U.S. Marine Corps

PROJECT
MANAGEMENT PLAN

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

IN REPLY REFER TO

5231/19A
CCIS-45
APR 2 1 1989

From: Commandant of the Marine Corps

Subj: INFORMATION RESOURCES MANAGEMENT (IRM) PROJECT MANAGEMENT PLAN

Ref: (a) MCO P5231.1A
        (b) MCO 5271.1
        (c) MCO P5600.31

Encl: (1) IRM-5231-19A

1. <u>PURPOSE</u>. To provide guidance and instructions on the development of Project Management Plans as required by reference (a).

2. <u>CANCELLATION</u>. IRM-5231-19.

3. <u>SUMMARY OF REVISION</u>. This revision adds a discussion of project management tools and techniques, expands the content description, adds a figure to describe the relationship of all project tasks and documentation, and adds appendixes on acronyms, abbreviations, and references.

4. <u>AUTHORITY</u>. This standard is published under the authority of reference (b).

5. <u>APPLICABILITY</u>. The guidance contained in this publication is applicable to all Marine Corps personnel responsible for the preparation of a Project Management Plan in support of Automated Information System (AIS) projects managed per reference (a). This standard is applicable to the Marine Corps Reserve.

6. <u>DISTRIBUTION</u>. This technical publication will be distributed as indicated. Appropriate activities will receive updated individual activity Table of Allowances for Publications. Requests for changes in allowance should be submitted per reference (c).

7. <u>SCOPE</u>

        a. <u>Compliance</u>. Compliance with the provisions of this publication is required unless a specific waiver is authorized.

        b. <u>Waivers</u>. Waivers to the provisions of this publication will be authorized only by CMC (CC) on a case by case basis.

Subj: INFORMATION RESOURCES MANAGEMENT (IRM) PROJECT MANAGEMENT
       PLAN

8. RECOMMENDATIONS. Recommendations concerning the contents of
this technical publication should be forwarded to CMC (CCI) via
the appropriate chain of command. All recommended changes will
be reviewed upon receipt and implemented if appropriate.

9. SPONSOR. The sponsor of this technical publication is CMC
(CCI).

                        R. L. PHILLIPS
              Brigadier General, U. S. Marine Corps
           Director, Command, Control, Communications
                   and Computer (C4) Division

DISTRIBUTION: L1P
               L1Q
               L1R
               7000006   (1)
               7000007   (2)
               7000012   (2)
               7000014   (2)
               7000015   (2)
               7000017   (1)
               7000019   (1)
               7000020   (1)
               7000029   (40)
               7000031   (10)
               7000045   (1)
               7000050   (10)
               7000051   (4)
               7000062   (2)
               7000066   (2)
               7000067   (1)
               7000070   (1)
               7000071   (20)
               7000072   (10)
               7000093   (2)
               7000142   (1)
               7000148   (4)

Copy to: 8145001

UNITED STATES MARINE CORPS

Information Resources Management (IRM)
Standards and Guidelines Program

Project Management Plan
IRM-5231-19A

APR 2 1 1989

RECORD OF CHANGES

Log completed change action as indicated.

Change Number	Date of Change	Date Received	Date Entered	Signature of Person Entering Change

PROJECT MANAGEMENT PLAN
IRM-5231-19A

PUBLICATION TABLE OF CONTENTS

PROJECT MANAGEMENT PLAN
IRM-5231-19A

LIST OF FIGURES

Chapter Table of Contents

Chapter 1

GENERAL

Chapter 1

GENERAL

1.1. <u>INTRODUCTION</u>. This Project Management Plan (PMP) standard provides guidance for developing a plan to accomplish the procurement or the design, development, and deployment of automated information systems (AIS's). The PMP developed using this standard will provide the plans, procedures, schedules, documentation requirements, and evaluation criteria for all activities necessary to execute and control an AIS project. Appendix A provides a list of references associated with life cycle management and AIS development.

1.2. <u>SCOPE</u>. The PMP is part of the planning process initiated by the Project Manager (PM) as the first step in the Concepts Development Phase of the project life cycle. At specific points in the life cycle, the PMP is revised to reflect any additions or changes such as:

    a. purchase of new hardware or software,

    b. changes in requirements or constraints, and/or

    c. installation of telecommunications equipment.

