SYSTEM TEST PLAN FOR [SYSTEM NAME AND VERSION] FOR CONSOLIDATED AFLOAT NETWORKS AND ENTERPRISE SERVICES (CANES) [SELECT ONE: FORCE LEVEL/UNIT LEVEL/SUBMARINE]

VERSION X.X

[INSERT DATE OF DOCUMENT RELEASE]

PREPARED FOR:

Program Executive Officer–Command, Control, Communications, Computers, Intelligence (PEO C4I), PMW 160

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RECORD OF CHANGES

*__A__–ADDED __M__–MODIFIED __D__–DELETED

Version No.	Date	Figure/Table/ Paragraph No.	Code	Title or Brief Description

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1.0 OVERVIEW

Describe an overview of the test in general terms. Provide a brief history of the system and the reason the change(s) is being implemented. Define the goal of the testing here. This can then be used as a guide to measure the effectiveness of your test objectives as a means of validation

1.1 PURPOSE

The purpose of the **[System Name]** Test Plan is to document all test expectations, requirements, resources, etc. that must be satisfied before and during the test event. A key component of the application/ system test plan is the identification of test objectives, e.g., KPPs, KSAs, and IERs that will be tested for during the SIT. The test plan should provide a traceability matrix to the supporting test cases and/or test procedures that will be used during the test event.

1.2 OBJECTIVE

The desired outcome of this event is to reduce the risk for integration and interoperability between the CANES Unclassified, Secret, Secret Releasable (SR), and Sensitive Compartmented Information (SCI) enclaves, and all other applications/systems that will operate in this environment for the targeted platform type.

1.3 SCOPE

The scope of this SIT document is limited to testing **[cite system of systems and specific system names as applicable]**. It also includes testing requirements of interfaces with required supported or related systems to include **[name those expected systems external to the test boundary for which interfaces need to be tested]**.

1.4 TEST SCHEDULE

Provide a schedule of all test task activities and related events. Include at a minimum, the date of SIT initiation, SIT completion.

The high-level test schedule with milestones is shown in the table below:

Table 1-1 Test Schedule [Sample – Update]

Date	Milestones	Deliverables/Comments
2/21/2011	*Test Bed Setup*	*Mock up ship and shore network architecture in the Engineering Lab, BLDG 660*

1.5 TEST PERSONNEL

Use the table below to list all participants and their roles, organization and contact information. If needed, include in the paragraph above the reason for selection of particular participants. Include Test Engineers, Project Lead, Test Director, and actual testers who will conduct the test.

The test team for this event is listed in the table below:

Table 1-2 Test Personnel

Name	Role & Organization	Phone Number	Email

1.6 REFERENCE DOCUMENTS

This section lists the primary documents used to either flow down or derive functional, technical, performance, or interface requirements.

Table 1-3 lists all references used as guidance in the design process and development of this Test Plan. Only documents that have been approved and released are referenced herein.

Table 1-3 Reference Documents

Document Number	Title	Date	Revision
725-6F-07	*Capability Development Document (CDD)*	*January 2014*	*Version 1.0*
	CANES CVN/LHD AI SIT Test Plan, Version 1.0	*29 August 2013*	*Version 1.0*
	Add available System Interface Control Document (ICD)		

1.7 RISKS

Identify risks associated to this system that could compromise the test.

2.0 SYSTEM DESCRIPTION

2.1 MISSION DESCRIPTION

Briefly summarize the capability the system under test will provide to the warfighters and mission area that the system under test will be supported

2.2 SYSTEM DESCRIPTION

Provide a detailed description of the system under test. Figure 2-1 is a Functional Block Diagram depicting all hardware components and interfaces under test. Each block in the diagram shall represent an independent functional component. External and internal interfaces shall be shown and the external equipment or systems that interface with the equipment or system shall also be shown.

[The program system boundary should be what is in the C&A Plan.]

