TEST AND EVALUATION MASTER PLAN (TEMP)

FOR

TRANSPORTATION COORDINATORS' - AUTOMATED INFORMATION FOR MOVEMENT SYSTEM II TC-AIMS II BLOCK 4

Program Executive Office
Enterprise Information Systems
(PEO EIS)

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TEST AND EVALUATION MASTER PLAN
FOR
TRANSPORTATION COORDINATORS' AUTOMATED INFORMATION FOR MOVEMENT SYSTEM II (TC-AIMS II)
BLOCK 4

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PART 1. SYSTEM INTRODUCTION

1.1 MISSION DESCRIPTION

The Transportation Coordinators'-Automated Information for Movement System II (TC-AIMS II) is a top-down directed program that addresses critical shortfalls in moving cargo and people in support of the Department of Defense (DoD) mission. TC-AIMS II is an Office of the Secretary of Defense (OSD) directed joint program designed to address joint interoperability among the Services and Agencies for the deployment and transportation of materiel and personnel in support of Department of Defense (DoD) operations.

The Army is designated as Lead Service and is responsible for software development, initial training, and life cycle maintenance for the system. The individual Services and Agencies are responsible for hardware procurement. The Commander, U.S. Joint Forces Command is the functional proponent for TC-AIMS II, chairs the TC-AIMS II Joint Requirements Board (JRB) and represents the user community to the acquisition milestone decision authority. Force structure changes within DoD have created a need for more rapid and effective force projection to accomplish United States defense objectives. To achieve these objectives, the Department must rely on Information Technology (IT) systems to reduce the time required to move and track (via ITV) Joint Forces. TC-AIMS II will facilitate interoperability among the Services and Agencies by providing the IT system that enables the Joint Deployment Process. TC-AIMS II Block 4 provides the capability to accept, create, and transmit all types of movement source data including unit move, sustainment (MILSTRIP/DLMS), and mail. TC-AIMS II will use this source data to create applicable movement documents such as Bills of Lading and military manifests. Block 4 will have the capability to manage cargo consolidation, theater rating and routing, detention/demurrage, specialized reports, commercial tenders and carriers in theater. It will also provide capabilities to manage pallet and reusable container inventories in theater. It will interface with appropriate financial systems for proper billing of shipments and passengers. The system will serve as an automated interface between air/sea clearance authorities and U.S. customs and will provide documentation required by specific foreign customs authorities. Additionally, Block 4 will interface with specific automated supply and War Readiness Reserve systems to accession pre-positioned equipment and supplies and to provide a common data picture of cargo moving into and exiting the transportation pipeline in theater.

1.2 SYSTEM THREAT ASSESSMENT

TCAIMS II Block 4 is subjected to the same threats as nearly all automated information system The vast amounts of information stored, processed and transferred makes for an attractive target of diverse, worldwide threats intending to compromise data, corrupt data, disrupt service, or to physically destroy them. The threat is diverse in source, motivation, sophistication, technique, and time. TC-AIMS II undergoes a Certification and Accreditation in accordance with the Department of Defense (DoD) Information Technology Security Certification and Accreditation Process (DITSCAP). TCAIMS II was initially accredited in April 2002 and was accredited to operate in the TIS enterprise environment in January 2004. Block 4 will not impose an impact to the accreditation.

1.3 SYSTEM DESCRIPTION

TC-AIMS II Block 4 will build on initial Deployment and Joint Reception, Staging, Onward Movement and Integration (JRSOI) capabilities of TC-AIMS II including Block 3 to provide full support for sustainment cargo. Other than for Personal Property, Block 4 provides the capability to accept, create, and transmit all types of movement source data. TC-AIMS II will use this source data to create applicable movement documents such as Bills of Lading and military manifests. Block 4 will have the capability to manage cargo consolidation, theater rating and routing, detention/demurrage, specialized reports, commercial tenders and carriers in theater. It will also provide capabilities to manage pallet and reusable container inventories in theater. It will interface with appropriate financial systems for proper billing of shipments and passengers. The system will serve as an automated interface between air/sea clearance authorities and U.S. customs and will provide documentation required by specific foreign customs authorities. Additionally, Block 4 will interface with specific automated supply and War Readiness Reserve systems to accession pre-positioned equipment and supplies and to provide a common data picture of cargo moving into and exiting the transportation pipeline in theater.

TC-AIMS II Block 4 contributes to the Joint Deployment System (JDS) mission areas of Deployment/Redeployment, Overseas Presence and Force projection, and Focused Logistics. A cross-walk of JDS KPPs and the TCAIMS II Block 4 KPPs is provided in Attachment 5. Figure 1.1 provides a graphical representation of the mission areas that are supported by TCAIMS II Block 4.

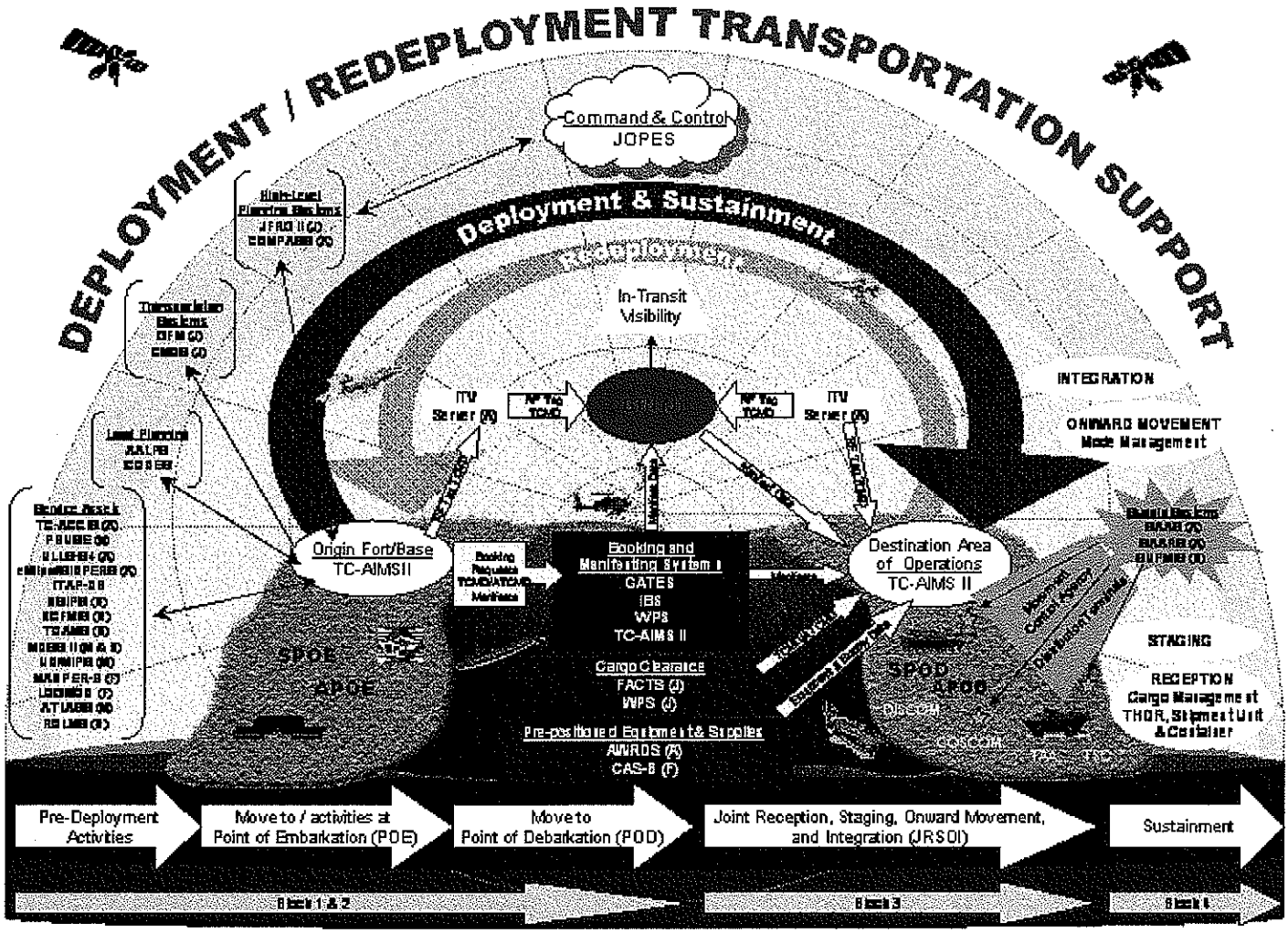

Figure 1-1: TC-AIMS II Mission Areas

1.3.1 Key Features and Subsystems

Block 4 provides capability to complete the JRSOI phase and to bridge the transition to full sustainment transportation operations including:

- improve support for staging and onward movement phases of JRSOI
- implement full sustainment transportation support.
- support for receiving pre-positioned equipment from AWRDS
- sustainment transportation support functions including air and water clearance request, a US Customs interface for retrograde shipments, selected foreign customs documentation, receiving transportation requests and supply data from SAAS, SARRS

The following are key features of the Block 4 system:

1. Theater Traffic Management

Theater Traffic Management functionality shall allow movement control elements operating with theater transportation hubs to assist in managing sustainment transportation support to rate and route intra-theater cargo, manage carrier performance, interface with US Customs for retrograde shipments, and accomplish accessorial asset management. Capabilities will include managing detention and demurrage, a facility for local management of overseas tenders and for maintaining

local transportation funds balances associated with bills of lading and requisitions. Accessorial asset management provides capability for port operations MCT to manage reusable containers and pallets. Documentation capabilities will include Non-MILSTRIP TCN register maintenance, movement cost reporting, billing discrepancy detection, managing certified services and creation of transportation discrepancy reports (SF 361).

2. Theater Distribution Management

Theater Distribution Management capability shall allow movement control elements operating with theater transportation hubs to assist in managing sustainment transportation support by managing cargo shipments with added capabilities including managing astray freight, managing frustrated cargo, suspense due-in file maintenance, a cargo status query capability to support the inbound/outbound function, consolidation of shipments for pickup by consignee, preparing truck loads, in-checking cargo, and preparing air manifests for mail, and a Block 4 desired URL link to the Terminal Facilities Guide.

3. Operating Environment

Theater Distribution activities will be required at the ports of Embarkation/ Debarkation, in Cross Docking Stations, Theater Distribution Centers or Distribution Hubs, located in Supply Support Activities (SSAs) and Tactical Assembly Areas (TAAs). Operators of this functionality will primarily consist of professional logisticians within Theater Support Command (TSC), Corps Support Command (COSCOM), and the Division Support Command (DISCOM). It will operate either on existing information infrastructure networks when communication is available or in a stand-alone (expeditionary) mode in instances of inadequate communications.

1.3.2 Interfaces with External Systems

Block 4 will provide full theater distribution, receipt of pre-positioned unit equipment and sustainment stocks, issue/delivery capabilities, pallet/container reconfiguration processes, shipment/re-shipment functions, additional theater mode management capability, as well as enhanced documentation and reporting capabilities. It will also include required new interfaces with Distribution Standard System (DSS), Army War Reserve Deployment System (AWRDS), US Customs, Standard Army Ammunition System (SAAS), Standard Army Supply System (SARSS), Financial and Air Clearance Transportation System (FACTS), and a generalized commercial carrier 858 interface. In addition, Block 4 may include desired but not required interfaces with the Air Force Combat Ammunition System – Deployable (CAS-D), and a new functionality with Global Air Transportation Execution System (GATES) for Passenger Reservations.

1.4 PERFORMANCE THRESHOLDS AND OBJECTIVES

The following sections identify performance thresholds and objectives. The Key Performance Parameters (KPPs) are detailed in Attachment 3.

1.4.1 Logistics Supportability Objective

1.4.1.1 Issue: TC-AIMS II Block 4 must be logistically supportable

1) TC-AIMS II Block 4 will normally operate in an enterprise environment requiring only browser-based access. As dictated by theater operational limitations (i.e., infrastructure), TC-AIMS II Block 4 may be operated in an expeditionary mode employed on an exception basis until such time as normal operations are available/re-established.
2) TC-AIMS II Block 4 will be operated within existing Service infrastructure to include networks and hardware supported by existing organic Service support programs for Automated Information Systems.

1.4.2 Reliability, Availability and Maintainability Objective

1.4.2.1 Issue: TCAIMS II must be Reliable

TC-AIMS II Block 4 Reliability will be 0.95 (threshold) and 0.975 (objective).

1.4.2.2 Issue: TCAIMS II Block 4 must be Available.

1) In the presence of established and operational network connectivity between the user and the Enterprise perimeter, the TC-AIMS II Enterprise Application & Database will be operationally available 95%(T); 97.5%(O) of the time.

2) In the presence of established and operational network connectivity between the user and the Enterprise perimeter and connectivity is interrupted, the TC-AIMS II Enterprise Application & Database availability will be restored within 8 min 90% of the time by re-connecting it to the Enterprise or by rebooting the user's computer.

