AUTOMATED PROCUREMENT SYSTEM (APS)

PROJECT MANAGEMENT PLAN (DS-03)

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For:

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George C. Marshall Space Flight Center (MSFC)
National Aeronautics and Space Administration
Marshall Space Flight Center, AL 35812

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1.0 INTRODUCTION

The National Aeronautics and Space Administration (NASA) Marshall Space Flight Center (MSFC) is implementing an Automated Procurement System (APS) to streamline its business activities that are used to procure goods and services.

The implementation is being performed in compliance with MSFC Manual, MM 2410.13, "MSFC General-Purpose Software Development and Management Requirements Manual."

As part of this development, a contract was awarded to the Procurement Automation Institute, on August 1, 1994. The contract number is NAS8-39897. The contracting officer is Jane Maples. The contract calls for a commercial off-the-shelf (CTOS) system, customized to MSFC's requirements, and integrated with MSFC administrative applications.

This Project Management Plan (PMP) is the governing document throughout the implementation process and is identified as the APS Project Management Plan (DS-03). At this point in time, the project plan includes the schedules and tasks necessary to proceed through implementation. Since the basis of APS is an existing COTS system, the implementation process is revised from the standard SDLC.

1.2 PURPOSE

The purpose of the PMP is to provide the framework for the implementation process. It discusses the roles and responsibilities of the NASA project staff, the functions to be performed by the APS Development Contractor (PAI), and the support required of the NASA computer support contractor (CSC). To be successful, these three organizations must work together as a team, working towards the goals established in this Project Plan.

The Project Plan includes a description of the proposed system, describes the work to be done, establishes a schedule of deliverables, and discusses the major standards and procedures to be followed.

1.3 SCOPE

The APS system has been classified as a Software Development Category C: medium-scale support application, average development effort, non-complex hardware and software environment, conducted within a self-contained organization, does not involve complicated interactions with other projects, and is not on the critical path for any other development effort.

As a result, production of the following documents are considered mandatory:

DS-03	Project Management Plan
DS-04	Requirement Specification[1]

Production of the following documents, however, have also been included in the Project Plan, since these documents are considered important to the effective management of the project:

DS-05	Configuration Management Plan
DS-08	Design Specification
DS-09	Test Plan and Procedures
DS-11	Training Plan and Procedures
DS-12	System Implementation Plan

In addition, the following reviews are considered mandatory under the directive:

SRR	System Requirement Review
CDR	Critical Design Review
ORR	Operations Readiness Review

In addition, a Test Readiness Review (TRR) is included for effective management of the project.

2.0 SYSTEM OVERVIEW

2.1 BACKGROUND

Improving the way the Government does business is imperative in today's world of declining budgets. Currently, MSFC has several automated systems, which are somewhat integrated, and perform various business functions. MSFC is implementing, through APS, a system that performs the "cradle-to-grave" procurement of goods and services and integrates it with existing systems, thereby making an end-to-end system. The proposed system also implements electronic commerce. MSFC's goal Is to have a complete functioning system through a combination of modification, integration, and new development in minimum time.

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[1]A predecessor project resulted in the development of a preliminary requirements specifications, and is used as the starting point for this project. The reports from the predecessors are entitled: APRS Phase II - Requirements Specifications: Document Specification - 04 (DS-04), June 1993, and Automated Bulletin Board Service Requirements Specification (DS-04), May 1993.

Users of the system will use a variety of hardware and software platforms including PC networks using MS Windows, Macintosh, and SUN workstations running UNIX. The system must operate effectively in this multi-platform environment. APS must also interface within the center's legacy administrative systems (accounting, supply management, equipment management, etc.).

These legacy systems are resident on IBM 3090 hardware and are written in ADABAS Natural. Other database systems are utilized throughout the Center for various administrative systems. These are predominately written in Oracle. The standards used for wordprocessing, spreadsheet, database, and electronic mail as used in the Center are as follows:

WordProcessing	Microsoft Word
Spreadsheet	Microsoft Excel
Database	Oracle compliant, SQL compliant, Natural compliant
Electronic Mail	Lotus ccMail

The APS system must operate within this environment, interfacing with legacy systems and applications developed in the above environments.

2.2 OVERVIEW OF REQUIREMENTS

The APS system is a cradle-to-grave procurement system containing the following components:

2.2.1 Requisitioning

Requisitioning includes the capability to initiate requests for supplies, equipment, services, studies and grants throughout MSFC. The ability to include any attachments necessary to the procurement document (such as specifications or justifications) created in wordprocessing software compatible with existing Center standards is also required.

2.2.2 Routing for Review/Approval

Routing for review/approval includes a capability to electronically route requests for review and approval to any system user. Routing is accomplished by integrating the APS with the Center's existing electronic mail system. Interface with applicable existing MSFC systems must also be allowed to determine availability of goods from MSFC stock, other government stocks (Fedstrip, Milstrip), or excess government supplies or equipment.

2.2.3 Fund Certification

Fund certification includes the capability to interface APS with MSFC's existing accounting system on a realtime basis to verify and record the availability of funds.

2.2.4 Buying Activity

Buying activity functions include capabilities to process an approved procurement request from receipt to award of purchase orders, contracts, or grants. This allows for interface with the applicable existing MSFC systems. Access is also required to an electronic bulletin board capable of meeting the requirements for public dissemination of opportunities using electronic commerce. ANSI ASC X12 standards must be used for electronic commerce applications, where available.

2.2.5 Recording of Obligation

Recording of obligation includes the interface to record obligations in the MSFC accounting system subsequent to award by the buying activity.

2.2.6 Receiving Activity

Receiving activity functions includes the interface necessary to accommodate recording of receipt of supplies or equipment and sharing data with existing systems (e.g., NASA Supply Management System or NASA Equipment Management System), MARTS.

2.2.7 Recording Cost

Recording includes an interface to record cost in the accounting system upon receipt of goods or services. This data will have been gathered in the receiving process and will need to be passed to the MSFC accounting system (MARTS).

2.2.8 Recording Disbursement

Recording disbursement includes an interface to obtain information on disbursements made by the MSFC accounting system. All disbursement activity is handled within the accounting system, so data will be passed to APS for use in maintaining the status of the procurement.

2.2.9 Final Close-Out

Final close-out includes tracking the status of a procurement request from initiation through final close-out.

2.2.10 Reporting

Reporting includes capabilities to issue reports from data gathered in any and all of the preceding processes. This will include but not be limited to reports of: status, initiations by organization, initiations by document reference number, and initiations by various elements of the accounting code. The creation of ad-hoc reports by the user in a powerful, easy to use manner is also an import element of the system.

2.3 SCOPE OF SYSTEM

The system is designed to support the procurement process from beginning to end.

2.3.1 Requisitioning

Requisitions are initiated by any organization within MSFC and are routed through a review and approval process which varies by funding organization, dollar threshold, commodity, etc. The overall standard for this approval process is set forth in MMI 5101.5G, Approval and Routing of Procurement Requests.

The system must support the initial preparation of the procurement process, including routing and approval. The system must also include funds certification through a real-time interface to MARTS.

The users of the requisitioning component may be any organization throughout MSFC, and may access the system through PC, Macintosh, or SUN workstations.

Routing will be achieved through ccMail and the APS system will pass messages to and from the electronic mail system.

Electronic signatures will be used to signify approval, and must be handled in a secure manner, consistent with NASA data security policies.

A central database must be maintained describing the status of each requisition throughout its life: this includes during the approval process; during the buying process; and during the receiving process. Ad-hoc query and retrieval capabilities on this database should be available throughout the center.

It is anticipated that some 11,000 requisitions will be handled annually.

2.3.2 Cataloging

The first stop for an approved requisition in the procurement cycle for goods outside the requisitioning office, is the cataloging function within the Property Management Office. Here, required sources of supply are checked to determine whether one of these sources can be used to meet the need.

An interface is required with NEMS to facilitating the excess (re-utilization) check. A further interface is required with NSMS to facilitate the check of stock. If it is determined that the item can be acquired using MILSTRIP/FEDSTRIP procedures from an established Government source (e.g., GSA), then an interface with NSMS is required to place the order by this route.

Status throughout the cataloguing process must be updated in the requisition tracking database.

2.3.3 Buying

If purchase is required from a commercial firm than the procurement request will be automatically sent to the procurement office. Here, the procurement request will initiate a procurement action and may be processed using:

- Small purchase procedures;
- Mid-range procurement procedures;
- Large contracts procedures;
- Grants and cooperative agreements with non-profit organizations procedures; and
- Cooperative agreements with for-profit firms procedures.

A single requisition may result in one procurement action, may be consolidated with others into a single procurement action, or may be split into various procurement actions. The system must keep track of each requisition throughout the buying process and pass status information back to the requisition tracking database.

APS will track the procurement request from receipt in the procurement office through award. Milestones will be established, in compliance with NASA-standards (for update in AMS) and to meet local MSFC requirements. Standard documents will be generated as required by the procurement process being used, including forms, solicitations, contracts, grants, etc. A list of the NASA and MSFC specific forms to be produced by APS is given in Appendix A.

If electronic commerce is selected for the procurement action, X12 ECAT-compliant transactions will be generated and transmitted when available. Other forms of electronic transmission will be used where X12 EDI standards do not exist, e.g., for large or mid-range contracts. If the procurement is subject to open competition, the solicitation document will be posted to a bulletin board where it can be accessed by any vendors. Bids will be accepted electronically and orders placed electronically. All implementations of electronic commerce will be in full compliance with the Federal Government ECAT requirements.

For those procurement actions which require a synopsis to be published in the CBD, the system will generate and transmit the notice.

At the time of award, an obligation will require to be recorded through an interface with the Marshall accounting system (MARTS).

FPDS reporting information will be transferred to NASA HQ through an interface with AMS.

2.3.4 Receiving

The system provides for an interface with NSMS to handle the receiving of goods and the reporting of receipt to the supply system. An interface to MARTS is also required to show the recording of costs.

2.3.5 Cost Disbursements

A further interface is required from MARTS to APS to show payments that are made to vendors, including final payment.

2.3.6 Contract Administration

In addition to receiving and payment, the APS system will facilitate the many other processes associated with contract administration including contract closeout. Such functions include generation of COTR appointment letters, generation and issuance of modifications, renewing options, handling terminations, and closing out contracts. The system will generate MSFC specific forms and documents, as required, and manage information on the current status of individual contracts.

2.4 HIGH LEVEL TECHNICAL AND PERFORMANCE REQUIREMENTS

2.4.1 Technical Requirements

High level technical requirements include:

- Be compatible with hardware, software and database environments at MSFC, including PC, Macintosh, and SUN workstations; and
- Maximize the utilization of current ADP technology, taking advantage of third-party products whenever practical.

