U.S. Marine Corps

FUNCTIONAL MANAGER'S INFORMATION SYSTEMS (IS) HANDBOOK AND GLOSSARY

UNITED STATES MARINE CORPS
MARINE CORPS COMPUTER AND TELECOMMUNICATIONS ACTIVITY
QUANTICO, VIRGINIA 22134-5010

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        GLOSSARY

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1. <u>PURPOSE</u>. To support Functional Managers in the performance
of their duties with regard to Automated Information Systems
(AIS) projects. This Handbook is also intended to foster
coordination among Functional Managers as a way of countering the
ongoing fiscal constraints in Information Resource Management
(IRM) through the sharing of resources and efforts. Recognizing
that the position of Functional Manager is often an additional
duty and one that is frequently turned over, this handbook is
also an attempt to provide continuity of baseline policy.

2. <u>AUTHORITY</u>. These standards are published under the auspices
of reference (a). The contents of this publication are derived
from various documents residing within MCCTA. However, this
document is not all-encompassing nor singularly authoritative on
the subjects herein contained. It is intended as a reference
manual to provide the user a ready reference on selected matters
and activities with the sole purpose of introducing topics to the
reader.

3. <u>APPLICABILITY</u>. The guidance contained in this publication is
applicable to all Marine Corps personnel responsible for
Automated Information System (AIS) development. These standards
also apply to the Marine Corps Reserve.

4. <u>DISTRIBUTION</u>. This technical publication will be frequently
updated and distributed as indicated. Additional copies are
available from MCCTA. Local reproduction is encouraged.
Requests for changes in allowance should be submitted in
accordance with reference (b).

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5.   SCOPE

     a. Compliance. This is an information document that
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directives is addressed in the original document.

     b. Waivers. Not applicable.

6.   RECOMMENDATIONS. Recommendations concerning the contents of
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7.   SPONSOR. The sponsor of this technical publication is MCCTA.

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UNITED STATES MARINE CORPS

Information Resources Management (IRM)
Standards and Guidelines Program

<u>FUNCTIONAL MANAGER'S INFORMATION SYSTEMS (IS)</u>
<u>HANDBOOK AND GLOSSARY</u>
IRM-5230-03

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IRM-5230-03

PUBLICATION TABLE OF CONTENTS

APPENDICES

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FM'S HANDBOOK & GLOSSARY
IRM-5230-03

LIST OF FIGURES

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CHAPTER TABLE OF CONTENTS

Chapter 1

GENERAL

Chapter 1

GENERAL

1.1. <u>INTRODUCTION</u>. Functional Managers are frequently assigned a project, given appropriate funding, and directed to accomplish their mission without full understanding of the applicable directives. This handbook provides Functional Managers with a reference from which to initiate IRM support planning. It is intended to provide a brief overview of Marine Corps structure for IRM support and an initial overview of the references and appropriate orders which govern the business of developing AISs.

In addition to complying with the law, Life Cycle Management (LCM) is a common-sense approach to planning for the expenditure of public funds, with the intent of forcing key questions to the beginning of the planning process. LCM validates that a requirement exists, that systems are designed and implemented which meet those requirements, and that the systems are supportable once they are fielded.

1.1.1. <u>ORGANIZATION</u>. Chapter 1 provides an overview of the various IRM chains of command and Marine Corps IRM facilities. Responsibilities are delineated in Chapter 2. An simple overview of life cycle management is contained in Chapter 3. Department of Defense (DoD) activities are the subject of Chapter 4. And, finally, control mechanisms that influence IRM activities are discussed in Chapter 5. Areas of key importance are bolded and in upper case.

1.2. <u>COMMAND, CONTROL, COMMUNICATIONS, COMPUTER AND INTELLIGENCE (C4I) DEPARTMENT MISSION</u>. The Director, C4I is the senior IRM policy official and provides for the planning, directing, budgeting, and coordinating of staff activities relating to Automated Information Systems (AISs). The Director also chairs the Information Systems Steering Committee (ISSC), coordinates reviews conducted by the ISSC, and reviews Life Cycle Management (LCM) documentation for all AIS projects that require ISSC approval. The purpose of the documentation review is to guarantee compatibility with Marine Corps IRM plans and to ensure that new systems are properly fielded.

1.3. <u>MANAGEMENT FRAMEWORK</u>. The Marine Corps IRM framework is structured around <u>centralized</u> technical direction, policy formulation, acquisition, and oversight and <u>decentralized</u> data processing through a hierarchy of regional service centers. This framework fosters uniformity through standardization of hardware, systems software and application software. Functional areas are supported by common user hardware and system software. This framework also includes <u>centralized</u> development and maintenance of standard AISs, and <u>decentralized</u> processing of the AISs by regional service centers while in garrison or by various deployable IRM resources while in a deployed or combat environment. A formal AIS strategic planning process was

chartered in February 1985. The process results in promulgation of the Mid-Range Information Systems Plan (MRISP) and is directed at management oversight issues with participation by HQMC functional managers and major field commands. The process is integrated with the Planning, Programming and Budgeting System (PPBS) in that AISs not included in the MRISP will not receive favorable consideration in the POM. This process ensures that proposed AIS initiatives are cost effective, well planned and conform to established Marine Corps standards.

1.4. INTERNAL ORGANIZATION

1.4.1. Executive Steering Group (ESG). The ESG generally consists of the MajGen or LtGen representative of each functional area of the Headquarters and Marine Corps Combat Development Center (MCCDC). The ESG addresses issues, presented by the ISSC Chairperson, dealing with C4I matters and supporting information resources. Matters that are unresolved at the ISSC level will be forwarded to the ESG.

1.4.2. Information Systems Steering Committee (ISSC). The ISSC is the designated arm of the ESG which oversees IRM-related issues and was established by MCO 5271.3. The ISSC consists of a general officer grade representative of each member of the C4I ESG plus the Director, Administrative and Resource Management (AR) Division, Headquarters, U.S. Marine Corps. When attendance of the primary representative is jeopardized, a Colonel or civilian equivalent will be designated. The ISSC is chaired by the AC/S C4I. When issues directly concerning the FMF are discussed by the ISSC, major FMF commands (MARFORLANT/PAC) will be invited.

1.4.3. Information Systems Working Group (ISWG). Chaired by the ISSC secretary, the ISWG membership reflects the composition of the ISSC, usually with field grade officers. The ISWG performs necessary staff actions as required by the ISSC.

1.4.4. AIS Steering Groups. An AIS Steering Group is formally chartered by the project approval authority for AIS projects that impact more than one functional area. For those AIS development projects that will operate in the Fleet Marine Forces (FMF), the Steering Group includes representatives from MCCDC and the Marine Corps System Command (MARCORSYSCOM).

1.4.5. Assistant Chief of Staff, Command, Control, Communications, Computer and Intelligence (AC/S C4I) Department. The AC/S C4I is the senior Marine Corps IRM representative and provides for the planning, directing, budgeting and coordinating of staff activities relating to command and control systems, telecommunications, and AISs. In addition, the AC/S approves IRM and telecommunications standards and protocols for use within the Marine Corps, develops and promulgates IRM standards and guidelines, and chairs the ISSC. The following staff agencies assist the AC/S in the management of information resources:

a. <u>Resource Management Division</u>. This C4I Division provides personnel (Occupational Field Sponsor) and training support for the 02XX, 25XX and 40XX MOSs.

b. <u>C4I Systems Integration Division (Code CS) HQMC</u>. This Division integrates all C4I systems to include intelligence, air and ground, amphibious, space based and joint C4I systems. It is also responsible for systems security, the development of a comprehensive Marine Corps-wide C4I architecture, standards and integration oversight, C4I integration with the Navy's Space and Electronic Warfare (SEW) concept, as well as the tactical and supporting establishment (SE) communication integration IAW DoD CIM initiatives.

c. <u>Marine Corps Computer and Telecommunications Activity</u> <u>(MCCTA)</u>. The Director, MCCTA, is the next senior Marine Corps official for IRM matters and assists the AC/S, C4I Department in directing and coordinating such matters. Elements within MCCTA consist of the Computer and Telecommunications Division, MCCTA Operations Center, the Marine Corps Central Design and Programming Activity (MCCDPA) at Quantico, VA, the MCB Quantico Data Communication and Integration Division and the Force Automated Service Center (FASC). MCCTA is responsible for supporting life cycle management of AIS's and supporting establishment communications; is the focal point for DoD Corporate Information Management (CIM) initiatives; administers the Marine Corps Data Network (MCDN); manages MCCDC's information and telecommunications system; and maintains the Deployable Force Automated Service Center (DFASC) as a Marine Corps general support asset.

1.4.6. <u>Commanding General, Marine Corps Combat Development</u> <u>Command (MCCDC)</u>. The Commanding General, MCCDC is responsible for identifying and validating FMF AIS hardware and software requirements. Functional managers of other AISs will coordinate with MCCDC to determine what, if any, portion of their common user system is required in the FMF. In cases where only a portion of the AIS is applicable to the FMF, the functional manager will retain overall responsibility for the AIS development but will coordinate with MCCDC during its development.

1.4.7. <u>Commander, Marine Corps Systems Command (MARCORSYSCOM)</u>. The Commander, MARCORSYSCOM is responsible for acquisition of FMF Table of Equipment (T/E) AIS equipment, the configuration management and interoperability testing (per MCO 3093.1) of that equipment, and for the development of FMF-specific AISs, such as, Marine Tactical Command and Control System (MTACCS), Marine Corps Combat Readiness and Evaluation System (MCCRES), etc. In cases where only a portion of another functional manager's AIS is applicable to the FMF, that functional manager will retain overall responsibility for the AIS development but will coordinate with MARCORSYSCOM to determine FMF interoperability requirements. MARCORSYSCOM will inform the appropriate Functional Manager(s) of changes to T/E AIS equipment that may

necessitate the modification of system software.

1.5. EXTERNAL ORGANIZATION. The following agencies have only an indirect effect on Functional Managers.

1.5.1. Director of Defense Information (DDI). DDI develops and promulgates DoD information management policies, management processes, programs, and standards, and integrates the principles of information management into all the DoD's functional activities. This includes information technologies and architectures, software, systems development methods and tools, information technology and data standards, and automatic data processing equipment acquisition processes. The Director is the principle deputy assistant at the secretary level assigned with overall responsibility for CIM.

1.5.2. Director of Defense Information Systems Agency (DISA). DISA is responsible for providing technical support for the CIM programs by developing DoD-wide standards for information technologies and architectures, software, systems development methods and tools, data standards and automatic data processing equipment acquisition processes. DISA will coordinate DoD-wide data management methods, programs and procedures.

1.5.3. Information Technology Policy Board (ITPB). The ITPB, which is chaired by the DDI, includes the designated senior IRM officials of the Army, Navy, Air Force, the Defense Intelligence Agency, DISA, Defense Logistic Agency, the National Security Agency, the Director of Defense Research and Engineering and the Joint Chiefs of Staff. The ITPB determines the centralized (corporate) policy direction for DoD-wide information technology standards, for modeling support to architecture and system development, and defining standards and methods for managing data.

1.5.4. Deputy Assistant Secretary of Navy, Command, Control, Communications and Computer and Intelligence, Electronic Warfare and Space (DASN(C4I/EW/Space)). DASN(C4I/EW/Space) is the senior IRM official responsible for the planning, coordination and oversight of IRM, acquisition and life cycle management; program oversight; Paperwork Reduction Act Compliance; review and guidance of USN and USMC IRM plans; budget preparation and defense.

1.5.5. Naval Information Systems Management Center (NISMC). This center is responsible for implementing the DASN(C4I/EW/Space) policies throughout the Navy and Marine Corps. See Chapter 5 for further details.

1.6. MARINE CORPS REGIONAL PROCESSING ACTIVITIES AND DATA NETWORK. Data processing support is structured around centralized policy formulation, technical direction, and acquisition under C4I. This concept also includes centralized development and maintenance of standard AISs, and decentralized processing of AISs by regional service centers while in garrison.

1.6.1. <u>Garrison Support</u>. The concept of operation while in garrison is to provide data processing support through six regional service centers, a Force Automated Services Center (FASC) and 14 Remote Job Entry (RJE) facilities which provide access to the regional service centers at selected locations. These activities are interconnected by the Marine Corps Data Network (MCDN). See Figure 1-01.

    a. <u>Marine Corps Central Design and Programming Activities (MCCDPAs)</u>. The MCCDPAs are located in Quantico, Virginia and Albany, Georgia. MCCDPA Albany has been renamed the Information Resource Management Division (IRMD) and MCCDPA Kansas City, Missouri now belongs to DISA. The MCCDPA located in Quantico is under the operational control of the Director, MCCTA. IRMD Albany is under the operational control of the Commanding General, Marine Corps Logistics Base, Albany, Georgia. Quantico has the functional areas of finance, operations, training, intelligence and R&D and acts as sponsor for Marine Corps-wide system software support, providing detailed technical guidance, management, and control for those products. Quantico is also responsible for computer capacity planning and serves as the master node for the MCDN. Albany supports the logistics functional area and, in 1992, assumed system sponsorship for the MAGTF II LOG AIS family of systems. Kansas City supported the functional areas of manpower, disbursing and reserve affairs. MCCDPA Kansas City also provided software support development, maintenance and information management support through an inter-service support agreement to the Defense Finance and Accounting Service (DFAS). Since being capitalized by DISA and redesignated Central Design Activities (CDA), these missions have begun to change. Within these assigned functional areas, each CDA is responsible for the <u>design</u>, programming, testing, implementation, distribution, documentation, enhancement, configuration management, and maintenance of Marine Corps standard application software. This includes application software developed or maintained with contractor support.

FUNCTIONAL MANAGERS SHOULD NOT ASSUME THAT THEY MUST CONTRACT FOR NEW DEVELOPMENT.

SABRS and UCPS are examples of AISs developed "in-house" by Marines. The MCCDPAs also function as regional service centers and provide data processing support to designated organizations within their geographical area.

    b. <u>Regional Automated Service Centers (RASCs)</u>. The three major RASCs are located at Marine Corps Base (MCB), Camp Lejeune, North Carolina; MCB, Camp Pendleton, California; and Camp Kinser, Okinawa, Japan. The RASCs are under the operational control of the commanding general of the base or station where they are located. The RASCs are organized, staffed, and equipped to provide data processing support to both FMF and supporting establishment (SE) organizations within their designated or geographical areas. The primary responsibilities of the RASCs are to provide day-to-day processing support, monitor
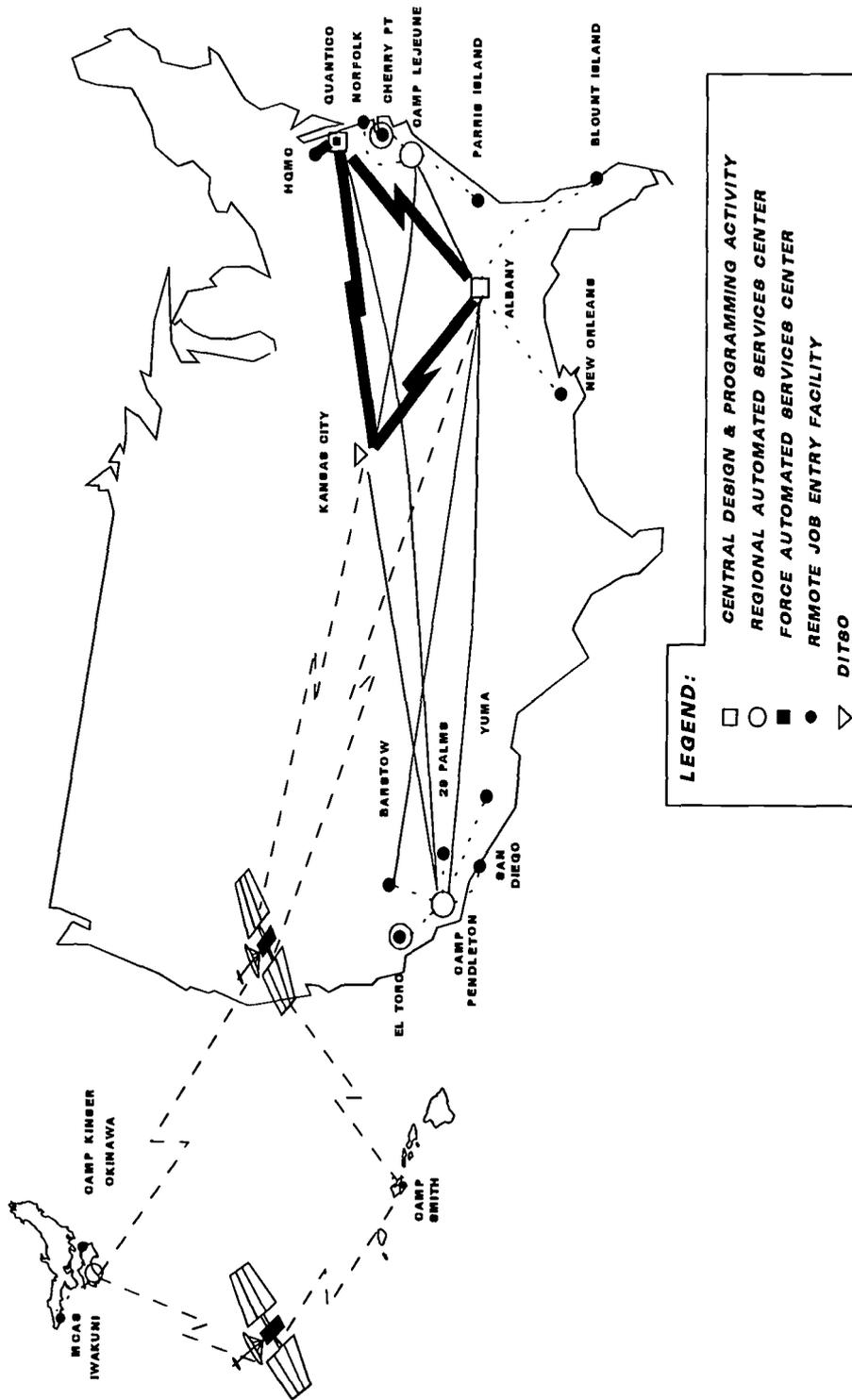
FIGURE 1-01
Marine Corps Data Network (MCDN)

telecommunication support to their users, develop local software applications, and provide technical assistance. There are two additional RASCs located at Marine Corps Air Station (MCAS), Cherry Point, North Carolina and MCAS, El Toro, California that provide primary data processing support only for naval aviation unique applications, and function as a RJE for all other applications. The 4th FASC is a Marine Corps general support asset which resides at MCCTA, Quantico, VA. It was deployed in Saudi Arabia during Desert Storm. The primary mission of the 4th FASC is to provide Class I AIS support to Marine air ground task forces at the MEF level or above for real world contingencies or exercises. Its secondary mission is to support Marine Corps ADP facilities at MCBs in the event of a catastrophic failure at one of those facilities.

c. <u>RJE Facilities</u>. The RJE facilities are under the operational control of the commanding general/officer of the base or station where they are located. Each facility is equipped with a medium-scale computer, a communications processor, line printers, and other peripheral equipment, which supports interactive terminals and microcomputer workstations. The primary functions of an RJE facility are to provide day-to-day AIS processing and programming support, and trouble-shooting services for interactive terminals, microcomputers, and local area networks at the supported activity or base.

