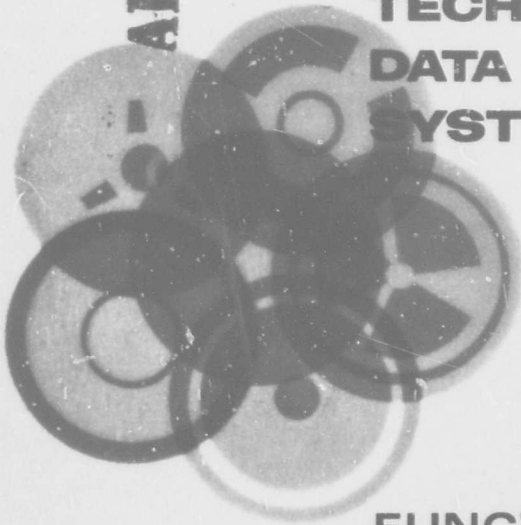


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INTEGRATED TECHNICAL DATA SYSTEM



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FUNCTIONAL DISCIPLINES SUBSYSTEM:

PERSONNEL POSITION DESCRIPTIONS

JUNE 1969

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

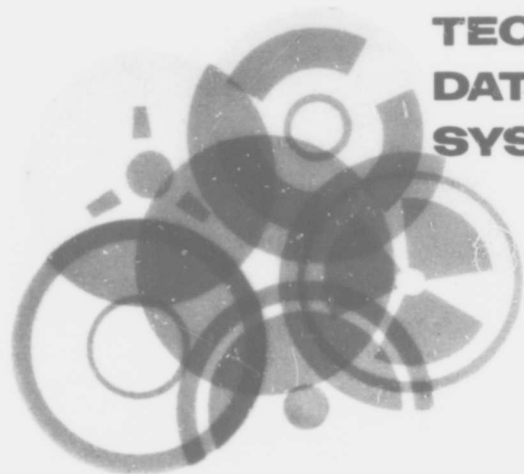
TRW
SYSTEMS GROUP

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

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**INTEGRATED
TECHNICAL
DATA
SYSTEM**



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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. ITDS user documentation, of which this manual is a part, is oriented to the above subsystems, with the exception of an overall System User's Guide and a Configuration Management Plan.

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

This manual describes the personnel position descriptions for the Functional Disciplines Subsystem.

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FUNCTIONAL DISCIPLINES SUBSYSTEM:
PERSONNEL POSITION DESCRIPTIONS

1. INTRODUCTION

This document contains the approved descriptions of management and technical personnel required to operate and maintain the Functional Disciplines Subsystem of the Integrated Technical Data System (ITDS). These are professional personnel representing several technical and management disciplines who provide an integral capability for technical analysis, evaluation and quality assurance of all technical data handled by the ITDS.

1.1 PURPOSE

The purpose of this document is to specify the minimum personnel skills required to operate and maintain a Functional Disciplines Subsystem within an ITDS. These personnel requirements are expressed in qualitative (not quantitative) terms. Each individual position description is described separately on a standard format. Each description is cross-referenced to the appropriate function block on the ITDS Summary Function Flow Chart contained in the System Description, Part II in order to show the functional location within the system.

1.2 SCOPE

This document identifies and describes only those personnel positions specified for the operation and maintenance of the Functional Disciplines Subsystem. The functional disciplines covered include management, system engineering, engineering design, quality assurance, operational engineering, production engineering, test, logistics, and procurement/production. The common subsystem functions performed by all of these personnel are reflected in the Functional Disciplines Subsystem Operations Manual and are described briefly below:

- a) Technical analysis of source data.
- b) Definition of output requirements including inquiry responses, periodic, and exception reports.
- c) Definition of data storage requirements including digital, hard copy, and microform capacities.
- d) Identification of authorized data sources and definition of data transmission channels.

- e) Designation of keywords for subject indexing of input data.
- f) Extraction/abstraction of source data.
- g) Input data scheduling.
- h) Output data quality assurance.
- i) ITDS effectiveness evaluation.
- j) Introduction of new data requirements.
- k) Evaluation of proposed system changes.

