

HUMAN SYSTEMS INTEGRATION PLAN

for

Transportation Coordinators' Automated Information for Movement System II (TC-AIMS II)



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1. BACKGROUND

a. TC-AIMS II is a top-down directed program that must address critical shortfalls in moving cargo and people in support of the DOD mission. This system must support the FY87 Joint Chiefs of Staff (JCS) direction and the FY89 defense guidance that provided a requirement for an automated capability to provide timely and accurate passenger/cargo movement information during force deployments. Further, system development and implementation must be consistent with FY95-99 defense guidance that called for support systems to provide "rapid strategic mobility and sufficient support and sustainment capabilities."

b. The Secretary of Defense directed the system to satisfy these mission needs be fielded by Mar 97. Beyond that requirement, there is an urgent need to field a system that meets these needs in order for the Defense Transportation System (DTS) to be able to efficiently support unit movements and sustainment actions in support of US policy to react to crises or conflicts with CONUS-based components supported by Maritime Prepositioning Force/Afloat Prepositioning Force Assets. This has given additional emphasis to Joint Operations and Composite Force concepts.

c. Current systems fielded in the individual DOD Components cannot support such deployments with any degree of efficiency. Individual DOD Component systems support their DOD Component's needs satisfactorily, but they cannot adequately support Joint or Composite operations. It is imperative that these mission needs be satisfied in conjunction with the actions being taken in the operational systems arena so the transportation system that deploys and supports them is readily available. This requirement is essential to complying with stated US policy.

d. TC-AIMS II must provide an integrated information transportation system capability for routine deployment, sustainment, and redeployment/retrograde operations by employing the same DOD and Service shipment policies and procedures in peace and war and in both the active and reserve forces.

e. This system must be integrated with installation, unit, and depot-level supply systems to manage inbound and outbound movement (less Household Goods) documentation and requisition information. TC-AIMS II must be capable of supporting routine and surge requirements and must automate origin shipping/receiving, deployment, sustainment and redeployment/retrograde processes; produce movement documentation and unit move data; and 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 must provide data for in-transit visibility (ITV) and control over cargo and passenger movement.

2. DESCRIPTION.

2.1 TC-AIMS II System Description.

a. TC-AIMS II is a transportation management AIS and will interface with a number of other functional area Automated Information Systems (AIS) in order to accomplish its mission and to support other functional area requirements. TC-AIMS II objectives are to provide:

- A modernized and easily deployable AIS that supports reengineered functional processes throughout DOD.
- An increased effectiveness of the DTS as the single DOD Transportation Management AIS for use by all DOD Component unit movement personnel and ITO/TMOs.
- An essential electronic linkage of crucial movement information for US forces from the source to the ultimate achievement of global end-to-end information connectivity. Linking all DOD Component unit movement personnel and ITO/TMOs into one consolidated, integrated, easily deployable, transportation management system will do this.
- A critical mobility support that furnishes a force multiplier that will improve the responsiveness of DOD Component unit movement personnel and ITO/TMOs to move passengers and cargo worldwide.
- An improved, integrated, easily deployable, single DOD Transportation Management AIS that is reengineered to use the best functions of its legacy and migration systems.
- An elimination of duplicate systems among DOD Component unit movement officers and the ITO/TMO AIS infrastructure.
- An open architecture to include compliance with Global Combat Support System (GCSS) Common Operating Environment (COE) standards that will enhance the system's ability to incorporate results of ongoing process reengineering efforts to improve DTS responsiveness to the warfighter.
- A removal of barriers to data sharing, data transfer, and interoperability as defined by GCSS COE.
- An Electronic Commerce/Electronic Data Interchange (EC/EDI) linkage to the commercial transportation industry for procurement of passenger and cargo transportation services at "best value" to users.

- An integration of transportation and related logistics and operations AIS's to ensure cross-functional integration of the deployment and replenishment processes.
- A standardized system that achieves total interoperability for all DOD Component unit movement officers and ITO/TMOs.
- A significantly improved joint mobility and transportation procedure that provides DOD unit move personnel and ITO/TMOs with a single totally integrated, easily deployable transportation management AIS.

b. TC-AIMS II will integrate computer hardware, software, and communications in order to process, retrieve, and transmit unit movement and ITO/TMO data. A host processor will support an UNIX-like multi-user, multi-tasking operating system, and an ORACLE relational data base management system. Workstations will contain the application programs that allow users to interact with the database at the host processor. ORACLE SQL provides access to the functional areas to enter and view data.

c. A unified LAN for intrabase communications while long haul communications traverse DDN will connect the system. Electronic Data Interchange (EDI) will provide standard transaction formats with commercial carriers, other traffic managers, and financial centers. A suite of Automated Information Technology equipment will facilitate the collection and transmission of bar coded shipment information. The TC-AIMS II architecture will be rounded out by a complement of document, text, and label printers.

2.2 Target Audience Description (TAD). The TAD will be made up of System Administrators (SA), Database Administrators (DBA), Installation Transportation Office (ITO)/Traffic Management Office (TMO) specialists and Unit Movement (UM) specialists.

3. ACQUISITION STRATEGY

a. TC-AIMS II will be developed incrementally. Block 1 provides the basic unit movement capability and fields that capability to units designated as "early deployers" by their respective Service headquarters. Block 1 also provides the technical architecture and functional foundation for the objective system.

3.1 Software Development. TC-AIMS II software will be developed incrementally. Block 1, the initial increment, will support basic capabilities necessary to plan, coordinate, and execute deployment or re-deployment. Follow-on software development consists of four block upgrades. Each block is scheduled for an 18-month development period from contract award to a full-fielding decision. Each Block,

beginning with Block 3 requires MS B approval prior to development. The following are summaries of the major software capabilities to be developed, tested, and fielded.

a. **Block 1** - Basic Unit Move capabilities provide the ability to plan, coordinate, and execute unit movements. This includes maintaining equipment and personnel databases; organizing unit equipment and personnel list for air, rail, ship, truck, or container load planning; determining transportation requirements; and interfaces with designated supply, personnel, transportation, and C2 systems. This capability also supports the Chairman of Joint Chiefs of Staff requirement for a 72-hour time phased force and deployment data (TPFDD) standard and replaces the following Component Unit Move legacy system:

- Transportation Coordinator – Automated Command and Control Information System (TC-ACCIS). This is the Army unit move planning and movement system.

b. **Block 2** - Enhanced Unit Move (2nd Qtr, FY02 through 4th Qtr, FY03) provides overall system enhancements to the basic unit movement functionality. These enhancements include Web-enablement, Text Sensitive Help, interactive calendar in date fields, additional reference data source options, and initiating print products from remote Hand Held Terminals. Block 2 provides the capability to read Common Access Cards into the system. Included are the requirements deferred from the 3.01 release of Block 1. This capability replaces the following Service component legacy systems:

- TC-AIMS is a Marine Corps unit move planning system.
- MAGTF Deployment Support System II (MDSSII). This is the Marine Corps deployment system.

c. **Block 3** - Movements Control and Planning/Map Graphics. (1st Qtr, FY04 through 3rd Qtr, FY05) provides movements control, plan sourcing, port operations visibility, theater reception, staging, onward movement and integration (RSO&I) and multiple convoy tracking. Provides the Map Graphics capabilities previously planned in Block 7.

d. **Block 4** - --Maritime Prepositioning Force/Theater Operations. (1st Qtr, FY06 through 3rd Qtr, FY07) provides Maritime Prepositioning Force Management, unit dispatch, additional reports, vehicle driver ability, and prepositioning stock management. Provides Theater Mode Operations and Theater Distribution and replaces the Department of the Army Movement Management System-Redesign (DAMMS-R).

e. **Block 5** - ITO/TMO. (1st Qtr, FY08 through 3rd Qtr, FY09) provides ITO interfaces, CONUS/OCONUS, ITO/TMO Enhancements, and TMO Interfaces. This block will replace the Air Force legacy system – Cargo Movement Operations System (CMOS) which supports Installation Transportation Office/Traffic Management Office functions.