3) In the presence of established and operational network connectivity between the user and the Enterprise perimeter and if the Enterprise TC-AIMS II Application & Database is not operationally available; the TC-AIMS help desk shall respond and correct the problem within two hours after receiving notification 80% of the time. For calls where service cannot be restored within two hours, the problem shall be corrected within 24 hours 95% of the time.

   NOTE: Connectivity issues external to the Enterprise perimeter are to be noted for record; but, are not to be chargeable to TC-AIMS II systems availability.

1.4.2.3 Issue: TCAIMS II must be Maintainable

1) System maintenance, configuration, and software support will be conducted in accordance with the maintenance concept, the Supportability Strategy (SS) and the service annexes to the SS.

2) TC-AIMS II Block 4 mean time to repair (MTTR) at the organizational level (system operation) shall be 1 hour threshold and 30 minutes objective values.
3) TC-AIMS II Block 4 mean time to repair (MTTR) at the organizational level (lost information) shall be 8 hours threshold and 1 hour objective values.

1.4.3 Organizational Impact Objective

1.4.3.1 Issue: The TC-AIMS II Block 4 should have no impact on the structure of the unit to which assigned.

Fielding of TC-AIMS II Block 4 to any unit should not require the assignment of additional occupational specialties to the organization.

1.4.4 Personnel Selection and Training Objective

1.4.4.1 Issue: TC-AIMS II Block 4 must be operated and maintained by users.

TC-AIMS II Block 4 can be operated and maintained with minimal additional training for users who either have the appropriate Military Occupation Specialty (MOS) or other appropriate experience beyond that currently taught for the legacy systems being replaced. Block 4 target audience is trained movement control specialists. The target audience is not additional duty soldiers.

1.4.5 Human Factors and Safety Objective

1.4.5.1 Issue: TC-AIMS II Block 4 human factors will support operation, maintenance and support of the system

TC-AIMS II Block 4 will employ intuitive operating procedures (based on the processes that are being automated) characterized by a consistent graphic user interface across the range of applications.

1) Visual indicators and screens will be easily readable in all ambient light conditions without the need for ancillary equipment.
2) TC-AIMS II Block 4 shall provide the capability for system data input and control using multiple means (keyboard and mouse or trackball or touchpad).

1.4.5.2 Issue: The TC-AIMS II Block 4 system does not present major safety or health hazards while being operated, maintained or supported

TC-AIMS II Block 4 shall contain no hazards that will cause death, severe occupational illness, or irreversible damage to health.

1.5 CRITICAL TECHNICAL PARAMETERS (CTPS)

The CTPs in Attachment 4 are derived from the critical system characteristics and technical performance measures, and will include the parameters in the Acquisition Program Baseline.

1.6 INTEROPERABILITY CERTIFICATION (IOPCERT)

Interoperability includes both the technical exchange of information and the end-to-end operational effectiveness of that exchanged information as required for mission accomplishment. TC-AIMS II Block 4 must satisfactorily meet interoperability requirements as defined by the Net-Ready Key Performance Parameters (NR-KPPs).

The Joint Interoperability Test Command (JITC) will conduct the evaluation of TC-AIMS II Block 4 in accordance with the JITC Net-Ready Certification Evaluation Plan (NCEP, also known as an Interoperability Certification Evaluation Plan (ICEP)). The test and evaluation will be in conjunction with other test events (e.g., Development Test and Evaluation (DT&E), Operational T&E (OT&E)) or various joint exercises to help conserve resources.

PART II. INTEGRATED TEST PROGRAM SUMMARY

2.1 INTEGRATED TEST PROGRAM SCHEDULE (ITPS)

TC-AIMS II Block 4 is a fully funded program IAW the Joint Cost Position established at Milestone B. PM TIS will seek a Full Design Decision Review (FDDR) to field the TC-AIMS II Block 4 Transportation Theater Distribution in Dec 2007 for the participating Services. A Milestone C decision is required prior to Block 4 operational test.

The Operational Test Schedule provided in Figure 2-1 identifies key test activity/events and dates for Test. Table 2-1 Operational Test Activity Matrix, below, identifies Key Test Activity/Events and dates for Block 4 testing.

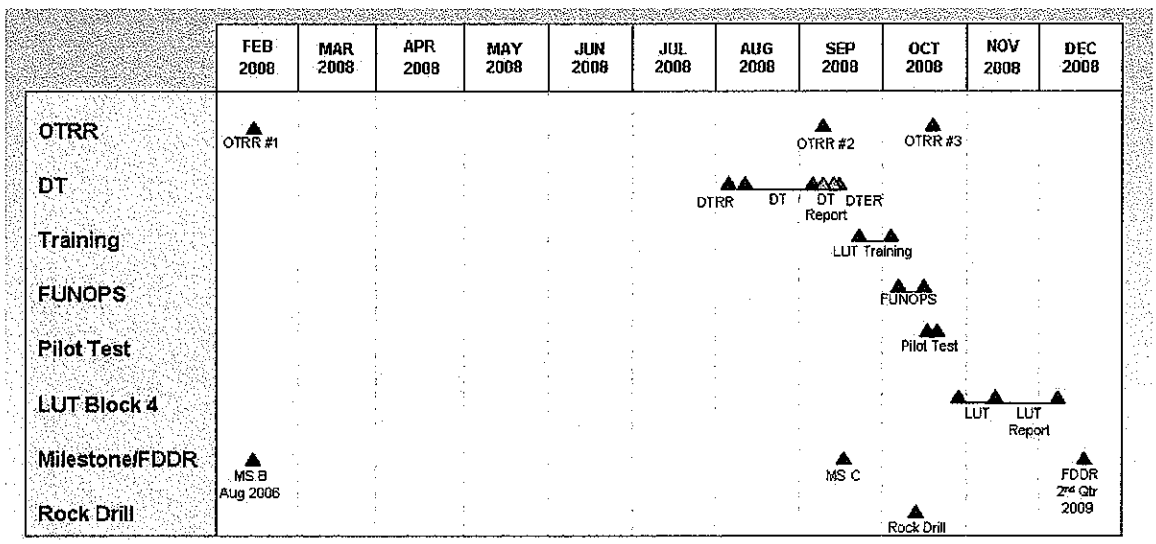

Figure 2-1: Operational Test Schedule

Activity	Planned Date Completed	Actual Date Completed
Milestone B	Aug 2006	
Operational Test Readiness Review (OTRR) 1	14 Feb 2008	
Software Development Test (SDT) –Block 4	4 Aug – 5 Sep 2008	
OTRR2	11 Sep 2008	
Milestone C	18 Sep 2008	
Training	22 Sep – 3 Oct 2008	
Functional Operations (FUNOPS)	6-17 Oct 2008	
OTC Pilot Test	20-21 Oct 2008	
OTRR3	23 Oct 2008	
Limited User Test	27 Oct – 7 Nov 2008	

Table 2-1: Operational Activity Matrix

2.2 ROLES AND RESPONSIBILITIES

2.2.1 PM TIS

PM TIS manages the design, development, testing, training, software extension and logistics support of the Block 4 product. The PM TIS is staffed by the participating components in accordance with the May 97 Joint Staffing Memorandum of Agreement (MOA) and Army policies for program office staffing. The staff is augmented by matrix support from various Army activities and program support contractors. PM TIS is responsible for the development of the TEMP and chairs the T&E WIPTs; and is responsible for the planning and conduct of the Block 4 Developmental Test. PM TIS is also responsible for the funding of all Block 4 T&E activities.

2.2.2 PEO EIS

PEO EIS provides management and acquisition oversight of the PM TIS and provides representation to the Joint Requirements Board (JRB), the Configuration Management Board (CMB) and JTMB. PEO EIS forwards the TEMP to OSD for staffing and approval.

2.2.3 Department of the Army G4

The Army G4 is the Army staff proponent for TC-AIMS II and is the focal point for Army lead Service responsibilities. G4 represents the Army on the JTMB and CMB. G4 will be the user representative for decisions delegated to the PEO EIS and signs the User Representative Concurrence page for the Army.

2.2.4 Deputy Under-Secretary of the Army (Operations Research) (DUSA-OR)

The DUSA-OR signs Lead Service Approval of the TEMP.

2.2.5 Office of the Assistant Secretary of Defense (OASD) (NII)

OASD (NII) is the TC-AIMS II MDA and the Principal Director for OSD approval.

2.2.6 Office of the Secretary of Defense, Deputy Director, Systems Engineering, (Assessment & Support) OUSD AT&L DS/SE(A&S))

DS/DT&E is responsible for DT&E and engineering oversight within OSD, and for staffing and coordinating the System Engineering Plan and the TEMP within OSD and securing approval from OIPT Chairman. DS/DT&E is also responsible for approving the Software Qualification Test (SQT) plan prior to the start of the SQT.

2.2.7 Director, Operational Test and Evaluation (DOT&E)

DOT&E exercises oversight of all aspects of TC-AIMS II OT&E. DOT&E reviews the System Evaluation Plan (SEP) and approves the Event Design Plan (EDP). After considering the results of OT&E and input provided by the OTAs, DOT&E provides an independent assessment of the operational effectiveness and suitability of the system to the IT-OIPT and to Congress. The DOT&E is an OSD TEMP approval authority.

2.2.8 Army Test and Evaluation Command (ATEC)

ATEC is the lead OTA for TC-AIMS II and exercises overall responsibility to plan and conduct TC-AIMS II OT&E, report results, and provide system-level evaluations of effectiveness, suitability and survivability.

2.2.9 United States Army Operational Test Command (OTC)

OTC plans, coordinates and conducts TC-AIMS II operational testing.

2.2.10 United States Army Evaluation Center (AEC)

AEC performs the developmental and operational evaluation of the TC-AIMS II system, and produces the System Evaluation Report (SER) and Bottom-Line Summary (BLS) for DOT&E and the MDA.

2.2.11 Joint Interoperability Test Command (JITC)

The JITC recommends system certification for net-readiness and interoperability to the Joint Staff/J-6 by evaluating enterprise information requirement capabilities during test events (e.g., DT&E, OT&E or various joint exercises). The JITC participates with the operational test agencies to help minimize the duplication of effort in data collection, testing, and evaluation. As a member of the ATEC Systems Team (AST), JITC works in consultation and coordination with the AST members to provide Joint Net-Ready (Interoperability) Certification test results and SER input for TC-AIMS II upon the conclusion of testing. Based on the successful demonstration of net-readiness and interoperability requirements for TC-AIMS II Block 4, the JITC is responsible for the issuance of the Joint Net-Ready (Interoperability) Test Certification. The JITC provides the Joint Staff/J-6 and the Program Manager (PM) with a net-ready (interoperability) certification letter recommendation and test summary report.

2.2.12 Information Systems Engineering Command (ISEC)

TC-AIMS II undergoes certification and accreditation in accordance with DoD D 5200.40, DITSCAP, Jan 97 and DoD 8510.1-M, DITSCAP Application Manual, Jul 00. The DAA has appointed the Information Systems Engineering Command (ISEC) Information Assurance and Security Engineering Directorate (IASED) as the certification authority. IASED will conduct security surveys and perform the security test and evaluation (ST&E) of TC-AIMS II. IASED will also conduct a comprehensive evaluation of the technical and non-technical security features of TC-AIMS II and other safeguards made in support of the accreditation process. The certification authority provides the DAA with the results of the ST&E and an accreditation recommendation based upon the results of the ST&E.

2.2.13United States Joint Forces Command (USJFCOM)

USJFCOM is the functional proponent for TC-AIMS II, chairs the TC-AIMS II Joint Requirements Board (JRB), represents the user community to the acquisition milestone decision authority, and provides decisions and direction to the Program Manager for TC-AIMS II product implementation.

2.2.14 United States Transportation Command (USTRANSCOM)

TBP

2.2.15 United States Air Force (USAF), United States Navy (USN) and United States Marine Corps (USMC)

As required, the USAF, USN and USMC provide representation to the JTMB, CMB, and JRB and are responsible for funding, procuring, and installing necessary hardware for TC-AIMS II.

2.2.16 Test and Evaluation Working-Level Integrated Product Team (WIPTs)

The Test and Evaluation WIPT provides a forum to develop the Block 4 test strategy, schedule, and plans. The WIPT also provides a means to review and update the TEMP and resolve or elevate test related issues. The WIPT concept calls for empowerment of representatives to speak for their organizations on pertinent matters.

PART III. DEVELOPMENTAL TEST AND EVALUATION OUTLINE

3.1 DEVELOPMENTAL TEST AND EVALUATION (DT&E) METHODOLOGY

DT&E is linked to the TC-AIMS II incremental Acquisition Strategy. Each developmental increment is subject to TIS JPMO Developmental Testing (DT). The scope of DT is based on DA PAM 73-1, "Test and Evaluation Guidelines," dated May 2003.

PM TIS will produce and implement an approved developmental test plan to ensure that all technical and functional requirements for Block 4 have been properly developed in support of the JRSOI mission. Test data, in addition to physical access to the test environment will be made available to the Independent Development Evaluator (IDE). An independent evaluation of test results will be provided to PM TIS by the IDE in support of determining functional software maturity and readiness for system to enter OT.