2.4.2 Performance Requirements

High-level performance requirements include:

- Automate the process not the form;
- User-friendly interaction; and
- Traceability to the requirements established in the definition phase of the SDLC.

3.0 SYSTEM DEVELOPMENT APPROACH

3.1 DEVELOPMENT OVERVIEW

The development of APS will be conducted in the following phases:

- Planning;
- Validation;
- Prototype;
- Customization;
- Enhancement:
- Interface;
- Data Conversion;
- Documentation;
- System Testing;
- Implementation;
- Training; and
- Maintenance.

These phases are different from the standard DLSC processes because of the acquisition of a COTS system, PAI*IPRO, as the starting point for the development of APS.

3.2 DEVELOPMENT METHODOLOGY

The APS will be developed using a modified version of the AIM Standards and Rapid Application Development (RAD) Methodology. End user participation will be encouraged to the maximum extent possible given the short timeframe for implementation. End users are identified as those who perform the daily business activities to be incorporated into the APS, i.e., initiators, approvers, buyers, catalogers, warehousers, etc. They are represented on the APS Team.

3.3 DEVELOPMENT APPROACH

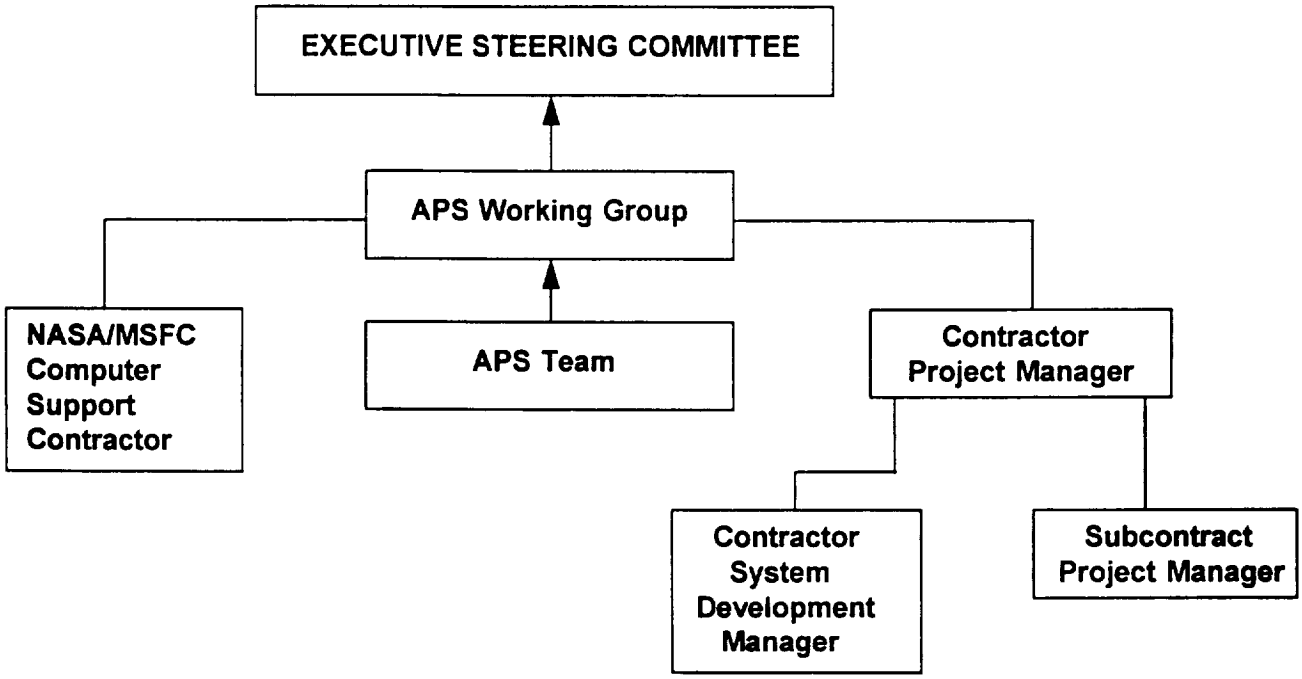
The development and implementation approach will be defined by the project schedule which identifies the tasks to be completed. The project schedule,

Appendix B, will serve as the baseline and may change as the project develops. The schedule has been developed using MS-Project which will be used to update and maintain the schedule on a monthly basis. Upon completion of testing and acceptance by MSFC, the system will be implemented for production.

4.0 ORGANIZATION

4.1 ORGANIZATION PLAN

The project management structure is identified in the following chart:



Executive Steering Committee

Representatives on the Executive Steering Committee include:

Chairman - Center Comptroller
Director - FMO
Assistant Director Mgt. - S&E
Director - MOO
Director - Procurement
Deputy Director - ISO

Working Group

Members of the Working Group are:

Chief: Accounting Information Sys & Control Br - FMO
Gerald Cucarola
Bill Vaughn, FMO
Dave Carstens, MOO
Larry Smith, S&E
Bobby German, ISO
Jerry Williams, Procurement

Additional functional/technical experts on the working group are:

Bobby German, ISO
Jonathan Pettus, ISO
Jim Bradford, Procurement

APS Team

The APS team includes the following:

Pat Waye, MOO
Adonna Mitchell, MOO
Mark McCutcheon, MOO
Annie Lankford, MOO
Sandra Marshall, MOO
Dave Aiello, MOO
Charles Sullins, MOO

L. Smith, S&E
R. Pettis, S&E
C. Macpherson, S&E
B. Poe, S&E
S. Hopper, S&E
P.L. Johnson, S&E
J.T. Hamilton, S&E

Bobby German, ISO
Katie Mann, ISO
David Howell, ISO
Elizabeth Woeber, ISO

Gerald Cucarola, Comptroller
Kathy Shockley, Comptroller
Bill Vaughn, Comptroller
Glenn Alexander, Comptroller

Ken King, Comptroller

Carolyn Lovell, Procurement
Wayne Simmons, Procurement
Sue Depew, Procurement
Judy Drinnon, Procurement
Jane Maples, Procurement
Richard Robbins, Procurement
Earl Pendley, Procurement
Jim Bradford, Procurement
Stan McCall, Procurement
Steve Morris, Procurement
Janice Burrough, Procurement

Contractor Project Manager

Dr. Diane Murphy, President, PAI

Contractor System Development Manager

David Marrow, Director System Development, PAI

Subcontractor Project Manager

James Lloyd, Software AG

NASA/MSFC Computer Support Contractor

Computer Sciences Corporation

4.2 RESPONSIBILITIES

Overall responsibilities for each of the organizational units involved in the project include:

- The Executive Steering Committee will provide overall vision and resources during the life cycle of the project.

- The APS Working Group will provide dedicated personnel necessary to validate the system requirements set forth in the contract specifications. The Group will provide oversight for the development team, ensure that the requirements are satisfied, conduct periodic reviews to ensure compliance with the software development schedule, and provide timely briefings to the Executive Steering Committee.

- The APS Team will provide detailed requirements necessary for software development and provides end-user advocacy for APS.

- The Contractor Project Manager is responsible for all interfaces between the contractor and NASA MSFC and will ensure the timely delivery of quality products, within budget.

- The Contractor Software Development Manager is responsible for the implementation of high quality software which performs effectively within the NASA information systems environment.

- The subcontractor Project Manager is responsible to the Contractor Project Manager for the timely delivery of all Software AG products required under this contract and the development of interfaces between APS and the MSFC Legacy ADABAS Natural applications.

- The MSFC Computer Support Contractor is responsible for supporting the APS development program and ensuring its integration with other center system development efforts.

4.3 CONTRACTUAL RELATIONSHIPS

While it is important to the success of this project, that the organization work as a team, the contractual relationship between MSFC and PAI must always be respected.

The MSFC contractual responsibilities are as follows:

- Contracting Officer, Jane Maples;

- COTR, Gerald Cucarola; and

- Alternate COTR, Bobby German.

PAI's Project Manager, Dr. Murphy is responsible for all contractual activities, including those of its subcontractor, Software AG.

5.0 PROJECT DETAILS

5.1 SCHEDULE

The project schedule will be reviewed and updated as needed throughout the development life cycle, particularly prior to each formal review, using MS-Project. The baseline version of the project schedule GANTT chart is included as Appendix B of this document. The following paragraphs describes the tasks to be accomplished with critical review points.

5.2 PLANNING PHASE

The first phase of the project is the planning phase, which culminates in the review and approval of this project plan.

The planning phase began with award to the contract to PAI on August 1, 1994. The contract calls for delivery of the APS software eight months after award, and training by nine months after award. The completion date for implementation and training is April 30, 1995.

Other milestones and deliverables Identified in the contract's statement of work include:

- Project plan;
- Acceptance test plan;
- Software;
- User and training manuals and publications;
- Support documentation; and
- Object and source codes.

This plan incorporates production of all of these items.

A kick-off meeting was held at MSFC on August 11/12, 1994 and the planning process was initiated.

An initial data collection task was begun with a view to collecting data to be used as the baseline information. Sources of information were identified, and a data collection methodology established to collect the required data.

A date of August 26, 1994 was established as the date for collection of initial data. The information collected as of this date is shown in Appendix A. Additional data will be added as it is obtained, and a list of missing data will be given in the monthly project status report.

The second task was to develop the Project Plan. This plan takes into account the work already done on APRS Phase II, the technology concerns about the proposed solutions, and the existing functionality of the COTS software.

This project is subject to review and approval by NASA by September 15, 1994.

5.3 VALIDATION PHASE

The purpose of the validation phase is to test the technological basis of the proposed solution, to validate and update the requirements specifications, and to analyze and review the COTS solution to identify those features which require to be modified, developed, or are the subject of an interface development. This validation phase meets Task 1 and Task 2 of the contract's statement of work and will culminate in a design review scheduled for October 24-November 4, 1994. This design review coincides with the contract's decision point, and further work shall not continue until the design is approved in writing by the MSFC COTR.

The first task in the validation phase is for PAI to research and develop a proof of concept demonstration that meets the following critical elements:

- Presentation of functional understanding of each interface requirement including files, data elements, and edits required to be updated;

- Demonstration of updating a procurement request from within PAI's application by making a call to a MARTS test database (i.e., specific repeating field) from both a PC and Macintosh;

- Presentation of PAI's plan on how the application meets the performance requirements, including an updated Acceptance Test Plan; and

- Identification of the location (i.e., server, workstation) of each component or piece of the APS within the MSFC architecture.

The results of this task (a presentation and demonstration) will be presented to NASA in a proof of concept review on October 11-12, 1994. The presentation will include flowcharts showing files and data element relationships between APS and the other MSFC administrative systems. A demonstration will be conducted showing the required interfaces.