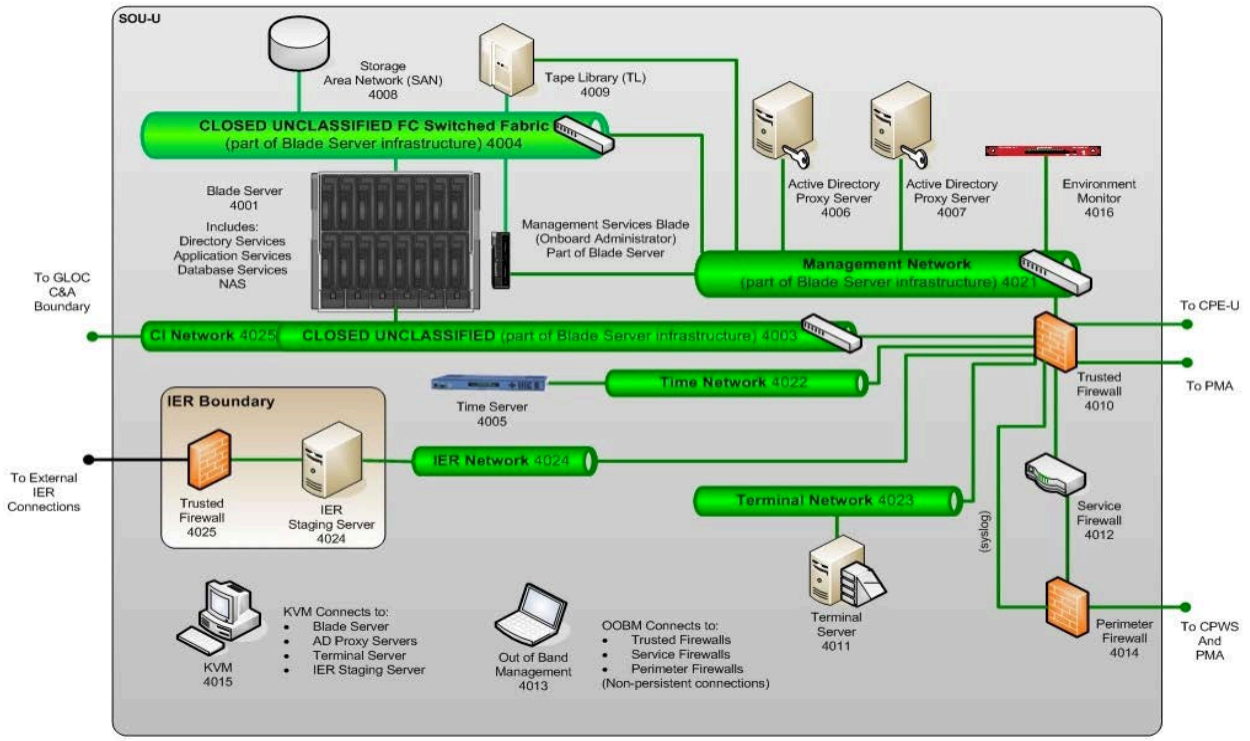

Figure 2-1 System Boundary [Sample 1]

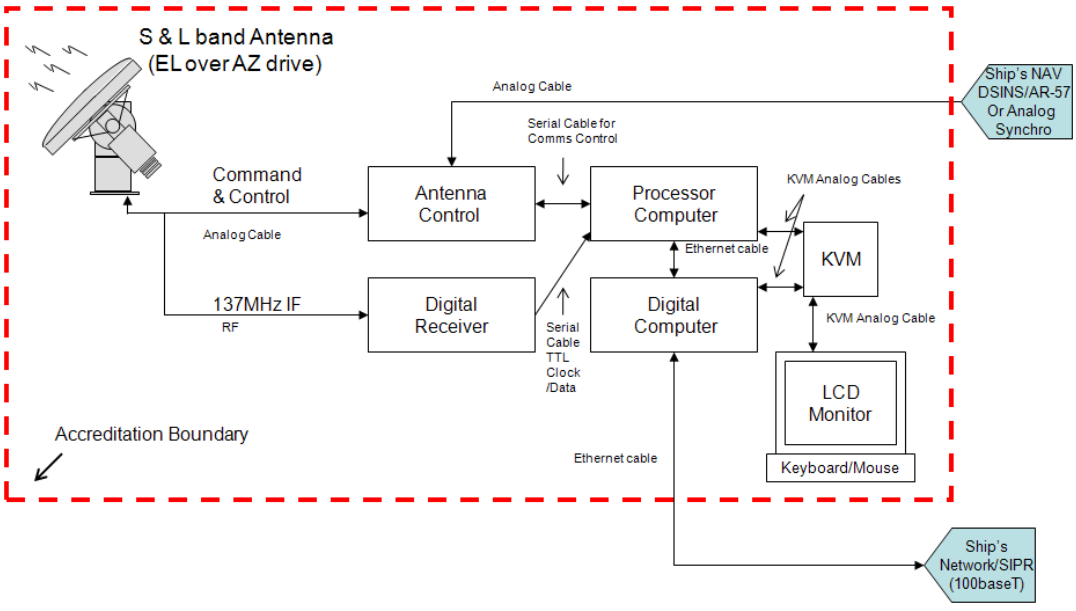

Figure 2-2 System Boundary [Sample 2]

If the system under test is an application, identify the hosted system that the application under test resides in the block diagram.

