indication of any subsequent modifications performed by the QPL Applicant. The example would be computers and Graphics Processing Units (GPU) cards. For hardware products that were designed by a third party per QPL Applicant requirements, TSA expects to receive specification sheet(s) that identify the attributes and characteristics of that product and assurance the document used to substantiate the product is under configuration control. Any end-product that contains a Material Safety Data Sheet (MSDS) as part of that physical items hierarchy should also be provided to substantiate the end-product. Some examples for this would be coolant, or lead curtains.

2.3.8.3 Software Release Notes

The release notes should contain revision history, introduction, new features and enhancements, bug fixes, corrections, known issues, documentation references, special considerations required, and hardware and software compatibility. The release notes introduction should contain information on what type of release it is—major, minor or patching. If testing or integration is an aspect of the software release notes, then that should be linked in the documentation references.

2.3.9 Manuals

The following manuals will be listed as configuration items throughout the developmental lifecycle—operators or user, maintenance, and installation. The operator's manual will contain information and strategies designed to guide operations in the normal use, system recovery procedures, and operator's preventative maintenance. The maintenance manual will provide maintenance personnel with the information necessary to maintain the entire system effectively and provide recommended maintenance schedules. The installation manual will provide detailed instructions on how to safely and effectively install and configure the system in various environments and locations.

2.3.10 Modeling and Simulation Requirements

The QPL Applicant shall code, test, document, and deliver Modeling and Simulation (M&S) (to include emulators) required to verify system performance for Certification and Qualification Tests. The documentation provided for each M&S shall include a user manual sufficient to allow the Government to utilize the M&S. Each delivered M&S shall include commented source code, executable code, block/flow diagrams, algorithm descriptions, and input data files necessary for execution. Of note, the TSA will safeguard all Intellectual Property as provided to the utmost of TSA's ability.

The QPL Applicant shall provide complete identification of the M&S to be used for Certification and Qualification tests:

1. Model number(s).
2. Serial number(s).
3. Software version(s), including version of software subcomponents such as reconstruction and inspection.
4. A detailed component listing of the hardware, software, and firmware configurations; and
5. Identification of all configurable and adjustable parameters and adaptation data used to tailor or tune the system as well as their settings and values. Adaptation data refers to variables used to configure or adjust the system to specific environments or uses.

2.3.11 Pre-Production Manufacturing

The QPL Applicant shall describe the manufacturing process necessary to build the system. The QPL Applicant shall describe any special testing performed and any specific test items or materials used to facilitate such testing. The QPL Applicant also shall describe planned activities to support a manufacturing readiness assessment, including pilot process / line development, proof of manufacturing systems, and transition to production activities if applicable. Describe the manufacturing aspects of maintaining the system.

2.3.12 Test Configuration(s)

The QPL Applicant shall define the specific test configuration(s) used to collect test data, including all hardware, software, firmware, test equipment utilized, manuals, tuning parameter settings and site adaptation data. Configuration documentation and data shall be associated with specific system configuration(s) used during the QPL Applicant's testing (Step 2b: QPL Applicant System Testing). The QPL Applicant is not permitted to alter any configuration parameters on systems submitted to TSA for testing (Certification and Qualification testing) unless specifically approved by the Government. All changes to configuration must be documented through a Trouble Report.

2.3.13 QPL Applicant System Plan

Step 2b: QPL Applicant System Testing determines the maturity of the system design to meet the TSA FRD requirements and will be used to determine system readiness to proceed into QT. This consists of component, subsystem and string integration testing at the QPL Applicant's facilities

or Third Party Test Facilities, of the proposed system prior to installation at the TSIF or a field site. The QPL Applicant shall plan for Government participation in all aspects of testing.

QPL Applicant System Testing will follow a common T&E process that isolates and evaluates every system from the component level through the Automated Conveyance System (ACS) in an operationally realistic environment. This robust T&E process allows the TSA and QPL Applicant to fully vet the proposed systems to ensure compliance with TSA capability, functional and operational requirements. The specifics of each test period shall be defined in the QPL Applicants QDP submission, and by TSA in the CPSS Test and Evaluation Master Plan (TEMP).

The QPL Applicant shall describe the testing conducted to demonstrate the individual system component performance and software, and firmware or hardware readiness for system integration and testing. This description shall cover test events, facilities, and assumptions required to satisfy all test objectives. QPL Applicant System Testing shall be conducted by the QPL Applicant and third party testing organizations (when required).

The QPL Applicant shall produce a System Test Plan to verify the requirements of the A-Specification, the FRD, and the STIP Interface Requirements Document (IRD). These plans shall identify the methods to be used to verify requirements compliance. The test plans shall include what is to be tested (e.g., A-Specification requirement), the test methodology (e.g., demonstration using simulated inputs and operator actions), and the criteria for passing the test. These test plans shall also identify the location of the testing procedure, such as stand-alone CI testing in the factory, CIs in sub-systems, or CIs in the final configuration at a test facility. These test plans shall also identify all test limitations and provide detailed mitigation descriptions. For test limitations that are due to facility / infrastructure limitations the QPL Applicant is to identify required infrastructure needed to complete the verification events and identify alternate test sites to conduct the events (i.e., third party facilities).

2.3.14 Safety

The QPL Applicant shall provide third party certification that the systems meet the safety requirements as specified in the FRD and Appendix B of this QMP.

2.3.15 Test Reports

The QPL Applicant shall provide a Test Report that provides the detailed results of the Step 2b: QPL Applicant System Testing conducted during Step 2: System / Subsystem Testing. The Test Report shall document the completion of all test events and requirements verification. Also, the Test Report shall include an overview of the testing (e.g., dates, facilities, systems under test). For any requirement with a “B” substantiation, at a minimum, the QPL Applicant shall provide to the Government the test methodology, all test data, a list of evaluation tools (including simulations) used during testing, any limitations when conducting the test, and results. The QPL Applicant shall ensure the substantiation provided complies with the substantiation required by TSA in Appendix B. The QPL Applicant shall also include any general limitations and constraints corresponding to the testing effort and discussion of any requirements unable to be tested as required by TSA in Appendix B.

The QPL Applicant shall provide the test report results from Nessus vulnerability scans, including detailed mitigations for open vulnerabilities. The test report shall include test variables (e.g. version of DHS/TSA DISA plug in, date, asset name).

2.4 Step 4: Integration / Implementation Testing

The goal of Step 4 is to ensure the system meets requirements specified in the FRD, is ready to proceed into the Initial Operation Test and Evaluation (IOT&E), and will not pose any operational, safety, or security risks. During Step 4, the Government shall execute testing against requirements, assigned by the QT System Evaluator, as a verification test source. These are typically requirements from the FRD and IRD (if applicable). Testing for Step 4 will be tailored to these requirements and all effort will be made to evaluate each System Under Test (SUT) in an identical manner. Step 4 will also include early user in the loop events.

