

TRANSPORTATION COORDINATOR'S AUTOMATED INFORMATION FOR  
MOVEMENTS SYSTEM II (TC-AIMS II)

USMC ACQUISITION STRATEGY



Prepared For:  
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Command, Control, Computers, Communications, and  
Intelligence Directorate

Marine Corps Systems Command

30 October 1997  
(Revised 23 Sept 98)

USMC ACQUISITION STRATEGY  
for  
TRANSPORTATION COORDINATOR'S AUTOMATED INFORMATION FOR  
MOVEMENTS SYSTEM II (TC-AIMS II)

DoD IT ACAT: IA(M)  
USMC: ACAT III

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Date 23 Sept 98

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Date 9 Oct 98

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Date \_\_\_\_\_

APPROVAL

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Date \_\_\_\_\_

## PROGRAM OVERVIEW

TC-AIMS II is a transportation and deployment Automated Information System (AIS) supporting the Department of Defense (DoD) mission areas of mobility and sustainment. TC-AIMS II will be used by Headquarter units, Traffic Management Offices, deploying Service, and other agencies to automate the processes of planning, organizing, coordinating, and controlling deployment, redeployment, and sustainment activities worldwide, in peace as well as during contingencies. It will provide a modernized, scaleable, integrated, and easily deployable AIS that supports reengineered functional process throughout DoD. TC-AIMS II will link all DoD Component unit movement and Installation Transportation Office/Traffic Management Office (ITO/TMO) functionality into a single transportation management system.

TC-AIMS II is a Joint Chiefs of Staff (JCS) directed program, as described in Joint Staff Memo 3-87 (Required Operational Capability (ROC)), and revised in 1992. Each Service developed their own system to meet the requirements of JCSM 3-87, with TC-AIMS as part of the Marine Corps Marine Air/Ground Task Force Logistics Automated Information System (MAGTF LOGAIS) integrated family. In 1993, the Secretary of Defense directed that system improvement actions be taken to increase standardization, improve processes, and migrate multiple parallel and/or stovepipe systems into effective multi-purpose, Joint AISs. The software development approach is to migrate selected portions of the "best-of-breed" Service deployment and transportation systems into a single, integrated Joint application based on the USTRANSCOM Joint Transportation Corporate Information Management Center (JTCC) recommendation. The Joint Program Management Office (JPMO) intends to reuse software from the migration system's functions. These functions include the Unit Movement functions of the Marine Corps MAGTF Deployment Support System II (MDSS II) and TC-AIMS, the Air Forces Cargo Movement Operating System (CMOS) for TMO freight and passenger functions, rail load movement capability from the Army's Transportation Coordinator-Automated Command and Control Information System (TC-ACCIS), and convoy movement capability from the Army's Department of the Army Movement Management System-Redesign (DAMMS-R). The system is designed around a standards-based, three-tier, object-oriented open architecture which is compliant with the Defense Information Infrastructure Common Operating Environment (DII COE).

The TC-AIMS II software development will leverage the JPMO to mitigate risk and address cost and schedule parameters. Selection of Marine Corps Common Hardware Suite (MCHS) components will promote supportability for the system.

An extensive developmental testing program and subsequent independent operational evaluation will validate that TC-AIMS II meets the needs of the user community. Development will employ a "continuous evaluation" of the system as it progresses by holding periodic Subject Matter Expert (SME) reviews at the Software Development Facility. Additionally, the JPMO has installed test suites and Beta software at two sites per Service (Camp Lejeune and Camp Pendleton) for the purpose of conducting continuous testing of software builds against the Joint Requirements.

Project Decision Memorandum (PDM) II (September 1995) established and funded the JPMO for FY97 software development. PDM I (August 1996) funded software development from 1998-2003 and provide IOC.

The USMC has a number of responsibilities to the program. They are:

- Provide funding for hardware procurement, communications and infrastructure to support the joint deployment and transportation mission.
- Provide funding for infrastructure-related fielding costs for USMC sites in excess of the 17 sites to be paid for by the TC-AIMS II JPMO. They are:

1. I MEF Camp Pendleton, CA
2. MCAS El Toro and Tustin, CA
3. MCAS Miramar San Diego, CA
4. MCRD San Diego, CA
5. MCAGCC 29 Palm, CA
6. MCAS Yuma, AZ
7. MCLB Barstow, CA
8. MCAS Kaneohe Bay, HI
9. MCB Hawaii
10. II MEF Camp Lejeune, N.C.
11. MCAS Cherry Point, N.C.
12. MCAS New River, N.C.
13. MCAS Beaufort and MCRD PI, S.C.
14. HQMC and Quantico, VA

15. MCLB Albany, GA
16. Blount Island CMD., Jacksonville, FL
17. III MEF Camp Butler, Okinawa, Japan

- Provide staffing (two USMC personnel) to the JPMO. The staffing requirement is for one O-4/ Civilian Equivalent, Logistics Officer, and one O-4/ Civilian Equivalent, Transportation Officer.