2.2.1 Key Features And Subsystems

Identify key features and subsystems of the system under test. Major hardware and software are listed in Table 2-1.

Table 2-1 List of Feature and Subsystems

System	Hardware	Software	Configuration
System 1: System Name and Variant *Example: AN/USQ-144K(V)3*			
Device Name 1 *Example: Policy Router*	Hardware 1 *Cisco 7604*	Software 1 *C76000rsp72043…*	Version 1 *V1.3.9*

2.2.2 Physical Interfaces

Identify the physical interfaces that will connect to the network (i.e., data/video). Also identify those physical interfaces that will connect to other systems or devices required to complete functional testing. Physical and Logical Interfaces should align with system ICD documentation.

Table 2-2 Physical Interfaces [Sample – Update]

Application/System	Interface Class	Physical Interface Connection	Interface type	Standards/ Protocols

2.2.3 Logical Interfaces

Identify the logical interfaces/data exchanges between your system and systems other than CANES that are required to complete functional testing. Physical and Logical Interfaces should align with system ICD documentation.

Table 2-3 Logical Interfaces [Sample – Update]

Application/System	Data Transmitted	Direction

3.0 TEST OVERVIEW

3.1 PREVIOUS TEST EVENTS

Describe any prior related tests that would identify unique considerations for the current SIT. These would include known deficiencies and trouble reports identified from prior tests. Discuss the results of any previous tests that apply to, or have an effect on this test.

3.2 SATISFACTORY/UNSATISFACTORY

Describe any prior related tests that would identify unique considerations for the current SIT. These would include known deficiencies and trouble reports identified from prior tests. Discuss the results of any previous tests that apply to, or have an effect on this test

3.3 ENTRANCE/EXIT CRITERIA

Identify the entrance and exit criteria for the test event. Reference the documentation where test requirements are identified. The examples listed below can be modified/customized as needed.

Each test procedure shall have entrance/exit criteria. Adherence to these pre-configuration requirements shall be documented and maintained in accordance with the test plan.

3.3.1 Entrance Criteria

Identify key testing prerequisites and entrance criteria that are specific to the system under test and reference the CANES CVN/LHD AI SIT Test Plan, Version 1.0 for the overarching entrance criteria, such as required certifications (e.g. DoD Information Assurance Certification and Accreditation Process (DIACAP) Authorization to Operate, Weapon Systems Explosive Safety Review Board (WSERB), flight certification, etc.) and other criteria must be met prior to entering the test.

Example: The entrance criteria for this test event include the following:

- *Ensure Authorization to Operate (ATO) exists*
- *Verify all hardware, software, and hosted applications are fully functional and available to support the test*
- *Verify end-to-end connectivity between systems and interfaces are fully functional*
- *Network is established and system of systems venue setup and verified*
- *Objectives clearly defined and articulated to the test and event manager*
- *Detailed test procedures are available*
- *Test environment and architecture is fully documented and distributed*
- *Security requirements are satisfactorily addressed*
- *Configuration Management for the test documented*
- *Information Assurance fully addressed*
- *Successful completion of the Test Readiness Review*

3.3.2 Exit Criteria

Provide list of items that the program office for the system under test considers the test objectives as complete.

Example: The following exit criteria need to be met to fully realize the event objectives:

- *All test objectives are addressed*
- *Data collection is complete and data was archived*
- *System anomalies reported to FIE/Test Director*

- *Test results documented*
- *Event closeout properly executed and approved by the Test Director.*
- *All tests included within this test plan are completed successfully or acceptable mitigation plans have been identified.*
- *Analysis of test data.*
- *Inform the PM, APM-E, T&E Manager, APM, SE, and Lead Test Conductor of the results. These stakeholders will review the results and determine completion of the test.*

3.4 EXPECTED END PRODUCT

Provide the expectations of the end product that the program office of the system under test wants to collect for this test event.