1.2.1. <u>Contents</u>. Appendixes B and C describe PMP format and content requirements. The format for project deliverables (e.g., the PMP) is guided by IRM-5320-02 (Project Deliverable Style Manual). In brief, a PMP shall contain the following items:

    a. The purpose of the PMP.

    b. A brief description and statement of purpose of the system being developed or acquired.

    c. Organizational responsibilities and relationships.

    d. A description of all the developmental and project management tools that will be used to manage the project.

    e. Descriptions of all tasks to be performed.

    f. Time Schedules for accomplishing those tasks.

    g. Resources required to support the development effort.

    h. A list of support plans to be developed.

1.3. APPROACH

1.3.1. <u>General</u>. The PMP serves as a guide to direct an AIS project through its life cycle in an efficient manner. Due to the dynamics of AIS acquisition and development, the PMP must be refined throughout the life of the project.

1.3.2. <u>Tools and Techniques</u>. This standard provides guidance regarding the planning data to be considered when developing the initial PMP. This data should be reflected in and controlled by some form of planning and tracking vehicle. Figures 1-01 through 1-05 are samples of planning charts which may be used for this purpose. Any appropriate alternative methods which are found to be effective as planning and tracking vehicles may be used.

     a. <u>Figure 1-01, Responsibility/Task Matrix</u>. This matrix is used to identify the tasks that each member of the project team are responsible for performing.

     b. <u>Figure 1-02, Work Breakdown Structure (WBS)</u>. A WBS defines work from the highest level to the lowest level of detail necessary to describe the project tasks to be accomplished. Individual project tasks are identified by breaking down the high level work packages into the lower level work packages. A WBS not only identifies work packages but also the start date, duration, and expected completion date of each work package.

     c. <u>Figure 1-03, Activity Precedence Diagram (APD)</u>. An APD describes the planned sequential relationship of project activities as defined in the WBS.

     d. <u>Figure 1-04, PERT Network</u>. A Program Evaluation Review Technique (PERT) Network is a project management tool used to identify the precedence and duration of project events (i.e., milestones) and activities as defined in the WBS.

     e. <u>Figure 1-05, Gantt Chart</u>. A Gantt Chart is a project management tool used to graphically display the planned schedule of activities, events, and deliverables. A Gantt Chart identifies the planned start date, duration, and completion date for each task.

1.3.3. <u>Approval</u>. The initial PMP shall be presented to the functional manager or steering group for approval. Essential items from the PMP (and its updates) will be included in the System Decision Papers (SDP's) submitted to the approval authority at the conclusion of each phase of the project life cycle. In this way, the approval authority is approving the contents of the PMP.

Responsibility/Task Matrix

RESPONSIBILITIES/ TASKS	TASK ID	IMPLEMENTATION TEAM LEADER	COMPUTER SYSTEM ANALYST	FUNCTIONAL SYSTEM ANALYST	COMPUTER PROGRAMMER	USER COMMAND	FUNCTIONAL USER	SITE DP PERSONNEL	DATA BASE MANAGER	DATA BASE ADMINISTRATOR	SITE DATA BASE ADMINISTRATOR	QA REP
IDENTIFY POINT OF CONTACT	3.1	p										
CREATE TRAINING SCHEDULE	3.2	p										
ARRANGE SITE TRAINING	3.3	p				x						
CONDUCT SITE TRAINING	3.4	p	x	x	x	x						
IDENTIFY BRIEFING ATTENDEES	4.1	p				x						
ARRANGE BRIEFING FACILITIES	4.2	p				x						
CONDUCT BRIEFING	5.1	p	x	x	x	x	x	x			x	
CONDUCT IMPLEMENTATION	5.2	p	x	x	x	x	x	x			x	x