- Perform duties for the program as the Joint Requirements Officer (JRO), and chair the Joint Requirements Office.

- Provide USMC SMEs to the Joint Application Development conferences hosted by the JPMO.

- Provide funding (as required) for all USMC-unique software enhancements after fielding of Version 3.0.

- Provide funding for hardware and software upgrades not otherwise covered.

**ACQUISITION STRATEGY**  
**for**  
**TRANSPORTATION COORDINATOR'S AUTOMATED INFORMATION FOR**  
**MOVEMENTS SYSTEM II (TC-AIMS II)**

**I. REQUIREMENT**

**A. SUMMARY DESCRIPTION.** TC-AIMS II falls within the DoD mission area of logistics - transportation and sustainment of DoD personnel and cargo during peace, operations other than war, and war.

Mission Need. TC-AIMS II addresses critical shortfalls in moving cargo and people in support of the DoD mission. Further, TC-AIMS II responds to FY95-99 Defense Guidance that calls for support systems to provide "rapid strategic mobility support and sustainment capabilities." TC-AIMS II will permit improvements in transportation efficiency and information flow. Transportation efficiencies will improve because standard transportation information will be captured once, at the source, resulting in less time needed for preparing required documentation and providing source In-Transit Visibility (ITV) and force movement information. TC-AIMS II is critical to the realization of Joint Vision 2010's tenets of Focused Logistics and is a part of USTRANSCOM's Integrated Priority List.

Type of System Proposed. TC-AIMS II is an AIS that will automate the process of planning, organizing, coordinating, and controlling unit-related deployments, sustainment, day-to-day ITO/TMO operations, redeployment, and retrograde operations in support of the Defense Transportation System (DTS). It will interface with installation, unit, and depot-level supply systems, strategic and theater transportation systems, and global ITV systems and will be capable of supporting both peacetime and wartime requirements. TC-AIMS II is the system of origin that will produce movement documentation and unit move information. It will furnish timely information to major commands (MAJCOMs/MACOMs), Transportation Component Commands, USTRANSCOM, and the Joint Deployment Community. As a DoD source movement information system, TC-AIMS II will provide feeder information for ITV and transportation management over cargo and passenger movement during peace, operations other than war. TC-AIMS II will integrate the functionality of selected, existing Service-unique transportation legacy systems into a single AIS migration system. It will consist of a scaleable, deployable, client-server environment, compliant with the Joint Technical Architecture (JTA). Although TC-AIMS II functionality will

reside on workstations, users will regularly interface with and receive updated information from the host database.

#### Operational and Support Concept

1) Operational Concept. TC-AIMS II will operate in both garrison and deployed field operational environments and will directly support unit and force commanders, ITOs, and TMOs of all Services. It will provide an automated transportation planning and execution capability for unit and individual cargo movements, allocate organic transportation assets where applicable, and support Reception, Staging, Onward Movement & Integration and redeployment operations within the theater of operations. TC-AIMS II will provide critical information to the Global Transportation Network and will operate within the Global Combat Support System/Global Command and Control System environment as well as Command and Control (C2) systems at various command levels.

2) Support Concept. TC-AIMS II is an AIS designed to operate in conformance with the DII COE and utilize the Shared Data Environment (SHADE) as defined in the JTA established by Defense Information Systems Agency (DISA). The JPMO will be responsible for software development and installation while each Service will be responsible for site preparation and hardware installation. **The JPMO will coordinate and manage distribution of software and software updates to users, provide a technical assistance capability, and develop and provide initial training.** Long-term training is a Service responsibility.

#### **B. IDENTIFICATION OF AUTHORITATIVE SOURCE DOCUMENTS.**

The TC-AIMS II Mission Needs Statement (MNS) was approved by Director, JCS 7 August 97. TC-AIMS II is a top-down directed program. In 1987, the Secretary of Defense directed that programs be initiated to provide automated support to Service transportation coordinators. Joint Staff Memo (JSM) 3-87 directed the Services to implement this guidance. Each Service developed its own system to comply with JSM 3-87. In 1993, the Secretary of Defense directed that systems improvement actions be taken to increase standardization, improve processes, and migrate multiple parallel and/or stovepipe systems into effective multi-purpose, multi-Service automated support systems.

In March 1995, the Office of the Secretary of Defense (OSD) approved recommendations from the JTCC to migrate selected portions of Unit Move and ITO/TMO systems into an improved TC-AIMS II. TC-AIMS II was designated to be a

standard joint system and intended to be sufficiently flexible to meet Service-unique requirements.

