

**U.S. Marine Corps**



# **DATA BASE CONVERSION PLAN**



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

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Subj: INFORMATION RESOURCES MANAGEMENT (IRM) DATA BASE CONVERSION PLAN

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(b) MCO P5231.1  
(c) MCO 5271.1  
(d) MCO P5600.31

Encl: (1) IRM-5231-13

1. PURPOSE. To provide guidance and instructions on the development of Data Base Conversion Plans as required by references (a) and (b).

2. AUTHORITY. This publication is published under the auspices of reference (c).

3. APPLICABILITY. The guidance contained in this publication is applicable to all contractors and Marine Corps personnel responsible for the preparation of a Data Base Conversion Plan. This standard is applicable to the Marine Corps Reserve.

4. DISTRIBUTION. 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 in accordance with reference (d).

5. SCOPE

a. Compliance. Compliance with the provisions of this publication is required unless a specific waiver is authorized.

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

6. 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.

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7. SPONSOR. The sponsor of this technical publication is CMC  
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DATA BASE CONVERSION PLAN  
IRM-5231-13

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DATA BASE CONVERSION PLAN  
IRM-5231-13

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DATA BASE CONVERSION PLAN  
IRM-5231-13

PUBLICATION TABLE OF CONTENTS

Paragraph    Page

Chapter 1

GENERAL

Section 1.	INTRODUCTION .....	1.1.	1-3
Section 2.	SCOPE .....	1.2.	1-3
Section 3.	APPROACH .....	1.3.	1-3

Chapter 2

CONTENT AND FORMAT

Section 1.	DOCUMENTATION STANDARDS .....	2.1.	2-3
Section 2.	DOCUMENTATION DEPENDENCIES .....	2.2.	2-4

APPENDIXES

A.	GLOSSARY .....		A-1
B.	REFERENCES .....		B-1
C.	DATA BASE CONVERSION PLAN TABLE OF CONTENTS...		C-1
D.	DATA BASE CONVERSION PLAN CONTENT DESCRIPTION.		D-1





DATA BASE CONVERSION PLAN  
IRM-5231-13

LIST OF FIGURES

<u>Figure</u>		<u>Page</u>
2-01	Precedence Relationship	2-5



DATA BASE CONVERSION PLAN  
IRM-5231-13

Chapter Table of Contents

Chapter 1

GENERAL

	<u>Paragraph</u>	<u>Page</u>
Section 1. <u>INTRODUCTION</u> .....	1.1.	1-3
Objective .....	1.1.1.	1-3
Purpose .....	1.1.2.	1-3
Section 2. <u>SCOPE</u> .....	1.2.	1-3
Section 3. <u>APPROACH</u> .....	1.3.	1-3
System Implementation .....	1.3.1.	1-3
Requirement .....	1.3.2.	1-3

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Chapter 1

GENERAL

1.1. INTRODUCTION

1.1.1. Objective. The objective of this standard is to define the format and content of the Data Base Conversion Plan. Adherence to this standard assures the plan adequately addresses all issues and aspects of the data conversion process.

1.1.2. Purpose. The purpose of the Data Base Conversion Plan is to detail the methodology and documentation necessary to plan and control part of a data processing conversion effort. The total effort produces an updated system in a target environment. This plan addresses procedures that must be followed and activities that must be initiated in order to transfer existing data into the new production environment.

1.2. SCOPE. The Data Base Conversion Plan Standard defines requirements of the Data Base Conversion Plan document. Appendix C is a table of contents for that document and Appendix D is a description of each item contained therein. This standard addresses issues concerning the hardware/software environment, conversion and capture of data, conversion scheduling, and supporting administrative activity. Procedures for evaluation and verification of the Data Base Conversion Plan document are also presented.

1.3. APPROACH

1.3.1. System Implementation. Any new system will usually be proliferated among Marine Corps Central Design and Programming Activities (MCCDPA's), Regional Automated Service Centers (RASC's), and Deployable Force Automated Service Centers (DFASC's) by installing the developmental software at each site and transferring data from the current system to the new system environment. This will result in establishment of an upgraded production environment at each such site.

