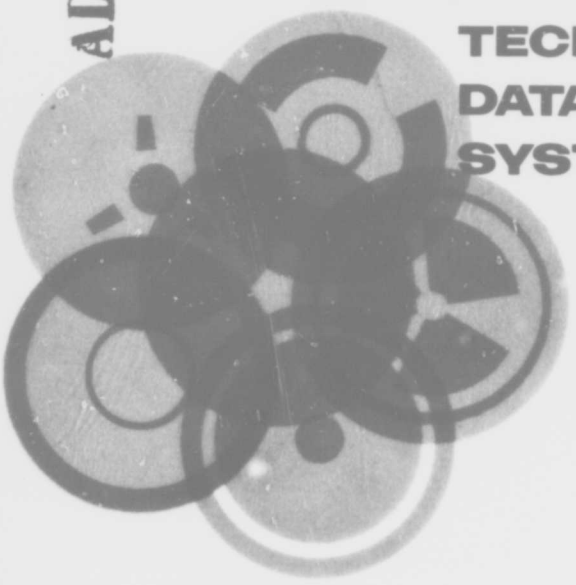
06349-W513-R0-00

# INTEGRATED TECHNICAL DATA SYSTEM





# CONFIGURATION MANAGEMENT PLAN

JUNE 1969



PREPARED FOR
U.S. ARMY MATERIEL COMMAND
CONTRACT NO. DA-49-186-AMC-324 (X)

TRW SYSTEMS GROUP
WASHINGTON OPERATIONS
1735 I STREET N.W. • WASHINGTON, D.C. 20006



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## FOREWORD

TRW Systems was awarded a contract [Contract Number DA-49-186-AMC-324(X)] by the U. S. Army Materiel Command to develop an Integrated Technical Data System (ITDS). The ITDS is intended to assist the Army Systems Manager in performing his management and technical tasks by operating on relevant data to produce, summarize, and condense information. This allows the manager and technical support personnel to a) determine status and monitor technical progress, b) identify and predict system technical/management problems and their impact, c) comprehend and evaluate proposed system changes, and d) assign and maintain awareness of responsibility for action.

The ITDS is composed of personnel, procedures, equipment, and computer programs. The organization of these elements provides a capability for the processing of systems program data, including the following functions:

- Data receipt and indexing
- Validation and verification for authenticity
- Storage
- Manipulation
- Retrieval
- Display and dissemination.

The organization is divided into three major subsystems: the Functional Disciplines Subsystem, the Data Operations Subsystem, and the Computer Subsystem.

Following is a tabulation of ITDS user documentation (title of this volume is heavily underscored):

ITDS - Overall

- System User's Guide
- Configuration Management Plan

Functional Disciplines Subsystem

- Administrative Manual
- Operations Manual
- Personnel Position Descriptions

Data Operations Subsystem

- Administrative Manual
- Operations Manual
- Equipment Description
- Personnel Position Descriptions

Computer Subsystem

These 12 manuals, in general, cover administration of the subsystem, operating and maintenance instructions for the programs, computing equipment description, and personnel position descriptions.

- Administrative Manual
- Generalized Processing Program, General Description
- Applications Programs, General Description
- Peripheral Programs, General Description
- Computer Programs Maintenance Manual
- Computer Programs Operations Manual
- Data Processing Center Operator's Manual
- Equipment Description
- Personnel Position Descriptions
- Generalized Processing Program, Programming Documentation
- Applications Programs, Programming Documentation
- Peripheral Programs, Programming Documentation

## CONTENTS



## ILLUSTRATIONS

# CONFIGURATION MANAGEMENT PLAN

## 1. PURPOSE

This document establishes the policies, procedures and responsibilities by which changes to the ITDS shall be documented and controlled. It defines the requirements for assuring that each proposed change is thoroughly evaluated and its effect on other areas of ITDS are completely identified.