Table 3.1-1
System Software Configurations

Microsoft NT Server	Version 4.0
Microsoft Windows	2000
TC-AIMS II Application	Version 3.01

3.2 Hardware Acquisition. The current Block 1 TC-AIMS II architecture consists of standalone workstations, garrison or deployed client/server, regionalized servers, or a hierarchy of “deployable” peer-to-peer connected servers networked throughout the operational chain of command, with the servers being connected to client workstations and laptop computers at staff and organizational unit levels. TC-AIMS II is web-enabled in Block 2 and beyond. The Transportation Information Systems (TIS) Program Office (formerly TC-AIMS II Program Office) will provide minimum and optimum hardware configurations for operating TC-AIMS II. Web-enablement and Enterprise Management System (EMS) will result in server consolidation and an overall reduction in the initial hardware estimate. Each Service will be responsible for procuring and installing TC-AIMS II hardware in accordance with Component distribution plans.

Table 3.2-1
Computer System, Digital
(TC-AIMS II Server)
AN/TYQ-129(V)1

LIN/NSN: C27367/7010-01-504-2351

	Rack Mountable Server	Tower Server
Major Component	Pedestal footprint/Rack Mounted. Dual Hot swappable power supplies 110/220VAC, auto- sensing/switching	Pedestal footprint/Tower configuration. Dual Hot swappable power supplies 110/220VAC, auto- sensing/switching
Processor Speed	Dual Processor XEON 2Ghz/512 Cache	Dual Processor XEON 2Ghz/512 Cache
RAM	4GB RAM minimum with ECC DDR	4GB RAM minimum with ECC DDR
Monitor	15” SVGA monitor or 15” SVGA rack mountable monitor	15” SVGA monitor
Video Card	8Mb video with SVGA support integrated on motherboard or	8Mb video with SVGA support integrated on motherboard or

	PCI/AGP card	PCI/AGP card
Hard Drive	Minimum ten 18.2 GB HD (configured as four RAIDI drives) Ultra160 SCSI disk drives on a dual channel RAID controller drives with 15k RPM formatted NTFS & configured as: Drive 1 C: (System) Drive 2 D:: (Apps) Drive 3 E: (Logs) Drive 4 F: (Backup) Drive 5 G: (Data)	Minimum ten 18.2 GB HD (configured as four RAIDI drives) Ultra160 SCSI disk drives on a dual channel RAID controller drives with 15k RPM formatted NTFS & configured as: Drive 1 C: (System) Drive 2 D:: (Apps) Drive 3 E: (Logs) Drive 4 F: (Backup) Drive 5 G: (Data)
Operating System	Microsoft Windows 2000 Advanced Server SP2 pre-installed with License and CD media	Microsoft Windows 2000 Advanced Server SP2 pre-installed with License and CD media
External Mouse	PS2 or USB style mouse with mouse pad	PS2 or USB style mouse with mouse pad
Keyboard	PS2 or USB style Windows keyboard	PS2 or USB style Windows keyboard
Network Connection	Dual integrated with System Board 10/100 MHz Dual Port Adapter NIC (Teamable)	Dual integrated with System Board 10/100 MHz Dual Port Adapter NIC (Teamable)
Modem	None	None
CD	CD-ROM (CD-RW) drive, EIDE	CD-ROM (CD-RW) drive, EIDE
Floppy Drive	3.5" Floppy disk drive	3.5" Floppy disk drive
Speakers	None	None
Storage/Backup	20/40GB DDS-4 DAT tape drive, SCSI with controller	20/40GB DDS-4 DAT tape drive, SCSI with controller
Backup Media	Four DDS-4 tape cartridges and one cleaning tape	Four DDS-4 tape cartridges and one cleaning tape
Backup Software	Veritas Backup Exec software, Single Server version with CD media must be issued with each server	Veritas Backup Exec software, Single Server version with CD media must be issued with each server
External Case	None	None
Printer	None	None
Hardware Protection	None	None
Data Protection (UPS)	1000VAC auto-sensing/switching uninterruptible power supply	1000VAC auto-sensing/switching uninterruptible power supply
Cables, Hubs	14 foot snag proof UTP Cat5 patch cable, pre-terminated RJ-45 connectors on both ends	14 foot snag proof UTP Cat5 patch cable, pre-terminated RJ-45 connectors on both ends
Productivity SW	None	None

Other	One 25 pin parallel port	One 25 pin parallel port
	One 9 pin serial port UART 16550 compatible	One 9 pin serial port UART 16550 compatible
	Electronic Documentation including all Windows 2000 Advanced Server Drivers. Must include software to restore server to original factory configuration.	Electronic Documentation including all Windows 2000 Advanced Server Drivers. Must include software to restore server to original factory configuration.
	4 USB ports	4 USB ports
System Board	Support 2 Intel Xeon processors, E7500 chipset and 400 MHz system buses, triple pair PCI buses, Integrated SCSI adapter, integrated video adapter, integrated dual NIC	Support 2 Intel Xeon processors, E7500 chipset and 400 MHz system buses, triple pair PCI buses, Integrated SCSI adapter, integrated video adapter, integrated dual NIC
Warranty	Five-year on-site parts and labor warranty, Next Business Day response (CONUS), 72-hour response (OCONUS)	Five-year on-site parts and labor warranty, Next Business Day response (CONUS), 72-hour response (OCONUS)

Table 3.2-2
Computer System, Digital
AN/TYQ-129(V)2
(TC-AIMS II Workstation)

LIN: C27435 NSN: 7010-01-504-2352	Deployable Laptop/Server
Major Component	Three spindle design (hard drive, floppy and CD-ROM self contained in box)
Processor Speed	Pentium 4 Processor minimum 2GHz/512 Cache or higher
RAM	1GB
Monitor	15" Active Matrix TFT SVGA Display, minimum
Video Card	16Mb video with SVGA support, minimum
Hard Drive	60 GB hard disk (minimum) partitioned: C: 8 GB Labeled "System" D: 12 GB Labeled "Apps" E: 40 GB Labeled "TC-AIMS"
Operating System	Windows 2000 Professional and SP2 pre-installed with CD media

	Windows XP License and Media
External Mouse	PS2 or USB style mouse with mouse pad
Key board	Windows style keyboard, integrated
Network Connection	10/100TX Ethernet, integrated or PCMCIA vice integrated options available
Modem	56K V.90 modem, integrated, configured to COM1 or PCMCIA vice integrated options available
CD	6X/4X/24X CD-RW drive, minimum
Speakers	Integrated Speakers
Storage Backup	3.5" 1.44MB Floppy disk drive
External Case	Soft sided carrying case w/shoulder strap, capable of holding all accessories
Printer	
Hardware Protection	Surge suppressor for notebook, APC Pnote Pro or equivalent
Data Protection (UPS)	
Cables, Hubs	<u>14 foot snag proof UTP Cat 5 patch cable, pre-terminated RJ-45 connectors on both ends</u>
Productivity SW	Microsoft Office 2000 Professional and CD Media pre-installed, XP Professional License, CD-RW creation software
Other	Two Type II or one Type III PCMCIA slots
	One 25 pin parallel port
	One 9 pin serial port UART 16550 compatible
	Two USB ports
	Electronic Documentation including Windows 2000 and Windows XP Drivers. Must include software to restore laptop to original factory specifications
System Board	Power supply, 110-220VAC, auto-sensing, auto-switching
Warranty	Five-year on-site parts and labor warranty, Next Business Day response (CONUS), 72-hour response (OCONUS)

Table 3.2-3
Printer

Platform Component	Description
	Army Printer Configuration 2003
Printer Type	LaserJet – Monochrome
System Requirements	MS Windows 2000/NT4 Compatible
Max Resolution B&W	1200 X 1200 dpi
Minimum Printer Output	16ppm B/W Letter A Size (8.5" X 11")