FIGURE 1-01
Responsibility/Task Matrix

Work Breakdown Structure

The Work Breakdown Structure (WBS) defines the work to be performed from the highest level to the lowest level of detail necessary to describe the tasks to be accomplised. It is the breakdown that defines the individual work to be performed. An example of a WBS for a task is:
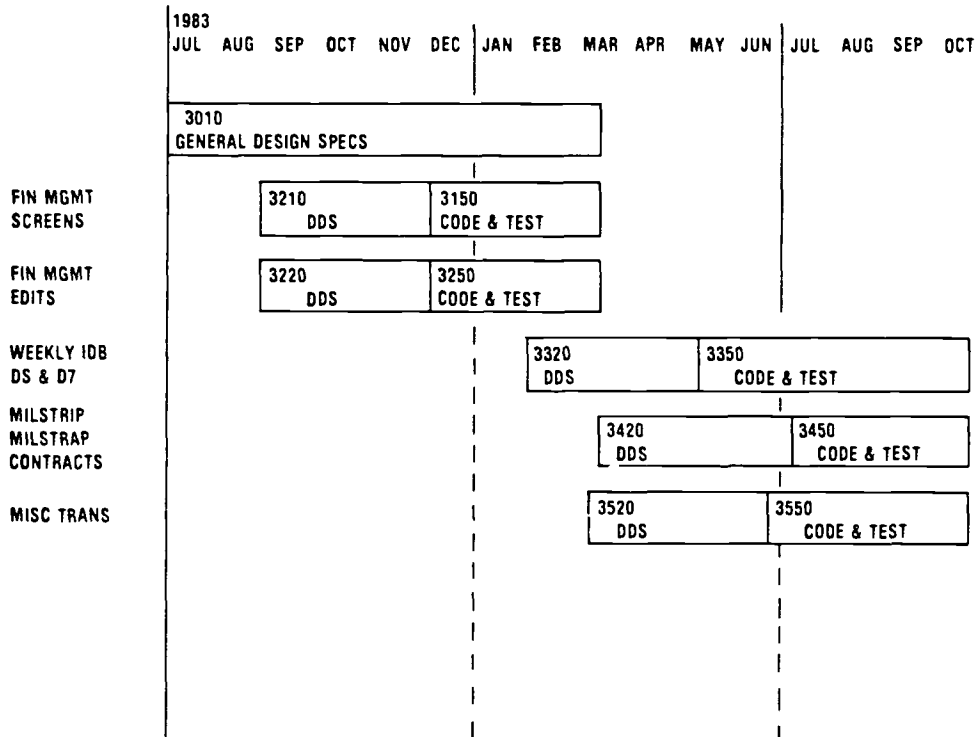
	1983																
	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT

```
1983
JUL  AUG  SEP  OCT  NOV  DEC │JAN  FEB  MAR  APR  MAY  JUN│JUL  AUG  SEP  OCT

   3010
   GENERAL DESIGN SPECS

FIN MGMT       3210        3150
SCREENS            DDS     CODE & TEST

FIN MGMT       3220        3250
EDITS              DDS     COOE & TEST

WEEKLY IDB                        3320        3350
DS & D7                           DDS         CODE & TEST

MILSTRIP                               3420        3450
MILSTRAP                               DDS         CODE & TEST
CONTRACTS

MISC TRANS                             3520        3550
                                       DDS         CODE & TEST
```

FIGURE 1-02
Work Breakdown Structure

Activity Precedence Diagram

The Activity Precedence Diagram (APD) is the mechanism by which the planned sequence of events is first addressed. Each WBS member is shown on the diagram as a discrete event, connected from the left to all other WBS members which must precede it. An example is:
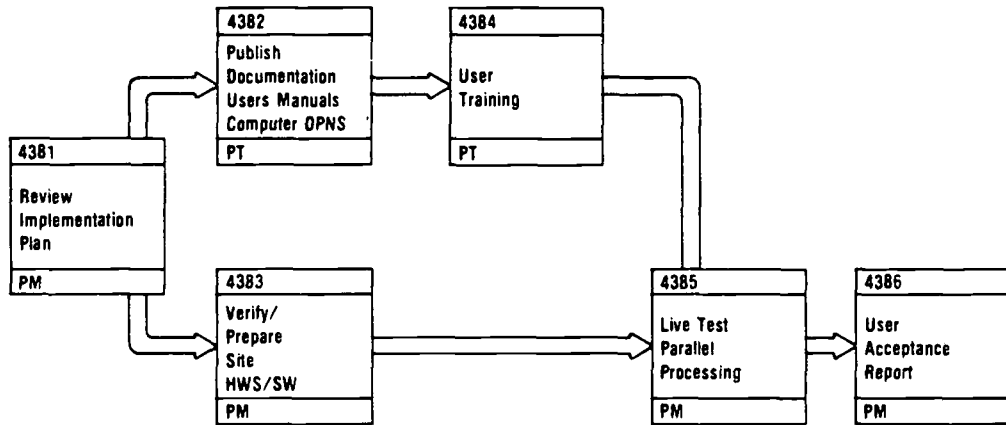