The QPL Applicant shall deliver to TSA a proposed baseline system with all associated approved corrections following System / Subsystem Testing, for use in independent Government Integration/Implementation Testing (Qualification Testing (QT) and Field Test respectively). QT and Field Test will be performed independently from the QPL Applicant by the Government at the TSA TSIF and airport checkpoints in a true operational environment. QT will be focused on verification of requirements to include Critical Technical Parameters, Key Performance Parameters, Key System Attributes, Measures of Effectiveness, Measures of Suitability, Measures of Performance, and mission level performance in the controlled laboratory environment.

Integration or Implementation Testing will be tailored at the discretion of the TSA and may include early user in the loop events, system endurance tests integrated at an operational field site, Cybersecurity Vulnerability Scans, Networking Configuration validation, Privileged Access Management (PAM) credential validation, and an assessment of performance prior to the conduct of IOT&E.

2.4.1 Step 4a: Qualification Testing

QT is conducted by the TSA at the TSA TSIF to assess system performance against requirements in a laboratory environment and readiness for testing in the operational environment. The QPL Applicant shall provide the TSA with the proposed system for QT at the TSIF.

The QPL Applicant will not be permitted to witness QT. However, the QPL Applicant may be called upon for on-site technical support, cyber security verification activities (e.g. questions on security controls) and maintenance, or troubleshooting of system malfunctions, as required. With the exception of Field Data Reporting System (FDRS) and log files, the QPL Applicant shall not conduct data recording (logging) of test events or test objects. All image files, FDRS and log files generated during QT will be the property of the Government or will be purged from the system upon completion of the tests by the Government. The QPL Applicant will not be permitted to wipe any data from test equipment without the explicit approval of the Government employee, in writing, during a maintenance visit or at completion of QT.

2.4.1.1 QT Procedures

The Government will generate a Qualification Test Plan (QTP) with standard test procedures. All efforts will be made to evaluate each SUT in an identical manner; however, the Government retains the right to tailor the procedures if needed, on a system-by-system basis.

2.4.1.2 Execution

Once the QPL Applicant has successfully installed the SUT at the TSIF and has passed all configuration audits, a Test Readiness Notification (TRN) will be prepared by the QPL Applicant and provided to the TSIF Test Director. The TRN is the final notice that the QPL Applicant has successfully installed the SUT at TSIF, that the system is fully functional, and the system is ready for evaluation by the Government without further QPL Applicant involvement, unless specifically directed. If QPL Applicant support is required during QT, the Government will document all requests and any involvement by the QPL Applicant will be observed and recorded. The Government will conduct an internal Test Readiness Review as the final confirmation before entering official TSIF QT.

2.4.1.3 QT Failures

The TSIF Test Branch will track and document all SUT failures, malfunctions, and / or anomalies encountered during QT. The TSIF Test Branch will review observed issues that affect testing activities and will coordinate with the QPL Applicant for resolution of any required corrective actions for critical failures.

QT will be suspended if the SUT malfunctions or has a critical failure that impedes the progress of testing, and cannot be repaired or replaced within three business days of QPL Applicant notification or a time frame specified by TSA. Repeated critical failures, or a critical failure that remains unresolved, may also result in suspension or termination of testing if the overall QT schedule is impacted. If it is determined at any time during QT that the SUT fails to meet requirements, testing may be suspended or terminated and the QPL Applicant will be notified by the Government.

TSA may perform re-test or regression testing following a repair or replacement of parts, or after any software modification.

The Government reserves the right to remove any QPL Applicant from QT and require third party substantiation of QPL Applicant fixes if:

- the SUT experiences at least one TSA defined significant failure during QT.
- TSA determines the TSE has an unacceptable cluster of non-significant failures during QT.
- TSA determines the TSE has significant issues prior to testing that will prevent passing QT or IOT&E.

2.4.1.4 QT Reporting

The TSIF Test Branch will produce a QT Report at the conclusion of test activities, after any deficiencies have been properly adjudicated. The QPL Applicant will be notified of test results

after the conclusion of the QT reporting period. The next steps in the process will also be provided and may include termination, deficiency investigation, correction or continuation through the Qualification Process.

2.4.2 Step 4b: Field Test

Field Testing is conducted by the Government or Government's Authorized Agent in an operationally realistic environment prior to IOT&E and is used to ensure the SUT is installed, integrated and ready to proceed to IOT&E. This test event will be done in parallel, or immediately following QT, and used to inform IOT&E; it will serve as one last test prior to IOT&E to ensure a successful Operational Test outcome. Testing will be conducted at the operation field site identified by TSA, which will likely consist of the same sites where IOT&E will be conducted.

Field Testing objectives include but are not limited to:

a) Further system performance verification that can only be fully verified in the operationally representative environment;
b) Identify performance shortfalls and to ensure the highest chance of IOT&E success;
c) If necessary, completion of Hazards and Environmental Safety and Occupational Health trials in the operationally realistic environment to verify system safety analysis done during QT (Subset of Occupational Safety Health, and Environment testing from TSIF);
d) Initial assessment by TSA organizations of component SOPs and training to include:
    a. SOP evaluations to ensure the SOP is correct for IOT&E.
    b. Training verification to reduce the "learning curve" and ensure adherence to the SOP during IOT&E.
    c. Inform the Program Manager to determine if the SUT is ready to present to the Operational Test Agent (OTA) for IOT&E.

2.4.2.1 Field Testing Equipment Delivery and Installation

The QPL Applicant shall ship and install two (2) CPSS systems for Field Testing. The QPL Applicant shall ensure the same procedures as specified in Section 1.2 Production Systems are followed for the delivery and installation of Field Testing systems. The systems shall have the same configuration that successfully passed CERT and the configuration installed for QT. The QPL Applicant shall be responsible for support during the Site Acceptance Test (SAT) and Integrated Site Acceptance Test (iSAT). The QPL Applicant shall conduct checkout to ensure the system is operational and affirm the system readiness for testing.

The QPL Applicant shall provide any services deemed necessary for the equipment installation such as crane services, routine labor force, special installation fixtures, etc.

2.4.3 QPL Applicant Installation Plan

The QPL Applicant shall develop an Installation Plan that defines the requirements and responsibilities to Install and Checkout (INCO) the equipment and ensure it conforms to test site requirements. The Installation Plan shall identify the electrical and cooling required on-site and

identify any additional energy storage, power equipment or cooling beyond that which is provided at the test site. The QPL Applicant shall ensure the prevention of damage to facilities.

2.4.4 System Training

The QPL Applicant shall generate and maintain an Operator Manual for operation while at Government laboratories and test sites. The QPL Applicant shall also generate and maintain a M&S Operator and Maintenance Manual for each M&S tool used for Certification and Qualification.