Example: The expected end product of this test event is a System Test Report in which all test objectives have been addressed. The test report will:

- *Document results from Installation Procedure verification*
- *Document the results of test cases used during this evolution*
- *Document all system defects discovered during the test event, if applicable*
- *Provide fielding recommendations for [System Under Test] in a CANES environment based on documented test results*
- *HBSS Policy Verification*
- *IA assessment (to be provided in a separate report)*

3.4.1 Data Collection Plan

The data collected will be the results of the test cases (Pass, Fail, Not Testable [NT], or Non-Applicable [NA]) and any supporting data for submitted (SCRs). The data collected will be reduced, analyzed, and traced to test cases in Section 4, and issues will be reported to the Test Director via the creation of SCRs.

3.4.2 Reporting

If in the course of testing, a documentation or system discrepancy is discovered, then an SCR will be generated, an internal peer review conducted, and the request will be submitted to the **[Fill in].**

Upon completion of testing, the test team will generate and submit a final System Test Report to **[Fill in].** Copies of the final reports will be submitted to the CANES event test director.

3.5 QUALIFCATIONS AND CERTIFICATIONS

Detail any special personnel qualifications or certifications necessary for this test event. Identify the requirements for equipment certifications, calibrations, or performance qualifications.

Test personnel shall be properly trained and certified where appropriate, to operate the instrumentation and recording equipment during test events. All test equipment shall have current calibration certificates where appropriate.

3.6 SAFETY

Identify safety issues and the steps or processes implemented to address the issue. The list below is an example. Please identify appropriate controls/regulations for your test. Update list and reference safety plan as appropriate.

Standard safety precautions shall be in effect while working on electronic equipment in a laboratory environment. The following is a list of safety regulations in effect:

- SPAWARINST 5100.9, Navy Shore Electronics Safety Precautions
- Occupational Safety and Health Act (OSHA), Code of Federal Regulations Title 29
- Occupational Safety and Health Act (OSHA), Code of Federal Regulations Title 40

3.7 SECURITY

Identify security issues and the steps or processes implemented to address the issues. Where a separate project security plan exists, it may be referenced if the applicable security issues for specific tests are cited in the applicable test procedures. Security issues include the operational security, militarily critical technology, and essential technical elements as well as classification issues.

The **[Fill in]** test will take place on Unclassified equipment for the duration of the event. The SPAWAR laboratory facilities are accredited to support testing at the UNCLASSIFIED classification level. All test participants are required to ensure the integrity of the facility and the test data.

Identify any security issues:

- *Operational security.*
- *Militarily critical technology.*
- *Essential technical elements.*
- *Classification issues.*

Steps and processes implemented to address the issues.

Where a separate project security plan exists, it may be referenced if the applicable security issues for specific tests are cited in the applicable test procedures.

3.8 TEST LIMITATIONS

Identify any limitations that are specific to the system under test and reference the CANES CVN/LHD AI SIT Test Plan, Version 1.0 for the limitations of the test event. Explain the impacts of these limitations. Include any risks to the validity of the test due to them and when, if ever, tests will be performed without the limitations in Section 1.7. These limitations should be/are the result of equipment availability shortfalls, lack of assets, minor configuration differences from the final ship configuration and external resource availability constraints. These limitations should / do not affect the validity of (the type of) testing being performed.

4.0 TEST CONDUCT

This test plan covers all the necessary testing needed to successfully verify proper operation of the **[Fill in]** Test. The test plan methodically and systematically covers the various segments of the new design, and is objective-based.

Identify the specific facilities to be used for the test event. Compare the requirements for facilities dictated by the scope and content of planned testing with existing and programmed facility, and highlight any major shortfalls. Identify instrumentation that must be acquired specifically to conduct the planned test program and any airspace or spectrum requirements needed to support testing. Reference the CANES CVN/LHD AI SIT Test Plan, Version 1.0 for information on the method of reporting a Trouble Report

4.1 TEST ARCHITECTURE

Provide a brief description of the Test Architecture, what systems are represented, etc. Include a diagram.