At the same time, PAI will continue to analyze the requirements as specified in the APRS and APBBS DS-04 documents (see Appendix A) to update these specifications to the current environment (e.g., ECAT compliance). PAI will document which requirements are met by the COTS software and which require customization enhancement, or interface development. This process will be performed by a combination of interviews with MSFC personnel, review of existing requirements document, knowledge of the procurement process, and experience with the functions and capabilities of the COTS solution. The result of this will be the development of an updated Requirements Specification (DS-04) and its presentation to MSFC on September 30, 1994. MSFC will be given a two-week period to review and approve the Requirements Specification. This concludes work on Task 1 of the SOW.

The next task is to analyze and document the implementation approach and provide a design document describing the technical architecture of the solution across the MSFC multi-platform environment. The Design Document (DS-08) will be delivered on October 21, 1994 and subject to a detailed design review scheduled to be completed on November 4, 1994. This concludes work on Task 2 of the SOW.

5.4 PROTOTYPE PHASE

The prototype phase is designed to allow the MSFC buying office to experiment with the small purchase component of the system and to begin to develop an electronic commerce strategy in compliance with President Clinton's memorandum entitled "Streamlining Procurement Through Electronic Commerce", October 26, 1993. This established September 1994 as the starting point for government-wide implementation of electronic commerce.

A prototype system (PC-Windows only) will be installed by November 7, 1994. MSFC will test and evaluate the system, including conducting electronic commerce for a 90-day period ending on December 30, 1994. At that time, PAI will analyze the lesson learned from the prototype and summarize these lessons, and the actions that will be taken in a presentation to MSFC on December 30, 1994.

5.5 CUSTOMIZATION PHASE

While PAI recognizes that it must receive approval of Task 1 and Task 2, before proceeding with Task 3, it also recognizes that to meet the eight month development cycle, time is of the essence. As such, our Project Plan requires PAI to begin work, at our own risk, on Task 3 prior to formal acceptance of Task 1 and Task 2.

Much of the work to meet the requirements of MSFC will be achieved through database customization, i.e., using the PAI*IPRO core software with a database designed specifically to meet NASA MSFC requirements.

The customization phase begins with data element definition, the structuring of the requirements into procurement actions, milestones, triggers, etc. Subsequent tasks include the development of all pre-printed forms and the development of all documents (solicitation, contracts, grants, etc.).

These tasks will be completed by January 27, 1995 and will be subject to a review by NASA for a 30-day period. Once reviewed and accepted, these will become the system baseline. PAI will develop and deliver a Configuration Management Plan on February 20, 1995 to document the procedures for handling updates to this baseline system.

5.6 ENHANCEMENT PHASE

During the enhancement phase, any software changes (modifications or additions) which were identified during the validation phase, excluding ADABAS interfaces, will be developed and tested.

The development and unit testing will be performed at PAI's Software Development Laboratory and will be fully tested in PC-Windows, Macintosh, and SUN/UNIX environments. Unit testing will be complete as of February 21, 1995.

5.7 INTERFACE PHASE

During the interface phase, all interfaces with ADABAS Natural mainframe legacy systems will be defined, developed, and tested. Interfaces with the following systems will be included:

- MARTS;
- NSMS;
- NEMS; and
- AMS.

Testing will occur, to the maximum extent possible using Software AG computer resources. NASA will provide test systems for each of these applications for use in this interface development process. All interfaces will be complete and unit tested by December 9, 1994.

Software AG, as a subcontractor to PAI, is responsible for ADABAS Natural interface development.

5.8 DATA CONVERSION PHASE

The purpose of the data conversion phase is to provide the capability, at the time of implementation, to migrate data from the existing APRS to APS, thereby, providing "one-source" for procurement request information. The contract does not call for PAI to perform the actual conversions. Beginning in January 1, 1995, PAI will define the conversion requirements, develop appropriate conversion programs, and test the conversion programs using test data provided by MSFC. These test data will then be available for use in the final system test.

5.9 DOCUMENTATION PHASE

The first task, and most important task, in the documentation phase is the development of the on-line HELP features of the system. These will be developed concurrently with the customization and enhancement phases and are scheduled for completion by January 31, 1995.

Other documentation to be developed and delivered with the system on March 31, 1995 include:

- User Documentation;
- Technical Specifications;
- Training Manuals; and
- System Documentation.

5.10 SYSTEMS TESTING PHASE

After MSFC acceptance of the Design Specifications, PAI will develop a detailed final test and acceptance plan (DS-09). This plan will be submitted by January 2, 1995 and will define all acceptance requirements and criteria to determine the acceptability of APS. This plan will outline a series of tests to be performed to verify that APS meets functional, technical, and performance requirements as specified in the design document approved after Tasks 1 and 2. The Test and Acceptance Plan should be reviewed by NASA on or before January 16, 1995.

Integration testing will be performed on each of the three platforms (PC-Windows, Macintosh, and SUN UNIX), and a full multi-platform test will be conducted. A Test Readiness Review will be conducted at the end of March 1995.

5.11 TRAINING PHASE

The contract's Task 4 is the on-site training of the Center's representatives in the use of APS. The contract requires a minimum of 25 and a maximum of 50 MSFC employees to be trained and for these employees to include system users, system administrators, database administrators, and training personnel to subsequently train and support other MSFC personnel.

Understanding the true training needs should be left to a later point in the project. As a result, PAI proposes that a Training Plan be developed during February 1995. The Training Plan will be delivered to MSFC on March 6, 1995 with a view to the actual training sessions being conducted in the last two weeks of April 1995.

5.12 MAINTENANCE PHASE

At the option of the Government, maintenance will begin on May 1, 1995 and end on April 30, 1999. (Task 5 of the contract).

6.0 PROJECT RISKS

6.1 GENERAL

It is important to minimize risks to avoid business, technical, performance and schedule issues.

Business risks include:

- Adherence to MSFC's standards/policies for operating business;
- Understanding of the NEMS, NSMS, MARTS, and AMS interface requirements; and
- Changing of requirements after requirements have been defined.

Technical risks include:

- Implementation of solution which allows the system to be upgraded with changes in technology;
- Government-wide initiatives (e.g., Electronic Commerce);
- Availability and capacity of equipment to support APS; and
- Additional system risks identified as the project life cycle evolves.

Schedule risks include:

- Availability of software on multiple platforms; and
- Availability of interfaces.

PAI will take all precautions to minimize risks.

These steps include:

- Ensuring that the requirements are fully understood and validated by MSFC before implementation begins;
- Ensuring that all technical components of the system, including third-party packages are fully tested prior to implementation of the COTS solution;
- Ensuring that PAI staff are fully conversant with the overall Government electronic commerce initiatives;

- Maintenance of full and complete documentation on the project, including the monthly status report; and

- An honest approach to the technical issues which are an essential part of the solution.

6.2 REMOTE CONTRACTOR

PAI and its subcontractor are both located remotely to MSFC.

Regular visits by PAI are required to ensure the MSFC environment is fully reflected in the delivered product.

7.0 TEST AND ACCEPTANCE

7.1 UNIT TEST

Unit testing will be performed by PAI during all parts of the project. Each lowest level software component will be tested by the software developers to ensure the detail requirements have been satisfied.

7.2 INTEGRATION TEST

Integration test will be performed by PAI at the end of the development phase. Components will be logically, then functionally grouped for integration testing. The test results will be traceable to the requirements established in the definition phase of the project life cycle. This test will be a coordinated effort with agency-wide and MSFC applications.

7.4 GOVERNMENT TEST

This test will be formally performed by the Government end-user. The system's operational capabilities and requirements will be validated and formally accepted. The acceptance concept should cover:

- Assurance that all organizations requirements have been met;

- Compatibility with operational environment;

- Demonstration of all user screens;

- Demonstration ergonomic compatibility;

- Verify security provisions, operational procedures, performance; and

- Demonstration of support ability provisions.

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APPENDIX A
DOCUMENTATION RECEIVED FROM NASA

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1. Standards and Requirements Documents

   1.1 MMI 5101.5G, Approval and Routing of Procurement Requests

   1.2 MMI 2410.13, MSFC General-Purpose Software Development and Management Requirements Manual

3. APRS Phase II - Requirements Specifications: Document Specification-04 (DS-04), June 1993

4. Automated Bulletin Board Service Requirements Specification (DS-04), May 1993

2. APRS

   2.1 Detailed Listing - Alphabetically All Data Element Entries - Entity Relationships

   2.2 User and Operations Guide

3. PROMIS

   3.1 PROMIS Documentation

   3.2 Design of the Procurement Management Information System (PROMIS) for shuttle

4. MARTS

   4.1 Automated Information Detailed System Description for Marshall Accounting Resource Tracking System, May 1989

   4.2 User and Operations Guides:

   - Labor Cost System
   - Manpower Manpower Information Systems (MMIS)
   - Authority Control Module (ACS)
   - Contracts Module
   - Disbursement Module
   - FEDSTRIP/MILSTRIP System (FEDMIL)
   - FMS Adjustments Module
   - FMS Distribution System (FMS)
   - Government Bill of Lading (GBL) Module

- General Ledger Module
- Industrial Property Module
- Inventory Module
- Letter of Credit Module
- Edit Module
- Tables System
- Personal Property Module
- Property Transfer Module
- Real Property Module
- Reimbursables Module
- Returnable Containee Module
- Transaction Accounting Module
- Travel Module
- 224 Module
- 3935 Module
- Cost System
- Lapsing Appropriations Module