At the discretion of the Government, the QPL Applicant shall conduct training for approximately twenty (20) Government designated personnel at each laboratory and test site in order to allow Government personnel to operate the system and M&S independently. The training shall include operator and maintenance training on the system and M&S. The QPL Applicant shall generate operator training materials (to include presentation materials in order to conduct training, as well as maintenance training materials). Initial operator and maintenance training shall be addressed in the QDP. Also, the QPL Applicant shall provide the TSA all training manuals, administered training materials, access and administrator privileges to all data recording (logging) capabilities of the system, demonstrate how to extract FDRS data from the system, how to access and download all system log files and how to access and download raw and processed image files, as well as how to import and run image files in the system M&S. The QPL Applicant shall support training sessions at the discretion of the Government to support Certification, Qualification, Field Test, and Operational Test periods.

At a minimum, the QPL Applicant shall deliver a course covering the following topics at the discretion of the Government (e.g., secure online submission, DVD/CD, instructor based, etc.):

1. The basic scientific and engineering principles applied in the technology (such as the physics behind the equipment):
    a. Include an Overview of the system and all major components. Theory of Operation Overview shall include a high level description of the system and how it operates.
2. Definition of “threat envelope” and detection or false-alarm tradeoff:
    a. Describe system performance across the threat space, regions of responsibility, size packaging, physical configuration, material make up. Also, provide QPL Applicant Test Performance Data.
3. System data collection, high-level processing steps, and data representation (including bag and detection results, basic operation decisions).
4. Equipment components (i.e., scanner, Inlet module, Outlet module, Primary Viewing Station, Secondary Viewing Station, Master Control Station) including network equipment (including function, interactions between components, calibration, failure modes and radiation safety):
    a. Include a block diagram format showing all the major hardware components of the system and how those components interact with one another. Block diagrams should also be provided for ancillary equipment components.

5. System day-to-day operation (start-up and shut-down procedures, mechanical system operations, use of image quality and Operational Test Kit bags).
6. User interface features and capability along with an overview of system maintenance.
7. FDRS data collection, standard reports, download system data (i.e., System Status, review FDRS reports, system logs files, system error log reporting).
8. Step-by-step instructions to access, change, and download all configurable settings, include the following topics:
    a. Definition of the configurable settings and configurable settings value.
    b. Steps on how to revert set configurable settings back to a value of choice.
    c. Access to the configurable settings (log-ins) to include any instructions on how to use hardware / software associated to this effort.
    d. Definition of the configurable settings and their respective values.
9. Step-by-step instructions to locate and download all image files (i.e., raw image and reconstructed image).
10. Step-by-step instructions on how to restore the system to operating condition after a system error or fault.

The QPL Applicant shall provide the trainees with a hands-on demonstration of the system and demonstrate all the required tools and user access to perform the testing activities. The QPL Applicant shall provide all special equipment or tools needed to perform certain operations such as configurable settings extraction, and any special software, applications or equipment to collect data. The QPL Applicant shall provide a simulator or emulator at each system location 14 calendar days prior to the delivery of the actual system.

2.5 Step 5: Conduct Initial Operational Test and Evaluation

IOT&E is the final dedicated phase of the Qualification Process. It is the final evaluation of the system in a true operational environment. The IOT&E is conducted by the OTA independent of the QPL Applicant and CPSS Program Office. The QPL Applicant shall ensure the same system configuration that successfully passed CERT and Qualification Testing is on all Field Test systems prior to the start of IOT&E.

IOT&E is conducted to:

- Determine system operational effectiveness, suitability, and cyber resilience.
- Identify operational deficiencies.
- Evaluate system capability against currently deployed capability to validate system utility.
- Provide information for developing and refining logistics support requirements for the system and training, SOP and Concept of Operations.
- Determine whether the technical publications and support equipment are adequate in the operational environment.

2.5.1 IOT&E Failures

In the event the proposed system does not pass testing or is suspended, the system will be removed from the Government test site(s). The QPL Applicant will be notified of the failure and the Government will provide Trouble Reports detailing the deficiencies observed. The QPL Applicant may be required to resolve the identified deficiencies and may be required to enter into Third Party Testing to verify the corrected deficiencies prior to re-entry into the TSA Qualification Process.

2.5.2 IOT&E Reporting

A System Evaluation Report (SER) will be generated by the OTA post IOT&E that will document operational effectiveness, suitability, and cyber resilience and will identify any deficiencies. The SER will be submitted to the TSA and DHS. The TSA will review the SER and may or may not provide the details to the QPL Applicant.

The QPL Applicant will be notified of test results after the conclusion of the IOT&E reporting period. The TSA will also advise the QPL Applicant of required next steps in the process, which may include termination and/or deficiency investigation/correction.

2.6 Step 6: Placement on the Qualified Products List

Post IOT&E, a satisfactory finding of operational effectiveness, suitability, and cyber resilience, followed by a favorable DHS programmatic decision will result in that system being placed on the QPL. Once a system is added to the QPL it is considered “Qualified” and no additional qualification determination will be provided.

The TSA will provide test results and advise the QPL Applicant of the required next steps in the process.

3 System Failures

After a deficiency is found during testing causing a suspension of testing and at the TSA’s discretion, the QPL Applicant may re-enter the TSA acquisition process by submitting change documentation and an updated QDP that provides all required information and detailed descriptions of the deficiencies found, actions taken to correct the deficiencies and the third party test results verifying the corrected deficiencies. The change documentation and QDP will be considered as a new submission and shall contain all required information. If approved, the QPL Applicant will enter the T&E process either at the test phase where the deficiencies were identified or at some other point in the T&E process based on the nature of the deficiencies found and the scope of changes within the system, at the Government’s discretion.

4 Technical Data Package

After notification by the Government that the system has successfully completed Operational Testing and prior to placement on the CPSS QPL, the QPL Applicant must be able to provide a Technical Data Package (TDP) if and when exercised as part of an optional Contract Line Item Number (CLIN) in the purchase and install contract. The TDP level will be determined prior to purchase install and contract award.

5 Configuration Management

The purpose of the following section provides the government with the level of substantiation necessary to establish the systems configuration baseline for any qualification testing, study or demonstration. These configuration items are the lowest common denominator for managing information. Also, the documentation submitted is used for impact assessments and determining the magnitude of change the QPL Applicant proposes through the CPSS formal change request process. The need for the following documentation encompasses both systems in developmental testing or in a production based environment. These collective documents will validate the "as-built" SUT is representative of the "as-designed" and "as-documented" system.

The QPL Applicant shall establish, implement, and maintain the Configuration Management (CM) Program for the hardware/software CIs, using ANSI/EIA 649 and the Configuration Management QDP Review, Version C, 4 OCT 2018 in Appendix F. The CM program shall include:

- CI Definitions.
- Hardware and software.
- Mapping of CI to functional requirements using template in Appendix D. The mapping shall indicate to TSA the specific requirements requiring regression testing if the CI should be updated in the future.
- Allocated, Functional and Product baselines.
- Configuration control / configuration status accounting.
- Performance of configuration audits as necessary.