## 2. SCOPE

This plan applies to the following elements of this project.

a) Data Operations Office (DOO)

b) Project Information and Control Office (PICO)

c) Data Management Office (DMO)

d) Contracts Management Office (CO)

e) Configuration Management Office (CMO)

f) System Engineering Office (SEO)

g) Engineering Design Office (EDO)

h) Quality Assurance Office (QAO)

i) Operational Engineering Office (OEO)

j) Production Engineering Office (PEO)

k) Test Engineering Office (TEO)

l) Logistics Office (LO)

m) Production and Procurement Office (PPO)

n) Computing Services Center (CSC)

This plan shall be implemented on each item of software, personnel requirements, hardware requirements, and technical manuals referenced in paragraph 5.2 of the plan.

3. REFERENCES

AMCR 11-26 and changes thereto.

4. OPERATION

4.1 CONFIGURATION CONTROL OPERATION

The Project Manager, or his designated representative, is responsible for the accomplishment of the configuration control function of the ITDS.

The configuration control operation provides for the recording, issuing, and documentation of baselines when system documentation is submitted or approved. After baselines are established, the operation provides for: (a) systematic evaluation of all proposed changes submitted against approved documentation, (b) issuance of documentation to record approved changes, and (c) recording of the status of change incorporation.

4.2 ORGANIZATION

The Project Manager, or his designated representative, shall serve as the chairman of the Configuration Control Committee, an advisory body established herein by the Project Manager. Figure 1 presents the organization of the Configuration Control Committee.

The Configuration Management Office shall be responsible for reviewing and screening all system change proposals prior to submission to the members of the Configuration Control Committee. System Change Proposals, approved for processing by the Configuration Management Office, shall be processed in accordance with the procedure of Section 6. System Change Proposals, disapproved for processing by the Configuration Management Office, shall be returned to the originator for revision or deletion.

A member of the Configuration Management Office shall serve as executive secretary of the Configuration Control Committee.