Minimum Memory/RAM	8 MB
Installed:	
Minimum Memory Expandable	16 MB
Minimum Processor Speed	133 MHz
Minimum Connectivity	Parallel, USB, and Ethernet Ports
Minimum Paper Input	2
Standard Paper Sizes	Letter (8.5" X 11") & legal (8.5" X 14")
Minimum Paper Capacity Tray #1	100 up to legal size
Minimum Paper Capacity Tray #2	25 up to legal size
Weight	Under 40 lbs

Table 3.2-4
Optical Memory Card, Reader/Writer
AN/TYQ-117

LIN/NSN	DESCRIPTION
LIN: Z47955 NSN: 5998-01-480-6392	Optical Memory Card Reader/Writer Interface Unit, Automatic Data Processing Transit Case

Table 3.2-5
Interrogator Set

LIN	DESCRIPTION
LIN: Z52950 NSN: 5895-01-494-0898	Interrogator Set, AN/TYX-1
5895-01-454-0219	Interrogator Set, (Active, Handheld) AN/TYQ-95
5895-01-454-1339	Interrogator Set Transit Group Configuration AN/TYQ-97
5895-01-454-5356	Interrogator (Active, Transportable) CY-8848/TYQ
5895-01-454-5357	Solar Power Source CY-8849/TYQ
5895-01-454-5361	Mounting Structure CY-8850/TYQ

4. DEFICIENCIES AND/OR LESSONS LEARNED FROM THE PREDECESSOR SYSTEM

4.1 Deficiencies. TC-AIMS II is the next step in the evolution of TC-AIMS as promulgated under SM-3-87 by the Joint Chiefs of Staff. TC-AIMS II will continue the evolution of the Unit/Installation Level Defense Transportation System element. Much has been accomplished since the issuance of SM-3-87 but even more remains to be accomplished, and TC-AIMS II is critical to correcting these deficiencies. Today's DTS remains largely fragmented along DOD component and modal lines characterizing the multiple oversight structure that currently exists. Management processes evolved independently for each mode of transportation, with focus more on "local" as opposed to total transportation system optimization. This fragmentation manifests itself in a number of deficiencies/mission needs. There are several information management deficiencies, which must be overcome.

a. Each of the Services and DOD activities operates its own separate systems to accomplish similar movement management and deployment-related tasks. These individual systems are not integrated to provide uniformity of information. There is a lack of standardization in data elements; data transmission formats accessibility to information and source data capture capabilities. These limitations hamper our ability to create an accurate common DOD information picture of the status of deployments and DTS movements. Other operational impacts include: limited automated connectivity between/within the service/activity systems; separate transportation systems foster the growth of different, service-unique procedures to solve similar problems; separate, service-unique training courses must be developed/presented; and each system is maintained by a separate software development team.

b. The separate systems operated by each Service/activity cannot stand alone to satisfy the total information management needs for each unit/activity. This has led to the development of several systems across the Services, which serve the same user with different capabilities. To take advantage of the total capabilities, the user is forced to acquire/use several different computer systems and hardware platform configurations. Because these various capabilities were developed independently, there is limited horizontal and vertical interoperability among them. The user must learn to operate several different systems to accomplish his job, which lengthens the training time required and increases training complexity.

c. The separate systems operated by each Service/activity are not fully integrated with service-unique command and control systems or joint command and control systems, which result in a lack of advanced movement information. This deficiency restricts the movement of accurate peacetime and wartime information, captured at the operational level, to other commands and supporting elements. This deficiency is most significant when the information relates to force deployment. Command and control headquarters, both for the deploying force and the supported CINC, require immediate access to an accurate picture of the deployment status.

d. The separate systems operated by each Service/activity provide different levels of capability to transition from daily operations to a higher OPTEMPO; e.g., to support a large force deployment or increased shipment levels. Some systems have an ability to operate on the battlefield while others have been designed for operation in garrison conditions with a specific communications interface requirement. The Services and CINCs need an integrated DOD transportation system which is operated by units that deploy, units that support the deployment, and Service/DOD activities both in peace and war. The integrated system must be capable of operating in all environments, at all OPTEMPO, and with a variety of communications support options.

4.2 The DTS community includes many different types of customers. Each customer type has specific information needs, which are not currently being met in a cohesive DOD-standard system. The system customers listed below represent the baseline user community, which will operate this information system.

a. Deploying unit commanders must translate information about the mission they are deploying to support into detailed and realistic movement plans for the deployment. This translation occurs in a short time period when information continually changes about available lift assets, mission details, and unit assets allocated to support the mission. The deployment managers, acting for the unit commander, must use this volatile information to plan unit convoys; schedule and track events; prepare load plans for vehicles, rail cars, aircraft or ships; prepare MILSTAMP/Electronic Data Interchange (EDI) documentation; and account for equipment, personnel, consumable supplies and funds. The current information management tools available to the deployment managers in all Services are not integrated and do not readily support the OPTEMPO for a crisis deployment.

b. The ITO/TMO is charged with coordinating transportation services, preparing shipment documentation, and certifying funding for all freight items and group passenger movements. This mission supports unit deployments, shipping sustainment items to support the deployed forces, and daily inbound/outbound shipments to support installation/depot business. The information management tools available to the ITO/TMO staff is not fully integrated with the other installation/depot systems or the unit deployment systems. The ITO/TMO systems do not have a common electronic interface to commercial carrier systems. Current systems are limited in their ability to do one-time data entry, minimize man-machine interface, and electronically exchange data, thereby causing business process inefficiencies. A lack of fully integrated systems and communications also delays the reporting of accurate in-transit visibility information.

c. Theater Movement Control Activity. Movement control activities on the modern battlefield require access to the best information, which can be provided. Theater movement control activities are responsible for:

(1) Ensuring the delivery of items when and where needed, managing inbound, intra-theater, and retrograde transportation movements.

(2) Planning for the best use of available transport assets to meet the highest priority command needs.

(3) Providing multiple levels of service to accommodate customer needs.

(4) Creating Surface Distribution Plans which can be used by all shippers in a dynamic environment.

(5) Assisting in the expedited delivery, diversion, and timely movement of supplies to prevent traffic problems.

(6) Scheduling traffic along the theater distribution network to meet command needs.

(7) Accounting for intermodal assets and returning them for use in the DTS.

(8) Accurately documenting transportation funds committed to support ongoing missions.

(9) Management of inbound, intra-theater, and retrograde transportation movements.

The current suite of information management tools available to theater movement control activities is not fully integrated with the other logistical and C2 systems or with systems operated by the other Services on the same battlefield or in the same theater of operations.

d. Vehicle Asset Managers and Operators. The conveyances used to move military equipment and personnel assets are precious commodities. To schedule their use effectively, managers of these assets require access to timely information on the status of vehicles, drivers, and missions. This information must be displayed in a method, which allows the managers to easily identify the status of all current and future missions and to allocate multiple consecutive missions to individual drivers and vehicle combinations. The current suite of information systems available to asset managers does not readily support this requirement. These systems are not integrated with other systems, which track the maintenance status of the vehicles or driver availability/qualifications. This information management shortfall hampers the timely dispatch of movement assets and their effective use to support DTS movement missions.

e. Cargo Transshipping/Documentation Activities. Transshipment activities must be able to identify inbound shipments and plan for their quick, onward movement; document cargo for onward movement utilizing prepositioned electronic data and AIT capability; redirect frustrated cargo; expedite shipments; and report on the status of shipments in transit. The current suite of information management systems available for transshipment activities does not support these actions without extensive man-machine

interface. This shortfall expands the amount of time needed to process transshipment documentation and lengthens the time shipments remain at transshipment facilities. There is a need for a common DOD transshipping software application that supports all intermodal activity at transshipment points, whether airports, seaports, barge, terminals, railheads, truck hub-and-spoke terminals, or consolidation activities.