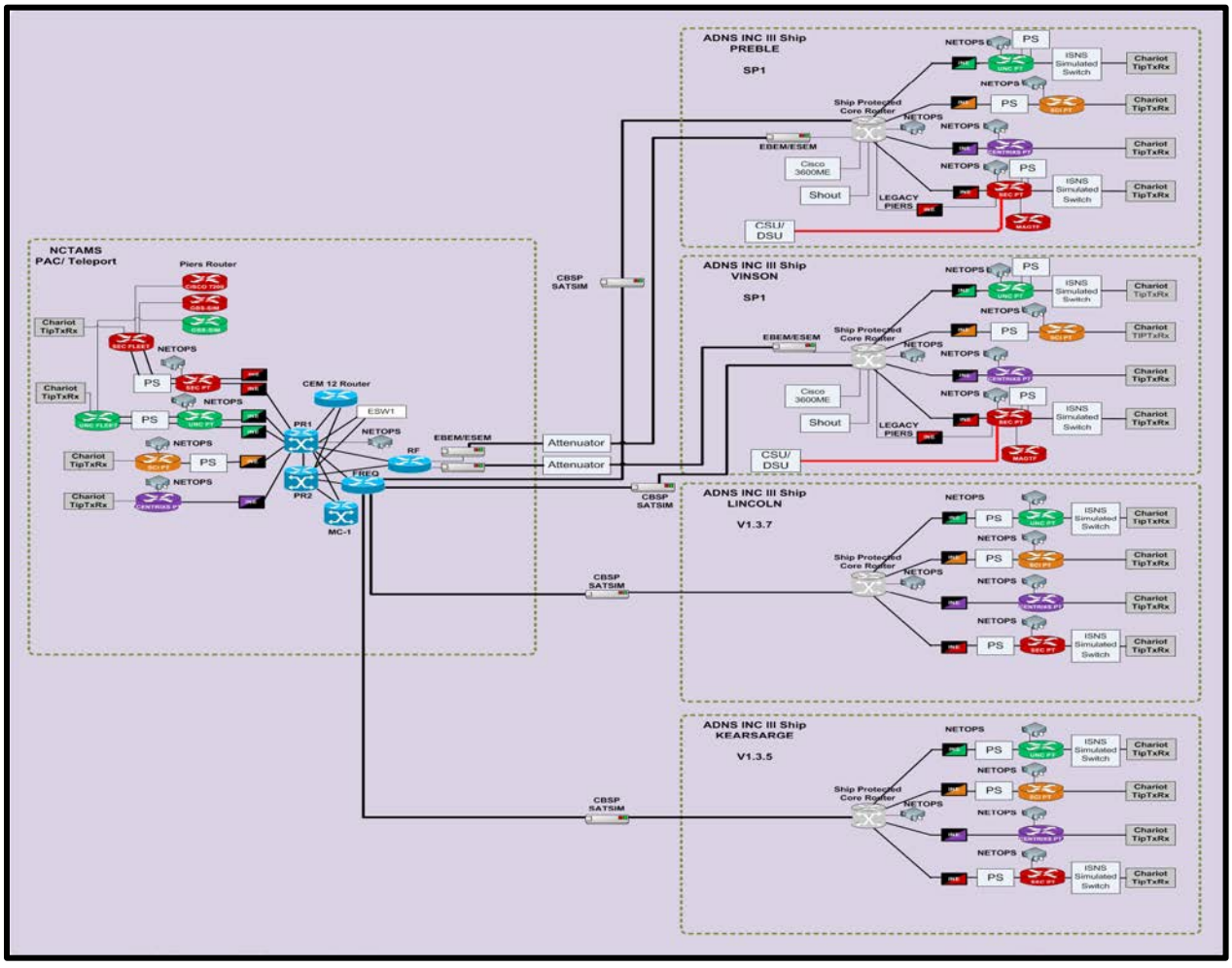

Figure 4-1 Test Bed Topology

4.2 BASELINE TEST EQUIPMENT CONFIGURATION

List the hardware and software configurations (specific to the system under test) to be used for testing. Details on how this deviates from the operational baseline are in the next section. If special/unique

configurations are required, explain the need for this. Add additional tables as needed for various configurations. Describe the significance of the various configurations or suites and indicate on the topology where they are represented.

The tables below provide additional detail of the actual hardware, software, configuration for the devices that make up the test bed.

4.2.1 Software Configuration

Table 4- 2-1 [Test Suite 1] Software Configuration [Sample – Update]

Software	Role	Software Version	Template Version
Cisco 3825	*Ship Secret PT Router*	*12.4(20)T2 Adv IP Services*	*v1.3.6*

4.2.2 Hardware Configuration

Table 4-1 [Test Suite 1] Hardware Configuration [Sample – Update]

Hardware	Role	Hardware Version	Template Version
Cisco 3825	*Ship Secret PT Router*	*12.4(20)T2 Adv IP Services*	*v1.3.6*

4.3 TEST CASE ASSIGNMENT MAP

Table 4-2 maps the supporting test cases that will satisfy each test objective.