The focus of TC-AIMS II DT is based on measuring and assessing the system's ability to achieve the Key Performance Parameters (KPP) and Critical Technical Parameters (CTP). DT events are conducted in a laboratory environment but closely follow the OT scenario.

3.1.1 Developmental Test (DT)

The two major events of Developmental Test are Software Development Test (SDT) followed by Software Qualification Test (SQT). The SDT test results culminate from the contract developer's unit, integration and system test activities. Successful SDT results lead to the conduct of a Developmental Test Readiness Review (DTRR), essential to the decision to begin SQT. A Data Authentication Group (DAG) chaired by the PM-TIS Test Director is conducted on an as-needed basis throughout the SQT. Authenticated data will be passed to a DT performance advisory committee chaired by the independent evaluator. A Developmental Test Exit Report (DTER) is provided at the conclusion of the SQT.

DT addresses system performance, technical and functional characteristics (hardware, software, interfaces and communications). The DT will leverage results from all levels of Contractor Test. These tests will be monitored by government staff. The DT effort will include a SDT conducted by the contract developer and followed by a government SQT to ensure that all capabilities and requirements of the system have been met.

3.1.1.1 Software Development Test

The developer executes technical test procedures and functional test scenarios on target hardware to authenticate compliance with all applicable system requirements. The contractor will provide a Software Development Test Plan, Reported Results and Test Analysis. In addition, the contractor will document all phases of testing through the use of test cases and automated test scripts such that the tests are repeatable. The three levels of testing conducted by the contractor include:

1. **Unit Test (UT).** The unit test validates requirements expressed in the detailed design descriptions and software requirement specifications. In addition, unit testing ensures that all source statements in a unit have been executed.
2. **System Integration Test.** The objective of this activity is to integrate two or more functional threads from the bottom-up and to test that the composite software works as intended without adverse affects. All integrated functional threads should accept valid inputs and produce correct outputs as specified for the associated sub function(s). This process continues until all units are integrated into a delivered suite of software.
3. **Engineering Development Test.** The engineering development test will demonstrate performance, achievability of system critical technical parameters, refinement of hardware configurations and operability with existing equipment.

3.1.1.2 Software Qualification Test (SQT)

The SQT is a system test conducted by the PM-TIS executed on target hardware using realistic data files supplemented with user prepared data. Objectives of the SQT are to obtain government confirmation that the design meets technical performance and operational requirements. System users participate in the technical and functional aspects of the SQT. Software, interfaces and interoperability requirements comprise the total system to be validated.

Developmental scenarios that demonstrate the theater operations business process will be used for the functional testing. These scenarios will be decomposed into detailed test cases to ensure test repeatability. Technical testing will also be documented in repeatable test cases and through the use of automated test scripts. In addition to the functional and technical testing, technical reviews of NR KPP conformity will also be conducted.

3.1.2 Developmental Test Readiness Review (DTRR)

PM TIS conducts a DTRR prior to the start of SQT. The DTRR determines that the following entry criteria have been met:

1. Evidence of successful completion of the SDT in the form of the Contractor's approved System Developmental Test Report.
2. The software provided for test has been identified with name and version identifiers and has been QA certified.
3. The TEMP is approved.
4. Failure definition and scoring criteria has been identified.
5. The test hardware configuration has been defined.
6. A safety assessment report has been approved by the TIS-PM
7. A safety release statement has been provided.
8. System documentation is in final draft.

3.1.3 Developmental Test Exit Report (DTER)

The PM-TIS provides a development test exit report at the completion of SQT. The report identifies that the following exit criteria has been met:

1. The system is certified for readiness to enter the next dedicated phase of OT&E.
2. The DT objectives have been met and there are no open Priority 1 or 2 (Critical/High) problem reports.
3. All Priority 3 (Medium) problems have been documented as applicable.
4. All unmet requirements are identified and an impact statement provided.
5. A statement is provided concerning any restrictions/limitations during the test to ordinary operations under fielded conditions.
6. A base-lined version of software is ready for delivery to the operational test community.
7. A list of available system and user documentation is provided.
8. The hardware configuration is identified and validated.
9. JITC attests that TCAIMS II has demonstrated basic net-readiness/interoperability with its Block 4 external interfacing systems during DT and is ready to proceed into an operational test and evaluation posture of its joint net ready/interoperability characteristics.

3.2 FUTURE DEVELOPMENTAL TEST AND EVALUATION

DT&E is linked to the TC-AIMS II incremental Acquisition Strategy. Each developmental increment receives a government DT. The scope of DT is based on DA PAM 73-1, "Test and Evaluation Guidelines," dated May 03. The functional, hardware and communication configurations; test scenarios and events; evaluation scope; test limitations; and DT&E objectives for developmental tests for Block 4 are described below.

3.2.1 Configuration Description

TC-AIMS II Block 4 is a component of an integrated Transportation Information Management system designed for access through the world-wide web. The Block 4 component does not have any hardware requirements, rather the added functionality will leverage from hardware that has been fielded in support of previous system Blocks.

The DT will be conducted in a laboratory environment that exercises both Enterprise configurations and expeditionary (standalone) configurations. The Enterprise will require users to access TCAIMS II Block 4 through an Internet browser. The user data will then be exported from the Enterprise server and imported into an expeditionary system for standalone operations. Test scenarios will be developed to exercise the configurations in accordance with realistic operations.

3.2.2 Developmental Test and Evaluation Objectives

Full system testing is conducted to validate system performance, accuracy and validity, security, functionality, and interoperability. This is accomplished by ensuring that the system capabilities, regulatory compliance, training effectiveness, and the functional performance are exercised, verified and validated. Specific objectives of the DT include the following:

- Validate Critical Mission Functions (CMF)
- Validate Key Performance Parameters (KPP)
- Evaluate Critical Operational Issues and Criteria (COIC) in Attachment 2
- Validate Critical Technical Parameters (CTPs) in Attachment 4
- Review and validation of Training and User Documentation
- Viability to successfully conduct an OT (specific language from PAM)

3.2.3 DT Events, Scope of Testing, and Basic Scenarios

Several events occur during the DT, many of which are sequential by nature. These events include the Contractors SDT followed by the PM TIS SQT. These test events are described above in Section 3.1.1. Within the SDT and SQT, different phases will be planned to focus on the technical testing, performance testing and the functional testing. The applicable test objectives will be evaluated within each of these test events.

Throughout the DT, results are analyzed, software revised as appropriate, and regression testing is executed. The fixes and tests will be documented in the form of a change page to the contractors SDT plans and report. The SQT will be operated on a baseline version of the software; a fix will not be incorporated into the SQT until it has been verified by the contractor, properly documented an approved by PM TIS.

All test incidents will be recorded in the configuration management change control repository. Observers from AEC and JTIC will be on-site during the DT events and will have access to all data associated with the events. An Independent Developmental Evaluation Report will be provided to PM TIS following the DT. A final analysis of the test results is provided in a formal test report submitted to the Operational Test Readiness Review Certification Authority. This final report will include the analysis from PM TIS as well as the IDE submission.

The scope of the Block 4 DT will focus on the validation and verification of required technical parameters and ensures the system provides the functionality needed to support the JRSOI business process. Data will be collected against all identified test objectives using a set of test methods that include:

1. **Inspection:** Verification by visual examination
2. **Analysis:** Verification by technical, mathematical or analytical evaluation
3. **Demonstration:** Verification of operation of the item under a specific condition

4. **Test:** Verification through systematically exercising the applicable item under appropriate conditions with instrumentation and collection, analysis, and evaluation of quantitative and qualitative metrics.

Technical testing primarily pertains to system security, system interfaces, database performance, interoperability, and regulatory compliance. PM-TIS leverages the SDT technical test results as input to the SQT technical verification. Stress testing and load testing will be conducted with the aid of automated test tools. Test scripts will be developed to exercise both volume of data and number of users. Resources to conduct the technical testing will be comprised from the TIS test personnel and from USAISEC for security testing.

3.2.4 Limitations

None.

PART IV. OPERATIONAL TEST AND EVALUATION OUTLINE

4.1 OPERATIONAL TEST AND EVALUATION OVERVIEW

In accordance with DoD Instruction 5000.2, the Army Test and Evaluation Command (ATEC) is responsible for the conduct of Operational Test (OT) of TC-AIMS II and for the preparation of an integrated, independent, and objective operational evaluation. Two ATEC subordinate commands are involved in the test and evaluation of TC-AIMS II Block 4. These are the Army Evaluation Center (AEC) and the Operational Test Command (OTC). ATEC will conduct testing of TC-AIMS II in theater sustainment operations. The OT will be based on Command Post Exercises (CPXs), in which representative users perform the transportation tasks required to support sustainment operations using pre-positioned cargo and equipment. System evaluation will focus on the accuracy and timeliness of critical mission functions, and the reports and outputs required to complete the Theater Operations process.

ATEC will combine data gathered from observations during Continuous Evaluation (CE) events, DT and operational tests for each service to produce a cost-effective, risk-reducing test and evaluation program for TC-AIMS II Block 4. ATEC will plan and execute a Limited-User Test (LUT) to acquire data for evaluating TC-AIMS II. Significant changes to the baseline software during or after DT may invalidate previous test events and data for evaluation purposes. If significant changes are made to the baseline software, then satisfactory regression testing must be conducted prior to PM TIS passing configuration control to OTC. Test will not begin without OTC configuration control before the LUT. These test events may then have to be repeated during OT to demonstrate production-representative performance. ATEC will test all capabilities provided by TC-AIMS II that are required to support the mission.

JFCOM, as the Single User Representative, is the Service voice for scenario coordination and development. Individual services will provide input to ATEC through JFCOM. JFCOM is ultimately responsible for the TC-AIMS II requirements, and will aid ATEC in ensuring that these requirements are tested and met. This includes developing scenarios to exercise the system. JFCOM is empowered to make decisions regarding Service-specific differences in the TC-AIMS II testing process.

4.1.1 Pre-Test Reporting Requirements and Entrance Criteria

Before the start of each operational test event, OTC will conduct a final OTRR to determine if the system and all test participants are ready for OT. Certain items noted below will require an operational test readiness statement (OTRS). At this final OTRR, the following reports or certifications are required:

1. The Milestone Decision Authority (MDA) approval of Milestone C.
2. PM TIS certifies, and ATEC agrees, developmental testing (DT) and exit criteria stated in PART III have been met.
3. OT scenarios have been developed by OTC and verified by JFCOM.

4. Users have conducted Functional Operations (FUNOPS) to verify the business processes and operating procedures that support the JCS JRSOI process and the Army and Navy CONOPS. [OTRS]
5. The PEO EIS certifies TC-AIMS II is ready to enter OT and that no software Priority 1 and 2 problems exist and workarounds are in-place and agreed to by JFCOM for Priority 3 problems. [OTRS]
6. PM TIS provides ATEC a copy of System Security Authorization Agreement (SSAA) and PEO EIS certifies security requirements based on PM TIS security and IA test results have been addressed in accordance with the DoD Information Technology Security Certification and Accreditation Process (DITSCAP).
7. PEO EIS provides a generic accreditation of TC-AIMS II or an Interim Authority to Operate (IATO) for the period of Army and Navy OT.
8. The PM TIS provides a safety release and final versions of all test support packages.
9. Combined Arms Support Command (CASCOM) training directorate with JFCOM input certifies that training provided to the test players is adequate to prepare the users to operate and provide system administration for the TC-AIMS II system during the Block 4 OT. [OTRS]

   The Naval Operation Logistics Support Center (NOLSC) will conduct an independent assessment of the training for the Navy.
10. Site representatives certify test sites are ready for OT and provide a site security accreditation.
11. Service representatives certify test unit personnel are trained and committed for the duration of the test, as applicable. [OTRS]
12. The test organizational elements and PM TIS will certify that the database(s) supporting the test are current prior to OT.
13. JITC attests that TC-AIMS II conforms to applicable standards preparatory to net-ready/interoperability test certification in accordance with CJCSI 6212.01C.
14. PM TIS provides an approved Supportability Strategy (SS), which includes the Help Desk plan.
15. Subject Matter Experts are identified and tasked to support OTC.
16. Necessary contractor support is coordinated and funded.
17. Data collectors are trained on collection methods.

4.2 CRITICAL OPERATIONAL ISSUES AND ADDITIONAL ISSUES

4.2.1 Critical Operational Issues and Criteria (COIC)

A summary of the COIC to evaluate TC-AIMS II Block 4 is contained in Attachment 2.

4.2.2 Additional Issues

In addition to the COICs from the functional proponent, the ATEC System Team has developed two additional issues (AI) to ensure that a comprehensive operational test and evaluation is prepared; see Table 4-1,. Additional issues include AI 1 (Business Practices) as an effectiveness issue and AI 2 (COOP) as a survivability issue. The AIs will be used to obtain evaluation information to prepare an operational evaluation by the ATEC.