The following summarizes authoritative documentation supporting TC-AIMS II development:

<b>Date</b>	<b>Document</b>	<b>Description</b>
July 1987	JCS Memo 3-87	SecDef Guidance, ROC
1993	Revision to JCSM 3-87	SecDef Guidance, Directed Joint Version of Service TCAIMS solutions
1993	JTCC Integrated Decision Papers (IDPs)	Transportation System Survey, Analysis and Migration Study
31 Mar 95	Transportation Systems Migration Recommendation	Sec Klugh Recommends Transportation System Migration
10 July 95	Migration Selection Approval	Sec Paige Approves Migration Selection
Sep 95	PDM II	Provided FY97 Funding for TC-AIMS II
1995	DoD ITV Implementation Plan	OSD Concept of Operations for DoD Transportation Systems relative to ITV/TAV
Nov 95	DUSDL (TP) Memo	Assigns Army as Lead Agent for TC-AIMS II, USMC as JRO
26 Mar 96	USA DISC4 Memo	HQDA Assigns TC-AIMSII to PEO STAMIS
Aug 96	PDM I	Provides FY98-03 Funding for TC-AIMS II Development, IOC
9 Jan 97	ASD, C3I Acquisition Decision Memorandum	Approves program initiation and specified US Army as lead agent for acquisition
21 July 97	ASD, C3I Acquisition Decision Memorandum	Provides further program guidance
Aug 97	Mission Needs Statement	MNS signed, Admiral Blair Director, Joint Staff
Sep 98	Operational Requirements Document (ORD)	Final Staffing - OSD/Joint Requirements Oversight Council (JROC)
Pending	Joint Test & Evaluation Master Plan (TEMP)	Draft - Pending ORD
Pending	Joint Integrated Logistics Support Plan (ILSP)	Draft Dated Feb 98
Pending	USMC Annex to Joint ILSP	Draft Dated Feb 98
Pending	Joint Cost Analysis Requirements Document	Draft Dated Jun 98
Pending	Joint Life Cycle Cost Estimate	Pending COST ANALYSIS REQUIREMENTS DESCRIPTION (CARD)
Pending	Joint Economic Analysis	Pending CARD
Pending	Joint Human Systems Integration (HSI) Plan	Draft Dated Mar 98
Pending	USMC Concept of Employment	Work in Progress by Marine Corps Systems Command (MARCORSYSCOM), HQMC (LP), and Combat Development Command (MCCDC) Requirements Required for ADM approval
Pending	Memorandum of Agreement between USMC and TC-AIMS II JPMO	

Pending	USMC Approved Acquisition Objective	Draft Being routed to MCCDC
Pending	USMC Acquisition Program Baseline Agreement	Required for ADM approval, pending ORD approval
Pending	USMC Acquisition Strategy	Required for ADM approval
Pending	USMC Integrated Process Team (IPT) Charter	Required for ADM approval

**C. STATUS OF REQUIREMENT DEFINITION.** The MNS for TC-AIMS II was signed by OSD 7 August 97. The Operational Requirements Document (RD) is in final staffing in accordance with CJCSI 3170.01 as of January 98, expected for signature during November 98. USMC staffing was officially routed through MCCDC, MARCORSYSCOM and Installations & Logistics (I&L), and coordinated through the JROC cell, Plans, Programs and Operations. The Requirements Division, MCCDC (C44), has initiated a Doctrine, Organizations, Training, Equipment, and Support (DOTES) survey and has registered TC-AIMS II into the Combat Development Process, (tracking number #97219JA). The Functional Approved Acquisition Objective (AAO) hardware requirements for TC-AIMS II is in the process of being reviewed by MCCDC Requirements. OSD Program Analysis and Evaluation (PAE) directed a Joint Preliminary Program Baseline, and is being staffed at the OSD PAE and C3I. The Draft Marine Corps Acquisition Program Baseline will be staffed to MCCDC and Headquarters, Marine Corps (HQMC) for final review and concurrence. The TC-AIMS II DOTES Assessment Final Report is expected to be completed by 1<sup>st</sup> Qtr FY99.

**II. PROGRAM STRUCTURE**

**A. SUMMARY DIAGRAM.**

DATE	EVENT
Jul 96	JPMO Established
Oct 96	USMC Initial Submission to Joint Requirements Office
Jan 96	Technical Proof of Concept (TPOC)
Apr 97	v1.0 (Beta, Proof of Concept) Released
May 97	Beta testing sites installed at Camp Pendleton and Camp LeJeune
Dec 97	V2.0 (Beta) Released to Beta sites
Mar 98	System In-Progress Review at MARCORSYSCOM