1.6.2. <u>End User Computing and Local Area Networking (EUC/LAN)</u>. During the past few years, HQMC functional managers and various FMF and SE organizations have acquired a wide variety of stand-alone, mini, and microcomputer office automation equipment and LANs to provide dedicated support for functions such as training, personnel management, budgeting, and project management. About 20,000 microcomputers and more then 700 local area networks have also been installed throughout the Marine Corps. These LANs can also access the RASCs via MCDN. The functional manager is responsible for the training, operation and maintenance of stand-alone, mini, and microcomputers in support of a newly fielded AIS. The responsibility for LAN operation and maintenance also rests with the functional manager if the new AIS requires additional LAN support.

1.6.3. <u>Deployed Support</u>. To support deployed FMF units, the Marine Corps has fielded about 5000 ruggedized microcomputers as T/E equipment which provide data processing support down to the battalion/squadron and separate company level, three small deployable mainframe computer systems, one for each FSSG, and a larger deployable mainframe computer system for MEF-sized operations. Another 1100 ruggedized microcomputers are being procured to complete the T/E requirements.

a. <u>Fleet Marine Force-End User Computing Equipment (FMF-EUCE)</u>. The FMF-EUCE devices will be used to support developing AISs such as MIMMS. Under the FMF-EUCE program the Marine Corps (SYSCOM) acquired desk top and portable microcomputer systems with a selection of peripheral equipment

and software packages. The FMF-EUCE devices are deployable, TEMPEST accredited, and meet the same environmental specifications previously met by the ADPE-FMF devices. Ruggedization is limited primarily to the carrying case. The FMF-EUCE devices are deployed in four standard configurations and have been designated the AN/UYK-83 (286 desktop), AN/UYK-83A (386 desktop), AN/UYK-85 (286 luggable), and AN/UYK-85A (486 luggable). The AN/UYK-83A can be configured as a LAN server. For further information consult IRM-5230-01A. The Marine Corps Common Hardware Suite (MCHS) initiative, sponsored by SYSCOM, will likely replace the FMF-EUCE program commencing 1996.

b. Maintenance. The FMF-EUCE are unit T/E items and supported through normal supply channels. The training and MOS structure related to computer-based systems include FMF-EUCE and not, necessarily, commercial off the shelf (COTS) equipment.

THIS IS AN IMPORTANT POINT TO CONSIDER WHEN CHOOSING A TARGET HARDWARE PLATFORM OR NEW AISs.

c. Data Communications. The concept of employment calls for the establishment of data communication circuit paths from the combat service support area (CSSA) to MCDN from the onset of forces being deployed. The host in the CSSA may be a LAN server until replaced by a FASC (if required). Units within the CSSA can be connected via the LAN or individual terminal workstations for direct access to the FASC. For units without data communications with the host, data will be transferred via the most expeditious means available.

1.6.4. Marine Corps Data Network (MCDN). MCDN is a common-user, data communications network which provides terminal-to-terminal and computer-to-computer communications for all functional Marine Corps AISs for the SE and FMF units in garrison. See Figure 1-02. The MCDN architecture is based on IBM's System Network Architecture and uses communications processors as the major nodal elements in the network. Nodal points are the regional service centers and RJE facilities. The communications processors perform front-end processing for all host computers, switching/line control for all terminals, and other network communications functions. Connectivity between nodal points is provided by leased circuits. Terminals and other devices gain access to the MCDN primarily through dedicated circuits to the nearest nodal point. All terminals connected to the network can access any host computer in the network in an on-line, interactive mode. Local area networks connect individual microcomputers and mainframe computers at the regional service centers. End user computing equipment can provide access to the regional service centers and other LANs by connecting LANs to MCDN via the RJE facility's front end processor.

CHAPTER TABLE OF CONTENTS

Chapter 2

RESPONSIBILITIES

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Chapter 2

RESPONSIBILITIES

2.1. HQMC, C4I.

2.1.1. Assistant, Chief of Staff, C4I. The AC/S C4I (Code C4I) serves as the senior C4I proponent, the center of C4I policy, and overseer of standards and systems integration within the Marine Corps. This billet provides C4I leadership, education and vision to the Marine Corps; exercises direction for technical training and assignment of military and civilian IRM personnel; monitors internal C4I systems as well as all DoD, national and allied systems that impact on the Marine Corps C4I architecture, for both the FMF and SE, to ensure system integration and interoperability; discharges the duties as the Director of Intelligence as prescribed by Executive Order 12333; establishes data administration policies and standards. The C4I Department, through MCCTA, is responsible for the policies, standards, and procedures to establish, manage, and operate long haul and local area data networks. Figure 1-01 contains the C4I Organizational Chart.

2.1.2. Marine Corps Computer and Telecommunications Activity (MCCTA). MCCTA assists the AC/S C4I in directing and coordinating IRM matters by providing technical direction to Marine Corps IRM activities through the development of policies and standards and the designation or development of procedures and guidelines for developing, operating, and maintaining AISs; assessing current and projected IRM support requirements; coordinating the procurement, allocation, maintenance, inventory, budget, and management of computer and telecommunications hardware, software, facilities, and services required to develop, operate, and maintain Marine Corps AISs; managing the Marine Corps computer system architecture which includes compatibility of processors, peripherals, workstations, software, and telecommunications network facilities; developing the Marine Corps strategic AIS plan; coordinating technical support for major information technology procurement and determining (with SYSCOM and MCCDC) allocations for hardware, software, and services for all Marine Corps AISs; planning, designing, and administering MCDN; developing plans, policies, and procedures regarding computer and AIS security; and developing plans, policies, and procedures regarding data administration. Figure 2-01 contains the MCCTA Organizational Chart.

2.2. HEADQUARTERS FUNCTIONAL MANAGER.

2.2.1. General. Functional managers and users will be responsible for defining and validating their requirements, including determining current needs, forecasting future needs, validating those needs, establishing training plans, and providing funds to support IRM program initiatives. CG, MCCDC will be responsible for identifying and validating FMF AIS

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CTAW — WORLD WIDE SPT MOC

CTAS — PLANS & REVIEW

CTAR — PGMS & BUDGET

CTAE — TECH ASSESSMENT

CTAT — INFO TRANSFER

CDPD — CDPA QUANTICO

CTAC — COMM ELECT OFFICE

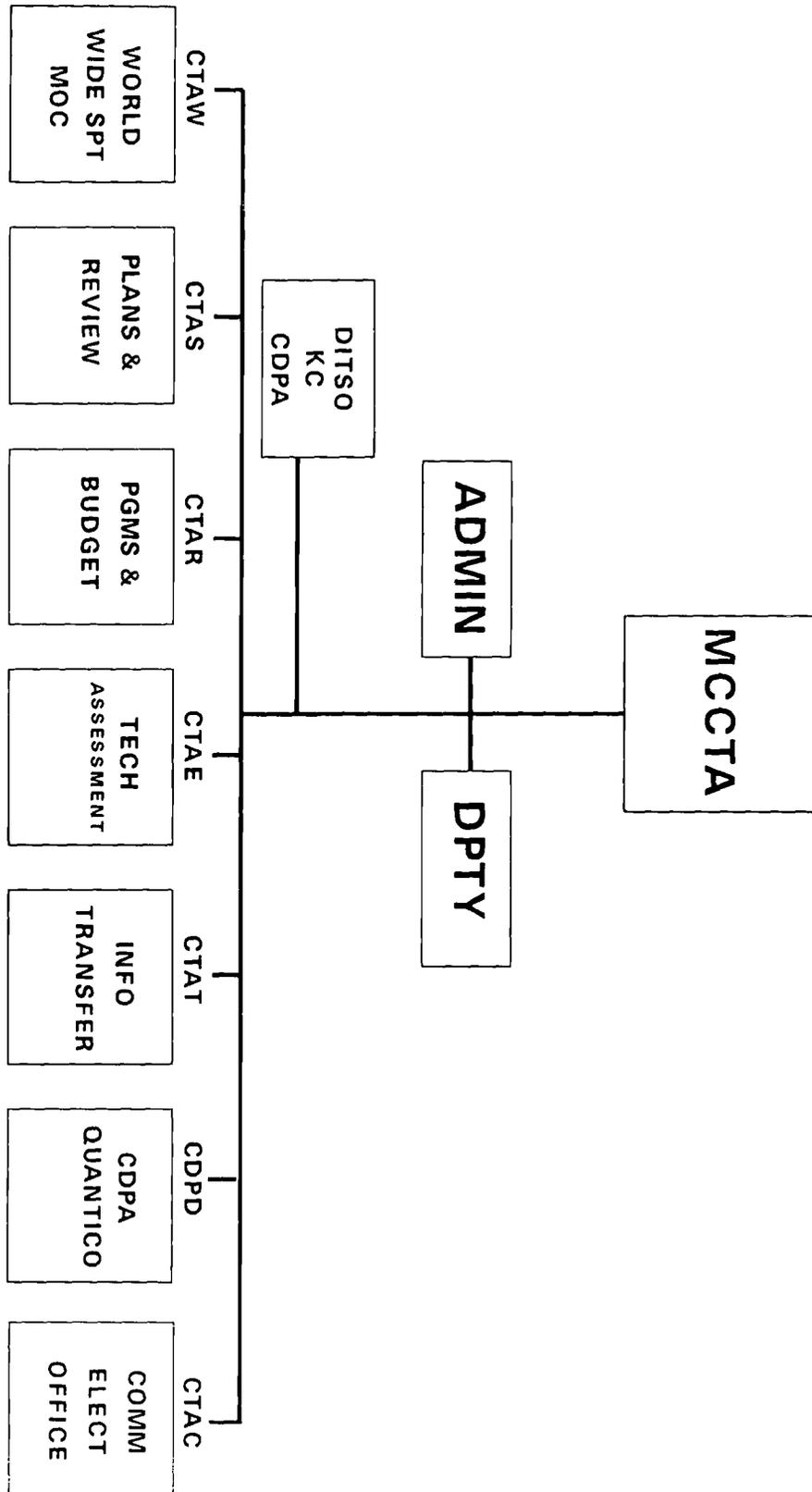FIGURE 2-01
MCCTA Organizational Chart

hardware and software requirements. The Commander, MARCORSYSCOM will be responsible for acquisition of FMF Table of Equipment (T/E) AIS equipment, the configuration management and interoperability testing (per MCO 3093.1) of that equipment, and for the development of FMF-specific AISs.

2.2.2. <u>Standards</u>. The responsibility for such things as proper LAN operation and maintenance rests with the functional manager or the local commanding general/officer. Functional managers and local commanders are responsible for complying with Marine Corps published standards to ensure interoperability with existing and future systems. IRM 5231-23 inventories the Marine Corps Standards for IRM.

2.2.3. <u>Deployability</u>. The functional manager must ensure that deployability requirements are given primary consideration throughout the development process.

SUPPORT OF THE FMF IN A DEPLOYED ENVIRONMENT IS THE KEY TO DETERMINING ACCEPTABILITY OF THE DESIGN AND APPROVAL FOR OPERATION.

2.3. <u>INFORMATION SYSTEMS STEERING COMMITTEE (ISSC)</u>.

2.3.1 <u>Charter</u>. The ISSC is chartered with the following responsibilities:

2.3.1.a. Coordinate the application and use of information systems consistent with overall Marine Corps objectives.

2.3.1.b. Resolve near-term conflicts among AISs competing for existing information resources.

2.3.1.c. Oversee the development of the Mid-Range Information Systems Plan (MRISP) per the procedures outlined for AIS Strategic Planning in MCO 5271.2A.

2.3.1.d. When warranted, provide specific recommendations and/or alternative courses of action concerning IRM issues to the ACMC Executive Steering Group.

2.3.1.e. Prioritize information resources Procurement Marine Corps (PMC) Program Objectives Memorandum (POM) initiatives, and reprogramming requests for information resources.

2.3.1.f. Review and approve all Class I and HQMC-sponsored Class II AIS projects at each milestone, in accordance with current LCM policy and guidance.

2.4. <u>INFORMATION SYSTEMS WORKING GROUP (ISWG)</u>. The ISWG responds to taskings from the ISSC. The ISWG generally provides administrative and coordination support to the ISSC.

2.5. <u>AIS STEERING GROUPS</u>. The AIS Steering Group is responsible for the functional review at each milestone, and for the overall

management of the system. The steering group is accountable to the CMC via the ISSC.

2.6. <u>INFORMATION SYSTEMS MANAGEMENT OFFICER (ISMO)</u>. The ISMO is the primary staff officer for information resource matters within an FMF or SE command.

2.6.1. <u>Functions</u>. The ISMO's functions include advising the commander and the staff on information technology matters; acting as command focal point on all matters pertaining to coordination of information technology requirements, objectives, concepts, plans, implementation procedures and policies, including establishing priorities with supporting and external data processing activities; exercising staff supervision of organic information resources; preparing IRM support estimates, operating and contingency plans, and ensuring that these plans are tested.