2. APPLICABLE DOCUMENTS

Specifications

06349-W510-RO-00

System Description, Part II: Production Description for Integrated Technical Data System, dated 7 March 1969

Manuals

06349-W531-RO-00

Functional Disciplines Subsystem: Operations Manual, dated 15 June 1969

3. PERSONNEL REQUIREMENTS

The personnel required for the Functional Disciplines Subsystem are described in succeeding paragraphs. Position descriptions are presented in qualitative terms only because the number of personnel required for each functional discipline is dependent upon the nature, volume, and complexity of technical data being handled by the ITDS. For that reason, typical types of personnel skills that are required to process technical data for a large, complex Army aircraft weapon system are described.

Each position description has been allocated an individual paragraph and page with descriptions grouped and presented in the following sequence:

- a) Management
- b) Systems Engineering
- c) Engineering Design
- d) Quality Assurance

- e) Operational Engineering
- f) Production Engineering
- g) Test
- h) Logistics
- i) Procurement and Production

3.1 MANAGEMENT SYSTEMS ANALYST

3.2 PROGRAM ANALYST

3.3 DATA MANAGEMENT, CONTRACTS MANAGEMENT ANALYSTS

3.4 DATA MANAGEMENT SPECIALIST

3.5 CONFIGURATION MANAGEMENT ENGINEER

3.6 SYSTEMS ENGINEER: SYSTEMS ANALYST

3.7 PROJECT ENGINEERS: ELECTRONICS, MECHANICAL, MAINTENANCE,
AERONAUTICAL AND WEAPONS

3.8 ENGINEERS: QUALITY ASSURANCE, RELIABILITY, MAINTAINABILITY,
AND SAFETY

3.9 PRODUCTION ENGINEER

3.10 TEST ENGINEER

3.11 LOGISTICIAN OR LOGISTICS ENGINEER

3.12 PRODUCTION CONTROL AND PROCUREMENT SPECIALIST

3.13 TECHNICAL DATA ANALYST

3.1 POSITION DESCRIPTION: MANAGEMENT SYSTEMS ANALYST

POSITION TITLE:

Management Systems Analyst

PRIMARY RESPONSIBILITY:

To perform analyses of project management data requirements, of source data received for processing; and to perform quality assurance of output data.

FUNCTIONS:

Performs analyses of input data and inquiries; defines computer program applications such as PERT/Cost and line of balance, determines requirements for computer program design of specialized analytical techniques as applied to project planning and control, and develops procedures and methods of incorporating all planning, scheduling and program analysis information into the complete data system.

REQUIRED QUALIFICATIONS/SKILLS:

College degree in business with major in management sciences, systems analysis or data processing preferred.

Minimum three years experience as a systems analyst in medium-to large-scale project management utilizing a data processing system capability. Ability to communicate effectively in both written and oral forms.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.2 POSITION DESCRIPTION: PROGRAM ANALYST

POSITION TITLE: Program Analyst	
PRIMARY RESPONSIBILITY: To perform technical analyses of source data, inquiries, and requests for information and exception reports. To evaluate and select significant data from source documents for input to the system. To validate outputs, such as reports, responses to inquiries, for accuracy.	
FUNCTIONS: Defines management data requirements for weapon system acquisition; specifies application of program planning and control techniques such as PERT/Cost and line of balance for integration of planning, analysis of computer output reports, identification of cost and schedule deviations and impact, and the methods for graphic, written, and oral presentation of exception management information. Analyzes for input to the data processing system management data for all phases of complex weapon system planning, scheduling, and control, and project modeling. Maintains conversance with all ITDS attendant disciplines.	
REQUIRED QUALIFICATIONS/SKILLS: College degree in business and/or industrial engineering. Must possess formally acquired background in management sciences, systems analysis, program management and data processing. Minimum three years experience as a program analyst in medium-to large-scale project management activity utilizing a data processing system.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