Apr 98	Program transferred to PM, IS, C4I Directorate, MARCORSYSCOM
Apr 98	V2.1 Released to Beta sites
Jun 98	V2.2 Released to Beta sites
Jul 98	V2.3 Released to Beta sites
Jan 99	V3.0 First three software segments to be trained and installed at Beta sites
Feb 99	Independent Developmental Test
Apr 99	Operational Test
Aug/Sep 99	MSIII Decision (MAISRC)
Sep 99	MSIII Decision (MARCORSYSCOM)
Sep 99	Initial Operational Capability (Joint)
Jan 2001	Completion of Initial Distribution
4 <sup>th</sup> Qtr FY02	Joint Migration Completion Date (FOC)

**B. ACQUISITION PHASES.** The TC-AIMS II program has not followed a traditional acquisition approach. In 1993 the Secretary of Defense directed that systems improvement actions be taken under OSD cognizance to increase standardization and to migrate multiple existing parallel and/or stovepipe movement systems into effective multi-purpose, Joint AIS's. In 1995, the USTRANSCOM JTCC assessed the functional, technical, and programmatic capabilities of existing transportation systems. As a result of that assessment, the decision was made to migrate selected portions of the "best-of-breed" of Service Deployment and Transportation systems into a single, integrated Joint application. Systems chosen for migration to TC-AIMS II include: MDSS II and TC-AIMS, the Air Force's CMOS for TMO freight and passenger functions, rail load movement capability from the Army's TC-ACCIS, and convoy movement capability from the Army's DAMMS-R.

Consequently, the software development approach has been the incorporation of multiple existing capabilities into an integrated system. Because there was no need to re-enter a Program Definition and Risk Reduction (PDRR) stage of development, TC-AIMS II moved directly to Phase II, Engineering and Manufacturing Development. The intention is to complete software development, conduct an Initial

Operational Test and Evaluation, and then to seek a Milestone III decision for procurement and fielding.

### III. RISK MANAGEMENT

The TC-AIMS II program has risks that include:

- Unstable Requirements
- Aggressive Schedule
- Real World Commitments
- Year 2K
- Changing Business and Operational Concepts

#### Unstable Requirements

The ORD has ~~not yet~~ been approved for TC-AIMS II. Although the program started as an automated information system, the decision was made to bring it under DoD 5000 and to send it to the JROC for approval. This decision has increased the time required for final approval of the requirements document since no former AIS has gone through this revised process. Additionally, the JPMO is using SMEs to determine functional requirements, review the database design, determine reporting requirements, and to evaluate interface priority and the schedule for their implementation. This strategy increases the risk that the requirements for the system will remain dynamic. Requirements growth was approved by the TC-AIMS II Configuration Management Board as recently as 29 January 1998. Another problem with requirement stability is the lack of stability in the Joint Requirements Officer (JRO) position. Although the USMC has responsibility for JRO billet, the billet is currently being filled as an additional duty. The incumbent will depart this fall with no replacement identified. Lack of a strong JRO increases the risk that requirements will grow without a coherent view of the program goals.

In an attempt to slow the growth of requirements, the CMB eliminated category 4 (enhancement) requirements from TC-AIMS II version 3.x. PM, Information Systems, plans a number of steps to alleviate the risks of excessive requirements growth. In recognition that requirements will grow and that PDSS costs will initially be high as this complex capability is fielded, the PM will ensure there is adequate funding (through funding requests) to cover the projected costs of adding Marine Corps requirements as they

are identified. Finally, HQMC (I&L) must take steps to identify a strong logistics expert to serve as the JRO.

### **Aggressive Schedule**

As mentioned above, the TC-AIMS II ORD has not received final approval. The current program schedule calls for two interim software releases for version 2.x and for five interim releases of version 3.x software segments to occur before January 1999. The program intends to move to Operational Test within one month of release of the version 3.5 software segment.

PM, IS will address the aggressive schedule in two ways. First, he will ensure the active participation of USMC SMEs in the JPMO software development efforts. Second, he will maintain constant contact with the USMC Beta sites to ensure they are using TC-AIMS II to the maximum extent possible. This will ensure the Marine Corps is ready to participate in the operational test; it will also increase the degree of testing conducted on the version 3.x software. He will also provide test materials to the sites, along with a schedule for the exercise of different software modules.

### **Potential for Cost Growth in Joint Program**

Joint programs have a tendency to show large cost growth as the multiple program participants add their unique requirements. Each of the Services end up paying for the added complexity of integrating large numbers of requirements and capabilities into a single package.

PM, IS will negotiate a Memorandum of Understanding (of Agreement) which establishes the percentage of R&D, PMC, and O&M costs which must be provided to the TC-AIMS II JPMO if there are cost overruns which exceed previous forecasts.

### **Real World Commitments**

The TC-AIMS II JPMO has supported numerous real world deployments and redeployments during the last two years. These commitments have had an adverse impact on the program since key members of the JPMO staff have had other obligations beside the TC-AIMS II program. These staff members are routinely required to travel to deployment sites to assist in force redeployment.