The QPL Applicant shall allow the Government access to its baseline data, configuration control and configuration status accounting data and software tools. During the Qualification Process, the QPL Applicant shall inform the PMO of proposed changes in accordance with the CM Guidance and its associated procedures.

The QPL Applicant is not permitted to alter any configuration parameters on any SUT (Certification, Qualification Testing, or Operational Test & Evaluation) unless specifically authorized by the Government. All changes to the configuration must route through the Government Configuration Control Board (CCB). The QPL Applicant is responsible for the generation and submission of the initial change package, and responding to the government change package review questions. The Government CCB is responsible for internal routing and final adjudication.

Upon Qualification and being placed on the CPSS QPL, the QPL Applicant shall provide the TSA with the baseline data and full system configuration details, as well as software tools to verify and adjust system configuration. Upon Qualification the Government will take ownership of the CM for the Qualified system.

6 Maintain Qualified Status

The QPL Applicant is responsible to ensure it maintains the ability to manufacture the qualified CPSS Baseline documented in the Physical Configuration Audit and Qualification Letter. In the

event the CPSS Baseline cannot be manufactured, the Government may remove the QPL Applicant from the CPSS QPL.

7 Diminishing Manufacturing Sources and Material Shortage

The QPL Applicant shall generate and execute a Diminishing Manufacturing Sources and Material Shortage (DMSMS) Plan using DoD DMSMS Guidebook: A Guidebook of Best Practices and Tools for Implementing a Proactive DMSMS Management Program (SD-22), dated September 2010 as guidance. The QPL Applicant shall document DMSMS findings and metrics and provide it to the Government as issues arise or minimally annually. This requirement will be maintained during the Qualification Process and Post Qualification.

Appendix A: Acronyms and Abbreviations

ACS	Automated Conveyance System
APM	Acquisition Program Management
BOM	Bill of Material
CCB	Configuration Control Board
CERT	Certification Testing
CFR	Code of Federal Regulations
CDP	Certification Data Package
CI	Configuration Item
CLIN	Contract Line Item Number
CM	Configuration Management
CMP	Configuration Management Plan
COR	Contracting Officer Representative
COTS	Commercial-off-The-Shelf
CPSS	Checkpoint Property Screening System
DHS	Department of Homeland Security
DID	Data Item Description
DMSMS	Diminishing Manufacturing Sources and Material Shortage
EMC	Electromagnetic Compatibility
EMI	Electromagnetic Interoperability
EMV	Electromagnetic Vulnerability
ESD	Electrostatic Discharge
ESOH	Environment Safety and Occupational Health
ERP	Enterprise Resource Planning
FAR	Federal Acquisition Regulation
FD	Failure Detection
FDRS	Field Data Reporting System
FI	Fault Isolation
FITARA	Federal Information Technology Acquisition Reform Act
FOT&E	Follow-on Operational Test and Evaluation
FRD	Functional Requirements Document
GPU	Graphics Processing Units
HIS	Human Systems Integration
HME	Home Made Explosives
INCO	Install and Checkout
IOT&E	Initial Operational Test and Evaluation
iSAT	Integrated Site Acceptance Test
LRU	Line Replaceable Unit
MBOM	Manufacturing Bill of Materials
MCIL	Master Configuration Item List
MRP	Manufacturing Resource Planning
MSDS	Material Safety Data Sheets
M&S	Modeling and Simulation

NIST	National Institute of Standards and Technology
PAM	Privileged Access Management
PCA	Physical Configuration Audit
P/N	Part Number
QDP	Qualification Data Package
QMP	Qualification Management Plan
QT	Qualification Testing
QTP	Qualification Test Plan
QVP	Qualification Verification Package
RADHAZ	Radiation Hazards
RMA	Reliability, Maintainability, and Availability
SAT	Site Acceptance Test
SELC	Systems Engineering Life Cycle
SER	System Evaluation Report
SP	Special Publication
SSI	Sensitive Security Information
SoS	System of Systems
STIP	Security Technology Integrated Program
SysML	Systems Modeling Language
SUT	System Under Test
TDP	Technical Data Package
TEMP	Test and Evaluation Master Plan
TOC	Total Ownership Cost
TP	Tailoring Plan
TRN	Test Readiness Notification
TRR	Test Readiness Review
TSA	Transportation Security Administration
TSL	Transportation Security Laboratory
TSIF	TSA Systems Integration Facility
T&E	Test and Evaluation
UML	Unified Modeling Language
UOM	Unit of Measure
VRTM	Verification Traceability Matrix

Appendix B: CPSS QPL Applicant Required Substantiation

This appendix defines each level of substantiation required to be provided by the QPL Applicant in the QDP.

Table B-1 provides the required level of substantiation for requirements documented in the FRD. The levels of substantiation are coded as follows:

A = QPL Applicant certification of compliance (substantiation not required).

B = QPL Applicant certification of compliance (substantiation/test data/test reports required).

C = Independent / accredited third-party certification of compliance with substantiation.

A Certificate of Compliance (CoC) is a formal QPL Applicant claim that a method, such as test, demonstration, inspection, or analysis, was used to substantiate compliance to the specified procurement requirement. A CoC signed by the QPL Applicant's Project/Program Manager, Quality Assurance Manager, Engineering/Test Manager, and/or General Manager is required for all "A" and "B" level requirements listed in Table A-1. Independent (third-party) CoCs for all "C" level requirements shall identify the Nationally Recognized Test Laboratory (NRTL) that conducted the test and its accreditation and shall be signed by an official of the independent NRTL.

The CoC and substantiation documents must be numbered and ordered to match the paragraph and "shall" numbers of the requirement being verified. In the case where substantiation from an NRTL is required, data must be provided with the same level of detail.

All requirements having a substantiation level of "A" are to be listed in one signed CoC letter, submitted in the QDP. No substantiation is required.

All requirements having a substantiation level of "B" are to be substantiated and the resulting substantiation data, along with one signed CoC listing all the "B" requirements, submitted in the QDP. Every "B" requirement must be addressed, and must have an evaluation approach and evaluation data available, including photographs/screenshots/reports (where applicable) documenting test results. A description of the verification method is acceptable for verifications using demonstration and inspection methods. If the verification is done using the test method, a test procedure, and test data are the minimum details necessary. For this level, the QPL Applicant submission will be reviewed by the government to determine system's capability of meeting requirements in governmental lab testing.

All requirements having a substantiation level of "C" are to be substantiated by an accredited NRTL, and must include the resulting substantiation data, along with one signed CoC for each requirement. The NRTL report must include the following items:

- The name of the testing laboratory.
- A list of the standards being verified.
- The test approach and results to include the following:
  - System identification, including model and serial number.
  - Test location and date.