FIGURE 1-03
Activity Precedence Diagram

PERT Network

A PERT network is a tool for planning and tracking events and activities with regard to the duration of activities and the precedence of other events and activities. The chart represents the network of activities required to implement a system or subsystem. Events are represented by circles. Activities are represented by the lines connecting the circles.
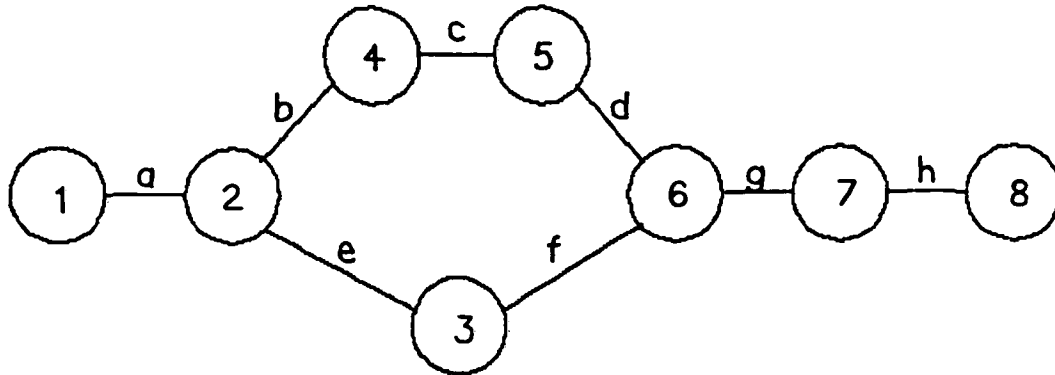
Activity	Description	Duration	Start/End Dates
a	Identify point of contact	1 day	
b	Create training schedule	4 days	
c	Arrange site training	2 days	
d	Conduct site training	9 days	
e	Identify brief attendees	1 day	
f	Arrange brief facility	2 days	
g	Conduct brief	1 day	
h	Conduct implementation	9 days	

FIGURE 1-04
PERT Network

Gantt Chart

The Gantt chart is the mechanism by which the planned schedule of events and deliverables is derived for the tasks. Preliminary estimates of the manpower and duration of each WBS member are used with the Activity Precedence Diagram to develop a schedule for each lower level WBS member. An example is:

WORK PRACTICE	NOVEMBER 12 WEEK 1	NOVEMBER 19 WEEK 2	NOVEMBER 26 WEEK 3	DECEMBER 3 WEEK 4	DECEMBER 10 WEEK 5
4381 Review Implementation Plan					
Publish Documentation Users Manual					
Verify/ Prepare Site HW/SW					
User Training					
Live Test Parallel Processing					
User Acceptance Report					

FIGURE 1-05
Gantt Chart

Chapter Table of Contents

Chapter 2

CONTENT AND FORMAT

Chapter 2

CONTENT AND FORMAT

2.1. <u>DOCUMENTATION STANDARDS</u>. The Project Management Plan (PMP) shall be developed in accordance with the criteria described in the following paragraphs.

2.1.1. <u>Project Tasks/Schedule</u>. In documenting project activities and events via the PMP, the project manager shall use the table of contents described in Appendix B and the content descriptions described in Appendix C. Project support plans will be included as appendixes to the PMP.

2.1.2. <u>Level of Detail</u>. The project schedule should identify all major activities and events and should become progressively more detailed as the project moves through the life cycle. Task lists and work package descriptions should be detailed enough to permit adequate monitoring of progress.