FM'S HANDBOOK & GLOSSARY
IRM-5230-03

CHAPTER TABLE OF CONTENTS

Chapter 3

LCM MADE EASY

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Chapter 3

LCM MADE EASY

3.1. **PURPOSE**. The purpose of this chapter is to provide a simplified guide to the Life Cycle Management (LCM) process. Detailed LCM guidance can be found in MCO P5231.1B.
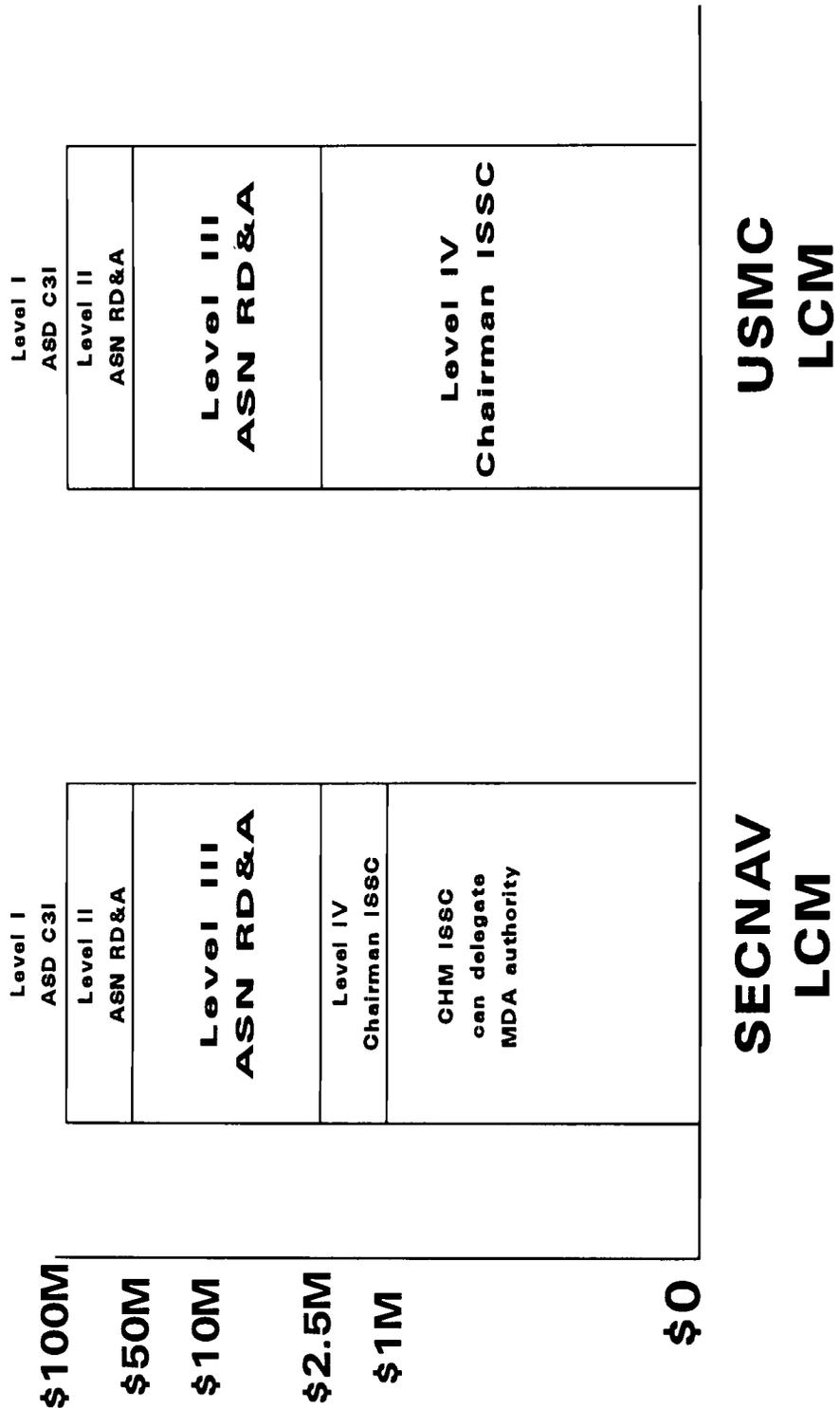
3.2 **AIS PLANNING**. Proper AIS planning will prevent fraud and waste of public funds and keep the Functional Manager from being relieved of duties. The IRM environment is too complex for a single manager to successfully navigate. Therefore, the LCM steps are a guide for proper coordination and planning. An AIS is a broad entity, combining information, computer, telecom- munications resources and other information technology and personnel resources which collects, records, processes, stores, communicates, retrieves and displays information. AIS projects vary in scope and diversity from simple, in-house projects, to complex, Marine Corps-wide environments. A single program manager will often be appointed to manage an overall effort and individual project managers will be appointed to manage each AIS project. The life cycle of each AIS project will be managed and budgeted for separately. Each will have its own set of LCM documentation. Categories of AIS projects can be found in MCO P5231.1B, paragraph 1002. Approval authority for an AIS project depends on the AIS type and project costs. (See Figure 3-01).

3.3 **LCM PHASES**. There are six LCM phases. Figure 3-02 depicts the LCM phases. They are described in detail in reference (c), paragraph 1003. The six phases are:

a. **Need Justification**. Perhaps the most critical step, the mission need is identified, validated and alternatives are explored. It begins when management becomes aware of a mission deficiency and ends with the approval of a Mission Needs Statement (MNS). See appendix E for a sample MNS. Approval of the MNS marks Milestone 0 of the LCM process. The requester is now authorized to proceed to the Concepts Development Phase and to expend resources for the activities of that phase.

b. **Concept Exploration and Definition**. This phase explores various alternatives for satisfying the mission need and defines the best program concept to satisfy that need. Concepts Development begins with the appointment of a project manager and ends with the approval of one or more workable alternatives for detailed evaluation. The approved document will either be an Abbreviated Systems Decision Paper (ASDP), see appendix F for sample, or a System Decision Paper (SDP), see appendix G for sample. MCO P5231.1B, paragraph 1003.7 explains when to use an ASDP or a SDP. Approval of one of these documents constitutes milestone I.

LCM THRESHOLDS

$100M	Level I ASD C3I		Level I ASD C3I
$50M	Level II ASN RD&A		Level II ASN RD&A
$10M	Level III ASN RD&A		Level III ASN RD&A
$2.5M	Level IV Chairman ISSC		Level IV Chairman ISSC
$1M	CHM ISSC can delegate MDA authority		
$0			

SECNAV LCM

SECNAVINST 5231.1C

USMC LCM

MCO 5231.1B

FIGURE 3-01
Milestone Decision Approval Thresholds

c. Demonstration and Validation. The objective of this phase is to complete the AIS technical specifications and validate the selected system design. This phase begins at Milestone I after approval of the AIS program concept and is completed upon approval of SDP II. Approval of SDP II constitutes milestone II.

LCM Process

LCM Phases

MNS Phase	Phase 0	Phase I	Phase II	Phase III	Phase IV
Need Justification	Concept Exploration and Definition	Demonstration and Validation	Development	Production and Deployment	Operations and Support

0	I	II	III	IV
Concept Studies Decision

Is the mission need valid and supported by a functional analysis? | Concept Demonstration Decision

How best can the system be done? | Development Decision

Is program adequate to accomplish the Mission? | Production Decision

Is program ready for Production? | Major Modification Decision

How should the program evolve? |

LCM Milestones
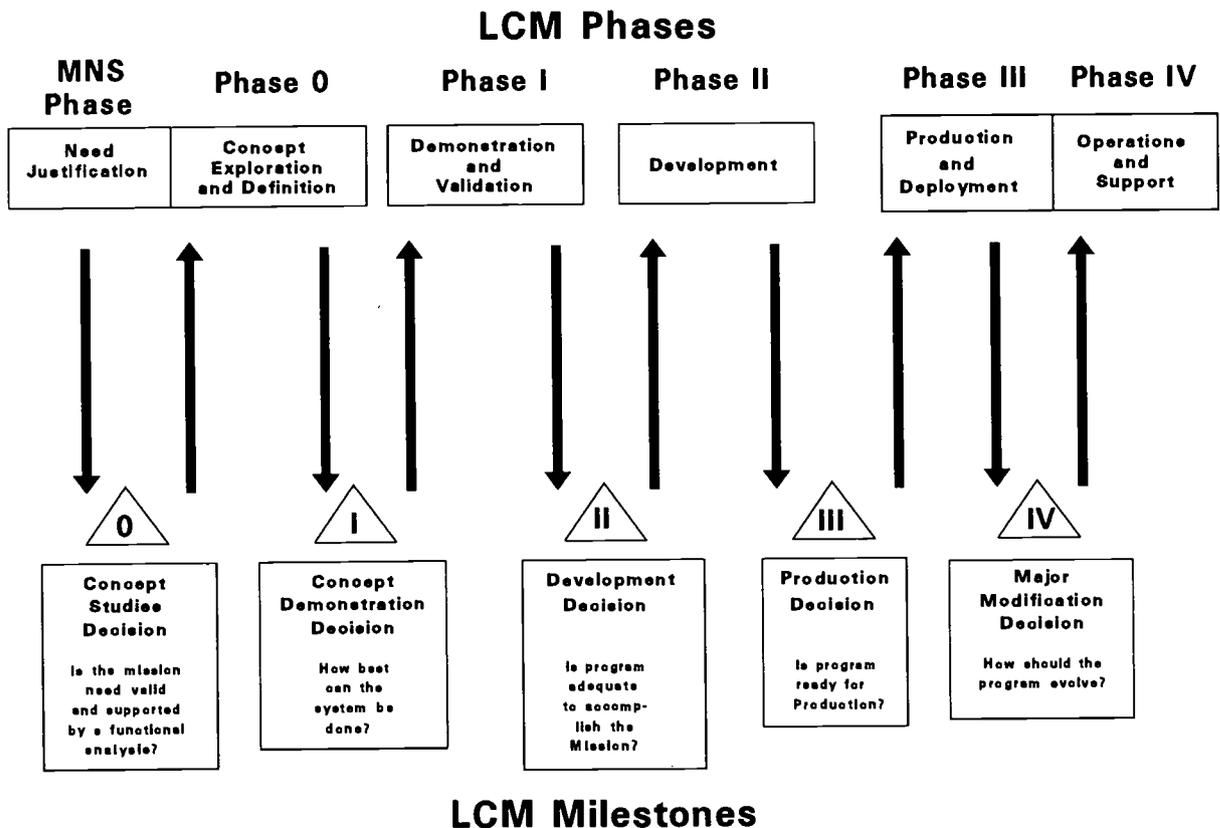
FIGURE 3-02
Life Cycle Management Phases and Milestones

d. Development. The purposes of this phase are to develop, integrate, test, and evaluate the AIS. This phase is completed when the functional manager certifies that the AIS satisfies the mission need, and approval to implement the AIS is granted in SDP III. Approval to implement the AIS shall also include a review by the Information Systems Work Group (ISWG). When the AIS has been approved for fielding, an entry will be placed in the Mid-Range Information Systems Plan (MRISP). Without this entry in the MRISP, the AIS will not be officially recognized as an operational system. Approval of SDP III constitutes milestone III.

e. Production and Deployment. The purpose of this phase is to implement the AIS. This phase is completed when responsibility for management of the AIS is transferred from the project manager to the post-deployment support manager - often the local functional manager in the field.

f. Operations and Support. The objective of this phase is to operate and maintain the AIS; evaluate AIS effectiveness and benefits; and plan for evolution, whether modification, modernization or replacement, of the AIS. Approval of the operational assessment constitutes milestone IV.

3.4 DOCUMENTATION. The activities associated with the design of an AIS are documented in accordance with reference (b) and IRM-5231-01A, System Development Methodology OVERVIEW and IRM-5231-02A, System Development Methodology DEVELOPER PERSPECTIVE. The required documentation for an AIS project tracks the progress and growth of the AIS and is essential for funding justification and the life cycle of an AIS.

LACK OF DOCUMENTATION CAN PREVENT A PROJECT FROM BEING PROPERLY FUNDED.

Submitters of LCM documentation include functional managers; the COMMARFORPAC, COMMARFORLANT and COMMARRESFOR; and Commanders of posts and stations. Specific documents are required for each LCM phase and are detailed in the aforementioned references. All LCM documentation, regardless of Milestone Decision Authority (MDA), shall be submitted to MCCTA for review.

CHAPTER TABLE OF CONTENTS

Chapter 4

DOD EMERGING ACTIVITIES

Chapter 4

DOD EMERGING ACTIVITIES

4.1. DOD SOFTWARE REUSE PROGRAM.

4.1.1. Background. On 14 Aug 1991, the Information Technology Policy Board (ITPB) approved ITPB Proposal 91-32 which establishes the CIM reuse program or in other words, "a spare parts warehouse of software code". An on-line DoD software warehouse of reusable code and reuse centers within the military services and the Defense Logistics Agency (DLA) will be established. The DoD software warehouse will contain the aggregated contents of the DLA and the services' libraries and will make those reusable components universally accessible to DoD elements and their supporting contractors. The Army's project Reusable Ada Packages for Information Systems Development (RAPID) Center libraries will be used to implement the program. RAPID will issue software as government-furnished equipment to both DoD users and contractors working on DoD projects. RAPID's primary goal is to acquire general-purpose Ada code, though it also handles other languages that have a maximum potential for reuse. The program will be implemented in three phases.

4.1.2. Preparation Phase. During this phase, coordination will be effected with the CIM Reuse Executive Agent and reuse opportunities will be identified.

4.1.3. Implementation Phase. During this phase, a Marine Corps Reuse Center will be established at Quantico, Virginia and training and operations will begin.

4.1.4. Sustainment/Expansion Phase. During this phase, Local Software Reuse Centers will be established at all Marine Corps Development Activities (CDPAs, RASCs, FSSGs, MCTSSA, and 4th DWT). Additionally, connectivity between the Marine Corps Reuse Center will be established with each of the Local Software Reuse Centers.

4.2. FEE-FOR-SERVICE.

4.2.1. Background. DoD will provide computing power and central systems design on a fee-for-service basis from consolidated centers. Users will be buying information technology as a supply item. DMRDs 924 and 971 and the Office of Management and Budget (OMB) Circular A-130 all require activities to implement a cost reporting and chargeback system for multi-user facilities. The Defense Business Operations Fund (DBOF), established by DMRD 971, is a fundamental change to the DoD's system of financial management. The goal is to produce a management structure that allows a larger number of DoD managers and employees to provide the best support to the operating forces at a lower cost. The following actions are being or will be accomplished:

4.2.1.a. A fee-for-service task group has been established to develop and execute a policy for the implementation of a uniform DoD budget, accounting, and industrial funded chargeback system for Information Technology Facility (ITF) resources.

4.2.1.b. A DoD task group, in which the Marine Corps is a member, is currently visiting selected sites throughout DoD for fee-for-service implementation.

4.2.1.c. The DoD task group visited the MCCDPA, Kansas City in January 1992. Kansas City was selected by the AC/S C4I as the Marine Corps test site for fee-for-service.

4.3. DOD DATA ADMINISTRATION.

4.3.1. Background. Data Administration within the DoD will change with the implementation of DoDD 8320.1 and 8320.1M. Changes include organizational structure, standard data element naming procedures, data standards and conventions, common DoD data dictionaries, repositories, approved methodologies, repository standards and common tools. The Director of Defense Information states that there will be one data dictionary for DoD that is on-line with 100 percent reusable data and an indefinite life for data definitions. Standardization of data elements is an uncompromisable element of CIM. The Defense Data Repository System (DDRS) has been selected as an interim data dictionary. The Marine Corps is participating in the DoD Data Administration efforts and the Marine Corps will migrate to the final data dictionary.

4.4. DOD COMPUTER STORE.

4.4.1. Background. The Director of Defense Information plans to set up a DoD computer store/leasing warehouse. It would provide mainframes, central processing units, workstations and peripherals. The Director of the Center for Information Management states that the purpose of acquiring this equipment centrally is to shorten the acquisition cycle so users can get the equipment and software they need when they need it.

4.5. DATA PROCESSING INSTALLATION (DPI) OPERATIONS ASSESSMENT.

4.5.1. Background. The Director for Defense Information has tasked DISA to explore techniques for assessment of DPI operations comparable to the DoD Software Engineering Institute (SEI) self-assessment for software. This assessment is on the operational level and will cover such things as the distribution of data sets to tape drives versus DASD, optimization of JCL, work load scheduling, and equipment maintenance costs. The intent is to baseline current operations and compare them to industry, to prove how utilitarian gathering such information is, and to evaluate contractors abilities and techniques for further work if warranted. The MCCDPA, Quantico, VA will be participating in this initiative.

4.6. SOFTWARE PROCESS ASSESSMENT (SPA).

4.6.1. Background. The Director for Defense Information has tasked the services and defense agencies to perform software engineering process self-assessments on their central design activities (CDAs) in accordance with the methodology defined by the Software Engineering Institute (SEI). This self-assessment will enable each CDA to progress to a higher level of software engineering practices. The software maturity levels of the MCCDPAs at Quantico, Kansas City, and Albany will be assessed. The purpose of the self-assessment will be to determine the current state of software practices, to identify the high-priority areas for improvement, and to provide guidance and structure on how to implement those improvements. The assessments will be based on a maturity model developed by the DoD SEI. The model has evolved to provide an organized and disciplined approach to building the software process infrastructure.

4.7. INTEGRATED COMPUTER-AIDED SOFTWARE ENGINEERING (I-CASE).

4.7.1. Background. DoD will procure and distribute a standard set of Integrated Definition Language tools under the I-CASE procurement being run by the Air Force. This tool set will include integrated definition language tools for business re-engineering. The Director for Defense Information plans to use business re-engineering methods to help DoD managers model and redesign their activities. The Marine Corps is participating in this effort by having representatives on the Technical Writing Team, the Government Management Review Team and the Acquisition and Business Strategy Panel.

4.8. GOVERNMENT OPEN SYSTEM INTERCONNECTION PROFILE (GOSIP).

4.8.1. Background. In today's environment, a Federal agency may have hundreds of disparate information systems from a multitude of vendors. The incompatibilities in hardware, software, data and communications resulting from this heterogenous environment led to many problems: inefficiency, poor performance, high expense, and a general feeling that things are out of control. With GOSIP, a wide degree of interoperability between a variety of computers manufactured by different vendors is made possible. The universal connectivity implied by GOSIP has made potential benefits for the Federal government and the payoffs will increase as the trend toward lower cost, universally-available computing power continues. GOSIP is expected to drastically alter the federal work place for the user in the 1990s by reducing the cost of accessing data just as today's personal computers and workstations have dramatically changed the way users process data. The benefits reaped from GOSIP will include: lower hardware costs for distributed computer systems, lower software development costs, network-related functions, lower training costs for support personnel and users, and an overall higher productivity. GOSIP is being implemented within the Marine Corps in versions. GOSIP version 1.0 was mandatory 15 Aug 90, version

2.0 was scheduled to be implemented 4th Quarter FY92. MCO 3093.2 explains the policy for the implementation and management of GOSIP and provides concise guidance on technology, applicability, procurement and waivers to GOSIP compliance.