4.3 MARTS-FMO Users Manual

5. NSMS

5.1 System/Software Detailed Design Specification May 1991

5.2 User and Operations Guide for the NASA Supply Management System, June 1994

5.3 Module Specifications: Maintain and Report Catalog Items

6. Forms

6.1 MSFC Form 55: Purchase Order

6.2 MSFC Form 404: Procurement Request

6.3 MSFC Form 67: Proposal Summary/Abstract of Bids

6.4 MSFC Form 55: Request for Issue, Procurement, Transfer or Turn-in

6.5 Continuation Sheet for MSFC Form 55

6.6 NASA Form 1634, Contracting Officer Technical Representative (COTR) Delegation

6.7 NASA Form 1432, Letter of Contract Administration, Delegation, Termination

6.8 NASA Form 1412, Termination Authority

6.9 NASA Form 1413, Termination Docket Checklist

6.10 NASA Form 1430, Letter of Contract Administration, Delegation, General

6.11 NASA Form 1430A, Letter of Contract Administration, Delegation, Special Instructions

6.12 NASA Form 1431, Letter of Acceptance of Contract Administration Delegation

6.13 NASA Form 1434, Letter of Request for Pricing - Audit Technical Evaluation Services

6.14 NASA Form 1433, Letter of Audit Delegation

6.15 MSFC Form 3988: Order for Supplies or Services

6.16 MSFC Form 3988-1, Order for Supplies and Services (Continuation Sheet)

6.17 NASA Form 1647: Federal Information Processing (FIP) Resource Decision Document - FRDD

6.18 Federal Information Processing (FIP) Resources Decision Document (FRDD) for SEWP Acquisitions

6.19 MSFC Form 3075, Delivery Order, Proposal and Acceptance

6.20 MSFC Form 404, Procurement Request

6.21 NASA Form 1451, Request for Procurement Plan Approval

6.22 NASA Form 1452, Signature Page (Installation)

6.23 NASA Form 1096, Checklist for Contract Award File Content

6.24 NASA Form 1651, Contractor Performance Summary (CPS)

6.25 NASA Form 1630, Request for Access to Classified National Security Information

6.26 NASA Form 1011, Contractor Completion Statement

6.27 NASA Form 780, Contractor's Assignment of Refunds, Rebates, Credits, and Other Amounts

6.28 NASA Form 779, Assignee's Release

6.29 NASA Form 778, Contractor's Release

6.30 NASA Form 666, New Technology Transmittal

6.31 NASA Form 667, Report on NASA Subcontracts

6.32 MSFC Form 450, MSFC Small Business, Minority Business, and Labor Surplus Area Coordination Form and Memo for File

6.33 MSFC Form 4032, Request for Cost/Price Analysis

6.34 MSFC Form 3143, Statement of Price or Cost Analysis

6.35 NASA Form 507A, Individual Procurement Action Report (New Awards), Supplement A

6.36 MSFC Form 2642, Sub-Contract Consent

6.37 MSFC Form 2656, Subcontractor Review

6.38 MSFC Form 4235, Credit Card Purchase Record

7. Other Documentation

7.1 NASA FAR Supplement

7.2 Interim Procurement Operating Procedure for Commercial Credit Card Acquisition by Personnel Assigned to the Procurement Office

8. AMS

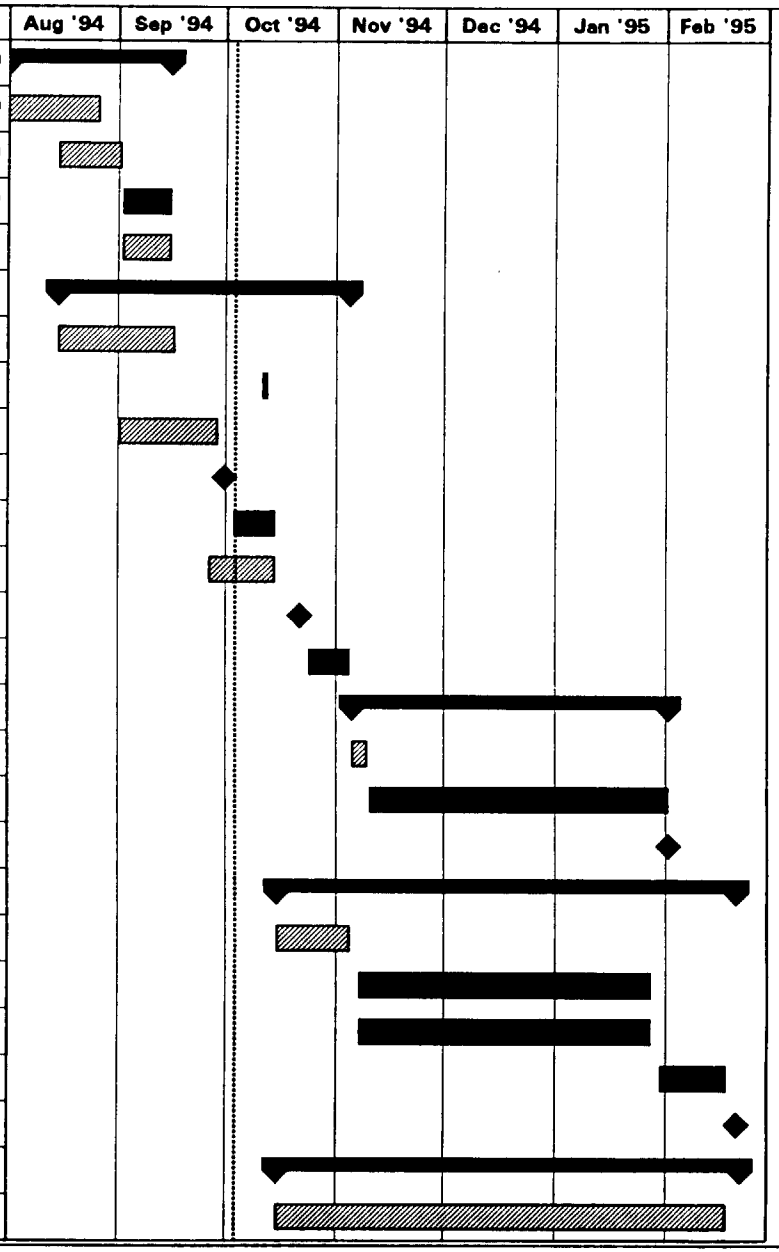
8.1 AMS Systems Manual, Ref. 3.1

8.2 AMS User Manual, Volumes 1 through 4

APPENDIX B
PROJECT SCHEDULE

NASA Automated Procurement System Implementation Plan

ID	Name	Duration	Scheduled Start	Scheduled Finish
1	PLANNING PHASE	34d	8/1/94 8:00am	9/15/94 5:00pm
2	Obtain Baseline Information	20d	8/1/94 8:00am	8/26/94 5:00pm
3	Develop Project Plan	14d	8/15/94 8:00am	9/1/94 5:00pm
4	Deliver Final Project Plan	10d	9/2/94 8:00am	9/15/94 5:00pm
5	Review & Approve Project Plan	10d	9/2/94 8:00am	9/15/94 5:00pm
6	VALIDATION PHASE	60d	8/15/94 8:00am	11/4/94 5:00pm
7	Develop Proof of Concept	25d	8/15/94 8:00am	9/16/94 5:00pm
8	Proof of Concept	2d	10/11/94 8:00am	10/12/94 5:00pm
9	Analyze Requirements/System Functions	20d	9/1/94 8:00am	9/28/94 5:00pm
10	Update Requirements Specification	1d	9/30/94 8:00am	9/30/94 5:00pm
11	Review & Approve Requirements	10d	10/3/94 8:00am	10/14/94 5:00pm
12	Analyze Implementation Approach	15d	9/26/94 8:00am	10/14/94 5:00pm
13	Deliver Design Specification Document	1d	10/21/94 8:00am	10/21/94 5:00pm
14	Critical Design Review	10d	10/24/94 8:00am	11/4/94 5:00pm
15	PROTOTYPE PHASE	63d	11/5/94 8:00am	2/1/95 5:00pm
16	Install Small Purchase Prototype w/ EDI	3d	11/5/94 8:00am	11/9/94 5:00pm
17	Test & Evaluate SP Prototype	60d	11/10/94 8:00am	2/1/95 5:00pm
18	Deliver Prototype Evaluation Summary	1d	2/1/95 8:00am	2/1/95 5:00pm
19	CUSTOMIZATION PHASE	91d	10/15/94 8:00am	2/20/95 5:00pm
20	Data Element Definition	15d	10/15/94 8:00am	11/4/94 5:00pm
21	Forms Development	60d	11/7/94 8:00am	1/27/95 5:00pm
22	Document Development	60d	11/7/94 8:00am	1/27/95 5:00pm
23	System Configuration	15d	1/30/95 8:00am	2/17/95 5:00pm
24	Deliver Configuration Management Plan	1d	2/20/95 8:00am	2/20/95 5:00pm
25	ENHANCEMENT PHASE	92d	10/15/94 8:00am	2/21/95 5:00pm
26	Develop MSFC Specific Components	90d	10/15/94 8:00am	2/17/95 5:00pm



Project: NASA/MSFC
Date: 10/3/94

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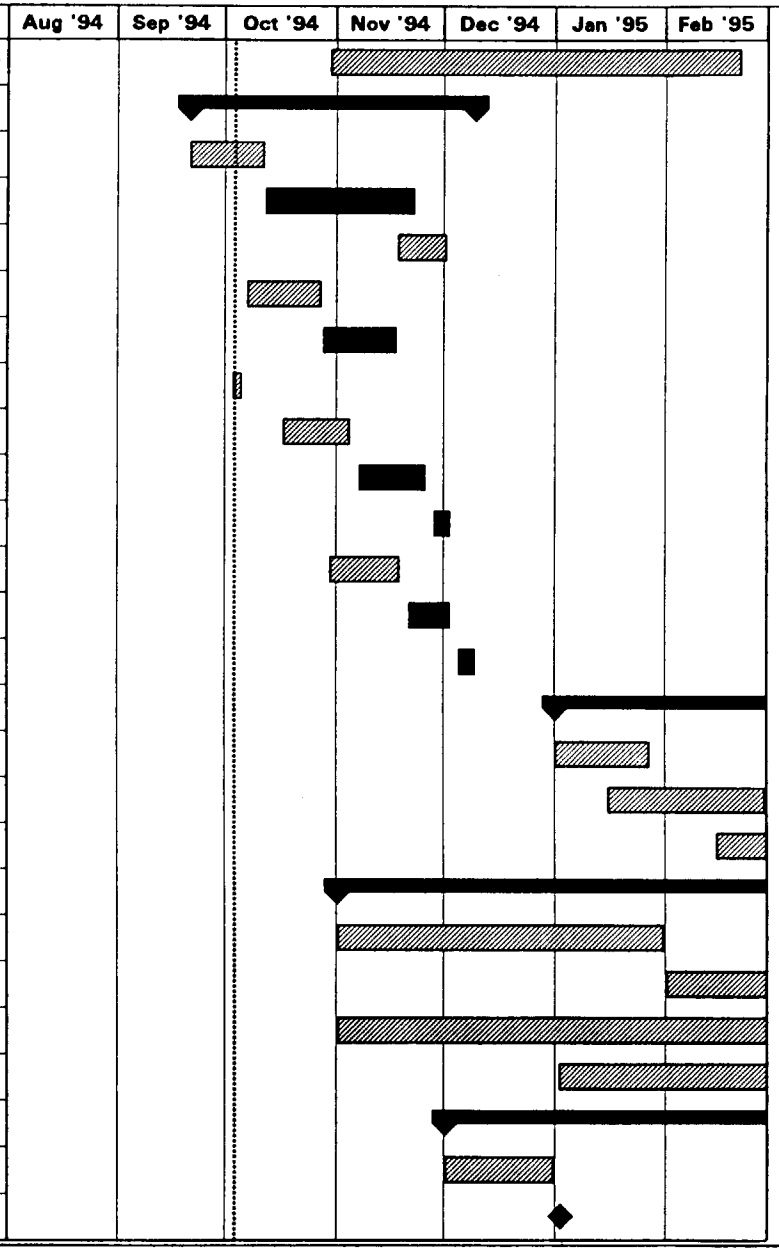
Progress
Milestone
Summary
Rolled Up