(1) In summary, DTS is handicapped by long-standing problems that begin at the unit/installation level. DOD's mobility challenges in the world's new operating environment require integrated, flexible, effective, efficient, and responsive structures and processes. Customers are increasingly critical of the DTS's ability to provide reliable, cost-effective transportation services in comparison to the commercial sector; they will not tolerate unnecessary overhead, excessive layering, and duplication of effort. The DTS must use "best-business" practices and strive to continually improve service to its customers. One key ingredient in realizing this much-needed improvement is through the fielding of TC-AIMS II.

(2) DOD Component systems will continue to be stove-piped at the unit/installation level and will not support joint or composite operations which support national strategies. System maintenance costs will continue to be high and the cost of upgrading the individual systems may exceed available budgeted amounts. Current ITV/TAV initiatives will be compromised and operational unit movement data will not be available to strategic planners without a great deal of collection effort.

5. HSI GOALS AND CONSTRAINTS

5.1 **Goals.** The goals to be achieved for each HSI domain are outlined in the following paragraphs.

5.1.1 **Manpower.** Manpower refers to the human resource requirements and authorizations (military and civilian spaces) needed for the operation, maintenance, and support of each item of the system. Manpower goals are:

- a. Current personnel, military and DOD civilian (target audience) must be able to perform the required mission using the acquired hardware, software, communication, and associated equipment.
- b. No increase in military or DOD civilian manpower will be required for the operation of TC-AIMS II equipment. An over all increase in manpower is not planned at sites where TC-AIMS II will be maintained.

5.1.2 **Personnel.** Personnel Domain is the domain concerned with the quality and qualifications of individuals who will operate TC-AIMS II. The personnel domain is specifically concerned with skills, abilities, aptitude and knowledge, physical and

psychomotor characteristics, distribution of quality and quantities, grade structure and Military Occupational Specialties (MOS) information. Personnel goals are:

- a. TC-AIMS II shall be designed to meet the capabilities and limitations of the target personnel.
- b. Software and hardware maintenance tasks will not exceed present user capability or skill level.
- c. No new MOS or civilian job series shall be created.
- d. Security clearance is not currently required to operate the TC-AIMS II system. However, the security requirements are the responsibility of the using organization.

5.1.3 Training. Training refers to the instruction or education, and-on-the-job or unit training required to provide personnel their essential job skills, knowledge and attitudes. TC-AIMS II training goals are:

- a. Provide training materials that adequately train system tasks to operators, maintainers and system administrators without increasing manpower, personnel or training requirements.
- b. Develop training manuals and system screens to the RGL of the target audience.
- c. Identify critical training tasks for each category of users.
- d. Ensure training measures are in place to prevent skill erosion, i.e., having to retrain personnel, etc."

5.1.4 Human Factors Engineering. Human Factors Engineering (HFE) is defined as a comprehensive technical effort to integrate design criteria, psychological principles, and human capabilities and limitations as they relate to the design, development, test, and evaluation of systems. HFE objectives are:

- a. Ensures the system Conforms to applicable human engineering design criteria and principles for the design, development, and integration of system hardware and software.
- b. Conduct a human following the appropriate program, following the appropriate portions the military handbook to ensure that the human-to-computer hardware and software interfaces:

(1) Do not exceed the physical and cognitive abilities of the target audience user, operator, or maintainer.

(2) Are selected and designed based upon appropriate task, function, and work load analyses.

(3) Can be used in the intended operational environments associated with peacetime, mobilization, and war operations.

c. Ensure human engineering principles are used as a key element in the criteria and trade-offs regarding the selection and evaluation of NDI and COTS hardware and software.

5.1.5 System Safety. System Safety is defined as the application of engineering and management principles, criteria, and techniques to optimize safety within the constraints of operational effectiveness and time throughout all phases of the system. Additional information is available in MIL-STD-882B (System Safety Program Requirements). System safety objectives are to:

a. Identify any unique safety features, restrictions, and special procedures applicable to the system for potential injury-causing defects. Technical publications shall contain warnings, cautions, and proper procedures for safe use of the system.

b. Utilize system safety programs during design, installation, and integration of the system.

c. Ensure, through the application of the principles of system safety engineering, the elimination or development of countermeasures for those hazards associated with:

- Electrical/shock hazards
- Unsafe cabling or wiring
- Laser hazards
- Vision hazards
- Noise hazards
- Blunt and sharp objects
- Thermal hazard

d. Ensure that NDI/COTS systems meet current military and commercial safety design criteria.

e. Ensure, through the application of the principles of system safety engineering, the elimination or development of countermeasures for those hazards identified during the design of the system. Those hazards that are not eliminated will be treated as residual hazards, to be classified and processed in accordance with the requirements of MIL-STD-882B (System Safety Program Requirements). If applicable,

those residual hazards will be included in the system's training programs and technical publications.

5.1.6 Health Hazard. A health hazard is defined as any existing or likely condition, inherent in the operation or use of equipment which can cause death, injury, acute or chronic illness, disability, or reduced job performance of personnel. There shall be no uncontrolled potential health hazards associated with the TC-AIMS II system, and will not require a formal Health Hazard Assessment Report.

5.1.7 Soldier Survivability (SSv)

- a. The TC-AIMS II system shall not increase the vulnerability of operating personnel to the expected battlefield threats.
- b. The TC-AIMS II system shall not be uniquely identifiable through electromagnetic emissions or signatures.
- c. The TC-AIMS II system shall be operable by personnel in MOPP IV.
- d. The TC-AIMS II system shall be designed, to the extent possible, to reduce operator mental fatigue and cognitive stress.

5.1.8 Other goals.

- a. Integrate HSI completely into the acquisition of the system including its support structure.
- b. Identify early in the development cycle those HSI analyses, tests and evaluations whose results are critical to anticipated system performance.
- c. Assure that proposed hardware and software technologies are as mature as possible with respect to HSI issues.
- d. Maintain continuous HSI considerations in program level trade-offs and decisions through integration and review meetings.
- e. Monitor, review, and resolve Human Computer Interface (HCI) issues addressed through the PVCS TRACKER system.
- f. Monitor, evaluate, and participate in the MANPRINT testing events as noted in the TEMP.

5.2 Constraints.

Required workforce at all levels are trained and prepared to receive and operate the software and hardware.

5.2.1 Common Operating Environment (COE). TC-AIMS II must comply with GCSS and DII COE for information management systems. These standards are most critical for clients who use the system in the battlefield environment where system interoperability is a crucial success factor. The system must comply with the MANPRINT standard and must be transportable for use while deploying, in garrison, and on the battlefield.

5.2.2 Communications. TC-AIMS II will be operated around the globe in areas where communications infrastructure is completely developed and reliable and in other areas where the communications infrastructure is non-existent. In either environment, TC-AIMS II information management capabilities will be necessary to support the deployment, sustainment, redeployment/retrograde, and employment of forces. TC-AIMS II communications design must support a wide range of options, including commercial telephone services, wireless communications, local area networks, wide area networks, the Warfighter Information Network (WIN), Defense Information System Network (DISN), tactical Mobile Subscriber Equipment (MSE), cellular communications, and satellite communications. The type of communications being employed must be transparent to the functional system user, i.e., there should be no technical knowledge burden placed on the user who is required to send/receive information.

5.2.3 Power. When provided to deploying/deployed forces, TC-AIMS II hardware must be capable of operating in both field and garrison conditions using commercial power sources, mobile generator power, vehicle (battery) power, or computer battery power.

5.2.4 Joint Usage. TC-AIMS II software design must permit service-unique capabilities. While the system should be operated similarly by all Services, the importance of data elements, process or process structures to one Service should not be set aside because the same requirement does not exist across all Services.

5.2.5 Geographic Information Systems (GIS). In situations where TC-AIMS II will use map databases to support applications, the TC-AIMS II design will permit use of the standard GIS selected for C2 systems.

5.2.6 Interface to Command and Control Systems. TC-AIMS II must provide for information exchange with service-unique C2 and joint C2 systems.

5.2.7 Documentation Formats. TC-AIMS II input and output documentation, transmissions, and input screens will comply with standards established in Standard NATO Agreements (STANAG), Joint US Message Text Formats (USMTF), American National Standards Institute (ANSI), Electronic Data Interchange (EDI) formats, MILSTAMP (DOD Reg 4500.32R), and radio-frequency (RF) tag formats.