Name	Issue
Business Practices (AI 1)	Do the business practices required for TC-AIMS II adequately support accurate and timely completion of the critical mission functions?
Continuity of Operations (COOP) (AI 2)	Are the TC-AIMS II availability IA controls and SOPs for local data base backup, alternate site data backup, and restoration of operations adequate for continued user accomplishment of critical mission functions?

Table 4-1: TC-AIMS II Additional Issues

4.3 FUTURE OPERATIONAL TEST AND EVALUATION

In the evolutionary development of TC-AIMS II, future acquisition blocks will add functionality and interfaces as determined by PM TIS and the TC-AIMS II Joint Requirements Board (JRB) until full operational capability is achieved. ATEC plans to support the decisions to field future blocks of TC-AIMS II with an evaluation that uses data from contractor testing, Government DT evaluated by the independent developmental evaluator, and an OT on each Block.

DoD guidance requires that the system configuration, OT&E objectives, events, scope of testing, scenarios, and test limitations for all future phases of OT of a system be described. For ease of readability and to facilitate communication and coordination among all members of the acquisition team, these required subjects are presented in a tabular format in Table 4-5 and are discussed in the following paragraphs. The OT events for Block 4 and future Blocks are the column headings for the table. This enables the reader to quickly assess the similarities and differences between the OT events.

	• **Block 4–Theater Operations** Incremental Strategy	**Future Planned Block 5** Evolutionary Strategy
Functional Configuration	Provide Full Theater Distribution Support • Provides selected interfaces • Provides theater traffic management • Provides theater distribution management • Provides support in applicable operating environments	Will include all OP/CMFs and additional functionality as determined by Joint Requirements Board and approved by Configuration Management Board: • Block 5 – Installation Transportation Office/Transportation Management Office (ITO/TMO)
Hardware Configuration	• Enterprise via Web-browser • Expeditionary (Standalone) (Recommend that the hardware configuration be Service provided PCs, laptops, and servers that meet nominal specifications)	• To be determined by Joint Requirements Board and approved by Configuration Management Board
Communication Configuration	• Internet (Enterprise via Web-browser) • Expeditionary (Standalone) • Commercial/Defense Information Systems Network (DISN) • Tactical communications • Floppy disk	• To be determined by Joint Requirements Board and approved by Configuration Management Board
OT & E Objective	• OT assesses operational effectiveness, suitability & survivability to support MDA decision to field Block 4 and to develop future system blocks	• TBD by use of risk assessment methodology of the DOT&E memo *Guidelines for Conducting Operational Test and Evaluation for Software-intensive System Increments*, dated June 2003
Test Scenarios & Events	• Use CPX • Multiple test sites. • One or more Unified Command participants • All required interfaces and feeder systems needed for Sustainment will be tested • Actual users as stated in the target audience description	• TBD by use of risk assessment methodology of the DOT&E memo *Guidelines for Conducting Operational Test and Evaluation for Software-intensive System Increments*, dated June 2003.
Evaluation Scope	• All COICs and AIs will be evaluated for all required functions • Block 4 evaluation will also include Net-Ready issues such as Enterprise Management and Information Assurance	• TBD by use of risk assessment methodology of the DOT&E memo *Guidelines for Conducting Operational Test and Evaluation for Software-intensive System Increments*, dated June 2003, approved by the T&E WIPT.
Test Limitations	• TBD	• To be determined

Table 4-2: Operational Test and Evaluation of TC-AIMS II

4.3.1 Configuration Descriptions

The hardware configuration of TC-AIMS II Block 4 consists of Service provided commercial-off-the-shelf (COTS) computer systems. This hardware must be capable of hosting TC-AIMS II as a standalone application. Users may also access the application through a standard Web browser connected through local area networks and the Internet to a Regional Access Node (RAN) of the TIS Enterprise.

4.3.2 Operational Test and Evaluation Objectives

- To verify that TC-AIMS II is an effective tool for use in supporting the sustainment mission; providing accurate and timely information and outputs to end users and interfacing systems
- To ensure that TC-AIMS II is a suitable tool for military and civilian users; easy to use and intuitive, easily learned through proper training, reliable, available, maintainable, and presents no risk to the user through design and use
- To prove that TC-AIMS II is survivable from attack; capable of keeping data secure and preventing intrusion from unauthorized entities

4.3.3 Operational Test and Evaluation Events, Scope of Testing and Scenarios

The OT will consist of collecting data during live day-to-day theater sustainment operations or exercises in which representative users at the test site will use TC-AIMS II and Service legacy or manual systems to perform the transportation tasks required to support the Sustainment mission business processes.

JFCOM and the Services will aid ATEC in creating realistic scenarios focused on the Sustainment of a Theater of Operations. In the Scenario Working Groups (SWG), ATEC and JFCOM will identify the Sustainment mission in the form of a complete scenario. ATEC will then define and highlight the functions and tasks that TC-AIMS II is required to provide, according to the Joint Requirements Board. TC-AIMS II success hinges on its ability to support the Sustainment mission through its required tasks.

A Master Scenario Event List (MSEL) will be developed to provide OTC the data required to answer the Measure of Effectiveness (MOE) and Measures of Performance (MOP). Each scenario event will be mapped to specific JRB requirements in TC-AIMS II. It is important to note that no physical movement of equipment and personnel is planned for this OT.

TC-AIMS II will be tested to ensure that it provides capabilities-focused, effects-based interoperability and is supportable on the Global Information Grid (GIG). TC-AIMS II must also demonstrate compliance with the Net Readiness KPP (NR-KPP) as described in CJCSI 6212.001C and DOD Directive 4630.5. Interoperability includes both the technical exchange of information and the end-to-end operational effectiveness of that exchange of information as required for theater sustainment mission accomplishment. Any interfaces required to support the completion of the Sustainment mission will be tested.

According to the DOT&E Policy for conduct of IA testing during OT&E, additional IA OT&E may not be required for a MAC III Sensitive confidentiality system; provided that the certification and accreditation (C&A) for security is complete and residual risk is acceptable. Need for further IA testing will be reviewed at OTRR #1 based on the results of the last previous quarterly ST&E and Active accreditation.

ISEC will be used at every available opportunity in an effort to save money. This concept has served ATEC, ISEC, and PM TIS well in past efforts.

4.3.4 Limitations

TBD

4.4 EVALUATION STRATEGY

ATEC will develop an overarching evaluation concept using the Lens methodology. The Lens charts will be finalized in the AEC System Evaluation Plan (SEP). The evaluation of the system will only change (from past evaluation plans) where the mission to be supported has changed. All in all, TC-AIMS II is adding functionality to take on a new mission so the basic evaluation strategy will not change. Once the Block 4 critical mission functions are determined, the SEP will be updated. As necessary, the TEMP will be updated for Milestone C. Below is the evaluation plan for Block 4 as it is understood prior to Milestone B.

4.4.1 System Effectiveness

The evaluation dendritic to evaluate Block 4 system effectiveness is contained in figure 4-2. ATEC has developed a set of evaluation measures that will guide the collection of objective and subjective data for analytical comparisons. Results of all criterion and related supplementary/complementary measures will be combined to address the two critical issues and one additional issue. To be operationally effective, TC-AIMS II must satisfy the requirements of mission performance, interoperability, and business practices. Military judgment will be applied to the analysis of data to answer the question, "Will TC-AIMS II provide accurate and timely information needed for users to provide Sustainment support for In-Theater Operations?" If the conclusion indicates TC-AIMS II meets the users' needs for Sustainment functions and for movement control missions, the system will be found effective.

Interoperability is the condition achieved when information or services can be exchanged directly and satisfactorily between various systems and their users (JCS Pub 1-02). ATEC and JITC will cooperate to produce the information required for JITC to complete the Net-Ready/Interoperability Certification. ATEC will also use the data to address COI 3 on Interoperability. JITC is the sole DoD certifier for Joint Net-Readiness (Interoperability) and will use data collected during DT and OT to complete the Block 4 certification. JITC will assist test organizations in identifying what net-readiness/interoperability testing is required to satisfy joint requirements. PM-TIS will provide JITC and ATEC with information on the technical aspects of

the TC-AIMS II interfaces such as: status of interface agreements, status of the technical implementation of those agreements, and supporting opinions on causality if an interface is not effective. ATEC will test the effectiveness of information transfer in an operational environment. ATEC will coordinate OT plans with JITC to ensure Net-Readiness (Interoperability) test requirements, including the NR-KPP, will be met. ATEC will provide JITC access to the test database and will share the resulting evaluation of the operational timeliness, accuracy and usability of information transferred in an operational environment. ATEC and JITC will coordinate findings and explore any discrepancies to produce a thorough interoperability evaluation. Whereas the ATEC evaluation is independent, coordinating findings with the expertise of JITC will result in a better product for the users. ATEC and JITC will continue to share data and evaluations on all future operational events.

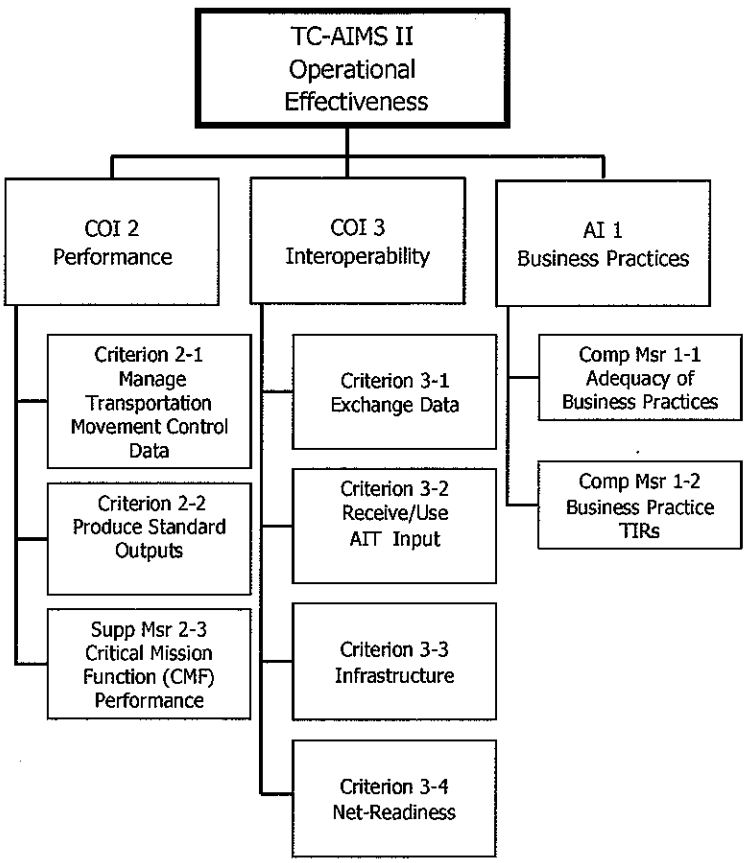

Figure 4-2: TC-AIMS II System Effectiveness

4.4.2 System Suitability

The System Suitability Evaluation dendritic to be used for TC-AIMS II Block 4 is shown in Figure 4-3. Data will be collected on all system suitability measures and results of all criterion and measures will be combined to address the critical issue. To be operationally suitable, TC-AIMS II must satisfy supportability and maintainability requirements for the users. In addition, the Block 4 system must provide adequate Enterprise Management to establish and maintain the Web-based server architecture planned to be fielded, in conjunction with Block 4 functions for system administrators to manage standalone workstations and deployed system networks._Local variations in the implementation of Active Directory can require setting changes when a user moves between forests. Such changes and resulting delays in user connection shall not be construed as impacting the suitability of TC-AIMS II. Military judgment will be applied to the analysis of all data to answer the question, "Given training, will soldiers, sailors, and DoD civilians be able to operate, support and maintain TC-AIMS II in an operational environment?" If analysis concludes that issues are adequate, then TC-AIMS II will be found suitable for operations in the intended environment. Human-System Integration and Block 4 training will be integrated into the evaluation of the MANPRINT and ILS issues, respectively.