4.3 RESPONSIBILITIES

4.3.1 Data Operations Office (DOO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

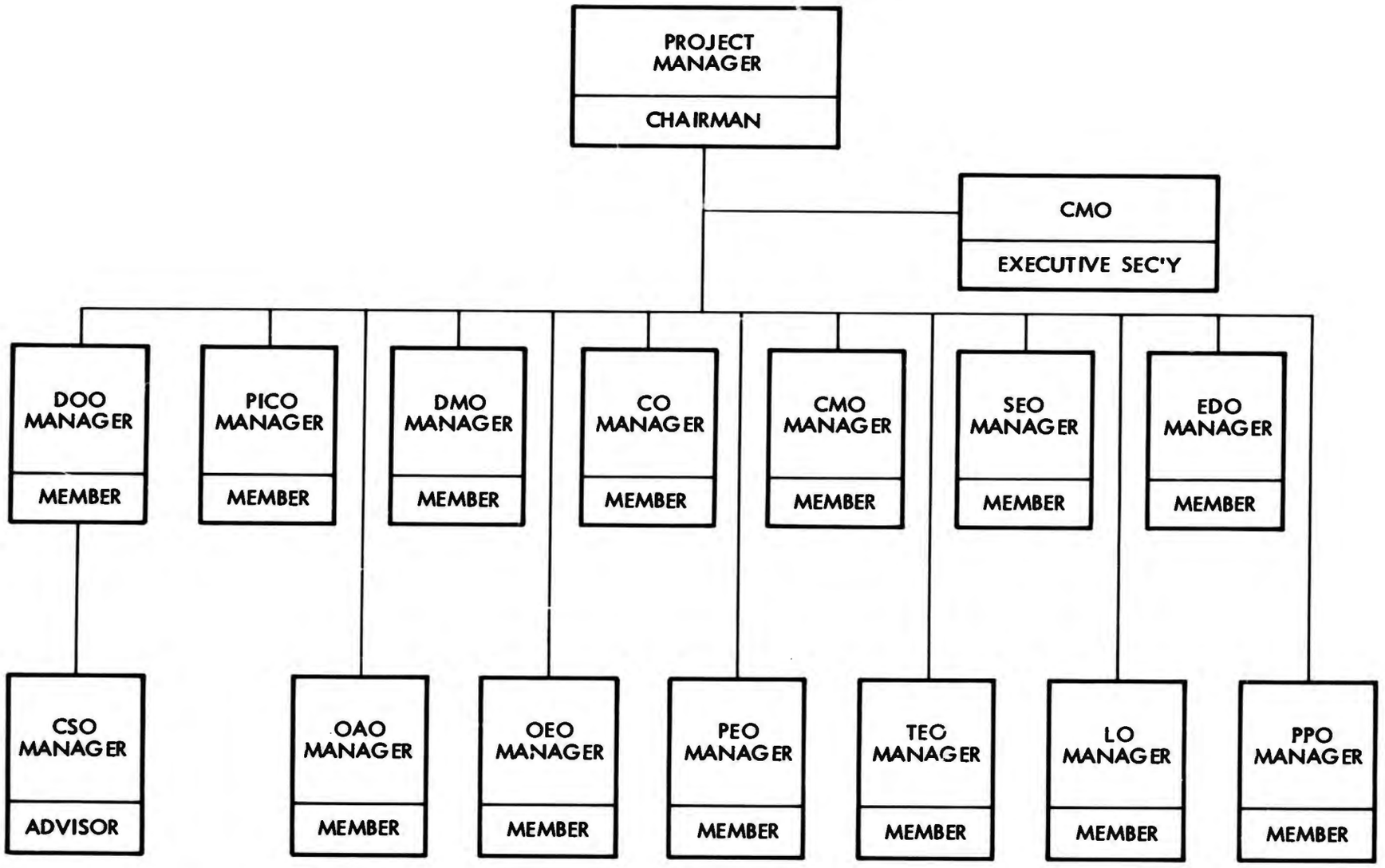


Figure 1. Configuration Control Committee Organization

b) DOO shall provide a depository for all officially transmitted documentation. This file shall be maintained and updated to assure that the records reflect the complete and accurate configuration of the ITDS at all times.

c) DOO shall generate System Change Proposals, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

d) DOO shall evaluate all System Change Proposals submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.2 Project Information and Control Office (PICO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) PICO shall be responsible for reflecting baseline establishment, changes to baselines, and schedule of events to assure the completeness and accuracy of the appropriate charts as they are affected by configuration control of ITDS.

c) PICO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

d) PICO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.3 Data Management Office (DMO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) DMO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) DMO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.4 Contracts Management Office (CO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) CO shall generate SCPs, are required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) CO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.5 Configuration Management Office (CMO)

a) The office manager, or his designated representative, shall:

- be a member of the Configuration Control Committee
- act as the Executive Secretary to the Configuration Control Committee
- be responsible for developing and promulgating policies for Configuration Control
- assist the Project Manager, as required, in accomplishing configuration control of ITDS.

b) CMO shall provide assistance in assuring that the ITDS documentation file is complete and accurate at all times and shall publish periodic status reports.

c) CMO shall be the recipient (addressee) of all SCPs and shall:

- log and file master SCP (see DOO above)
- reproduce and distribute SCP with "Request for Evaluation" sheet
- assemble evaluation package for CCC and schedule item on CCC agenda.

d) CMO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

e) CMO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.6 System Engineering Office (SEO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) SEO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) SEO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.7 Engineering Design Office (EDO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) EDO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) EDO shall evaluate all SCPs submitted to assess the impact of the change in areas encompassed by the office charter in response to "Request for Evaluation."

4.3.8 Quality Assurance Office (QAO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) QAO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) QAO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.9 Operational Engineering Office (OEO)

a) The department manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) OEO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the department charter.

c) OEO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.10 Production Engineering Office (PEO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) PEO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) PEO shall evaluate all SCPs sumbitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.11 Test Engineering Office (TEO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) TEO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) TEO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.12 Logistics Office (LO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) LO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) LO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.13 Production and Procurement Office (PPO)

a) The office manager, or his designated representative, shall be a member of the Configuration Control Committee.

b) PPO shall generate SCPs, as required, to propose changes to the ITDS baseline for areas encompassed by the office charter.

c) PPO shall evaluate all SCPs submitted to assess the impact of the change on areas encompassed by the office charter in response to "Request for Evaluation."