4.8.2. OSI Reference Model. Information management communications are dependent upon interoperability between computers. To this end, the Open Systems Interconnection (OSI) Reference Model has been adopted by the International Organization for Standardization (ISO) as the basic reference model for open systems interconnections. Compliance with the OSI model is essential to enable users and vendors to take full advantage of interoperability between computer systems. The OSI Reference Model is based on protocol layering. A protocol is simply an agreement on how two parties will communicate. This isolation between layers benefits both users and providers. Users benefit from simpler operation and the ability to select services from multiple servers. The service provider also benefits by being able to change implementation of the service as desired to improve efficiency or adapt to changing conditions without requiring the service user to make changes.

4.8.3. GOSIP Usage. GOSIP is to be used by all executive branch Federal government agencies when acquiring computer network products, services, and communication systems to provide functionality equivalent to that defined by GOSIP. For the indefinite future, agencies will be permitted to buy network products in addition to those specified in GOSIP and its successor documents. Such products may include other nonproprietary protocols, proprietary protocols, and features and options of OSI protocols which are not included in current versions of GOSIP.

4.9. PORTABLE OPERATING SYSTEM INTERFACE (POSIX).

4.9.1. Background. POSIX was mandated as an interface standard for all federal computer buys by FIPS 151-1 in 1988. It was developed under the auspices of the Institute of Electrical and Electronics Engineers (IEEE). POSIX is defined as a functional interface between applications and the operating system environment. It offers the promise of interoperability and vendor independence. According to IEEE, an open system is one that supports portability of applications and user skills along with interoperability across potentially diverse platforms. POSIX is considered to be the first step in achieving that portability. The number of POSIX-compliant operating systems is expected to rise as other working groups address such issues as POSIX-compliant applications and user interfaces.

4.10. MIGRATION SYSTEMS AND EXECUTIVE AGENTS.

4.10.1. Background. The DoD has a sizable investment in installed information systems that provide required functional capabilities. It is important to determine whether there are opportunities for taking advantage of these existing resources as

joint requirements are determined and must be met. Consequently, DoD developed mechanisms in the summer of 1990 for examining existing systems and for assigning responsibility for accelerating the migration to systems emerging by means of "interim" systems. The "interim" systems concept was designed to save money today by transitioning to fewer systems supporting the same function in the near term, without major changes in business processes. The business plan and subsequent information systems strategy will detail the approach to migration. The migration systems will be made as the functional groups complete the business plans and DoD established the open architecture policy and rules for the future.

4.10.2. Guidelines. The guidelines for selecting systems for migration were developed to meet day-to-day operational requirements, while maximizing the use of limited resources and eliminating duplicative automated information systems (AIS) development. This is to set the stage for the evolution of DoD's information systems to meet joint requirements and to become more responsive to improvements in DoD's business processes. Migration systems are selected only when DoD's selection criteria, as issued by the DoD Comptroller in June 1990, are met. The criteria are as follows:

4.10.2.a. A migration system will be employed only if net benefits accrue to the Department prior to deployment on a standard system whose development is based on the CIM Technical Reference model.

4.10.2.b. A selected migration system must meet functional requirements, based on the current functional concept of operations, and is applicable and acceptable across DoD Components.

4.10.2.c. A selected migration system must be flexible enough to adjust to functionally driven operational systems.

4.10.2.d. A selected migration system must be operational or in an advanced state of development and be partially implemented. A migration system may be a system that is operational in one of the components or it may be a hybrid system composed of modules taken from currently operational systems.

4.10.2.e. System implementation must be technically feasible. It must address the ability to interface with related functional areas.

4.10.2.f. An acquisition strategy must be feasible to support the transition.

4.10.2.g. A key criterion requires that benefits exceed costs. It must be recognized that if the cost of fielding that system to other components exceeds its benefits, the department does not accept that system for migration.

4.11. BUSINESS PROCESS IMPROVEMENT.

4.11.1. BACKGROUND. The main focus of the DoD CIM initiative is on management methods, and its primary objective is business process improvement. Meeting these objectives will require the development of a functionally oriented business approach that supports the concept of continuous process modernization. The functional managers are, and will continue to be, the driving force behind all major process improvement efforts within DoD. Process improvement is an ongoing procedure where the individual activities of an organization are evaluated for cost effectiveness. Value added activities are streamlined and subsequent reviews are refocused on the relative effectiveness and efficiency of the remaining processes. Non-value added activities are identified and eliminated. Through the use of models, a rigorous and structured approach is applied to determine specific opportunities for improvement.

4.11.2. TRAINING. The adoption of the functional process improvement approach to business management will require major changes in organization culture. This, in turn, will necessitate a substantial amount of retraining of people at all levels of DoD. Training programs are currently available at the National Defense University, Information Resource Management College (IRMC). Since most of the savings from CIM are expected to come from changes in business methods, training will be essential to the functional managers responsible for making these changes.

CHAPTER TABLE OF CONTENTS

Chapter 5

CONTROLS

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Chapter 5

CONTROLS

5.1. CORPORATE INFORMATION MANAGEMENT (CIM).

5.1.1. Background. The CIM program was established by the Office of the Secretary of Defense in November 1989 to improve the standardization, quality, and consistency of data from multiple DoD systems in eight functional areas. These functional areas include Finance, Health, Human Resources, Reserve Components, Materiel Resources, Procurement, Information Management, and Command and Control. Executive Agents will be responsible for implementing and maintaining migratory DoD systems. The goal is to establish defense-wide AISs to capture savings and at the same time dramatically improve the efficiency and effectiveness of operations. In February 1991, the Office of the Director for Defense Information was established and changed the emphasis from the idea of selecting standard information technology systems for all DoD to developing and establishing more fundamental standards for business practices and processes. Under CIM, DoD will engage in "evolutionary migration of existing systems, salvaging and revising existing know-how and software to the maximum extent possible".

5.1.2. The CIM/DMR Relationship. The CIM initiative is part of the President's overall effort to improve the management of the DoD. In response to the President's direction to "realize substantial improvements ... in defense management overall", the Secretary of Defense issued the Defense Management Report (DMR) in July 1989. The DMR contains outlined policies and directions the DoD is taking to maintain or improve defense capabilities, even in times of austere resource availability. One of the important tenets of the DMR is that the members of the Department will be "encouraged to examine and improve continuously the processes in which they are engaged -- and to raise, at all levels, new ideas and approaches that will contribute to a sound, affordable program to maintain adequate U.S. military strength". This must be done to take full advantage of opportunities for cost savings and quality improvement.

CIM is one of the management methods for achieving DMR cost reductions while maintaining or improving the effectiveness of DoD military missions. The primary objective of CIM is business process improvement. The role of information technology is supportive and allows the adoption of more efficient and effective business area management practices. CIM acts as an enabler for many DMR initiatives and their associated cost savings. This includes DMR initiatives such as reducing supply system costs, consolidation of supply depots, consolidation of financial operations, stock funding of repairables, reducing transportation costs, and better management of defense Agencies.

5.1.3. <u>Impact on the Marine Corps</u>. The Marine Corps Information Technology budget was reduced by $91.8 million over the FY91 to FY95 period in support of CIM. CIM reductions virtually eliminate all Marine Corps AIS development projects and cut deeply into operations during the FY93 - FY95 period. Savings will not be realized until DoD standard AISs are implemented to provide the same functionality that is projected from systems being terminated or downscoped. These saving are at least a decade away as it will take that long to develop defense-wide AISs.

5.1.4. <u>Marine Corps Participation in CIM</u>. The Marine Corps is a participant in the CIM Information Technology Policy Board (ITPB). The ITPB sets the policy for implementing the CIM program and the future direction of DoD resources. The Marine Corps has been selected to conduct an enterprise-wide pilot implementation of the DoD open systems migration methodology. This task will be accomplished through contractor support and limited in-house support provided by the Defense Information Systems Agency (DISA). This project, in coordination with DISA, will develop a plan for migrating the Marine Corps from its current proprietary automated data processing infrastructure to an open systems architecture. This pilot program will start the process to eventually lead all of DoD into an open systems environment. The major objectives of the task include:

5.1.4.a. Refinement of an architectural framework, which already exists in the Marine Corps.

5.1.4.b. Refinement of the Baseline Definition, which already exists in the Marine Corps.

5.1.4.c. Definition of a Target Architecture on open systems standards. This definition may lead to major changes or targets for operating systems, computers, data networks, local area networks, and user interfaces within the Marine Corps.

5.1.4.d. Identification of opportunities for migration.

5.1.4.e. Identification of migration options and development of a migration plan. The Marine Corps provides a good test case in this regard because, while many segments of the Marine Corps systems are based on proprietary standards, the computer and communications infrastructure is relatively compact and efficient.

5.2. <u>DEFENSE INFORMATION SYSTEMS AGENCY (DISA)</u>. The Defense Information Systems Agency (DISA) is responsible for planning, developing, and supporting command, control, communications (C3), and information systems that serve the needs of the National Command Authorities (NCA) under all conditions of peace and war. It provides guidance and support on technical and operational C3 and information systems issues affecting the Office of the Secretary of Defense (OSD), the Military Departments, the Chairman of the Joint Chiefs of Staff and the Joint Staff, the

Unified and Specified Commands, and the DoD Components. It ensures the interoperability of the Worldwide Military Command and Control System (WWMCCS), the Defense Communications System (DCS), theater and tactical command and control systems, North Atlantic Treaty Organization and/or allied C3 systems, and those national and/or international commercial systems that affect the DISA mission.

5.2.1. <u>Organization and Management</u>. The DISA is established as a Combat Support Agency of the Department of Defense, and is under the direction, authority, and control of the Assistant Secretary of Defense for Command, Control, Communications, and Intelligence (ASD(C3I)). It consists of a Director and such subordinate organizational elements as are established by the Director within the resources authorized by the Secretary of Defense. For further information, consult DoDD 5105.19 dated 25 June 1991.

5.2.2. <u>Defense Management Report Decision (DMRD) 918</u>. Effective on 1 November 1992, DMRD 918 assigns central management responsibility of the defense information infrastructure to DISA. It establishes DISA as the single manager for technical control, configuration management, centralized acquisition and education of defense information technology resources. The goal is cost savings through interoperability, standards enforcement, business process improvement and security. DMRD 918 authorizes DISA to capitalize portions of the information technology resources, above the tactical level, from each military component. Estimates of the savings from fiscal year 93 through fiscal year 99 are $4.5B across DoD.

5.2.3. <u>Defense Management Report Decision (DMRD) 969</u>. Still in draft form, this DMRD addresses systems modernization and proposes transfer of additional resources (functional personnel) supporting software development/modernization for functions not identified under the CIM initiative. The new functional areas include Training, Military Personnel, Installation Management, Contract Administration, and Research and Development (R&D). DMRD 969 also intends to establish a single accountable organization for each functional area.

5.3. <u>MID-RANGE INFORMATION SYSTEMS PLAN (MRISP)</u>. The MRISP is a strategic AIS plan which describes the information resources needs of the Fleet Marine Force (FMF), the Supporting Establishment (SE), the Headquarters Marine Corps (HQMC) functional managers, and the necessary support capabilities required to meet those needs. This plan is developed annually by the Director, MCCTA, in conjunction with individual planning submissions prepared by the functional managers and commands that have been delegated procurement authority for acquiring information resources. The MRISP contains strategic objectives for the use of information technology in support of Marine Corps missions and identifies an approach for obtaining those objectives.

5.3.1. Scope of the Plan. The MRISP is produced annually and will address the current year through the end of the current Program Objectives Memorandum (POM) period. Additionally, resource expenditure information from the last complete fiscal year will be collected for historical purposes. It includes:

5.3.1.a. The current and planned Class I, II, and III AISs (these classes and their subclasses are defined in reference c, paragraph 1005).

5.3.1.b. The current and planned Marine Corps data communications.

5.3.1.c. The current and planned computer equipment and system software.

5.3.1.d. The plan shall consider the six IRM program elements: Program management, hardware, application software, data communications, data and personnel.

5.3.2. Plan Exclusion. The MRISP does not include AISs that are integral to or embedded in a weapons system, or that are used exclusively for cryptological activities. AISs that have a portion of their system used in the FMF will appear in both the Command and Control (C2) Systems portion of the command element sub-plan of the Marine Air-Ground Task Force (MAGTF) Master Plan and the MRISP.

5.3.3. Purpose of the Plan. The purpose of the MRISP is to:

5.3.3.a. Provide a means to document, monitor, guide, and assist with the Marine Corps IRM Program for the current year through the end of the current POM.

5.3.3.b. Provide the information and justification necessary to program information resource requirements in the Planning, Programming, and Budgeting System (PPBS). Detailed information on the PPBS may be found in Appendix H.

5.3.3.c. Focus increased attention on the management of information technology resources.

5.3.3.d. Provide information on the current status and strategic direction of the use of computers and data communications technology within the Marine Corps.

5.3.3.e. Involve top level management, functional managers and users in the IRM planning process.

5.3.3.f. Avoid duplication of effort and encourage the sharing of resources where appropriate.

5.3.3.g. Present to Marine Corps leadership, functional managers and users how funds are projected to be allocated for IRM activities.

5.3.3.h. Focus the IRM activities into a concerted program designed to achieve IRM objectives.

5.3.3.i. Provide the Marine Corps IRM Program objectives and plans to higher authority.

5.3.4. Plan Development. The planning effort is comprised of four phases:

5.3.4.a. Planning Call Preparation. During this phase the MCCTA planning staff determines the scope of the planning effort, provides "TOP DOWN" strategic planning guidance, and issues the planning call. The planning call is issued to Headquarters, Marine Corps staff agencies and to field commands that have delegation of procurement authority for acquiring information resources.

5.3.4.b. Data Collection. In this phase, Headquarters, Marine Corps staff agencies and field commands complete individual planning submissions, using the MRISP Automated Planning System (MAPS) application, and provide them to the Director, MCCTA.

5.3.4.c. Analysis and Consolidation. During this phase, the MCCTA planning staff formulates a draft Marine Corps plan based on the strategic direction and the individual submissions. This is accomplished by analyzing the individual planning submissions, identifying assumptions and constraints, assessing progress made toward achieving the IRM program objectives established in the previous MRISP, and determining additional objectives.

5.3.4.d. Approval and Publication. In this phase, the draft plan is staffed to the ISSC for review and approval. The plan is modified based on comments received. The plan is then reviewed and approved by the Assistant Commandant of the Marine Corps (ACMC) and published.

5.4. NAVAL INFORMATION SYSTEMS MANAGEMENT CENTER (NISMC). NISMC implements the Deputy Assistant Secretary of the Navy for Command and Control, Communications, Computers, Intelligence, Electronic Warfare and Space (DASN(C4I/EW/Space)) policies throughout the Navy and the Marine Corps. NISMC also supports DASN (C4I/EW/Space) in executing responsibilities to manage DON information resources and to provide DON Information Resources Management (IRM) functional leadership throughout all stages of the development and operation of information and base telecommunications systems in accordance with approved DON objectives. See section 1.5.4. for additional information on the DASN(C4I/EW/Space).

5.4.1. Responsibilities. The following paragraphs synopsize the principal responsibilities of NISMC as referenced within the NISMC Charter.

5.4.1.a. Designated Senior Official (DSO). In the Department of the Navy (DoN), the senior official that executes Information

Management activities is the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN/RDA).

5.4.1.b. <u>Software Executive Official (SEO)</u>. As designated in DoDD 5000.2, the department has designated the Commander, NISMC as the senior level Software Executive Official to monitor, support, and be the focal point for Ada usage, sound software engineering, development and life-cycle management support policy and practice.

5.4.2. <u>Organization</u>. The following details NISMC's organizational structure and areas of responsibility. Figure 5-01 contains the NISMC Organizational Chart.

5.4.2.a. <u>Management Support Division</u>. Civilian personnel management; coordination of administrative procedures; maintenance of project control system; logistic/facility support; in-house support of office automation; in-house professional development; management of NISMC newsletter; management of DoN records management functions.

5.4.2.b. <u>Financial Management Division</u>. Reviews DoN budget estimates for Information Technology (IT) programs; prepares DoN IT budget exhibits; represents DoN at OSD/OMB budget hearings; prepares reclamas and heartburn responses; formulates and defends NISMC POM and budget; manages DoN fee-for-service initiative; monitors DoN IT budget execution.

5.4.2.c. <u>Business Process Planning Division</u>. Prepares DoN Information Resources (IR) strategic plan; DoN focal point for functional integration management; DoN coordinator for business process analysis; oversight of DoN data administration function; oversight of DoN workforce development program.

5.4.2.d. <u>Program Oversight Division</u>. Review and analyze Information Systems (IS) plans/documentation for MDA approval; support conduct of milestone reviews; support conduct of in-process reviews; principal point of contact for SYSCOMs regarding Life Cycle Management (LCM).

5.4.2.e. <u>Systems Engineering Division</u>. Coordinates DoN migration to open systems; coordinates DoN software engineering initiatives; coordinates DoN representation on IT standards groups; manages the DoN information systems security program; oversees DoN telecommunication architecture; promotes awareness of impact of emerging ITs; manages international IT exchange program.