- A diagram or picture of the test setup.
- Test standards and criteria.
- Calibration information for all test equipment utilized.
- All test results.

The Government Configuration Management will conduct a Physical Configuration Audit (PCA) with the TSIF Test Branch configuration audit prior to QT formally establishing the developmental baseline. This ensures the system tested by the QPL Applicant is identical to the system delivered to the TSIF. Any discrepancies discovered during the audit may delay QT, and potentially disqualify the system from placement on the CPSS QPL.

Table B-1. CPSS Requirement Substantiation

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
1	3.1.1	Automated Detection	B
2	3.1.1	Automated Detection	A
3	3.1.1	Automated Detection	B
4	3.1.1	Automated Detection	B
5	3.1.1	Automated Detection	A
6	3.1.1	Automated Detection	A
7	3.1.1	Automated Detection	B
8	3.1.1	Automated Detection	B
9	3.1.1	Automated Detection	B
10	3.11	Automated Detection	A
11	3.1.1	Automated Detection	B
12	3.1.1	Automated Detection	A
13	3.1.1	Automated Detection	B
14	3.1.2	Image Quality	A
15	3.1.2	Image Quality	B
16	3.1.2	Image Quality	B
17	3.1.2	Image Quality	B

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
18	3.1.2	Image Quality	A
19	3.1.2	Image Quality	A
20	3.1.2	Image Quality	B
21	3.1.2	Image Quality	B
22	3.2.1.1	Component Operation	A
23	3.2.1.1	Component Operation	A
24	3.2.1.1	Component Operation	B
25	3.2.1.1	Component Operation	A
26	3.2.1.1	Component Operation	A
27	3.2.1.1	Component Operation	A
28	3.2.1.1	Component Operation	A
29	3.2.1.1	Component Operation	A
30	3.2.1.1	Component Operation	A
31	3.2.1.1	Component Operation	A
32	3.2.1.1	Component Operation	B
33	3.2.1.2	Throughput	A
34	3.2.1.2	Throughput	A
35	3.2.1.3	Emergency Stop	A
36	3.2.1.3	Emergency Stop	A
37	3.2.1.3	Emergency Stop	A
38	3.2.1.3	Emergency Stop	A
39	3.2.1.4	Item Jam	A
40	3.2.1.4	Item Jam	B
41	3.2.1.4	Item Jam	A
42	3.2.1.4	Item Jam	A

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
43	3.2.1.4	Item Jam	A
44	3.2.1.4	Item Jam	B
45	3.2.2	Image Review Mode	A
46	3.2.2	Image Review Mode	B
47	3.2.2	Image Review Mode	B
48	3.2.2	Image Review Mode	B
49	3.2.2	Image Review Mode	B
50	3.2.2	Image Review Mode	B
51	3.2.2	Image Review Mode	B
52	3.2.2	Image Review Mode	A
53	3.2.2	Image Review Mode	A
54	3.2.2	Image Review Mode	A
55	3.2.2	Image Review Mode	A
56	3.2.2	Image Review Mode	A
57	3.2.2	Image Review Mode	A
58	3.2.2	Image Review Mode	A
59	3.2.2	Image Review Mode	A
60	3.2.2	Image Review Mode	A
61	3.2.2	Image Review Mode	A
62	3.2.2	Image Review Mode	A
63	3.2.2	Image Review Mode	A
64	3.2.2	Image Review Mode	A
65	3.2.2	Image Review Mode	A
66	3.2.2	Image Review Mode	B
67	3.2.2	Image Review Mode	A

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
68	3.2.2	Image Review Mode	A
69	3.2.2	Image Review Mode	A
70	3.2.2	Image Review Mode	A
71	3.2.2	Image Review Mode	A
72	3.2.2	Image Review Mode	A
73	3.2.2	Image Review Mode	A
74	3.2.2	Image Review Mode	A
75	3.2.3.1	Field Image Archiver	B
76	3.2.3.1	Field Image Archiver	B
77	3.2.3.1	Field Image Archiver	A
78	3.2.3.1	Field Image Archiver	A
79	3.2.3.1	Field Image Archiver	A
80	3.2.3.1	Field Image Archiver	A
81	3.2.3.1	Field Image Archiver	B
82	3.2.3.1	Field Image Archiver	B
83	3.2.3.2	Data Storage/Transfer	A
84	3.2.3.2	Data Storage/Transfer	A
85	3.2.4	Radiation Survey Mode	C
86	3.2.4	Radiation Survey Mode	C
87	3.2.4	Radiation Survey Mode	C
88	3.2.4	Radiation Survey Mode	C
89	3.2.4	Radiation Survey Mode	C
90	3.2.4	Lock-Down Mode	A
91	3.2.4	Lock-Down Mode	B
92	3.2.5	Lock-Down Mode	B

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
93	3.2.5	Lock-Down Mode	A
94	3.3.1	Image Format	B
95	3.3.1	Image Format	B
96	3.3.1	Image Format	B
97	3.3.1	Image Format	B
98	3.3.2	Field Data Reporting System (FDRS)	A
99	3.3.3	Mid-Sized Automated Conveyance System (ACS)	A
100	3.3.3	Mid-Sized Automated Conveyance System (ACS)	B
101	3.3.3	Mid-Sized Automated Conveyance System (ACS)	A
102	3.3.3.1	Screened Item Interaction	A
103	3.3.3.1	Screened Item Interaction	A
104	3.3.3.1	Screened Item Interaction	A
105	3.3.3.2	Dimensions	A
106	3.3.3.2	Dimensions	A
107	3.3.3.2	Dimensions	A
108	3.3.3.2	Dimensions	A
109	3.3.3.3	Bins	A
110	3.3.3.3	Bins	B
111	3.3.3.3	Bins	A
112	3.3.3.3	Bins	A
113	3.3.3.3	Bins	A
114	3.3.3.3	Bins	A
115	3.3.3.4	Auto-Diverter Subsystem	A
116	3.3.3.4	Auto-Diverter Subsystem	A
117	3.3.3.4	Auto-Diverter Subsystem	A