2.1.3. <u>Evaluation Criteria</u>. When evaluating the PMP for completeness and accuracy, the reviewer must, as a minimum, ensure that the following requirements are met.

    a. All sections and paragraphs in Appendix B, "Project Management Plan Table of Contents", are addressed.

    b. The title of any section or paragraph deemed not appropriate is listed as "not applicable".

    c. The content of all sections and paragraphs is completed per Appendix C, "Project Management Plan Content Description".

    d. The purpose and scope of the plan is consistent with the intent of this standard.

    e. The control, status accounting, and auditing functions conform to accepted methodologies.

    f. The plan is comprehensive, definitive, and feasible.

2.2. <u>DOCUMENTATION DEPENDENCIES</u>. The documentation governed by this standard may rely on the content of other project deliverables and/or standards. Figure 2-01, "Precedence Relationship", shows those project deliverables, reviews, baselines, and milestones which have an impact on or must be reflected in the PMP. Appendix D provides a list of acronyms and abbreviations that will be useful in reading figure 2-01.
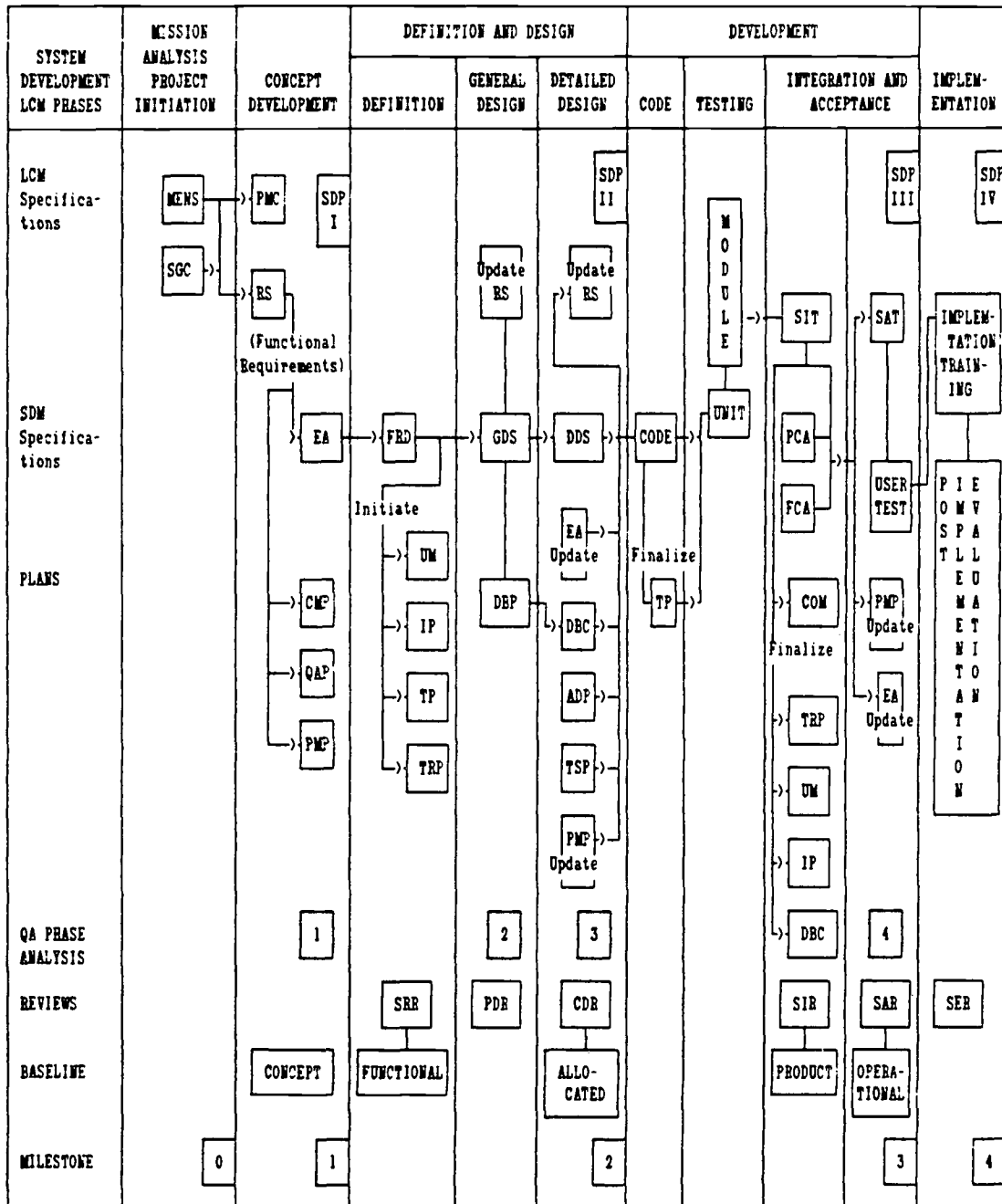
| SYSTEM DEVELOPMENT LCM PHASES | MISSION ANALYSIS PROJECT INITIATION | CONCEPT DEVELOPMENT | DEFINITION AND DESIGN | | | DEVELOPMENT | | | IMPLEM-ENTATION |
			DEFINITION	GENERAL DESIGN	DETAILED DESIGN	CODE	TESTING	INTEGRATION AND ACCEPTANCE	
LCM Specifica-tions	MENS SGC	→PMC SDP I →RS (Functional Requirements)		Update RS	SDP II Update RS	MODULE UNIT		SDP III SIT	SDP IV IMPLEM-TATION TRAIN-ING
SDM Specifica-tions		→EA	→FRD Initiate	→GDS	→DDS→ EA→ Update	→CODE→		PCA FCA SAT USER TEST	P I E O M V S P A T L L E U M A E T N I T O A N T
PLANS		→CMP →QAP →PMP	→UM →IP →TP →TRP	DBP	DBC→ ADP→ TSP→ PMP→ Update	Finalize TP→		COM Finalize →TRP →UM →IP →DBC	PMP Update EA Update I O N
QA PHASE ANALYSIS		1		2	3				4
REVIEWS			SRR	PDR	CDR			SIR	SAR	SER
BASELINE		CONCEPT	FUNCTIONAL		ALLO-CATED			PRODUCT	OPERA-TIONAL
MILESTONE	0	1			2				3	4

