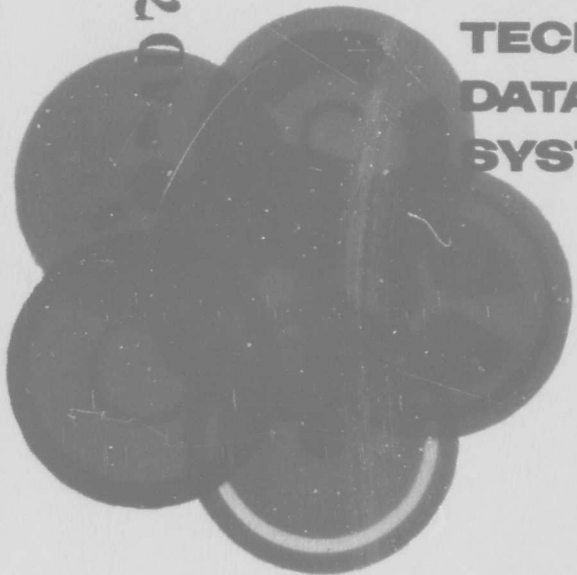


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FUNCTIONAL DISCIPLINES SUBSYSTEM:

OPERATIONS MANUAL

JUNE 1969

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Approved for public release;
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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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SET I

**INTEGRATED
TECHNICAL
DATA
SYSTEM**



**FUNCTIONAL DISCIPLINES
SUBSYSTEM:**

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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 provide assistance to 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 document 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 Description

Computer Subsystem:

These 12 manuals, in general, cover administration of the subsystem, operating and maintenance instructions for the programs, computing equipment descriptions, 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 covers operation procedures for the ITDS Functional Disciplines Subsystem. This subsystem is made up of the technical specialists and data analysts, organized generally along the lines of the functional disciplines (e.g., configuration management or test engineering). This manual presents the operating procedures in terms of what must be done, when, who is to do it, how, and with what resources. In a companion document, the Functional Disciplines Subsystem Administrative Manual, those matters are covered which are uniquely administrative in nature such as data handling, reproduction, distribution, filing, etc. You will be

referred to other manuals in the ITDS documentation structure for specific details about some of the subjects covered herein.

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FUNCTIONAL DISCIPLINES SUBSYSTEM:
OPERATIONS MANUAL

1. INTRODUCTION

In its inception, ITDS was largely founded on the principle of representing user disciplines to exercise, direct, and fully exploit the capabilities of computer hardware, programs, and personnel. The Functional Disciplines Subsystem, consisting of management and technical personnel, provides a unique system capability for technical analysis and quality assurance of technical and management data during both input and output processing.

1.1 PURPOSE

The purpose of this operations manual is to promote uniformity and orderliness in the performance of the routine, repetitive procedures of the organizational elements that make up the ITDS Functional Disciplines Subsystem. This includes all of the operational tasks necessary to accomplish the summary level functions of ITDS which have been allocated to this subsystem. The procedures contained in this manual are also intended to serve as a medium for training management and operating personnel and to establish standards against which actual performance can be checked for compliance.

1.2 SCOPE

The scope of the operating instructions contained in this manual is limited to work actually performed in the organizations in which the functional disciplines are placed in any application of ITDS. However, these procedures represent steps in overall ITDS operation with other subsystem activities interspersed between the steps. Thus, brief descriptions of activities performed by the other two ITDS subsystems (i.e., Computer Subsystem and Data Operations Subsystem) are included, where necessary, to promote understanding and to ensure a smooth transition in the flow of work.

2. THE ITDS FUNCTIONAL DISCIPLINES SUBSYSTEM

The ITDS Functional Disciplines Subsystem consists of professional technical specialists, technical data analysts, and management/administrative personnel. The disciplines defined below are typical functional areas found in large system programs or commodity management organizations. They provide an integral capability for technical analysis, subjective evaluation, and quality audit of all data entering and exiting the ITDS. Following are the definitions of the functional disciplines in terms of the types of data they analyze and process as part of ITDS operation. It is the intent of this manual to provide the necessary operating procedures for implementation of the charters set forth below.

2.1 MANAGEMENT

This function includes several disciplines: a) planning and control, b) data management and control, c) procurement and contracts data control, and d) configuration management. Each of these disciplines is described below:

2.1.1 Project Information Control

Project information and control data provide information on costs and schedules to identify the nature and level of detailed activity and the interrelationships of and constraints upon these activities. The elements and the relationships established among them will permit recognition of time and cost factors bearing upon early identification of potential problem areas, analysis of these problems, simulation of problem decisions, and preparation of alternatives for management. The activities and products derived from these data in support of the general objectives of the ITDS include:

- a) Development of a model of project (summary)-level work breakdown structure depicting cost information, actual and projected, etc. This capability is constrained by the availability of cost data.
- b) Development of a machine-sensible model summarizing schedules for total project, existing and significant planned effort in the project definition, design and development, acquisition, and operational phases of the project life cycle.

- c) Capability for simulation to permit analysis of problems to determine decision possibilities and alternatives and the effect of such decisions on aspects of program effort.
- d) Capability for identification and tracking of critical items with regard to action responsibility and status of analysis, review, and decision.

2.1.2 Data Management and Control

Data management data provide information on the status of prime contractor and GFM data requirements, and on performance.

2.1.3 Contracts Management

Contracts management data provide information on the requirements and status of cost, schedule, performance, and interpretation data for the project contracting effort. The data entered into the ITDS are utilized to load and maintain the data base and historical reference requirements files.

2.1.4 Configuration Management

Configuration management data, identified in accordance with the requirements of AMCR 11-26, are handled in accordance with appropriate implementation directives, and are indexed by applicable documentation, changes, part numbers, and federal stock numbers (FSN's) for each configured end item (CEI).

In support of the general objectives of the ITDS, the data will be used to:

- a) Identify the descriptions/specifications applicable to a system and provide a record of all changes and their effectivities and of revisions to each description/specification.
- b) Identify the engineering drawings and provide a record of all changes and their effectivities.
- c) Identify all engineering change proposals (ECP's) and the related hardware and documentation affected, and establish the resulting contractually authorized hardware and data configuration.
- d) Identify all interface control actions assigned by the ICWG and monitor the status of each interface control action.
- e) Monitor the procession of engineering changes and waivers as required by AMCR 11-26.

- f) Identify the technical publications (technical manuals, training manuals, operators' handbooks, etc.) applicable to a system and provide a record of all changes and revisions to each technical publication.
- g) Indenture drawings (top down) to support ECP evaluation and in-process design review.

2.2 SYSTEM ENGINEERING

System engineering data provide information pertaining to several individual work packages within this discipline. These include the following:

- a) System engineering plans.
- b) System mission definition and profile descriptions.
- c) System performance requirements definitions in the form of requirements allocations.
- d) System/subsystem analysis reports.
- e) System specification.
- f) System function analysis data including first through third level function flow diagrams.
- g) System effectiveness analysis reports containing statistical data required for the decision process.
- h) System manpower requirements plans and QQPRI's.

2.3 ENGINEERING DESIGN DATA

Engineering design data provide information to:

- a) Compare requirements of both Qualitative Materiel Requirement (QMR) performance and selected parameters common to many end items of the system with analytical and experimental values.
- b) Produce a bibliography of documents describing technical problems in any of several categories with end items.
- c) Support participation in design reviews (i.e., applicable specifications/descriptions, drawings, ECP's, analytical and test results, problems, interfacing equipment and interface types, open technical actions).

- d) Technically evaluate ECP's.
- e) Track responsibility for and status of technical actions assigned at design reviews and technical interface meetings.

2.4 QUALITY ASSURANCE

Quality assurance data include contractor data, selected maintenance engineering analysis data, and the Army field test results, handled in accordance with the Functional Disciplines Subsystem Operations Manual and TM 38-750. These data are used to evaluate equipment at the line replaceable unit (LRU) level, and to:

- a) Identify LRU's having the greatest discrepancy between predicted and actual maintenance times at all levels (total maintenance).
- b) Identify items with the largest adverse deviations between predicted and measured times on the bases of total products, of task frequency, and of maintenance time.
- c) Identify the highest ranked reliability problems on the basis of comparison between predicted (or allocated) and measured mean times between failure (MTBF).
- d) Identify the items which have, within the time period considered, most frequently failed and required corrective action.

2.5 OPERATIONAL ENGINEERING

Operational engineering information is derived from source data relevant to the following subdiscipline areas:

- a) Operations plans.
- b) Operational requirements analysis reports.
- c) System/subsystem support requirements analysis reports and plans.
- d) Updated documentation in the areas of maintenance requirements standards, maintainability, reliability, safety, and human factors engineering.

2.3 PRODUCTION ENGINEERING

Production engineering data provide the means for compiling information to support project management production program surveillance. These data include:

- a) Advanced production engineering (APE) plans and test reports.
- b) Production tooling descriptions.
- c) Production plans and schedules.
- d) Production control plans and procedures.
- e) Quality control and inspection and acceptance requirements and procedures.
- f) Delivery schedules and status reports.
- g) Production progress reports (technical aspects of processes, finishes, etc.).

2.7 TEST

Test data provide information on the status of the test programs, particularly whether performance objectives are being achieved and whether they are being achieved within the scheduled time frame. In support of the general objectives of the ITDS, the data will be used to:

- a) Identify all elements of a test program (i.e., objectives to be achieved, significant performance parameters, schedules, detail test plans, test article configuration, test support equipment); correlate the test objectives, by test phase, to the applicable test plan (reference USATECOM 705-16), test article, test conduct date (reference USATECOM 705-1 and 705-8), and test report (reference MIL-STD-831 and USATECOM 705-7) covering test objectives provided for in test planning documentation prepared by contractor, Test and Evaluation Command (TECOM), and other commodity commands (reference USATECOM 705-2).
- b) Compare the planned and actual delivery status for test articles and support equipment, and estimate the impact of delays on the test program schedules.
- c) Compare required and actual performance and estimate the impact; compare test objectives, sorted by CEI number or test article number, that have not yet been accomplished with scheduled or estimated completion dates.

- d) Estimate the effect of critical parameter/test result discrepancies on subsequent testing; define the configuration of each air vehicle for each test increment it supports; indicate the planned and actual configuration classification (that is, prototype, operation, etc.); and estimate the effect of deviations from planned configuration on test result validity.
- e) Review and comment on test planning documents and indicate their processing and approval status; estimate dates of completion as appropriate.
- f) Respond to requests for specific performance data.
- g) List, cumulatively, test planning discrepancies and actions taken (or planned) on each discrepancy.
- h) List, cumulatively, anomalies experienced during all phases of testing.

2.8 LOGISTICS

Logistics data, including selected maintenance engineering analysis data, provide information to:

- a) Track deliveries of government-furnished material (GFM) as listed on the approved government-furnished equipment schedule.
- b) Identify delinquent or potentially delinquent shipments of GFM that require management action to avoid slippage of equipment delivery.
- c) Identify support equipment (SE) by description and functions and the time frame for procurement to assure availability prior to prime equipment delivery.
- d) Base initial provisioning actions.
- e) Identify maintenance skills and the level required to effectively maintain the system and its subsystems.

2.9 PRODUCTION AND PROCUREMENT

Production and procurement data provide the pertinent factors which must be considered in defining a purchase and selecting a source. Factors to be considered are:

- a) Approved production and configuration.
- b) Supplementary requirements, including manuals, technical services, facility/equipment, etc.

- c) Schedule and delivery requirements.
- d) Competitive or sole-source procurement considerations for the items in question.
- e) Quality assurance requirements.
- f) Performance requirements and constraints.
- g) Proprietary considerations.
- h) Critical material implications.
- i) Test requirements.
- j) Spare parts and data requirements.
- k) Reprocurement data requirements.

3. OPERATIONS OF THE ITDS FUNCTIONAL DISCIPLINES SUBSYSTEM

3.1 GENERAL

The procedures set forth in this section are derived in the following manner:

- a) The ITDS Summary Function Flow (Figure 1) provides fundamental guidelines for assignment of major tasks to the Functional Disciplines Subsystem. The summary flow is arranged so that there are three major vertical divisions representing the primary stages in information processing: (1) input preparation, (2) storage, manipulation, and output production, and (3) output processing. The ITDS operational modes are depicted by use of horizontal broken lines for demarcation among (1) inquiry processing, (2) periodic reporting, and (3) exception reporting.
- b) Those summary functions which were allocated to the Functional Disciplines Subsystem were defined in more detail in terms of tasks to be performed and their sequence. Figure 2 illustrates this task sequence.
- c) Since the summary functions are major task parameters, they are the basis for organizing the procedures contained in this section. Each procedure that is common to all of the ITDS functional disciplines is presented in graphic format showing who (i.e., clerical, data analysis, technical specialist, or management) performs the detail tasks. Where there are differences in procedure peculiar to the functional disciplines, supplemental descriptive material is provided following the graphic presentation.

3.2 REVIEW AND EVALUATION OF SOURCE DATA FOR ACCEPTANCE

See Figure 3, ITDS Summary Function 5.0, Summary Operations Sequence (1) through (7) (2 sheets).

3.2.1 Operations Peculiar to the Functional Disciplines

Step (7), Analysis and Selection of Data, from Figure 3 is amplified as follows with respect to the indicated functional disciplines:

- a) All engineering disciplines will review data to determine impact on or relation to an existing Engineering Fact Sheet or Problem Summary. (See ITDS Document entitled Computer Subsystem: Peripheral Programs, General Description, which defines these two engineering reports.) New problem areas will be identified as well as requirements for engineering analysis.

- b) The Data Management element of the Management discipline will select relevant data elements for computer loading of the Authorized Data List File or Government Furnished Material File.
- c) Other functional disciplines will accomplish Step 7 in accordance with instructions and internal operating procedures contained in Figure 3.

3.3 KEYWORDING FOR SUBJECT INDEXING

See Figure 4, ITDS Summary Function 11.0, Summary Operations Sequence through 10 8

3.3.1 Description of the Keywording Process

Keywords are selected words or short phrases which describe the contents of a document and which are used as a part of an indexing procedure which in turn is used for retrieval. When a keyword is assigned it must conform to the users common language. Check various sources for new keywords with preference given to Army standards (AR-320-5, MIL-STD-DSA Cataloging Handbook H6-1, etc.) over contractor, DDC and other sources. Avoid selection of words and terms whose meanings coincide so closely with those of established keywords that a user will have difficulty distinguishing between them. Slang and jargon must be excluded. Acronyms and abbreviations may be used.

Keywords are categorized as "general" or "specific." Most single words (words which can be used alone) are general, although they often become specific when used with a modifier (prefix or suffix word). As an example:

General

Armament
Pylons
Battery

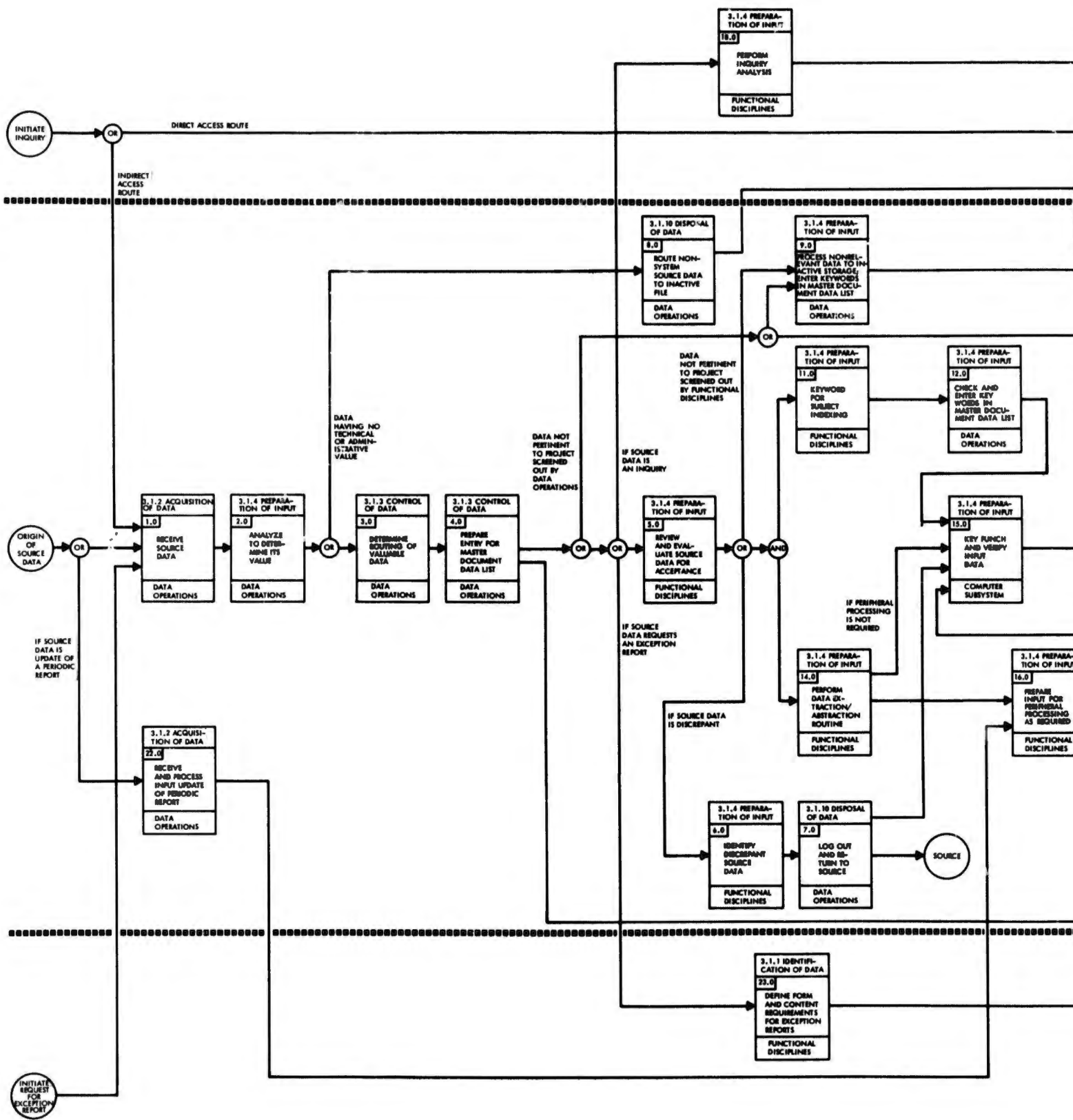
Specific

XM129
Pylon-Wing-Inboard
Storage batteries

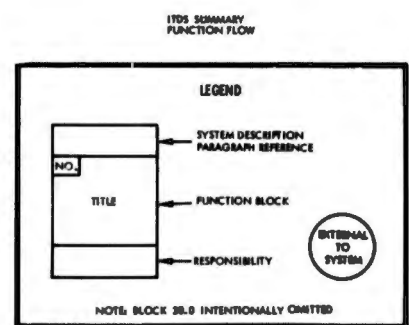
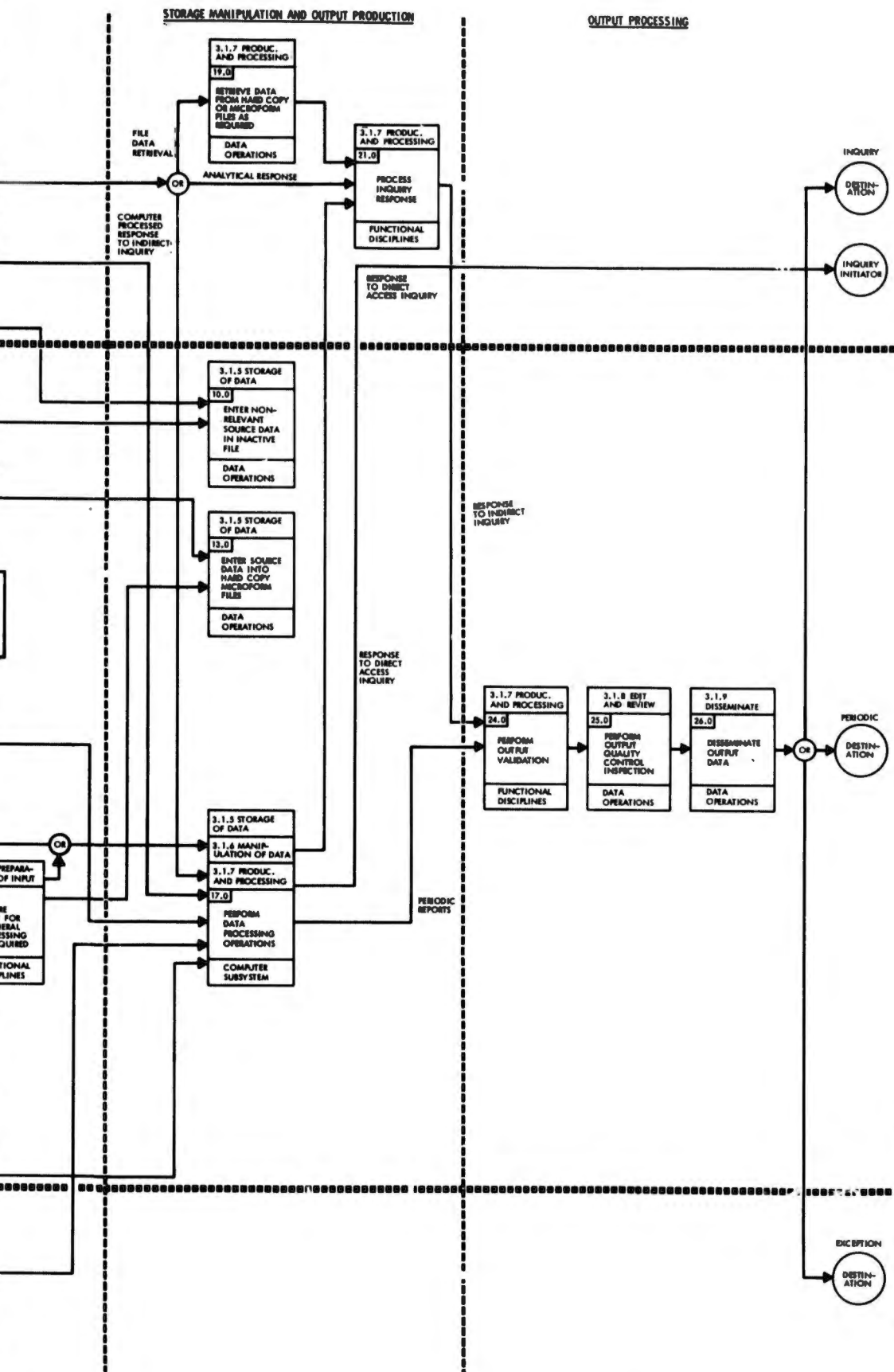
Noun forms will be used whenever possible. Adjectives will never be used unless to modify a noun. Never Use a Verb.

Use the plural form of the noun when the proposed term is a count noun, that is a noun which may be used to answer the question "how many." Use the singular for specific processes, properties, or conditions. Where the plural form of a word represents a distinctly different concept from the singular (e.g., gear, gears) both forms may be required.

INPUT PREPARATION



1 B



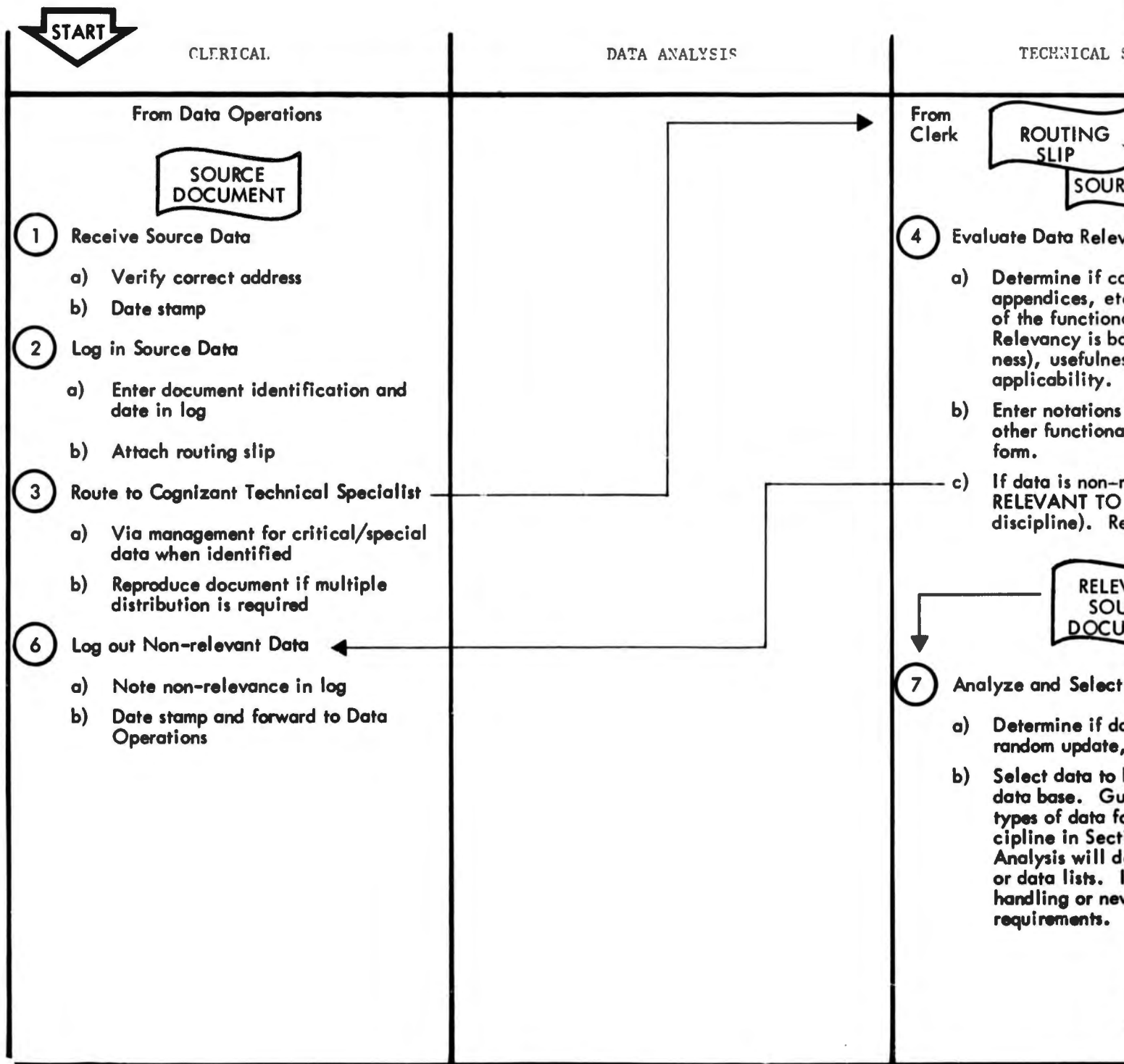
ITDS SUMMARY FUNCTION FLOW

Figure 1. ITDS Summary Function Flow

**Figure 2. ITDS Functional Disciplines
Subsystem Operations Flow**

(Contained in pocket on inside back cover)

A



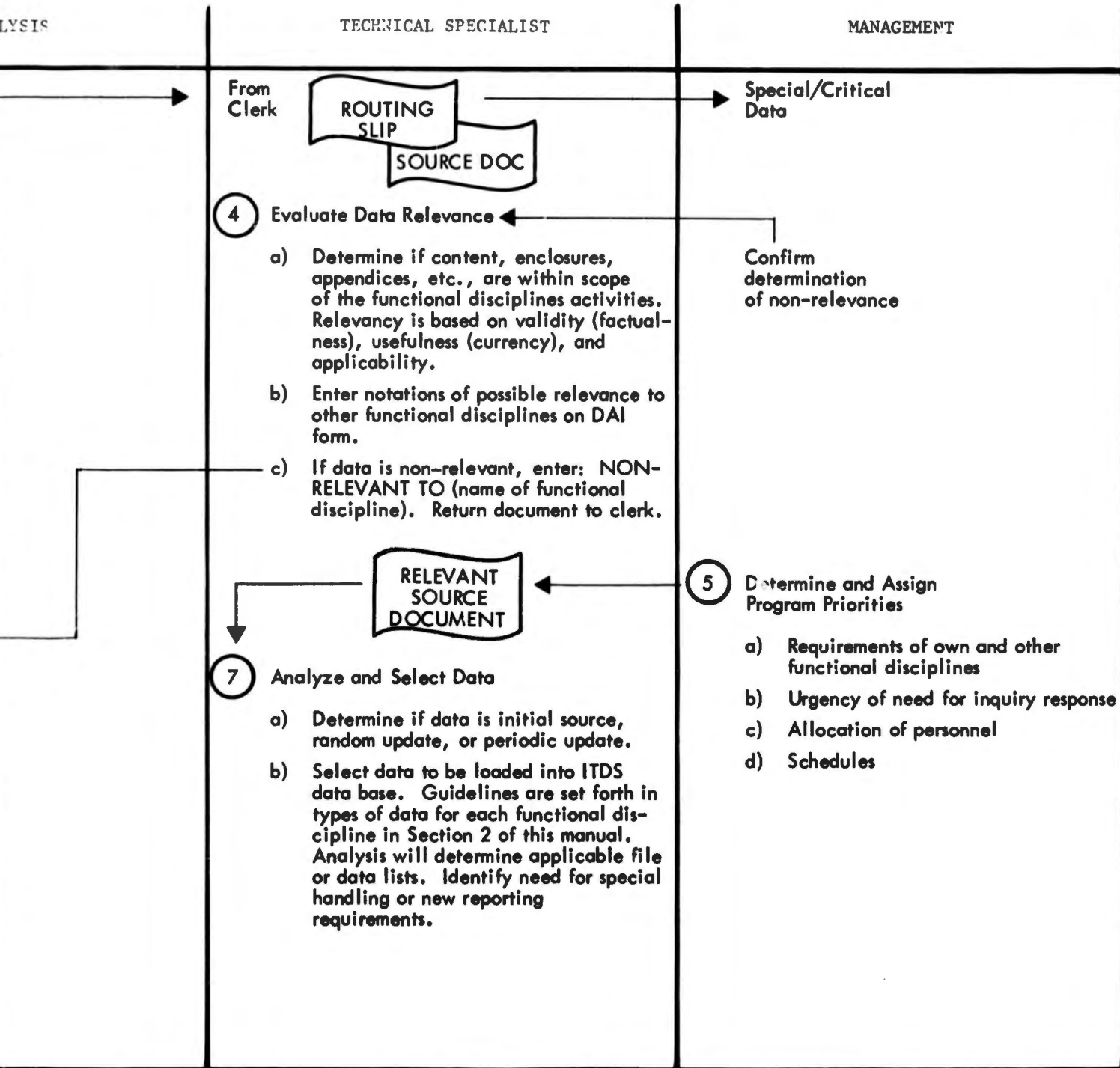
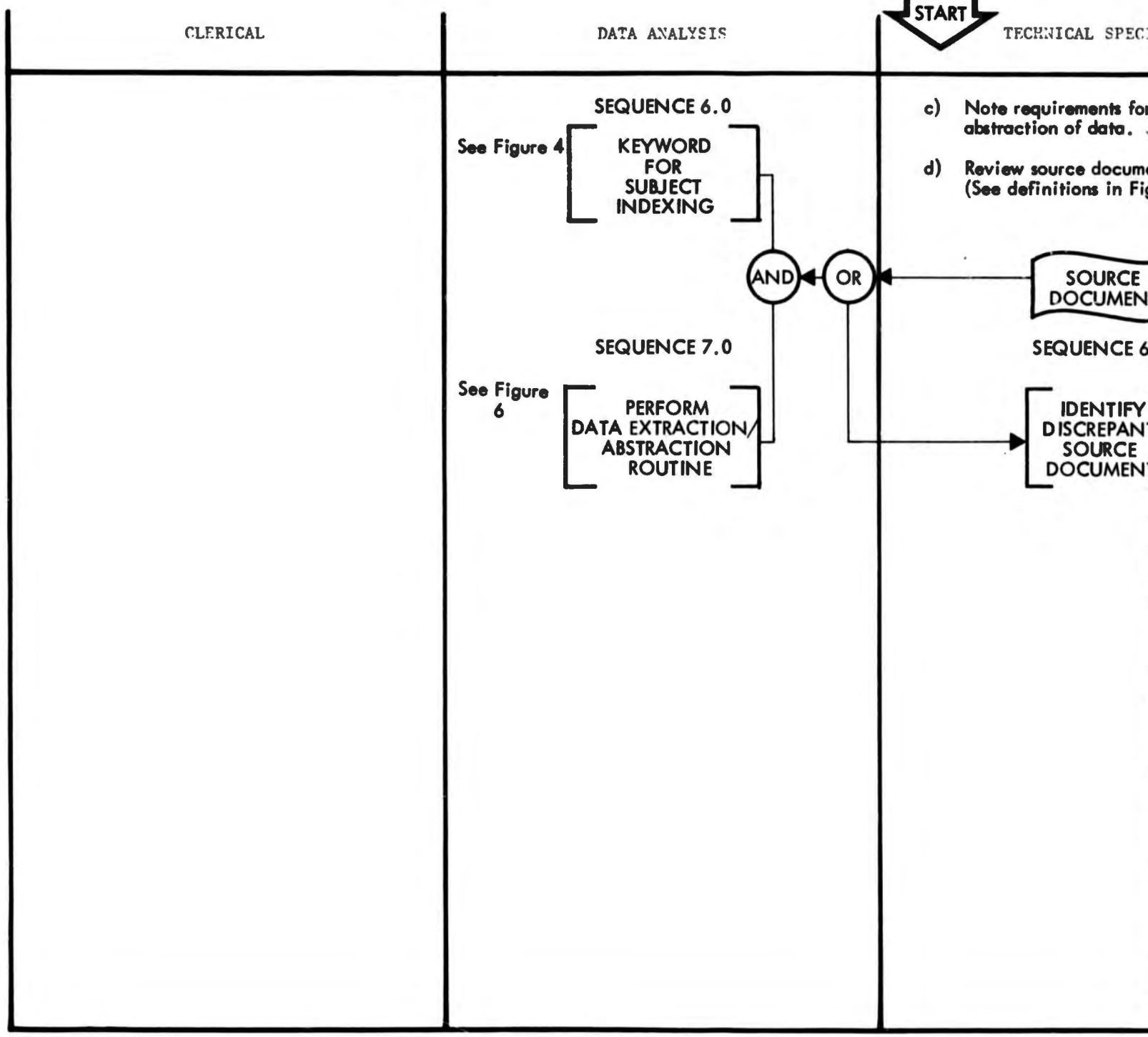


Figure 3. ITDS Summary Function 5.0, Summary Operations Sequence ① through ⑦ (1 of 2)

A



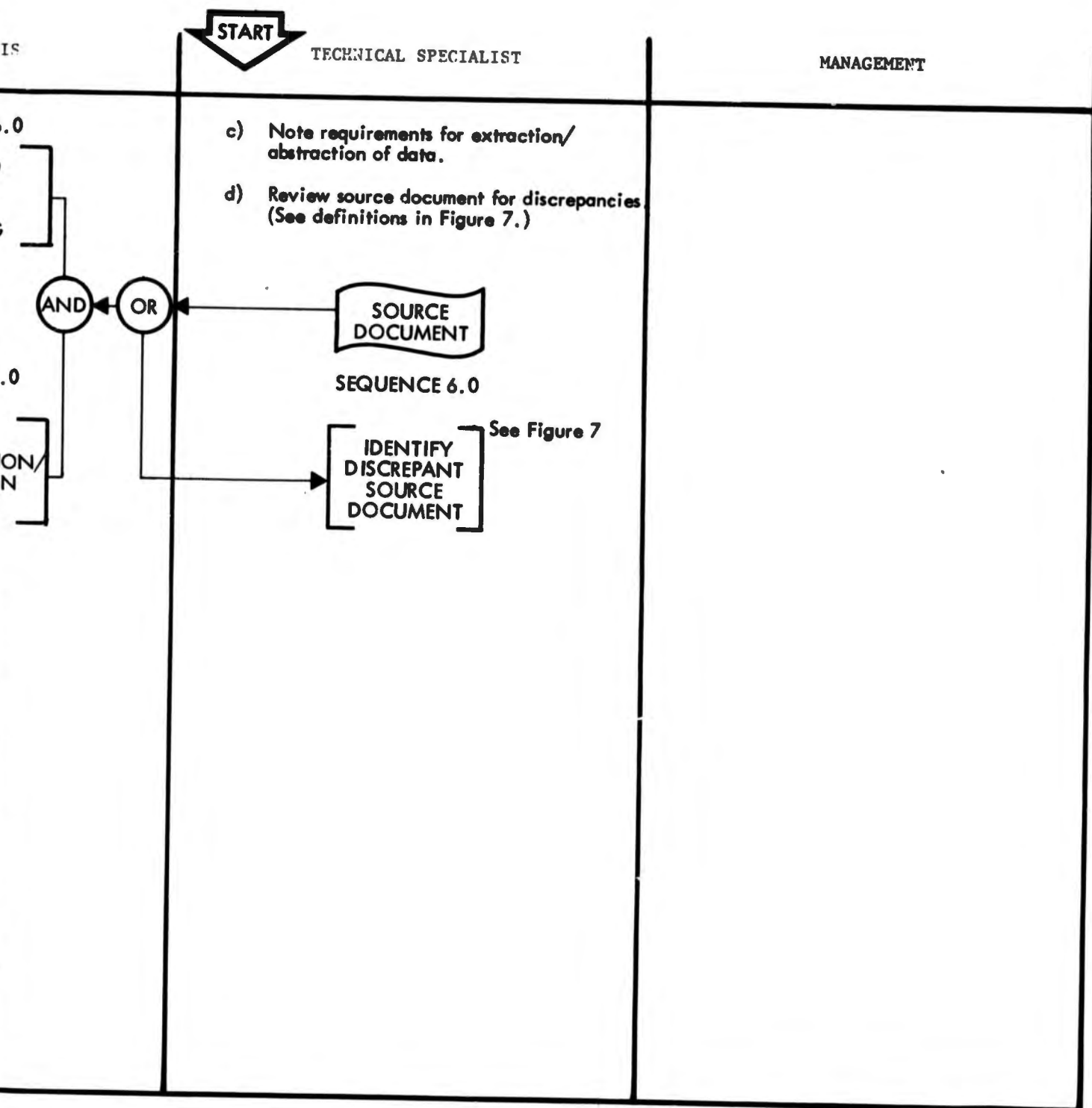


Figure 3. ITDS Summary Function 5.0,
Summary Operation
Sequence ① through ⑦
(2 of 2)

A



CLERICAL

DATA ANALYSIS

TECHNICAL SPE

Note:

See the amplification of the keywording process in Paragraph 3.3.1

- 10 List Keywords, continued
- c) Log out keyword list; send to Data Operations

- 8 Identify Keywords
 - a) Read document; identify keywords which describe or identify contents
 - b) Identify a maximum of six keywords
- 9 Verify Keywords in Thesaurus
 - a) Look up keywords in current issue of the ITDS Keyword Thesaurus. Verify that the word is authorized; verify correct spelling, meaning, and usage.
 - b) If need for new keywords is indicated, follow procedure

- 10 List Keywords
 - a) Record keywords on a columnar loadsheet or other form acceptable by the Computer Subsystem
 - b) Detach Keyword List from document; send to clerk

To data analyst after analysis and selecti



SEQUENCE 14.0

See Figure 6



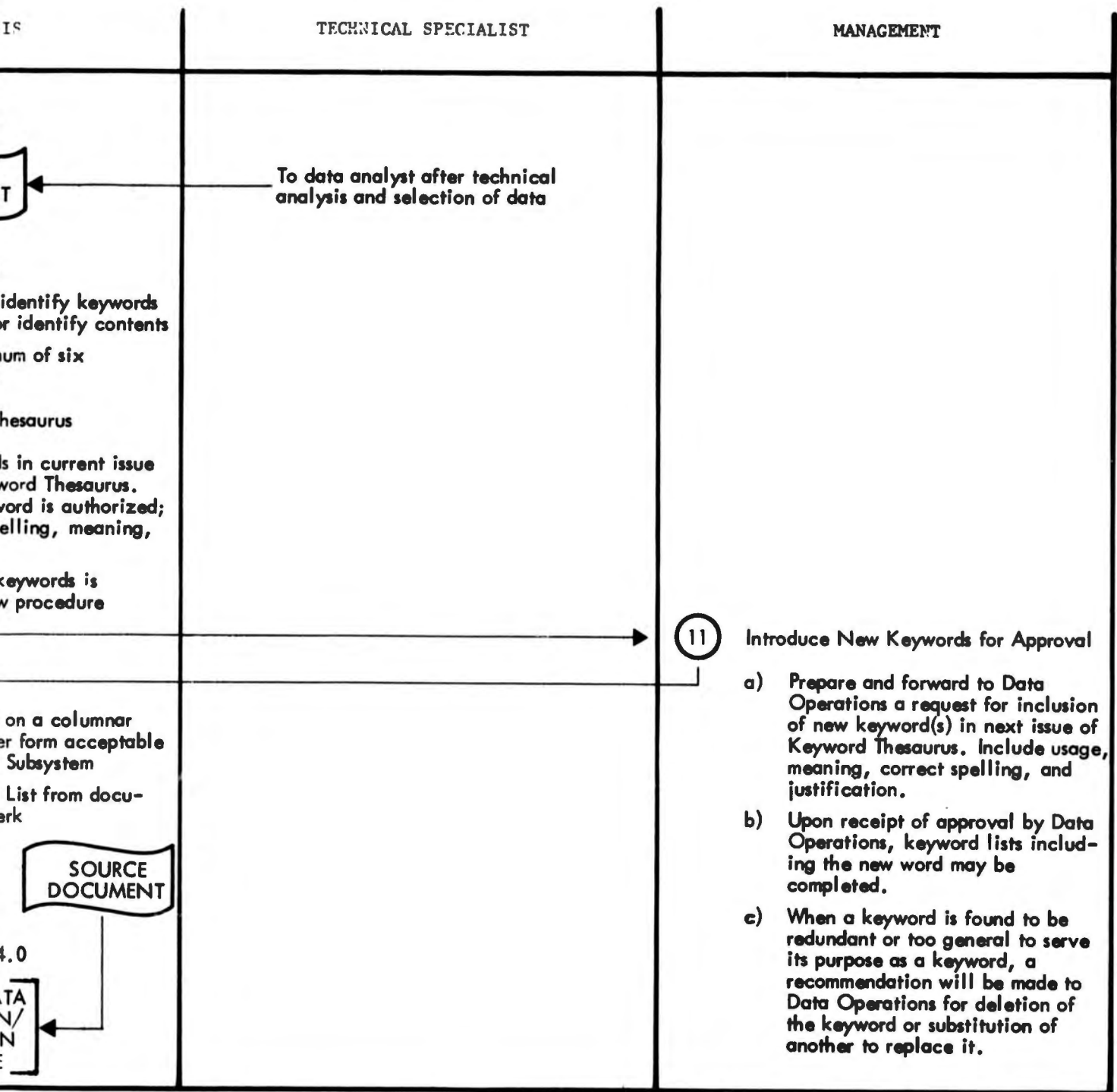


Figure 4. ITDS Summary Function 11.0, Summary Operations Sequence ⑧ through ⑪ (1 of 1)

Keywords consisting of two or more words will be listed in their natural word order, e.g., radar antennas rather than antennas, radar. Make a "see also" reference in the thesaurus under antennas to radar antennas.

Keywords for which distinctions from other keywords must be made must be accompanied by an explanation. "See also" references must be entered in the thesaurus.

When two or more keywords are true synonyms, one keyword will be selected and the other keyword entered in the thesaurus with a "See" reference referring from the unused form to that used.

A specific, multiword descriptor should be established when the specific concept is encountered so frequently that the ability to index and search directly would be both expeditious and economical or when one or both of the more general descriptors is so often used in indexing as to make searches awkward or inaccurate.

Cross references must be entered into the thesaurus. These are of the following types:

- a) SEE - directs the indexer and the searcher from an unused term to the acceptable term.
- b) SEE ALSO - directs the indexer and searcher to a related term.
- c) USED FOR - limits the use of the term to a specific meaning. The definition of the term should be followed by "Do not use for _____" with reference to the form used for secondary meaning. This is particularly important when indexing by acronyms and abbreviations.

In the ITDS, keywords are limited to 30 characters.

Use the Keyword Loadsheet shown in Figure 5. Enter the name of the functional organization, the person who assigned the keywords for the DAI and the date. Indicate the DAI number in the spaced provided and a maximum of six keywords. In the last line, identify the ITDS Data List(s) which the DAI updates.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
ORGANIZATION											KEYWORD											DATE												
ADD. DATA - FILE																																		
KW "																																		
KW "																																		
KW "																																		
KW "																																		
KW "																																		
KW "																																		
D.LI-REF "																																		

Figure 5. Keyword Loadsheet

3.3.2 Keyword Thesaurus

The keyword list (thesaurus) is a dynamic rather than static document, subject to additions, deletions, and corrections. It is a word association list generically structured to permit description of the subject content of a document to the desired level of generality or specificity at input, and to permit the description of the information at output in equally precise terms.

A listing of acceptable keywords is maintained in the ITDS Keyword Thesaurus. The Keyword Thesaurus is a computer-generated alphabetical listing of all keywords authorized by the system and acceptable by the computer for this function. In addition to the authorized keywords, this thesaurus provides acceptable abbreviations and/or acronyms and the true English meaning of each keyword or group of pre-conjoined keywords. By sorting on authorized acronyms, an acronym dictionary is created which can be utilized effectively by personnel with experience in this system. Although these reports can be produced at any time and frequency desired by the user, experience has proved that they are most needed when changes are frequent and when new personnel are introduced into the system. The Keyword

Thesaurus is maintained by the Data Operations Subsystem and is published as a periodic report. It is used primarily by personnel of the Functional Disciplines Subsystem to identify documentation for selective or group retrieval, and when suggesting new keywords for inclusion in the thesaurus.

3.4 EXTRACTION/ABSTRACTION OF DATA FROM SOURCE DOCUMENT

See Figure 6, ITDS Summary Function 14.0, Summary Operations Sequence (12) through (15)

3.5 IDENTIFICATION OF DISCREPANT SOURCE DOCUMENTS

See Figure 7, ITDS Summary Function 6.0, Summary Operations Sequence (17) through (20)

3.6 DESCRIPTION OF INPUT FOR PERIPHERAL PROCESSING

See Figure 8, ITDS Summary Function 16.0, Summary Operations Sequence (21) through (26)

3.6.1 Peripheral Data Processing Program Capabilities of the Functional Disciplines

The programs identified below have capabilities for further processing of data. They are described in detail in the ITDS user document entitled Computer Subsystem: Peripheral Programs, General Description.

3.6.1.1 Management Peripheral Programs

The following programs are used by the Project Information and Control element of the Management discipline:

- a) PERT Time. This is an analytical method for overseeing execution of plans and schedules and the measurement of current progress. It determines tradeoffs between time and resources for branching and overlapping tasks.
- b) PERT Cost. This is a management information system that interrelates a plan of work to the program's cost and produces integrated reports of work accomplished and cost incurred.
- c) SCIOLIST. Summary Cost Input - Output List is a program designed to provide a vehicle for implementing cost (funding) management, planning and reporting aspects of a program. It is a system wherein cost categories (requirements, funding, distributions, obligations) and their variances are formatted into several reports by which the program can be efficiently managed.

- d) MAST. Materiel Acquisition Status Technique tracks delivery status and related projections of identified requirements. Tracking is accomplished by processing the actual or expected deliveries and schedule changes received over a specific time period from the organizations supplying materiel.

3.6.1.2 Engineering Peripheral Programs

- a) Engineering Fact Sheet. This provides a concise description of a particular aspect of the system or state of required system performance, and shows the status of demonstration programs.
- b) Engineering Problem Narratives. These contain a summary of the results of the analysis and evaluation of data pertaining to an engineering problem.

3.6.1.3 Quality Assurance Peripheral Programs

- a) MEADS. Maintenance Engineering Analysis Data System is a centralized technical documentation and analysis system that provides integrated maintenance engineering support. It has the capability to control and analyze information pertinent to the maintenance and logistic support of each system, subsystem, and component of the system project.

3.7 INQUIRY ANALYSIS

See Figure 9, ITDS Summary Function 13.0, Summary Operations Sequence (27) through (30), (31) and (32), (35) and (36) (3 sheets).

3.8 INQUIRY RESPONSE

See Figure 10, ITDS Summary Function 21.0, Summary Operations Sequence (33) and (37), (34), (38) (3 sheets).

3.9 DEFINITION OF FORM AND CONTENT REQUIREMENTS FOR EXCEPTION REPORTS

See Figure 11, ITDS Summary Function 20.0, Summary Operations Sequence (39) through (42).

3.9.1 Operations Peculiar to the Functional Disciplines

Step (40) Determination of Exception Reporting Requirements, in Figure 11, is amplified as follows with respect to the indicated functional disciplines:

- a) **Logistics and Quality Assurance:**
ITDS-user missions, organizational structures, and the logistics and quality assurance functions performed by each organizational element shall be identified and maintained current. The logistics management responsibilities of each

organizational element shall also be identified and maintained current. Considering the missions, structures, functions, and responsibilities, perform appropriate analyses and determine the logistics management information requirements of each organizational element. The analytical effort shall be continuous and the identification of information requirements shall be maintained current.

b) **Data Management Element of the Management Discipline:**

Data management exception reports may be manually prepared correspondence and reports which utilize consolidated and/or interpretative techniques to present information retrieved from the computer, hardcopy data filed, and technical assessments. These reports may be precipitated by programmatic impact data assessments or directly from ITDS inquiries. Primarily the exception report is a letter or uniquely formatted report in response to a specific request or indicated requirement which contains human assessment or organization of facts about the system project or ITDS-related impacts. For data management, exception reports may be produced in response to an inquiry. In such cases the reports will be processed in the same manner as a routine inquiry considering the priority specified therein. For internally generated reports, the subject matter and requirements for the report may be coordinated with the intended user prior to production of the exception report. The general plan of the report, intended purpose, and distribution will then be approved by the user project's data management officer. Programmatic impact exception reports may be generated as a result of data management technical assessment of data entered into the ITDS. Such reports will be generated as the need for the report becomes known. In all cases, exception reports are to be coordinated with other concerned ITDS functional disciplines prior to release to the intended addressee. Copies of each exception report are distributed to the data management officer and are also maintained on file within the functional discipline and forwarded to Data Operations for entry into the bank. Normally, these reports are maintained in the ITDS hardcopy files.

3.10 OUTPUT PROCESSING

See Figure 12, ITDS Summary Function 24.0, Summary Operations Sequence (43) through (46)

CLERICAL

DATA ANALYSIS

START

TECHNICAL S

14 Coordinate Key punch Schedule

- a) The flow of load sheets into Data Operations will be properly scheduled to consider report generation or data retrieval requirements.
- b) Normally backlogged work will be stored and secured until such time as it can be accepted for keypunching by Data Operations.

15 Log Out Source Data and Loadsheets

- a) The source document will be logged out and forwarded to its next destination as indicated on the routing slip. The next destination may be either another functional discipline or Data Operations (for hardcopy or microform filing)
- b) Load sheets will be separated from the source document, logged out, and forwarded to Data Operations as the keypunch schedule permits.
- c) If a functional discipline wishes to retain a source document for further reference or use, add a note to that effect on the DAI form. If further routing to other disciplines is involved, forward the document as required. If no further routing is required, retain the document, and forward the DAI form to Data Operations.



SEQUENCE 11.0

SOURCE DOCUMENT

KEYWORD FOR SUBJECT INDEXING

See Figure 4

12 Extract/Abstract Significant Data

- a) Relevant source data within the scope of the categories defined in Section 2 will be extracted/abstracted for incorporation in the ITDS Data file.
- b) If source data being extracted is incompatible with the existing ITDS data base or otherwise requires peripheral processing, such a requirement will be identified in the course of this activity.

13 Prepare Load Sheet

- a) Loadsheets will be prepared to contain the extracted/abstracted data. They will reflect additions, deletions, changes, and/or corrections to the ITDS data files.

14

OR

16

Perform Direct En

- a) Confirm on-l
- b) Dial in and i
- c) Request listin stored in the file to be up
- d) Enter updates prepared loa
- e) Request listin
- f) Check revise
- g) Sign off and

SEQUEN

PREP INPUT PERIP PROC

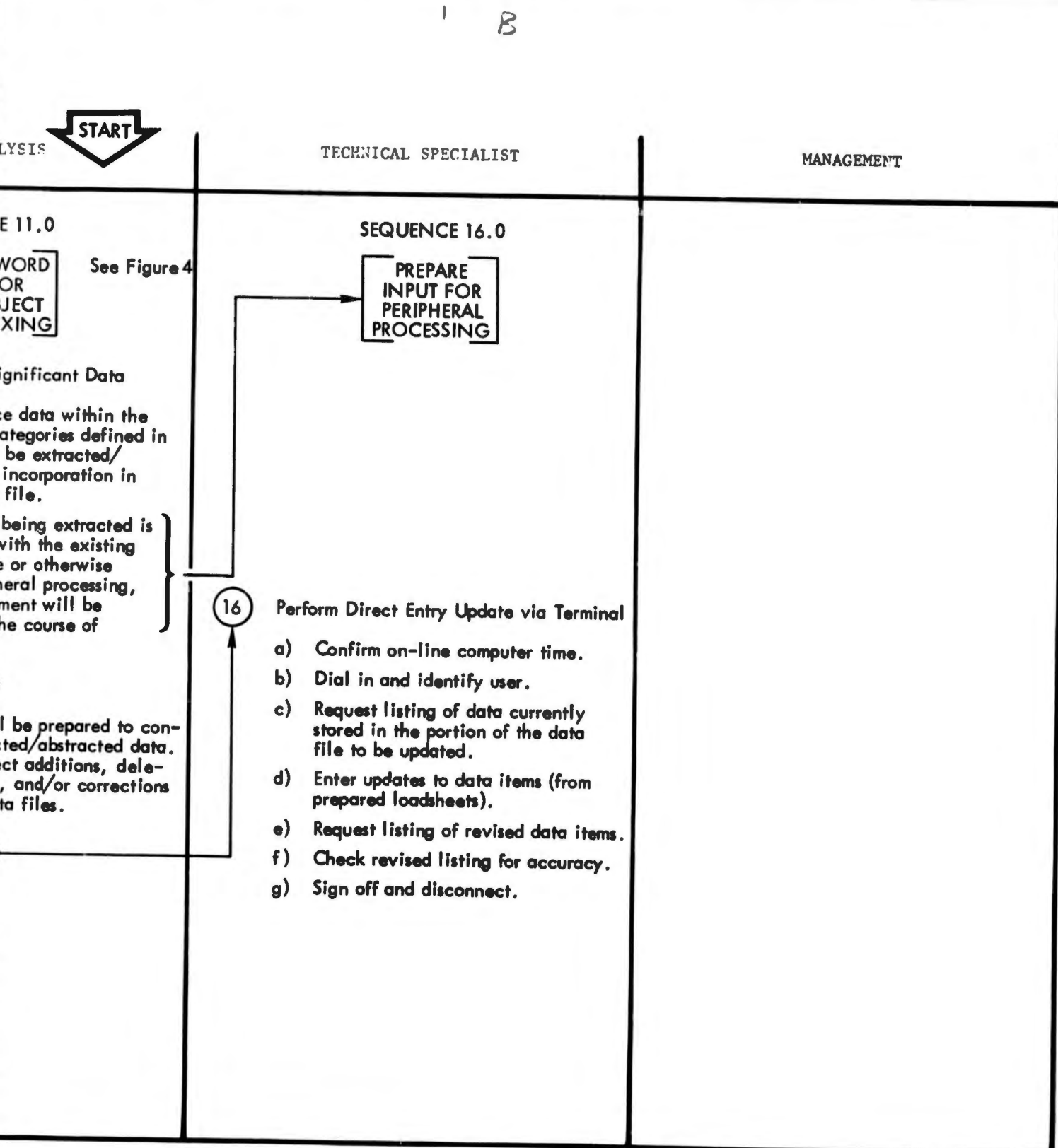


Figure 6. ITDS Summary Function 14.0
 Summary Operations
 Sequence 12 through 16
 (1 of 1)

A



CLERICAL

DATA ANALYSIS

TECHNICAL SPE

- 20 Log Out Discrepant Source Document
 - a) The discrepant source document and the discrepancy report will be logged out and forwarded to Data Operations



TO
DATA OPERATIONS

- From Step 7
- 17 Identify Discrepant Document

- a) Discrepancies of the source of missing portions or apparent errors in the document, that which, if file, would impact the ITDS.
- b) A distinction shall be made case by case by discrepant data from the above definition whose quality shall not be discrepant if the data have the meaning of data.

- 18 Identify Cognizant

- a) The originator of cognizant agencies this will occur if the agency has used other sources, or any interest in the document.

- 19 Prepare Discrepancy

- a) Report will be prepared in detail to define the discrepancy. It will also, where appropriate, either supply or recommend other sources.



TECHNICAL SPECIALIST

MANAGEMENT

From Step (7)

- (17) Identify Discrepancy in Source Document
- a) Discrepancies noted during review of the source document may include missing portions of the document or apparent errors in the content of the document. Erroneous data is that which, if entered into a data file, would impair the integrity of the ITDS.
 - b) A distinction shall be made, on a case by case basis, between truly discrepant data within the scope of the above definition, and that whose quality is degraded. The latter shall not be rejected as discrepant if the ITDS user does not have the means to obtain corrected data.
- (18) Identify Cognizant Agency
- a) The originator is generally the cognizant agency. Exceptions to this will occur when the originating agency has used data supplied from other sources, or merely has primary interest in or cognizance of the document.
- (19) Prepare Discrepancy Report
- a) Report will be prepared in sufficient detail to define the discrepancy. It will also, where appropriate, either supply correct data or recommend other action.

Figure 7. ITDS Summary Function 6.0,
Summary Operations
Sequence (17) through (20)
(1 of 1)

A

CLERICAL

DATA ANALYSIS

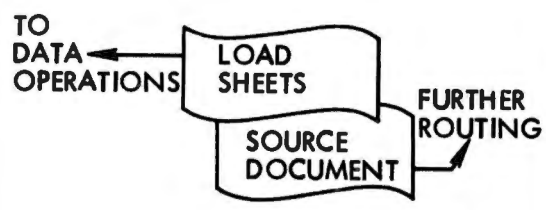


TECHNICAL SPECIFICATIONS

- 25 Coordinate Keypunch Schedule
 - a) The flow of loading sheets into Data Operations will be properly scheduled to consider report generation or data retrieval requirements.
 - b) Normally backlogged work will be stored and secured until such time as it can be accepted for key-punching by Data Operations.
- 26 Log Out Source Data and Loadsheets
 - a) The source document will be logged out and forwarded to its next destination as indicated on the routing slip. The next destination may be either another functional discipline or Data Operations (for hardcopy or microform filing).
 - b) Load sheets will be separated from the source document, logged out, and forwarded to Data Operations as the keypunch schedule permits.

- SOURCE DOCUMENT Routine Extract/Abstract Process, See 12
- 22 Extract Data for Peripheral Processing
 - a) Extract at selected data elements and segregate according to the peripheral programs involved.
 - 23 Identify Applicable Peripheral Computer Program
 - a) The applicable program for processing the extracted data will be identified from the list of peripheral programs in Paragraph 3.6.1.
 - 24 Prepare Load Sheet
 - a) Loadsheets will be prepared to contain the extracted peripheral data. They will reflect additions, deletions, changes, and/or corrections to the peripheral data files.

- 21 Identify Requirements Peripheral Processing
 - a) The need for peripheral processing is indicated when a report contains data to be processed by one or more peripheral computer programs identified in Paragraph 3.6.1.
 - b) Since some peripheral programs may produce more than one report, the appropriate program must be identified with this activity.



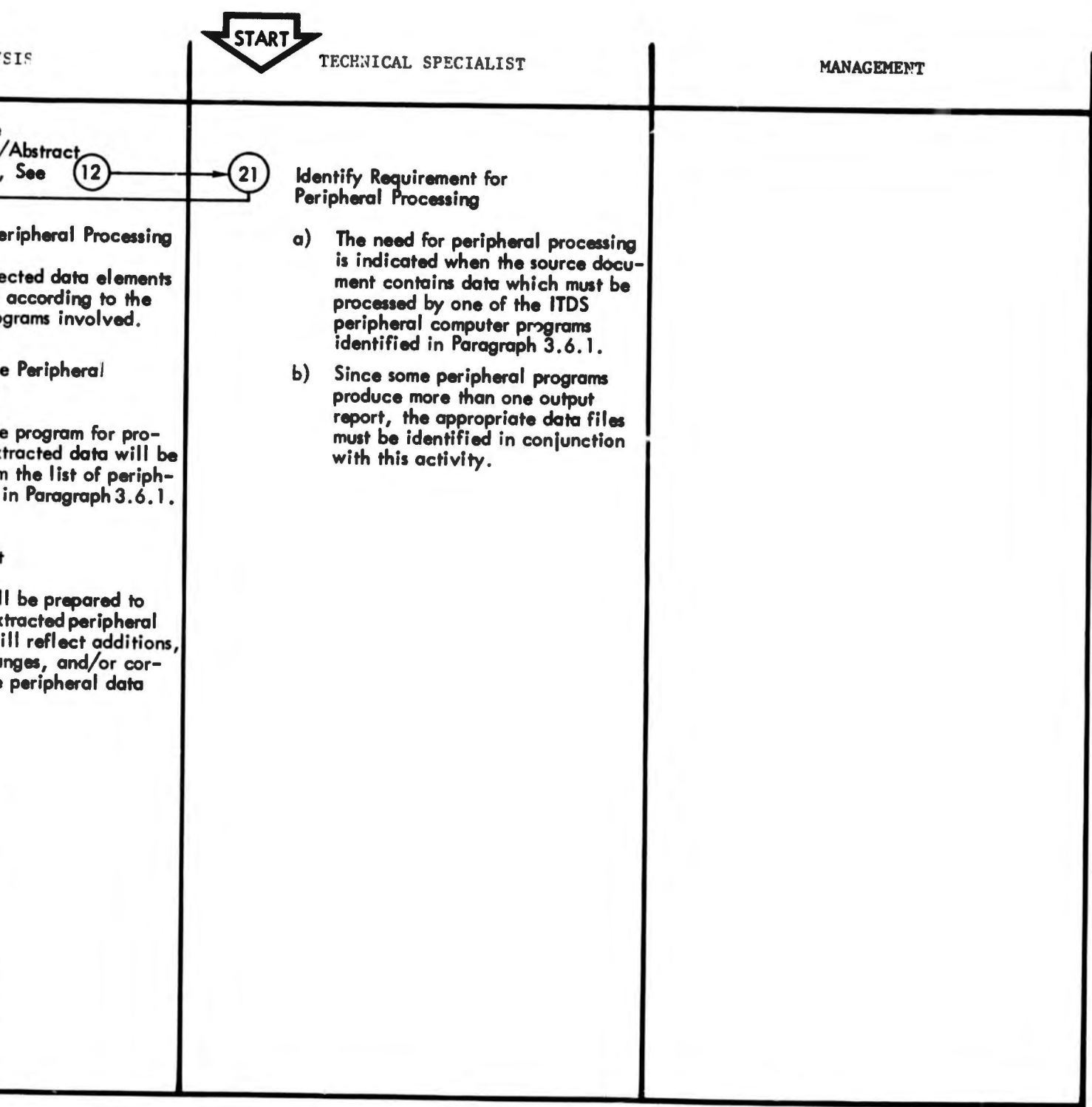


Figure 8. ITDS Summary Function 16.0, Summary Operations Sequence 21 through 26 (1 of 1)

A



CLERICAL

DATA ANALYSIS

TECHNICAL SPEC

NOTE:

Inquiries to ITDS may take two forms. One is direct entry to the computer sub-system from a terminal and response via the same route. The other form of inquiry is that which is processed by the functional disciplines. The particular advantages to the latter form are the availability of analytical and interpretive capabilities of the specialists plus the fact that an operation is included for update of the ITDS data base to reflect any new data generated by the inquiry response.

From Data Operations



- 27 Receive Inquiry
 - a) Verify correct address
 - b) Date stamp.
- 28 Log in Inquiry
 - a) Enter inquiry identification and date in the DAI columns of the ITDS Control Log. Precede the entry with: INO (originator).
 - b) Attach routing slip for immediate management attention.

- 30 Perform Inquiry Analy
 - a) Analyze the inquiry precisely what the user wants to know. Include the information he has furnished in other reports.
 - b) Determine which route will be taken for the inquiry. This may result in processing via either the file route (Steps 31, 33), the analytical route (Step 34), or computer processing (Steps 35, 36, 38).

sub-
inquiry is
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30

Perform Inquiry Analysis

- a) Analyze the inquiry to establish precisely what the user wants or wants to know. Determine whether the information has been or is being furnished in other ITDS reports.
- b) Determine which processing route will be taken to respond to the inquiry. This decision will result in processing the inquiry via either the file data retrieval route (Steps 31, 32 and 33), the analytical response route (Step 34), or the computer processing route (Steps 35, 36, and 37 or 38).

29

Evaluate, Prioritize, and Assign for Response

- a) Determine the nature of the inquiry, general type of response required, and the approach to obtaining such response.
- b) Normally, inquiries will be given priority over routine processing of incoming data. Establish a schedule for response output and delivery to the user.
- c) Assign the inquiry response task to a cognizant technical specialist.

Figure 9. ITDS Summary Function 18.0,
Summary Operations
Sequence 27 through 30
(1 of 3)

A



CLERICAL

DATA ANALYSIS

TECHNICAL SPECI

30 Perform Inquiry Analysis
 (This operation is descr
 on Sheet 1 of this figure

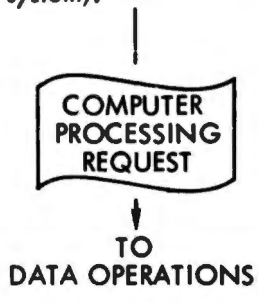
COMPUTER PROCESSING

35 Prepare for Computer P
 Perform the following o
 applicable if the respon
 listings, answers, or ot
 from the computer:

- a) Prepare a detailed
queries by keyword
- b) Specify the format
desired.
- c) Prepare a request f
processing.
- d) Hold inquiry until
processed response

36 Log Out Computer Processing
Request

a) Date stamp, log out in User
Service Request column of
the ITDS Control Log, and
forward to the Computer
Subsystem. Precede the
entry with: CPTR SVC REQUEST
SEQ (sequence number which is
obtained from the computer sub-
system).





CLERICAL

DATA ANALYSIS

TECHNICAL SPECI

File Data Retrieval Route

Computer Processing Route

From

From

32

36

FILE DATA REQUEST

COMPUTER PROCESSING REQUEST

SUMMARY FUNCTION 19.0

SUMMARY FUNCTION 20.0

RETRIEVE HARDCOPY OR MICRO FORM

GENERATE COMPUTER PROCESSED RESPONSE

33 Log in File Data

- a) Verify that all requested data was retrieved
- b) Date stamp and log in the Report In column of the ITDS Control Log.

37 Log in Computer Processed Data

- a) Enter the transaction number of the computer processed data and date received in the Report In column of the ITDS Control Log.
- b) Attach routing slip. Normally, computer processed responses will be utilized to update the data base prior to transmittal to the user.

7

Analyze and Select Data (This operation is described in Figure 3.)

RESPONSE

SEQUENCE 11.0

KEYWORD FOR SUBJECT INDEXING

AND

SEQUENCE 14.0

PERFORM DATA EXTRACTION/ABSTRACTION ROUTINE

AND

RESPONSE

USER INQUIRY

FILE DATA

USER INQUIRY

RESPONSE
USER INQUIRY

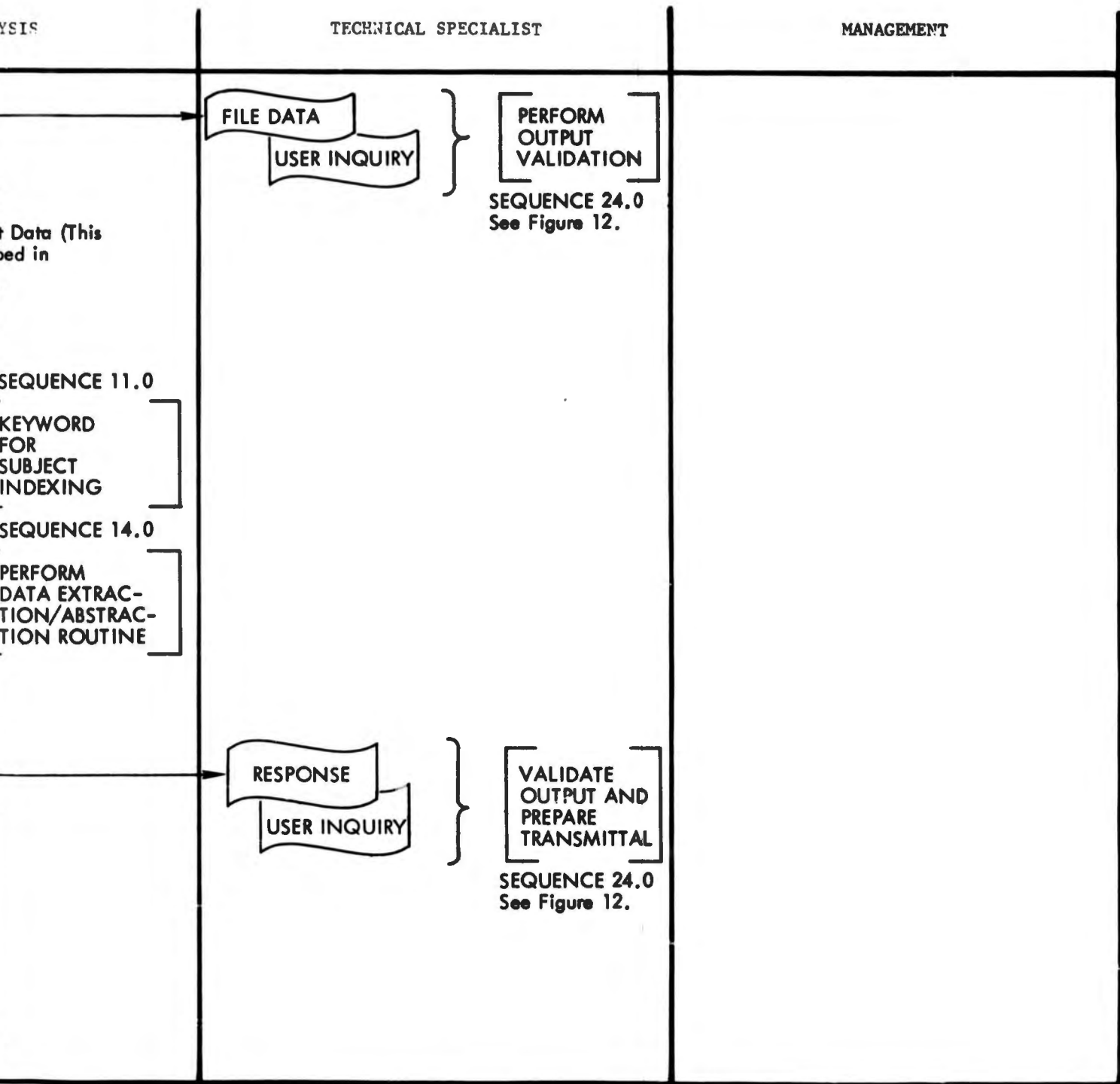


Figure 10. ITDS Summary Function 21.0, Operations 33 and 37 (1 of 3)

A

CLERICAL

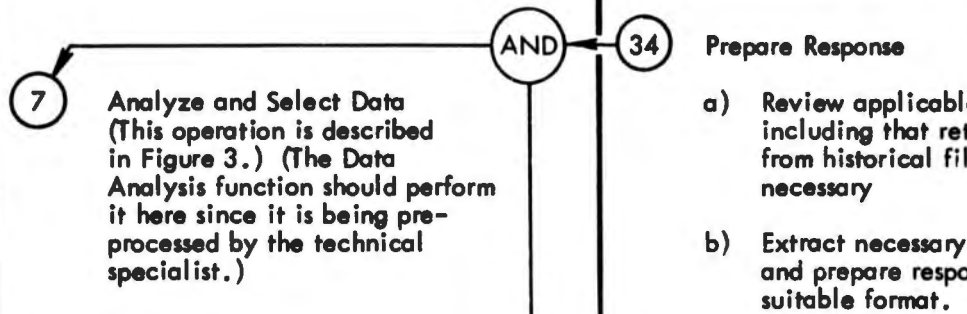
DATA ANALYSIS

START

TECHNICAL SPEC

30 Perform Inquiry Analysis
(This operation is described on Sheet 1 of Figure 9)

ANALYTICAL RESPONSE



INQUIRY RESPONSE

SEQUENCE 11.0
KEYWORD FOR SUBJECT INDEXING
See Figure 4.

SEQUENCE 14.0
PERFORM DATA EXTRACTION/ABSTRACTION ROUTINE
See Figure 6.

USER INQUIRY RESPONSE



30 Perform Inquiry Analysis
(This operation is described
on Sheet 1 of Figure 9.)

ANALYTICAL RESPONSE ROUTE

AND

34 Prepare Response

- a) Review applicable data including that retrieved from historical files if necessary
- b) Extract necessary information and prepare response in a suitable format.

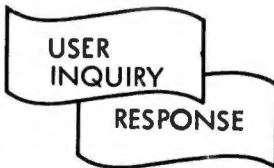
Data described
Data could perform
ing pre-
chnical

SEQUENCE 11.0
WORD
SUBJECT
INDEXING

See Figure 4.

SEQUENCE 14.0
FORM
EXTRACT-
ABSTRACT-
ROUTINE

See Figure 6.

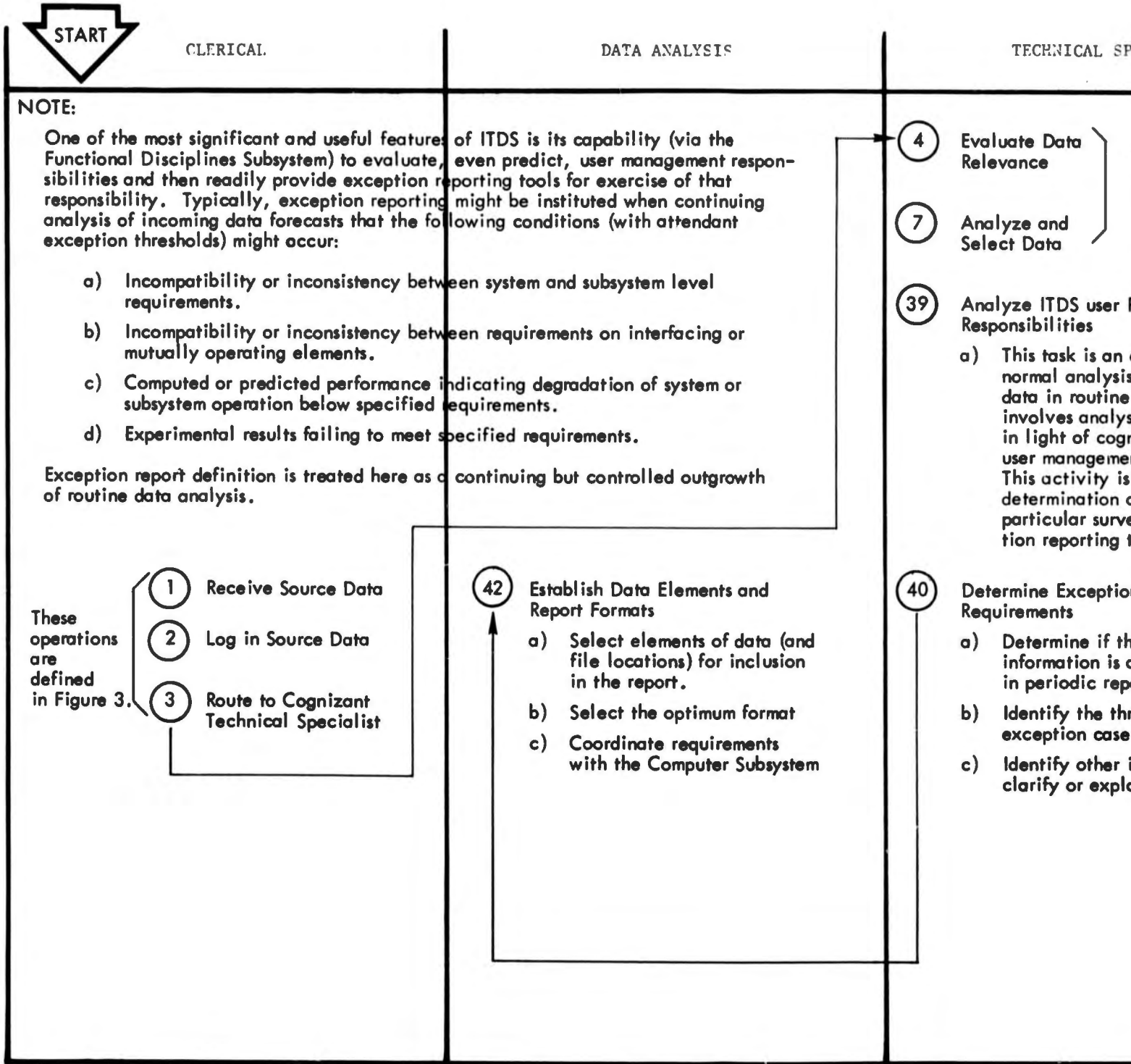


VALIDATE
OUTPUT AND
PREPARE
TRANSMITTAL

SEQUENCE 24.0
See Figure 12.

Figure 10. ITDS Summary Function 21.0,
Operation 34 (2 of 3)

A



CLERICAL

DATA ANALYSIS

TECHNICAL SP

NOTE:

One of the most significant and useful features of ITDS is its capability (via the Functional Disciplines Subsystem) to evaluate, even predict, user management responsibilities and then readily provide exception reporting tools for exercise of that responsibility. Typically, exception reporting might be instituted when continuing analysis of incoming data forecasts that the following conditions (with attendant exception thresholds) might occur:

- a) Incompatibility or inconsistency between system and subsystem level requirements.
- b) Incompatibility or inconsistency between requirements on interfacing or mutually operating elements.
- c) Computed or predicted performance indicating degradation of system or subsystem operation below specified requirements.
- d) Experimental results failing to meet specified requirements.

Exception report definition is treated here as a continuing but controlled outgrowth of routine data analysis.

These operations are defined in Figure 3.

- ① Receive Source Data
- ② Log in Source Data
- ③ Route to Cognizant Technical Specialist

- ④② Establish Data Elements and Report Formats
 - a) Select elements of data (and file locations) for inclusion in the report.
 - b) Select the optimum format
 - c) Coordinate requirements with the Computer Subsystem

- ④ Evaluate Data Relevance

- ⑦ Analyze and Select Data

- ③⑨ Analyze ITDS user Responsibilities

- a) This task is an normal analysis data in routine involves analysis in light of cogn user management This activity is determination of particular surve tion reporting t

- ④⑩ Determine Exception Requirements

- a) Determine if th information is c in periodic rep
- b) Identify the thr exception case
- c) Identify other i clarify or expl

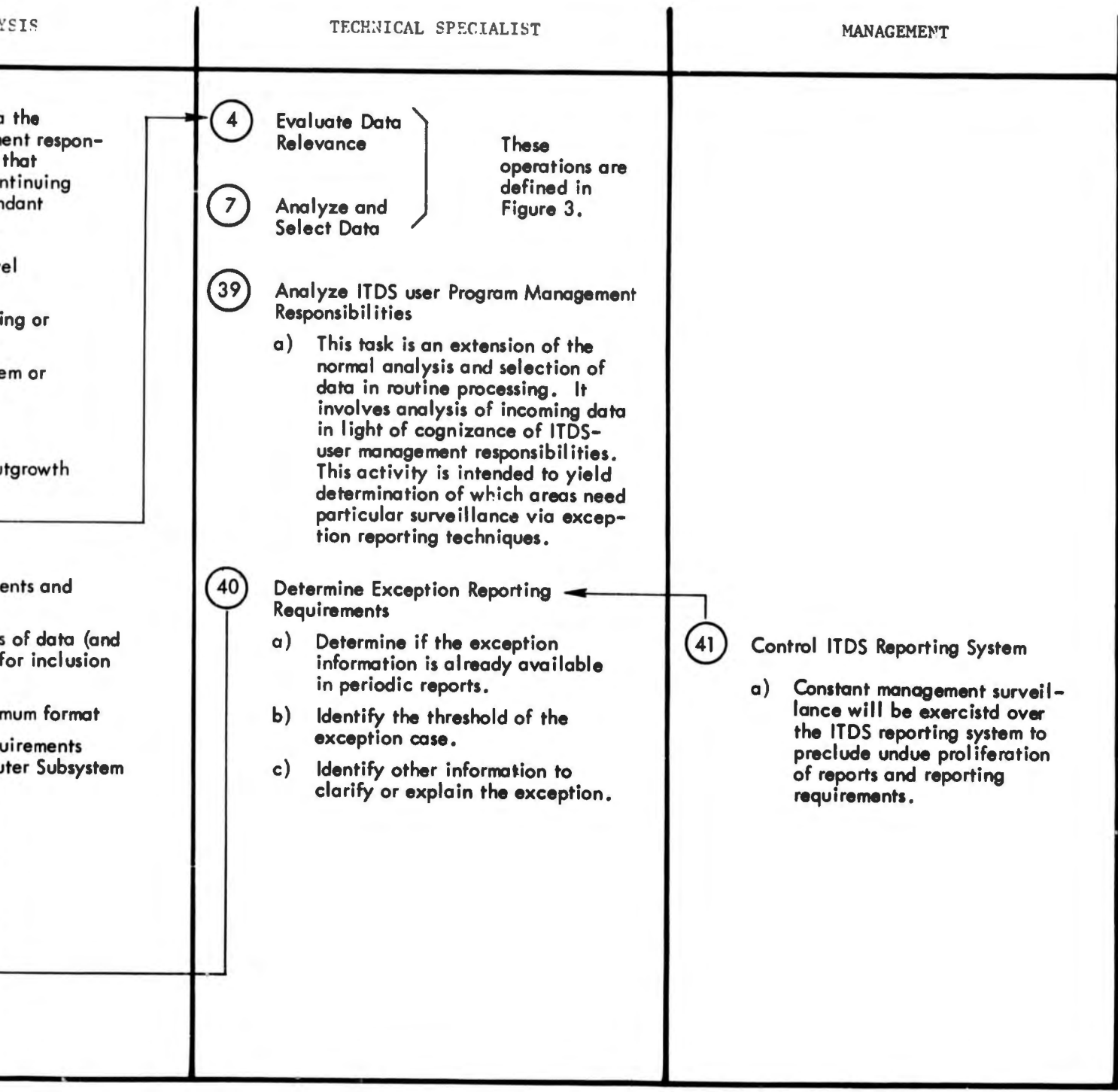


Figure 11. ITDS Summary Function 20.0, Summary Operations Sequence ③⑨ through ④② (1 of 1)

A

CLERICAL

DATA ANALYSIS

START

TECHNICAL SPEC

NOTE:

This sequence is essentially the same for all three ITDS reporting modes (i.e., Inquiry, Periodic, and Exception), except that normally analytical responses need not be validated since this would be redundant to actual preparation of the response.

46

Log Out Report

- a) Date stamp, log out, and forward to Data Operations.

LOAD SHEETS

DATA NOT YET IN COMPUTER

43

Validate Response

- a) Validation is a comparison of the report with the requirements of the query itself in the requirement. The generated reports with respect to omissions and printout omissions determine whether the report is yet keypunched.

44

Select Method and Print Transmittal

- a) Select the most appropriate method for transmitting the report. Consider the following factors when being transmitted:
 - requirements of the receiving agency;
 - urgency and priority;
 - numbers of copies;
 - established requirements for routine reports;
 - length of the response and the resources involved, etc.;
 - reproducibility of the report furnished.

E

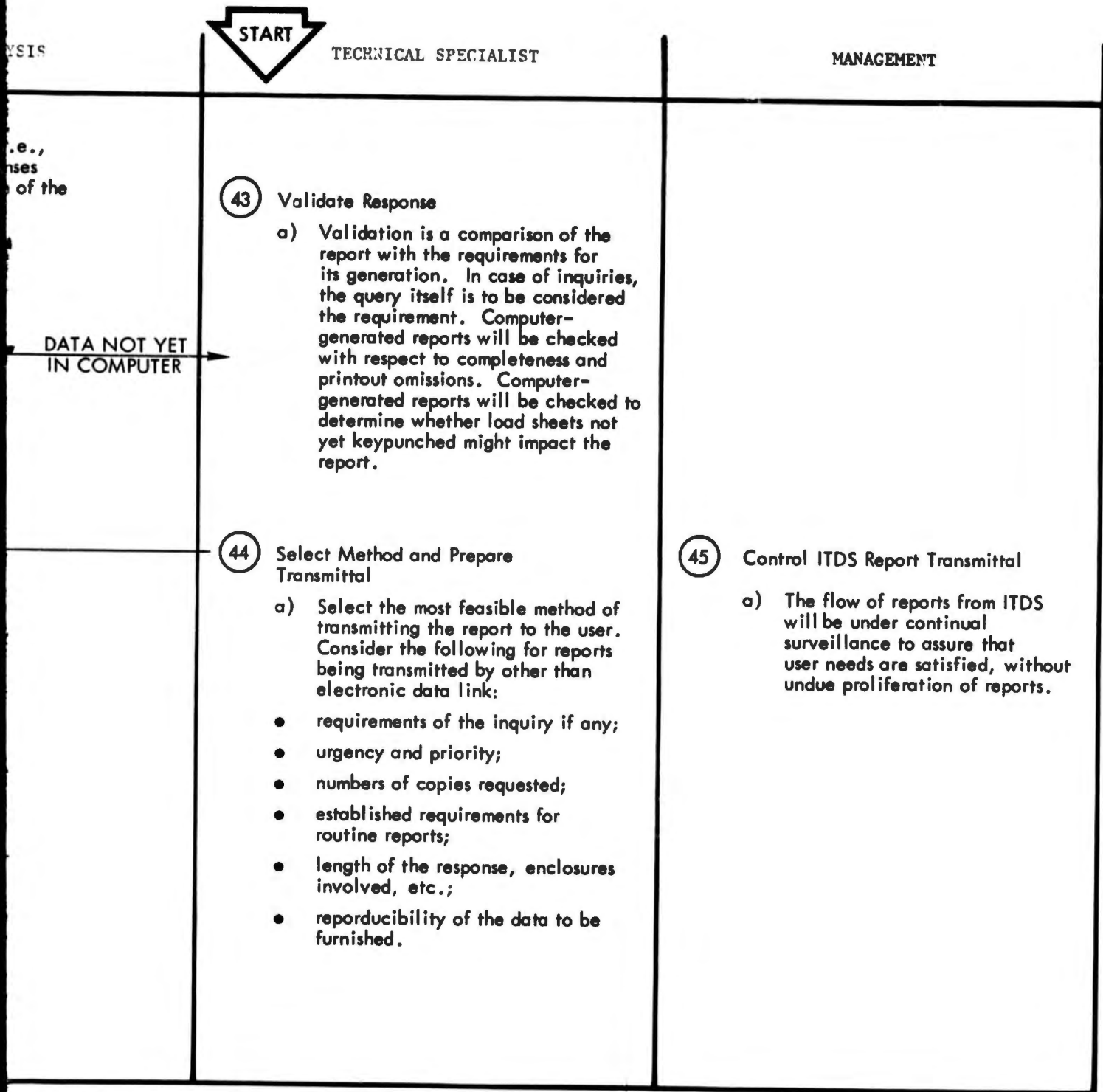
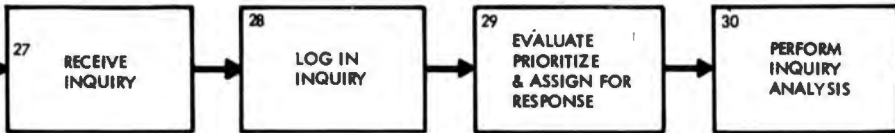


Figure 12. ITDS Summary Function 24.0,
Summary Operations
Sequence 43 through 45
(1 of 1)

A

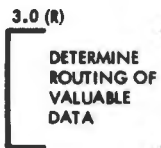
18.0 SUMMARY SEQUENCE
PERFORM INQUIRY ANALYSIS



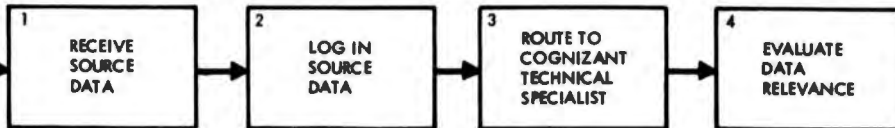
SUMMARY SEQUENCES ARE EXPANSIONS OF SUMMARY FUNCTIONS ASSIGNED TO THE ITDS FUNCTIONAL DISCIPLINES SUBSYSTEM.

WHEN SOURCE DOCUMENT IS AN INQUIRY

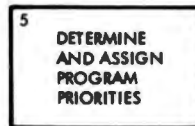
5.0 SUMMARY SEQUENCE REVIEW
AND EVALUATE SOURCE DATA FOR ACCEPTANCE



OR



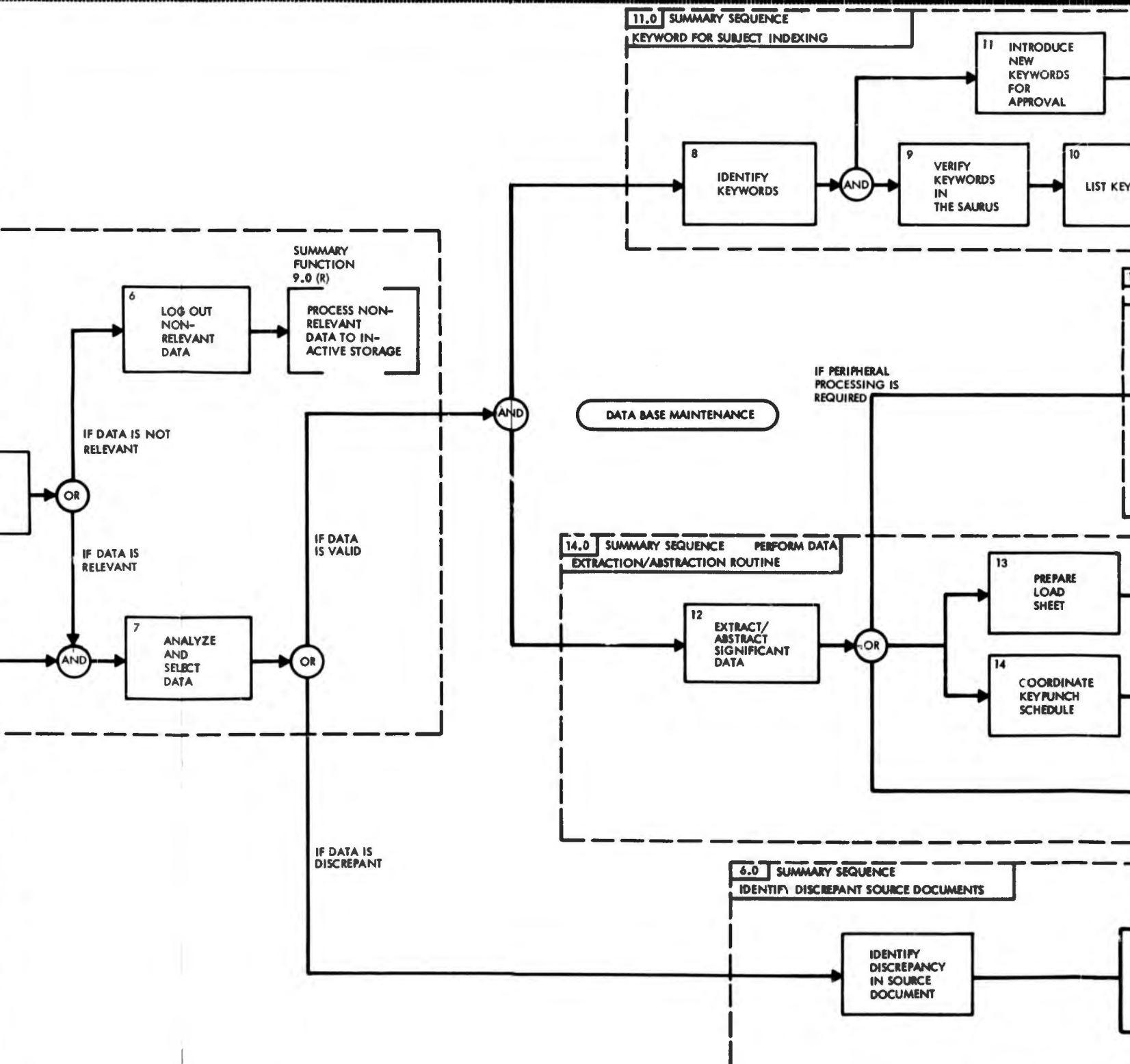
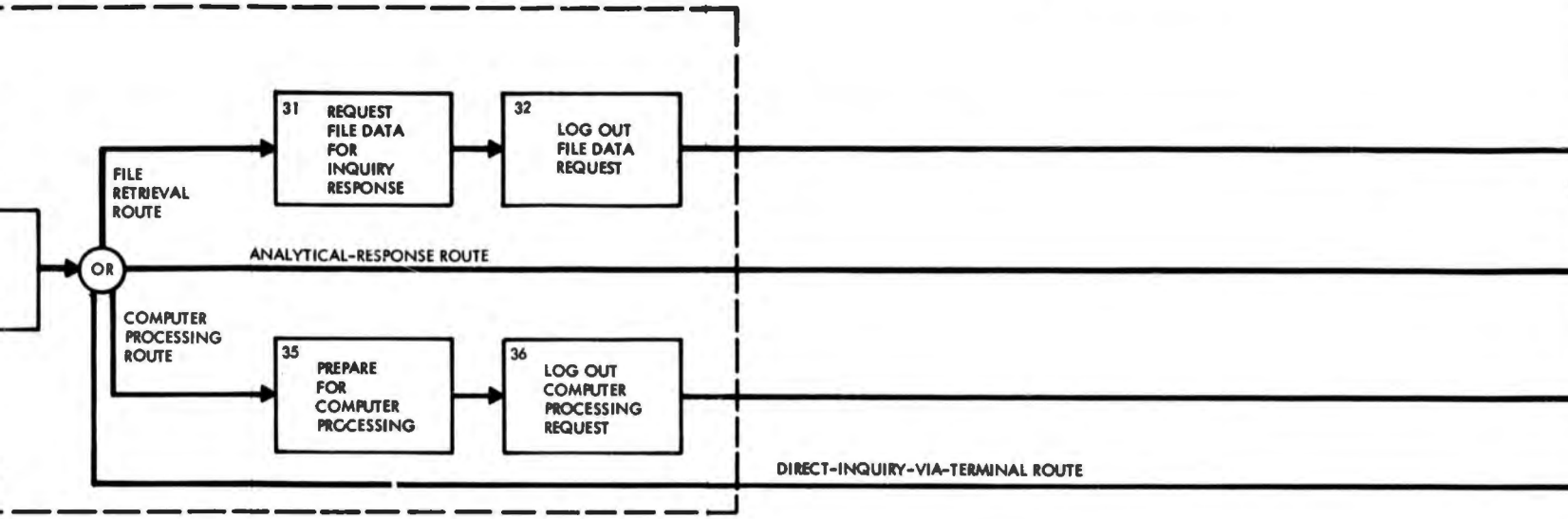
ROUTINE DATA INPUTS



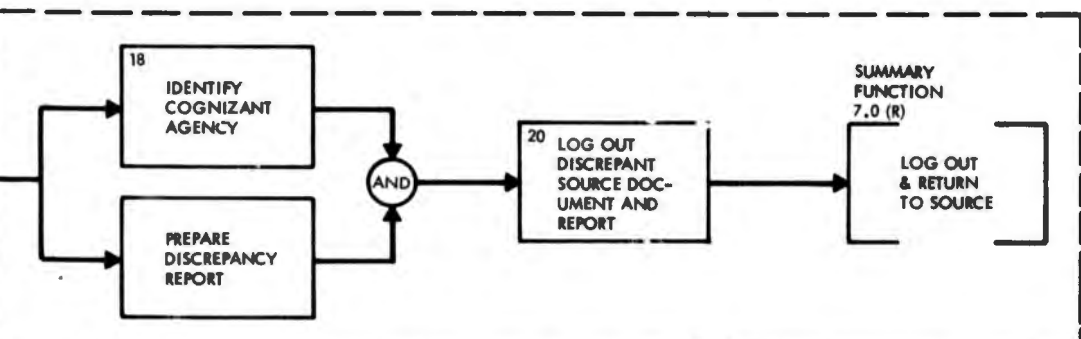
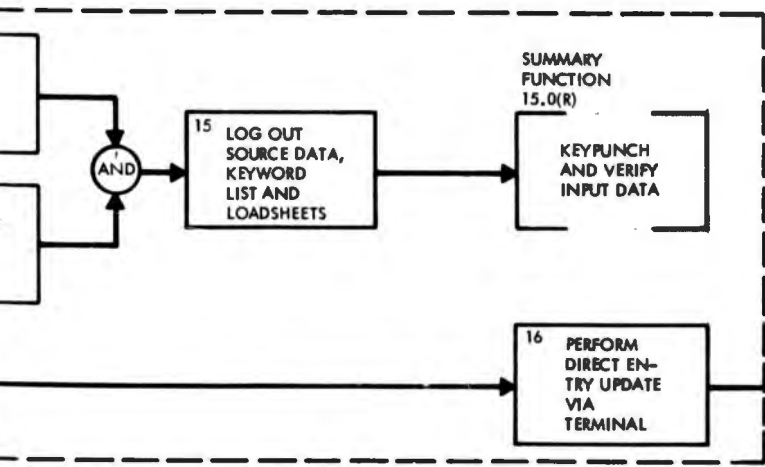
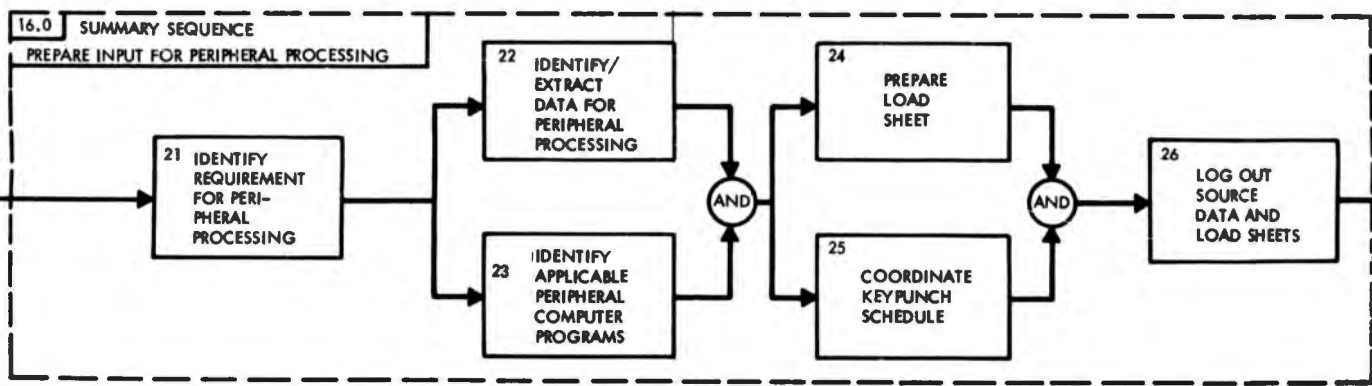
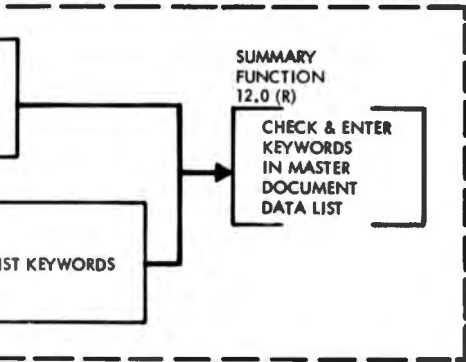
WHEN EXCEPTION REPORTING IS NEEDED

1 B

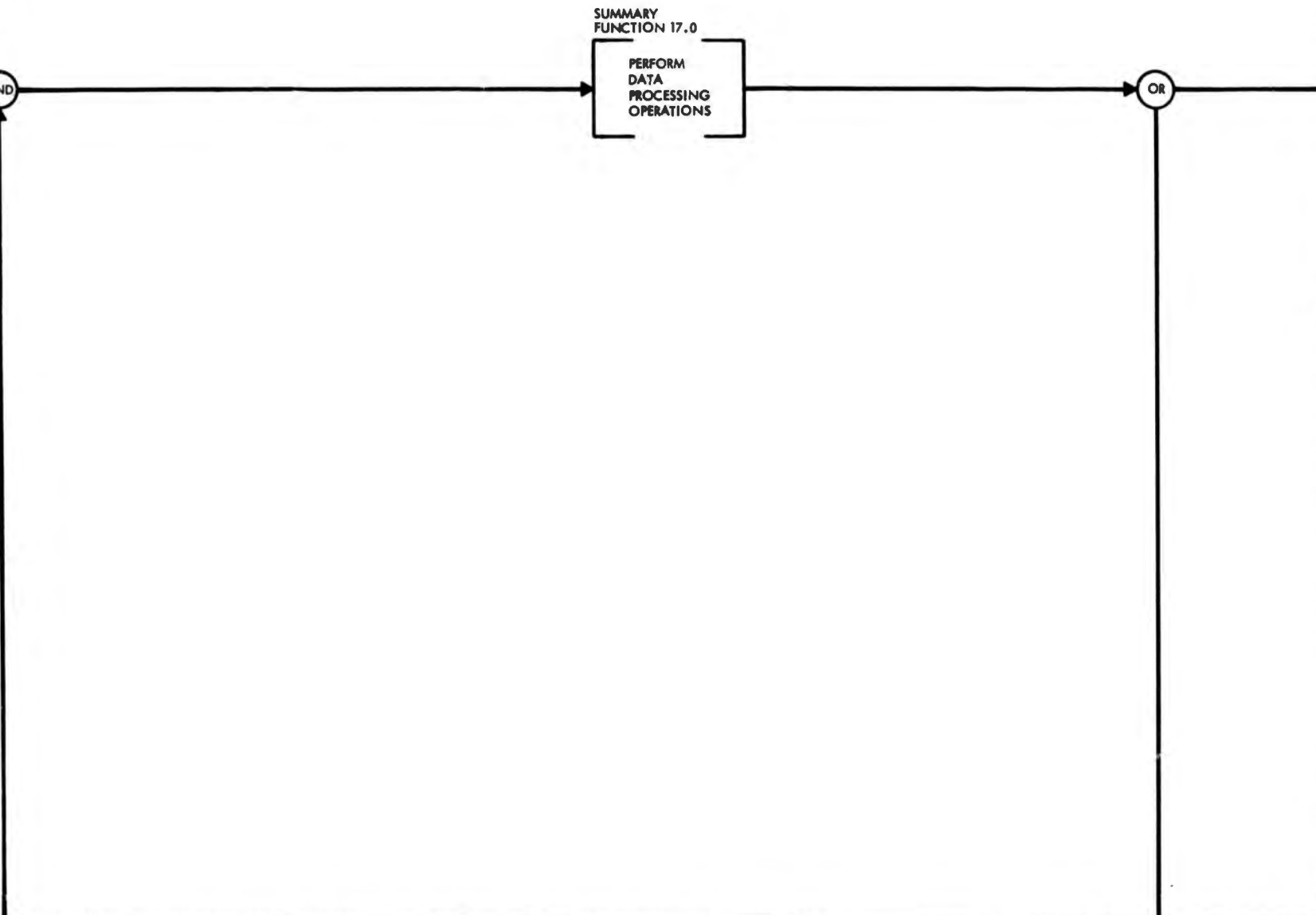
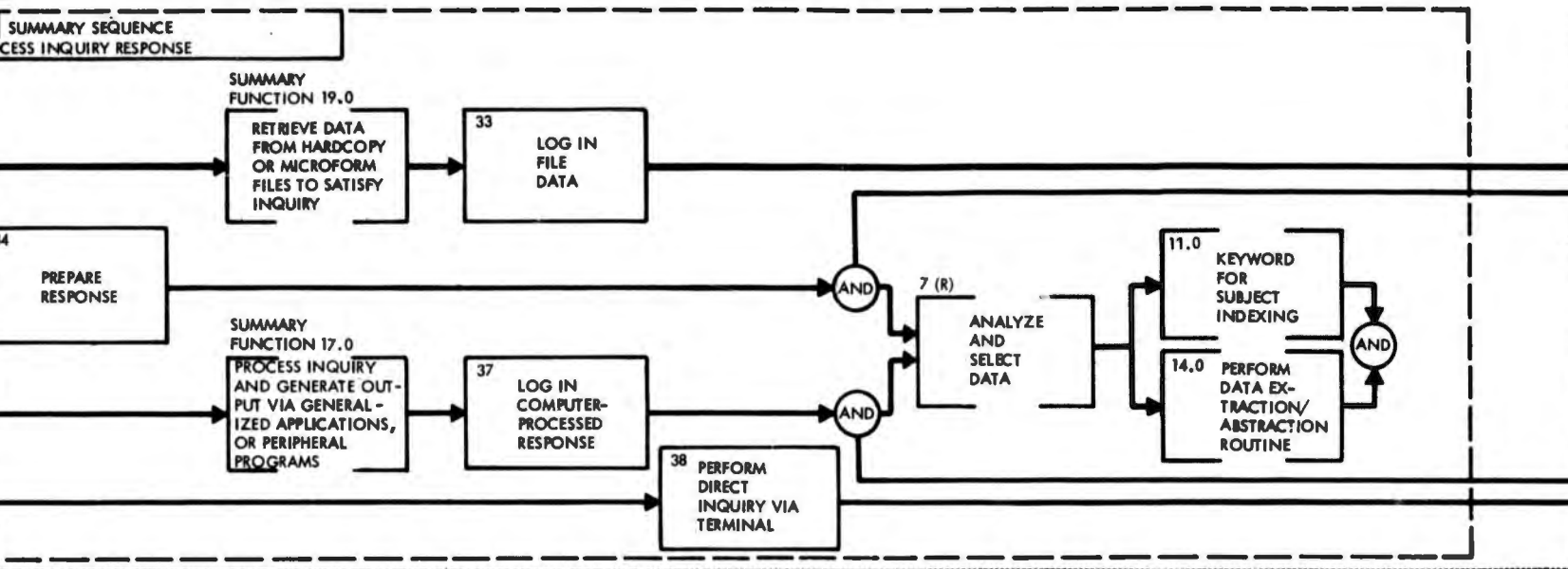
INPUT PREPARATION



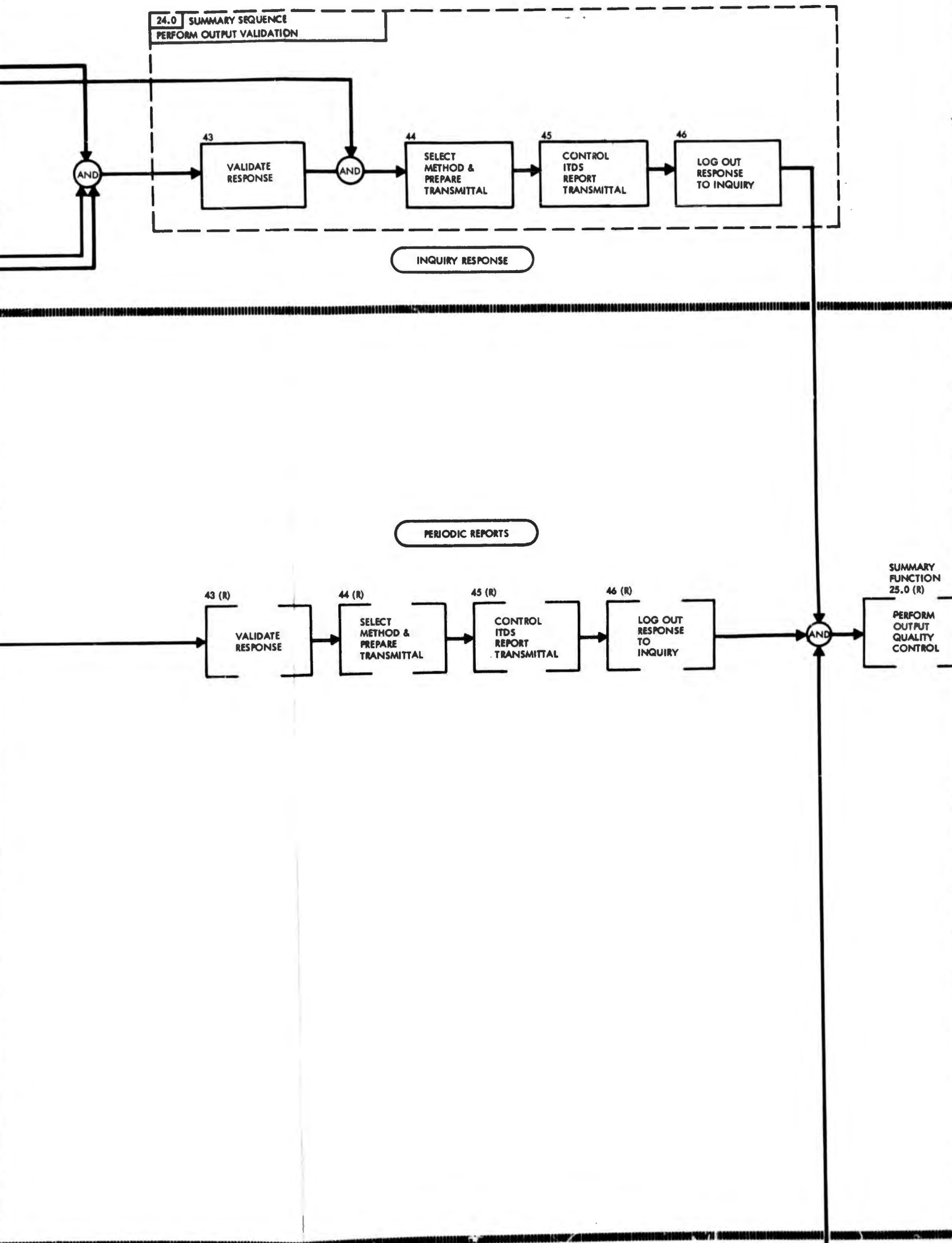
INQUIRY INPUTS

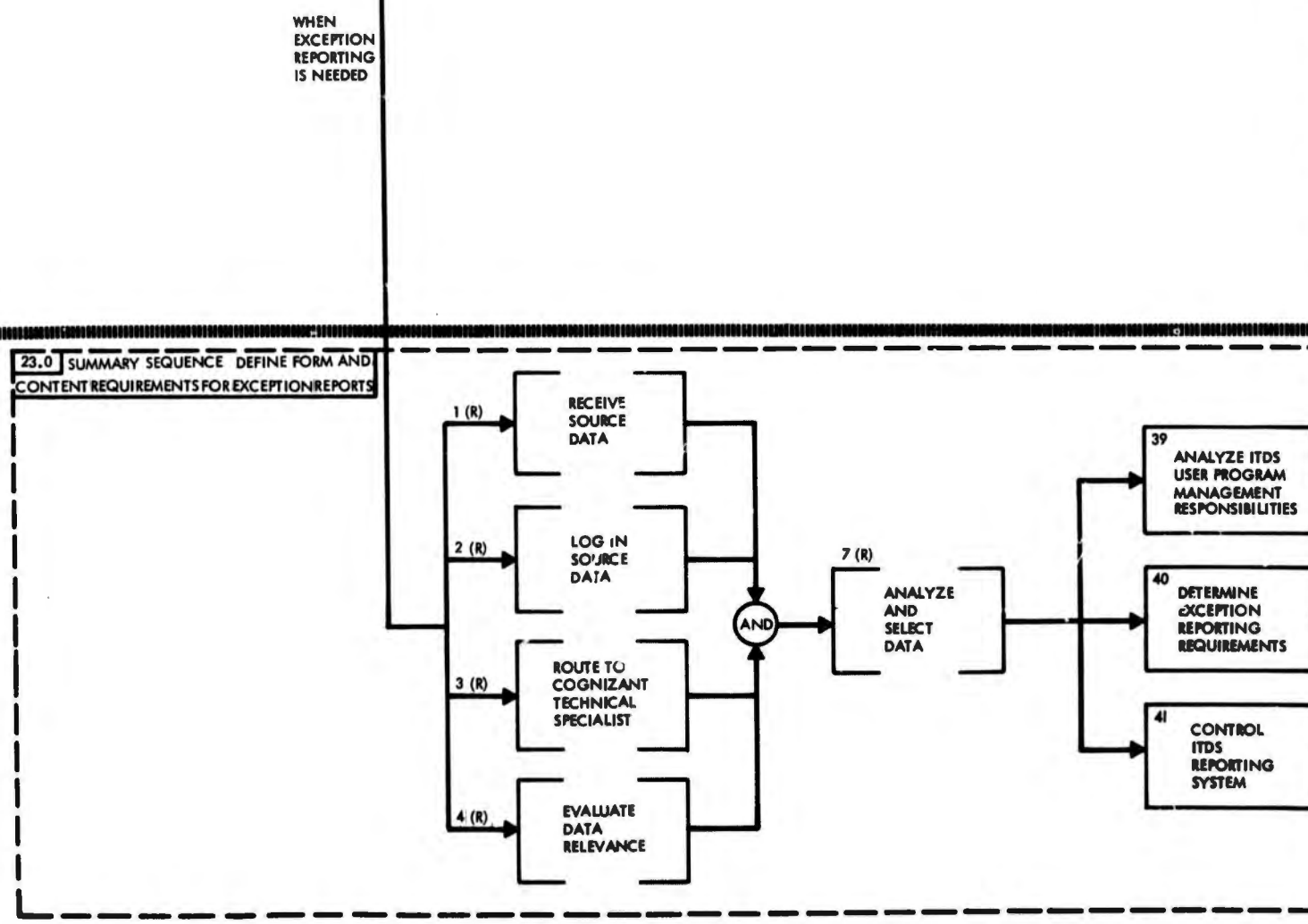
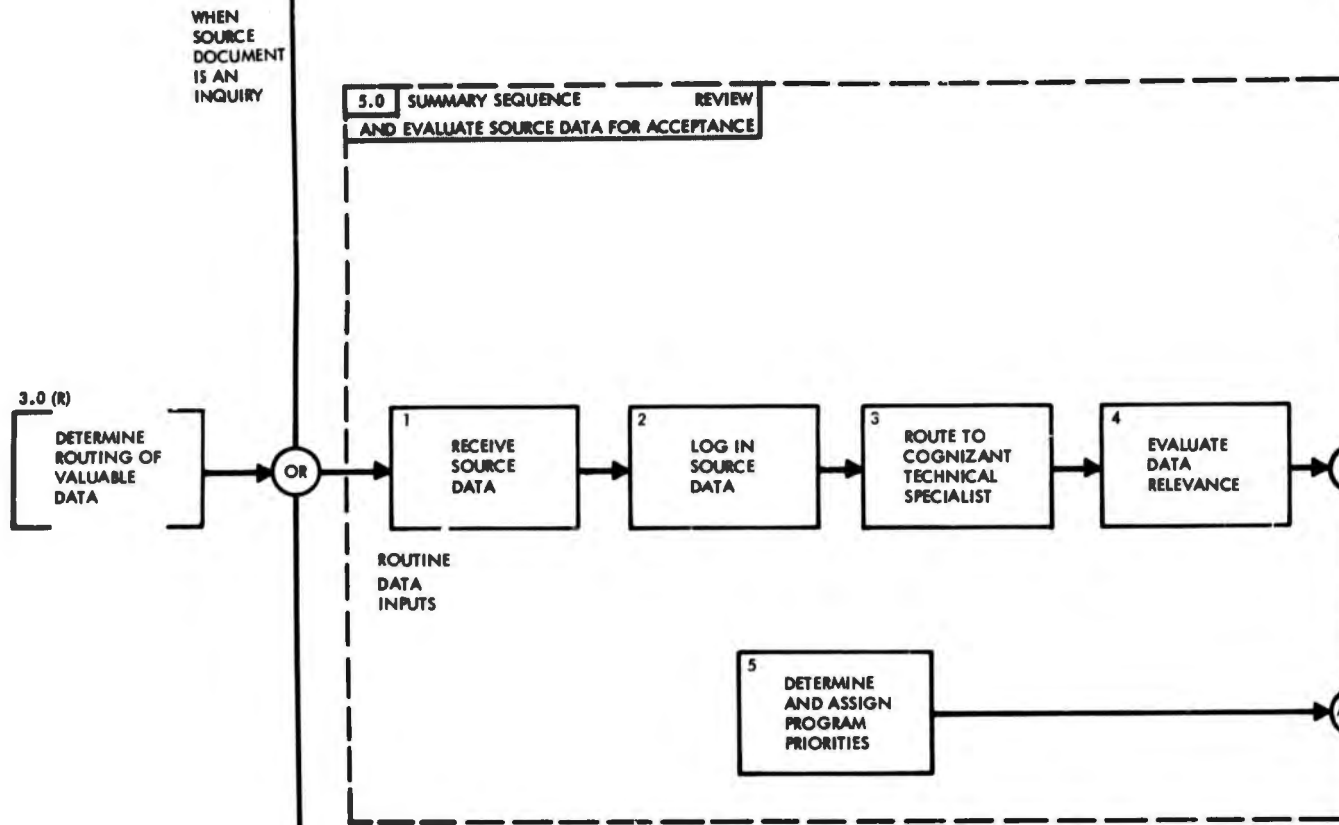


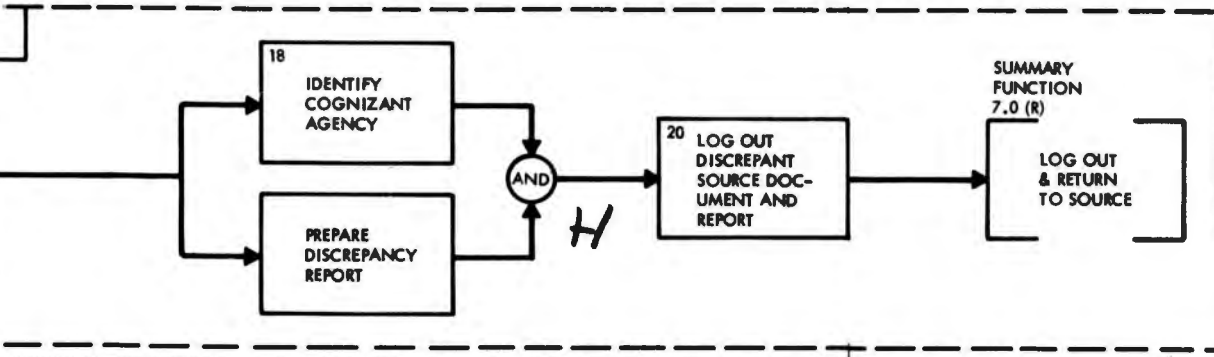
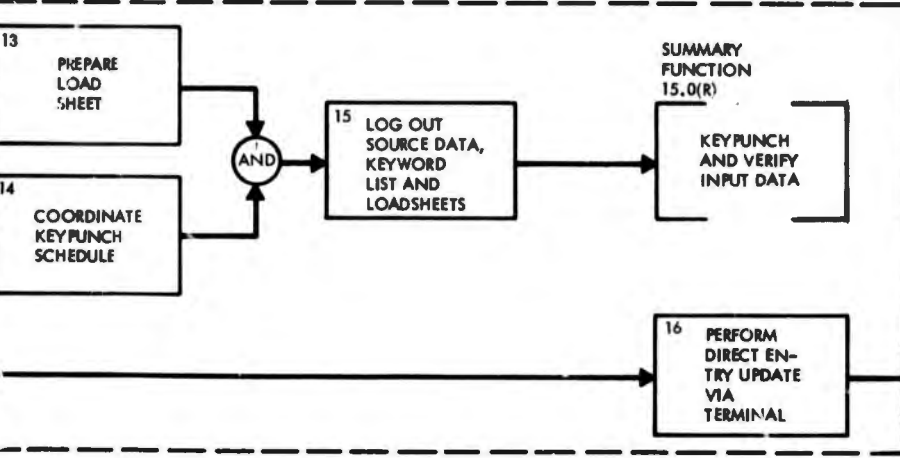
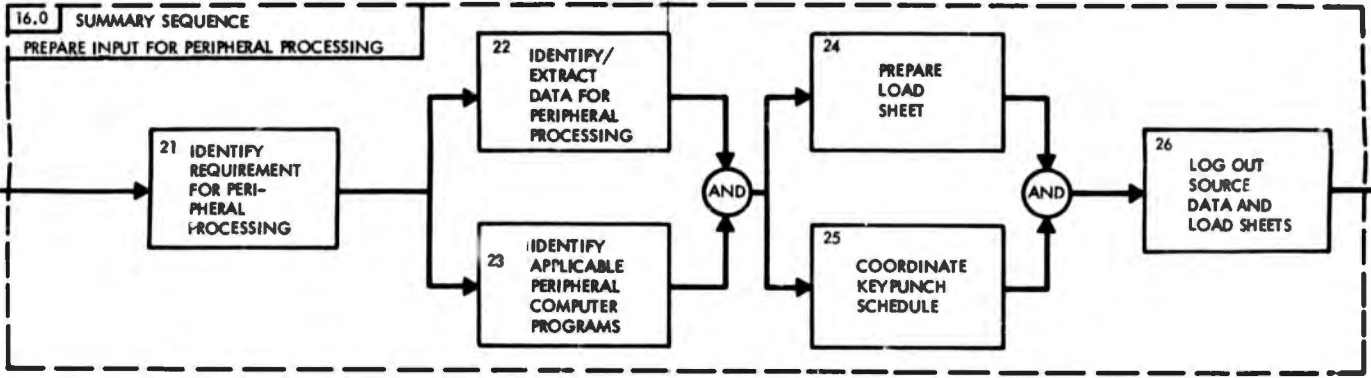
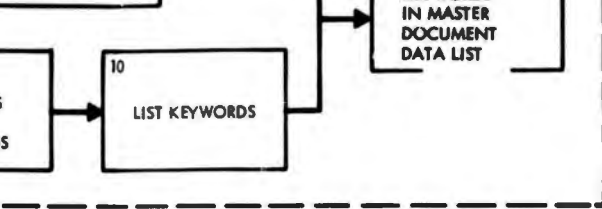
STORAGE, MANIPULATION, AND OUTPUT PRODUCTION



OUTPUT PROCESSING







REQUIREMENTS

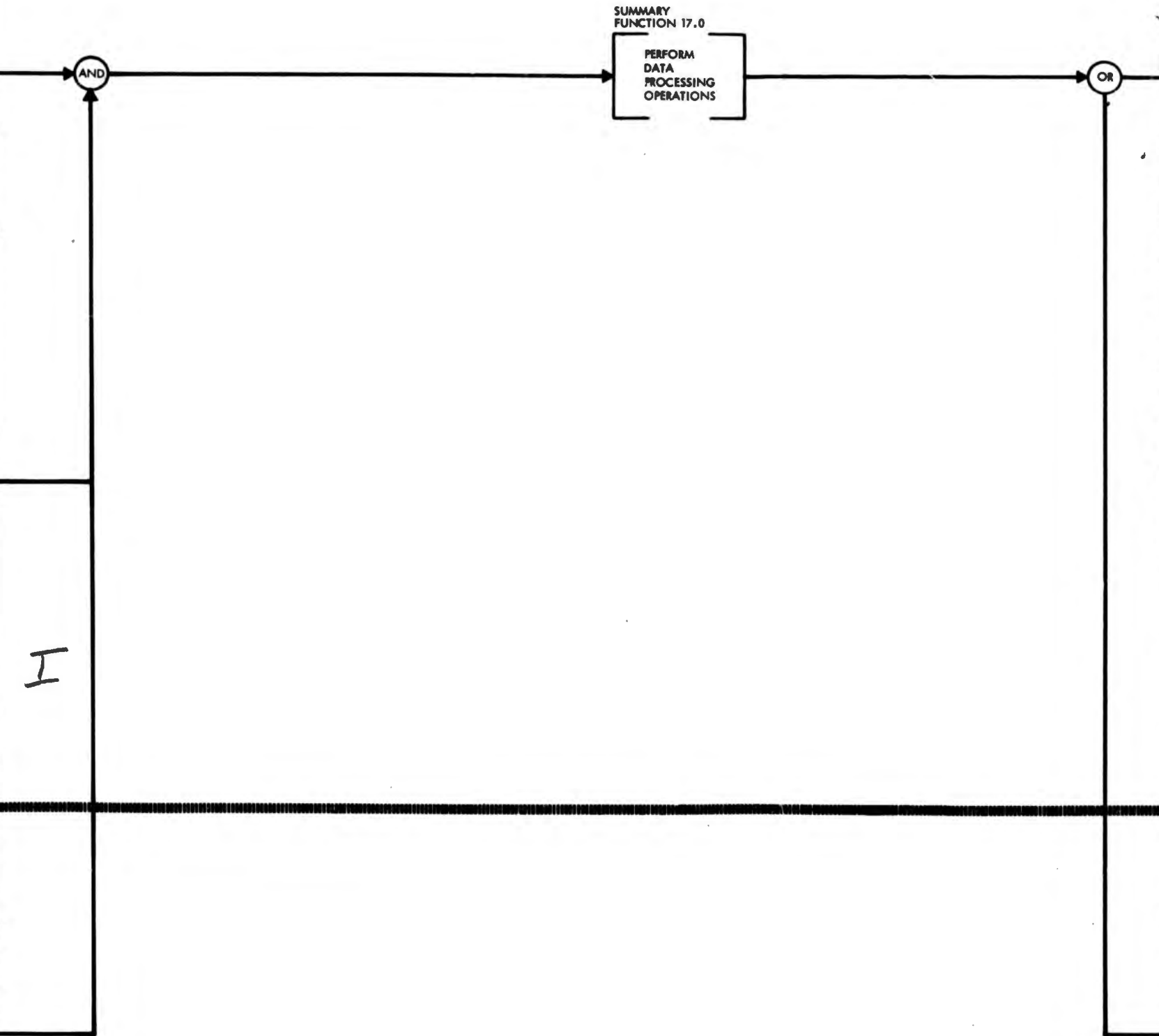
SUMMARY
FUNCTION 17.0

PERFORM
DATA
PROCESSING
OPERATIONS

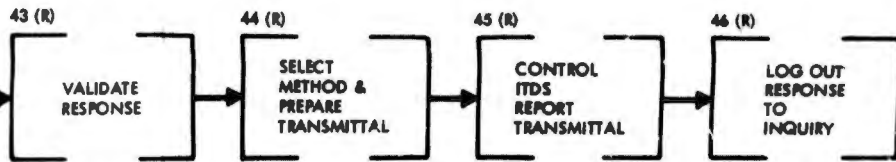
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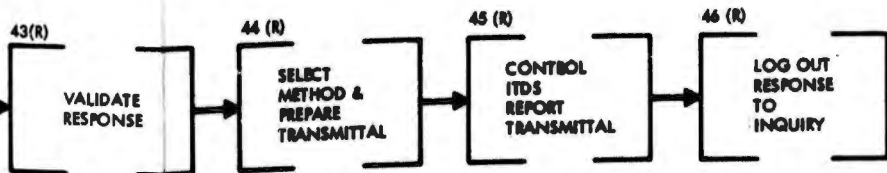


PERIODIC REPORTS



✓

EXCEPTION REPORTS

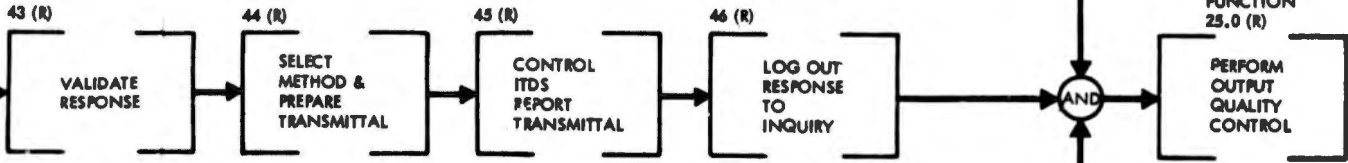


LEGEND

TASK DESCRIPTION	R - REFERENCE NUMBER
	SOURCE OF TASK IS ELSEWHERE, BUT IT OCCURS IN THIS SEQUENCE

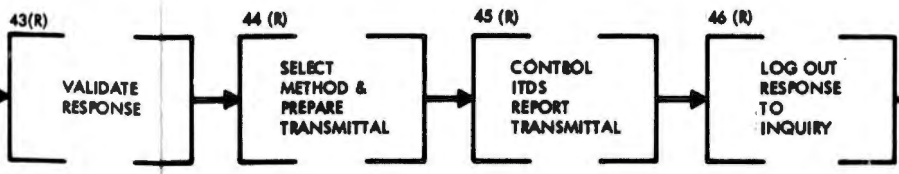
ITDS FUNCTION SUBSYSTEM C

PERIODIC REPORTS



K

EXCEPTION REPORTS



LEGEND

R - REFERENCE NUMBER

TASK DESCRIPTION

SOURCE OF TASK IS ELSEWHERE, BUT IT OCCURS IN THIS SEQUENCE

ITDS FUNCTIONAL DISCIPLINES SUBSYSTEM OPERATIONS FLOW