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
118	3.3.3.4	Auto-Diverter Subsystem	A
119	3.3.3.4	Auto-Diverter Subsystem	A
120	3.3.3.4	Auto-Diverter Subsystem	A
121	3.3.3.4	Auto-Diverter Subsystem	A
122	3.3.3.4	Auto-Diverter Subsystem	A
123	3.3.3.4	Auto-Diverter Subsystem	B
124	3.3.3.4	Auto-Diverter Subsystem	A
125	3.3.3.4	Auto-Diverter Subsystem	A
126	3.3.4	Electrical	B
127	3.3.4	Electrical	B
128	3.3.4	Electrical	A
129	3.3.4	Electrical	A
130	3.3.4	Electrical	A
131	3.3.4.1	Uninterruptible Power Buffer	A
132	3.3.4.1	Uninterruptible Power Buffer	B
133	3.3.4.1	Uninterruptible Power Buffer	A
134	3.3.5.1	Floor Loading	B
135	3.3.5.1	Floor Loading	B
136	3.3.5.1	Floor Loading	A
137	3.3.5.2	Footprint	B
138	3.3.5.3	Tunnel	B
139	3.3.5.4	Height	B
140	3.3.5.5	Curtains	A
141	3.3.6	Noise	B
142	3.3.7.1	Temperature and Humidity	B

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
143	3.3.7.1	Temperature and Humidity	B
144	3.3.7.1	Temperature and Humidity	B
145	3.3.7.2	Seismic Anchoring	B
146	3.3.7.2	Seismic Anchoring	A
147	3.3.7.3	Slopes	B
148	3.3.7.4	Altitude	B
149	3.3.7.5	Shock and Vibration	C
150	3.3.8	Electromagnetic Compatibility	C
151	3.3.9.1	Operability	B
152	3.3.9.1	Operability	B
153	3.3.9.1	Operability	A
154	3.3.9.1	Operability	A
155	3.3.9.2	User Interface	A
156	3.3.9.2	User Interface	B
157	3.3.9.2	User Interface	A
158	3.3.9.2	User Interface	B
159	3.3.9.2	User Interface	B
160	3.3.10	Identification Markings	A
161	3.3.10.1	Permanency and Legibility	A
162	3.4.1	Reliability	B
163	3.4.1	Reliability	B
164	3.4.1	Reliability	B
165	3.4.1.1	Mean Time Between Critical Failures	B
166	3.4.1.2	Non-Critical Failures	B
167	3.4.1.2	Non-Critical Failures	B

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
168	3.4.2	Maintainability	B
169	3.4.2	Maintainability	B
170	3.4.2.1	Maintenance Access	B
171	3.4.2.1	Maintenance Access	A
172	3.4.2.1	Maintenance Access	A
173	3.4.2.2	Scheduled (Preventative) Maintenance	A
174	3.4.2.2	Scheduled (Preventative) Maintenance	A
175	3.4.2.3	Scheduled (Corrective) Maintenance	B
176	3.4.3	Availability	B
177	3.5.1	General	A
178	3.5.1	General	C
179	3.5.2	Electromagnetic Emission Safety	C
180	3.5.3	Radiation	B
181	3.6.1	Physical Access and Item Control	A
182	3.6.1	Physical Access and Item Control	A
183	3.6.1	Physical Access and Item Control	A
184	3.6.1	Physical Access and Item Control	A
185	3.6.1	Physical Access and Item Control	A
186	3.6.1	Physical Access and Item Control	B
187	3.6.1	Physical Access and Item Control	B
188	3.6.1	Physical Access and Item Control	B
189	3.6.1	Physical Access and Item Control	B
190	3.6.1	Physical Access and Item Control	A
191	3.6.1	Physical Access and Item Control	B
192	3.6.1	Physical Access and Item Control	A

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
193	3.6.1	Physical Access and Item Control	B
194	3.6.1	Physical Access and Item Control	A
195	3.6.2	Cyber Security and Information Assurance	B
196	3.6.2	Cyber Security and Information Assurance	B
197	3.6.2	Cyber Security and Information Assurance	B
198	3.6.2	Cyber Security and Information Assurance	B
199	3.6.2	Cyber Security and Information Assurance	B
200	3.6.2	Cyber Security and Information Assurance	B
201	3.6.2	Cyber Security and Information Assurance	B
202	3.6.2	Cyber Security and Information Assurance	B
203	3.6.2	Cyber Security and Information Assurance	B
204	3.6.2	Cyber Security and Information Assurance	B
205	3.6.2	Cyber Security and Information Assurance	B
206	3.6.2	Cyber Security and Information Assurance	B
207	3.6.2	Cyber Security and Information Assurance	B
208	3.6.2	Cyber Security and Information Assurance	B
209	3.6.2	Cyber Security and Information Assurance	A
210	3.6.2	Cyber Security and Information Assurance	B
211	3.6.2	Cyber Security and Information Assurance	B
212	3.6.2	Cyber Security and Information Assurance	B
213	3.6.2	Cyber Security and Information Assurance	A
214	3.6.3	Software Access	A
215	3.6.3	Software Access	A
216	3.6.3	Software Access	A
217	3.6.3	Software Access	A

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
218	3.6.3	Software Access	A
219	3.6.3	Software Access	A
220	3.6.3	Software Access	A
221	3.6.3	Software Access	A
222	3.6.3	Software Access	A
223	3.6.3	Software Access	A
224	3.6.3	Software Access	A
225	3.6.3	Software Access	A
226	3.6.5	Security Technology Integrated Program (STIP)	B
227	3.6.5	Security Technology Integrated Program (STIP)	B
228	3.6.5	Security Technology Integrated Program (STIP)	B
229	3.6.5	Security Technology Integrated Program (STIP)	B
230	3.6.5	Security Technology Integrated Program (STIP)	B
231	3.6.5	Security Technology Integrated Program (STIP)	B
232	4.1.1.3	Installation	A
233	B.4.1	Emergency Stop	A
234	B.4.1	Emergency Stop	A
235	B.4.2	Item Tracking	A
236	B.4.2	Item Tracking	A
237	B.4.3	Dimensions	A
238	B.4.3	Dimensions	A
239	B.4.4	Divestiture Subsystem	A
240	B.4.4	Divestiture Subsystem	A
241	B.4.4	Divestiture Subsystem	A
242	B.4.4	Divestiture Subsystem	A

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
243	B.4.5	Secondary Screening Subsystem	A
244	B.4.5	Secondary Screening Subsystem	A
245	B.4.5	Secondary Screening Subsystem	A
246	B.4.6	Recomposure Subsystem	A
247	B.4.6	Recomposure Subsystem	A
248	B.4.7	Bin Return Subsystem	A
249	B.4.7	Bin Return Subsystem	A
250	B.4.7	Bin Return Subsystem	A
251	B.4.7	Bin Return Subsystem	A
252	B.4.7	Bin Return Subsystem	A
253	B.4.8	High Threat Containment Subsystem	A
254	B.4.8	High Threat Containment Subsystem	A
255	B.4.8	High Threat Containment Subsystem	A
256	C.5.1	Baseline Voltage and Current Distortion	B
257	C.5.1	Baseline Voltage and Current Distortion	B
258	C.5.2	Power Usage Profile and Power Factor	B
259	C.5.3	Maximum Inrush Current Ratio	B
260	C.5.5	Maximum Leakage Current	B
261	C.5.6	Voltage Sag and Interruption Withstand Performance	B
262	D	Field Data Reporting System Requirements	A
263	D	Field Data Reporting System Requirements	A
264	D	Field Data Reporting System Requirements	A
265	D	Field Data Reporting System Requirements	A
266	D	Field Data Reporting System Requirements	A
267	D.1	Data Elements	A