FIGURE 2-01
Precedence Relationship

Appendix A

REFERENCES

1. MCO P5231.1A   Life Cycle Management of Automated Information Systems (LCM-AIS) Projects

2. Department of Defense Standard 7935 (DOD-STD-7935) Automated Data Systems (ADS) Documentation.

3. Systems Development Methodology (SDM) Overview (IRM-5231-01)

4. SDM - Developer Perspective (IRM-5231-02)

Appendix B

PROJECT MANAGEMENT PLAN TABLE OF CONTENTS

Project Management Plan

Appendix C

PROJECT MANAGEMENT PLAN CONTENT DESCRIPTION

SECTION 1. INTRODUCTION

This section shall present the objectives of the Project
Management Plan (PMP) and other general information about the
system being acquired or developed.

1.1 PURPOSE

This paragraph shall contain the purpose of the PMP. The
following is an example of what might appear here:

"This document provides plans, procedures, schedules,
documentation requirements, and evaluation criteria for all
activities necessary to administer and control the AIS project
described below."

1.2 PROJECT DESCRIPTION

This paragraph shall provide background information about the
system being acquired or developed.

1.3 REFERENCES

This paragraph shall provide a brief summary of references
(documents and meetings) that are applicable to the acquisition,
design, development, deployment, operation and maintenance of
the system.

1.4 TERMS AND ABBREVIATIONS

This paragraph shall contain any terms and abbreviations that
are unique to this document.

SECTION 2. PROJECT MANAGEMENT

2.1 RESPONSIBILITIES

This paragraph shall describe the location of the project
management team/office in the overall organization and outline
the relationships and responsibilities of all levels of
management.

2.2 PROJECT ORGANIZATION

This paragraph shall describe the composition and
responsibilities of the project team/office. This paragraph
should reference the responsibility/task matrix established in
conjunction with paragraph 3.1 below.

2.3 PROJECT CONTROLS

This paragraph shall describe the developmental and project tools that will be used to control the project (e.g., automated cost estimators or project schedulers).