PM, IS will aggressively manage the USMC portion of the program to minimize the adverse impact of real world commitments on TC-AIMS II.

## **Year 2K**

TC-AIMS II is being developed as a Y2K-compliant system. One area of concern is that TC-AIMS II must exchange information with a host of other transportation and movement systems; many of these are legacy systems that may have Y2K problems.

PM, IS will coordinate closely with (through the TC-AIMS II JPMO) the various transportation and movement systems to determine their Y2K status. In cases where an interface system will not be Y2K compliant, the USMC TC-AIMS II IPT in coordination with the Interoperability Working Group (IWG) will determine the appropriate action regarding that particular interface or identify work-around solutions until the interface problem is solved. All decisions will be in accordance with SECDEF Y2K guidance.

## **Changing Business and Operational Concepts**

Since 1993, the Joint Staff (J4 and J3) have been leading a number of deployment process improvement initiatives. These changes to the deployment and transportation processes cause requirements to remain dynamic and development challenging. Additionally, OSD, through the guidance provided in Management Reform Memorandum #15, "Reengineering the Transportation Financial Management Process", commenced a long term Business Improvement Initiative which continues today. Finally, emerging doctrinal concepts such as Operational Maneuver From the Sea and Sea-Based Logistics also add to the difficulty in establishing requirements "once and for all".

## **Other Risk Reduction Efforts**

One final way in which the USMC will reduce risk is to maintain legacy movement and transportation systems until the performance and effectiveness of TC-AIMS II is verified. Systems that will continue in service until TC-AIMS II achieves Full Operational Capability include:

- Marine Air-Ground Task Force Logistics Automated Information System (MAGTF LOGAIS)
- Computer-Aided Load Manifesting (CALM)
- Transportation Management System (TMS)
- Cargo Movement Operating System (CMOS)

- Automated Manifesting System (AMS)

#### IV. LIFE CYCLE COST

**A. ESTABLISHING COST OBJECTIVES.** TC-AIMS II) Cost Analysis Requirements Document.

**B. MANAGING TRADEOFFS BETWEEN COST AND PERFORMANCE.**

PM, Information Systems will formally participate as the USMC representative to the TC-AIMS II Configuration Management Board. In order to ensure USMC requirements are met, PM IS will conduct informal coordination with MCCDC and the system functional sponsors at HQMC (LPO & LFT) to keep them informed of the program direction and to seek their input. Additionally, PM IS will host periodic Logistics Information System Working Groups (LISWG) with FMF, HQMC, and Supporting Establishment participation. The purpose of the LISWGs will be to keep interested parties informed of the direction of TC-AIMS II and to seek their input regarding program direction and requirements.

#### V. PROGRAM MANAGEMENT

**A. General Philosophy and Approach**

The TC-AIMS II JPMO reviews and monitors the overall direction and progress of the TC-AIMS II Joint Program. The JPMO is responsible for the implementation of Working-Level Integrated Product Teams (WIPTs) as a tool in the overall management of the TC-AIMS II Program.

**B. Responsibilities.** The following paragraphs describe the TC-AIMS II management structure; organizations and activities providing support to the program.

(1) CIO, Office of Assistant Secretary (OASD) of Defense (C3I). As delineated by the DOD 5000, the Chief Information Officer, Assistant Secretary of Defense (C3I) is the Milestone Decision Authority (MDA) for Information Technology ACAT IAM programs. TC-AIMS II acquisition oversight and approval is the responsibility of an Overarching Integrated Product Team (OIPT). Mr. Anthony Valletta is the Acting Chairman of the OIPT.

(2) Program Executive Office (PEO), Standard Army Management Information Systems (STAMIS). The PEO, STAMIS, Fort Belvoir, VA is responsible for setting up the TC-AIMS II JPMO; serves as the focal point representing the functional interests and requirements of

all joint service efforts, where appropriate; and, provides the primary funding and acquisition management oversight authority. The Acting PEO, STAMIS TC-AIMS responsibilities have been assigned to Colonel de Kanter, USA.

(3) Joint Program Management Office (JPMO). The JPMO has responsibility for the day-to-day program management of the TC-AIMS II Program. These responsibilities include implementing WIPTs, conducting acquisition business for the development and implementation of the program and monitoring the overall direction and progress of the acquisition program. The TC-AIMS II Program Manager duties and responsibilities have been assigned to Stanford Polonsky, TC-AIMS II JPMO, Ft Belvoir, Virginia, (703) 806-0586.

(4) ~~Joint~~ **Joint Requirements Officer (JRO)**. The JRO is responsible to conduct requirements analysis and to consolidate requirements identified by each of the Services. He forwards recommendations for joint system requirements to the Configuration Management Board (CMB) for action. He also is a non-voting member of the CMB. These duties are the responsibility of the Marine Corps; Mr. Nick Linkowitz is currently serving as the interim billet holder until October 1998.