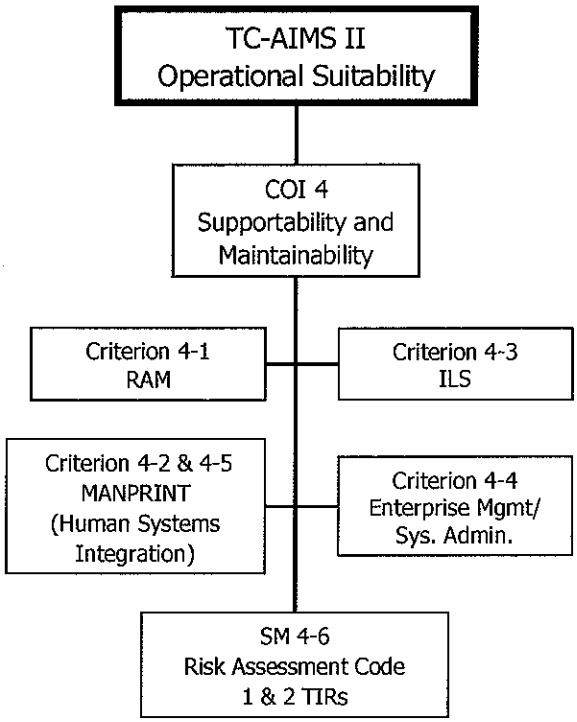

Figure 4-3: TC-AIMS II System Suitability

4.4.3 System Survivability

The dendritic to be used for evaluation of TC-AIMS II Block 4 System Survivability is in Figure 4-4. Data will be collected on all system survivability measures. Results of all complementary measures and criteria will be combined to address the critical issue and additional issue. To be operationally survivable, TC-AIMS II must satisfy system security and information assurance requirements and provide users with COOP capabilities to protect system information from unauthorized exploitation and corruption. Assessment of information assurance will focus on these four areas: (1) prevent data disclosure; (2) provide data integrity; (3) protect data IAW classification; (4) prevent attacks. Controlled attempts to penetrate the TC-AIMS II system or deny information or use will be conducted during ISEC security testing for PM TIS to assess the ability of users to implement safeguards. This data will be included in the evaluation. Military judgment will be applied to the analysis of all data to answer the question: "Will the TC-AIMS II system and its users be able to adequately safeguard vital movement information?" If analysis concludes that issues are adequate, then TC-AIMS II will be found survivable.

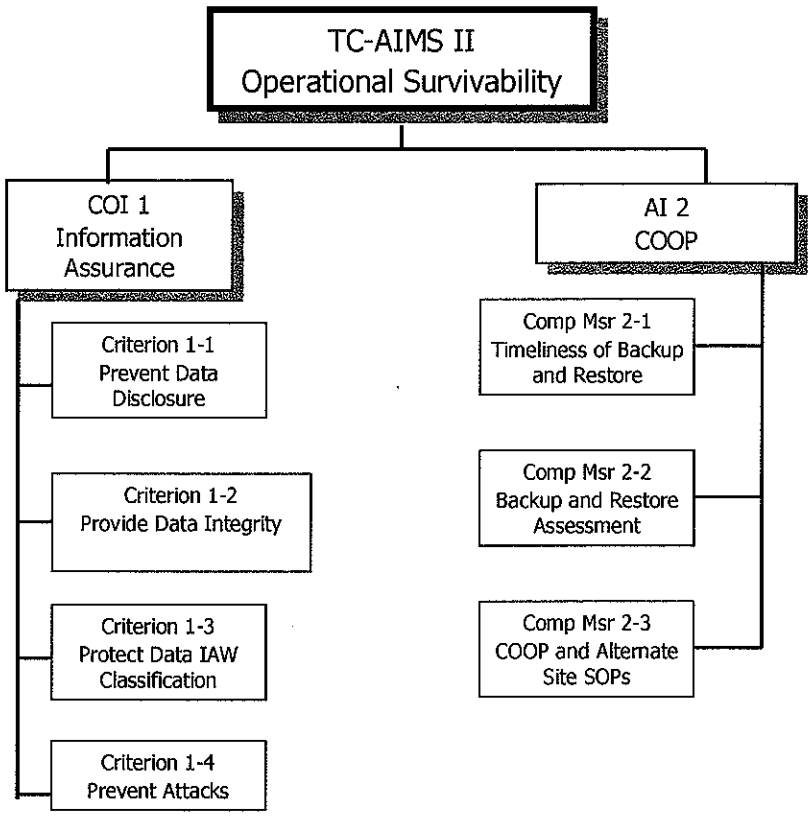

Figure 4-4: TC-AIMS II System Survivability

4.4.4 Net-Readiness evaluation

The core operational question to the war-fighter for Net-Readiness is: Can TC-AIMS II enter the intended network and securely exchange data in support of the Sustainment mission without adding undo burden on the users?

This question is answered with the ESS concept outlined above. The following shows a breakdown of the core NR question and the multiple data sources used for evaluation of the total question:

1. Effectiveness
   a. "support of the theater sustainment mission" - SM 2-3 CMF performance
   b. "exchange data" - Criterion 3-2 Exchange Data
   c. "enter the intended network" - Criterion 3-1 Infrastructure

2. Suitability
   "without adding undo burden on the users" - Criterion 4-2 & 4-3 MANPRINT

3. Survivability
   "securely" - Criterion 1-1 Prevent Data Disclosure & Criterion 1-3 Protect Data IAW classification

4.5 FUNCTIONAL OPERATIONS (FUNOPS)

Prior to the start of OT, the users at each test site will have a period of two weeks to implement and dry run the joint scenario using TC-AIMS II. This period provides the users with an opportunity to combine the TC-AIMS II functionality with that site's standard operating procedures and ensure the test unit has a complete understanding of how to best utilize the Block 4 system to accomplish Sustainment business processes and theater operations. By the end of FUNOPS, each test site would have successfully used TC-AIMS II to execute the scenario. ATEC will observe system administration activities and operations required by users to perform the establishment of an Expeditionary (standalone) workstation and a deployed server.

4.6 PLANNING ASSUMPTIONS AND CAVEATS

This TEMP is developed based on good faith estimates of the functionality that the PM TIS will incorporate in each Block of TC-AIMS II.

4.7 LIVE FIRE TEST AND EVALUATION

TC-AIMS II does not require live fire test and evaluation under the provisions of Title 10 USC 2366.

PART V. TEST AND EVALUATION RESOURCE SUMMARY

5.1 RESOURCE SUMMARY

Key test and evaluation resources, both government and contractor, which will be used during the course of the acquisition program are identified below. See the ATEC Outline Test Plan (OTP) 2008-LU-C4-TCAIM-A1204, for additional details on test requirements. Primary resource drivers will be these T&E concepts that apply to all Software Development Tests and all Operational Tests for TC-AIMS II and subsequent Blocks.

Software Development Testing will be based on simulated deployment of a brigade sized command post in a lab environment, and exercise the processes of a Theater Movement Control Agency or Movement Control Battalion (TMCA/MCB) for the Army. Navy testing will be based on a Carrier Strike Group, Expeditionary Strike Group and/or Expeditionary Logistics Support Group. The lab environment located in Newington, VA, will be configured to represent each Service's fielding plan for TC-AIMS II performing all the sustainment functions Block 4 provides. Representative users perform the transportation tasks required to support sustainment operations using pre-positioned cargo and equipment. The test event will be both free-play and scenario-driven and will focus on the performance of sustainment tasks by typical service users supporting an actual live theater sustainment operation or a simulated theater sustainment CPX. All required interfaces will be tested. Sufficient numbers of workstations, operators and databases for other required interfaces will also need to be available. (Interoperability is the condition achieved between systems when information or services can be exchanged directly and satisfactorily between them and their users (JCS Pub 1-02).)

The Operational Test (OT) event, a Limited User Test (LUT), will be based on observing live day-to-day operations or command post exercises in which representative users perform the transportation tasks required to support sustainment operations using pre-positioned cargo and equipment using TC-AIMS II and Service legacy or manual systems. The test event will be both free-play and scenario-driven and will focus on the performance of sustainment tasks by typical users supporting an actual live theater sustainment operation or a simulated theater sustainment CPX. Scripting will be used only as necessary. Testing will be conducted 5 days a week, 8 hours a day, excluding holidays and weekends. A combination of objective and subjective data will be collected using assessments provided by operators, administrators, and subject matter experts. System evaluations will focus on the accuracy and timeliness of critical mission functions, reports, and outputs required to complete the in-theater planning, coordination, and execution of the sustainment mission. Training (CASCOM and NOLSC), interoperability (JITC), and information assurance (ISEC) will also be evaluated concurrent with this event and assessments in these areas will be provided to AEC.

5.1.1 Test Articles.

PM TIS will provide sufficient quantities of Block 4 software to support each Service and test sites for both the SDT and LUT events. The specific LUT test support requirements and configurations for each of the test sites are provided in the Outline Test Plan. As noted above, each Service will need to provide a sufficient number of representative TC-AIMS II users to support an Army Brigade (Unit of Action) and Navy Battalion sized deployments. Table 5-1 shows projected personnel resources to support the portion of the TC-AIMS II Army and Navy LUT for Block III.

Requirement	Number
ARMY	
Theater Movement Control Agency (TMCA/MCB) O2/O3 /E-7	1
Mobility Warrant Officer WO1/3	1
Traffic Mgmt Coordinator E-6/E-7	11
Traffic Mgmt Coordinator E-6/E-7 (SA/DBA trained)	2
Transportation Coordinator (source DST)*	2
Motor Transport Operator E-6/E-7	2
*Deployment Support Team	Total 19
NAVY	
Carrier Strike Group E-6/E-7/Civ	2
Expeditionary Strike Group E-6/E-7/Civ	2
Expeditionary Logistics Support Group	2
Traffic MGMT Coordinator	1
	Total 7
Movement Operations Cell (ATEC)	1
Headquarters Operations Cell (OTC)	1

Table 5-1: Estimated Personnel Resources to Support Joint Army Navy LUT

USA estimates for Block 4 LUT: 19 personnel replicating a theater sustainment process receiving a Brigade size element.

USN estimates for Block 4 LUT: 7 personnel replicating a theater sustainment process.

These Service resource estimates are preliminary but are sufficient for long range estimations.

5.1.2 Test Sites and Instrumentation

The two proposed test sites are Fort Hood, TX and Gulfport, MS which will be used to support both the Army and Navy test requirements. Users will be logically dispersed on both test sites to reflect operational locations. The purpose of dispersing users across multiple test sites is to demonstrate a capability to operate over different means of communications where possible and across multiple networks to better simulate the operational environment.

5.1.3 Test Support Equipment

1. Automated test tools will be coordinated with all sites to be used in collection of AIS test data during the LUT
2. Operational Test Data Server (located at OTC, West Fort Hood, TX)
3. Automated test tools (see Outline Test Plan)

5.1.4 Threat Representation

As needed, system security testing and certification will be done primarily by the US Army Information Systems Engineering Command – Information Assurance Security Engineering Directorate (USA ISEC/IASED) during DT. Data will be shared with ATEC and JITC as required. The potential security threats to TC-AIMS II that will be represented during Certification Test include: unauthorized access, fraud and spoofing, service interruption/degradation, and human errors of commission and omission. Refer to TC-AIMS II Certification Plan (ISEC/IASED document).

OTC will collect backup and restore system data, system administrator and user security surveys, and security related Test Incident Reports during the LUT. If the residual vulnerabilities found during Security Test & Evaluation are unacceptable, ISEC will conduct an informal penetration test to determine the operational consequences of the residual vulnerabilities during the LUT. Information Assurance data will also be collected as part of the net-ready KPP in the areas of interoperability, enterprise management, and net-readiness.

5.1.5 Test Targets and Expendables

None

5.1.6 Operational Force Test Support

In support of Block 4 testing, access to required new interfaces with Distribution Standard System (DSS), Army War Reserve Deployment System (AWRDS), US Customs, Standard Army Ammunition System (SAAS), Standard Army Supply System (SARSS), Financial and Air Clearance Transportation System (FACTS), and a generalized commercial carrier 858 interface. In addition, Block 4 may include desired but not required interfaces with the Air Force Combat Ammunition System – Deployable (CAS-D), and a new functionality with Global Air Transportation Execution System (GATES) for Passenger Reservations. RF-ITV Server and AIT resources are required. Installation IT and administrative support will be coordinated through site surveys and Memorandum's of Understanding (MOU).

5.1.7 Simulations, Models and Test Beds

None

5.1.8 Special Requirements

PM TIS will provide the laboratory facilities required in support of all Block 4 government SDT, to include coordination of test players and adequate access to all interfaces required for each Service to be tested. PM TIS will coordinate directly with ATEC and JITC to provide onsite access for observations and to SDT data. The PM TIS Help Desk must be operational as called for in appropriate supporting and fielding plans during all LUT periods. Each test site must provide high speed LAN connectivity w/VPN ports and infrastructure support during the TC-AIMS II Block 4 LUT.

5.1.9 Test and Evaluation Funding Requirements

Table 5-2 shows estimated test and evaluation funding requirements by FY below. Funds are subject to availability.

Table 5-2: TC-AIMS II Test & Evaluation (T&E) Funding Requirements ($K)

RDT&E						
Test & Evaluation	**FY06**	**FY07**	**FY08**	**FY09**	**FY10**	**FY11**
PM	**41.6**	**42.7**	**43.6**			
AEC		57.6	345.6	0	0	0
OTC	50.4	396.1	258.9	0	0	0
JTIC	95.7	95.7	95.7			
Total	187.9	592.1	743.8			

5.1.10 Manpower/Personnel Training

Requirements and limitations that effect test and evaluation execution are derived from Integrated Logistics System training schedules, Joint and Service System Training Plans (STRAPs), test site Memoranda of Understanding (MOUs), and test site surveys with identified test units.

5.2 KEY RESOURCE REQUIREMENTS ESTIMATE

5.2.1 DT&E Resource Requirements Estimate

Preliminary estimates of resources required to support TC-AIMS II Software Development Test planners with a rough order of magnitude estimate are contained in Table 5-3.