1.3.2. Requirement. A Data Base Conversion Plan must be developed, approved, and implemented to assure a proper transition from the current production environment to one employing the new software components and data. The plan must describe source and target data environments, detail the conversion of that data, and provide procedures to verify that data thus converted operates properly within the target environment. The plan must also stipulate resource requirements, allocation of resources, activity schedules, and provide a means of tracking progress during the conversion activity.

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DATA BASE CONVERSION PLAN  
IRM-5231-13

Chapter Table of Contents

Chapter 2

CONTENT AND FORMAT

	<u>Paragraph</u>	<u>Page</u>
Section 1. <u>DOCUMENTATION STANDARDS</u> .....	2.1.	2-3
Table of Contents .....	2.1.1.	2-3
Description of Contents .....	2.1.2.	2-3
Evaluation Criteria .....	2.1.3.	2-3
Section 2. <u>DOCUMENTATION DEPENDENCIES</u> .....	2.2.	2-4
Preceding Documents .....	2.2.1	2-4
Consultation Documents .....	2.2.2	2-4
Change Requirements .....	2.2.3.	2-4



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Chapter 2

CONTENT AND FORMAT

2.1. DOCUMENTATION STANDARDS. The Data Base Conversion Plan will be documented in accordance with the following paragraphs. The paragraphs contained within each section may be expanded as required to provide the proper level of detail; sections may be added as necessary. The Data Base Conversion Plan document is the only deliverable produced through the use of this standard. The following paragraphs describe the required format and content of that document.

2.1.1. Table of Contents. Appendix C illustrates the required section and paragraph headings that must be employed in documenting the Data Base Conversion Plan. For an effort in which a particular section or paragraph is inappropriate, the title of the section or paragraph will be included, followed by a statement with supporting justification as to why that section or paragraph is not applicable.

2.1.2. Description of Contents. For each entry in the required table of contents described above, text will be provided according to the definitions contained in Appendix D, "Content Description." All information described must be present. Additional material may be presented as necessary for completeness or clarity.

2.1.3. EVALUATION CRITERIA. Criteria for evaluation of the Data Base Conversion Plan document for completeness and accuracy are as follows:

a. All sections and paragraphs contained in Appendix C, "Required Table of Contents," must be included as presented.

b. Any section or paragraph deemed not applicable to the plan must appear with a statement to that effect and a justification for its exclusion.

c. The "Purpose and Scope" and "Relationship to Other Activities" documented in Paragraphs 1.1 and 1.2 respectively, must be consistent with the objectives of the Implementation Plan.

d. The organizational planning presented in Section 2, "Data Base Conversion Planning and Control," must be in consonance with project management procedures.

e. The technical definitions and procedures presented in Section 3, "Technical Activities," will be subject to review and must be approved by appropriate project technical organizations for accuracy and applicability to the system environment.

DATA BASE CONVERSION PLAN  
IRM-5231-13

f. The overall plan must represent a sound approach to the task at hand and present a viable project structure as determined by USMC and project staff familiar with the intricacies of the system and its environment.

2.2. DOCUMENTATION DEPENDENCIES. The document governed by this standard may also rely on the content of other project deliverables and/or standards. Figure 2-01, "Precedence Relationship," shows those project deliverables and standards which impact the Data Base Conversion Plan deliverables.

2.2.1. Preceding Documents. The boxes that precede the Data Base Conversion Plan as shown by a connected line with an arrow, are those project deliverables that must be completed before the Data Base Conversion Plan. The preceding documents for any one development effort are:

- a. Data Base Plan
- b. Detailed Design Specification

2.2.2. Consultation Documents. The boxes in Figure 2-01 are project deliverables governed by standards, and the bars are particular conventions described by standards. The boxes and bars that are in line vertically with the Data Base Conversion Plan show the concurrent documents that may be consulted at that time. These include:

- a. Test Plan (IRM-5231-14)
- b. ADPE Support Plan (IRM-5231-12)
- c. Telecommunications Support Plan (IRM-5239-05)
- d. Project Deliverable Style Manual (IRM-5230-02)
- e. Inspection and Acceptance (IRM-5231-17)
- f. Data Dictionary (IRM-5235-01)
- g. Library Management System (IRM-5233-06)
- h. Programming Standard (IRM-5234-01)
- i. Prototyping Standard (IRM-5231-18)
- j. Application Configuration Management Plan (IRM-5231-09)
- k. Implementation Plan (IRM-5231-16)
- l. Computer Operations Manual (IRM-5231-08)
- m. Users Manual (IRM-5231-07)

2.2.3. Change Requirements. Since the System Development Methodology (SDM) is an integrated methodology, issues may arise during development of the Data Base Conversion Plan that will require changes to preceding documents. These changes must be documented and approved in accordance with the quality assurance and configuration management procedures. Externally imposed milestones that are unrealistic to accomplish should not be used as an excuse to defer or eliminate the documentation requirements.

DATA BASE CONVERSION PLAN  
IRM-5231-13

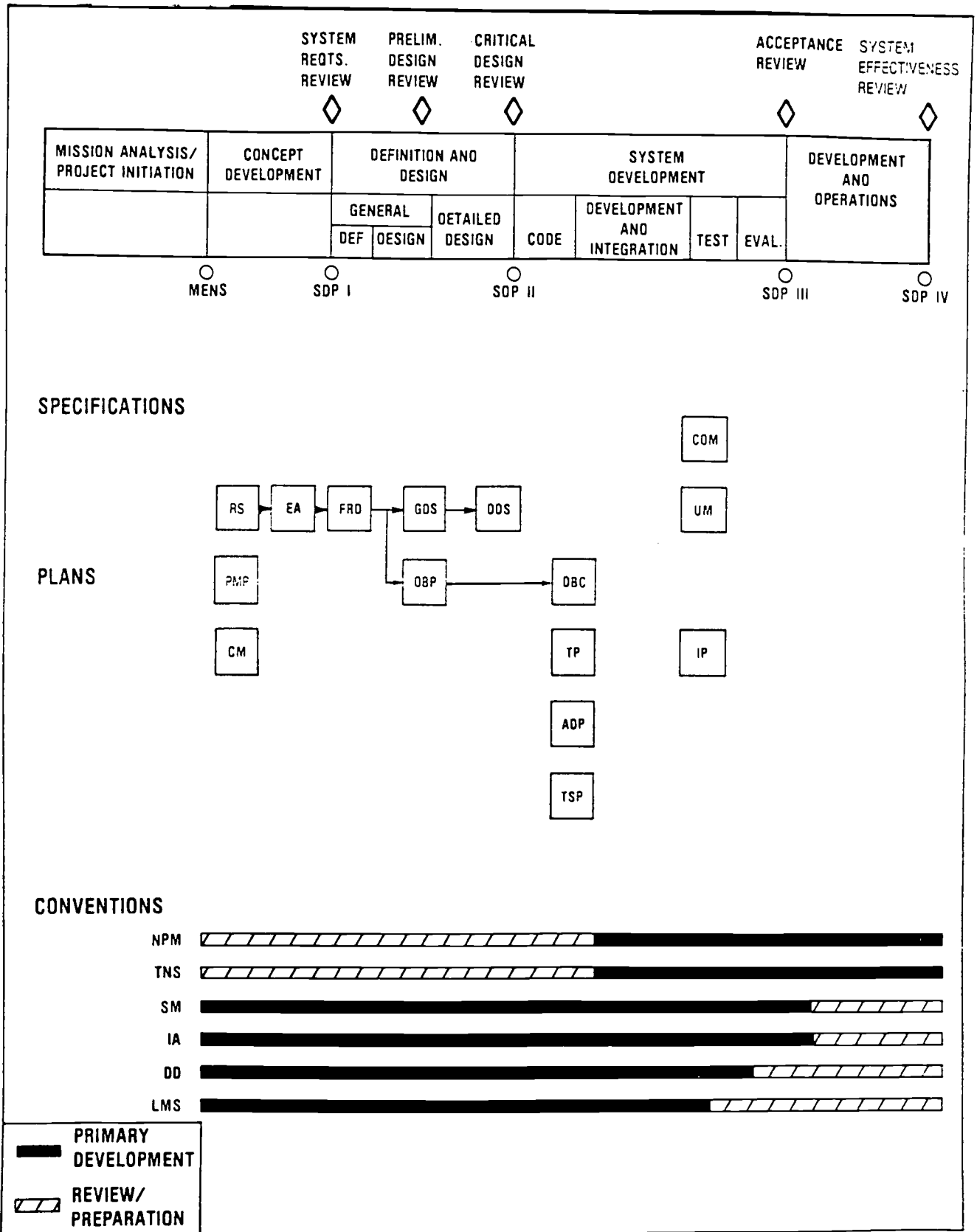


FIGURE 2-01  
Precedence Relationship

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DATA BASE CONVERSION PLAN  
IRM-5231-13

Appendix A

GLOSSARY

ADP: ADP is an acronym for "ADPE Support Plan"

CM: CM is an acronym for "Configuration Management Plan"

COM: COM is an acronym for "Computer Operations Manual"

DBC: DBC is an acronym for "Data Base Conversion Plan"

DBP: DBP is an acronym for "Data Base Plan"

DD: DD is an acronym for "Data Dictionary"

DDS: DDS is an acronym for "Detailed Design Specification"

EA: EA is an acronym for "Economic Analysis"

FRD: FRD is an acronym for "Functional Requirements Definition"

GDS: GDS is an acronym for "General Design Specification"

IA: IA is an acronym for "Inspection and Acceptance Standard"

IP: IP is an acronym for "Implementation Plan"

LMS: LMS is an acronym for "Library Management System"

MENS: MENS is an acronym for "Mission Element Need Statement"