SECTION 3. TASKS AND SCHEDULE

Development of a Project Management Plan (PMP) is the first action taken by the project manager following his/her appointment and chartering. One of the most important functions of the PMP is to list the remainder of the actions the project manager plans to take during the life of the project.

3.1 TASKS

This paragraph shall contain a set of project task lists using the categories discussed below. These tasks should then be incorporated in a responsibility/task matrix per figure 1-01.

3.1.1 Life Cycle Activities and Milestones

This paragraph shall provide a list of life cycle management (LCM) activities and milestones as described in the current version of MCO P5231.1. The activities should be grouped by LCM phase and shall include such things as determination and analysis of requirements, budgeting for project activities, acquisition or design and development of hardware and software, and development of supporting documentation and project deliverables. This paragraph shall indicate that each LCM phase ends with the submission of a System Decision Paper (SDP) to the project approval authority and that approval of the SDP constitutes achievement of an LCM milestone.

3.1.2 Quality Assurance Inspections, Audits, and Reviews

This paragraph shall provide a list of the inspections, audits, and reviews to be performed by project quality assurance (QA) personnel. Depending on the size and complexity of the project, a separate QA Plan may be required. See IRM-5231-10 (QA Plan) for details regarding QA.

     a. An inspection is a formal evaluation of a project deliverable to determine conformance to predetermined quality requirements. This paragraph shall list all such planned inspections.

     b. An audit is an independent assessment of compliance with software requirements, specifications, baselines, standard procedures, instructions, codes, contractual and licensing requirements, and production configurations. QA audits normally occur at the end of each life cycle phase. This paragraph shall list all such planned audits.

c. A review is an evaluation of software products regarding form and technical content. It is conducted by project management for the purpose of detecting and correcting deficiencies. This paragraph shall list all such planned reviews.

3.1.3 Configuration Management Audits, Reviews, and Baselines

This paragraph shall provide a list of the audits and reviews to be performed by project configuration management (CM) personnel. This paragraph will also include a list of CM baselines that will be established during the life of the AIS project as a result of CM reviews. Depending on the size and complexity of the project, a separate CM Plan may be required. See IRM-5231-09 (CM Plan) for details regarding CM.

a. The following CM audits will normally be listed.

(1) Functional Configuration Audit (FCA) - a formal audit to validate that the development of the configuration item being audited has been completed satisfactorily, has achieved specified performance and functional characteristics, and complies with operation and support documentation.

(2) Physical Configuration Audit (PCA) - a technical examination of a designated configuration item to determine its conformance to the technical documentation definition.

b. The following CM reviews will normally be listed.

(1) Systems Requirements Review (SRR) - a review of the system requirements specifications and preliminary support plans to determine if the functional requirements are complete, feasible, verifiable, and testable. Successful completion of this review results in the establishment of the Functional Baseline.

(2) Preliminary Design Review (PDR) - a review conducted upon completion of the general design to evaluate the progress, technical adequacy, quality, and testability of the selected design approach.

(3) Critical Design Review (CDR) - a review performed at the conclusion of the design phase to determine the acceptability of the detailed design, the performance and test characteristics of the design solution, and the adequacy of the operation and support documentation. Successful completion of this review results in the establishment of the Allocated Baseline.

(4) Systems Integration Review (SIR) - a review performed during the development phase to determine if the system is ready for acceptance testing. Successful completion results in the establishment of the <u>Product Baseline</u>.

(5) Systems Acceptance Review (SAR) - a review performed at the conclusion of the development phase to determine if the system functions properly, satisfies the requirements, has complete and accurate documentation, and is ready for implementation. Successful completion results in the establishment of the <u>Operational Baseline</u>.

3.1.4 Training

This paragraph will provide a summary of the training required for the project team/office to become knowledgeable in things such as project management or system development techniques.

3.2 SCHEDULE

3.2.1 Level of Detail

The initial schedule should provide as much detail as possible for the Concepts Development Phase but may be general for subsequent phases. The schedule for subsequent phases should become more detailed with each update of the PMP.