4.3.14 Computing Services Center (CSC)

a) CSC shall act as an advisor to the Configuration Control Committee through the Project Data Operations Office.

b) CSC shall generate SCPs, as required, to propose changes to the ITDS baseline for areas peculiar to the ITDS Computer Subsystem.

c) CSC shall evaluate all SCPs submitted to assess the impact of the change as required by the Project Data Operations Office.

5. IDENTIFICATION

5.1 The ITDS baseline consists of the times and documentation delineated in 5.2. This baseline identifies the items and documentation which are under Configuration Management.

5.2 The following items and documentation are controlled in accordance with this procedure:

| CEI # | CEI Description |
|---|---|
| V001<br>V026 | ITDS System Description<br>Part 1: Performance Requirements<br>Part 2: Product Description |
| V002 | Test and Demonstration Plan |
| V003 | System User's Guide |
| V004 | Configuration Management Plan |
| V005 | Functional Disciplines<br>Subsystem: Operations Manual |
| V006 | Functional Disciplines<br>Subsystem: Administrative Manual |
| V007 | Functional Disciplines<br>Subsystem: Personnel Position Descriptions |
| V008 | Data Operations Subsystem:<br>Operations Manual |
| V009 | Data Operations Subsystem:<br>Administrative Manual |
| V010 | Data Operations Subsystem:<br>Equipment Description |
| V011 | Data Operations Subsystem:<br>Personnel Position Descriptions |

| CEI # | CEI Description |
|---|---|
| V012 | Computer Subsystem: Administrative Manual |
| V013 | Computer Subsystem: Equipment Description |
| V014 | Computer Subsystem: Personnel Position Description |
| V015 | Computer Subsystem: Generalized Processing Program, General Description |
| V016 | Computer Subsystem: Application Programs, General Description |
| V017 | Computer Subsystem: Peripheral Programs, General Description |
| V018 | Computer Subsystem: Computer Programs Maintenance Manual |
| V019 | Computer Subsystem: Computer Programs, Operations Manual |
| V020 | Computer Subsystem: Data Processing Center Operator's Manual |
| V021 | Computer Subsystem: Generalized Processing Program, Programming Documentation |
| V022 | Computer Subsystem: Applications Programs |
| V023 | Computer Subsystem: Peripheral Programs, Programming Documentation |
| T677 | Generalized Processing Program |
| W001 | CEI Configuration Index |
| W002 | Description and Specification Index/Status |
| W003 | Drawing Index/Status |
| W004 | ICD Index/Status |
| W005 | ECP Index/Status |
| W006 | ICWG Action Status |
| W007 | ECP/Waiver Processing Audit |

| | |
|---|---|
| W008 | Technical Publication Index/Status |
| W009 | Test Requirements-DTP Status |
| W010 | Requirements for Contractor Test-Status Report |
| W011 | Specifications Equipment Test-Status Report |
| W012 | Development Test Status Report |
| W013 | Maintainability Problem Reports-Hi 25 |
| W014 | Reliability Problem Reports-Hi/Lo 25 |
| W015 | Maintenance Man-Hour Per Usage Unit-MOS |
| W016 | GFM/GSE Function and Status |
| W017 | Master Detail Milestones |
| W018 | Time Status Report |
| W019 | Cost Status Report |
| W020 | Funding Status Report |
| W021 | Key Word-DAI Cross-Reference Index |
| W022 | Data Element Manual |
| W023 | Data Element Manual |
| W024 | Contractor Data Requirements List |
| W025 | Government Data Requirements List-<br>Contractor Required Data |
| W026 | Generalized Input |
| W027 | PERT/Time Extract/Load |
| W028 | PERT/Cost Extract/Load |
| W029 | SCIOLIST Extract/Load |
| W030 | MAST Extract/Load |
| W031 | Action Item System Extract/Load |
| W032 | MEADS Extract/Load |