Req. #	Paragraph	Paragraph Title	Required Level of Substantiation
268	D.1	Data Elements	A
269	D.1	Data Elements	A
270	D.1	Data Elements	A
271	D.1	Data Elements	A
272	D.1	Data Elements	A

Appendix C: Instructions for Preparing The CPSS Qualification Data Package

DATA ITEM DESCRIPTION	
1. TITLE	2. IDENTIFICAITON NUMBER
Qualification Data Package (QDP) Procedures	DID-001
3. DESCRIPTION/PURPOSE	
The QDP Procedures define the QDP package's required content, format, and intended use, and provides the detailed procedures by which each QPL Applicant shall complete and submit their QDP.	
4. INCREMENT	
Detailed with FedBizOps announcement.	
5. PREPERATION INSTRUCTIONS	

1 Scope

QPL Applicant must submit a QDP to include all material specified in this Data Item Description (DID) and the Qualification Management Plan (QMP) for each candidate system submitted for qualification. All materials must be submitted in a manner that is clear, concise, and unambiguous. The CPSS QDP must include information and material necessary for the Transportation Security Administration (TSA) to confirm that the CPSS is capable of meeting the specifications and requirements documented within the QMP and references.

1.1 Documentation

QPL Applicant shall submit a minimum of two (2) hard copies and two (2) electronic copies (CD or DVD).

1.1.1 Format

All QDP material(s) shall be submitted in Microsoft Office format (Microsoft Word, Excel, etc.) and Portable Document Format. All annotated screenshot printouts, or images shall be bitmap or tagged image file format. All forms of substantiation shall be clearly marked with the requirement number.

1.1.2 Language

All materials must be submitted in English.

1.1.3 Measurements

All dimensions and measurements shall be in standard US Customary Units.

1.1.4 Images

All image graphics must be high-quality and high-resolution of at least 600 pixels per inch.

2 Content

The information submitted will be grouped into two (2) Volumes, Technical Proposal and Test and Evaluation Proposal. The QDP shall be formatted into the below outline. QPL Applicant format is acceptable within each section, unless identified differently below or within the QMP.

The Volumes shall be limited to the page count as identified below. Pages in excess of the page limit will not be read or evaluated. Title Pages, cover pages, glossaries, tabbed dividers, table of contents, Integrated Master Schedules, and system manuals shall not be subject to the page limitations.

Please reference the QMP for additional details when developing the QDP per the below guidance.

- Volume 1: Technical Proposal (300 pages):
  - Section 1 Executive Summary
  - Section 2 Management and Planning
  - Section 3 System Requirements and Architecture
  - Section 4 Life Cycle Support Concept
  - Section 5 Master Configuration Item List
  - Section 6 System Manuals
  - Section 7 System Training Materials
- Volume 2: Test and Evaluation Proposal (200 pages):
  - Section 1 Test Configuration
  - Section 2 Test Plans, Procedures, and Data Requirements
  - Section 3 Test Reports
  - Section 4 Test Data, Evaluation Tools, and Results
  - Section 5 Equipment Delivery and Installation Plan

2.1 Volume 1: Technical Proposal (300 pages)

Volume 1 shall enable technical / engineering personnel to make a thorough evaluation and arrive at a sound determination of whether the proposed system meets the requirements as specified in the QMP. The Technical Volume substantiates the successful completion of Step 2: System / Subsystem Testing events and substantiates the system's maturity to proceed into Step 4: Integration / Implementation Testing events. The Technical Volume shall be specific, detailed, and complete. The QDP shall include the block diagrams, flow diagrams, sketches, drawings, schematics, and interface descriptions required to describe the QPL Applicant's proposed system. The technical volume must be sufficient to show how the QPL Applicant

proposes to comply with the Government's requirements and include a full explanation of the methodology and procedures to be followed. The QMP provides the detailed descriptions and requirements that shall be provided within the QDP and in the following sections.

2.1.1 Section 1: Executive Summary

The Executive Summary shall summarize the QPL Applicant's approach for satisfying the Government's requirements. Key elements of the proposal shall be highlighted in this summary.

2.1.2 Section 2: Management and Planning

The Management and Planning Section shall define how the QPL Applicant managed the work required to meet qualification requirements. It shall describe the executed approach to quality, management, planning, organizing, and controlling the development of the system, as well as the facilities used for designing, engineering, fabricating, integrating, and testing (to include integration into existing government and airport facilities if applicable).

In addition, this section should include an Integrated Master Schedule as prescribed in the QMP to cover the period from QDP acceptance to completion of system Initial Operational Test and Evaluation. The schedule shall clearly identify test and production activities for each subsystem for system(s) that will be provided to the TSA. At a minimum, include detail for assembly, test, delivery / installation activities, and QPL Applicant support for TSA testing; the IMS shall also include elements detailing transition from testing to system production should the QPL Applicants placement on the CPSS QPL be achieved. Critical paths shall be identified.

2.1.2.1 Corporate Capacity

The QPL Applicant shall describe its experience in the development of Checkpoint Screening Equipment, CT systems manufacturing / installation, system integration with an ACS if applicable, and experience on previous projects of similar scope to the TSA.

2.1.2.2 Facilities

The QPL Applicant shall describe company, subcontractor, and / or third party test facilities that were used for the QPL Applicant's system engineering, development, assembly, testing, and manufacturing capability. The QPL Applicant shall identify any facility upgrades / modifications that were required to meet the requirements for qualification. The QPL Applicant shall define the communications structure that was used to ensure efficient and cohesive interaction between physically separated development and / or testing activities, if applicable. The geographic location of all program related organizational units shall be identified.

2.1.2.3 Engineering / Manufacturing/Test Capability

The QPL Applicant shall describe the engineering, manufacturing, and testing capability within the company. The description shall include proposed equipment, processes, and personnel that ensured successful manufacture and test of the QPL Applicant's proposed

system. The QPL Applicant shall describe its engineering, manufacturing, and testing capability through all phases of the Qualification Process and full or limited rate production.

2.1.2.4 Systems Engineering Process

The QPL Applicant shall provide an overview of their corporate Systems Engineering process used during Step 2 events for the development and integration of the proposed system, including assignment of personnel, personnel qualifications and responsibilities. The role of the Systems Engineering group and changes to existing Systems Engineering processes or methodology leveraged shall be described. The use of Computer-Aided Systems Engineering or similar tools and experience in using these tools in developing a structured process that encompasses all disciplines under Systems Engineering shall be described.