3.3 POSITION DESCRIPTION: DATA MANAGEMENT: CONTRACTS
MANAGEMENT SPECIALIST

POSITION TITLE: <p style="text-align: center;">Data Management: Contracts Management Specialist</p>	
PRIMARY RESPONSIBILITY: <p>Performs as the ITDS counterpart for contract administration and legal matters. Defines, develops and implements ITDS data management functions and procedures pertaining to contract administration data.</p>	
FUNCTIONS: <p>Provides assessment of source documents for keywording and data element extraction for file loading. Processes ITDS inquiries and develops and produces exception reports. Defines and develops procedures and documentation for the thesaurus. Identifies new requirements for thesaurus entries. Verifies file record information and identifies file structure requirements. Provides contract administration and legal counsel upon request.</p>	
REQUIRED QUALIFICATIONS/SKILLS: <p>Bachelor's Degree in business administration or industrial engineering. LLB preferred.</p> <p>Minimum three years experience in Department of Defense contract administration. Some automatic data processing applications experience desirable.</p>	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

3.4 POSITION DESCRIPTION: DATA MANAGEMENT SPECIALIST

POSITION TITLE:

Data Management Specialist

PRIMARY RESPONSIBILITY:

Performs as the ITDS counterpart for the project Data Management Officer (DMO) in the areas of prime contract and government furnished materiel data management. Defines, develops and implements ITDS data management functions and procedures.

FUNCTIONS:

Provides assessment of source documents for keywording and data element extraction for file loading. Processes ITDS inquiries and develops and produces exception and application reports. Defines and develops procedures documentation for the thesaurus. Identifies new requirements for thesaurus entries. Verifies file record information and identifies file structure requirements. Provides prime contractor and government furnished materiel data management support on request.

REQUIRED QUALIFICATIONS/SKILLS:

Bachelor's Degree in business administration or industrial engineering.

Minimum three years experience in conducting data management activities in support of medium to large system projects. Must be thoroughly familiar with DODI 5010.12, DOD Directives 7000.6, 7000.7; AR 700-51, AR 37-200; and AMCR 700-48. Must be familiar with data uses during systems acquisition phase. Some automatic data processing experience desirable.

REFERENCE FUNCTIONAL BLOCK:

Prepared by:

Approved by:

Date:

Date:

3.5 POSITION DESCRIPTION: CONFIGURATION MANAGEMENT ENGINEER

POSITION TITLE: Configuration Management Engineer	
PRIMARY RESPONSIBILITY: Performs analyses of source data, inquiries, requests for data and exception reports. Determines significant data to be extracted for input to the system. Performs output data validation to assure quality and responsiveness.	
FUNCTIONS: Reviews, analyzes and evaluates and processes all technical data such as descriptions, drawings, specifications, and associated lists required for the institution, identification, control, and maintenance of the configuration management function on a given program. Assists in the evaluation of program drawing structures, contractor drawing practices, program specification structures, contractor engineering release systems, and acceptance procedures. Determines the requirements of procuring activity regulations, specifications, contracts, etc., as applicable to configuration management records and reporting.	
REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in industrial or other project engineering discipline, with post-graduate training in the configuration management discipline. Minimum three years working experience in conducting configuration management activities on medium to large system projects.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

3.6 POSITION DESCRIPTION: SYSTEMS ENGINEER: SYSTEMS ANALYST

POSITION TITLE: Systems Engineer; Systems Analyst	
PRIMARY RESPONSIBILITY: Performs analyses of source data, inquiries, requests for data and exception reports. Determines significant data to be extracted for input to the system. Performs output data validation to assure quality and responsiveness.	
FUNCTIONS: <u>Systems Engineer:</u> Reviews, analyzes and processes data pertinent to system analysis and integration, in some or all of the following: reliability, maintainability, performance, statistical analysis, cost analysis, and functional analysis. <u>Systems Analyst:</u> Reviews, analyzes and processes data pertinent to design and application of systems effectiveness models to the measurement and interrelation of system availability, reliability, and performance.	
REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in engineering with post-graduate background in systems analysis and engineering. Minimum five years experience in systems analysis/engineering in the medium to large system project environment.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