5.4.2.f. <u>IRM Assessment and Support Division</u>. Focal point for GAO, GSA, NAS, DoD/DoN IG; develops IT criteria for DoN IG/NAS; sponsor of DoN IT management control program; provides assessments of DoN commands; facilitates exchange of lessons learned.

5.4.2.g. CIM Division. Coordinates formulation of SEVNAV IT/IRM
policy; principal DoN coordinator for ITPB issues; hosts DoN
policy steering and work groups; focal point for DoN support of
DMRD 925; coordinates DoN representation on joint policy groups.

5.4.2.h. ITF Consolidation Division. DoN manager for
consolidation of Data Processing Installations/Central Design
Activities (DPI/CDA); develop DoN consolidation business
case/Functional Economic Analysis (FEA); revises DoN
consolidation plan; manages DoN consolidation planning for
capacity management; analyzes invest requirements, acquisition
strategy and implementation planning.

NISMC Organization

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                          ┌─────────────┐
                          │  Command    │
                          │  Element    │
                          └─────────────┘
                                 │
     ┌───────────┬───────────────┼───────────────┬───────────────┐
┌──────────┐ ┌──────────┐   ┌──────────┐   ┌──────────────┐
│Management│ │Financial │   │ Business │   │IRM Assessment│
│ Support  │ │Management│   │  Process │   │ and Support  │
│ Division │ │ Division │   │ Planning │   │  Division    │
└──────────┘ └──────────┘   │ Division │   └──────────────┘
                            └──────────┘
                                 │
     ┌───────────┬───────────────┼───────────────┬───────────────┐
┌──────────┐ ┌──────────┐   ┌──────────┐   ┌──────────────┐
│ Systems  │ │ Program  │   │   CIM    │   │     ITF      │
│Engineering│ │ Oversignt│   │ Division │   │Csonsolidation│
│ Division │ │ Division │   └──────────┘   │  Division    │
└──────────┘ └──────────┘                   └──────────────┘
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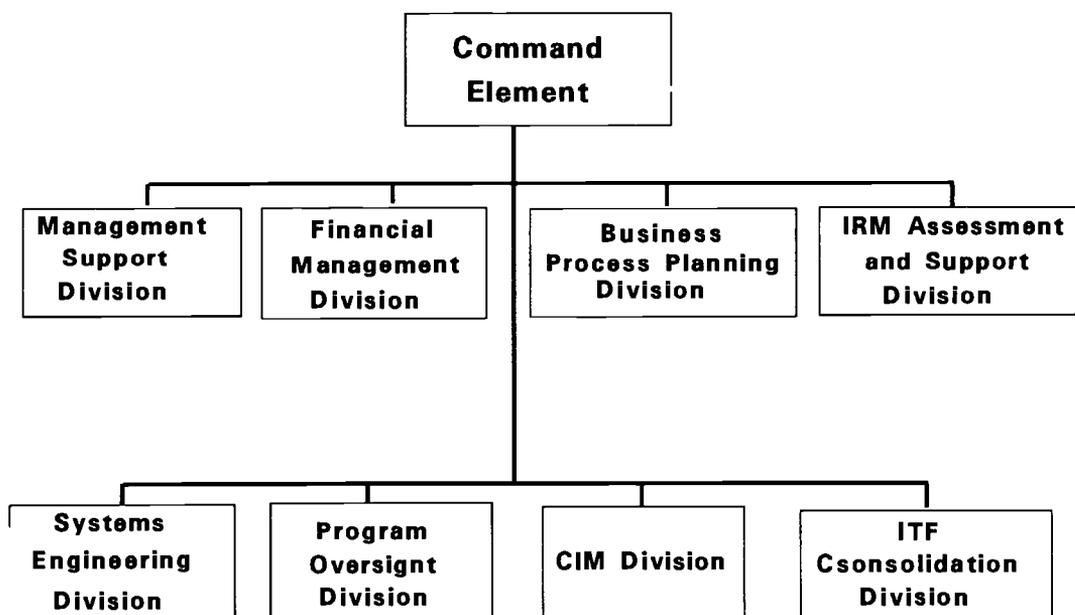
FIGURE 5-01
NISMC Organizational Chart

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Appendix A

GLOSSARY OF ACRONYMS AND DEFINITIONS

ACRONYMS:

ACCS CHS	Army Command & Control System Common Hardware/Software
ACIS	Automated Claims Information System
ACPERS	Army Civilian Personnel System
ACS	Access Control System
ADABAS	Marine Corps Standard Data Base Management System
ADPE	Automatic Data Processing Equipment
ARE	Application Entity
AFI	Address Format Identifier
AFRS	Automated Fitness Report System
AHIP	ARPANET Host Interface Protocol
AIS	Automated Information System
ALADNS	Automated Location and Data Netting System
ALS	Application Layer Structure
AMMOLOGS	Ammunition Logistics System
ANSI	American National Standards Institute
AO	Action Officer
APADE	Automated Procurement & Accounting System
API	Application Program Interface
APSE	Ada Programming Support Environment
ARMS	Automated Recruit Management System
ARPANET	Advanced Research Projects Agency Network
ASKARS	Automated Storage Kitering Retrieval System
ASME	American Society of Manufacturing Engineers
ATARS	Advanced Tactical Air Reconnaissance System
ATCCIS	Army Tactical Command and Control Information System
ATCCS	Army Tactical C2 System
ATRIMS	Aviation Training and Readiness Information Management System
ATWAR	Acquisition Through WARFIGHTING
AWARS	Airborne Weapons Analysis/Printing System
AWIS	Airborne Weapons Information System
BAN	Base Area Network
CAD/CAM	Computer Aided Design/Computer Aided Manufacturing
CAE	Computer-Aided Engineering
CAEMS	Computer-Aided Embarkation Management System
CAIS	Casualty Assistance Information System
CALS	Computer-Aided Acquisition and Logistic Support
CAMIS	Computer Assisted Medical Interactive Video System
CASE	Computer Aided Software Engineering
CBMS	Computer Based Messaging Systems
CCITT	Consultative Committee on International Telephone and Telegraph
CCSS	Commodity Command Standard System
CDA	Central Design Agency
CEFMS	Corps of Engineers Financial Management System
CGM	Computer Graphics Metafile
CIM	Corporate Information Management

CL	Connectionless Transport Protocol
CLNS	Connectionless Network Service
CM	Configuration Management
CMIS	Commissary Management Information System
CMISE	Common Management Information Services Element
CODS/SABRS	Customer Order Documents/Shipyard Automated Budget
COE	Common Operating Environment
COM	Computer Operations Manual
COS	Corporation for Open Systems
COTS	Commercial Off-the-Shelf
CPMS	Career Planning Management System
CTOS	Convergent Technologies Operating Systems
DCA	Defense Communication Agency
DES	Data Encryption Standard
DICA	Defense Industry Cooperation Agreement
DIS	Draft International Standard
DISN	Defense Integrated Systems Network
DLA	Defense Logistics Agency
DMA	Defense Mapping Agency
DMS	Defense Message System
DNA	Defense Nuclear Agency
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DODIIS	DoD Intelligence Information System
DOIT	DoD Open Systems Environment, Implementation and Transition
DSA	Defense Supply Agency
DSP	Domain Specific Part
DTRC	Taylor Naval Ship R&D Center Industrial Fund Account
EA	Economic Analysis
EAMTRAMS	Enlisted Aviation Maintenance Trainee Management System
EAS III	Expense Assignment System Version III
ECMA PCTE	European Computer Manufacturers Association Portable Common Tools Environment
EDI	Electronic Data Interchange
EGP	External Gateway Protocol
EPS	Enlisted Planning System
EUCE	End User Computing Equipment
FDDI	Fiber Distributed Data Interface
FIPS	Federal Information Processing Standards
FIREFLEX	Marine Flexible Fire Support System
FIREMAN	Fire and Maneuver System
FIST-DMD	Fire Spt Team - Digital Message Device
FOCS	Fibre Optics Communications System
FONS	FMF Operational Need Statement
FSCAIS	Family Services Center Automated Information System
FYDP	Fiscal Year Development Plan
GKS	Graphic Kernel System
GNMP	Government Network Management Profile
GOSIP	Government Open Systems Interconnection Profile
GOSIUG	Government OSI User's Group
GW	Gateway
HARDMAN II	Marine Corps Military Manpower/Hardware Integration System II

HLM	Heterogeneous LAN Management
I-CASE	Integrated Computer Aided Software Engineering
ICADIR	Integrated Communications Architecture Directory
ICCCM	Inter-Client Communications Conventions Manual
ICP	Inventory Control Point
ICPRES	ICP Resolicitation Project
IDA	Institute for Defense Analyses
IDI	Initial Domain Identifier
IDRP	Interdomain Routing Protocol
IDP	Initial Domain Part
IEEE	Institute of Electrical and Electronic Engineers
IGES	Initial Graphic Exchange Specification
IGOSS	Industry Government Open Systems Specifications
IMP	Interoperability Management Plan
INTERNET	INTERNETWORK (formerly DDN)
IOC	Initial Operational Capability
IP	Implementation Plan
IPMS	Interpersonal Messaging Service Layer
IRDS	Information Resource Dictionary System
IRM	Information Resources Management
IS	Intermediate System
ISDN	Integrated Services Digital Network
ISEE	Integrated Software Engineering Environment
ISO	International Standardization Organization
ISODE	ISO Development Environment
ISP	International Standard Profile
ITDN	Integrated Tactical-Strategic Data Network
JOPES	Joint Operational and Planning Evaluation System
JTSSG	Joint Telecommunications Standards Steering Group
JUMPS/MMS	Joint Uniform Military Pay System/Manpower Management System
LAN	Local Area Network
LATAR	Land and Training Area Requirements System
LFADS	Landing Force Asset Distribution System
LMIS	Logistics Management Information System
LOGMARS	Logistical Marking System
LUMS	Land Use Management System
MACG	Marine Air Control Group
MAGFARS	Marine Air-Ground Financial Accounting and Reporting System
MAP	Manufacturing Automation Protocol
MAPS	MRISP Automated Planning System
MATADOR IV	Marine Tactical Data Off-line Reduction Program
MATCALS	Marine Air Traffic Control and Landing System
MATCS	Marine Air Traffic Control Squadron
MATCU	Marine Air Traffic Control Unit
MATEMP	Marine Aviation Training Management and Evaluation Program
MATMS	Marine Aviation Training Management System
MCAIMS	Marine Corps Automated Instructional Management System
MCCRES	Marine Corps Combat Readiness Evaluation System
MCFMIS	Marine Corps Food Management Information System
MCLLS	Marine Corps Lessons Learned System
MCPDS	Marine Corps Publication Distribution System

MCPS	Marine Corps Promotion System
MCRSC	Marine Corps Reserve Support Center (Management System)
MCTASS	Marine Corps Travel Advance Settlement System
MEDLOGS	Medical Logistics System
MERS	Medical Expense Reporting System
MHSS	Human Resources Division Small Systems
MIDAS	MCCDC Integrated Data Automation System
MILDEPS	Military Departments
MILNET	Military Network
MILOGS	Marine Integrated Logistics System
MILSTEP	Military Supply and Transportation Evaluation Program
MIMMS	Marine Integrated Maintenance Management System
MIPS	Marine Integrated Personnel System
MIRS	MEPCOM Interactive Resource System
MISS	Manpower Information Support System
MMPS	Manpower Mobilization Planning System
MOTIS	Message Oriented Text Interchange System
MPR-JSS	Milpay Redesign - Joint Service Software
MRISP	Mid-Range Information Systems Plan
MSDSG	Multi-System Distributed Systems Gateways
MTACCS	Marine Tactical Combat and Control System
MTRIMS	Marine Training and Readiness Information System
MTS	Marine Tactical System
MUMMS	Marine Corps Unified Material Management System
M3S	Marine Corps Standard Supply System
NALCOMIS	Naval Aviation Logistics Management Info System
NALDA	NAVAIR Logistics Data Analysis
NAVAIR	Naval Air Systems Command
NAVCOMMSTA	Naval Communications Station
NCPDS	Navy Civilian Personnel Data System
NCS	National Communications System
NCSL	National Computer Systems Library
NHFS	Navy Headquarters Financial System
NIFMS	NAVAIR Industrial Financial Management System
NIMMS	Naval Indust Material Management System
NIST	National Institute of Standards and Technology
NISTIR	National Institute of Standards and Technology Interim Report
NMF	Network Management Forum
NMVT	Network Management Vector Transport Protocol
NOMIS	Naval Ordnance Management Information System
NPM	Network Procedures Manual
NSWE/STAFS	NSWSES Port Hueneme Standard I Fund Acct System
NTIS	National Technical Information Service
OADSS	Officer Assignment Decision Support System
OPUS	Officer Planning and Utility System
ODA	Office Document Architecture
ODA/ODIF	Open Document Architecture/Open Document Interchange Format
ODL	Open Document Language
OIW	OSI Implementors Workshop
OLDS	On-Line Diary System
OSF	Open Software Foundation
OSI/CS	Open Systems Interconnection/Communications Subsystem

PBAS	Program Budget Accounting System
PCI	Protocol Control Information
PCTE	Portable Common Tools Environment
PDES	Product Data Exchange using STEP
PDN	Public Data Network
PDSSA	Post-Deployment Software Support Activity
PDU	Protocol Data Unit
PEE	Platform External Environment
PHIGS	Programmer's Hierarchical Interactive Graphics System
PHY	Physical Layer Protocol
PIXIT	Protocol Implementation Extra Information for Testing
PLP	Packet Level
POM	Program Objective Memorandum
POSIX	Portable Operating System Interface for Computer Environments
PPBS	Planning, Programming, and Budgeting System
PREPAS	Precise Personnel Assignment Status
PRMIS	Printing Resources Management Information System
PSSG	Protocols Standards Steering Group
RAPIDS	Real-time Automated Personnel Identification System and DEERS Online (DOLI)
RAPIDS PH I	RealTime Automated Personnel ID System
RDA	Remote Database Access
REMMPS	Reserve Manpower Management and Pay System
RESFMS	Reserve Financial Management/Active Duty for Training System
RPM/FHS	Real Property Maintenance/Family Housing System
SABRS	Standard Accounting, Budgeting and Reporting System
SAS	Statistical Analysis System
SASSY	Supported Activities Supply System
SBS	Standard Budget System
SDNS	Secure Data Network Service
SDS-MOD	Standard Depot System - Modernization
SDU	Service Data Unit
SERMIS	Support Equip Resource Management Info
SGML	Standard Generalized Markup Language
SICPS	Standard Integrated Command Post System
SILS	Standard for Interoperable LAN Security
SIOP-ESI	Single Integrated Operational Plan-Extremely Sensitive Information
SMI	Structure of Management Information
SNA	System Network Architecture
SPAR	Stock Points ADP Replacement Project
SPLICE	Stock Points Logistics Integrated Com Environment
STARCIPS-R	Standard Army Civilian Payroll System-Redesign
STEP	Standard for the Exchange of Product Model Data
TAMMIS	Theater Army Medical Management Information System
TC-AIMS	Transportation Coordinators' Automated Information for Movement Systems
TCIS	Technical Common Interface Standards
TCO	Tactical Combat Operations
TCP	Transmission Control Protocol
TDMS	Tech Data Management System
TELNET	Telecommunications Network Protocol
TFA	Transparent File Access

TIDP	Technical Interface Design Plan
TIMS	Tactical Intelligence Management System
TIPI	Tactical Information Processing and Interpretation System
TLV	Type, Length, Value (encoding)
TMR/TL	Table of Manpower Requirements/Troops List System
TMS	Transportation Management System
TOP	Technical Office Protocol
TP	Transport Protocol
TPDU	Transport Protocol Data Unit
TPM	Transport Protocol Machine
TQM	Total Quality Management
TRIMIS	Tri-Service Medical Information System
TSGCEE	Tri-Service Group on Communications and Electronics
TSP	Teleprocessing Services Program
UADPS-ICP	Uniform ADP System ICPs
UADPS-SP	Uniform ADP System Stock Points
UAOS	User Alliance for Open Systems
UIMS	User Interface Management System
UISRM	User Interface System Reference Model
VSADMS	Veterinary Services Automated Data Management System
VTP	Virtual Terminal Protocol
WAN	Wide Area Network
WRS	War Reserve System
WSS	Warehouse Support System
WWMCCS	Worldwide Military Command and Control System

DEFINITIONS:

ADA: A general-purpose high-level procedure-oriented language, originally developed under the aegis of the US Department of Defense to provide a means, independent of proprietary machine languages, for implementing embedded systems. It features structured programming, data structures with strong typing, multitasking, and facilities for object-oriented programming.

ARCHITECTURE: The disciplined definition of the supporting information resources required by the Department of Defense to attain its mission objectives and achieve its business vision.

ARTIFICIAL INTELLIGENCE (AI): The capability of a device to perform functions that are normally associated with human intelligence, such as reasoning, learning, and self-improvement.

APPLICATION SOFTWARE INTEROPERABILITY: The ability to have application software operating on heterogenous hardware/software platforms cooperate in performing some user function.