2.1.2.5 Requirements Management

The QPL Applicant shall describe the process and methods that they used to develop a set of system and derived requirements that are in compliance with the FRD provided with the QMP and that meet user needs and functionalities as described in the FRD. This discussion shall include any methods that the QPL Applicant used to verify that these requirements are complete and consistent. The QPL Applicant shall describe their method used for Systems Engineering trade-off studies and will identify high-risk requirements encountered during Step 2 events.

2.1.2.6 Software Engineering

The QPL Applicant shall describe its approach used for software development. The QPL Applicant shall specifically address and describe the software development capabilities and resources leveraged to support the development and testing efforts that were necessary for the development, integration and operations of the proposed system used during Step 2 events.

2.1.2.7 Quality and Configuration Management Process

The QPL Applicant shall describe an overall program that determines the quality policy, objectives, and responsibilities used to manage the quality of all aspects of the program. The QPL Applicant shall describe their quality management system, explaining how it will be applied to manage program risk and specifically address (at a minimum) the quality system's role in design, development, testing and operations.

The QPL Applicant shall provide its updated CMP to document its Configuration Management program. The QPL Applicant CMP shall demonstrate compliance with the Government CMP referenced within the QMP.

2.1.3 Section 3: System Requirements and Architecture

The QPL Applicant shall describe the System Requirements met, including all mission level requirements, all driving requirements, and all functional requirements deemed significant to the architecture and design for the proposed system, the allocated system level architecture and design based on the performance requirements, the system integration approach (Interface

Requirements Document compliance), consideration for Electromagnetic Interference / Electromagnetic Compatibility, minimization or elimination of Hazards of Electromagnetic Radiation to Personnel, and system safety. Further definition and details of the required information is provided within the QMP.

2.1.4 Section 4: Life Cycle Support Concept

The QPL Applicant shall provide the description of the overall Life Cycle Support Concept to support the required system Reliability, Maintainability and Availability identified in the CPSS FRD.

2.1.5 Section 5: Configuration Management

The QPL Applicant shall provide the design documentation to effectively and efficiently establish, control and maintain the product developmental baseline:

- Product / Drawing Tree – Physical System Hierarchy clearly indicating the CIs
- Bill of Materials (BOM) – Indentured to the 5th level:
    - or Parts lists
- Master Configuration Items List – QPL Applicant suggest list
- Source Control Documents:
    - Engineering Drawings – English, Standard units of measure (UOM)
    - Product Specification Sheets – Attributes and characteristics of the CI
    - Software Release Notes

2.1.6 Section 6: System Manuals

The QPL Applicant shall provide at a minimum the following manuals:

- Operator Manual
- Training Manual
- Installation Manual
- Maintenance Manual
- FDRS Manual
- Viewing Station Manual(s)

2.1.7 Section 7: System Training Materials

The QPL Applicant shall provide all training material as identified in the FRD and QMP. The QPL Applicant shall provide at a minimum operator and maintenance training for the proposed system and any associated M&S/emulators.

2.2 Volume 2: Test and Evaluation Proposal (200 pages)

Volume 2 of the QDP is intended to provide evidence that the QPL Applicant system is sufficiently mature for acceptance into the TSA Qualification Process. The QPL Applicant shall provide test reports that document how the QPL Applicant demonstrated the system performance and software / firmware / hardware readiness to proceed into Government testing at the TSIF. The QPL Applicant shall provide test data and other supporting evidence on the system for testing completed during Step 2 to substantiate findings found within the submitted test reports.

The QPL Applicant shall provide a description of testing and analysis that was performed to verify system maturity against the FRD referenced in the QMP. This volume must sufficiently show how the QPL Applicant proposed to and then complied with the Government's requirements and include a full explanation of the methodology and procedures that were followed. The QMP provides the detailed descriptions and requirements that shall be provided within the QDP. The following subsections are an outline of the information required to be addressed in the Test and Evaluation Volume.

2.2.1 Section 1: Test Configuration

The QPL Applicant shall provide a detailed description and drawing for the configuration of the system used to execute the *Step 2b: System Testing*. This shall include identification and detailed descriptions of engineering level software / firmware / hardware and test tools that may be embedded within the system or to be used to support testing.

2.2.2 Section 2: Test Plans, Procedures, and Data Requirements

The QPL Applicant shall provide a detailed description of test plans and procedures that were used for data collection, recording and analysis as defined in the QMP.

2.2.3 Section 3: Test Reports

The QPL Applicant shall provide all Test Reports from Step 2 test events. The Test Reports shall include, at a minimum, a description of the test scope and objectives, test locations, detailed description of the scenarios / events conducted, and test results with substantiating evidence to support each test finding.

2.2.4 Section 4: Test Data, Evaluation Tools, and Results

The QPL Applicant shall provide all relevant test data used to verify system performance for all test reports submitted within the QDP; this includes all raw and post processed data. The QPL Applicant shall also provide any evaluation tools used in the processing or test analysis along with descriptions and instructions on the evaluation tool purpose and use.

2.2.5 Section 5: Equipment Delivery and Installation Plan

The QPL Applicant shall provide the equipment delivery and installation plan that identifies how the system will be delivered, installed and integrated at the TSIF and IOT&E sites.

Appendix D: Mapping of Configuration Items to Functional Requirements

The QPL Applicant shall provide a mapping of QPL Applicant suggested CIs to functional requirements (in MS Excel).. The mapping shall indicate to TSA what requirements will require regression testing if the CI should be updated in the future.

The QPL Applicant shall use the following format for providing this correlation. All content in the matrix below is provided for demonstration purposes and should be replaced by the QPL Applicant with actual CI/FRD content.

CI Number	CI	Dependent Requirements
1	Scanner Assembly	5,8,9,13
2	Entrance Tunnel	5,6,7,8,9,13
3	Exit Tunnel	5,6,8,9,13
4	X-Ray Tube	1,2,10
5	Primary Viewing Station	3,4,11,12,14
6	Secondary Viewing Station	3,4,11,12,14
7	System Software	1,2,10,14,15
8	Viewing Station Software	3,4,11,12,14
N	Configuration Item	Requirements

Appendix E: Substantiation Organizational Matrix

The QPL Applicant shall provide TSA a reference sheet (in MS Excel) that will provide the QDP location (e.g., volume, section, page number) for substantiation information for each requirement. The QPL Applicant is encouraged to utilize this matrix to provide additional information requested in this QMP regarding QDP location to allow for an efficient QDP review.

Functional Requirements Document		QDP Substantiation Reference		
Number	**Requirement**	**Level of Substantiation**	**QDP Volume/Attachment**	**QDP Page Number**

Appendix F: Instructions for Preparing the Checkpoint Property Screening System Configuration Management Documentation

The QPL Applicant should refer to QDP Review Procedure Version C for Acquisition Program Management for additional information on the CM documentation submitted with the QDP.

CM QDP Review Version C