5.2.8 MILSTAMP. TC-AIMS II functional processes will comply with shipping, transshipping, and receiving procedures documented in DOD 4500.32R, Military Standard Transportation and Movement Procedures (MILSTAMP), and the Defense Transportation regulation, DOD 4500.9-R (DTR).

5.2.9 Source Data Automation. TC-AIMS II will use DOD-approved source data automation. This includes the suite of AIT devices approved by DOD such as radio frequency tags, LOGMARS (3 of 9 and 2D) labels, optical laser cards, soldier data cards, and other methods established as DOD standards. The TC-AIMS II hardware suite must include the peripheral devices, which will read these source data automation devices and write or change the information on the device.

5.2.10 Information Access. Information in the TC-AIMS II is not classified. When tactical communications networks support TC-AIMS II, the use of end-to-end encryption technologies is required.

5.2.11 Deployment Phases. The TC-AIMS II will be used to support information activities for both the supporting CINC and supported CINC and their Service components. These activities include: pre-deployment planning actions, movement to local assembly areas, movement to POE, load planning for strategic lift, reception at POD, and onward movement from POD. In addition, TC-AIMS II must support sustainment, retrograde movement of unit equipment, and redeployment of forces to home stations.

5.2.12 Source Data from Service-unique Systems. TC-AIMS II will draw deployment-related information from service-unique systems. This data may include personnel identification, equipment lists, funding information, and movement status.

5.2.13 Multimedia Training. The TC-AIMS II will include a multimedia-training package via CD-ROM. The ability to load on the individual PC provides a form of embedded training.

5.2.14 Mode Asset Tracking Interface. When used in support of Vehicle Asset managers and operators, TC-AIMS II will include an interface to onboard the vehicle data communication and tracking devices. This will permit the managers/operators to identify vehicle locations and communicate with the drivers under their command.

5.2.15 Reserve Components. TC-AIMS II will be used by the Reserve Components of all Services to support pre-deployment planning activities, movement to home station, movement to mobilization station and similar activities associated with demobilization-related movements.

5.2.16 Service Depots and Defense Depots. TC-AIMS II will interface with and be used by transportation activities at Service depots and Defense depots to process inbound and outbound freight shipments.

5.2.17 Non-unit Personnel Movements. TC-AIMS II will support the scheduling and documentation requirements for movement of non-unit personnel on commercial and military assets.

5.2.18 Task Force Organizations. TC-AIMS II software design will permit Service units to easily task and organize into a deployable force through cross-leveling of equipment, personnel, and consumable stocks. A joint task organization among the Services will also be supported. The task organization should include provisions for deploying civilian personnel, DOD personnel and equipment in TDA units, non-DOD personnel/equipment, and foreign nationals.

5.2.19 Cross-Service Compatibility. TC-AIMS II system design should permit system operation by any Service personnel on workstations provided by other Services, i.e., USAF personnel deploying from a forward base to home station should be able to use TC-AIMS II workstations at US Army-controlled facilities/assembly areas to support deployment processing, also meeting the DISA open-system architecture and GCSS COE compliance.

5.2.20 Interfaces. TC-AIMS II will interface with service-unique systems and DOD systems to support TAV and ITV objectives for shipments in the DTS. TC-AIMS II will interface to serve unique systems for shipment planning, shipment receiving and financial accounting.

5.2.21 Data Standardization. All data elements transmitted and received by the system or provided through remote access to other systems must comply with DOD standards.

5.3 **Deficiencies and/or Lessons Learned by Domain**

5.3.1 Manpower

Predecessor systems can be characterized to varying degrees by the following deficiencies in the HSI manpower domain:

- a. User needs were not met, thus invalidating manpower savings estimates.
- b. Progress in reducing manpower requirements was not demonstrated until late in system development, thus revealing systems that were significantly off target at a stage where they were increasingly difficult to correct.
- c. Systems continued to rely on operator-intensive tasks, thus automating manual processes, rather than reducing task requirements through system design with resultant potential manpower saving or productivity increases.

5.3.2 Personnel

Predecessor systems can be characterized to varying degrees by the following deficiencies in the HSI personnel domain:

- a. Time from the current system's conception to fielding was too long, resulting in multiple changes due to new technology and trained personnel turnover.
- b. System requirements were often poorly understood, developed, and communicated from and to the user.

5.3.3 Training

Predecessor systems can be characterized to varying degrees by the following deficiencies in the HSI training domain:

- a. User needs was not fully met by the systems training programs, thus invalidating training savings estimates.
- b. Progress in reducing training requirements was often not demonstrated until late in systems development.
- c. Training often relied on instructor-intense, centralized approaches, resulting in high delivery costs, and imposing travel and travel-time financial and opportunity costs on the customer.
- d. User validation was often postponed until later training development stages or after initial system fielding.
- e. Redundant training development activities were often performed.
- f. Excessive training documentation was often required and produced, but which did not facilitate improved communication or support for user or maintenance personnel.

5.3.4 HFE

Predecessor systems can be characterized to varying degrees by the following deficiencies in the HSI HFE domain:

- a. User testing was often postponed until later development stages or after initial fielding.
- b. Application software was not always user-friendly, standardized, or easy and inexpensive to maintain.

c. Little or no consideration was made to accommodate female maintenance staff's limitations for lifting and carrying hardware configurations items or for reasonable accommodation and adaptive technologies for system use by handicapped personnel.

5.3.5 Safety

Predecessor systems can be characterized to varying degrees by the following deficiencies in the HSI safety domain:

- a. System safety requirements were often poorly articulated.
- b. System Safety Program management was often not conducted in concert with HSI management.
- c. System safety hazard risks were often inadequately mitigated, and residual risk hazards were often inadequately surveyed, logged, and disseminated through cautions and warnings.
- d. No integration responsibilities were assigned for total system environmental safety risk elimination or avoidance, often resulting in unsafe work environment despite safety-certified equipment.

5.3.6 Health Hazards

Predecessor systems can be characterized to varying degrees by the following deficiencies in the HSI health hazards domain:

- a. Health hazards requirements were often poorly articulated.
- b. Health hazards management was often not conducted in concert with HSI and System Safety Program management.
- c. Health hazard risks were often inadequately mitigated, and residual risk hazards were often inadequately surveyed, offered, and disseminated through cautions and warnings.
- d. No integration responsibilities were assigned for total system environmental health hazard risk elimination or avoidance, often resulting in potentially health-hazard-producing work environments despite screening of system hardware and peripheral support equipment.

5.3.7 Soldier Survivability (User). Predecessor systems can not be characterized at the current time for deficiencies in the HSI soldier survivability (user) domain because to its recent inclusion and lack of comparative data.

6. HSI ISSUES

6.1 Addressing Issues. The initial HSIWG meeting was held on 15 January 1998, at PEO STAMIS/JPMO. The purpose was to introduce Service representatives to the TC-AIMS II HSI program and the HSI Plan (HSIP). Each Service has an opportunity to address their services issues and concerns. As a result of this meeting the HSIWG will agree on the HSI issues shown at Annex D.

6.2 Issue Analysis. Each issue identified by the Services will have an HSI issue worksheet prepared and provided at Annex D. This worksheet will be the vehicle used to track each issue to its resolution.

6.3 Human Systems Integration Execution. The JPMO TC-AIMS II HSI program will be supported by an HSIWG, which is composed of representative members from each service and chaired by JPMO TC-AIMS II or his representative. The HSIWG meetings are held at the discretion of the chair (JPMO) to review the HSI program and address issues and concerns. The DRAFT HSIWG Charter is provided at Annex G. The charter will be reviewed and approved by the HSIWG members and JPMO TC-AIMS II and will be signed by all service representatives. The HSI Milestone Schedule is provided see Annex F.

7. **HSI EXECUTION.** This section is not applicable. The current approved TC-AIMS II program schedule may be found on the TC-AIMS II website at www.tis.army.mil.