AMERICAN NATIONAL STANDARD CODE FOR INFORMATION INTERCHANGE (ASCII): The standard code, using a coded character set consisting of 7-bit coded characters (8-bits including parity check), that is used for information interchange among data processing systems, data communication systems, and associated equipment.

APPLICATION PORTABILITY PROFILE (APP): The US Government's OSE profile which integrates federal, national, international, and other specifications to provide the functionality necessary to accommodate the broad range of federal information technology requirements.

APPLICATION PROGRAM INTERFACE (API): The interface or set of functions between the application software and the application platform.

BANYAN VINES: Marine Corps standard Network Operating System (NOS).

BUFFER/GATEWAY: Software or hardware used to compensate for a difference in rate of flow of data or time of occurrence of events or differences in protocol or in data representation when transferring data, from one system to another.

C: A general-purpose high-level programming language, especially suited for systems programming, as well as for application programming. Its features support and emphasize structured programming, data structures with weak typing, pointers, and address manipulation, recursive functions and bit and character manipulation.

COMPATIBILITY: The capability of two or more items or components of equipment or material to exist or function in the same system

or environment without mutual interference.

DATA ADMINISTRATION: The function of controlling the acquisition, analysis, storage, retrieval, and distribution of data.

DATA DICTIONARY: A database used for data that refers to the use and structure of other data. This database stores the metadata.

DATA NETWORK: An arrangement of data circuits and switching facilities for establishing connections between data terminal equipment.

DATABASE ADMINISTRATOR: The person who defines, organizes, manages, controls, and protects a database.

DATABASE MANAGEMENT SYSTEM (DBMS): A computer-based system used to establish, make available, and maintain the integrity of a database, that may be invoked by non-programmers or by application programs to define, create, revise, retire, interrogate, and process transactions; and to update, back up, recover, validate, secure, and monitor the database.

DEFENSE DATA NETWORK (DDN): A common user data communications network that, when fully implemented, will provide service for interactive and bulk data communication services.

DEFENSE INFORMATION SYSTEMS AGENCY (DISA): Agency responsible for ensuring the interoperability of theater and tactical command and control systems with the Joint Chiefs of Staff, the Secretary of Defense, and other DOD components.

DIRECTORY SERVICES: Determines the locations of various components in a network.

DISTRIBUTED DATABASE: A database under the overall control of a central database management system, but whose storage devices are not all attached to the same processor.

DOD TRUSTED COMPUTER SYSTEM EVALUATION CRITERIA: A document containing basis requirements and evaluation classes for assessing degrees of effectiveness of hardware and software security controls built into an AIS.

ENTERPRISE NETWORK ARCHITECTURE: Defines the protocols, message formats, and standards to which the network hardware and software must conform to achieve such things as seamless connectivity, modularity, ease of implementation and use, reliability, and ease of modification.

EXTERNAL ENVIRONMENT INTERFACE (EEI): The interface which supports information transfer between the application platform and the external environment.

INTERPROCESS COMMUNICATION OVER NETWORKS (ICON): Allows separate

processes to execute on the same or different platforms to communicate data between them.

INFORMATION SYSTEMS INTEROPERABILITY: The ability of systems to exchange data, in a timely manner, in support of a user-defined business decision process, and to preserve the meaning and relationships of the data exchanged.

INTEROPERABILITY: The ability of systems, units or forces to provide services to and accept services from other systems, units, or forces and to use the services so exchanged to enable them to operate effectively together.

INFORMATION RESOURCE DICTIONARY SYSTEM (IRDS): A set of standard specifications for a data dictionary system resulting from US Federal and national standards that provides facilities for recording, storing, and processing descriptions of an organization's significant information and information processing resources.

LIFE CYCLE MANAGEMENT (LCM): The process for managing and administering an AIS over its life cycle with emphasis on strengthening early decisions which influence AIS costs and utility. These decisions must be based on full consideration of functional, ADP, and telecommunications requirements to produce an effective AIS.

MARINE CORPS DATA NETWORK (MCDN): A common user data communications network which provides terminal-to-computer and computer-to-computer communications to supporting establishment and FMF units in garrison. The MCDN architecture is based on the use of front end processors as the major nodal elements in the network.

METADATA: Information about an organization's information and data activities.

MESSAGE HANDLING SERVICE (MHS): Formats and processes messages in a store-and-forward mode.

MID-RANGE INFORMATION SYSTEM PLAN (MRISP): The MRISP is a strategic plan that provides information on the current status and future direction of the use of information resources and data communications technology within the Marine Corps. The MRISP provides a 5-year look ahead based on input from the functional managers and Headquarters, Marine Corps.

NETWORK: An arrangement of nodes and interconnecting branches.

OFFICE AUTOMATION (OA): The techniques and means used for the communication of text, images, and voice.

OPEN SYSTEMS ENVIRONMENT (OSE): A computing environment designed to be interoperable and independent of hardware limitations. It consists of three main architectures: Communication, Information

Processing and Data Administration.

OPEN SYSTEMS INTERCONNECTION (OSI): The interconnection of open systems in accordance with ISO standards for the exchange of data.

PORTABILITY: The ability to use application software and data on heterogeneous hardware/software platforms.

REFERENCE MODEL: A generally accepted representation of a particular application domain.

SCALABILITY: The ability to use the same application software on many different classes of hardware/software platforms, from personal computers to supercomputers.

SIGNALS INTELLIGENCE (SIGINT): A category of intelligence information, either individually or in combination, comprising all communications intelligence, electronic intelligence, foreign instrumentation signals intelligence, and telemetry intelligence.

SYSTEMS DEVELOPMENT METHODOLOGY (SDM): A collection of methods, procedures, and activities associated with developing an IS. It defines the activities to build a system, the interfaces between those activities, and the central thrust of the products created as a result of those activities.

TACTICAL DATA SYSTEM (TDS): An interacting assembly of procedures, system processes, and methods which include equipment specifically designed to collect, display, evaluate and disseminate data for the purpose of supporting the command and control of military forces.

TAXONOMY: A scheme for describing the orderly classification of objects according to their presumed natural relationship.

TECHNICAL ARCHITECTURE: A set of standards such that information systems built to the standards are inherently interoperable. The degree of interoperability is to be specified by the functional user as part of the requirements definition process.

TOKEN: In a local area network, a group of bits that serves as a symbol of authority passed among data stations to indicate the station temporarily in control of the transmission medium.

TOKEN-RING NETWORK: A ring network that allows unidirectional data transmission between data stations by a token passing procedure over one transmission medium such that the transmitted data returns to the transmitting station.

Appendix B

IRM-RELATED ORDERS/BULLETINS

	ORDER	TITLE	PURPOSE
1.	P5000.10	SYSTEMS ACQUISITION MANAGEMENT MANUAL	To publish management guidance and procedures which implement the policies for the acquisition of weapons systems, computer resources, and equipment within the Marine Corps.
2.	5230.2D	USMC CENTRAL DESIGN AND PROGRAMMING ACTIVITIES; (MCCDPA); DESIGNATION OF	To designate MCCDPA's to publish the functions of the MCCDPA's and to establish command relationships.
3.	P5230.10A	AUTOMATIC DATA PROCESSING EQUIPMENT FOR THE FLEET MARINE FORCE (ADPE-FMF) PLAN (ADPE-FMF MGTPLAN)	To publish policy and guidance to the Fleet Marine Force commands for the management of the ADPE-FMF Program within the Marine Corps.
4.	5230.13	REGIONAL AUTOMATED SERVICES CENTERS (RASC'S); DESIGNATION OF	To designate RASC's and establish a regional concept of operations for providing data processing support to the Marine Corps.
5.	5230.15	DATA BASE ADMINISTRATION	MCO P5231.1B (LCM-AIS) provides guidance for the justification and development of Automated information Systems (AIS's). This Order supplements LCM-AIS by defining the organization and responsibilities for data base administration within the Marine Corps.

	ORDER	TITLE	PURPOSE
6.	P5231.1B	LIFE CYCLE MANAGEMENT FOR AUTOMATED INFORMATION SYSTEMS (LCM-AIS) PROJECTS	To establish the policies and procedures governing the acquisition, design, development, deployment, operation, maintenance, management, and termination of automated information system (AIS) projects.
7.	5233.2	CAPACITY PLANNING AND MANAGEMENT (CPM) PROGRAM	To establish policies and objectives and assign responsibilities for the Capacity Planning and Management Program.
8.	5234.2	CONFIGURATION MANAGEMENT OF AUTOMATED DATA PROCESSING (ADP) SYSTEMS SOFTWARE	To provide a standard procedure for planning, justify, testing, evaluating, acquiring and implementing ADP systems software.
9.	5236.2	AUTOMATED DATA PROCESSING (ADP) RESOURCE DELEGATION PROGRAM	To formally delegate authority to approve and conduct procurement for Automatic Data Processing (ADP) resources and to establish approval and procurement thresholds.
10.	5271.1	INFORMATION RESOURCES (IRM) STANDARDS AND GUIDELINES PROGRAM	To establish the Marine Corps Standards and Guidelines Program, and to authorize the development and distribution of publications that provide technical direction for the management of IRM activities.

ORDER	TITLE	PURPOSE
11. 5271.2A	AUTOMATED INFORMATION SYSTEMS (AIS) STRATEGIC PLANNING	To set forth policies and objectives and assign responsibilities for AIS planning.
12. 5271.3A	MANAGEMENT OVERSIGHT OF OF INFORMATION SYSTEMS	To assign responsibilities for management oversight of automated information systems (AIS's) under the purview of LCM-AIS and their supporting information resources, and to designate members of the Information Systems Steering Committee (ISSC), and assign their responsibilities and functions.
13. P5510.14	MARINE CORPS ADP SECURITY	To publish the technical direction and guidance governing the security of Marine Corps ADP activities

BULLETIN	TITLE	PURPOSE
14. 5230	SYSTEM SECURITY PLAN (SSP)	To direct that System Security Plans be submitted for all major AISs, and General Support Systems that process, store or use sensitive unclassified information on Marine Corps computers.
15. 5230	ELECTRONIC MAIL (E-MAIL) POLICY AND GUIDANCE	To establish policy and provide general guidance on the acquisition and use of E-MAIL.

BULLETIN	TITLE	PURPOSE
16. 5271	MID-RANGE INFORMATION SYSTEM PLAN (MRISP)	To distribute a plan that provides information on the current status and future direction of the use of automatic data processing and data communications technology within the Marine Corps.

MEMORANDUM	TITLE	PURPOSE
ASN(RDA) Memo dtd 24 Jun 91		To establish Ada as the standard language for all software development where cost effective and prescribe procedures for requesting Ada waivers. Promulgated under HQMC r/s Dir C4 dtd 9 Aug 91 and CMC ltr CCI 5230/9 Aug 91.

Appendix C

INFORMATION MANAGEMENT REFERENCES

Public Law

1. Public Law 89-306, Brooks Act, 30 October 1965.

2. Public Law 96-511, Paperwork Reduction Act of 1980 (New Brooks Act), 11 December 1980.

3. Public Law 97-86, DoD Authorization Act of 1982 (Includes Nunn-Warner Amendment), 1 December 1981.

Federal Policies

Office of Management and Budget.

1. OMB Circular A-11, Preparation and Submission of Budget Estimates, June 1989.

2. OMB Circular A-109, Major System Acquisitions, 5 April 1976.

3. OFPP Pamphlet No. 1, Major System Acquisition, A Discussion of OMB Circular No. A-109, August 1976.

4. OMB Circular A-130, Management of Federal Information Resources, 12 December 1985.

Department of Defense Regulations

DoD Index 5025.1-I, DoD Directives System Annual Index, January 1991 and Change 1 to DoD 5025.1-I, 30 April 1991 provides a complete, current listing of all DoD directives.

1. DOD-STD-2167A, Defense System Software Development, 29 February 1988.

2. DOD-STD-2168, Defense System Software Quality Program, 29 April 1988.

3. DoD Directive 3405.1, Computer Programming Language Policy, 2 April 1987.

4. DoD Directive 5000.1, Defense Acquisition, 23 February 1991.

5. DoD Directive 5000.2, Defense Acquisition Management Policies and Procedures, 23 February 1991.

6.   DoD Manual 5000.2M, Defense Acquisition Management Documentation and Reports, February 1991.

7.   DoD Directive 5000.11, Data Elements and Data Codes Standardization Program, 7 December 1964.

8.   DoD Directive 5000.12, Data Elements and Data Codes Standardization Procedures, 27 April 1965.

9.   DoD Directive 5200.28, Security Requirements for Automated Information Systems (AISs), 21 March 1988.

10.   DoD Directive 5010.19, DoD Configuration Management Program, 28 October 1987.

11.   DoD Directive 5105.19, Defense Information Systems Agency (DISA), 25 June 1991.

12.   DoD Instruction 7041.3, Economic Analysis and Program Evaluation for Resources Management, 18 October 1972.

13.   DoD Instruction 7045.7, Implementation of the Planning, Programming, and Budgeting System (PPBS), 23 May 1984.

14.   DoD Directive 7045.14, The Planning, Programming, and Budgeting System (PPBS), 22 May 1984.

15.   DoD Directive 7740.1, DoD Information Resources Management Program, 20 June 1983.

16.   DoD Directive 7740.2, Automated Information System (AIS) Strategic Planning, 29 July 1987.

17.   DoD Directive 7920.1, Life Cycle Management of Automated Information Systems (AIS), 29 June 1988.

18.   DoD Instruction 7920.2, Automated Information Systems (AIS) Life-Cycle Management Review and Milestone Approval Procedure, 7 March 1990.

19.   DoD 7920.2-M, Automated Information System Life-Cycle Management Manual, March 1990.

20.   DoD Instruction 7920.4, Baselining of Automated Information Systems (AIS), 21 March 1988.

21.   DoD-STD-7935A, DoD Automated Information System (AIS) Documentation Standards, 31 October 1988.

22.   DoD Directive 7950.1, Automated Data Processing Resources Management, 29 September 1980.

Component Regulations

Marine Corps.

1.   MCO 1510.37, Individual Training Standard (ITS) for Data
Systems, Occupational Field 40, 7 December 1989.

2.   MCO 5230.2D, USMC Central Design and Programming Activities
(MCCDPA), Designation of, 18 March 1988.

3.   MCO P5230.10A, ADP Equipment for the Fleet Marine Force
(ADPE-FMF) Plan (ADPE-FMF MGTPLAN), 16 June 1983.

4.   MCO 5230.13, Regional Automated Services Centers (RASCs),
Designation of, 28 December 1982.

5.   MCO 5230.14, Marine Corps Data Network (MCDN) Management and
Control Manual, 8 August 1983.

6.   MCO 5230.15, Data Base Administration, 9 August 1983.

7.   MCO P5231.1B, Life Cycle Management for Automated
Information Systems (LCM-AIS) Projects, 22 March 1990.

8.   MCO 5233.2, Computer Capacity Planning and Management (CPM)
Prg, 12 April 1990.

9.   MCO 5234.2, Configuration Mgmt of ADP Systems Software, 31
May 1983.

10. MCO 5236.2, ADP Resource Delegation Program, 26 June 1991.

11. MCO 5271.1, Information Resources (IRM) Standards and
Guidelines Program, 19 September 1986.

12. MCO 5271.2A, Automated Information Systems (AIS) Strategic
Planning, 30 October 1989.

13. MCO 5271.3A, Management Oversight of Automated Information
Systems, 22 March 1990.

14. MCO P5510.14, Marine Corps ADP Security, 2 January 1981.

15. MCBul 5271, MRISP (FY92-FY97), 6 Mar 92

Navy.

1.   SECNAV Instruction 5231.1C, Life Cycle Management (LCM)
Policy and Approval Requirements for Information System (IS)
Projects, 8 March 1989.