NPM: NPM is an acronym for "Network Procedures Manual"

SDP: SDP is an acronym for "System Decision Paper"

SM: SM is an acronym for "Style Manual"

TNS: TNS is an acronym for "Telecommunications Network Naming Standard"

TP: TP is an acronym for "Test Plan"

TSP: TSP is an acronym for "Telecommunications Support Plan"

UM: UM is an acronym for "Users Manual"

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DATA BASE CONVERSION PLAN  
IRM-5231-13

Appendix B

REFERENCES

The following references provide additional information of use in preparation of the Data Base Conversion Plan:

DeMarco, Tom., Controlling Software Projects, New York, NY; Yourdon Press, 1982.

Martin, James., Managing the Data Base Environment, Englewood Cliffs, NJ; Prentice-Hall, 1983.

Wolberg, John R., Conversion of Computer Software, Englewood Cliffs, NJ; Prentice-Hall, 1983.

Managing Data Base Conversion, DATAPRO, March 1983.



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DATA BASE CONVERSION PLAN  
IRM-5231-13

Appendix C

DATA BASE CONVERSION PLAN TABLE OF CONTENTS

Data Base Conversion Plan

Section 1.	Introduction
1.1	Purpose and Scope
1.2	Relationship to Other Activities
1.3	Responsibilities
1.4	References
1.5	Terms and Abbreviations
Section 2.	Data Base Conversion Planning and Control
2.1	Task Analysis
2.2	Task Precedence
2.3	Project Schedule
2.4	Project Organization
2.5	Project Control
2.6	Identification of Deficiencies
2.7	Corrective Action
2.8	User Impacts
Section 3.	Technical Activities
3.1	Environment Definition
3.2	Data Conversion
3.2.1	Space Allocation
3.2.2	Data Loading
3.2.3	Data Capture
3.3	Data Verification
3.4	Program and JCL Conversion
3.5	Documentation
3.6	Parallel Operation

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DATA BASE CONVERSION PLAN  
IRM-5231-13

Appendix D

DATA BASE CONVERSION PLAN CONTENT DESCRIPTION

SECTION 1 INTRODUCTION

This section should present the purpose, scope, and other general information relative to the Data Base Conversion Plan.