(5) JPMO WIPTs.

Requirements WIPT is responsible for the MNS and the ORD and for requirements integration within the JPMO.

Integrated Logistics WIPT is responsible for the ILSP to include training, Service Annexes and Implementation Plans.

Technical WIPT is responsible for JTA and DII COE compliance.

Cost WIPT is responsible for the development of the Economic Analysis (EA) and input to the Life Cycle Cost Estimate (LCCE).

Test WIPT is responsible for establishing test criteria and schedules to include the TEMP.

Security WIPT ensures that security requirements are part of the system design and test.

Communications WIPT ensures that TC-AIMS II operates within the existing DOD communications infrastructure.

(6) U.S. Army Information Systems Engineering Command (ISEC). ISEC is the Independent Developmental Evaluator (IDE) for the TC-AIMS II Program. ISEC supports the acquisition of an effective, supportable and safe system by assisting in the engineering design and development and determining the degree to which the technical parameters of the systems have been achieved. The ISEC point of contact is Mr. Dave Green.

(7) U.S. Army Operational Test and Evaluation (OPTEC)/Operational Evaluation Command (OEC). OPTEC/OEC is responsible for planning, directing and conducting an Independent Operational Test and Evaluation of the operational effectiveness and suitability. The OPTEC point of contact is Dr. Anne Maddux.

(8) GTE (Prime Contractor). The prime software developer for TC-AIMS II is GTE. The GTE point of contact is Mr. Peter Pflugrath.

(9) COMMARCORSYSCOM. Milestone Decision Authority (MDA) for the procurement and fielding of the Marine Corps portion of the TC-AIMS II Program.

(10) Director, C4I MARCORSYSCOM. The Director, C4I, functions as the single point of control for the MARCORSYSCOM acquisition process within the C4I matrix. He exercises direct line management over all C4I PMs to include program direction.

(11) Program Manager, Information Systems. The PM, Information Systems, MARCORSYSCOM, will have the responsibility for conducting acquisition business for the procurement (to include continued training) and fielding of TC-AIMS II within the Marine Corps. PM duties and responsibilities will be assigned to Colonel James Thigpen, Code C4I/IS.

(12) TC-AIMS II Project Officer (PO). The Project Officer (PO) represents the PM in matters regarding the acquisition and fielding of TC-AIMS II. The PO manages day-to-day TC-AIMS II program business including acquisition funding, contractual and documentation needs. The TC-AIMS II PO is Major ~~James Gannon~~, MARCORSYSCOM C4I (IS), (703) 784-1019 ext ~~5085~~. STEPHEN M. WILSON

6903

(13) Headquarters Marine Corps (HQMC). The Deputy Chief of Staff, Installations and Logistics (DC/S I&L) is the Functional Area point of contact for Marine Corps Logistics Systems, including the TC-AIMS II Program.

(14) Marine Corps IPT . Personnel from MARCORSYSCOM, HQMC (LPS), MCCDC (Requirements Division), MARCORLOGBASES (MCSD) AND MCOTEA (Ground Test Branch) have teamed to ensure that the Marine Corps participates in, receives, tests, accepts and supports the joint TC-AIMS II program.

(15) MCCDC. The Commanding General, MCCDC (Code C44) is responsible for reviewing the joint requirements (MNS, ORD) and Marine Corps system allocations.

(16) Marine Corps Operational Test and Evaluation Activity (MCOTEA). MCOTEA is responsible for providing the TC-AIMS II JPMO a Marine Corps representative to work with the Test and Evaluation WIPT and reviewing the TEMP and Independent Evaluation Report prior to COMMARCORSYCOM Procurement Decision. The MCOTEA point of contact is Major Robert Bickel.

**VI. FUNDING**

PDM II (1995) Approved TC-AIMSII Joint Program Development. Funding approved for software development, the responsibility of the JPMO and funded through HQDA DCSLOG is:

FY98-03 POM							
(\$K)	FY98	FY99	FY00	FY01	FY02	FY03	TOTAL
OMA	1.54	1.79	2.91	3.02	3.09	3.1	15.53
OPA	2.2	0.54	0.54	0.54	0.54	0.54	4.91

<u>PDM I (1996)</u>							
OMA	11.7	10.7	5.7	5.8	6.5	6.6	47.00

USMC Acquisition Program Request. The POM-00 Budget controls for MCHS, Automatic Identification Technology (AIT) hardware, infrastructure, fielding and post-deployment system support is:

POM-00 FYDP

(\$K)	FY00	FY01	FY02	FY03	FY04	FY05
R&D	95	600	300	300	265	265
PMC	4610	4748	4178	0	0	0
OMC	75	180	1180	1440	1215	945
HW <sup>1</sup>	5158	1706	0	0	0	0
TOTAL	9938	7234	5658	1,740	1,480	1,210