2.   SECNAV Instruction 5231.3A, Information System Executive
Board (ISEB), 25 April 1989.

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Appendix D

IRM TECHNICAL PUBLICATION INDEX

NUMBER	SUBJECT/DATE OF PUBLICATION
5230-01	FMF-EUCE AUTOMATED INFORMATION SYSTEMS GUIDELINES (06/13/89)
5230-02A	PROJECT DELIVERABLE STYLE MANUAL (03/23/92)
5230-03	FUNCTIONAL MANAGER'S INFORMATION SYSTEMS (IS) HANDBOOK AND GLOSSARY
5231-01A*	SYSTEM DEVELOPMENT METHODOLOGY (SDM) OVERVIEW (11/26/90)
5231-02A*	SYSTEM DEVELOPMENT METHODOLOGY (SDM) DEVELOPER PERSPECTIVE (09/19/88)
5231-03	*** CANCELLED ***
5231-04*	FUNCTIONAL REQUIREMENTS DEFINITION (07/10/87)
5231-05	GENERAL DESIGN SPECIFICATION (04/16/87)
5231-06	DETAILED DESIGN SPECIFICATION (04/23/87)
5231-07A	USERS MANUAL (10/23/90)
5231-08A	COMPUTERS OPERATIONS MANUAL (03/28/88)
5231-09A	APPLICATION CONFIGURATION MANAGEMENT PLAN (06/27/88)
5231-10A	QUALITY ASSURANCE PLAN (05/01/91)
5231-11	*** CANCELLED ***
5231-12	AUTOMATIC DATA PROCESSING EQUIPMENT (ADPE) SUPPORT PLAN (07/17/87)
5231-13	DATA BASE CONVERSION PLAN (04/23/87)
5231-14	TEST PLAN (03/20/87)
5231-15	TRAINING SUPPORT PLAN (05/26/87)
5231-16*	IMPLEMENTATION PLAN (03/17/87)
5231-17	INSPECTION AND ACCEPTANCE (04/16/87)
5231-18	PROTOTYPING STANDARD (03/17/87)

NUMBER	SUBJECT/DATE OF PUBLICATION
5231-19A	PROJECT MANAGEMENT PLAN (04/21/89)
5231-20A	REQUIREMENT STATEMENT (08/11/89)
5231-21	PROJECT BASELINING (06/26/89)
5231-22	COMPUTER BASE TRAINING DEVELOPMENT STANDARDS (09/25/91)
5231-23**	AUTOMATED INFORMATION SYSTEMS STANDARDS
5233-01	*** CANCELLED ***
5233-02	*** CANCELLED ***
5233-03	*** CANCELLED ***
5233-04**	COMPUTING CAPACITY MANAGEMENT
5233-05	*** CANCELLED ***
5233-06A	LIBRARY MANAGEMENT SYSTEM (02/05/92)
5233-07**	SOFTWARE PERFORMANCE ENGINEERING
5234-01*	PROGRAMMING STANDARDS (06/03/87)
5234-02	MAN-MACHINE DIALOGUE (03/17/87)
5234-03**	SYSTEMS SOFTWARE
5234-04	NAMING CONVENTIONS (12/21/87)
5234-05**	SOFTWARE DEVELOPMENT COST ESTIMATING
5234-06**	APPLICATION PERFORMANCE ENGINEERING
5235-01A	DATA DICTIONARY (02/05/92)
5235-02	ADAPTABLE DATABASE SYSTEMS STANDARDS (10/01/91)
5235-03**	STANDARD DATA ELEMENT DEVELOPMENT, APPROVAL, AND MAINTENANCE PROCEDURES
5236-01*	CONTRACT ADMINISTRATION (06/16/87)
5236-02	*** CANCELLED ***
5236-03	ECONOMIC ANALYSIS (03/20/87)
5236-04	INTEGRATION SUPPORT CONTRACT USER"S GUIDE (07/02/91)

NUMBER	SUBJECT/DATE OF PUBLICATION
5237-01**	STANDARDS/GUIDELINES FOR ELECTRONIC BULLETIN BOARD SYSTEMS
5238-01	*** CANCELLED ***
5238-02**	INVENTORY MANAGEMENT
5238-03**	COST ACCOUNTING AND REPORTING
5239-01	NETWORK PROCEDURES MANUAL (03/05/87)
5239-02**	NETWORK CAPACITY MANAGEMENT
5239-03**	NETWORK PERFORMANCE EVALUATION
5239-04**	LOCAL AND WIDE AREA NETWORKS
5239-05	TELECOMMUNICATIONS SUPPORT PLAN (03/01/87)
5239-06	DATA ACCESS SECURITY (03/28/90)
5239-07**	TERMINAL AREA SECURITY OFFICER (TASO) USERS GUIDE
5239-08*	COMPUTER SECURITY PROCEDURES (05/15/90)
5239-09	CONTINGENCY PLANNING (07/05/89)
5239-10	SMALL COMPUTER SYSTEMS SECURITY (05/23/90)
5239-11**	ACCREDITATION PROCESS
5239-12	PROJECT MANAGER'S SECURITY HANDBOOK (12/12/90)
5239-13	SYSTEMS SECURITY PLAN (04/30/91)
5270-01**	END-USER COMPUTING (EUC) PROGRAM
5271-01A	IRM STANDARDS AND GUIDELINES PROGRAM INDEX (10/22/90)
5271-02	*** CANCELLED ***
5271-03	*** CANCELLED ***
5271-04*	IRM STANDARDS AND GUIDELINES PROGRAM TECHNICAL PUBLICATIONS FORMAT (01/08/87)
5271-05	IRM PLANNING (01/30/87)
5271-06	*** CANCELLED ***
5271-07	*** CANCELLED ***

NUMBER   SUBJECT/DATE OF PUBLICATION

5271-08**   SOFTWARE SUPPORT PERSONNEL REQUIREMENTS MODEL

*   Indicates published changes

**   Indicates that the publication is under development and has
     not been published.

Appendix E

SAMPLE MISSION NEED STATEMENT (MNS)

NOTE: The purpose of the MNS is to describe the mission deficiency and to justify the exploration of alternative solutions for satisfying that deficiency. The following is a SAMPLE MNS for informational purposes only.

MISSION NEED STATEMENT (MNS)

SECTION 1 MISSION AREA IDENTIFICATION

1.1 Mission and Authority. The Facilities and Services Decision, under the direction of the Deputy Chief of Staff, Installations and Logistics is responsible for the management of Marine Corps facilities to include policy, requisition, construction, leasing, encroachment protection, technical inspections, real property maintenance activities, and disposition of facilities.

1.2 Current Environment. The facilities management functions performed at Marine Corps Bases and Air Stations are under staff cognizance of the Facilities and Services Division, Headquarters Marine Corps and receives their policy and guidance therefrom.

1.3 Priority. This MNS is considered high priority inasmuch as the major and minor activities in the Marine Corps are currently expending local assets to develop automated data processing systems for Facilities Maintenance and Housing Scheduling which are non-compatible.

SECTION 2 DEFICIENCY

2.1 Scope.

    a. The Deputy Secretary of Defense, by Department of Defense, (DoD) Directive 4165.2, has directed that all services will implement a program for the management of the maintenance and repair of real property in the most cost effective manner. SECNAVINST 11014.11A directs the Commandant of the Marine Corps to implement the DoD Directive. Fiscal and manpower constraints, implementation of the A-76 commercial activities program, and the Joint Interservice Management Flag Officers Working Group (JIMFOWG) have placed increased informational demands on local and Headquarters facility managers. Data, which has up to now been collected and manipulated manually, is being used as the basis for making major decisions. These decisions require accurate and timely data.

    b. A deficiency that is common to facilities management departments is inefficient operations due to the inability to make timely use of data. Each facility management department is

responsible for the maintenance and repair of many facilities and pieces of equipment. The management of these functions generates data (inspector results, emergency/service calls, standing work orders, etc.), and requires retrieval of data (Backlog of Maintenance and Repair, units due for inspection, work order status, etc.). In addition there exists a demand for the utilization of local housing assets. Proper data management is a prerequisite for effective facilities and housing support to Marine Corps activities. In all, except for the smallest Marine Corps activities, data handling requirements exceed the activities manual management capabilities.

c. In past years, several of the larger Marine Corps activities, in reaction to the large volume of data being generated, have instituted data processing systems unique to their activity. These systems, although better than the manual processing system, are for the most part primitive to the state of the art and place an inordinate amount of pressure on the local Regional Automated Services Centers (RASCs) to produce software and maintain the system. The systems are not compatible and cannot be used for Marine Corps wide management. Additionally, they do not provide for an automated interface with the fiscal cost collection systems (PRIME/SABRS) which is desirable for cost identification.

2.2 Jobs to be Accomplished. There is a serious need for the capability to provide real-time data on the status of facilities within the Marine Corps facility management area. The data must encompass inventories, maintenance history, current maintenance status, future plans and projects and the scheduling of the use of those facility assets. The various pieces of data which interface need to be tracked concurrently in order to assure one approach to solving a maintenance or scheduling problem. Most of the data required as currently being held in a manual mode (i.e. files, project folders, etc.) and are accessed manually. A listing of some of the tasks which need to be automated to assure a responsive facility management program are:

a. Track completed and in process service tickets.

b. Track work orders both in process, planned and completed.

c. Track and correlate major maintenance/repair and military construction projects with a and b above, to assure a non-repetitive maintenance effort.

d. Create management reports covering various areas of maintenance for local and higher headquarters analysis.

e. Create and track backlog of maintenance and repair of facilities for local and higher headquarters analysis.

f. Manage both scheduling and maintenance of family housing.

SECTION 3 EXISTING AND PROGRAMMED CAPABILITIES

3.1 Current Capability. At the majority of Marine Corps activities, the collection, manipulation and storage of facilities data is done manually. Several of the larger activities are processing a portion of the data by ADP means with varying degrees of success, however, none of the systems currently in use are compatible. All data interfaces are manual requiring an excessive amount of time to provide local activities and higher headquarters with reports required for facilities and housing management.

3.2 Programmed Capability. There are no programs currently being processed by the Marine Corps to alleviate the problems identified in this MNS relating to the facility management area. There are programs being used now or under development by other government agencies and will be reviewed for use by the Marine Corps during the development phase of this project.

3.3 Impact.

a. The base facility management organizations will continue to process the data manually. This will continue the status quo of the facility management with local and higher headquarters being incapable of responding to demands for data on a real time basis. The lack of this responsiveness will cause the managers to continue to rely on inaccurate data information to make current decisions.

b. The activities within the Marine Corps will continue to operate with individual systems of varying levels of efficiency but with little, if any, continuity between them. As a direct impact of this approach, the local RASCs will find themselves being faced with increasing requirements by the Facility and Housing management activities to provide responsive systems.

c. The activities will continue to be labor intensive organizations in the area of data management.

SECTION 4 CONSTRAINTS. The primary constraints to be considered when exploring alternative solutions to the problems identified in Section 3 are the following:

a. The exchange of information (data) between the Facilities and Housing systems and the Financial system (PRIME/SABRS) for accurate cost identification.

b. The exchange of information between the using activities and higher headquarters for management purposes.

c. The manpower and equipment necessary to develop the automation of the Facilities and Housing management areas should be accomplished with HQMC assets as far as practical.

d. The Facility and Housing automated system should support

higher headquarters needs for reports external to the Marine Corps for budgeting purposes. (BMAR, etc.).

    e. The system must have the capability to be easily modified to accommodate future requirements.

SECTION 5 ESTIMATED COSTS. This section was not required at the time of the RPM/FHS MNS. The following describes what is currently required.

5.1 AIS Project Cost. This is a preliminary estimate of AIS project costs (e.e., up to $1M, $1M to $10M, $10M to $50M, $50M to $100M, and over $100M).

5.2 Concepts Development Cost. Show the vents and estimated resources to move from milestone 0 to milestone 1.

Appendix F

SAMPLE ABBREVIATED SYSTEM DECISION PAPER (ASDP)

NOTE: The purpose of the ASDP is to document the LCM process for AIS development projects with AIS project costs of less than $1 million. The ASDP must logically and concisely outline the need for the AIS, the user requirements, all alternatives considered, the cost of the AIS project, and benefits of the AIS. The following is a SAMPLE ASDP for informational purposes only.

ABBREVIATED SYSTEM DECISION PAPER

Section 1 MISSION NEED

1.1 Need. CTAE has the mission of providing technology assessment. In addition to the technology assessment mission, there are six major initiatives in which CTAE is responsible for providing technological assessment. These initiatives are:

    a. Business Case. This initiative requires CTAE to present a business case for the way the Marine Corps does it's business in the Information Resources Management arena. This requires providing information for internal and external review as well as interfacing with external business case applications.

    b. Ada and software reuse. These initiatives require the Marine Corps to adhere, promote, provide technical assistance, provide a software reuse repository, and interface with DoD in promoting software reuse and the use of the Ada programming language.

    c. Data administration. This initiative gives CTAE responsibility for definition, organization, supervision, and protection of data within the Marine Corps. This includes data element standardization, data element approval and maintaining the Marine Corps data dictionary and results from Marine Corps modeling efforts.

    d. Capacity management. This initiative requires tracking, monitoring, and reporting of usage data of fixed hardware assets at the RJEs, RASCs and MCCDPAs. This data is critical in preparing future budgets and providing planning data for future requirements.

    e. Security. This initiative requires a proactive approach to security, in the mainframe, network, server and microcomputer environment. This involves a wide range of environments and levels of security, to include the multi-level security tasking recently assigned to CTAE.

    f. Open Systems Architecture. This initiative requires the Marine Corps to develop an approach to migrate and maintain an

open systems environment for future applications. This will require the use of POSIX compliant/certified operating systems. Standards and technology assessment for application portability from microcomputers to mainframes will have to be developed.

1.1.1. Replacement systems. Current software does not have the capability to run the POSIX certified open systems environment.

1.1.2. Word processing and spreadsheet capability is required for TAD trips, meetings, and work at home.

1.2 <u>Priority</u>. In order to perform these missions, more capable hardware, software and operating systems are required.

SECTION 2   <u>PROPOSED SOLUTION</u>

2.1 <u>User Requirements</u>. There is a requirement for an integrated network of independent work stations capable of distributed processing from each work station. The network must be independent of the MCCTA LAN to avoid possible disruption of services during technological assessment testing. Each work station requires the POSIX certified open systems environment. Each work station must be capable of supporting a distributed relational data base management system and use of file services directly and transparently on other work stations on the network. The hardware and software requirements explained above and the requirements for the other six major CTAE initiatives are contained in enclosures (1) through (7). Enclosures not included in sample ASDP.

2.2 <u>Performance Requirements</u>

2.2.1 Hardware requirements:

One year on-site service on all hardware systems, with 48 hour response time.

For 80386 based systems:

- Must be IBM compatible

- 80386 33 MHz: minimum speed requirement.

- 80387 33 MHz math co-processor

- ISA bus with minimum of 4 empty slots (one of which must
            be a 32 bit slot), 128K cache

- 8 megabytes of RAM expandable to 32 MB on motherboard: Minimum
            RAM requirement.

- Minimum of 320 MB hard disk storage (18 ms access time or
            better).

- Disk controller for use with hard disk/floppy disk, SCSI, ESDI, or IDE interface, 1:1 interleave

- 1.2MB 5 1/4" floppy drive

- 1.44MB 3 1/2" floppy drive

- SVGA video card with 1 MB memory capable of supporting SVGA monitor with 1024 X 768 resolution

- 14" SVGA monitor with 1024 X 768 resolution, .28 pitch or better

- Two button serial mouse, Microsoft compatible.

- Ethernet Card, BANYAN/VINES compatible

- 101 key keyboard

For 486 based systems:

- Must be IBM compatible.

- 80486 33 MHz minimum speed requirement.

- EISA board with minimum of 4 empty slots (one of which must be a 32 bit slot), 128K cache

- 16 megabytes of RAM expandable to 32 megabytes on the mother-board: Minimum RAM requirement.

- Minimum of 500 MB hard disk storage (18 ms access time or better)

- Minimum of 320 MB hard disk storage (18 ms access time or better)

- Disk controller for use with hard disk/floppy disk, SCSI, ESDI, or IDE interface, 1:1 interleave

- 1.2MB 5 1/4" floppy drive: Industry standard

- 1.44MB 3 1/2" floppy drive: Industry standard

- SVGA video card with 1 MB memory capable of supporting SVGA monitor with 1024 X 768 resolution

- 14" SVGA monitor with 1024 X 768 resolution, .28 pitch or better

- Two button serial mouse, Microsoft compatible.

- Ethernet Card, BANYAN/VINES compatible

- 101 key keyboard

Other:

- 2400 baud external modems (Hayes compatible)

- 9600 baud external modems (Hayes compatible): The V.32
                protocol is required.

- HP Laserjet III printer (with 3MB memory) or compatible.

- 80386-SX 25 MHz, Serial port, parallel port, two button
                mouse, 4 MB RAM, 60 MB hard disk, 3.5" 1.44 floppy
                drive, VGA (640 X 480 resolution) or better, MS-
                DOS 5.0 operating system, nylon carrying case,
                2400 baud modem, battery charger, two year
                onsite maintenance

2.2.2 Software requirements:

- MS-DOS 5.0 or 100% compatible operating system: To be used for
                standard MS-DOS applications or partition. Must
                use extended memory.

- Microsoft C professional development system compiler: for
                Ada interface to the Banyan/Vines toolkit. No
                other product will fill the requirement.

- BANYAN/VINES Toolkit: Required to build bridge between UNIX
                operating system and LAN server as well as
                interface for Ada application interfaces. There
                are no other products that can fill this
                requirement.

- Harvard Graphics: Will be used for presenting capacity
                management data.

- Windows 3.0 (or later) used in the DoD standard application
                for business modeling, used in the capacity
                management reporting, used in the data dictionary
                software interface. This proprietary product is
                required to run an application mandated by DoD.

- Microsoft Excel 3.0 (MS-DOS) used for the DoD standard
                application for business modeling.

- Enable for SCO Unix: Used for Marine Corps standard word
                processing, database, and spreadsheet
                applications.

- Word Perfect 5.0 for Unix: Used as the standard DOD word
                processing package.

- Oracle RDBMS (SCO UNIX/486): Required to run the DOD Data
                Dictionary application. No other product will
                run this application.

- Oracle Pro C pre-compiler (SCO UNIX/486): Proprietary C pre-compiler required to run the DOD Data Dictionary application. No other product will run this application.

- Oracle SQL Forms (SCO UNIX/486): Required to run the DOD Data Dictionary application. No other product will run this application.