1.1 PURPOSE AND SCOPE

This paragraph should describe the purpose of the Data Base Conversion Plan and how it will be used. It should include a description of the scope of activity within the overall system life cycle.

1.2 RELATIONSHIP TO OTHER ACTIVITIES

This paragraph should describe how conversion activities relate to other activities such as implementation, training, testing, and quality assurance. It should specify verification of operation and verification of function as part of the acceptance criteria.

1.3 RESPONSIBILITIES

This paragraph should describe the responsibilities of personnel involved with the conversion effort. Tasks should be outlined in a general manner and an organizational chart should be included to show the relationship of installation management to conversion activities.

1.4 REFERENCES

This paragraph should identify all applicable reference documents employed in the development of the Data Base Conversion Plan as well as those applicable to the execution of the plan.

1.5 TERMS AND ABBREVIATIONS

This paragraph should introduce any unique terms and abbreviations. It should include definitions, references to a glossary of terms, or a statement that there are no unique terms or abbreviations. Unique terms are those that do not appear in Volume II.

SECTION 2 DATA BASE CONVERSION PLANNING AND CONTROL

The following paragraphs describe the planning and control activities that should be addressed by the Data Base Conversion Plan. This section should not duplicate sections of other plans (such as Implementation Plan, Test Plan, Inspection and Acceptance Plan), but should complement those plans. Applicable section and paragraph references to associated plans should be contained herein.

DATA BASE CONVERSION PLAN  
IRM-5231-13

2.1 TASK ANALYSIS

This paragraph should identify specific tasks to be performed during the conversion effort. Included should be a description of each task, its complexity, estimated man-hours for completion, and any specialized job skills required by the task. Functional job descriptions should be categorized and related to each task. Non-manpower resources necessary to complete the task should also be identified.

2.2 TASK PRECEDENCE

This paragraph should present the tasks previously identified in graphic form. An activity precedence diagram may be presented or, if accurate task workload estimates are available, a more formal Program Evaluation and Review Technique (PERT) network chart may be more advantageous and should be employed.

2.3 PROJECT SCHEDULE

This paragraph should present a schedule for completion of all tasks. The format should be a Gantt chart or similar timeline representation. Completion milestones should be indicated as should review and evaluation points. The schedule should reflect the most appropriate mix of manpower and indicate elapsed time for the data conversion effort. Justification for the manpower mix should be presented.

2.4 PROJECT ORGANIZATION

This paragraph should present in narrative and graphic form, the structure and composition of the project team tasked with executing the Data Base Conversion Plan. Job titles, duties, and areas of responsibility should be identified. If possible, project staffing should be presented. This paragraph should also delineate channels of liaison and reporting internal and external to the project.

2.5 PROJECT CONTROL

This paragraph should describe the control mechanism to be employed in the data conversion effort. Timeliness and accuracy of the effort is largely determined by the quality of control procedures applied. These procedures should be delineated and functions such as monitoring, reporting, and reviews should be addressed. This paragraph should also address requirements of the Configuration Management and Quality Assurance Plans.

2.6 IDENTIFICATION OF DEFICIENCIES

This paragraph should describe the manner of documenting and reporting deficiencies and problems discovered during the course

DATA BASE CONVERSION PLAN  
IRM-5231-13

of the data conversion effort. Such deficiencies should be categorized as unique to specific target environment data or more general in nature and relevant to all existing data bases.

2.7 CORRECTIVE ACTION

This paragraph should describe the plan for resolution of deficiencies and problems discovered, as described above. Specific procedures should be detailed and organizations responsible for data beyond the control of the group charged with conversion should be identified.

2.8 USER IMPACTS

This paragraph should document the anticipated impact upon users based on conversion activities. This documentation should address:

- a. Effect on user activities due to differences in the post-conversion environment, procedures, and training requirements
- b. Effort expected and required of users for assistance during the conversion effort such as data and procedure verification
- c. Disruption of normal data processing services during the conversion activity
- d. Change in user orientation from ownership to sharing of data
- e. Plans to minimize user impact resulting from the above
- f. Effect on field sites.