Table 5-3: SDT Resource Estimates

Tasks	Army	Navy
Develop Test Scenarios	**2-3 persons for two one-week periods**	**1-2 persons for two one-week periods**
SDT Test Event	**2-3 persons for two weeks**	**1-2 persons for two weeks**
SDT DAG	**1 person for 3 days**	**1 person for 3 days**

5.2.2 Live Fire Test and Evaluation

None

5.2.3 LUT Timeline/Resource Requirements Estimate

Preliminary estimates of resources required to support a TC-AIMS II LUT sufficient to provide planners with a rough order of magnitude estimate are in Table 5-4. Specific requirements to support the Block 4 LUT are detailed in the MOUs signed between the PM TIS, OTC and each Service site. No other unique LUT resources are required. Integrated Logistics Support Package (ILSP) specifies the test support packages required to conduct LUT.

Table 5-4: LUT Timeline/Resource Participation

Tasks	Service Rep*	CASCOM	PM	AEC	JITC	OTC
OTRR#2 (11 Sep 2008	X	X	X	X	X	X
Software Configuration Control (12 Sep 2008)			X			X
Test Team Training (TBD)			X	X		X
User Training (22 Sep-3 Oct 2008)	X	X	X	X		
FUNOPS (6-17 Oct 2008)	X	X	X	X		
Pilot Test (20-21 Oct 2008)	X			X		X
OTRR#3 (23 Oct 2008)	X	X	X	X	X	X
LUT/OT Event (27 Oct- 7 Nov 2008)	X		X	X	X	X
Final DAG/PAC (NLT 10 Nov 2008)	X	X	X	X	X	X

*Note that Service Rep applies to Army, Navy and JFCOM as applicable.

5.2.4 Resource Shortfalls Introducing Significant Test Limitations

None noted at this time.

5.2.5 Discussion of Shortfall Impact

N/A

5.2.6 Planned Corrective Action.

N/A

ANNEX A: BIBLIOGRAPHY

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TC-AIMS II Mission Needs Statement (MNS), 07 August 1997
TC-AIMS II System Evaluation Plan

ANNEX B: ACRONYMS

ACRONYM	DEFINITION
0 to n	-Numeric-(zero thru n)
A	**-A-**
A*	Army (*Table 1-1, SER Column)
AAE	Army Acquisition Executive
AALPS	Automated Air Load Planning System (Will replace CALM)
ACA/OCONUS	Air Clearance Authority / Outside the Continental United States
ADM	Acquisition Decision Memorandum
ADNET	Automated Distribution Network (GSA's system)
ADUSD (L/TP)	Assistant Deputy Under Secretary of Defense (Logistics/Transportation Policy)
AE	Army Europe
AEC	Army Evaluation Center
AF	Air Force (*Table 1-1, SER Column)
AI	Additional Issues
AIS	Automated Information System
AIT	Automatic Identification Technology
AMS	Automated Manifesting System
AMSS	Ammunition Management Standard System
ANSI	American National Standards Institute
AO	Action Officer
AOI	Additional Operational Issue
APB	Acquisition Program Baseline
API	Application Programming Interface
ASD (NII)	Assistant Secretary of Defense (Networks and Information Integration)
ASE	Adaptive Server Enterprise
AST	ATEC Systems Team (formerly OST)
AT&L	Acquisition, Technology, and Logistics
ATAC-AF	Advance Traceability and Control - Air Force
ATEC	Army Test and Evaluation Command
ATLASS-1	Asset Tracking Logistics Automated Supply System
B	**-B-**
BN	Battalion
C	**-C-**
C-days	The unnamed day on which a deployment operation commences or is to commence
C/SCS	Cost/Schedule Control System
C2	Command and Control
C2IPS	Command and Control Information Processing System
C4	Command, Control, Communications and Computers
C4I	Command, Control, Communications, Computers and Intelligence
CA	Certification Agent
CAC	Common Access Card
CAEMS	Computer-Aided Embarkation Management System

ACRONYM	DEFINITION
CALM	Computer-Aided Load Manifesting
CAPS II	Consolidated Aerial Port System II (to be replaced by GATES) (aka: CAPSII/GATES)
CAS-B	Combat Ammunition System Base Level
CBL	Commercial Bill of Lading
CDD	Capabilities Development Document
CD-ROM	Compact Disk – Read Only Memory
CE	Continuous Evaluation
CEP	Certification Evaluation Plan (JITC)
CFM-ETA	CONUS Freight Management Electronic Transportation Acquisitions
CFM-Host	CONUS Freight Management System - Host
CIM	Corporate Information Management
CJCS	Chairman of the Joint Chiefs of Staff
CM	Configuration Management
CMB	Configuration Management Board
CMF	Critical Mission Functions
CMOS	Cargo Movement Operations System
COI	Critical Operational Issues
COIC	Critical Operational Issues and Criteria
COMPASS	Computerized Movement Planning and Status System
COOP	Continuity of Operations Plan
COTS	Commercial Off The Shelf
CPD	Capabilities Production Document
CPX	Command Post Exercise
CR	Change Request
CRIF	Cargo Routing Information File
CRS	Component Repair Squadron
CSDT	Computer Software Development Test
CSC	Critical System Characteristics
CSCI	Computer Software Configuration Item
CSSCS	Combat Service Support Control System
CTP	Critical Technical Parameters
CULT	Common User Land Transportation
CWBS	Contract Work Breakdown Schedule
D	**-D-**
DA	Department of the Army
DAA	Designated Approving Authority (formerly: Designated Accreditation Authority)
DALO-	Department of the Army Deputy Chief of Staff for Logistics (office symbol)
DAMMS-R	Department of the Army Movement Management System-Redesign
DA PAM	Department of the Army Pamphlet
DBMS	Data Base Management System

ACRONYM	DEFINITION
DCSLOG	Deputy Chief of Staff for Logistics (Army Staff)
DD	Defense Department (Form)
DDM	DoD Data Model
DII	Defense Information Infrastructure
DII COE	Defense Information Infrastructure Common Operating Environment
DII COE / JTA	Defense Information Infrastructure, Common Operating Environment/Joint Technical Architecture
DISA	Defense Information Systems Agency
DISN	Defense Information System Network
DIST	Defense Integration Support Tool
DLA	Defense Logistics Agency
DMLSS	Defense Medical Logistics Standard System
DoD	Department of Defense
DOIM	Director of Information Management
DOL	Directorate of Logistics
DOT&E	Director, Operational Testing and Evaluation
DSN	Defense Switched Network
DSS	Distribution Standard System
DST	Deployment Support Team
DT	Developmental Testing
DT&E	Developmental Test and Evaluation
DT/OT	Developmental Test/Operational Test
DTR	Defense Transportation Regulation
DTRR	Developmental Test Readiness Review
DTS	Defense Transportation System
DTTS	Defense Transportation Tracking System
DUSA-OR	Deputy Undersecretary of the Army - Operations Research
DUSD (L)	Deputy Undersecretary of Defense (Logistics)
E	**-E-**
EA	Electronic Attack
EDI	Electronic Data Interchange (see also EC/EDI)
EDP	Event Design Plan
EMP	Electromagnetic Pulse
EMS	Electronic Maintenance Squadron
EUCOM	European Command
F	**-F-**
FAB	Field Assistance Branch
FACTS	Financial Air Clearance Transportation System
FAR	Federal Acquisition Regulation
FD	Functional Description
FDSC	Failure Definition and Scoring Criteria
FOC	Full Operational Capability

ACRONYM	DEFINITION
FQT	Functional Qualification Test (*USAF. Formal testing conducted by developer*)
FRAP	Facilitated Risk Analysis Process
FS	Fighter Squadron
FSS	Fast Sealift Ships
FSSG	Force Service Support Group
FTP	File Transfer Protocol
FUNOPS	Functional Operations (USA ATEC term denotes actual SOP user operation of a new system prior to formal test)
FY	Fiscal Year
G	**-G-**
GATES	Global Air Transportation and Execution System
GB	Gigabyte
GBL	Government Bill of Lading
GCCS-A	Global Command and Control System – Army
GCSS-A	Global Combat Support System-Army
GCSS-AF	Global Combat Support System – Air Force
GDSS	Global Decision Support System
GOPAX	Group Operational Passenger System
GOTS	Government Off-The-Shelf
GSA/ADNET	GSA/Depot Transportation System (ADNET)
GTN	Global Transportation Network
H	**-H-**
HCI	Human-Computer Interface
HEROS V	German Convoy Scheduler
HFE	Human Factors Engineering
HHG	Household Goods
HP	Hewlett Packard
HQ	Headquarters
HQDA	Headquarters, Department of the Army
HSIP	Human Systems Integration Plan
I	**-I-**
IAW	In Accordance With
IBS	Integrated Booking System
ICEP	Interoperability Certification Evaluation Plan
ICODES	Integrated Computerized Deployment System
ID	Identification
IDE	Independent Developmental Evaluator
IDP	Incremental Development Package (April 2000 TC-AIMS II development strategy)
IDT	Independent Developmental Test
IEP	Independent Evaluation Plan
IER	Independent Evaluation Report
ILS	Integrated Logistics System/Supportability

ACRONYM	DEFINITION
ILS-S	Integrated Logistics System - Supply
ILSMIS	Integrated Logistics Support Management Information System
ILSP	Integrated Logistics Support Plan
IOC	Initial Operational Capability
IOE	Independent Operational Evaluator
IOPCERT	Interoperability Certification (DISA (JITC) term)
IOT	Initial Operational Test
IOTE	Initial Operational Test & Evaluation
IP	Internet Protocol
IPT	Integrated Product Team
I&RTS	Integrated and Run Time Specification
ISDP	Information Systems Design Plan
ISEC	Information Systems Engineering Command (US Army)
ISEC-TIC	Information Systems Engineering Command – Technology Integration Center
IT	Information Technology
IT-OIPT	Information Technology Overarching Integrated Product Team
ITO	Installation Transportation Office/Officer
ITO / TMO	Installation Transportation Office/ Traffic Management Office
ITPS	Integrated Test Program Schedule
ITV/TAV	In-Transit Visibility / Total Asset Visibility
IV&V	Independent Verification & Validation
IW	Information Warfare
J	**-J-**
J*	Joint (Services) (*Table 1-1, SER Column)
JCS	Joint Chiefs of Staff
JDL	Joint Data Library
JFRG II	Joint Force Requirements Generator II
JIEO	Joint Information and Engineering Organization
JITC	Joint Interoperability Test Command
JOPES	Joint Operational Planning and Execution System
PM TIS	Project Manger, Transportation Information Systems
JRB	Joint Requirements Board (TC-AIMS II)
JRBC	Joint Requirements Oversight Council
JRSOI	Joint Reception, Staging, Onward movement and Integration
JTA	Joint Technical Architecture (see also/associated with Interoperability, COE)
JTAV	Joint Total Asset Visibility
JTCC	Joint Transportation Corporate Information Management (CIM) Center
JTMB	Joint Transportation Management Board
K	**-K-**
Kb	Kilobytes
KPP	Key Performance Parameters
L	**-L-**
LAN	Local Area Network

ACRONYM	DEFINITION
LHA	Landing Helicopter Amphibious
LOGMARS	Logistics Application of Automated Marking and Reading Symbols,
LOGMOD	Logistics Module
LSS	Logistics Support Squadron
LUT	Limited User Test
M	**-M-**
MACOM	Major Command (Army)
MAGTF	Marine Air Ground Task Force
MAGTF II	Marine Air Ground Task Force II
MAIS	Major Automated Information System
MAJCOM	Major Command (Air Force)
MANPER-B	Manpower Personnel Readiness Module-Base Level
MANPRINT	Manpower and Personnel Integration
MAOPR	Minimum Acceptable Operational Performance Requirements (obsolete)(now MOES)
MARCORSYSCOM	Marine Corps System Command
MCC	Movement Control Center
MCOTEA	Marine Corps Operational Test and Evaluation Activity
MCT	Mission Critical Tasks
MDA	Milestone Decision Authority
MDAP	Major Defense Acquisition Program
MDSS II	MAGTF Deployment Support System II
MEF	Marine Corps Expeditionary Force
MEP	Mobile Electric Power
MEU	Marine Expeditionary Unit
MH	Military Handbook
MMS	Materiel Management System
MMT	Multi-Media Training
MNS	Mission Need Statement
MOA	Memorandum of Agreement
MOBCON	Mobilization Control
MOE	Measure of Effectiveness
MOES	Measures of Effectiveness and Suitability
MOBEX	Mobility Exercise
MOP	Measure of Performance
MOS	Military Occupational Specialty
Movement Planning	Movement Planning
MPMIS	Military Police Management Information System
MRM	Management Reform Mandate
MS	Microsoft
MSL	Military Shipping Label
MTBOMF	Mean Time Between Operational Mission Failure