Annex A - Coordination Listing

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Annex B - HSI Documentation Status

The following HSI related documentation is in progress or on going

Safety Suitability for Release
Health Hazard Assessment
System Training Plan
Human System Integration Working Group Charter
Test and Evaluation Master Plan (TEMP)
Supportability Strategy

Human Factors Engineering Analysis Reports (noted below), per U.S. Total Army Personnel Command (PERSCOM), letter dated 2 November 1993, in answer to HSI Action Item #005, are not currently required for MAISRC systems, request for reports will be submitted if deemed necessary.

Manpower, Personnel and Training Domain Report
MANPRINT Assessment
Human Factors Engineering Assessment

Annex C – References

The following list of potential HSI Data Sources is annotated pursuant to the requirements of the Services. The letter annotations next to each entry represent the HSI Domains as follows:

SS:	Safety
HFE:	Human Factors Engineering
HH:	Health Hazards
MP:	Manpower
PERS:	Personnel
TNG:	Training
SSv:	Soldier Survivability
A:	All HSI Domains

This annotated listing forms the cornerstone for all HSI analysis and planning:

<u>Document Title</u>	<u>Domain</u>
DOD Directive 5000.51, Total Quality Management Guidance for Implementation	A
DOD-HDBK-761, Human Engineering Guidelines for Management Information Systems	A
AR 602-1, Human Factors Engineering Program	HFE
AR 602-2, Manpower and Personnel Integration (MANPRINT) in the Materiel Acquisition Process, 9 April 1990, W/IC 13 May 94	A/SSv
AR 385-16, System Safety Engineering and Management	SS
MIL-STD-882B, System Safety Program Requirements, 20 March 1984	SS
DA PAM 385-16, System Safety Engineering and Management, 4 September 1987	SS
CECOM Suppl 1 to AR 385-16, System Safety Engineering and Management,	SS

10 February 1988, and change 1, 16

DA PAM 73-XX (Vol 6), Test and Evaluation Procedures and Guidelines (Software Test and Evaluation Guidelines)	HFE, TNG
MIL-H-46855B, Human Engineering Requirements for Military Systems, Equipment and Facilities	HFE
MIL-STD-454, General Design Requirements for Sys/Equip	A
MIL-STD-470, Maintainability Program for Sys/Equip	HFE, MP, TNG, SS
MIL-STD-721, Definitions of Effectiveness Terms for Reliability, Maintainability, Human Factors, and Safety	HFE, SS, HH
MIL-STD-785, Reliability Program for Systems and Equipment	HFE
MIL-STD-882B, System Safety Program Requirements	HFE, HH, SS
MIL-STD-1472D, Human Engineering Design Criteria for Military Systems, Equipment, and Facilities	A
MIL-STD-2155, Failure Reporting, Analysis, and Corrective Action System	HFE
OTEA Memo 73-1, Operational Test and Evaluation Methodology and Procedure Guide, 1 May 1990	HFE, TNG
OTEA Handbook for the Evaluation of User-Friendly or User-System Interfaces, 6 September 1989	HFE, TNG
AFTOECP 800-2 (Vol 4), Software Usability Evaluator's Guide,	A

The following provides a listing of TC-AIMS II contract referenced documentation for Design, Development and System Standards:

DOD-STD-2167A System Software Development
DOD-STD-1467 Software Support Environment
DOD-STD-7935A AIS Documentation
DOD 5200.28-STD Trusted Computer System Evaluation Criteria
MIL-STD-1815A Ada Programming Language
MIL-STD-1781 Simple Mail Transfer Protocol (SMTP)
MIL-STD-CITIS Contractor Integrated Technical Information Service
FIPS PUB 146 GOSIP Communications Protocols
FIPS PUB 127 Data Base Structured Query
FIPS PUB 151 POSIX Operating System

The following are document titles for Data Format and Exchange Standards:

MIL-STD-1840 Data Interchange, File Management

MIL-D-28000 CAD, Vector Graphics (IGES)
Engineering Drawings
TM Illustrations
Electronics
Numerical Control
MIL-R-28002 Scanned Images
Consultative Committee on International
Telegraphy and Telephone [(CCITT) Group 4 RASTER]

MIL-D-28003 Vector Graphics (CGM)
TM Illustrations (Preferred)

MIL-D-28004 Product Data Exchange Specification (PDES)

MIL-HDBK-59, CALS Implementation Guide

The following are other reference documents:

TMFD Joint Service Technical Manual Functional Description, December 91

TC-AIMS II Mission Need Statement, 5 August 1997

TC-AIMS II Operational Requirements Document, 25 March 1999

TC-AIMS II Acquisition Strategy, 1 September 2003

TC-AIMS II Project Management Charter, draft 24 June 1997

TC-AIMS II Cost Analysis Requirements Description, draft 3 April 2000

TC-AIMS II Concept of Operations, Functional and Technical, draft 30 August 1996

TC-AIMS II Software Development Plan, 14 February 2000

TC-AIMS II Information System Design Plan, 3 November 1999

TC-AIMS II Configuration Management Plan, 19 January 2000

DOD 5200.28, Security Requirements for Automated Information Systems, 21 March 88

MIL-STD-1840, Automated Interchange of Technical Information

AR 380-19, Information Systems Security, August 1998

The following are data sources:

TC-AIMS II Security Plan

TC-AIMS II System Segment Specification

TC-AIMS II Telecommunication Segment Specification Software Requirements Specifications

TC-AIMS II Interface Control Document

TC-AIMS II DBMS Specification

TC-AIMS II System Segment Design Document

TC-AIMS II Interface Design Document

TC-AIMS II Hardware Architecture Configuration Document

TC-AIMS II Software Test Plan

TC-AIMS II System Test Plan

TC-AIMS II Statement of Work

Annex D - HSI Issues Worksheets

A separate issue worksheet has been prepared for each item identified.

HSI ISSUE WORKSHEET

ISSUE# SS001	ISSUE TITLE: System Design
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Does the system design provide a work environment that permits efficient, reliable and safe operation and maintenance?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP_____ PERS_____ TNG_____ HFE_____ HH_____ SS_X_Ssv_____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI SSUE WORKSHEET

ISSUE# SS002	ISSUE TITLE: Emergency and Warning Devices
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Can emergency and warning devices adequately catch the attention of the operator?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG____ HFE____ HH____ SS <input checked="" type="checkbox"/> SSv_____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# SS003	ISSUE TITLE: Design Features
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Is there any design features that may cause injury to the operators?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG____ HFE____ HH____ SS <u>X</u> ____ SSv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE :	

HSI ISSUE WORKSHEET

ISSUE#HH001	ISSUE TITLE: Emissions
STATUS:	Assessment waived
LAST UPDATE:	
STATEMENT OF ISSUE:	Are there any optical emissions?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG____ HFE____ HH_ <u>X</u> ____ SS____ SSv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE :	