NASA Automated Procurement System Implementation Plan

ID	Name	Duration	Scheduled Start	Scheduled Finish
27	Unit Testing	82d	10/30/94 8:00am	2/21/95 5:00pm
28	INTERFACE PHASE	58d	9/21/94 8:00am	12/9/94 5:00pm
29	Define MARTS Interface Requirements	15d	9/21/94 8:00am	10/11/94 5:00pm
30	Develop MARTS Interfaces	30d	10/12/94 8:00am	11/22/94 5:00pm
31	Test MARTS Interfaces	10d	11/18/94 8:00am	12/1/94 5:00pm
32	Define NSMS Interface Requirements	15d	10/7/94 8:00am	10/27/94 5:00pm
33	Develop NSMS Interfaces	15d	10/28/94 8:00am	11/17/94 5:00pm
34	Test NSMS Interfaces	3d	10/3/94 8:00am	10/5/94 5:00pm
35	Define NEMS Interface Requirements	15d	10/17/94 8:00am	11/4/94 5:00pm
36	Develop NEMS Interfaces	15d	11/7/94 8:00am	11/25/94 5:00pm
37	Test NEMS Interfaces	5d	11/28/94 8:00am	12/2/94 5:00pm
38	Define AMS Interface Requirements	15d	10/30/94 8:00am	11/18/94 5:00pm
39	Develop AMS Interfaces	10d	11/21/94 8:00am	12/2/94 5:00pm
40	Test AMS Interfaces	5d	12/5/94 8:00am	12/9/94 5:00pm
41	DATA CONVERSION PHASE	51d	1/1/95 8:00am	3/13/95 5:00pm
42	Define Conversion Requirements	20d	1/1/95 8:00am	1/27/95 5:00pm
43	Develop Conversion Programs	32d	1/16/95 8:00am	2/28/95 5:00pm
44	Test Conversion Programs	19d	2/15/95 8:00am	3/13/95 5:00pm
45	DOCUMENTATION PHASE	109d	11/1/94 8:00am	3/31/95 5:00pm
46	Develop On-Line HELP	66d	11/1/94 8:00am	1/31/95 5:00pm
47	Develop User Documentation	43d	2/1/95 8:00am	3/31/95 5:00pm
48	Develop Technical Specifications	109d	11/1/94 8:00am	3/31/95 5:00pm
49	Develop Training Manuals	65d	1/2/95 8:00am	3/31/95 5:00pm
50	SYSTEM TESTING PHASE	97d	12/1/94 8:00am	4/14/95 5:00pm
51	Develop Test & Acceptance Plan	22d	12/1/94 8:00am	12/31/94 5:00pm
52	Deliver Test & Acceptance Plan	1d	1/2/95 8:00am	1/2/95 5:00pm



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Date: 10/3/94

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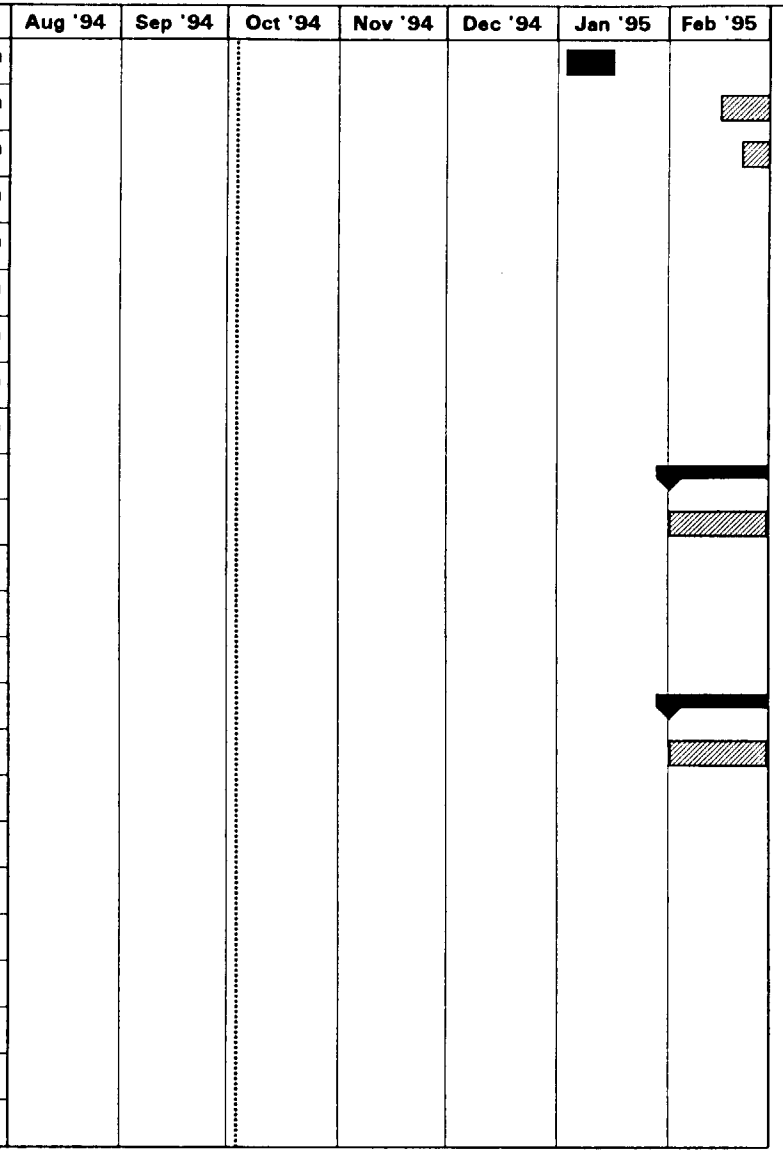
NASA Automated Procurement System Implementation Plan

ID	Name	Duration	Scheduled Start	Scheduled Finish
53	Review & Approve Test & Acceptance Plan	10d	1/3/95 8:00am	1/16/95 5:00pm
54	Integration Testing WINDOWS	15d	2/15/95 8:00am	3/7/95 5:00pm
55	Integration Testing MAC	14d	2/21/95 8:00am	3/10/95 5:00pm
56	Integration Testing SUN	11d	3/1/95 8:00am	3/15/95 5:00pm
57	Final Integration Test Multi-Platform	5d	3/16/95 8:00am	3/22/95 5:00pm
58	Test Readiness Review	5d	3/23/95 8:00am	3/29/95 5:00pm
59	TRR Complete	1d	3/30/95 8:00am	3/30/95 5:00pm
60	Government Test & Acceptance	10d	4/1/95 8:00am	4/14/95 5:00pm
61	Operation Readiness Review	1d	4/14/95 8:00am	4/14/95 5:00pm
62	IMPLEMENTATION PHASE	57d	2/1/95 8:00am	4/20/95 5:00pm
63	Develop System Implementation Plan	20d	2/1/95 8:00am	2/28/95 5:00pm
64	Deliver System Implementation Plan	1d	3/1/95 8:00am	3/1/95 5:00pm
65	Deliver System Documentation	1d	4/10/95 8:00am	4/10/95 5:00pm
66	Install Production Software	9d	4/10/95 8:00am	4/20/95 5:00pm
67	TRAINING PHASE	63d	2/1/95 8:00am	4/28/95 5:00pm
68	Develop Training Plan	20d	2/1/95 8:00am	2/28/95 5:00pm
69	Deliver Training Plan	1d	3/1/95 8:00am	3/1/95 5:00pm
70	Deliver Training Manuals	1d	4/17/95 8:00am	4/17/95 5:00pm
71	Conduct Training	9d	4/18/95 8:00am	4/28/95 5:00pm
72	MAINTENACE PHASE	1046d	5/1/95 8:00am	5/3/99 5:00pm
73	Maintenace Year One	262d	5/1/95 8:00am	4/30/96 5:00pm
74	Mainteance Year Two	262d	5/1/96 8:00am	5/1/97 5:00pm
75	Mainteance Year Two	261d	5/2/97 8:00am	5/1/98 5:00pm
76	Mainteance Year Two	261d	5/4/98 8:00am	5/3/99 5:00pm



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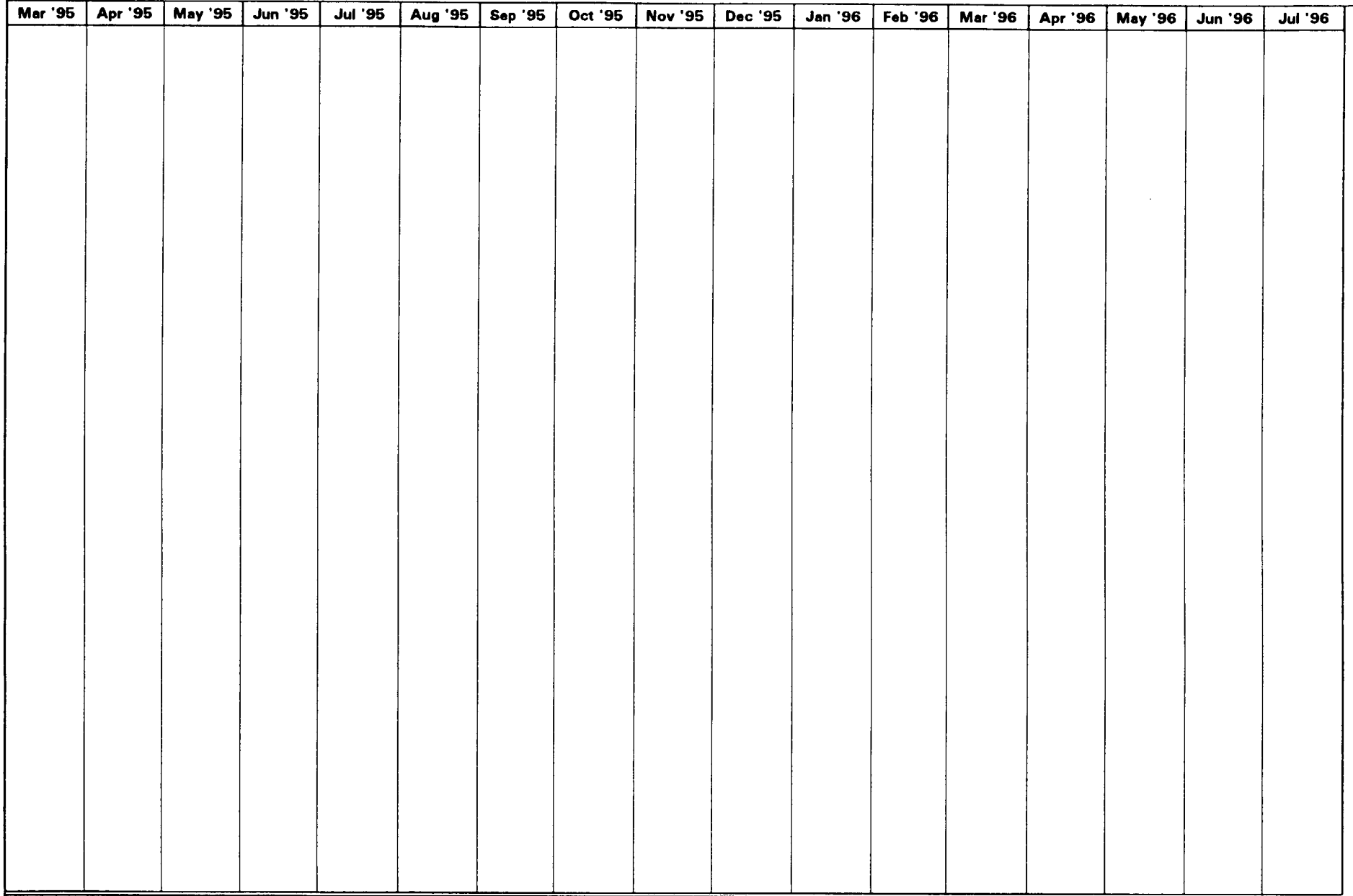