ACRONYM	DEFINITION
MTMS	Munitions Traffic Management System
MTS	Military Tracking System
MTTR	Mean Time To Repair
N	**-N-**
N*	Navy (*Table 1-1, SER Column)
NA	Not-Applicable
NAVMC	Navy/Marine Corps
NCOW	Net-Centric Operations Warfare
NCFMIS	Navy Construction Force Management Information System
NIMMS	NADEP (Naval Aviation Depot) Inventory Materiel Management System
NOLSC	Naval Operations Logistics Support Center
NSIPS	Navy Standard Integrated Personnel System
NSM	Network and Systems Management
NT	New Technology
O	**-O-**
ODCSLOG	Office of the Deputy Chief of Staff for Logistics (Army)
OE	Operational Evaluation
OEL	Organizational Equipment List
OIPT	Overarching Integrated Product Team
OMA	Operation and Maintenance Army
OMC	Optical Memory Cards
OPA	Other Procurement Army
OPR	Organizational Personnel Roster
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
OSS	Operational Support Squadron
OST	OPTEC System Team(OBSOLETE TERM: See AST)
OT	Operational Test
OTA	Operational Test Agency
OTC	Operational Test Command (formerly TEXCOM)
OT&E	Operational Test and Evaluation
OTP	Operational Test Plan
OTRR	Operational Test Readiness Review
P	**-P-**
P3I	Pre-Planned Product Improvement
PC	Personal Computer
PDF	Portable Data file (Used with 2d Barcode)
PEO	Program Executive Officer / Office
PEO EIS	Program Executive Office
PM	Project Manager Program Manager
PO	Project Officer
POA	Pattern Of Analysis

ACRONYM	DEFINITION
POC	Point of Contact
POD	Port of Debarkation
POE	Port of Embarkation
PR	Problem Report
PSA	Principal Staff Assistant
PSTN	Public Switched Telephone Network
Q	**-Q-**
	NONE
R	**-R-**
RAM	Reliability, Availability, and Maintainability
RDTE	Research, Development, Test & Evaluation
REPSHIPS	Report of Shipments
RF	Radio Frequency
RFID	Radio Frequency Identification
RFW	Radio Frequency Weapons
ROLMS	Retail Ordnance Logistics Management System
R&M	Reliability and Maintainability
S	**-S-**
SAAM	Special Assignment Airlift Mission
SAAS	Standard Army Ammunition System (to be replaced by GCSS-Army)
SA-DBA	System Administrator – Data Base Administrator
SBSS	Standard Base Supply System (replacing ILS-S) (aka: SBSS/ILS-S)
SBU	Sensitive but Unclassified
SDD	Software Design Descriptions
SDF	Software Development Folders
SDT	Software Development Testing
SEP	System Evaluation Plan Note: Versions: Functional (SEP-F), Technical (SEP-T), Developmental (SEP-D)
SER	System Evaluation Report
SF	Standard Form (Form)
SFOR 6	Stabilization Forces (6th Rotation)
SFS	Security Forces Squadron
SFUG	Security Features Users' Guide
SHADE	Shared Data Environment
SIA	Systems Interface Agreements
SIDPERS 3	Standard Installation/Division Personnel System III
SME	Subject Matter Expert
SMMP	System Manpower and Personnel Integration (MANPRINT) Management Plan
SMTP	Simple Mail Transfer Protocol
SOP	Standard Operating Procedure
SQDN	Squadron

ACRONYM	DEFINITION
SQT	Software Qualification Test
SQTP	Software Qualification Test Plan
SRS	Software Requirements Specification
SSAA	System Security Authorization Agreement
STAMIS	Standard Army Management Information Systems
STANAG	Standard NATO Agreements
STRAP	System Training Plan (Army)
SUN	Shipment Unit Numbers
SUP	Supply Squadron
SUPMIS	Supply-Management Information System
T	-T-
T&E	Test and Evaluation
TAMMIS	Theater Army Medical Management Information System
TAV	Total Asset Visibility (see also ITV/TAV)
TBA	To Be Announced
TBD	To Be Determined
TBF	To Be Furnished
TBP	To Be Published
TC-ACCIS	Transportation Coordinator – Automated Command and Control Information System
TC-AIMS	Transportation Coordinators' - Automated Information for Movement System (Marine Corps)
TC-AIMS II	Transportation Coordinators' - Automated Information for Movement System II
TCC	Transportation Component Command
TCMD	Transportation Control & Movement Documents
TCN	Transportation Control Number
TCP-IP	Transmission Control Protocol-Internet Protocol
TDP	Test Design Plan
TDR	Tonnage Distribution Roster
TDY	Temporary Duty
TE&C	Test, Evaluation & Certification (PM TIS, TC-AIMS II work group title)
TEMP	Test and Evaluation Master Plan
TEXCOM	US Army Test and Experimentation Command (OBSOLETE TERM: See OTC)
TOPNS	Theater Of Operations
TIC	Technology Integration Center (USA ISEC)
TI&C	Technical Issues and Criteria
TIR	Test Incident Report
TIWG	Test Integration Working Group (obsolete) (now: Test & Evaluation Working-level Integrated Product Team)(See WIPT)
TLDM	Transportation Logistical Data Model
TMO	Transportation Management Office
TPFDD	Time Phased Force Deployment Data

ACRONYM	DEFINITION
TrAMS	Transportation Automated Measuring System
TRANSCOM	Transportation Command (US)
TRNS	Transportation Squadron
U	**-U-**
UD/MIPS	Unit Diary/Marine Corps Integrated Personnel System
UDAPS(2)	Uniform ADP System
UIC	Unit Identification Codes
ULN	Unit Line Number
UM	Unit Movement
UMO	Unit Movement Officer/Office
UPS	USAREUR Prototype Site
USA	United States Army
USATEC	United States Army Test and Evaluation Command (formerly USAOPTEC)
USAF	United States Air Force
USAISEC	United States Army Information Systems Engineering Command
0	US Army Information Systems Software Development Center –Lee
USAOPTEC	United States Army Operational Test and Evaluation Command (OBSOLETE TERM: See USATEC)
USAOTC	United States Army Operational Test Command
USAREUR	United States Army Europe
USD (A&T)	Under Secretary of Defense (Acquisition and Technology)
USMC	United States Marine Corps
USMTF	US Message Text Formats
USN	United States Navy
USTRANSCOM	United States Transportation Command
UTC	Unit Type Code
V	**-V-**
	NONE
W	**-W-**
WIPT	Working-Level Integrated Product Team
WPS	Worldwide Port System
WRS	War Reserve System
X	**-X-**
	NONE
Y-Z	**-Y-Z-**
	NONE

ANNEX C: POINTS OF CONTACT

Name	Organization	Telephone (COMM/DSN)	E-Mail Address
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ATTACHMENT 1 – REQUIREMENTS / TEST CROSSWALK MATRIX

COIs	KPP	CTP	DT	OT
1. Security Does TC-AIMS II provide and maintain a level of security consistent with current regulations and policies?	KPP 3) All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness.)	System Availability System Non-Availability (Restore System) (Immediate Action) System Non-Availability (Restore System) (Deliberate Action) System Non-Availability (Restore System)	X	X
2. Performance Can TC-AIMS II support Joint and Service-specific business processes in conducting deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns. (JOpsC 3.A.7)	KPP 1 TC-AIMS II must support movement control activities. KPP 2 TC-AIMS II must produce standard forms KPP 3) All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness.)	System Outputs System Outputs Reports System Outputs Standard Forms	X	X
3. Interoperability Is TC-AIMS II interoperable with participating Services' current infrastructure and deployed/tactical data networks? In addition, can TC-AIMS II exchange data with appropriate Joint and Service-unique systems?	KPP 3) All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness.)	Data Transmission Accuracy Data Input Standardization & Commonality	X	X
4. Supportability / Maintainability Is TC-AIMS II supportable, maintainable and trainable during continuous operations, in a variety of environments and configurations?		System Reliability System Operation MTTR Lost Information MTTR	X	X

ATTACHMENT 2 - CRITICAL OPERATIONAL ISSUES AND CRITERIA (COIC)

Issue	Scope	Criteria	Rationale
Security (COIC: 1) Does TC-AIMS II provide and maintain a level of security consistent with current regulations and policies?	• This issue examines the ability of TC-AIMS II to protect data from unauthorized disclosure and meet the requirements of applicable security policies and directives. • This issue examines the ability of the TC-AIMS II to protect against computer network attacks.	1. TC-AIMS II Block 4 will prevent unauthorized disclosure of data (Ref. CDD Paragraph 8d and 14d.) 2. TC-AIMS II Block 4 will limit a user's access to those areas for which they have been given permission (Paragraph 8d and 14d.) 3. TC-AIMS II Block 4 will protect data in accordance with the highest classification of data accessible (Ref. CDD Paragraph 8d and 14d) 4. TC-AIMS II Block 4 will prevent denial of service attacks. (Ref. CDD Paragraph 8d and 14d.)	1. Criterion is based on CDD Paragraph 8d and Appendix E, requirement, in which TC-AIMS II Block 4 must ensure information is not disclosed to unauthorized entities or processes on the network and infrastructure so as to protect against passive intercept attacks, including against unauthorized disclosure of information and traffic analysis. 2. Criterion is based on CDD Paragraph 8d and Appendix E, requirement in which TC-AIMS II Block 4 must provide adequate protection from user attempts to circumvent access control. 3. Criterion is based on CDD requirement referenced in Paragraph 8d and Appendix E, in which TC-AIMS II Block 4 data must meet the requirements established for the highest classification of data accessible in accordance with applicable standards and regulations and include classification and releasability metadata in tags or schemas. 4. Criterion is based on CDD Paragraph 8d and Appendix E requirement, in which TC-AIMS II Block 4 must have an integral IA capability to resist a DOS attack.

Issue	Scope	Criteria	Rationale
Performance (COIC: 2) Can TC-AIMS II support deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns. (JOpsC 3.A.7)	• This issue examines the ability of TC-AIMS II to support Theater Traffic Management to allow movement control elements operating with theater transportation hubs to assist in managing sustainment transportation support to rate and route intra-theater cargo, manage carrier performance, interface with US Customs for retrograde shipments, and accomplish accessorial asset management. • This issue examines ability of TC-AIMS II to document capabilities to include Non-MILSTRIP TCN register maintenance, movement cost reporting, billing discrepancy detection, managing certified services and creation of transportation discrepancy reports (SF 361).	1. TC-AIMS II must allow movement elements operating with theater transportation hubs to assist in managing sustainment transportation support to rate and route intra-theater cargo, manage carrier performance. Must interface with US Customs for retrograde shipments, and accomplish accessorial asset management. 2. TC-AIMS II must produce standard forms and reports needed to accomplish transportation and functions. (Ref. CDD, KPP 2 and, Outputs, Reports and Forms)	1. Criterion 1 is based on CDD requirement paragraph 1 which requires TC-AIMS II Block 4 to accept, create, and transmit all types of movement source data including unit move, MILSTRIP requisition, and mail. TC-AIMS II will use this source data to create applicable movement documents such as Bills of Lading and military manifests. Block 4 will have the capability to manage cargo consolidation, theater rating and routing, detention/demurrage, specialized reports, commercial tenders and carriers in theater. It will also provide capabilities to manage pallet and reusable container inventories in theater. 2. Criterion 2 is based on CDD requirement paragraph 6.b.2 which requires TC-AIMS II Block 4 to properly generate new reports and forms. Performance Thresholds are listed in *table 2, Performance Thresholds and Objectives: Reports.* TC-AIMS II allows for the entry of correct data and, assuming such correct data is entered into the system, TC-AIMS II places the data, after any requisite transformation process, into appropriate fields and all text is readable by humans.

Issue	Scope	Criteria	Rationale
Interoperability (COIC: 3) Is TC-AIMS II interoperable with participating Services' current infrastructure and deployed/tactical data networks? In addition, can TC-AIMS II exchange data with appropriate Joint and Service-unique systems?	• This issue examines whether TC-AIMS II is interoperable with the deployable tactical and with the in-place infrastructure at Services posts, camps and stations. • This issue examines the ability of TC-AIMS II to exchange and share data with Joint and Service-unique supply, materiel, and transportation systems for the purposes of reducing or eliminating manual data input.	1. TC-AIMS II Block 4 must operate on existing information infrastructure networks, deployable tactical or in a stand-alone mode, for occasions where robust communications are not available (Ref. CDD 6.b.3 and Table 3) 2. TC-AIMS II Block 4 must accept and export properly formatted data from and to Distribution Standard System (DSS), Army War Reserve Deployment System (AWRDS), US Customs, Standard Army Ammunition System (SAAS), Standard Army Supply System (SARSS), Financial and Air Clearance Transportation System (FACTS), (Ref: CDD, Appendix F)	1. Criterion 1 is based on a CDD requirement paragraph 6.b.3 which requires TC-AIMS II Block 4 to operate either on existing information infrastructure networks when communication is available or in a stand-alone (expeditionary) mode in instances of inadequate communications. 2. Criterion 2 is based on CDD titled Data Interoperability in Appendix F, in which TC-AIMS II Block 4 must use common standards for data and metadata representation and data exchanged with other systems must be tagged and registered according to JTA standards and DoD policy.