### LOGISTICS SUPPORT

See USMC Annex to the Joint ILSP (Annex G)

### TEST AND EVALUATION

The U.S. Army OPTEC has the lead for the TC-AIMS II operational test. OPTEC will plan the test with support and assistance from ISEC. While it is expected that portions of the Operational Test (OT) will be modified to address USMC requirements or deployment considerations, it is not envisioned that there will be a separate USMC OT for TC-AIMS II. MCOTEA will assist in the testing of TC-AIMS II in a number of ways. First, they will participate in the TC-AIMS II Test and Evaluation Working Level IPT. Second, they will review JPMO and other test documents to identify what additional documentation will be required to verify TC-AIMS II operational suitability and effectiveness for USMC use. Finally, MCOTEA will prepare documentation as appropriate or provide technical expertise to PM, IS to assist their preparation of USMC OT documentation.

The program will use a three-tiered approach to verify the ability of TC-AIMS II to meet user requirements. This aggressive approach is being used to increase the chances of success for the program's aggressive schedule. Feedback from each of these evaluations will be provided to the JPMO to guide the development of system software and to identify problem areas as early as possible. The techniques include the use of USMC SMEs, "Beta" software test sites, and developmental/operational tests.

The first technique used is the involvement of USMC SMEs in the development of the TC-AIMS II software. These SME will participate in a number of Joint Application Development (JAD) sessions at the JPMO on a regular basis. During these meetings, the SMEs will identify the capabilities to be pursued in the next software build. The JPMO will then undertake the development of this set of software

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<sup>1</sup> Funding for Servers, Workstations and Laptops will be covered by the PM CCR line. TC-AIMSII AAO was submitted to PM CCR for POM-00.

capabilities. When the software is considered ready for review, the JPMO will schedule a series of Rapid Application Development sessions. During this conference, the SMEs will evaluate the latest software version and participate in the segment integration testing. The SMEs will also make a recommendation to the JPMO as to whether the build should be released to the USMC Beta sites at Camp Pendleton and Camp LeJeune. The Marine Corps will make the final decision regarding whether a particular software version should be delivered to and installed at the Beta sites.

The second tier of the approach is the use of software "Beta" test sites at Camp LeJeune, NC, and Camp Pendleton, CA. The sites consist of 21 computers, arranged in a configuration of 20 client workstations and one network server. The site at Camp LeJeune is operated by the Base TMO under a Memorandum of Agreement (MOA) established between the JPMO and the Camp LeJeune TMO. The site at Camp Pendleton is operated by the base TMO under a MOA established between the JPMO and the Camp Pendleton TMO. The Beta test sites provide a location for a larger group of Marine TC-AIMS II users to exercise and to evaluate the software. The Beta sites will provide their feedback on TC-AIMS software through use of Software Problem Reports to the JPMO.

The third tier of the approach is the use of a USMC-unique addition to the operational test to evaluate TC-AIMS II in a realistic USMC operational environment. Although OPTEC will conduct an operational test of TC-AIMS II, the test will not thoroughly evaluate the ability of TC-AIMS II to support USMC requirements. This is because of differing deployment concepts for the US Army and the US Marine Corps. The USMC deploys from the bottom up, with subordinate units developing their deployment plan and forwarding it to higher headquarters for consolidation and approval. MCOTEA will review the test documentation and planning prepared by the JPMO and will identify those capabilities which need to be evaluated in a unique USMC addition to the operational test. MCOTEA will assist MARCORSYSCOM by preparing appropriate documentation and by assisting MARCORSYSCOM in the preparation of required documentation to support this separate test effort.

## **Production Plan**

There will be no production of unique computer hardware or peripherals for TC-AIMS II. The system will utilize hardware from the MCHS to maximize commonality with other USMC C2 systems and to simplify support considerations. The system will, however, require high performance hardware since the TC-AIMS II equipment is also planned to co-host the Integrated Computerized Deployment System and the Automated Air Load Planning System. Another factor increasing the need for high performance hardware is the likelihood that CMOS (being integrated with TC-AIMS II) may co-host the Global Air Transportation System.

The system will also use standard commercial equipment for AIT procured under an existing DoD AIT contract. The DoD AIT Contract is managed by PEO STAMIS. Equipment to be used includes RF tags and interrogators, bar code scanners, and optical memory cards (smart cards). No unique items will be produced for this effort.

It is intended at this time that hardware currently in place at the USMC Beta sites will become part of the TC-AIMS II fielding plan. To simplify logistics support, that plan may change if the configuration of equipment used at the Beta sites is significantly different from the equipment purchased for Initial Operating Capability (IOC).