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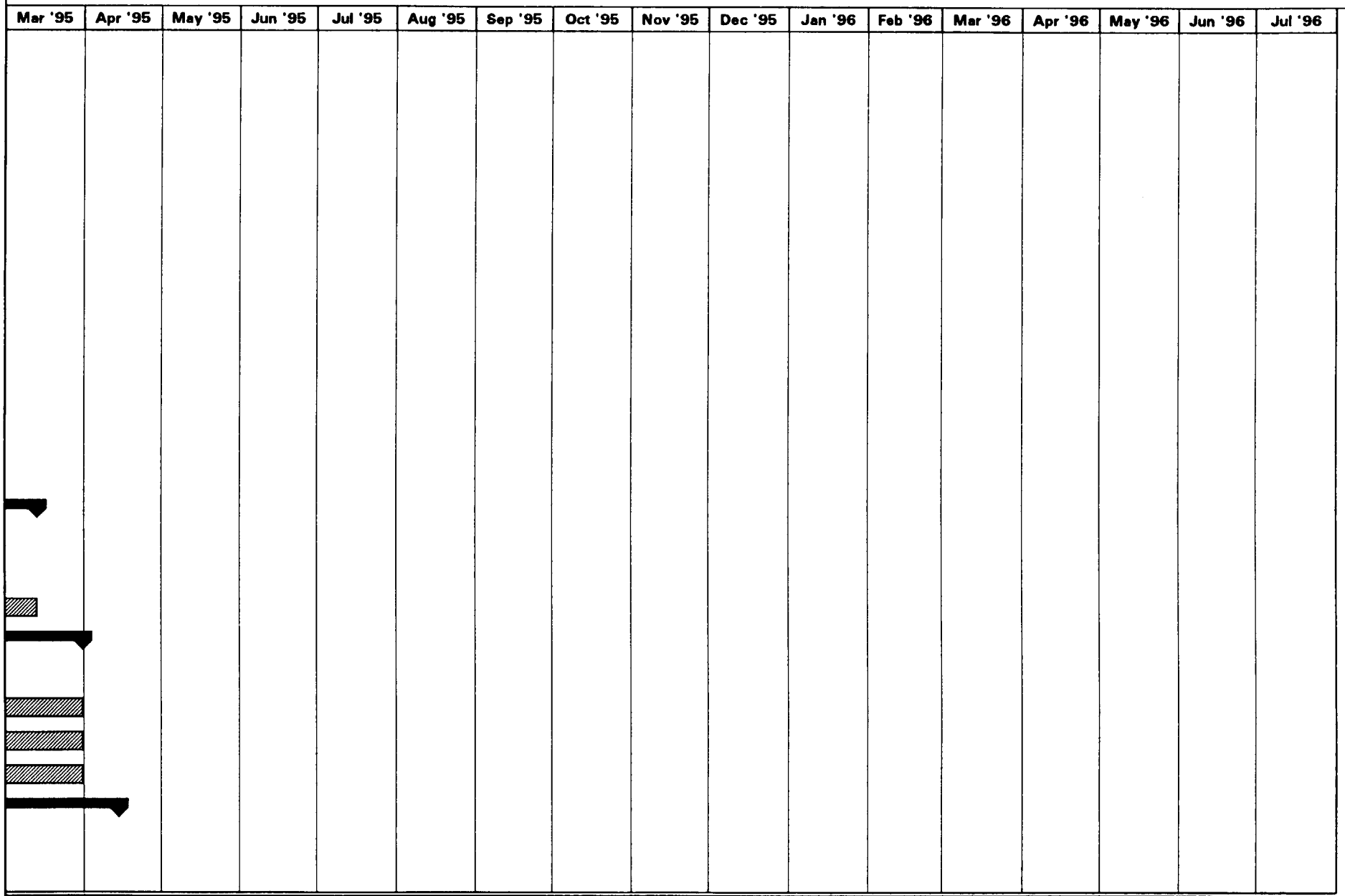

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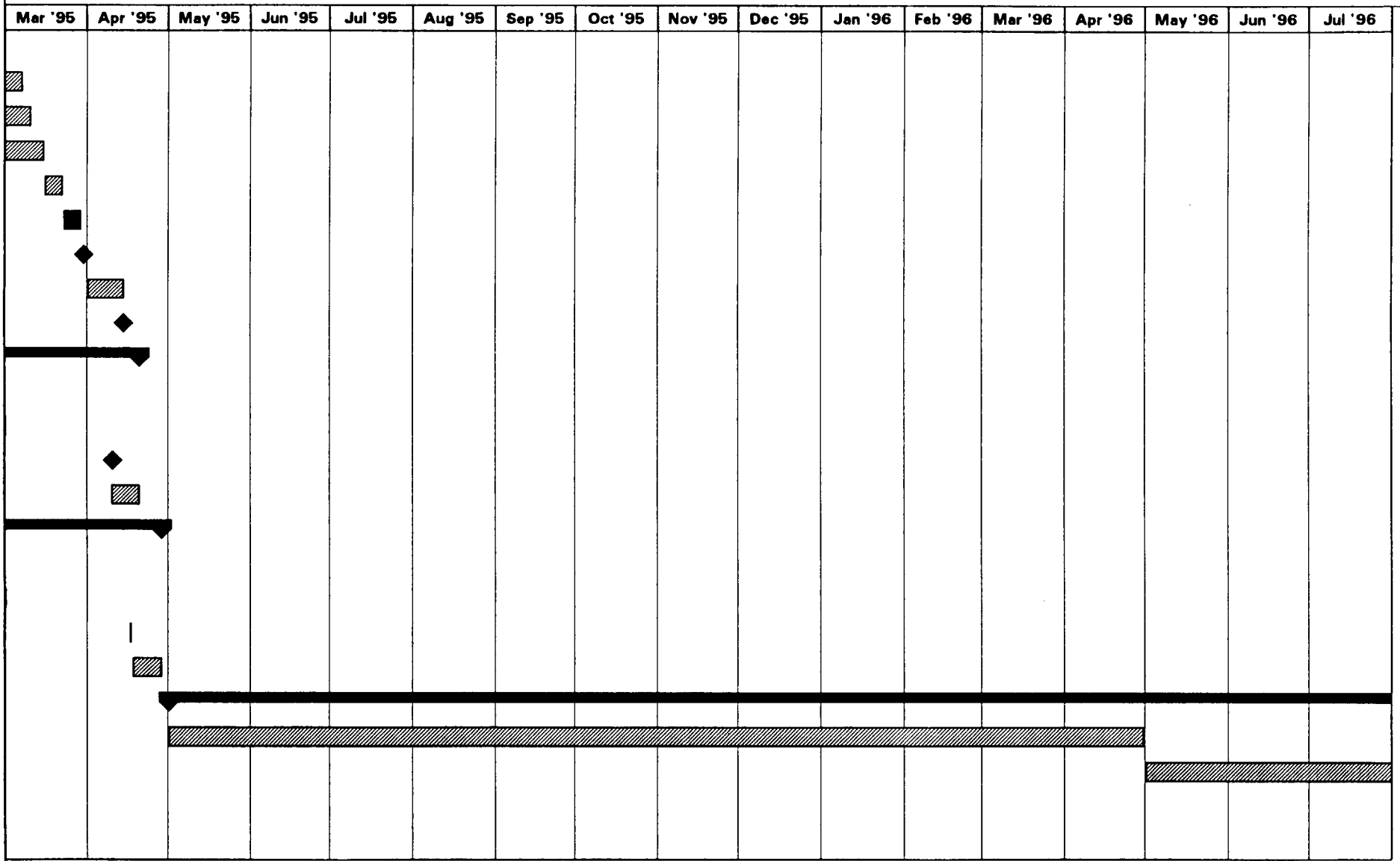