- Oracle SQL Plus (SCO UNIX/486): Required to run the DOD Data Dictionary application. No other product will run this application.

- Oracle RDBMS/Oracle SQL* Forms/Oracle SQL* Plus (MS-DOS/486): Required to run the DISA DOD Data dictionary inquiry for Central Design Activities. No other products will run this application.

- SCO Open Desktop Personal System: Operating system (must be POSIX certified). The most commonly used UNIX operating system within DOD. Provides the requirement for X-Windows graphical user interface and provides for the requirement for MOTIF. X-Windows is the DOD windows standard package. MOTIF is the DOD standard toolbox for creating graphical user interfaces under X-Windows. Provides the requirement for TCP/IP and LAN client capability. Provides a RDBMS system and SQL interface. Allows running some DOS applications in a UNIX environment. This product is the only POSIX certified.

- PROCOMM PLUS: TP software for dial-up access to DOD bulletin boards.

2.3 <u>Classification Requirements</u>. None

2.4 <u>Operating Environment</u>. These systems will operate in an office environment.

SECTION 3 <u>OTHER ALTERNATIVES CONSIDERED</u>.

3.1 <u>Current System</u>. Status quo. Do not pursue fulfilling CTAE's mission.

3.2 <u>Other alternatives considered</u>: None.

SECTION 4 <u>COST ANALYSIS</u>. (Summarize the projected costs (personnel, hardware, software, security mechanisms, training and facilities) associated with developing each of the alternatives into an operational system. Identify expected benefits of each alternative such as improvements to functional support and cost savings. Give rationale for the recommended alternative.)

SECTION 5   INTERFACE CONSIDERATIONS. None.

SECTION 6   TESTING. Testing of this system will be conducted in-house by an independent testing contractor at no expense to the government.

SECTION 7. FUNDING. PMC funds can be used for the hardware requirements over $25,000. O&M,MC funding is required for software and operating system requirements.

SECTION 8. OTHER COMMENTS

8.1 The hardware will be implemented as an entire system. Each work station is an essential part of the technology assessment requirement as well as each major initiative.

SECTION 9. JOINT SIGNATURES

Submitted: _____
                                         (Program Manager)

Functional Requirement Validated: _____
                                         (Functional Manager)

Appendix G

SAMPLE SYSTEM DECISION PAPER (SDP)

NOTE: A SDP recaps the essential information on an AIS for decision makers. An updated SDP is submitted at each major LCM milestone and provides the necessary information for the decision-making process. MCO P5231.1 provides information and instructions on the requirements and content of each SDP. The following is a SAMPLE SDP for informational purposes only.

SYSTEM DECISION PAPER I (SDP I)

SECTION 1 MISSION NEED.

1.1 Purpose. This document has a two-fold purpose. First, we summarize the development to-date of the United States Marine Corps Military Manpower-Hardware Requirements Determination System (HARDMAN II). Second, we request principal concurrence to take HARDMAN II from Phase II (Concept Development) to Phase III (Software Design).

1.2 Overview.

1.2.1. Mission Element Need Statement (MNS). All elements of the HARDMAN II MNS remain critical. This standardized manpower, personnel, and training (MPT) requirements determination system is our highest priority requirement in Manpower and Training.

1.2.2. Functions. HARDMAN II will provide a proven standardized process to analyze new equipment for MPT impacts. It will operate at Headquarters, U.S. Marine Corps (HQMC) and other non-FMF organizations on existing and future computing equipment and automated networks. It will be developed to take maximum consideration of existing Marine Corps data systems into account.

1.2.3. Key Objectives. The key objectives in developing and deploying HARDMAN II are fielding the system and establishing a network. Our software will be ready to field in the 3d Quarter FY88, for use on existing stand-alone computers at HQMC and other non-FMF organizations. We plan to provide a network system in 1990.

1.2.4. Assumptions.

1.2.4.1. That acquisition sponsors and project officers will continue to ensure that MPT requirements for their systems are developed.

1.2.4.2. That the Deputy Chief of Staff for Manpower and CG, MCRDAC will continue to validate MPT requirements for new combat systems.

1.2.5. Constraints.

1.2.5.1. That the Marine Corps force structure cap will continue.

1.2.5.2. That no additional manpower requirements will be created to support the HARDMAN II system, and that available resources will be reduced or limited to their current levels.

1.3. Discussion. The essential issues outlined above are discussed in detail below.

SECTION 2 ESSENTIAL ISSUES

2.1. Schedule

2.1.1. General. HARDMAN II is being developed in the following 5 phases. The major events for each phase are outlined in appendix 1.

2.1.1.1. Mission Analysis/Project Initiation

2.1.1.2. Concept Development

2.1.1.3. Software Design

2.1.1.4. Software Development

2.1.1.5. Deployment/Operations

2.1.2. Summary. We have ended Concept Development and are transitioning to the Software Design phase. The concept we recommend is to develop commercial and custom software into HARDMAN II application programs for use on stand-alone (desk top) and networked USMC personal computer (desk top) equipment.

2.1.2.1. Concept Development. In the Concept Development phase, our contractor, Hay Systems, Inc., surveyed 128 subject matter experts at HQMC and MCDEC to produce two documents. The first, the Requirements Statement (RS), expressed requirements for a system to help us determine military manpower, personnel, and training (MPT) requirements for our equipment. The RS is on file in MPC-20, Room 4330, HQMC, ext. 4-2110. The second document, the Economic Analysis/Feasibility Statement (EA) proposed the three alternatives listed below to satisfy the requirements in the RS. The EA is attached as appendix 2.

2.1.2.1.1. Alternative 1 is the status quo. It is not considered feasible, because it lacks standardization and auditable procedures.

2.1.2.1.2. Alternative 2 proposes the development of a system using commercial and custom software, and running it on present USMC computing equipment.

2.1.2.1.3. Alternative 3 adds an automated computer network to

alternative 2.

2.1.2.2. Software Design. Our contractor for the initial part of this phase is Idaho National Engineering Laboratory (INEL). They are preparing advanced prototype HARDMAN II software, a User's Manual, and a Program Maintenance Manual. It will be available in the 2d Quarter, FY88, for further development into a complete system.

2.1.3. Organizational Change. When we initiated this project, USMC equipment was acquired by the Deputy Chiefs of Staff in their respective areas. I&L provided Acquisition Project Officers, and MCDEC provided Developmental Project Officers. The DC/S for Research Development and Studies provided Development Coordinators. ALMAR 269/87 established the Marine Corps Research Development and Acquisition Command (MCRDAC) on 18 November 1987 to assume the mission of acquiring USMC equipment. We recommend that the Deputy Chiefs of Staff for Manpower and Training continue to develop HARDMAN II for use by USMC program managers, manpower analysts, and training review officers regardless of their location/position in the USMC acquisition or review process.

2.1.4. Current Schedule Differences. As shown by appendix 3, the current development schedule for HARDMAN II differs somewhat from its predecessor. The schedule shows that we will complete HARDMAN II within the originally scheduled period, except for the networking hardware. As shown in appendix 5, we have submitted a Program Objective Memorandum (POM) initiative for a computer file server and networking hardware in FY90. This POM initiative provides us with a contingency in case other plans (i.e., C4's plan to network HQMC) are not completed by then.

2.2. Resources. We have expended $193,000 and plan to expend $615,000 more to complete HARDMAN II. Expenditures by phase are as follows:

2.2.1. Phase I (Mission Analysis/Project Initiation). No dollars were spent during this phase. The project management team expended 0.65 military manyears (MMY) to initiate the project.

2.2.2. Phase II (Concept Development). We expended $115,000 for contractor deliverables and 0.4 MMY by the project management team during this phase. The deliverables were the Requirements Statement and the Economic Analysis/Feasibility Study. The contractor was Hay Systems, Inc.

2.3.3. Phase III (Software Design). We have expended $78,000 for contractor deliverables and plan to expend 0.3 MMY to design the HARDMAN II software. The deliverables will be a prototype software application program, a user's manual, and a program maintenance manual. The contractor is Idaho National Engineering Laboratory (INEL).

2.2.4. <u>Phase IV (Software Development)</u>. We plan to expend an additional $200,000 and 0.3 MMY to develop INEL's prototype software and manuals into a complete system, except for the network we plan to establish in Phase V (described below). The complete system will include all the application software necessary for operations, and the documentation listed in section 2.4 below.

2.2.5. <u>Phase V (Deployment/Operations)</u>. During Phase V, we plan to expend $415,000 and 0.6 MMY for a computer and networking hardware, as per appendix 5. With this material we will establish a HARDMAN II automated network with the computer acting as a file server to handle the large database that HARDMAN II will need to use.

2.2.6. <u>Cost Comparison</u>. Actual versus projected costs by phase are listed on the following pages. (Figure 1 not included in this sample).

2.3. <u>Problem Areas</u>. The only problem area to date involved contractual difficulties with our Phase II contractor, Hay Systems, Inc. (HSI). The draft and final documents they initially submitted were unsatisfactory. We returned them to HSI for rewrite. HSI took 3 months longer than they originally planned to come up with material that satisfied the project management team.

2.4. <u>LCM Documentation</u>. The life cycle management (LCM) documents completed during Phase II are summarized as follows. Appendix 4 is a list of the documents that are pending completion. All LCM documents required for Phase II have been completed.

2.4.1. <u>Requirements Statement (RS)</u>. The RS recorded the results of a survey given to 135 subject matter experts at HQMC and MCDEC. The survey takers were, as a group, completely familiar with the Marine Corps systems acquisition process. They expressed a requirement for a system to determine manpower, personnel, and training (MPT) requirements for Marine Corps equipment. The RS can be reviewed in MPC-20, Room 4330, HQMC, ext. 4-2110.

2.4.2. <u>Economic Analysis/Feasibility Study (EA)</u>. The EA proposed three alternatives to satisfy the requirements listed in the RS, as follows.

2.4.2.1. Alternative 1 is the status quo. It is not considered feasible, because it lacks most of the requirements listed in the RS, principle among which are standardization and auditable procedures.

2.4.2.2. Alternative 2 proposes the development of an MPT requirements determination system using commercial and custom software, and running it on present USMC computing equipment.

2.4.2.3. Alternative 3 adds an automated computerized network system to alternative 2. See appendix 5.

2.5. Summary of Appendices. The appendices are not included in this sample. Titles are provided below.

2.5.1. Appendix 1 - HARDMAN II Development Schedule. This appendix contains a complete schedule of the major events for each developmental phase of the HARDMAN II project.

2.5.2. Appendix 2 - Economic Analysis.

2.5.3. Appendix 3 - Development Schedule Comparison. This appendix compares the schedule in our updated Project Management Plan (PMP) prepared for project initiation.

2.5.4. Appendix 4 - Required Documentation. This appendix shows the required documents per MCO P5231.1 for the HARDMAN II system.

2.5.5. Appendix 5 - Program Objective Memorandum (POM). This is the POM initiative for the computer file server and networking hardware.

2.6. Approval

2.6.1. Recommendations.

2.6.1.1. That the Deputy Chiefs of Staff for Manpower and Training continue to develop the HARDMAN II system.

2.6.1.2. That the HARDMAN II system be developed to initially consist of application programs and an automated database management system to run on present USMC personal computing equipment.

2.6.1.3. That a HARDMAN II network system be established.

2.6.1.4. That the Acquisition Project Manager proceed from Phase II, Concept Development, into Phase III, Software Design, with the HARDMAN II system.

2.6.2. Certification. The HARDMAN II system as described herein is certified as having completed all requirements for Concept Development, and is recommended for Software Design by the HARDMAN II Project Team.

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Appendix H

THE PLANNING, PROGRAMMING, AND BUDGETING SYSTEM (PPBS)

1. The purpose of the PPBS is to produce a plan, a program, and finally a budget for the Department of Defense (DoD). The budget is then forwarded in summary to the President for approval, with the President's Budget ultimately submitted to Congress for authorization and appropriation.

2. The PPBS is a cyclic process containing three distinct but interrelated phases: planning, programming and budgeting. In addition to establishing a framework and process for decision-making on future programs, the process permits prior decisions to be examined and analyzed from the viewpoint of the current environment (threat, political, economic, technological and resources) and for the time period being addressed. The decisions are based on and consistent with a set of objectives, policies, priorities, and strategies derived from National Security Decision Directives. The ultimate objective of the PPBS is to provide the operational commanders-in-chief the best mix of forces, equipment, and support attainable within fiscal constraints. Throughout the PPBS, the Secretary of Defense provides centralized policy direction, but places program execution authority and responsibilities with each DoD component. The Services and Defense Agencies thus provide advice and information to the Secretary of Defense so that execution and accountability can be properly assessed. The PPBS phases are broken out below.

3. <u>Planning Phase</u>. The planning phase of the PPBS encompasses the Future Years Defense Program (FYDP) period (mid-term) plus a 10-year extended planning period (long-term). The military role and posture of the US and the DoD in the world are examined, considering national security objectives and the efficient management of resources. The first fundamental documents in the planning phase are the Joint Long Range Strategic Appraisal (JLRSA), the Joint Strategic Planning Document (JSPD), and the Military Department's Long Range Plans. These documents contain the independent Joint Staff (JS) and Service's military strategy and recommendations to be considered when developing the Defense Guidance (DG) for both the mid- and long-term periods.

4. <u>Programming Phase</u>. The programming phase translates approved objectives into resource requirements. The resources include manpower, material, and services. It also organizes DoD goals and expectations under financial categories that are part of the biennial budget. The DoD components develop proposed programs consistent with the policy, strategy, force, resource, and fiscal guidance provided in the DG. These programs are expressed in each component's Program Objective Memorandum (POM).

<u>Program Objective Memoranda</u>. Annually, each Military Department and Defense Agency prepares and submits a POM to the Secretary of

Defense. The POM is prepared consistent with the strategy and guidance, both programmatic and fiscal, stated in the DG, and reflects a systematic analysis of missions and objectives to be achieved, alternative methods of accomplishing them, and the effective allocation of resources. The POM must also identify any major issues that are required to be resolved during the year of submission.

5. Budgeting Phase. With the establishment of program levels in the POM, as modified by Program Decision Memorandas (PDMs), the budgeting phase begins with the DoD components developing detailed budget estimates for the budget years of the approved program.

Budget Estimates. Budget estimates are submitted annually to the Secretary of Defense and include the prior, current, and budget fiscal years (budget year plus one for programs requiring Congressional authorization). Data for the outyears is also derived from, or consistent with, the FYDP update coincident with the submission of budget estimates. Budget estimates are prepared and submitted based on the program as approved in the PDMs, and on economic assumptions related to pay and pricing policies, which are developed and promulgated by the DoD Comptroller in coordination with OMB. The final phase of the budget submission consists of updating the estimates based on final end-of-year accounting reports.

Budget Hearings. After an initial review and analysis of the material submitted in support of the budget estimates, the DoD Comptroller staff holds hearings to review program details with representatives of the DoD components.

Program Budget Decisions (PBDs). Prior to the submission of the budget to OSD and OMB, the DoD Comptroller issues a list of PBD numbers and titles, which are used by the DoD components to structure their budget by subactivities that correspond to the PBD categories. PBDs are used in OSD to provide the Secretary of Defense with an analysis of the funding and program as requested by the DoD components along with one or more alternative recommendations. The PBD process is designed to permit the examination of programs prior to meetings with the President and OMB to resolve final levels of Defense spending.

Draft PBDs. Draft PBDs are provided to the components at the same time they are circulated for coordination with OSD. The components are normally allowed to comment on these drafts, usually within a 24 to 48 hour period.

Final PBDs. When the staffing phase of PBD preparation is completed, the PBD is sent forward for signature. Once signed by the Secretary of Defense, PBDs are then translated into an automatic budget review system to reflect changes in submissions. Even then, PBDs are only considered tentative. Final decisions actually result from three separate activities: PBDs responding to DoD component reclamas, a Major Budget Issued meeting between

the Secretary of Defense and the head of each Defense component, and the Secretary's final meeting with the President.

Reclamas. Upon receiving a PBD, a DoD component may formulate a uniform position on specific issues in the PBD through the preparation of reclamas, which are requests for reconsideration of any item which has been deleted, reduced or otherwise adjusted during the budget review process. Once reclamas have been approved or modified by a DoD component, they are sent to the OSD, which may confirm the original decision or decide on a reconsideration alternative. OSD notifies the component of the decision.

Defense Budget. With final appeals resolved, the Defense Budget is presented to the President for approval. The approved budget is then incorporated into the President's Budget for transmittal to Congress. Each component then updates its FYDP to reflect the approved budget, which establishes the baseline for developing the next POM.

6. Legislative Process. The starting point for the Congressional review phase of the budget process is the transmittal of the President's Budget to Congress. After receiving the president's Budget, Congress conducts hearings with representatives of the Executive Branch and reviews the budget in committee. It then enacts legislation which sets ceilings on the total Federal budget and the total for National Defense. Following this, it authorizes the enactment of appropriations and finally enacts appropriations. When approved by Congress and signed into law by the President, these two acts provide the legal authority for DoD to incur obligations, make payments and execute the budget.

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COMMENTS/REVISIONS

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