3.2.2 Scheduling Techniques

Using the techniques described in figures 1-02 through 1-05, or other appropriate techniques, schedule the tasks in paragraph 3.1 above.

a. Organize the project tasks into logical and manageable jobs and assign target and projected start and end dates for each task and major milestone (i.e., develop a Work Breakdown Structure per figure 1-02, a Gantt Chart per figure 1-05, or use another appropriate technique).

b. Determine and display the dependencies between project tasks as well as the estimated time required to accomplish the tasks (i.e., develop an Activity Precedence Diagram per figure 1-03, a PERT Network per figure 1-04, or use another appropriate technique).

c. Develop a project team training schedule.

d. Assign responsibility for each project task (i.e., develop a Responsibility/Task Matrix per figure 1-01 or use another appropriate technique).

SECTION 4. RESOURCE REQUIREMENTS

Estimate required resources (i.e., dollars and man-hours) per work package.

4.1 MANPOWER

This paragraph will provide a summary of target and projected manpower requirements (i.e., manhours) for the tasks and schedule described in section 3.

4.2 FUNDING

This paragraph will provide a summary of target and projected funding (i.e., required funds and allocated funds) for the tasks and schedules described in section 3.

SECTION 5. ACQUISITION STRATEGY

This section will contain an acquisition strategy that provides a funding profile to support the project as well as an assessment of the impact of attaining only a portion of the AIS. The Economic Analysis can provide supporting data.

SECTION 6. SUPPORT PLANS

The following support plans will be added to the PMP as appendixes:

a.	Configuration Management Plan	(CM Plan)	(IRM-5231-09)
b.	Quality Assurance Plan	(QA Plan)	(IRM-5231-10)
c.	Test Plan	(TP)	(IRM-5231-14)
d.	Telecommunication Support Plan	(TSP)	(IRM-5231-05)
e.	ADPE Support Plan	(ADP)	(IRM-5231-12)
f.	Implementation Plan	(IP)	(IRM-5231-16)
g.	Training Support Plan	(TRP)	(IRM-5231-15)

The CM and QA Plans shall be completed during the Concepts Development Phase and updated in subsequent phases. Preliminary versions of the remaining support plans will be prepared during the Concepts Development Phase with the formal versions being completed during the design phase. These plans will be updated as appropriate.

APPENDIX D

ACRONYMS AND ABBREVIATIONS

ADP - ADPE Support Plan
AIS - Automated Information System
CDR - Critical Design Review
CM   - Configuration Management
CMP - Configuration Management Plan
COM - Computer Operators Manual
DBC - Data Base Conversion Plan
DBP - Data Base Plan
DD   - Data Dictionary
DDS - Detail Design Specification
EA   - Economic Analysis
FCA - Functional Configuration Audit
FRD - Functional Requirements Definition
GDS - General Design Specification
IP   - Implementation Plan
IRM - Information Resources Management
LCM - Life Cycle Management
MENS - Mission Elements Need Statement
PCA - Physical Configuration Audit
PDR - Preliminary Design Review
PGM - Program Manager
PIE - Post Implementation Evaluation
PM   - Project Manager
PMC - Project Manager Charter
PMP - Project Management Plan
PS   - Programming Standard
QA   - Quality Assurance
QAP - Quality Assurance Plan
RS   - Requirements Statement
SAR - Systems Acceptance Review
SAT - Systems Acceptance Test
SDM - System Development Methodology
SDP - System Decision Paper
SER - Systems Effectiveness Review
SGC - Steering Group Committee
SIR - Systems Integration Review
SIT - Systems Integration Test
SRR - Systems Requirements Review
TP   - Test Plan
TRP - Training Support Plan
TSP - Telecommunications Support Plan
UM   - Users Manual

COMMENTS/REVISIONS

Technical publications under the Information Resources Management (IRM) Standards and Guidelines Program (MCO 5271.1) are reviewed annually. Your comments and/or recommendations are strongly encouraged.

IRM Tech Pub Name: Project Management Plan

IRM-5231-19A (Number)   Date of Tech Pub:

COMMENTS/RECOMMENDATIONS:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Name/Rank:_____(Optional)

Unit:_____(Optional)

Mail to: Commandant of the Marine Corps (Code CCIS)
           Headquarters, United States Marine Corps
           Washington, D.C.   20380-0001