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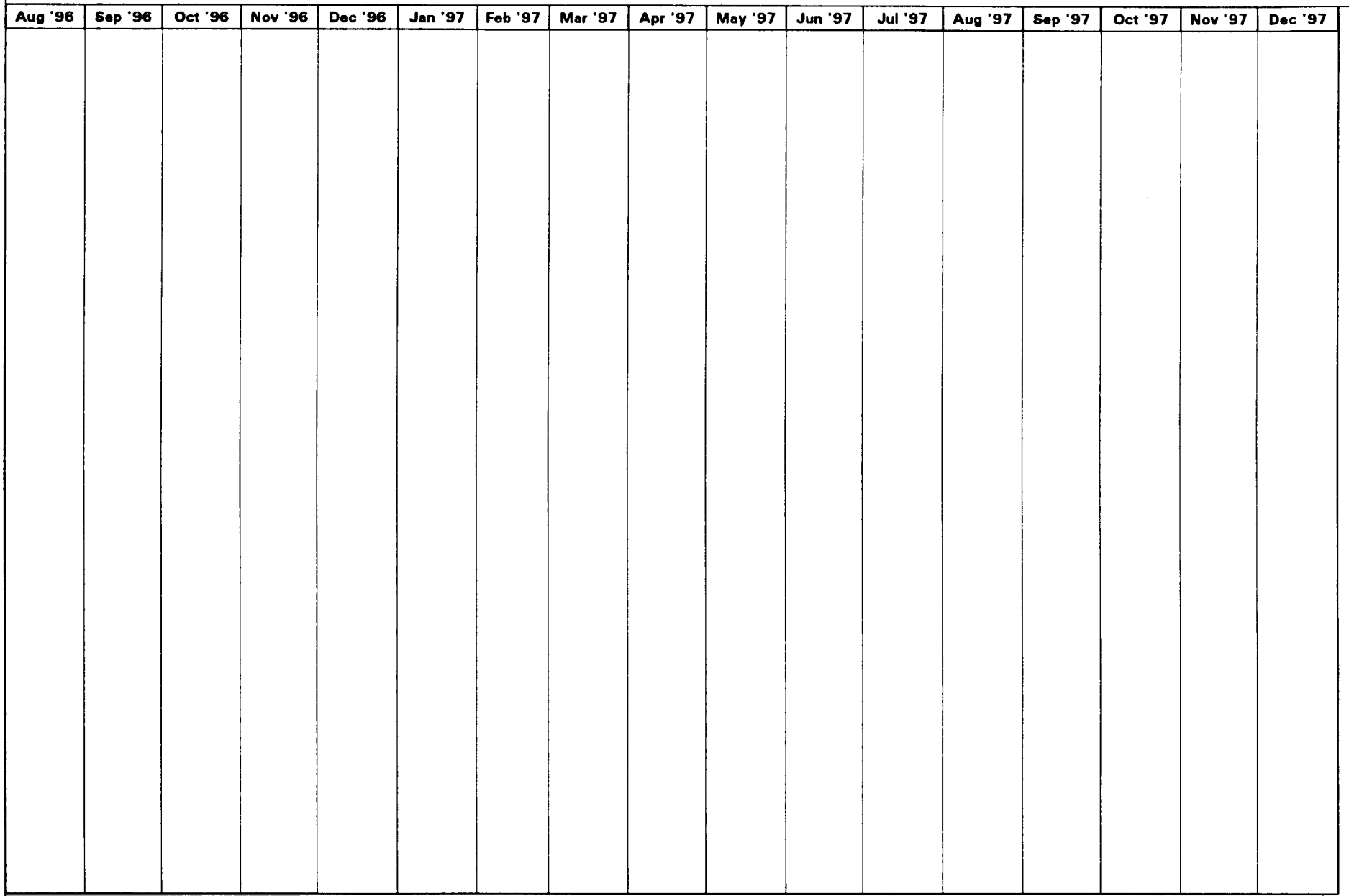

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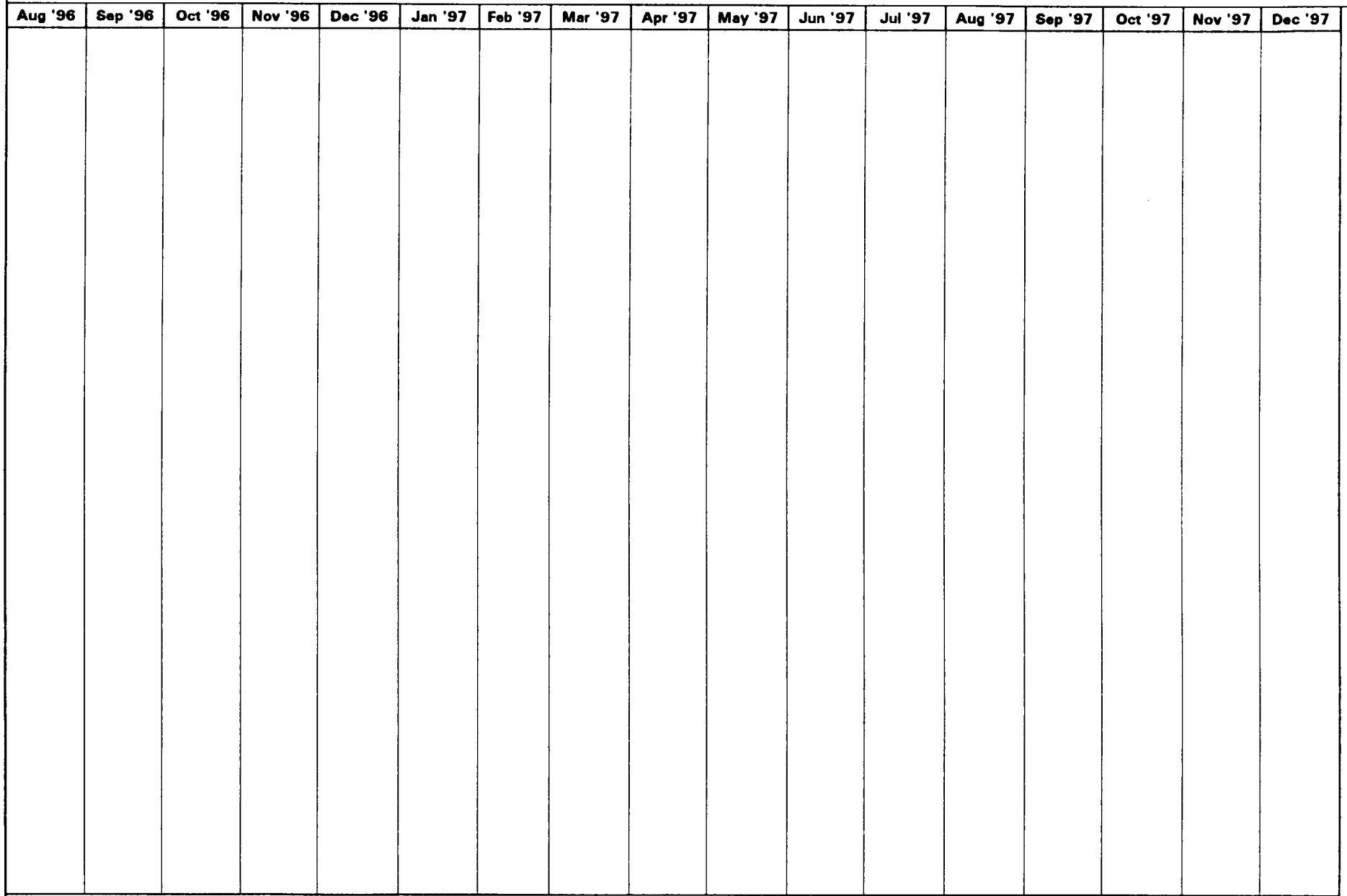

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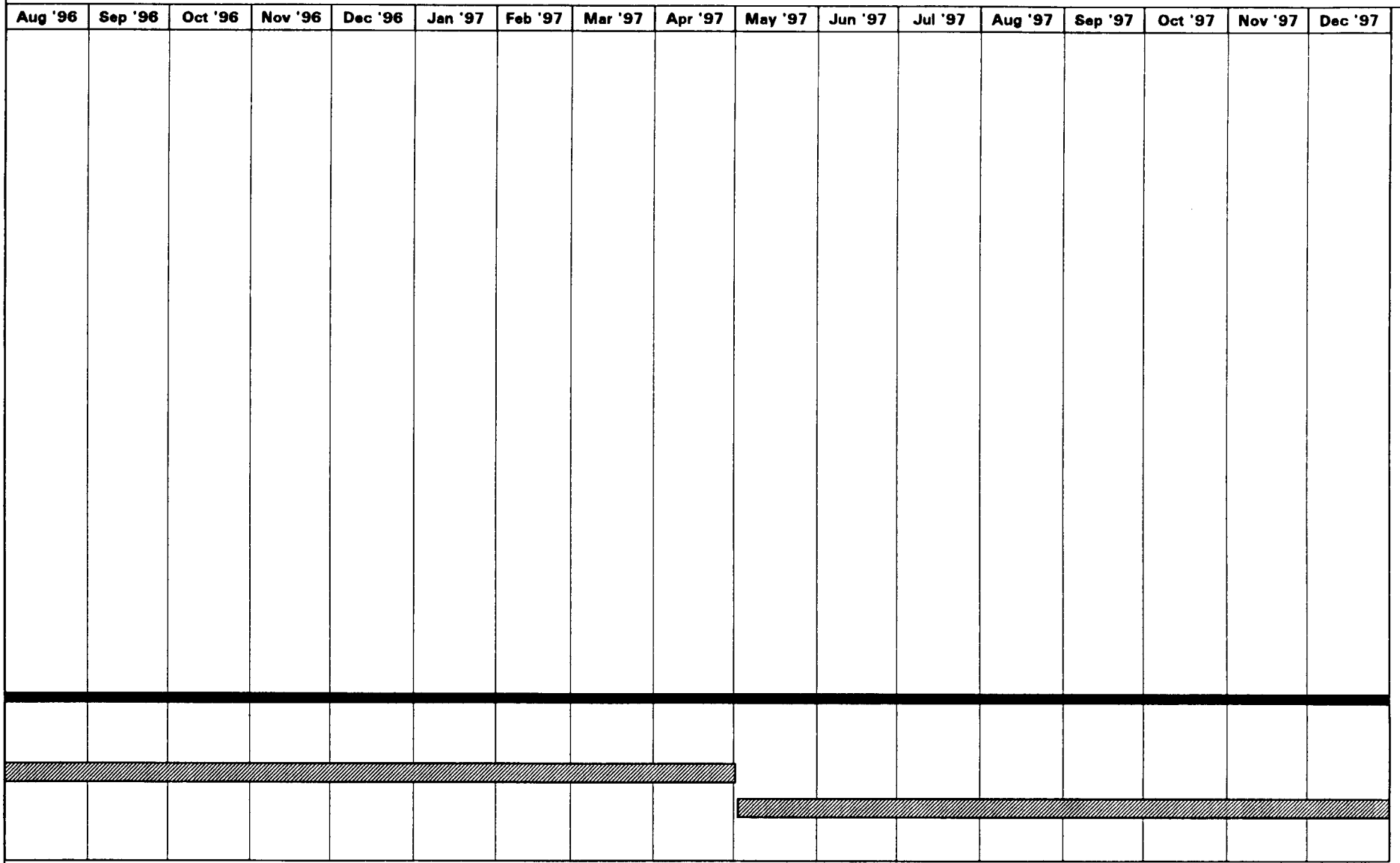