## **SOFTWARE DEVELOPMENT**

TC-AIMS II software development has followed a directed path since program inception. The initial capabilities to be provided involved the migration of the selected systems from stovepipe systems to TC-AIMS II. For new requirements, the Joint Requirement Working Group evaluates nominations of new capabilities and forwards recommendations to the Configuration Management Board. The Joint Requirements database has identified many enhancements which will not be provided in TC-AIMS II at (IOC).

While the development of software capabilities beyond version 3.0 remains To Be Determined (TBD), it is expected that the US Army will remain the lead agent for TC-AIMS II and that development will continue. It is also expected that the requirement for USMC participation in the program will continue through Full Operational Capability for the program.

## **TECHNOLOGY**

Some required upgrades have already been identified for the AIT hardware to be used by TC-AIMS II. The program will have to add equipment to support two dimensional (2D) bar codes and bar code readers. The radio frequency (RF) identification equipment will also have to be upgraded as RF tags improve.

While the specifics have not been identified at this time, it is also expected that the processing power of the TC-AIMS II servers will have to be upgraded at some time during the service life of the system. This upgrade will be required to maintain the performance of TC-AIMS II at an acceptable level and to maintain compatibility with the systems that it must interface with. Another expected product improvement is the upgrade of the system to fully leverage SHADE technology. This will allow TC-AIMS to take advantage of enterprise level data management.

## **CONTRACTS**

Army contracts will be used to purchase equipment and support for the Beta sites at Camp Pendleton and Camp LeJeune until IOC. Additionally, all required AIT hardware for TC-AIMS II will be purchased using existing Army or appropriate AIT lead agent contracts for the life of the program.

The hardware required for USMC IOC will come from the MCHS and will be purchased using contract vehicles available through PM, Common Computer Resources.

PM, IS intends to contract for and provide Field System Maintenance Support for each of the major TC-AIMS II locations. These data base administrators will be provided until the USMC develops an occupational specialty which has the appropriate training to serve as functional data base and systems administrators. The contract vehicle for that effort remains To Be Determined TBD at this time.

## Appendix A      Acronyms

2D	Two dimensional
AAO	Approved Acquisition Objective
AIS	Automated Information System
AIT	Automatic Identification Technology
C2	Command and Control
CALM	Computer-Aided Load Manifesting
CIM	Corporate Information Management
CMB	Configuration Management Board
CMOS	Cargo Movement Operating System
DAMMS-R	Department of the Army Movement Management System-Redesign
DII COE	Defense Information Infrastructure Common Operating Environment
DoD	Department of Defense
DOTES	Doctrine, Organizations, Training, Equipment, and Support
DTS	Defense Transportation System
E&MD	Engineering and Manufacturing Development
EA	Economic Analysis
HIS	Human Systems Integration
HQMC	Headquarters Marine Corps
IDE	Independent Developmental Evaluator
IDPs	Integrated Decision Papers
ILSP	Integrated Logistics Support Plan
I&L	Installations and Logistics
IOC	Initial Operating Capability
IPT	Integrated Process Team
ISEC	Information Systems Engineering Command
ITO/TMO	Installation Transportation Office/Traffic Management Office
ITV	In-Transit Visibility
JAD	Joint Application Development
JCS	Joint Chiefs of Staff
JPMO	Joint Program Management Office
JRO	Joint Requirements Officer
JTA	Joint Technical Architecture
JTCC	Joint Transportation Corporate Information Management Center
LCCE	Life Cycle Cost Estimate
LISWG	Logistics Information System Working Groups

MAGTF	Marine Air/Ground Task Force Logistics Automated
LOGAIS	Information Systems
MAJCOM/	Major commands
MACOM	
MCHS	Marine Corps Common Hardware Suite
MCOTEA	Marine Corps Operational Test and Evaluation Activity
MDA	Milestone Decision Authority
MDSS II	MAGTF Deployment Support System II
MNS	Mission Needs Statement
OIPT	Overarching Integrated Product Team
OPTEC/OEC	Operational Test and Evaluation/Operational Evolution Command
ORD	Operational Requirements Document
OSD	Office of the Secretary of Defense
PDRR	Program Definition and Risk Reduction
PEO STAMIS	Program Executive Office, Standard Army Management Information Systems
PO	Project Officer
ROC	Required Operational Capability
SHADE	Shared Data Environment
SM	Staff Memo
SME	Subject Matter Expert
SSA	Software Support Activity
TBD	To Be Determined
TC-ACCIS	Transportation Coordinator-Automated Command and Control Information System
TC-AIMS II	Transportation Coordinator's Automated Information for Movements System II
TEMP	Test and Evaluation Master Plan
TMO	Transportation Management Office
TMS	Transportation Management System
WIPTs	Working-Level Integrated Product Teams