HSI ISSUE WORKSHEET

ISSUE# HH002	ISSUE TITLE: Potential Hazards
STATUS:	Assessment waived
LAST UPDATE:	
STATEMENT OF ISSUE:	Are all potential health hazards identified and eliminated or reduced?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG____ HFE____ HH_X____ SS____ SSv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# MP001	ISSUE TITLE: Impacts on Grades, Series and Military Occupational Specialties
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	What are the impacts on the grade structures for civilian personnel grade, series and Military Occupational Specialties (MOS)?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP <input checked="" type="checkbox"/> PERS _____ TNG _____ HFE _____ HH _____ SS _____ SSv _____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# MP004	ISSUE TITLE: Determination of required Number of Personnel
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Has the number of personnel required as Technical Manual (TM) Functionality users and TC-AIMS II System support personnel been determined?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP__X_ PERS____ TNG____ HFE____ HH____ SS____ Ssv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# PERS001	ISSUE TITLE: Target Audience Identification
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Who is the Target Audience for all Services? (Military and Civilian Personnel)
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS__X__ TNG____ HFE____ HH____ SS____ Ssv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# PERS002	ISSUE TITLE: Reading Grade Level
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Is the system documentation written at a level that can be readily understood by the users?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS_X__ TNG____ HFE____ HH____ SS____ Ssv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# PERS003	ISSUE TITLE: Levels of Access
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	What levels of access are required for U.S. citizens and foreign nationals?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS_X___ TNG___ HFE___ HH___ SS___ SSv___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# PERS004	ISSUE TITLE: Security Clearance Requirements
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Are sufficient numbers of personnel with a security clearance available in each organization?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS_X__ TNG____ HFE____ HH____ SS____ SSV____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# PERS006	ISSUE TITLE: Quality of Skills
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Do TM Functionality users and TC-AIMS II System support personnel have adequate aptitudes and skills to perform system required tasks, with the required speed and accuracy?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS_X___ TNG___ HFE___ HH___ SS___ SSV___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# TNG001	ISSUE TITLE: Computer Literacy Requirement
STATUS:	Closed
LAST UPDATE:	
STATEMENT OF ISSUE:	Are user personnel required to be computer literate?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	JPMO TC-AIMS II
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG_X____ HFE____ HH____ SS____ Ssv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	TMFD, Par 2.5.4.4 Training
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	“Those students attending training must be “computer literate”, i.e. familiar with the use of personal computer/system hardware, software, video displays, and simple data entry techniques.”

HSI ISSUE WORKSHEET

ISSUE# TNG002	ISSUE TITLE: Embedded Training
STATUS:	Open
LAST UPDATE:	
STATEMENT OF ISSUE:	How effective is the multimedia training to the target audience?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	JPMO TC-AIMS II
REQUIREMENTS REFERENCE:	TRADOC Reg 350-70
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG__X___ HFE____ HH___ SS___ SSv_____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	JPMO TC-AIMS II Systems Approach to Training (SAT)
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	Multimedia training is not part of the current TC-AIMS II training strategy.

HSI ISSUE WORKSHEET

ISSUE# TNG003	ISSUE TITLE: Timing of Training
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Will Government and contractor personnel be able to be trained to complete all system related tasks within the time allotted?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG__X__ HFE____ HH____ SS____ SSV____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HIS ISSUE WORKSHEET

ISSUE# TNG004	ISSUE TITLE: Training Goals
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Have training objectives been specified in sufficient detail?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG__X__ HFE____ HH____ SS____ Ssv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# TNG005	ISSUE TITLE: Sustainment Training
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Have the requirements for sustainment training been identified?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP_____ PERS_____ TNG__X__ HFE_____ HH_____ SS_____ Ssv_____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# TNG006	ISSUE TITLE: Additional Training
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	What is the impact of TC-AIMS II on their being able to complete currently assigned duties?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG__X___ HFE____ HH___ SS___ Ssv___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# HFE001	ISSUE TITLE: Physical and Cognitive Abilities
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Do the TC-AIMS II design characteristics exceed cognitive abilities of the target audience?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG____ HFE__X____ HH____ SS____ SSv____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# HFE002	ISSUE TITLE: Navigational ability
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Do the software interfaces meet accepted human engineering practices for consistency of presentation, navigational ability, screen layout, operator feedback, and error messages?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG___ HFE_X___ HH___ SS___ SSv___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# HFE003	ISSUE TITLE: Help
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Does the system provide adequate help messages and instructions to aid the operator?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG___ HFE__X___ HH___ SS___ SSv___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# HFE004	ISSUE TITLE: Controls, Displays and Work Space
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Does the system have all necessary controls and displays to meet the needs of the operators and maintainers under all operating modes and in all operating environments?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG___ HFE__X___ HH___ SS___ SSv___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# HFE005	ISSUE TITLE: Impact of Operator Fatigue and Stress
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	How much will performance be degraded when system operators are fatigued or stressed?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG___ HFE__X___ HH___ SS___ SSv___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# HFE006	
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Are the business practices of each service easily translatable to usage of the functional screen?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG___ HFE__X___ HH___ SS___ SSv___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# SSv001	ISSUE TITLE: System Characteristics
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Is there a system characteristic which, if not remedied, could reasonably be expected to result in serious bodily injury or death to the operating personnel?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP___ PERS___ TNG___ HFE___ HH___ SS___ SSV_ X___
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# SSv002	ISSUE TITLE: System Characteristics
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Is there a system electromagnetic signature or emissions which uniquely identifies the TC-AIMS II system and could be exploited for targeting threat weapons against the system?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP _____ PERS _____ TNG _____ HFE _____ HH _____ SS _____ SSv <u>X</u> _____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# SSv003	ISSUE TITLE: System Characteristics
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	When deployed in an area where there is a high likelihood of a chemical and/or biological agent attack, can the operating personnel adequately perform the required functions while wearing full chemical protective clothing (i.e. MOPP IV)?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP____ PERS____ TNG____ HFE____ HH____ SS____ SSv__X__
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

HSI ISSUE WORKSHEET

ISSUE# SSv004	ISSUE TITLE: System Characteristics
STATUS:	
LAST UPDATE:	
STATEMENT OF ISSUE:	Can the operator of the TC-AIMS II perform the required functions for the required duration with a minimum of mental fatigue and/or cognitive stress?
SOURCE OF ISSUE AND DATE IDENTIFIED:	
RESPONSIBLE AGENCY:	
REQUIREMENTS REFERENCE:	
MANPRINT/HSI DOMAINS AFFECTED:	MP _____ PERS _____ TNG _____ HFE _____ HH _____ SS _____ SSv <u>X</u> _____
PROPOSED SOLUTION:	
SUBMITTING AGENCY/AGENCY POC:	
SOURCES OF INFORMATION:	
SCHEDULE OF INTERIM RESULTS AND/OR COMPLETED ACTION:	
OUTCOME/RESOLUTION OF CONCERN/ISSUE:	

Annex E – Test and Evaluation

The Human Factors Engineering test and evaluation approaches for the TC-AIMS II System are outlined as follows:

a. For Test and Evaluation, the TC-AIMS II System was installed at eight sites. These sites served as the basis for an operational assessment, HSI-related functions such as environment, health and hazard analysis, safety analysis, human factor's evaluations, manpower and personnel evaluation, and training. The operational environment of the TC-AIMS II users will continue to be assessed through the Site Survey Questionnaires (SSQs), initial site surveys, hardware NDI assessments, and previous lessons learned. The environment of the users will range from brick and mortar buildings to warehouse environments; from well-lighted, air-conditioned offices to open area desk space with office noise and traffic and variable lighting. The working environment will continue to be assessed by human factors engineers and will be completed as part of each site's final site survey. The initial assessment of user work areas did not identify any human factors, safety, or health hazards.

b. The HFE program effort will be tested as specified in the Human Engineering Test Plan (HETP), To Be Published. This plan describes the formal test program that will be performed to demonstrate that the TC-AIMS II System complies with all human engineering requirements. The human engineering data collected will be analyzed to ensure that the following criteria are satisfied. A detailed breakout of the testing criteria for each HSI domain is provided in the HETP.

(1) All human performance requirements for operations and maintenance (contractor maintenance at this time) can be performed to an acceptable level or standard under conditions of expected use.

(2) The human performance requirements for operations and maintenance (contractor maintenance at this time) are performed reliably by personnel who will ultimately perform them.

(3) Both the cost (in terms of all resources required) and some measure (based on human performance time and error data) of prospective effectiveness of the contractor's training program for operations and maintenance (no maintenance training required at this time) are known.

(4) The design of system hardware and software facilitates efficient, safe, and accurate human performance.

c. During the Initial Operational Test & Evaluation (IOT&E), HFE criteria will be tested as outlined in the Test and Evaluation Master Plan.