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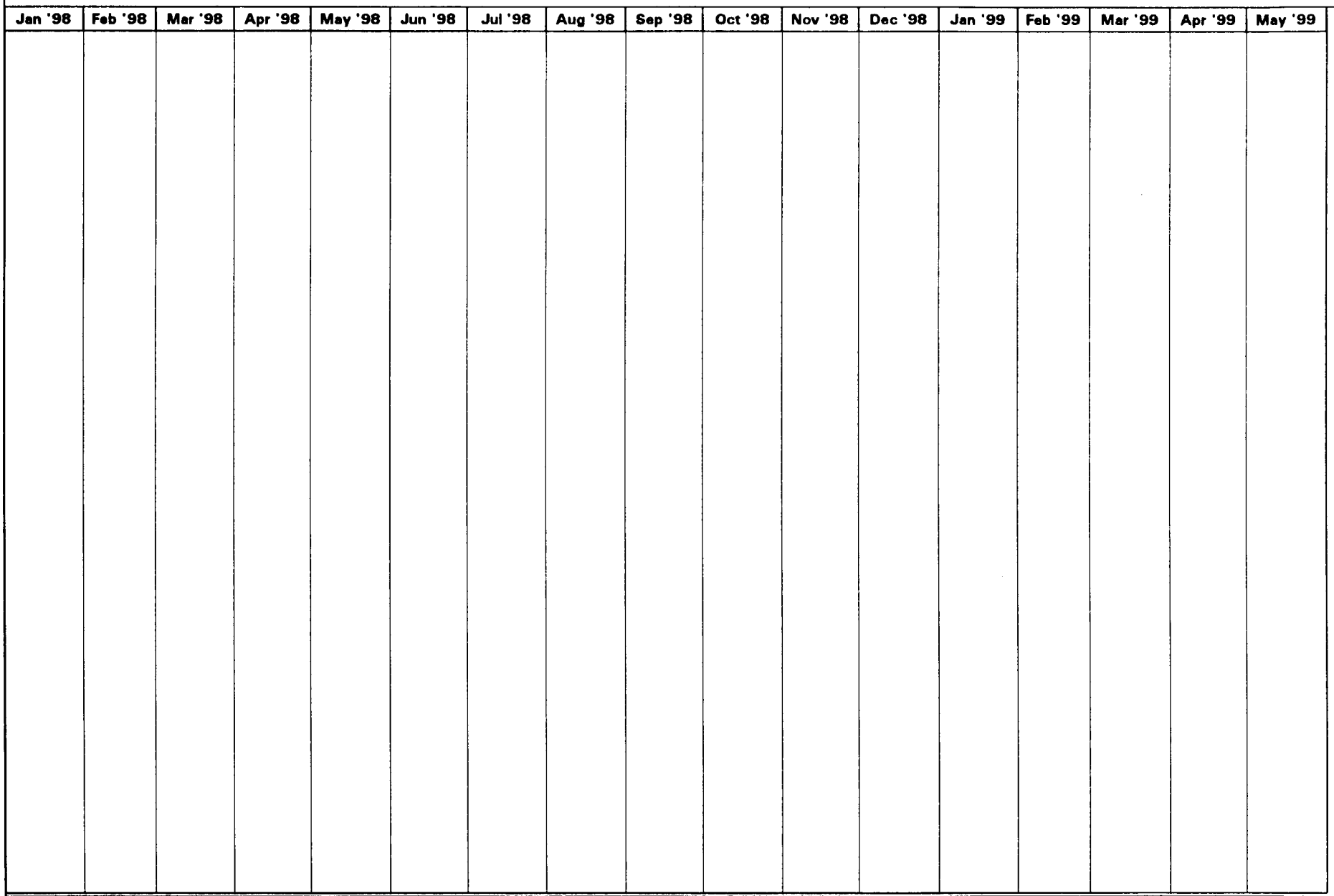

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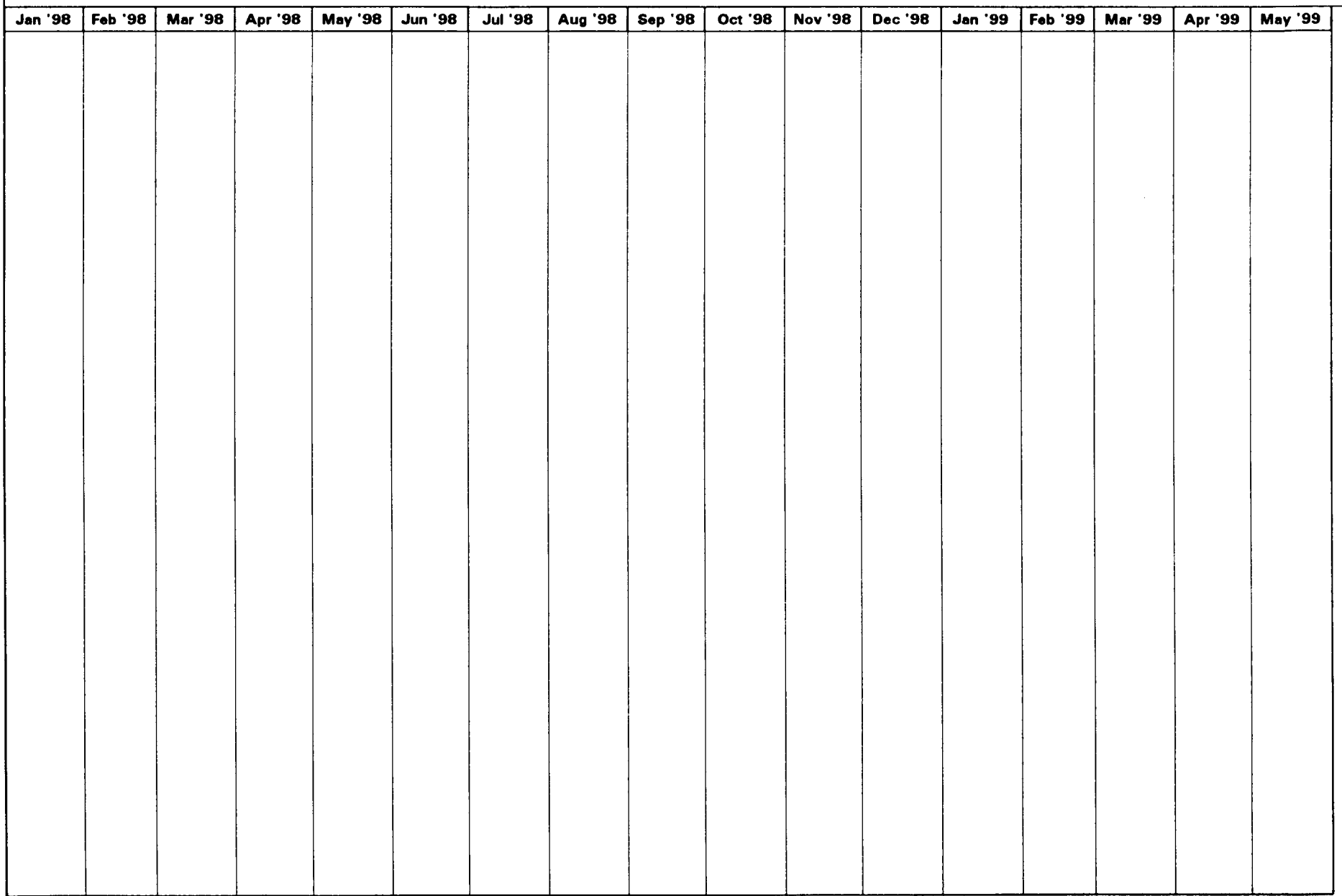

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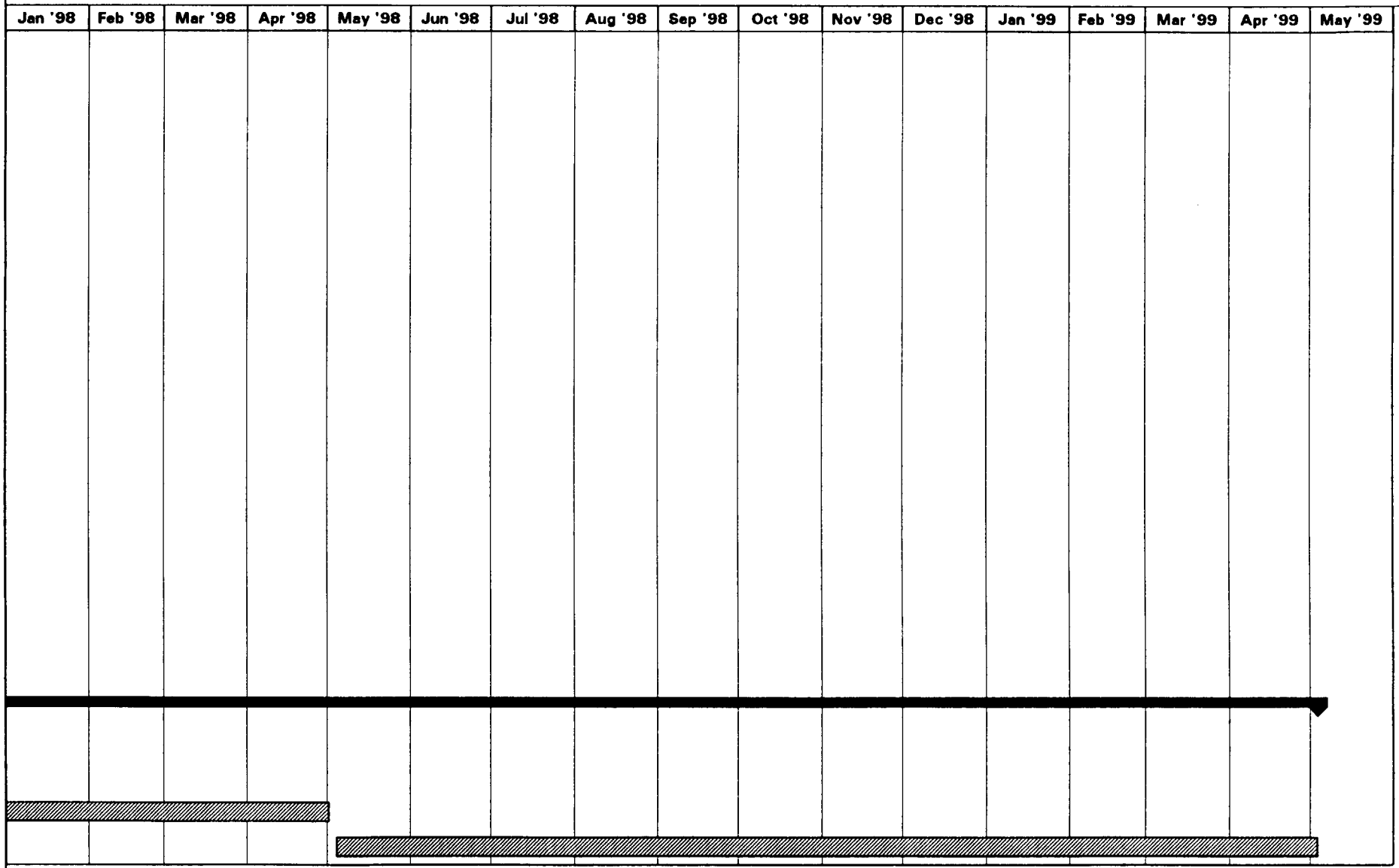

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12b. DISTRIBUTION CODE

13. ABSTRACT (*Maximum 200 words*)

The Project Plan is the governing document for the implementation of the Automated Procurement System (APS). It includes a description of the proposed system, describes the work to be done, establishes a schedule of deliverables, and discusses the major standards and procedures to be followed.

14. SUBJECT TERMS
Automated Procurement System Final Project Plan (DS-03)

15. NUMBER OF PAGES
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