Issue	Scope	Criteria	Rationale
Supportability / Maintainability (CIOC: 4) Is TC-AIMS II supportable, maintainable and trainable during continuous operations, in a variety of environments and configurations?	• This issue examines whether TC-AIMS II can operate effectively in-garrison, in a theater of operations, and deployed. • This issue examines whether TC-AIMS II can operate effectively in various configurations to include through the Enterprise Management System, as a client-server, and expeditionary. • This issue examines whether functionally competent users who have had TC-AIMS II Block 4 training, can effectively use the application to support deployment and sustainment activities in support of multiple simultaneous, distributed, decentralized battles and campaigns • This issue looks at whether system administrators/ database administrators can effectively maintain the system after receiving TC-AIMS II Block 4 System Administration training with the aide of user documentation, multi-media training, and help-desk support. • This issue looks at whether the system can continue to operate during daily/routine maintenance activities such as system backup.	1. TC-AIMS II Block 4 must be operable in-garrison, in a theater of operations, and in deployed environments. (Ref CDD, Para 13a) 2. TC-AIMS II Block 4 must operate through the Enterprise Management System, as a client server and in the expeditionary configurations. (Ref: CDD, Para 13b) 3. TC-AIMS II Block 4 must be able to be operated by trained users with the aide of user documentation, multi-media training, and help-desk support. (Ref.: CDD Para 13d) 4. TC-AIMS II Block 4 must provide effective training support that addresses operator and system administrator training, and that enables the user's ability to use TC-AIMS II. (Ref: CDD Para 13.d.2.c) 5. Routine system server maintenance will not preclude normal user operations of TC-AIMS II Block 4 (Ref.: CDD Para 13.e)	1. Criterion 1 is based on a draft CDD requirement paragraph 13a which requires TC-AIMS II Block 4 to operate in all garrison, installation, and forward deployed locations where transportation execution, and JRSOI operations are accomplished, including aboard ship and at remote ports, beaches, airfields, and traffic nodes. 2. Criterion 2 is based on CDD requirement paragraph 13b, which requires TC-AIMS II Block 4 to operate in both client/server and expeditionary configuration through the Enterprise Management System. 3. Criterion 3 is based on CDD requirement paragraph 13d which requires TC-AIMS II Block 4 trained users with appropriate MOS to operate the system with the aid of help desk support. 4. Criterion 4 is based on CDD requirement paragraph 13.d.2.c which requires TC-AIMS II Block 4 to provide standard system training for users. Standard system training will suffice for system administration and maintenance. 5. Criterion 5 is based on the CDD requirement paragraph 13.e which requires TC-AIMS II Block 4 to be maintainable without interfering with user operations.

ATTACHMENT 3 –KEY PERFORMANCE PARAMETERS (KPP)

Attribute	Development Threshold	Development Objective
KPP 1 Performance TC-AIMS II must allow movement control activities to receive, create, and maintain designated critical movement requirement data and to schedule, coordinate, and manage critical transportation services to support theater distribution activities. (Ref. CDD, Para 6.b.1 and Table 1)	The mathematical evaluation of the threshold will divide the number of successful critical movement control activities by the total number of critical movement control activities attempted. Threshold is greater than or equal to .85	The mathematical evaluation of the objective will divide the number of successful critical movement control activities by the total number of critical movement control activities attempted. Objective is greater than or equal to .90
KPP 2 Reports and Forms TC-AIMS II must produce standard forms and reports completed with critical data needed to accomplish transportation and functions. (Ref. CDD, Para 6.b.2 and Table 1)	The mathematical evaluation of the threshold will divide the number of successful critical standard forms and reports by the total number of critical standard forms and reports attempted. Threshold is greater than or equal to .95 (NOTE: when operated by target audience user in operating environment and where successful means the activity is both accurate and timely as specified in the CDD.)	The mathematical evaluation of the threshold will divide the number of successful critical standard forms and reports by the total number of critical standard forms and reports attempted. Threshold is greater than or equal to .975 (NOTE: when operated by target audience user in operating environment and where successful means the activity is both accurate and timely as specified in the CDD.)
KPP 3 Net Readiness All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness capability) (Ref CDD, Para 6.b.3 and Table 1)	100% of interfaces; services;, policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise-level or critical in the Joint integrated architecture products, using the NCOW RM, including the development of high-level interface information for becoming net ready	100% of interfaces; services;, policy-enforcement controls;, and data correctness, availability and processing requirements

ATTACHMENT 4 - CTP MATRIX

Specific Performance Requirements	Required Performance	Threshold	Objective
Interoperability			
Interoperability: Data Transmission Accuracy	Interpreted as applicable to all data transmissions on the first attempt (Reference CDD pg.A-65)	Completeness 100% Accuracy 100%	Completeness 100% Accuracy 100%
Data Input	The system must accept data, in time frames that support operational mission or task completion, from the external systems. (Reference CDD pg.A-65)	Accept properly formatted data from current systems. Completeness 100% Accuracy 100%	Interface with additional current and future systems. Completeness 100% Accuracy 100%
Interoperability: Standardization & Commonality	TC-AIMS II must comply with the **Key Interface Profiles (KIPs);** applicable provisions contained in the DISR and use DoD standardized information where compatible. (Reference CDD 6.b (3) (b))	100% of interfaces; services; policy-enforcement controls; and data correctness, availability and processing requirements designated as enterprise-level or critical in the Joint integrated architecture.	100 percent of interfaces; services; policy-enforcement controls; and data correctness, availability and processing* requirements in the Joint integrated architecture.
System Outputs	TC-AIMS II must properly generate reports, forms, OMC data so that: the correct data is placed in appropriate fields, that text is readable by humans, or that bar codes and cards, are readable by appropriate AIT devices. (Reference CDD pg.A-65)	Completeness .100% Accuracy 100%	Completeness 100% Accuracy 100%

Specific Performance Requirements	Required Performance	Threshold	Objective
System Output Reports	Standard (pre-formatted) reports. (Reference CDD para 6.b Table 2)	Completeness: .95, Accuracy: .95, Speed: Min 1 Page per minute	Completeness: .98, Accuracy: .98, Speed: Min 30 seconds per page
System Output Standard Forms	Standard DOD Forms and other paper outputs – (Reference CDD para 6.b Table 2)	Completeness: .95, Accuracy: .95, Speed: Min 1 Page per minute	Completeness: .98, Accuracy: .98, Speed: Min 30 seconds per page
Reliability, Availability, and Maintainability			
System Reliability	TC-AIMS II Block 4 must be reliable. (Reference CDD para 13.c (1))	0.95 reliability	0.975 reliability
System Availability	TC-AIMS II must be available. (Reference CDD para 6.b Table 2 & para 13.c (2))	.95 availability	.975 availability
System Non-Availability (Restore System) (Immediate Action)	Non-Availability will be correctable by simply rebooting the computer or reconnecting to the NIPR net. (Reference CDD para 13.c (2) (a))	Correctable 90% with reboot of eight minutes or less	Correctable 90% with reboot of three minutes or less
System Non-Availability (Restore System) (Deliberate Action)	When TC-AIMS II Block 4 non-availability is not correctable by a reboot or reconnect, the TC-AIMS help desk must be able to respond to and correct the problem within two hours 80% of the time. (Reference CDD para 13.c (2) (b))	System Restored within 2 hours 80% of the time	System Restored within 2 hours 80% of the time

Specific Performance Requirements	Required Performance	Threshold	Objective
System Non-Availability (Restore System)	For help desk calls that cannot be successfully corrected within 2 hours, the problem will be corrected within 24 hours. (Reference CDD para 13.c (2) (b))	System Restored within 24 hours 95% of the time	System Restored within 24 hours 95% of the time
System Maintainability	TC-AIMS II must be maintainable.		
System Operation MTTR	Mean time to repair (MTTR) at the organizational level (system operation) will be one hour (threshold); 30 minutes (objective). (Reference CDD para 13.c (3) (b))	1 hour to repair	30 minutes to repair
Lost Information MTTR	Mean Time to Repair (MTTR) at the organizational (user) level (lost information). (Reference CDD para 13.c (3) (c))	8 hours to restore	1 hour to restore

ATTACHMENT 5– JDS / BLOCK 4 KPP CROSSWALK MATRIX

JDS			TCAIMS II Block 4		
KPP	**Threshold**	**Objective**	**COIC**	**KPP**	**CTP**
KPP 1. Interoperability *All high-level information exchange requirements (IERs) outlined in Table IV-2 will be satisfied to the standards specified in the Threshold and Objective values.	Satisfy 100% of critical IER attributes	Same as Threshold	**3. Interoperability** Is TC-AIMS II interoperable with participating Services' current infrastructure and deployed/tactical data networks? In addition, can TC-AIMS II exchange data with appropriate Joint and Service-unique systems?	KPP 3 All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness capability)	Data Transmission Accuracy Data Input Standardization & Commonality
a. Relevancy/Currency	Data accuracy and data age >95% accurate from authoritative source	Data accuracy and data age 100% accurate from authoritative source			
b. Responsiveness	Provide timely responses to queries. Asset Visibility < 60 seconds 95% of the time	Provide timely responses to queries. Asset Visibility < 30 seconds 95% of the time			
c. Availability	JDST < 120 seconds 95% of the time Accessibility and connectivity to data >95% of the time, down to the deployed JTF and Component level headquarters	JDST < 60 seconds 95% of the time Accessibility and connectivity to data >99% of the time, down to the deployed JTF and Component level headquarters			

JDS			TCAIMS II Block 4		
KPP	**Threshold**	**Objective**	**COIC**	**KPP**	**CTP**
KPP 2. Data Interoperability	All of a system's data that will be exchanged, or has the potential to be exchanged, shall be tagged in accordance with the DISR standard for tagged data items, and tags shall be registered in accordance with the DOD XML registry and clearinghouse policy and implementation plan	Same as Threshold			
Information Dissemination Management	Systems shall have a GIG capability to acquire needed information by search queries, with successful searches yielding 85% of available, needed information based on the user query and with no more than 20% being irrelevant / unusable (waste) or failed searches	Systems shall have a GIG capability to acquire needed information by search queries, with successful searches 95% of available, needed information based on the user query and with no more than 10% being irrelevant / unusable (waste) or failed searches.		KPP 2 TC-AIMS II must produce standard forms and reports completed with critical data needed to accomplish transportation and functions. KPP 3 All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness capability)	Interoperability Data Transmission Accuracy Data Input Interoperability Standardization & Commonality System Outputs System Outputs Reports System Outputs Standard Forms

JDS			TCAIMS II Block 4		
KPP	**Threshold**	**Objective**	**COIC**	**KPP**	**CTP**
KPP 3. Security a. Provide a deployable AIS capability to control filtering of information into a Common Operational Picture (COP) and process data between different levels of security. b. Authentication / Confidentiality / Non-repudiation.	Provide for classified (GENSER), sensitive but unclassified, and/or unclassified information in accordance with the minimum standards set forth in DoDD 8500.1, and DoDI 8500.2. Systems shall meet and maintain minimum IA Defense in Depth standards, including certification and accreditation in accordance with the DITSCAP process (e.g., CJCSI 6510.01C, DODI 5200.40). Systems shall provide proof of information origin and receipt as required.	Same as Threshold Same as Threshold	COIC 1. Security Does TC-AIMS II provide and maintain a level of security consistent with current regulations and policies?	KPP 3 All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness capability)	System Availability System Non-Availability (Restore System / Immediate Action) System Non-Availability (Restore System - Deliberate Action) System Non-Availability (Restore System)

JDS			TCAIMS II Block 4		
KPP	**Threshold**	**Objective**	**COIC**	**KPP**	**CTP**
KPP 4. Survivability					
a. Survival Information Dissemination	Systems shall have a GIG capability that, utilizing a standard schema, IAW the commander's dissemination policies and user profiles, will support the means for prioritization of information flows within a theater, using theater apportioned resources, and able dissemination of survival information,	Systems shall have a GIG capability that, utilizing a standard schema, IAW the commander's dissemination policies and user profiles, will support the means for prioritization of information flows within a theater, using theater apportioned resources, and able dissemination of survival information,	COIC 1. Security Does TC-AIMS II provide and maintain a level of security consistent with current regulations and policies?	KPP 3 All activity interfaces, services, policy-enforcement controls, and data sharing of the NCOW-RM and GIG-KIPs will be satisfied to the requirements of the specific Joint integrated architecture products (including data correctness capability)	System Maintainability System Operation MTTR Lost Information
b. Survivability Information Integrity and Availability.	limiting survival information to less than 12 kb Systems shall have the Information Assurance capability to define, control, and defend enclave boundaries. Maintain >99.99% integrity of all exchanged information elements.	(limiting survival information to less than 12 kb) and 0.5 seconds 95% of the time Systems shall have the Information Assurance capability to define, control, and defend enclave boundaries. Maintain >99.999% integrity of all exchanged information elements.			