One or more test cases are mapped to verify/validate specific objective in Table 4-3 to ensure that test objective has been met.

Table 4-2 Test Case Assignment Mapping

Test Objective	Test Case	Pass/Fail Criteria
Objective 1: *Verify Core Functionality of TSw NetOps ENMS*	*SIT-TestCase -1* *SIT-TestCase-2* *SIT-TestCase-3*	
Objective 2:		

4.4 TEST CASE SUMMARY

Table 4-2 provides an overview of the test cases. Detailed procedures of each test case are listed in Section 5.0.

Table 4-3 Test Cases

Test ID	Test Case Description	Pass/Fail Criteria
SIT-TestCase-1	*Verify that TSw FLTNOC provides TSw NetOps ENMS with access to DNS name resolution of IP addresses.*	
SIT-TestCase-2	*Verify that TSw FLTNOC provides TSw NetOps ENMS with access to Network Time Protocol (NTP) in order to support accurate event and ticketing information for event correlation, incident, and trend analysis reporting.*	
SIT-TestCase-3	*Verify that TSw FLTNOC provides TSw NetOps ENMS with Active Directory server/service interface.*	

SIT-TestCase-4		

5.0 TEST PROCEDURES

The following sections detail the test cases and procedures that shall be completed for this testing. The following test cases are grouped to verify if each test objective has been met.

5.1 DETAILED TEST PROCEDURES

5.1.1 Objective 1: *Example - Verify Core Functionality of TSw NetOps ENMS*

Provide a description of the objective and the test cases included to meet this objective. Procedures should be at a level of detail to be executable by a junior to mid-level test engineer as well as reproducible. The format below is an example

Describe the test configuration for each test objective. Identify any configuration differences between the test environment and the actual systems to be fielded. Include mission impacts of the differences and the extent of integration with other systems which it must be interoperable or compatible

Completion of the following test cases in this section will satisfy test objective Obj-1

Test Case 1 Name: **SIT-TestCase-1**
Description: *Describe the description of test case 1*
Requirement(s): *Describe the requirement that this test objective and associate test cases will be used to verify/validate.*
Prerequisites: *Describe any prerequisites prior to perform this test case.*
Setup: *Describe how the operator will need to setup the test in able to perform this test case. (if applicable, provide software load procedures to upload the required software to perform the test and post software load system/software configuration procedures – If these procedures reside in separate documents, reference those documents)*

Table 5-1 SIT-TestCase-1 Detailed Test Procedures

Step	Operator Action	Expected Results	Observed Results	Pass/ Fail
1	*Describe the step to be taken.*	*Describe the expected result.*	*Describe the result from observing the test.*	*Determine pass/fail based on the observed result.*
	Example: Logon to system as an administrator user with valid ID.	*User should be able to log in the system and Workload screen appears for an administrator*	*User log in the system and Workload screen indicates user as an administrator*	*Pass*
2	*Describe the step to be taken.*	*Describe the expected result for step 2.*	*Describe the result from observing the test.*	*Determine pass/fail based on the observed result.*
n	*Keep describing the steps in the procedures until the test is complete*			
Overall Result SIT-TestCase-1: Determine the overall test case result has been met based on the Pass/Fail results of the individual steps.				

APPENDIX A – REQUIREMENTS TRACEABILITY

Provide reference of requirement documents that are employed for this test. Each Critical Information Exchange Requirement (CIER) or ECR requirement will likely have at least one test objective. Each test objective may have one or more test cases.

The classic verification methods documented in table C-1 are defined as follows:

Inspection (I) - Inspection is observation using one or more of the five senses, simple physical manipulation, and mechanical and electrical gauging and measurement to verify that the item conforms to its specified requirements.

Demonstration (D) - Demonstration is the actual operation of an item to provide evidence that it accomplishes the required functions under specific scenarios.

Test (T) - Test is the application of scientific principles and procedures to determine the properties or functional capabilities of items.

Analysis (A) - Analysis is the use of established technical or mathematical models or simulations, algorithms, or other scientific principles and procedures to provide evidence that the item meets its stated requirements.

Test Objective	Requirement Number: KPPs, CTPs, CIER or ECR[1]	Test Cases	Verification Method

[1] Enterprise Change Request (ECR) is only applicable to PEO C4I programs.

APPENDIX B – ACRONYMS

Insert table of acronyms as appropriate.

APPENDIX C – CONFIGURATION AUDIT

To include installation procedures for supporting all system setup configurations. Information should be sufficient to qualify system ready for test.