| | |
|---|---|
| X001 | MEADS |
| X002 | Engineering Fact Sheets |
| X003 | Engineering Problem Narratives |
| X004 | PERT/Time |
| X005 | PERT/Cost |
| X006 | MAST |
| X007 | SCIOLIST |
| X008 | Master Microfilm Listing |
| X009 | Master Drawing List by WBS |
| X010 | Keyword Thesaurus |
| X011 | Action Item System |

Additional CEI's will be implemented for each project and include, as a minimum, the project-peculiar implementation manual and the project-peculiar data lists described therein.

6. PROCEDURE

6.1 Configuration control of the ITDS shall be in accordance with AMCR 11-26 as modified by this procedure.

6.2 The ITDS baseline delineated in 5.2 can be changed by System Change Proposals only as authorized as the result of Configuration Control Committee action.

6.3 Systems Change Proposals (Figure 2) shall be generated by the Project Office personnel as defined in 4.3. All SCPs together with their Specification Change Notice Proposals (SCNP) (Figure 3) and any associated backup data shall be submitted directly to the CMO. When a change is proposed to the Data List Dictionary, the System Change Proposal shall include the forms (completed to the extent possible) of Figures 4 and 5. CMO shall: (a) assign a number to the SCP, (b) log and file the master copy of the SCP, (c) make distribution to all CCC members and advisors with a copy of the "Request for Evaluation" form (Figure 6), and (d) establish the time schedule for review and evaluation of the SCP and place each on the agenda for a

future scheduled CCC meeting. The CCC members and advisors shall review and evaluate the SCPs. The office manager shall indicate his recommendation on the evaluation form and return the signed copy to the CMO. In the event that disapproval or approval with comment is recommended, he shall attach a brief synopsis of the justification for his recommendation and any suggested changes to the SCP. CMO shall assemble the evaluation package for the CCC and shall present the package to the scheduled CCC meeting.

CCC action shall be documented on a Configuration Control Committee Directive (CCD) (Figure 7). The CCCD shall be signed by the CCC members and the CCC Chairman and shall be distributed by CMO. The CCC need not be convened if complete accord on the SCP and signatures on CCD can be obtained during the reviewing cycle. The CMO shall take the necessary action to implement and make distribution of the CCCD with associated Specification Change Notices to the CCC members and advisors. The SCP flow is illustrated in Figure 8.

ITDS
SYSTEM CHANGE PROPOSAL

DATE:

TO: CONFIGURATION MANAGEMENT OFFICE

SUBMITTED BY:

SCP TITLE: _____

_____

SCP NO. _____

REVISION _____

CORRECTION _____

PRIORITY

EMERGENCY ☐

ROUTINE ☐

CEI NO. _____

CEI _____

SYSTEM DESC AFFECTED _____

OTHER CEI'S AFFECTED _____

DESCRIPTION OF CHANGE

REASON FOR CHANGE

Figure 2. ITDS System Change Proposal

SPECIFICATION NOTICE PROPOSAL

SPECIFICATION TITLE _____ PAGE _____ OF _____

_____ DATE _____

_____ SUPERSEDING _____

SCN NO. _____ _____

| SCP NO. | TYPE, MODEL, SERIES | SPECIFICATION DATE |
|---|---|---|
| CONTRACT | AUTHORITY | FILE OPPOSITE PAGE NO. |
| EFFECTIVITY | | |
| TEXT OF CHANGE | | |