TC-AIMS II
Human Systems Integration Plan

Version 1.0
November 2003

Annex F
HSI Milestone Events Schedule

TASK	ACTION	DATE	AGENCY	COMMENTS
HSIP Development	Begin Preliminary Draft	24 Dec 97	JPMO/ILS Division	Prepared Draft HSI Charter and HSIP
HSIP Development	Internal Coordination of Draft	7 Jan 98	JPMO/ILS Division	Review prior to submission to Services
HSIP Development	Submit to Services	8 Jan 98	JPMO/ILS Division and Services	Review prior to HSIP WIPT
HSIP WIPT	Initial brief and discussions	14 Jan 98	JPMO/ILS Division and Services	Provided Services with HSI Charter and HSIP
ILS WIPT	HSI Review	12 Aug 98	JPMO/ILS Division and Services	Update HSI status and cost of domain assessments
Health Hazard Assessment	Reviewed TC-AIMS II Health Hazards	19 Nov 98	USAMC-SG	Provided a Waiver for Health Hazard Assessment
ILS WIPT	HSI Review	3 Dec 98	JPMO/ILS Division and Services	Waiting for cost estimates from domain reps
MANPRINT Meeting	Understanding Domains	17 Dec 98	JPMO/ILS Division and Domain Reps	Obtain understanding of domain requirements
HSIP Draft Development	Update HSIP	19 Mar 99	JPMO/ILS Division	Revised and Updated the HSIP
System Safety Assessment	Reviewed TC-AIMS II System Safety	8 June 99	CECOM	Provided a Waiver for the System Safety Assessment Report
MANPRINT Meeting	TC-AIMS II Overview for the Domains	17 June 99	JPMO/ILS Division and Domain Reps	Domain Reps provided preliminary assessments
HSIP Draft Development	Update HSIP	5 Oct 99	JPMO/ILS Division	Revised and Updated the HSIP
T&E/ILS WIPT	Discuss OT Requirements	13 Oct 99	JPMO/Services/ATEC/OTC/TRANSCOM	Update on CMB issues/direction
T&E/ILS WIPT	Discuss OT plans and program status	13 Dec 99	JPMO/Services/DPMO/CASCOM	ILS/Training/Fielding plans. HSI review
Preliminary HFE Assessment	Signed 2 Feb 00	Jan 00	ARL DHRED	Distributed to PM and Division Chiefs
MANPRINT Meeting	Discuss Army Assessment	20 Apr 00	JPMO/CASCOM/ARL	Analysis by Mr. Charity, CASCOM
Operational Assessment	OA at one of each Service sites	Aug 00	Ft Hood, Shaw AFB, Camp Lejeune, Gulfport	AEC/OTC/Services

Annex G

**HUMAN SYSTEMS INTEGRATION
WORKING GROUP (HSIWG) CHARTER
FOR
TRANSPORTATION COORDINATORS'
AUTOMATED INFORMATION FOR MOVEMENT SYSTEMS II
(TC-AIMS II)
1 November 2003**

SUBMITTED BY:

APPROVED BY:

Doug Garrell
Chief, Integrated Logistics Support Division
HSIWG Chairperson
TC-AIMS II, JPMO

Robert W. Morris
Project Manager
Transportation Information Systems

**HUMAN SYSTEMS INTEGRATION
WORKING GROUP (HSIWG) CHARTER
FOR
TRANSPORTATION COORDINATORS'
AUTOMATED INFORMATION FOR MOVEMENT SYSTEMS II
(TC-AIMS II)**

1. PURPOSE

This charter will establish a technically qualified Human Systems Integration Working Group to monitor, plan, manage, coordinate, and ensure that HSI issues and concerns are appropriately and adequately addressed during system design, development, and test.

2. SCOPE

The HSIWG will operate in accordance with TC-AIMS II, JPMO HSIWG charter and will ensure that all HSI domains (Manpower, Personnel, Training, System Safety, Health Hazards, Human Factors Engineering, and Soldier Survivability) are considered in the achievement of the overall objectives: to influence material and support system designs. This will ensure conformance with the capabilities and limitations of civilian and military personnel who will be required to operate and maintain the TC-AIMS II system. The HSIWG will monitor HSI goals and constraints and address all issues and concerns to confirm satisfactory resolution. The HSIP will be used as the vehicle to document HSIWG activities.

3. REFERENCES

- a. DOD Directive 5000.51, Total Quality Management Guidance for Implementation.
- b. DOD-HDBK-761, Human Engineering Guidelines for Management Information Systems.
- c. AR 602-1, Human Factors Engineering Program, 2 August 91.
- d. AR 602-2, Manpower and Personnel Integration in the Materiel Acquisition Process, 10 July 94.
- e. MEMORANDUM: MANPRINT Interim Procedures for Automated Information System, 2 August 1993.

f. Human Systems Integration Plan (HSIP), November 2003.

4. MANAGEMENT

The management and functional operation of the HSIWG is outlined below:

a. Membership

(1) Key members are appointed from the following organizations.

(a) TC-AIMS II, JPMO Management Office

(b) U.S. Total Army Personnel Command (PERSCOM)

(c) Training and Doctrine Command (TRADOC)

(d) Army Research Laboratory-Human Research and Engineering Directorate (ARL-HRED)

(e) Army Research Laboratory-Survivability and Lethality Directorate (ARL-SLAD)

(f) U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM)

(g) U.S. Army Test and Evaluation Command (ATEC)

(h) Contractors (if required)

(2) Members will be appointed from the principal program offices.

(3) Supporting organization members will be invited to attend meetings on an as-needed basis to provide technical expertise and support.

(4) TC-AIMS II, JPMO ILS representative will be the Chairperson for the HSIWG.

(5) Membership requirements for the HSIWG will be changed as the need arises to fulfill HSIWG program objectives.

(6) The System Safety Working Group (SSWG) meetings will be held as a subgroup of the HSIWG. Individual SSWG meetings will be held preceding safety reviews and at other times as required by TC-AIMS II, JPMO.

b. HSIWG meetings will be held at least twice a year and/or as deemed

necessary by the TC-AIMS II, JPMO Office. Key members, or a replacement, will attend all meetings. Supporting members will attend meetings as required at the invitation of the Chairperson.

c. Administration

(1) The HSIWG Chairperson will publish the agenda for scheduled meetings, normally two weeks prior to the meeting.

(2) Proposed agenda items may be submitted by any member of the HSIWG prior to agenda submittal by the Chairperson.

(3) Minutes will be prepared for each meeting. A summary of all actions, action agencies, representatives and suspense dates will be prepared prior to closure of the meeting. Formal minutes for each meeting will be prepared and distributed by the TC-AIMS II, JPMO office.

(4) All HSI issues and concerns received from any source along with recommendations for their resolution will be provided to TC-AIMS II, JPMO office for final disposition.

(5) All HSIWG members will assist in the resolutions of all HSI issues and concerns.

(6) All action items from previous HSIWG meetings will be reviewed to determine location or possession status. Any action items not resolved will be pursued to effect a successful closure. If deemed necessary by the HSIWG, Special Study Groups (SSG) or subcommittees will be established to investigate unresolved HSI issues.

(7) Recurring HSI element issues will be examined, monitored, reviewed, and evaluated for corrective action.

(8) The HSIWG will assign SSG and/or subcommittees to review and analyze critical issues and concerns relating to any of the HSI domains.

(9) This HSIWG charter will be reviewed at least annually and updated or modified as required to meet HSI goals and objectives.

(10) HSIWG members must have signature authority from their Services/agencies.

5. TERM

TC-AIMS II, JPMO HSIWG will remain active until retired by the TC-AIMS II, JPMO Office.

**TC-AIMS II
HSI WORKING GROUP
MEMBERSHIP ROSTER**

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TC-AIMS II
Human Systems Integration Plan

Version 1.0
November 2003

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HSIWG CHARTER
APPROVAL SHEET

SIGNATURE

D ATE

Program Manager

HSIWG Chairperson

US Army

US Air Force

US Marine Corps

US Navy

Army, G-1

Human Resources Command

TRADOC

ARL-HRED

ARL-SLAD

CHPPM

ATEC

PEO EIS

CASCOM

Army Safety Center