SECTION 3 TECHNICAL ACTIVITIES

The following paragraphs describe the technical activities that should be addressed by the Data Base Conversion Plan. Topics thus presented represent the primary technical factors related to the conversion effort.

3.1 ENVIRONMENT DEFINITION

This paragraph should describe the source environment within which the developmental system was created, the target environment for the production system, and any significant differences between those environments. Variations in hardware/software components that could cause deviation from a straightforward transfer of existing data to the target environment should be documented.

### 3.2. DATA CONVERSION

This paragraph should address the two major components of data conversion; allocation, and transfer. The former component relates to the establishment of a vehicle for maintaining data within the system; the latter provides for the actual movement of data to the target environment.

#### 3.2.1. Space Allocation

Establishment and allocation of mass storage resources are a prerequisite to the transfer or loading of data. This paragraph should, at a minimum, address the following topics:

- a. Sizing of the projected, production data base including estimated growth factors.
- b. Description of the physical mass storage hardware, its capacity, expansion capabilities, logical, and physical constraints, and related characteristics.
- c. Allocation of storage to contain the primary data base.
- d. Allocation of ancillary file space and work space.
- e. Adjustment of parameters to accommodate any unique characteristics of the target environment.
- f. Creation of control tables and files specific to the target environment.

#### 3.2.2. Data Loading

Establishment of the data base requires that all operational data be transferred to the target environment. This paragraph should describe the transfer process and, at a minimum, address the following topics:

- a. Identification of automated tools that may be used to facilitate the transfer of data to include commercial products and "one-time" specialized programs
- b. Definition of tables and algorithms necessary to convert existing data structures and codes to those required by the new system
- c. Transfer of existing data from all sources to the target environment, both DBMS and non-DBMS structures
- d. Verification and cleaning of data with respect to the transfer process and initial implementation.

### 3.2.3. Data Capture

Data that does not exist within the current system must be defined, captured, and incorporated in the target environment data base. This paragraph should describe the process of capture and, at a minimum, address the following topics:

- a. Description of data neither currently resident in the source environment, target environment, nor otherwise available in mechanized form.
- b. Identification of data sources for the unmechanized data described above.
- c. Capture and reduction of unmechanized data.
- d. Introduction of this now-mechanized data into the target environment.

### 3.3. DATA VERIFICATION

This paragraph should describe procedures to be employed in verifying that the converted data is accurate and operates properly within the target environment. Those portions of the Test Plan applicable to this verification should be identified. Specific tests or subsets of tests appropriate to this validation should be described. Previously defined parallel tests and benchmarks should be addressed with respect to their applicability in verifying that the data converted to the target environment operates within established performance and accuracy parameters.

### 3.4. PROGRAM AND JCL CONVERSION

This paragraph should explain:

- a. The methods and conventions for storing source modules, object modules, and JCL procedures in the system with respect to the installation's library facilities.
- b. Administrative and accounting codes to be used in JCL procedures as these are often installation-specific.
- c. Specification of tape drives, disk units, and other hardware components relative to the target configuration.
- d. Allocation of resources according to the target installation's available facilities.
- e. Naming conventions for jobs, steps, procedures, and other JCL elements where an installation-specific standard exists.



DATA BASE CONVERSION PLAN  
IRM-5231-13

3.5. DOCUMENTATION

This paragraph should describe requirements for upgrading or replacing user and technical documentation necessitated by the conversion. Incorporation of new material into existing documentation or its replacement should be specified for procedure documents, runbooks, and other such material in use at the installation site. Changes to document library procedures should also be indicated if they are impacted by the updated documentation. Modifications to project Computer Operations Manuals and Users Manuals should be in accordance with their respective standards.

3.6. PARALLEL OPERATION

This paragraph should address the requirements and plans for parallel operations during and after the conversion. Parallel operation is recommended for vital system areas but should be minimized elsewhere through rapid cutovers. Methods should be specified for operating in parallel such as verifying results and the manner of splitting input streams to support both operations.