**Figure 3. Specification Notice Proposal**

REQUEST FOR DATA LIST DICTIONARY UPDATE

**GENERAL INFORMATION**

1. Data List Name _____

2. Attribute Name _____

3. Action Required: Add ☐ Change ☐ Delete ☐

4. Is Attribute a User Synonym: Yes ☐ No ☐

5. Synonym Name _____

6. Security Classification: Uncl. ☐ Conf. ☐ Secret ☐ Top Secret ☐

7. Update Security Restrictions
Authorized Individuals _____ Restricted ☐
_____ Non-Restricted ☐

8. Retrieval Security Restrictions
Authorized Individuals _____ Restricted ☐
_____ Non-Restricted ☐

**INTERRELATIONSHIPS OF ATTRIBUTES**

A — Value stored unless value has been previously stored ☐

B — Value entered is to replace any value stored previously ☐

C — Value entered is added to stored value ☐

D — Value entered is subtracted from stored value ☐

E — Retrieval of more than one attribute in data list; retrieval of one or more segments of concatenated values using this attribute or retrieval of result from addition, subtraction, multiplication or division of two values already existing in data list ☐

9.

**ATTRIBUTE STORAGE METHODS**

10. Value of Attribute is to be added ☐ to, or subtracted from ☐ _____ in this data list.

11. Computation required from existing attributes in this list.
Attribute Name (Factor)[1] _____ Attribute Name (Factor)[2] _____
Subtract ☐ Divide ☐ Add ☐ Multiply ☐ Sum ☐

Is this a primary attribute ☐ Is this a secondary attribute ☐ List attribute primary to entered attribute, or attribute(s) secondary to entered attribute

12. _____

13. SELECTION OF MORE THAN ONE ATTRIBUTE FROM THIS DATA LIST
LIST ATTRIBUTE NAMES:
_____

14. To retrieve one or more segments of concatenated values using this attribute
Number of segments passed to reach the first segment _____ Number of contiguous segments to be selected _____

15.

| Secondary Data List Name | Attribute(s) to be retrieved from Secondary Data List |
|---|---|
| | |
| | |
| | |

**RETRIEVAL SPAN**

16.

| Secondary Data List Name | | | Secondary Data List Attribute Name where Data is to be stored |
|---|---|---|---|
| | Verify ☐ | Store ☐ | |
| | Verify ☐ | Store ☐ | |
| | Verify ☐ | Store ☐ | |
| | Verify ☐ | Store ☐ | |

**UPDATE BRIDGES**

**FIELD LENGTH AND FORMAT**

17. Attribute Justification: Left ☐ Right ☐

18. Characterization of Attribute: Alphabetic ☐ Numeric ☐ Both ☐

19. Attribute Size: Maximum _____ Minimum _____

20. Left pattern of attribute _____

21. Right pattern of attribute _____

22. If Data list is new what is the average number of records in this list _____

23. What is the average number of values for this attribute _____

**Figure 4. Request for Data List Dictionary Update**

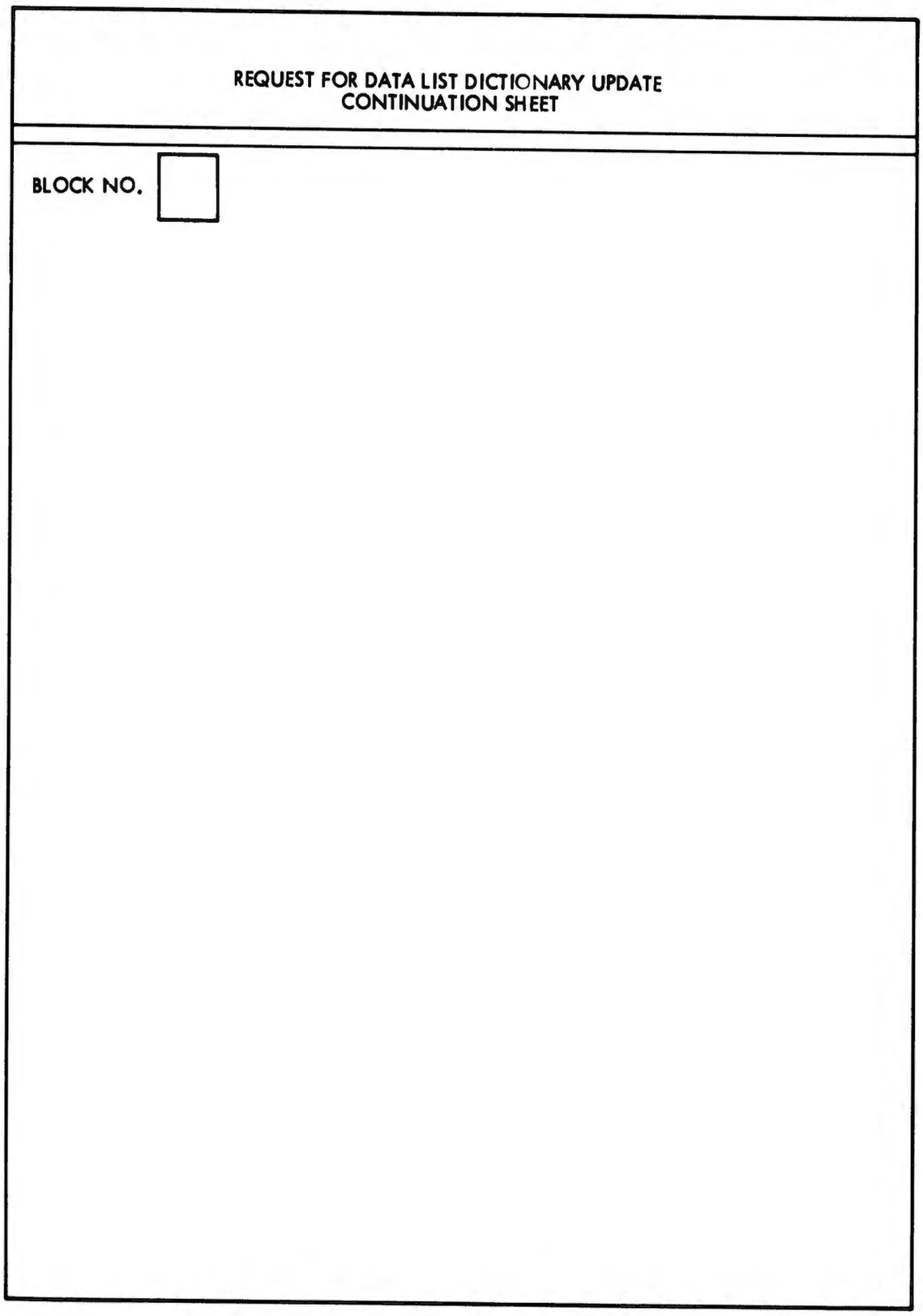


Figure 5. Request for Data List Dictionary Update Continuation Sheet

REQUEST FOR EVALUATION

TO _____ (ASSIGNEE)

SCP NO _____

OTHER IDENTIFICATION _____

_____

SCP TITLE:

BACKGROUND:

DESCRIPTION OF PROBLEM (IN PHASES):

REFERENCES:

CCC MEETING DATA:

COMPLETION DATES:

EVALUATORS RECOMMENDATIONS:

☐ APPROVAL AS WRITTEN

☐ DISAPPROVAL

☐ APPROVE WITH COMMENT

_____

SIGNATURE

Figure 6. Request for Evaluation

DATE _____

ITDS

CONFIGURATION CONTROL COMMITTEE DIRECTIVE

SCP NO. _____ SCP TITLE _____

_____

DATE OF SCP _____

ITDS DOCUMENTS AFFECTED _____ CEI NO. _____

_____

SCP DECISION

- ☐ APPROVED
- ☐ DISAPPROVED
- ☐ APPROVED WITH COMMENTS

IMPLEMENTATION DIRECTION:

| ENDORSEMENT RECORD | YES | NO |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

ITDS CCC CHAIRMAN

Figure 7. ITDS Configuration Control Committee Directive

SYSTEM CHANGE PROPOSAL
FLOW PROCESS CHART

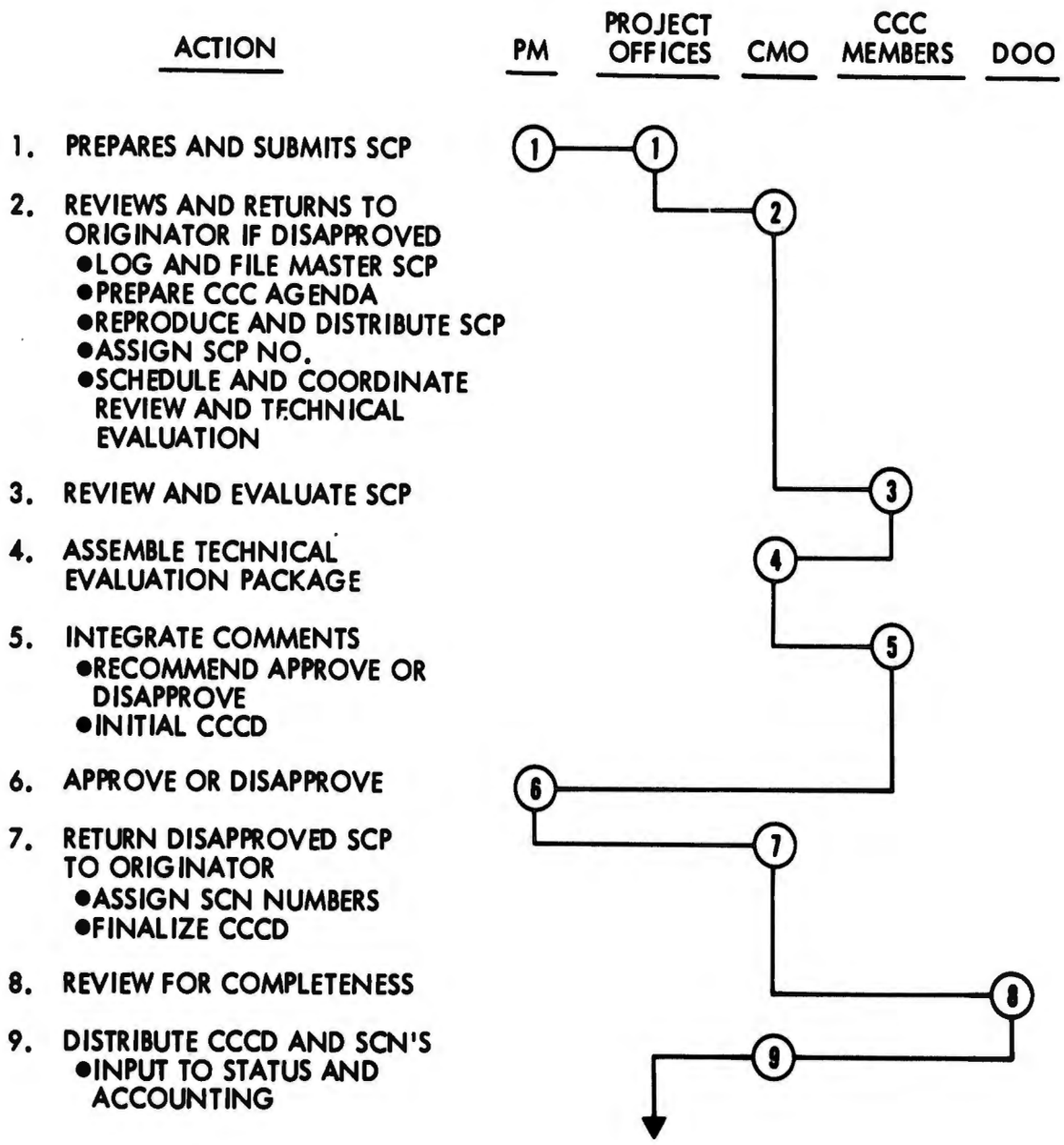


Figure 8. System Change Proposal Flow Process Chart