3.7 POSITION DESCRIPTION: PROJECT ENGINEERS; ELECTRONICS,
MECHANICAL, MAINTENANCE, AERONAUTICAL AND WEAPONS

<p>POSITION TITLE: Project Engineers; Electronics, Mechanical, Maintenance, Aeronautical and Weapons</p>	
<p>PRIMARY RESPONSIBILITY: Performs analyses of source data, inquiries, requests for data and exception reports. Determines significant data to be extracted for input to the system. Performs output data validation to assure quality and responsiveness.</p>	
<p>FUNCTIONS: <u>Electronics Engineer:</u> Reviews, analyzes and processes data pertinent to design of communications equipment, radar, computing equipment, control systems, navigations systems and instrumentation. <u>Mechanical Engineer:</u> Reviews, analyzes and processes data pertinent to turbine propulsion, including ducting for intake and exhaust, gear and gear reduction design, aircraft structure design and analysis, hydraulics and hydraulic system and component design. <u>Aeronautical Engineer:</u> Skills and experience required in rotary- and fixed-wing aerodynamics and performance, including aircraft dynamics behavior and structural dynamics, propeller and rotor theory, aerodasticity. <u>Weapons Engineer:</u> Skills and experience required in design of guns, turrets, fire control systems, range finding and in exterior ballistics. Additional experience is required in design and application of guided and unguided air-to-surface missiles.</p>	
<p>REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in respective engineering discipline with post-graduate training in the particular specialties. Minimum five years experience in applying speciality to functional support of medium to large system project.</p>	
<p>REFERENCE FUNCTIONAL BLOCK:</p>	
<p>Prepared by:</p>	<p>Approved by:</p>
<p>Date:</p>	<p>Date:</p>

**3.8 POSITION DESCRIPTION: ENGINEERS; QUALITY ASSURANCE,
RELIABILITY, MAINTAINABILITY, AND SAFETY**

POSITION TITLE: Engineers; Quality Assurance, Reliability, Maintainability, and Safety	
PRIMARY RESPONSIBILITY: Performs analyses of source data, inquiries, requests for data and exception reports. Performs output data validation to assure quality and responsiveness.	
FUNCTIONS: <u>Quality Assurance Engineer:</u> Reviews, analyzes and processes quality assurance, quality control, materiel review board, and acceptance tests of data submitted in accordance with MIL-Q-9858 and MIL-I-45028. <u>Reliability Engineer:</u> Reviews, analyzes and processes statistical analysis, failure effects and analysis, distribution functions, and statistical data. <u>Maintainability Engineer:</u> Reviews, analyzes and processes failure data, task analysis, statistical methods, prediction, and demonstration data. <u>Maintenance Engineer:</u> Reviews, analyzes and processes data pertinent to maintenance activities, level of repair analysis, levels of mainte- nance, maintenance task analysis, operational reporting systems, and data collection. <u>Safety Engineer:</u> Reviews, analyzes and processes data pertinent to accident prevention and investigation, both industrial and equipment; equipment characteristics and human error analysis, and human factors and personnel subsystem analysis.	
REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in respective engineering discipline. Minimum of five years experience in the respective engineering discipline obtained in functional support of medium to large system program/project.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

3.9 POSITION DESCRIPTION: PRODUCTION ENGINEER

POSITION TITLE: Production Engineer	
PRIMARY RESPONSIBILITY: Performs analysis of source data, inquiries, requests for data and exception reports. Determines significant data to be extracted for input to the system. Performs output data validation to assure quality and responsiveness.	
FUNCTIONS: Reviews, analyzes and processes data pertinent to production planning, control, advanced production engineering plans, production status, inspection and acceptance records, delivery schedules, etc.	
REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in industrial engineering with majors in production engineering and production control. Minimum three years working experience in production engineering planning, engineering control environment in support of production on medium- to large-scale system project.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by: Date:	Approved by: Date:

3.10 POSITION DESCRIPTION: TEST ENGINEER

POSITION TITLE: <p style="text-align: center;">Test Engineer</p>	
PRIMARY RESPONSIBILITY: Performs analyses of source data, inquiries, requests for data and exception reports. Determines significant data to be extracted for input to the system. Performs output data validation to assure quality and responsiveness.	
FUNCTIONS: Reviews, analyzes and processes data pertinent to test system and subsystem engineering, management, planning, scheduling, test documentation, test results review and analysis, test performance, test facilities and support and coordination of test engineering activities among the other disciplines and specialties of the subsystem.	
REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in engineering with formal post-graduate training in the field of test engineering. Minimum five years experience in development test programs on medium- to large-scale system projects.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

3.11 POSITION DESCRIPTION: LOGISTICIAN OR LOGISTICS ENGINEER

POSITION TITLE: Logistician or Logistics Engineer	
PRIMARY RESPONSIBILITY: Performs analyses of source data, inquiries, requests for data and exception reports. Determines significant data to be extracted for input to the system. Performs output data validation to assure quality and responsiveness.	
FUNCTIONS: Reviews, analyzes and processes data pertinent to logistics plans, provisioning, procurement of spaces, ground-support equipment, inventory control acceptance, transportation and handling, initial issue and basis of issue, government-furnished material, new equipment training, maintenance support plans and technical manuals.	
REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in industrial or other engineering discipline with post-graduate training in the field of logistics management and engineering. Minimum three years experience in performing logistics planning and logistics operations functions in a medium- to large-scale system project environment.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

**3.12 POSITION DESCRIPTION: PRODUCTION CONTROL AND
PROCUREMENT SPECIALIST**

POSITION TITLE: <p style="text-align: center;">Production Control and Procurement Specialist</p>	
PRIMARY RESPONSIBILITY: Performs analyses of source data, indirect inquiries and requests for exception reports. Determines significant data to be extracted for input to the system. Performs output data validation to assure quality and responsiveness.	
FUNCTIONS: Reviews, analyzes and processes data pertinent to production and procurement plans, source selection, schedule and delivery requirements, approved production configuration, supplementary requirements including manuals, spare/repair parts, technical services, etc. Coordinates data with other affected functional disciplines as required during processing.	
REQUIRED QUALIFICATIONS/SKILLS: Minimum of Bachelor's Degree in industrial engineering, or business administration with specialized post-graduate training in the fields of production and procurement management. Minimum of three years experience in production and procurement management on medium- to large-scale system projects. Knowledge of Armed Services Procurement Regulations (ASPR), and government and industry procurement practices is essential.	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date:

3.13 POSITION DESCRIPTION: TECHNICAL DATA ANALYST

POSITION TITLE: <p style="text-align: center;">Technical Data Analyst</p>	
PRIMARY RESPONSIBILITY: <p>Abstraction and extraction of data elements and keywords for entry into data base and establishment of data base dictionaries.</p>	
FUNCTIONS: <p>Assists in the selection, extraction, and key wording of data to be entered into the data base. Assists in the acquisition and validation of input source data. Establishes and initially loads system dictionaries. Prepares load sheets and performs data loading operation. Receives and analyzes diagnostic error messages. Structures and maintains records of all data inquiries. Assists in the formatting and processing of periodic and exception reports. Coordinates the processing of changes to the system dictionaries and data base formats.</p>	
REQUIRED QUALIFICATIONS/SKILLS: <p>College degree or equivalent preferred.</p> <p>Minimum three years experience as a data analyst with experience in interacting within a data processing environment. Ability to communicate effectively in both written and oral form.</p>	
REFERENCE FUNCTIONAL BLOCK:	
Prepared by:	Approved by:
Date:	Date: