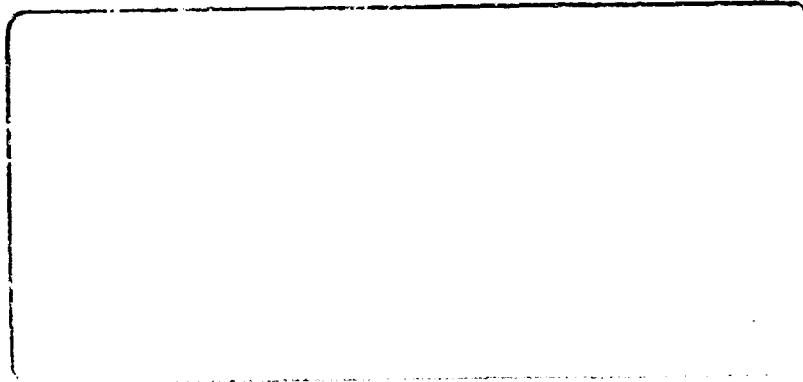


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EDIS TASK I REPORT
WORK UNIT 1.9
CATEGORIZATION OF EXISTENT
DATA SYSTEMS

20 January 1966

Contracting Officer
Research & Development Procurement Office, USAERDL
Fort Belvoir, Virginia

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ABSTRACT

This report, prepared for EDIS (Engineering Data and Information System) Task I, presents the results of Work Unit 1.9, Categorization of Existent Data Systems. Findings on individual data systems that were examined during this phase are presented under four groups: 1) systems that are currently being used by the Army; 2) systems used by the Army but operated by some other agency or organization; 3) systems which are being studied, planned, developed, or acquired by the Army; and 4) extant systems handling relevant data that could be but are not used by the Army at this time.

The data gathered on these systems are discussed as relevant to forming an integral part of the data base upon which the over-all EDIS design concept will be built. Possible ramifications of these data on interfaces, security procedures, priority, controls, indexing, communication, and the switching center(s), are included in the report.

Discussions are supported graphically by categorizing existent Army systems by: disciplines and item categories; disciplines and fields; and geographical location. These systems are identified by the type of equipment each uses (manual, EAM, graphic devices, and EDP). A directory of organizations by field is also given.

An analysis of the consistency and validity of gathered data is made. Lastly, recommendations and conclusions that have evolved from this effort are offered. A bibliography is included.

PREFACE

This report is one of a series of documents being prepared under the EDIS Task I contractual effort. The objective of these reports is to document existing and potential sources of, and requirements for, engineering and scientific data and information in the Army RDT&E community. The information contained in these reports will provide the primary input and Data Base to the Task II (software development), Task III (network design) and Task IV (training) efforts. Each report presents and discusses data and information gathered and analyzed in a specialized area of study pertinent to the design and development of EDIS. Although these documents are self-contained, each comprises part of a planned effort to develop a data base for decisions about the EDIS concept.

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1.0

SUMMARY

1.1 Purpose and Scope

The primary purpose of this report is to relay knowledge gained through a detailed examination of existent Army systems that are handling RDT&E data and information, and secondly, to offer the recommendations and conclusions that have evolved from this effort. The information reported is expected to form an integral part of the data base that is necessarily involved in the over-all EDIS design concept and succeeding EDIS tasks.

The major emphasis in this study has been placed on examining existent Army systems. The information gathered on these systems has been related to predetermined parameters such as: the type of equipment each systems uses (manual, EAM, graphic devices, and electronic data processing equipment); their geographic location in the United States; and the disciplines, fields, and item categories which these systems service. Other selected systems which were examined in a similar manner were: those which were reported to be in the study, planning, developmental, or acquisition stage by the Army; systems used by the Army but operated by another agency or organization; and systems not used by the Army at the present time, but which handle data and information that appears to be relevant to Army needs. The systems included in this study were limited to those which are connected

with research, development, test and evaluation (RDT&E).

For purposes of providing further familiarization with systems, the following parameters were examined, where available, for the systems covered by this report: 1) personnel required by the system; 2) present volume and rate of growth; 3) storage methods used in the system; and 4) brief descriptions of total system operation.

1.2 Conclusions

The following conclusions were reached under this work unit.

- a) Available information sources provided sufficient data for identifying and categorizing existent Army data Systems (Section 3.0).
- b) Preliminary assessment of the requirements for the follow-on systems work unit (1.5) indicates a lack of sufficient data for evaluating existent Army data systems (Section 3.2).
- c) Where existent systems data was checked, it was generally found to be accurate (Section 4.7).
- d) Areas of missing, incomplete, inaccurate, and obsolete information exist within the data used in this study (Section 4.7).
- e) Detailed interface data will be required by EDIS network designers. This requirement is mandatory if EDIS is to interface with, but not interfere with, existent systems (Section 6.0).
- f) Item Category is a satisfactory method of categorizing systems (Section 7.1).

- g) Although systems can be categorized via the NSF discipline scheme, modifications to it would be helpful, especially in the area of inter-disciplinary combinations (Section 7.2 and Appendix A).
- h) EDIS system interfaces will occur primarily through the filter (see Progress Report, June 15, 1965) located at the system/data bank, i.e., most existent Army data systems are not automated for electronic or semi-automatic entry (Section 7.4).
- i) Most existent Army data systems are in the discipline of ENGINEERING and located in the eastern half of the United States. This conclusion agrees in discipline and location with similar conclusions found in EDIS TASK I REPORT(S) Work Unit 1.2 and Work Unit 1.3, CATEGORIZATION OF AVAILABLE DATA AND INFORMATION and IDENTIFICATION OF USER NEEDS.
- j) Subject specialties cannot be adequately measured without consideration of the volume of material being held. (Section 7.3).
- k) Many systems are available to, and/or used by, but not operated by, the Army. These may contain D&I relevant to EDIS as indicated by other EDIS TASK I REPORTS (Section 8.2).
- l) EDIS should maintain an awareness of RDT&E data systems in the process of being studied, planned, or developed. This awareness should extend to data systems internal and external to the Army (Section 8.2, 8.3, 8.4).

1.3 Recommendations

- a) Data necessary for evaluation of existent Army Systems should be obtained (Section 3.2).

- b) Arrangements should be made for gathering current and periodically updating the systems data (Section 4.7).
- c) Data systems which presently are not known to exist, or will come into existence during EDIS tenure must have an input to EDIS (Section 3.0).
- d) Detailed interface data, as discussed in e of Conclusions (Section 1.2), should be updated and completed for those systems with which EDIS intends to interface (Section 6.0).
- e) The Federal Supply Catalog Classification scheme should be utilized by EDIS for item categorization, with recommended modifications (Section 7.1 and EDIS TASK I REPORT Work Unit 1.4 IDENTIFICATION OF DISCIPLINES AND FIELDS).
- f) Modification of the NSF discipline scheme, as indicated in EDIS TASK I REPORT Work Unit 1.4 IDENTIFICATION OF DISCIPLINES AND FIELDS, is necessary to provide better interdisciplinary combinations (Section 7.2).
- g) EDIS network design must provide for manual system interfaces (Section 7.4).
- h) A formula should be derived to establish a weighting factor, equalizing Subject Specialties and volume of D&I throughout the Army Data Banks. This is required to accurately relate data banks, systems, and users with the source of subject material (D&I) (Section 7.3).
- i) EDIS requires the development and maintenance of interface with existent non-Army Data systems having D&I relevant to Army interests (Section 8.2).
- j) EDIS has to maintain awareness of RDT&E data

systems in the process of being studies, planned,,or developed (Section 8.2, 8.3, 8.4)

1.4 Analysis

Two prime efforts are required if EDIS is to connect Army users of data with D&I sources. The first it to up-date the EDIS data base, and second, to tie together existent RDT&E data and information systems internal and external to the Army.

In updating the existent data base, EDIS will establish for itself a firm footing upon which design efforts for query handling and data input/changes will evolve. The requirement for this data base has been presented in every EDIS memo, report, or discussion or record. Since EDIS will be a communication network, delivering directions to data and information, it can be only as efficient as its source data base is accurate and complete.

Army RDT&E personnel need a single directory to connect them with available D&I. This directory should cover all data of interest be it internal or external to the Army proper. The concept of EDIS is that of a directory, not planning to contain information except on a limited basis. EDIS will direct a query/user to the most logical D&I resource to answer it. With this basic premise, EDIS offers to complement and/or assist all existent information systems in their goal to serve their potential users. EDIS is limited in this goal only by the data base upon which EDIS relies.

2.1 Background Information

In early 1965 the Howard Research Company began work on Task I of the Engineering Data and Information System (EDIS) for ERDL, Fort Belvoir, U. S. Army. The purpose of EDIS Task I is to determine the information needed and available, the location and characteristics of that information, and the strengths and weaknesses of existing systems presently handling engineering data and information. The objective of EDIS Task I is to supply EDIS Task II (Development of EDIS Software) and EDIS Task III (Network Design of EDIS) with a data base from which to proceed. The basic concepts of EDIS and their development are discussed in the EDIS-1 report, (AD 444700L), the EDIS-2 report (AD 453737L), the EDIS Task I Progress Report dated 15 June 1965, and the EDIS Task I Interim Report dated 1 September 1965. The latter two reports were prepared by Howard Research Company.

This report, prepared for EDIS Task I, presents the results of Work Unit 1.9, Categorization of Existent Data Systems. This work unit comprises the initial phase of a study of existing systems that are handling scientific/technical data and information in the Army or such systems that could be used by the Army. The second and final phase of this study will be accomplished under Work Unit 1.5, Evaluation of the Operation of Existent Data Systems.

2.2 Contents and Scope

This report presents characteristics of all of the data systems studied in Work Unit 1.9. Although major emphasis in this study was placed on examining existent Army systems, a selected number of scientific and technical information systems falling outside of this category were included in the study with a view toward their potential tie-in with the EDIS network. These selected systems are grouped under the headings: 1) systems that are in the study, planning, developmental, or acquisition stage by the Army; 2) systems used by the Army but operated by some other agency or organization, such as the one at Defense Documentation Center; 3) extant systems not used by the Army at the present time, but handling data that appears to be relevant to Army needs, such as the Science Information Exchange (SIE). To allow for comprehensiveness in conveying the data gathered, the systems are discussed generally in Section 510 System Profiles and specifically through predetermined characteristics in Section 810, Appendices A through D.

The data gathered on all of these systems are discussed as relevant to forming an integral part of the data base upon which the over-all EDIS design concept will be built. Possible ramifications of these data on communication interfaces, indexing, the switching center(s), and controls, priority, and security problems are included.

Existent Army data systems are categorized by: discipline and item category and discipline and field in Sections 7.1 and 7.2, respectively. These same systems are identified: 1) geographically by discipline and state, and 2) by the type of equipment used (manual, electronic accounting machinery, graphic devices and electronic data processing equipment). (Sections 7.3 and 7.4). A directory of Army organizations having systems related to specific subject fields is included. (Section 7.5).

An analysis is made of the consistency and validity of the data gathered, and recommendations and conclusions that have evolved from this effort are offered.

2.3 Definition of Terms

A logical place to begin the Categorization of Existent Data Systems was with a definition of the term "system". The purpose of such a written definition was to predetermine the kind of system with which we would be dealing and to provide a tangible control in collecting system data. Since this study emphasizes scientific and technical data, the following definition of the term system was chosen:

an assembly of interacting elements, including personnel, equipment and procedures, which provides some or all of the following functions: acquisition, classification, storage, search, retrieval, and dissemination of scientific and technical data and information.

Other terms used throughout this study are defined as follows:

- a. Data - A symbolic representation (e.g., letters, numerals, diagram) to which meaning may be assigned.
- b. Disciplines - Broad areas of knowledge which are composed of fields and specialties (e.g., engineering, physics, chemistry).
- c. Field - A division of a discipline which is composed of specialties (e.g., electronic engineering, civil engineering, mechanical engineering).
- d. Item Category - A scheme for classifying and identifying commodity supply items, e.g., "machine guns", by two ascending levels: by class, e.g., "guns, through 30mm" and by group, e.g., "weapons".

There were two prerequisites to categorizing the systems presented in this report: 1) gathering and organizing all of the information that is currently available on systems; and 2) determining from the information available what characteristics would be most useful in providing a library of findings on data systems through categorizing, identifying, and describing these systems.

3.1 Information Sources Used

In accordance with the action plan for EDIS presented in Report No. EDIS-1, this study includes examination of information contained in the U. S. Army On-Site Survey of Scientific and Technical Information (STINFO) and the DOD User Needs Study. In a further effort to gather the most comprehensive and current published information available on scientific and technical data and information systems in the RDT&E community, the following sources were also used: the Survey of Scientific and Technical Information Retrieval Schemes within the Department of the Army (BRL Report No. 1169 - July, 1962); the DOD Technical Data Systems Inventory (DD 1498 Forms); the Inventory of DOD Technical Logistics Data Actions and Related Efforts; a survey of mechanized technical libraries and information centers in the Department of Defense being conducted by Booz-Allen Applied Research, Inc.; The Use of Engineering Data in the Army Material Command by the Computer Usage Company, Inc. (15 August 1964); and a report by National Science Foundation, Non-conventional Technical Information

Systems in Current Use (October 1962). Of these sources, the BRL Survey proved to be more related and consistent to the needs of this study than any of the other available D&I sources, i.e., the responses to this survey were more specific and therefore more adaptable to the data gathering needs of Task I.

3.2 Information Required for Task

It was decided early in Task I that a number of parameters related to the systems characteristics were salient to gathering data as a base for determining the "problem solution" for EDIS. These parameters were designated as check-list items and for each system studied, an attempt was made to systematically record the answers to these items. The items were:

- Installation
- Organization
- Organizational Element
- Contents and Scope
- Discipline Field
- Item Category
- Input Format
- Output Format
- Method of Inquiry
- Method of Storage
- Method of Reproduction
- Method of Dissemination
- Method of Transmission
- Volume
- Rate of Growth
- Frequency of Inquiry
- Indexing Technique
- Type of File Organization
- Vocabulary (Thesaurus of Word List) Used

Personnel Required
Equipment Utilized
Average Response Time
Software Utilized
Purpose of the System
Users Services
System Operation
Administrative Controls
Communication Methods
Technical Compatibilities
Interface Characteristics
Economic Justification
Future Growth Potential
Services Potential
References

In an effort to streamline the total Task, it was decided to select items which would fulfill not only the initial requirements of Work Unit 1.9, but to include those items which would also be necessary to accomplish the final phase, Evaluation of the Operation Existent Data Systems. In addition, it was decided that since many of these items would be imperative to the successful accomplishment of many of the necessarily overlapping activities of succeeding EDIS Tasks, this parallel effort would result not only in an over-all time and cost savings, but would also point out the lack of pertinent items of information while there is sufficient time remaining to obtain the necessary information. Unfortunately this task effort revealed that most of these parameters were not included in sources being used for this study. Therefore, only the limited set of the parameters listed in Section 5.0 are in the system

descriptions given in Appendices A through D. The additional parameters will be obtained under the follow-on work unit, Evaluation of Operation of Existent Data Systems.

4.1 Introduction

To insure that the information gathered in this study on Categorization of Existent Data Systems will supply the EDIS network designers with a well grounded data base, the information gathered was analyzed on two levels: 1) specifically, in relation to the individual source from which it was obtained; and 2) collectively, by evaluating all of the information gathered from the standpoint of consistency and validity. The succeeding sections 4.2 to 4.6 inclusive discuss the individual sources used for data gathering in this study. Section 4.7 presents the collective analysis which incorporates efforts to match, relate, and standardize the information used for this study with other available sources.

4.2 Ballistics Research Laboratories Survey

The BRL Survey, initiated in November 1961 and terminated in May 1962, measured the current status of scientific and technical information retrieval schemes within the Department of Army. Unlike the EDIS concept, which is concerned with serving data systems in the scientific and technical RDT&E community, the BRL Survey was limited to those organizations which were engaged in research and development only. It should be noted that the Biological Laboratories at Fort Detrick, Maryland, well covered by the BRL Survey because of their

extensive research activities, accounted for almost half of the systems included under the discipline of biology in this report. Because these Laboratories, alone, maintain many small manual systems in the fields of biological research, this discipline ranks second only to engineering in total number of systems studied during this phase of Task I. Approximately eighty-five percent of the information contained in the BRL Survey was found useful for: locating systems geographically by installation, organization, and organizational element; categorizing systems by discipline, field, and item category; and in identifying the type of equipment used by each system.

Through most of the available sources, the specific number (or model) of the equipment could be obtained for each of the systems. This information will be used in the Evaluation Phase of Task I in relating not only the type of equipment actually used by various systems but total equipment capabilities, as well, to: average response time for inquiries; users serviced; total system cost; and the necessary communication interfaces between systems, e.g., methods of storing and transmitting data, indexing techniques (including depth and sophistication), vocabulary/thesaurus, coding schemes, and software. In some cases, there were inconsistencies in the information available on types and number of personnel used in the system (e.g., there was no standardization on what constituted professional or non-professionals used in

the system and the amount of time each type of personnel devoted to the system). Samples of these inconsistencies are the following replies to questions on personnel:

- a. 15-20 scientists or technical personnel (part-time) to take data and prepare reports.
- b. No one individual is assigned for this duty. Approximately 80 civilian and military personnel from GS-7 to GS-15 perform functions as necessary.
- c. Development engineers, 12 (part-time).
- d. Literature investigators and one secretary. Time required unknown.
- e. One man operation.
- f. One scientist (part-time).
- g. Principal investigators, clerical assistants (part-time).
- h. Engineer, one (part-time), technician, one (part-time).
- i. Librarian 1% time.

4.3 On-Site STINFO Survey

The major emphasis of this survey, terminated in September 1964, was placed on activities, funding, personnel and holdings. From the data gathered on one or more of these parameters, it was possible to derive the type of equipment used by many of the systems. Aside from this parameter, the only other check-list item of real value in Categorizing Existent Data Systems was information on the type of personnel required by the systems. As in the BRL Survey, inconsistencies were encountered in the On-Site STINFO Survey on replies to

types of personnel used. In this survey, personnel used in the system were reported as professional or sub-profession. The total time devoted to a particular system was aggregated for each of these two categories, e.g., 1 mathematician (5% of the time) and 1 information specialist (55% of the time) would appear as "professional" (60% of the time).

The On-Site STINFO Survey makes reference to a number of large-scale information systems, including EDIS, CIDS, and ALPHA. However, the only specific information provided by the survey is the designation of a point of contact for these systems.

In addition, the On-Site STINFO Survey questionnaires provided indications of the existence of other information systems. A careful examination indicated 55 partially identified, and thereby, potential systems. (For example, the system was assumed present if the On-Site Questionnaire indicated Termatrix equipment, however, nothing was definite if magnetic tape was listed.) Some of these were eliminated as the system data was already available, others remain in the "possible" category and will be further examined under the "Evaluation of Systems" work unit.

4.4 Computer Usage Company, Inc. Survey

This survey, initiated in March 1964 and terminated in June 1964, concentrated on the hardware in actual use or suggested for use in the processing of engineering

data within the Army Materiel Command. Unlike the EDIS user oriented philosophy, the CUC Survey was directed toward uncovering "management's view of the problems of technical data and developing a suggested system or systems for improving the utilization of that data for management purposes". Because of these differences in study orientation, the type of equipment used in the various systems was the most valuable parameter obtained from the CUC Survey in the Task of Categorizing Existent Data Systems.

4.5 DOD Technical Data Systems Inventory

The Technical Data Systems Inventory was begun on 4 May 1965 and was terminated on 15 May 1965. The reporting form used by this inventory was the DD Form 1498. In contrast to the management oriented systems covered by the Computer Usage Company's survey and discussed earlier, the TDS Inventory is directed toward those systems handling technical data serving primarily "working level" personnel (e.g., engineers, scientists, and technicians). These systems included those which are at "some stage of planning, development, acquisition, or actual use" and are automated or mechanized to a point which clearly distinguishes them from manual systems.

The format of the DD 1498 Form, in many cases, was not conducive, to providing EDIS with the information required for a data base, e.g., the responses to the inventory were too broad to be of any great value in

determining the system parameters needed for this study. For instance, it was extremely difficult to determine just what "stage" of development the system was in, i.e., study stage, acquisition, actual use, etc. Moreover, although keywords were provided, they did not give a representative picture of the D&I in the system under discussion. In effect, the information provided by these forms was too general or incomplete to be considered a dependable source. Because of these factors, it was necessary to spend effort on validating the data gathered from this source. These criticisms are supported, in part, by recent comments that appeared in the Army Research and Development Magazine in reference to the information recorded on the 1498 Forms: ". . . another critical deficiency is that many reports are not retrievable due to the use of irrelevant and non-descriptive keywords, or were indexed by too few keywords" and there was ". . . identification of only one scientific area when additional areas obviously were related. . ."

4.6 DOD User Needs Study

In this study, no specific information is presented on data systems except for the names 33 specialized information/data centers which presumably use some type of information retrieval system. For reference, the names and addresses of these centers are given below:

BALLISTIC MISSILE RADIATION ANALYSIS CENTER
Institute of Science and Technology
Ann Arbor, Michigan

LIQUID PROPELLANT INFORMATION AGENCY
The Johns Hopkins University
Silver Spring, Maryland

POWER INFORMATION CENTER OF THE INTERSERVICE GROUP
FOR FLIGHT VEHICLE POWER
Philadelphia, Pennsylvania

THE SOLID PROPELLANT INFORMATION AGENCY
The Johns Hopkins University
Silver Spring, Maryland

U. S. ARMY ROCKET AND GUIDED MISSILE AGENCY,
TECHNICAL LIBRARY
Redstone Arsenal, Alabama

U. S. ARMY ENGINEER WATERWAYS EXPERIMENT STATION,
RESEARCH CENTER
Vicksburg, Mississippi

U. S. NAVAL OBSERVATORY, NAUTICAL ALMANAC OFFICE
Washington, D. C.

HIBERNATION INFORMATION EXCHANGE
c/o Office of Naval Research
Chicago, Illinois

U. S. ARMY, DEPARTMENT OF RADIOBIOLOGY
Walter Reed Army Medical Center
Washington, D. C.

U. S. ARMY, NATIONAL INDEX OF FUNGUS CULTURES
Pioneering Research Division
Natick, Massachusetts

JOINT ARMY-NAVY-AIR FORCE THERMOCHEMICAL DATA
Midland, Michigan

BATHYTHERMOGRAPH DATA PROCESSING AND ANALYSIS
OCEANOGRAPHIC DATA ARCHIVES
La Jolla, California

CLIMATIC CENTER, USAF, AIR WEATHER SERVICE (MATS)
Washington, D. C.

NATIONAL OCEANOGRAPHIC DATA CENTER
Washington, D. C.

VELA SEISMICS INFORMATION AND ANALYSIS CENTER
Ann Arbor, Michigan

ADVISORY GROUP ON ELECTRONIC PARTS
Philadelphia, Pennsylvania

ARMED FORCES PEST CONTROL BOARD
Walter Reed Army Medical Center
Washington, D. C.

ARMED FORCES INSTITUTE OF PATHOLOGY
Washington, D. C.

U. S. ARMY ORDNANCE, HUMAN ENGINEERING LABORATORY
Aberdeen Proving Ground, Maryland

DEFENSE METALS INFORMATION CENTER
Columbus, Ohio

INFORMATION SERVICE IN SILICATE SCIENCE
Toledo, Ohio

NATIONAL ACADEMY OF SCIENCES, PREVENTION OF
DETERIORATION CENTER, NATIONAL RESEARCH COUNCIL
Washington, D. C.

U. S. ARMY, PLASTICS TECHNICAL EVALUATION CENTER
Picatinny Arsenal
Dover, N. J.

LOGISTICS RESEARCH PROJECT, GEORGE WASHINGTON
UNIVERSITY
Washington, D. C.

U. S. ARMY, MATHEMATICS RESEARCH CENTER
University of Wisconsin
Madison, Wisconsin

U. S. AIR FORCE, AIR INFORMATION DIVISION
Washington, D. C.

ARMED FORCES-NATIONAL RESEARCH COUNCIL COMMITTEE
ON VISION
Washington, D. C.

DEFENSE LOGISTIC SERVICES CENTER
Battle Creek, Michigan

INDEX OF SPECIFICATIONS AND STANDARDS (DODISS)
Naval Supply Depot
Philadelphia, Pennsylvania

FOREIGN TECHNOLOGY DIVISION OF AFSC
Wright Patterson AFB
Dayton, Ohio

FOREIGN SCIENCE AND TECHNOLOGY CENTER, U. S. ARMY
Washington, D. C.

DIVISION OF MISSILE INTELLIGENCE
Army Missile Command
Huntsville, Alabama

LAWRENCE RADIATION LABORATORY
Livermore, California

Selected data systems from this list appear in Section 8.0, Appendices A through D.

4.7 Consistency and Validity

Because of the overlapping nature of the activities in Task I, the major function of confirming the data gathered on data systems will necessarily fall within

the realm of the second phase of this Task, Evaluation of the Operation of Existent Data Systems. However, it appears judicious, at this time, to note that the information content of the available sources referenced in Sections 4.2 through 4.6 varies in format, level of detail, and completeness from source to source. Since the requirements of scientific and technical data systems are dynamic, as opposed to static in nature, the following assumptions can be made: a) the indications of obsolescence in some of the information gathered are valid, e.g., such parameters as "contents and scope", "volume", and "equipment utilized" are subject to rapid change; b) new scientific and technical information systems have evolved since, for instance, publication of the BRL Survey; c) systems have been transferred or merged with other systems as some Army installations or organizations have been consolidated.

An attempt was made to identify inaccurate or incomplete information gathered through available sources (and where possible to supply this information), and to standardize individual peculiarities appearing in the information gathered from the available sources referenced in Sections 4.2 through 4.6 of this report. In addition to cross-checking these available sources to uncover discrepancies, the additional sources listed below were used to confirm data gathered:

- a. A guide to the Army Materiel Command Organiza-

tion and Missions published 1 January 1965 by Headquarters, AMC confirmed information on organizations.

- b. An Inventory of DOD Technical Logistics Data Actions, January 1964, provided a check on the accuracy of information gathered on "system operation".
- c. A survey of mechanized technical libraries and information centers in the Department of Defense being conducted by Booz-Allen Applied Research, Inc. substantiated some information gathered on equipment.
- d. Confirmation of data gathered on systems at the following installations was made by telephone using ARO's AUTOVON facilities:
 - 1) Fort Huachuca, Arizona
 - 2) Detroit Arsenal, Warren, Michigan
 - 3) Springfield Armory, Springfield, Massachusetts
 - 4) Fort Lee, Virginia
- e. An article appearing in the October 1965 issue of Army Research and Development magazine gave current information on the Army's portion of the DOD reporting system (DD Form 1498).
- f. Information issued through a brochure on D&I at Rock Island Arsenal supports the data gathered on disciplines and fields for this installation.
- g. An article in the October 1965 issue of Army Research and Development magazine confirmed disciplines and fields gathered from various sources.
- h. Current information on the D&I at Dugway Proving Ground, Utah, was provided by a letter from the Scientific Director of Dugway to Chief, Scientific and Technical Information, OCRD. The contents of this letter compare well with the data on systems at this installation.

The results of these checks on the validity and con-

sistency of data gathered for use in the EDIS design concept shows that while most of the data was found to be accurate, there were, as suspected, areas of missing, incomplete, inaccurate, and obsolete information. Arrangements should be made to collect current data for these problem areas and to make provisions for periodically updating the data on systems to provide the valuable input needed for the EDIS Task III effort.

For each system identified from available sources, certain characteristics were obtained to make possible the categorization of system by discipline, item category, and other appropriate parameters. In addition, identification schemes were devised to effectively present the available data in a logical and readable format. The following sections discuss the parameters used to further characterize data systems and describe the means by which these parameters are presented in Appendices A through D.

5.1 Description of Systems

The information presented in Appendices A through D presents the actual data gathered on the data systems that have been discussed and categorized in this report. It was decided early in Task I that a number of parameters related to a system's characteristics were salient to gathering data as a base to assist the network design of EDIS. These parameters were designated as check-list items, and the items for which enough meaningful information could be obtained were selected for inclusion in this report. They are:

- Installation
- Organization
- Organizational Element
- Contents and Scope
- Method of Storage

Volume
Rate of Growth
Personnel Required
Equipment Utilized
System Operation

An effort was made to obtain the necessary information for these items. For the most part, this effort was successful; nevertheless, some of the information is incomplete and must be updated in future work units.

5.2 Format

Data systems and their respective item descriptions have been divided into four categories appearing in Appendices A - D. These are as shown below:

- A. Existent Army systems
- B. Systems used by the Army but operated by another agency or organization
- C. Systems in process of being studied, planned, developed, or acquired by the Army
- D. Systems which could be but are not used by the Army.

Each system has been assigned a number within the above grouping which can be related to the equipment and item category tables. The numbers were assigned consecutively to organizations and organizational elements located at a particular installation. Below the numbers appear the parametric items and the respective item descriptions.

5.3 Disciplines

In addition to the system descriptions, each system was categorized according to the scientific and technical disciplines which are representative of the data system. Discipline designations were made using as a reference the Index of Fields and Specialties, which was used by CEIR and the Army for the On-Site STINFO Survey (See Appendix F).

6.0 FURTHER SYSTEMS DATA STUDY

The prime use of the information systems data being presented by this task is to provide a base for the network design in later EDIS Tasks. The function of interfacing these systems with the EDIS network will be a major EDIS problem. It is the purpose of this section to present some of these known problem areas.

6.1 Systems Interfaces

EDIS must allow for an interface without attempting to alter the existent system. Therefore, this work unit has attempted to gather information on the equipment, personnel, system parameters, degree of automation, and internal system interfaces, be they personnel or mechanical, for the enlightenment of the EDIS designers. This data will be presented in the system evaluation study (Work Unit 1.8) and is mentioned here only to give this report complete coverage. The actual use and storage of this data within EDIS will lie between the information supplied to each "filter" (see Progress Report EDIS Task I, June 15, 1965) and the information stored at the switching center(s). It is germane to discuss some of these types of data and their uses to explain the "systems evaluation" concept.

6.1.1 Systems Indexing

Both the common language and the searching structure must allow for variations in the indexing used at different systems. This is especially true if the system

has a mechanical interface available to EDIS. The method of indexing and the indexing controls will be of prime consideration to common language and network design personnel.

6.1.2 Controls, Priority, and Security

The functions of EDIS information systems must have controls placed upon them by management, security, dollars available, personnel, and demand. It will be important for EDIS users to have a knowledge of these as their expected response and the response time may rely a great deal on these factors.

6.1.3 Response Factors

Each system responds to a query in a different fashion - one via a bibliographic printout, another via a list of accession numbers, yet another with an actual answer. This response may or may not satisfy the user of EDIS - it is important that he know what to expect before he queries the distant data bank. Not only is the response format important, but the response time can be either critical for a reply or for the D&I. For example, an EDIS query may locate the source of a particular drawing, the local system may retrieve the drawing in 0.6 seconds, but the only method of getting a copy from the remote data bank to the user is via air mail, taking two days. This may not suffice for some applications, and the user will wish to look elsewhere.

6.2 Systems Communication

It is essential that the switching center(s) and/or EDIS monitor be up to date on significant changes in information systems integrated with EDIS. As the communications network is drawn up by EDIS designers, this function will be accommodated. Important at that time will be the best "common denominator" to integrate the EDIS scheme. Data from each system will tie into the network to keep all information networks current.

This function may be further encumbered with the problem of relaying part or all of this information to the "filters", if the information entails data under their assigned jurisdiction.

6.3 Systems Design

This section has presented problems to be solved by the network designers. However, as in most R&D efforts, the problem is which came first, the design of a system or the system design problems. In EDIS, Task I has attempted to outguess the actual system designer in some areas, in order to supply data to him in advance of his actual need. It is a Task I policy to apply this method in directing its research toward the best possible goal for EDIS. Therefore, as efforts progress and problems evolve, further systems data study will adapt to encompass all problem areas recognized and approved by the Task I contractor and technical director.

7.0 CATEGORIZATION AND IDENTIFICATION OF SYSTEMS

Using the information contained in the descriptions of existent Army systems in Appendix A, each system was categorized by: discipline and item category; discipline and field; and geographical location. These same systems were further identified by: type of equipment used; geographical location in the United States; and by organization and field.

Discipline and field designations were made using, as a reference, the Index of Fields and Specialties (See Appendix F) which was used by CEIR and the Army for the On-Site STINFO Survey. Item category designations (groups and classes) were made using the Federal Supply Classification, Cataloging Handbook #2-1, as a reference (See Appendix E).

The results of these findings on existent Army data systems are presented in the following five tables:

Table 7.1 - Categorization of Existent Data Systems by Discipline and Item Category

Table 7.2 - Categorization of Existent Data Systems by Discipline and Field

Table 7.3 - Geographical Distribution of Existent Data Systems by Discipline and State

Table 7.4 - Identification of Existent Data Systems by Type of Equipment Used

Table 7.5 - Identification of Existent Data Systems by Organization and Subject Field.

Each table is prefaced by an explanation.

7.1 Categorization of Systems by Discipline and Item Category

Table 7.1 presents a categorization of existent Army data systems by discipline and item category. The item categories are arranged alphabetically under the disciplines from which they were obtained. The classification scheme presented in this table was derived from the one used in the Federal Cataloging Program and published as the Federal Supply Classification, Part 1, Groups and Classes (see Appendix E for sample classifications from this publication).

It was found that systems may be easily classified by item category if the RDT&E activity associated with the system involves something physical, e.g. ammunition and explosives or chemical products. Since the FSC is a commodity classification designed to serve the functions of supply, it was not possible to categorize the systems such as those referenced below that contain:

System field and laboratory data on densification
#100 of snow, confined compressive strength of snow, and deformation of footing foundations on snow.

System information on human performance capabilities
#12 and limitations as related to weapon requirements and affected by task related criteria such as, information processing, time constraints, work space conditions, etc.

System field data, such as tests on ice strength
#99 and deformation, sea ice salinity, and load tests.

System data on the normal microbial flora of the air.
#57

System histologic and pathologic case study data.
#31

System clinical and laboratory records of mechanical
#91 and clinical trauma.

For example, System #100 could have been classified by the item category, "Snow and Ice". However, such a group or class did not appear on the FSC classification used as a guide. Since most of the systems could be categorized by item category, it would be prudent to retain, but modify, the FSC scheme to include additional item categories appropriate to systems in the RDT&E community.

DISCIPLINE

ITEM GROUP

ITEM CLASS

SYSTEM NUMBER*

CHEMISTRY	Agricultural Supplies	Forage and Feed	44
	Ammunition and Explosives	Military Biological Agents	42, 48, 54, 55, 61, 63, 64, 66, 67, 71
	Containers, Packaging, and Packing Supplies	Ammunition Boxes, Packages and Special Containers	61
	Medical, Dental, and Veterinary Equipment and Supplies	Drugs, Biologicals, and Official Reagents	50, 56, 144
	Medical, Dental, and Veterinary Equipment and Supplies	Medical and Surgical Instruments, Equipments, and Supplies	92
	Medical, Dental, and Veterinary Equipment and Supplies	(Undetermined)	141
	Ammunition and Explosives	Military Biological Agents	42, 48, 55, 66, 67, 71
	Chemicals and Chemical Products	Chemicals	22, 26, 36, 46, 59, 143, 144
	Chemical and Chemical Products	(Undetermined)	118, 141
	Ores, Minerals, and Their Primary Products	Additive Metal Materials and Master Alloys	155
EARTH SCIENCES	Ores, Minerals, and Their Primary Products	Minerals, Natural and Synthetic	133, 134, 135, 136

* Refers to the number assigned to each description of existent Army data systems in Appendix A.

Table 7.1 CATEGORIZATION OF EXISTENT DATA SYSTEMS BY DISCIPLINE AND ITEM CATEGORY

<u>ITEM GROUP</u>	<u>ITEM CLASS</u>	<u>SYSTEM NUMBER *</u>
MATHEMATICS	Motor Vehicles, Trailers and Cycles	10
	Nonmetallic Fabricated Materials	126
	Nuclear Ordnance	120, 137, 161, 168
	Ores, Minerals, and Their Primary Products	155
	Ores, Minerals, and Their Primary Products	159, 160, 161, 163
	Textiles, Leather, Furs, Apparel, and Shoe Findings, Tents and Flags	77
	Tires and Tubes	133
	Weapons	37
	Weapons	126
	Weapons	4, 7, 36, 125, 127, 129, 130, 131, 163
PHYSICS	Fire Control Equipment	6
	Guided Missiles	6
	Communications Equipment	83, 86
	Nuclear Ordnance	168
	Ores, Minerals, and Their Primary Products	159

* Refer to the number assigned to each description of existent Army data systems in Appendix A.

<u>DESCRIPTION</u>	<u>ITEM GROUP</u>	<u>ITEM CLASS</u>	<u>SYSTEM NUMBER *</u>
AIRCRAFT	Aircraft; and Airframe Structural Components	(Undetermined)	10
	Aircraft Components and Accessories	(Undetermined)	132
	Ammunition and Explosives	Ammunition	154
	Ammunition and Explosives	Land Mines	10
	Ammunition and Explosives	Rockets	1, 6
	Ammunition and Explosives	(Undetermined)	36, 53, 103, 117, 129, 130
	Clothing, Individual Equipment, and Insignia	(Undetermined)	77
	Communication Equipment	(Undetermined)	1, 79, 81, 171
	Electric Wire, and Power and Distribution Equipment	Batteries, Primary	85
	Electrical and Electronic Equipment Characteristics	(Undetermined)	36
	Fire Control Equipment	(Undetermined)	7, 10
	Food Preparation and Serving Equipment	Food Cooking, Baking, and Warming Equipment	77
	Fuels, Lubricants, Oils, and Waxes	Oils and Greases	126
	Maintenance and Repair Shop Equipment	(Undetermined)	17, 37, 119, 121
	Materials Handling Equipment	(Undetermined)	77

* Refers to the number assigned to each description of existent Army data systems in Appendix A.

7.2 Categorizations of Systems by Disciplines and Fields

Table 7.2 presents a categorization of systems by disciplines and fields. Installations are presented alphabetically with the number of systems in a particular discipline field being shown in relation to the installation. The total number of systems handling D&I in a particular field are presented on the last page of each discipline. The disciplines covered are: Astronomy; Biology; Chemistry; Earth Sciences; Engineering; Mathematics and Statistics; Physics; Psychology; and Social Sciences. These disciplines, and the many fields within these disciplines, are based on the Index of Fields of Specialties (Appendix F). Where a system was known to have D&I in a particular discipline, but the specific field could not be determined from the available sources, the system was included under "Field Undetermined". The entries under "other biological specialties" or "other engineering", etc., refer to systems which handle D&I on subjects not included by the discipline fields in the tables such as: air pollution, radiation biology, aviation-space biology, and ordnance engineering, human engineering, and maintenance engineering.

The information presented in this table will be used by the EDIS network designers in determining the interfaces between the switching center(s), and the data banks. This table should be compared with the conclusions and recommendations given in EDIS TASK I REPORT Work Unit 1.4, Identification of Disciplines and Fields, pages 1-3, 1-4, and 1-5.

BIOLOGY

INSTALLATION	Anatomy	Bacteriology	Botany	Ecology	Entomology	Genetics	Hydrobiology	Immunology	Microbiology	Mycology	Nutrition & Metabolism	Parasitology	Pathology	Pharmacology	Physiology	Phytopathology	Virology	Zoology	Agronomy and Agrology	Animal Husbandry	Fish and Wildlife	Forestry and Range Science	Horticulture	Other Biological Specialties	Field Undetermined
Dugway Proving Ground Utah	1																								1
Edgewood Arsenal, Maryland														1	1										4
Fitzsimmons General Hospital, Denver, Colorado	1							1	1		1		1		1	3	2								2
Fort Bragg, N. C.						1																			1
Fort Detrick, Md.		2	2		2	1		3	14	1	2		5		1				1	1				14	

BIOLOGY

INSTALLATION	Anatomy	Bacteriology	Botany	Ecology	Entomology	Genetics	Hydrobiology	Immunology	Microbiology	Mycology	Nutrition & Metabolism	Parasitology	Pathology	Pharmacology	Physiology	Phytopathology	Virology	Zoology	Agronomy and Agrology	Animal Husbandry	Fish and Wildlife	Forestry and Range Science	Horticulture	Other Biological Specialties	Field Undetermined
Fort Knox, Kentucky																									1
Fort Lee, Virginia	1			1					1														1		
Fort Lewis, Washington																									1
Fort Ord, California																									1
Fort Rucker, Alabama																									1
Fort Sam Houston, Tex.															1										1
Fort Totten, New York																									1

BIOLOGY

INSTALLATION

Harry Diamond Laboratories,
Washington,
D. C.

Natick Laboratories,
Natick, Mass.

Picatinny Arsenal,
Dover, New Jersey

Redstone Arsenal, Ala.

Walter Reed Army
Medical Center
Washington, D. C.

2					Anatomy
					Bacteriology
			1		Botany
					Ecology
1					Entomology
					Genetics
					Hydrobiology
					Immunology
					Microbiology
			2		Mycology
					Nutrition & Metabolism
					Parasitology
2					Pathology
1					Pharmacology
2			1		Physiology
1			1		Phytopathology
					Virology
					Zoology
					Agronomy and Agrology
					Animal Husbandry
					Fish and Wildlife
					Forestry and Range Science
					Horticulture
2					Other Biological Specialties
2	1	1	1	2	Field Undetermined

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CHEMISTRY	
INSULATION	
Aberdeen Proving Ground, Maryland	1
Dugway Proving Ground, Utah	1
Edgewood Arsenal, Maryland	4
Fitzsimons General Hospital, Denver, Colo.	2
Fort Detrick, Maryland	1
Fort Knox, Kentucky	1
Fort Lee, Virginia	1

CHEMISTRY

INSTALLATION	Analytical Chemistry	Agriculture and Food Chemistry	Biochemistry	Inorganic Chemistry	Organic Chemistry	Physical Chemistry	Pharmaceutical Chemistry	Other Chemistry	Field Undetermined
Fort Rucker, Alabama									1
Fort Sam Houston, Texas									1
Frankford Arsenal, Pa.									1
Harry Diamond Laboratories Washington, D. C.									2
Natick Laboratories, Natick, Massachusetts									1
Picatinny Arsenal, Dover, New Jersey					1				1
Redstone Arsenal, Alabama									2

INSTALLATION

**Agriculture and Food
Chemistry**

Biochemistry

Inorganic Chemistry

Organic Chemistry

Physical Chemistry

Pharmaceutical Chemistry

Other Chemistry

Field Undetermined

Walter Reed Army Medical
Center, Washington, D. C.

Watertown Arsenal
Watertown, Massachusetts

White Sands Missile
Range, New Mexico

Total systems in each field

		2		2			2
				1	2		
1	2	11	2	8	7	-	-
							22
							2

EARTH SCIENCE

INSTALLATION

Aberdeen Proving Ground, Maryland	Atmospheric Dynamics, Chemistry and Physics									
	Climatology									
Dugway Proving Ground, Utah	Meteorology									
	Area Specializations									
Edgewood Arsenal, Md.	Meteorological Instrumentation									
	Geochemistry									
Fort Belvoir, Virginia	Geodesy									
	Geology									
Fort Eustis, Texas	Paleontology and Paleobotany									
	Solid Earth Geophysics									
Fort Lee, Virginia	Geography									
	Hydrology									
Fort Ord, California	Oceanography									
	Photogrammetry, Surveying, Carto- graphy and Photo- interpretation									
	Field Undetermined									

EARTH SCIENCE

INSTALLATION	Atmospheric Dynamics, Chemistry and Physics	Climatology	Meteorology	Area Specializations	Meteorological Instrumentation	Geochemistry	Geodesy	Geology	Paleontology and Paleobotany	Solid Earth Geophysics	Geography	Hydrology	Oceanography	Photogrammetry, Surveying, Carto- graphy and Photo- interpretation	Field Undetermined
Hanover, New Hampshire	1		1									3	2		2
Harry Diamond Labora- tories Washington, DC		3	1								1		1		1
Natick Laboratories, Natick, Mass.															
Picatinny Arsenal, Dover, New Jersey															1
Redstone Arsenal, Ala.															1
Springfield Armory, Springfield, Mass															1

EARTH SCIENCE

INSTALLATION

Vicksburg, Mississippi Washington, D. C. White Sands Missile Range, New Mexico Total Systems		Atmospheric Dynamics, Chemistry and Physics	
	1	Climatology	
		Meteorology	
		Area Specializations	
		Meteorological Instrumentation	
	1	Geochemistry	
	1	Geodesy	
	4	Geology	
		Paleontology and Paleobotany	
	3	Solid Earth Geophysics	
	1	Geography	
	3	Hydrology	
	1	Oceanography	
	1	Photogrammetry, Surveying, Carto- graphy and Photo- interpretation	
	2	Field Undetermined	
	2		
	5		
	4		
	1		
	1		
	1		
	1		
	5		
	-		
	3		
	3		
	7		
	4		
	5		
	10		

ENGINEERING

INSTALLATION

ENGINEERING		INSTALLATION
Aeronautical Engr.		
Agricultural Engr.		
Architectural Engr.	1	
Ceramic Engineering	1	
Chemical Engr.	1	
Civil Engineering	2	
Construction Engr.	1	
Electrical Engr.	2	
Electronics Engr.	3	1
Engineering Mechanics	1	
Hydraulic Engr.		
Industrial Engr.	3	4
Internal Combustion Power Plant Engr.	1	
Marine Engineering		
Materials Engr.	1	
Mechanical Engr.	1	
Metallurgy and Metallurgical Engr.	1	
Mining and Petroleum Engineering		
Sanitary Engr.	1	
Structural Engr.	1	
Valuation Engr.	1	
Other Engineering	1	1
Field Undetermined	2	

INSTALLATION

ENGINEERING		INSTALLATION
		Aeronautical Engr.
		Agricultural Engr.
		Architectural Engr.
		Ceramic Engineering
		Chemical Engr.
		Civil Engineering
		Construction Engr.
	1	Electrical Engr.
	3	Electronics Engr.
		Engineering Mechanics
		Hydraulic Engr.
	2	Industrial Engr.
		Internal Combustion Power Plant Engr.
		Marine Engineering
		Materials Engr.
	1	Mechanical Engr.
	1	Metallurgy and Metallurgical Engr.
		Mining and Petroleum Engineering
		Sanitary Engr.
		Structural Engr.
		Valuation Engr.
		Other Engineering
		Field Undetermined

INSTALLATION

Field Undetermined

Rock Island Arsenal,
Illinois

I

W

I

ENGINEERING

INSTALLATION

Aeronautical Engr.
Agricultural Engr.
Architectural Engr.
Ceramic Engineering
Chemical Engr.
Civil Engineering
Construction Engr.
Electrical Engr.
Electronics Engr.
Engineering Mechanics
Hydraulic Engr.
Industrial Engr.
Internal Combustion
Power Plant Engr.
Marine Engineering
Materials Engr.
Mechanical Engr.
Metallurgy and
Metallurgical Engr.
Mining and Petroleum
Engineering
Sanitary Engr.
Structural Engr.
Valuation Engr.
Other Engineering
Field Undetermined

Springfield Armory
Springfield, Mass

St. Louis, Missouri

Vicksburg, Miss.

Washington, D. C.

Watertown Arsenal,
Watertown, Mass.

Watervliet Arsenal,
New York

White Sands Missile
Range, New Mexico

Total systems in each
field

2	1	1	1	1	11	1	4	14	3	1	21	1	-	7	3	7	-	1	1	1	14	31
					5				1	1				5		4					7	1
											1					1						5

MATHEMATICS & STATISTICS

INSTALLATION	Algebra	Analysis and Functional Analysis	Geometry	Logic	Mathematics of Resource Use	Number Theory	Numerical Methods and Computation	Topology	Probability	Statics	Field Undetermined
Aberdeen Proving Ground, Maryland					2		1			3	
Dugway Proving Ground, Utah		1								1	
Edgewood Arsenal, Md.										2	3
Fitzsimons General Hospital, Denver, Colo.										1	2
Fort Detrick, Maryland							1			3	
Fort Huachuca, Ariz.					1						
Fort Lee, Virginia	1	1	1		1	1	1	1	1	1	

MATHEMATICS & STATISTICS

INSTALLATION	Algebra	Analysis and Functional Analysis	Geometry	Logic	Mathematics of Resource Use	Number Theory	Numerical Methods and Computation	Topology	Probability	Statics	Field Undetermined
Fort Lewis, Washington					1					1	1
Fort Meade, Maryland											
Fort Ord, California											1
Fort Rucker, Alabama										1	
Frankford Arsenal, Pa.										1	
Harry Diamond and Laboratories, Washington, D. C.											2
Natick Laboratories, Natick, Mass.											1

MATHEMATICS & STATISTICS

INSTALLATION	Algebra	Analysis and Functional Analysis	Geometry	Logic	Mathematics of Resource Use	Number Theory	Numerical Methods and Computation	Topology	Probability	Statics	Field Undetermined
Picatinny Arsenal, Dover, New Jersey											1
Redstone Arsenal, Ala.											2
Rock Island Arsenal, Ill								1			1
Vicksburg, Mississippi		1									
White Sands Missile Range, New Mexico											7
Total Systems	1	3	1	-	5	1	3	2	1	14	20

PHYSICS

INSTALLATION	Acoustics	Atomic and Molecular Physics	Electromagnetic Waves and Electron Physics	Elementary Particle Physics	Mechanics	Nuclear Structure Physics	Optics	Solid State	Thermal Phenomena	Theoretical Physics	Biophysics	Physics of Fluids	Other Physics	Field Undetermined
Aberdeen Proving Ground, Maryland														2
Fort Detrick, Maryland											1			1
Fort Knox, Kentucky														
Fort Lee, Virginia	1	1	1	1	1	1	1		1		1			
Fort Monmouth, N. J.		1	2					1						
Fort Ord, California														1
Fort Rucker, Alabama														1
Frankford Arsenal, Pa.														2

PHYSICS	INSTALLATION
Acoustics	
Atomic and Molecular Physics	
Electromagnetic Waves and Electron Physics	
Elementary Particle Physics	
Mechanics	
Nuclear Structure Physics	
Optics	
Solid State	
Thermal Phenomena	
Theoretical Physics	
Biophysics	
Physics of Fluids	
Other Physics	
Field Undetermined	

Hanover, New Hampshire					2				
Harry Diamond Laboratories, Washington, D. C.					1			1	2
Natick Laboratories, Natick, Massachusetts									1
Picatinny Arsenal, Dover, New Jersey									1
Redstone Arsenal, Ala.									1
Springfield Armory, Springfield, Mass.	1								2

PHYSICS

INSTALLATION

Acoustics

Atomic and Molecular
Physics

Electromagnetic Waves and Electron Physics

Elementary Particle Physics

Mechanics

Nuclear Structure Physics

Optics

Solid State

Thermal Phenomena

Theoretical Physics

Biophysics

Physics of Fluids

Other Physics

Field Undetermined

Vicksburg, Mississippi

Walter Reed Army
Medical Center,
Washington, D. C.

Watertown Arsenal,
Watertown, Mass.

White Sands Missile
Range, New Mexico

Total systems in each field

[illegible]

INSTALLATION

PSYCHOLOGY	
INSTALLATION	
Aberdeen Proving Ground, Maryland	
Edgewood Arsenal, Md.	
Fitzsimmons General Hospital, Denver Colorado	
Fort Knox, Kentucky	
Fort Monmouth, N. J.	
Fort Ord, California	
Fort Sam Houston, Tex.	
	Clinical Psychology
	Counseling and Guidance
	Developmental Psychology
	Educational Psyc.
	General Psychology
1	Industrial and Personnel Psychology
1	Personality
	Programmed Learning
	School Psychology
	Social Psychology
1	Experimental, Comparative, and Physiological Psychology
1	Field Undetermined

PSYCHOLOGY

INSTALLATION

Natick Laboratories
Natick, Mass.

Picatinny Arsenal,
Dover, N. J.

White Sands Missile
Range, New Mexico

Total systems in
each field

	Clinical Psychology	
	Counseling and Guidance	
	Developmental Psychology	
	Educational Psyc.	
	General Psychology	
	Industrial and Personnel Psychology	
	Personality	
	Programmed Learning	
	School Psychology	
	Social Psychology	
1	Experimental, Comparative, and Physiological Psychology	
6	Field Undetermined	2

SOCIAL SCIENCE

INSTALLATION

Fort Ord, California	1	-
Frankford Arsenal, Pa.	1	-
Harry Diamond Laboratories	1	-
Natick Laboratories Natick, Massachusetts	1	-
Picatinny Arsenal Dover, New Jersey	1	-
Washington, D. C.	1	-
Total systems in each field	6	-

- Archeology
- Area Studies
- Business Adm.
- Business and Commerce
- Economics
- Education
- Fine and Applied Arts
- History
- History of Science and Mathematics
- Home Economics
- Int. Relations
- Journalism
- Law Jurisprudence
- Library and Archival Sci.
- Music
- Patent Law
- Philosophy of Science
- Political Science
- Public Administration
- Religion and Theology
- Sociology
- Speech
- Anthropology
- Scientific and Technical Documentation
- Demography
- Industrial Hygiene and Occupational Health
- Other

7.3 Geographical Distribution of Systems by Discipline and State

This table identifies existing Army data systems geographically by discipline. The states are presented regionally under five headings: Northeast; Middle Atlantic; South; Middle West; and West. Sub-totals indicating the number of systems in each scientific/technical discipline are given by region. Totals are given for each discipline.

As a factor in providing rapid and accurate access to scientific and technical D&I, Task III EDIS activities can use this geographical distribution of systems in determining possible switching center(s) locations in order to provide the most direct links possible to information sources. Task III could further use this table as a tool in selecting a cross-section of disciplines for integration into the pilot system.

It is interesting to compare this table to those given in EDIS TASK I REPORT Work Unit 1.2 CATEGORIZATION OF AVAILABLE DATA AND INFORMATION, pages 5-2 and 5-3; and EDIS TASK I REPORT Work Unit 1.3 IDENTIFICATION OF USER NEEDS, page 11-5. From these tables we recognize, for example, the high biology region is Middle Atlantic in systems and users, but not in holdings (it is second). However holdings are not measured in volume - but in specialty (i.e. subjects covered) thus a factor formula is needed to create a specialty/volume factor. These and other comparisons are being made under Task I in order to supply a clear picture of the Army D&I activities affecting EDIS.

GEOGRAPHIC
AREA

STATE

DISCIPLINE

	ASTR	BIOL	CHEM	ESCI	ENGR	MATH	PHYS	PSYC	SSCI
NORTHEAST	Massachusetts	5	4	5	15	1	6	2	1
	New Hampshire			3	3		2		
	New Jersey		2	1	10	1	3	2	1
	New York	1			2	1			
	Pennsylvania		1		5	1	2		1
	SUB-TOTAL	6	7	9	35	4	13	4	3
MIDDLE ATLANTIC (D. C. AREA)	Maryland	33	14	2	13	15	3	2	
	Virginia	1	1	3	8	1	1		
	Washington, D. C.	11	6	3	4	2	5		2
	SUB-TOTAL	45	21	8	25	18	9	2	2
SOUTH	Alabama	1	3	1	5	3	2		1
	Kentucky	1	1				1	1	
	Mississippi			5	6	1			
	Missouri				1				
	North Carolina	1							1
	Texas	1	1	1				1	1
	SUB-TOTAL	4	5	7	12	4	3	2	2
MIDDLE WEST	Illinois				4	1			
	Michigan				5				
	SUB-TOTAL				9	1			
WEST	Arizona				2	1			
	California	1		1	2	1	1	1	
	Colorado	4	3	1		3		1	
	New Mexico	2	2	2	5	7	3	1	
	Utah	1	1	1		1			
	Washington	1				1			
	SUB-TOTAL	1	9	6	5	9	14	4	3
TOTALS		2	64	39	90	41	29	11	7

Table 1.3 GEOGRAPHICAL DISTRIBUTION OF EXISTENT DATA SYSTEMS BY DISCIPLINE AND STATE

7.4 Identification of Systems by Types of Equipment Used

To provide familiarization with existing equipment resources in the Army, this table identifies the equipment used in organizations that were studied during this phase of Task I. Seven classifications have been used:

Manual Systems - those systems using file cards, sorting needles, hand punches, optical coincidence cards, and edge-punched card equipment. (80 reported, page 1)

Electronic Accounting Machines - those systems which use sorters, collators, keypunch machines, tabulators, and the IBM 870 Document System. (36 reported, page 8)

Graphic Devices - those systems using microfilm, microcards, microfiche, and xerography. (24 reported, page 12)

Electronic Data Processing Equipment - those systems using computers (including all tape and disc system). (43 reported, page 15)

Systems for Which No Information on Equipment Was Available - (12 reported, page 19)

Systems Using a Combination of EAM and EDP Equipment - (14 reported, page 21)

Systems Using a Combination of EDP Equipment and Graphic Devices - (1 reported, page 22)

Systems Using a Combination of EAM Equipment and Graphic Devices - (1 reported, page 22)

It should be noted that these findings are valid only insofar as the available data used is valid. Refer to Section 4.7 which discusses the consistency and validity of available data sources used and Section 1.3, which gives recommendations.

Table 7.4 IDENTIFICATION OF EXISTENT DATA SYSTEMS BY TYPE OF EQUIPMENT USED

MANUAL SYSTEMS (80 Total Systems)		
INSTALLATION	ORGANIZATION	SYSTEM NUMBER*
Aberdeen Proving Ground, Maryland	Ballistic Research Laboratories	2
	Deputy Post Commander	7
	Development and Proof Services	8, 9, 10, 11
	Human Engineering Laboratories	12
Dugway Proving Ground, Utah	Technical Library	20
Edgewood Arsenal, Maryland	Chemical Research and Development Laboratories	23, 26
Fitzsimmons General Hospital Denver, Colorado	Research and Nutrition Laboratories	31
	Rocky Mountain Arsenal	33
	-	34

*Refers to systems described by number in Appendix A.

INSTALLATION	ORGANIZATION	SYSTEMS NUMBER
Fort Belvoir, Virginia	Engineering Research and Development Laboratories	36, 38
Fort Bragg, North Carolina	Headquarters and Special Warfare Center	41
Fort Detrick, Maryland	Biological Laboratories	42, 43, 44, 45, 46, 47, 48, 49, 51, 53, 54, 55, 56, 57, 58, 60, 61, 62, 63, 64, 65, 66, 67, 68, 70
	Foreign Science and Technology Center	71
Fort Eustis, Texas	Transportation Board	72

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Fort Knox, Kentucky	Medical Research Laboratory	74
Fort Lee, Virginia	Research and Engineering Field Evaluation Agency	77
Fort Meade, Maryland	Air Defense Engineering Agency	79
Fort Monmouth, New Jersey	Electronics Research and Develop- ment Laboratory	83
Fort Ord, California	CDC Experimental Center	88
Port Sam Houston, Texas	Army Surgical Research Unit	91

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Fort Totten, New York	Medical Equipment Development Laboratory	92
Franco Arsenal, Philadelphia, Pennsylvania	- Pitman-Dunn Laboratories	94, 95 98
Harry Diamond Laboratories, Washington, D. C.	Harry Diamond Laboratories, Headquarters	103
Mountain View, California	Electronic Defense Laboratories Library	106
Natick Laboratories, Natick, Massachusetts	Research and Engineering Command	113

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Picatinny Arsenal, New Jersey	Feltman Research Laboratories	115
	Plastics Technical Evaluation Center	118
Redstone Arsenal, Alabama	Missile Command Headquarters	122
Rock Island Arsenal, Illinois	Ordnance Weapons Command	125
	Technical Information Branch	126
Springfield Armory, Springfield, Massachusetts	Research and Engineering Division	129
	Research and Development Division	130
Vicksburg, Mississippi	Engineer Waterways Experiment Station	137

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Walter Reed Army Medical Center, Washington, D. C.	Prosthetics Research Laboratory	141
	Armed Forces Pest Control Board	140
	Walter Reed General Hospital	147
	Walter Reed Army Institute of Research	144
Washington, D. C.	Office of the Chief of Transportation	151
	Office of the Surgeon General	152
Watertown Arsenal, Massachusetts	Materials Engineering Laboratory	153
	Materials Research Agency	155, 156, 157, 159, 160, 161, 162
Watervliet Arsenal, New York	R & E Division	163

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
White Sands Missile Range, New Mexico	Headquarters	170

ELECTRONIC ACCOUNTING MACHINERY (36 Total Systems)		SYSTEM NUMBER
INSTALLATION	ORGANIZATION	
Aberdeen Proving Ground, Maryland	Ballistic Research Laboratories	1, 4, 5
	Computing Laboratory	6
	Weapons Systems Laboratory	13
Detroit Arsenal, Warren Michigan	Army Tank and Automotive Center	15
Edgewood Arsenal, Maryland	Chemical Research and Development Laboratories	22, 23, 24
Fitzsimmons General Hospital, Denver, Colorado	Rocky Mountain Arsenal	32
Fort Detrick, Maryland	Biological Laboratories	50, 59

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Fort Huachuca, Arizona	Electronics Proving Ground	73
Fort Lee, Virginia	Research and Engineering Field Evaluation Agency	76
Fort Lewis, Washington	Madigan General Hospital	78
Fort Monmouth, New Jersey	Electronics Research and Develop- ment Laboratory	82, 85
Fort Rucker, Alabama	Aviation Accident Research Board	89
	Aviation Agency	90
Harry Diamond Laboratories, Washington, D. C.	Harry Diamond Laboratories, Headquarters	104

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Joliet, Illinois	Army Ammunition Procurement and Supply Agency	105
Natick Laboratories, Natick, Massachusetts	Pioneering Research Division	109
	Research and Engineering Command	110
	Research Institute of Environmental Medicine	114
Picatinny Arsenal, New Jersey	-	120
Redstone Arsenal, Alabama	Missile Command Headquarters	123
Vicksburg, Mississippi	Engineer Waterways Experiment Station	133, 134, 135, 136, 138

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Walter Reed Army Medical Center, Washington, D. C.	Walter Reed Army Institute of Research	142, 143
Washington, D. C.	Medical Research and Development Headquarters	150
Watertown Arsenal, Watertown, Massachusetts	Materials Research Agency	154
White Sands Missile Range, New Mexico	Headquarters	164

GRAPHIC DEVICES (24 Total Systems)

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Aberdeen Proving Ground, Maryland	Ballistic Research Laboratories	3
Detroit Arsenal, Warren, Michigan	Army Tank Automotive Center	14
Fitzsimmons General Hospital, Denver, Colorado	-	35
Fort Belvoir, Virginia	Engineering Research and Develop- ment Laboratories	37, 39, 40
Fort Detrick, Maryland	Biological Laboratories	49

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Fort Lee, Virginia	Research and Engineering Field Evaluation Agency	76
Fort Monmouth, New Jersey	Electronics Command Headquarters	80
	Electronics Research and Devel- opment Laboratory	81, 87
Frankford Arsenal, Phila- delphia, Pennsylvania	-	97
Harry Diamond Laboratories, Washington, D. C.	Harry Diamond Laboratories, Headquarters	102
Natick Laboratories, Natick, Massachusetts	Headquarters	108
	Research and Engineering Command	111, 112

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Picatinny Arsenal, New Jersey	Munitions Command Headquarters	117
	-	119
Redstone Arsenal, Alabama	Army Missile Command	121
Rock Island Arsenal, Illinois	Weapons Command	127
Springfield Armory, Springfield, Massachusetts	Headquarters	128
St. Louis, Missouri	Air and Surface Materiel Command	132
Washington, D. C.	Office, Chief of Engineers	149
White Sands Missile Range, New Mexico	Headquarters	170

ELECTRONIC DATA PROCESSING EQUIPMENT (43 Total Systems)

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Aberdeen Proving Ground, Maryland	Ballistic Research Laboratories	1
	Computing Laboratory	6
	Weapons Systems Laboratory	13
Detroit Arsenal, Warren, Michigan	Army Tank and Automotive Center	16, 17, 18, 19
Dugway Proving Ground, Utah	-	21
Edgewood Arsenal, Maryland	Chemical Research and Development Laboratories	25
	Director, Engineering and Industrial Services	27
	Headquarters	28, 29

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Fort Detrick, Maryland	Biological Laboratories	45, 46, 50, 59, 69
Fort Huachuca, Arizona	Electronics Proving Ground	73
Fort Lee, Virginia	Army Logistic Management Center	75
Fort Monmouth, New Jersey	Electronics Research and Development Laboratory	84, 85, 96
Frankford Arsenal, Philadelphia, Pennsylvania	-	93
Hanover, New Hampshire	Cold Regions Research and Engineering Laboratory	99, 100, 101

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Joliet, Illinois	Army Ammunition Procurement and Supply Agency	105
Picatinny Arsenal, New Jersey	Headquarters	116
	Plastic Technical Evaluation Center	118
	-	
Redstone Arsenal, Alabama	Missile Command Headquarters	121
Vicksburg, Mississippi	Engineer Waterways Equipment Station	133, 134, 135, 136, 138
Walter Reed Army Medical Center, Washington, D. C.	Walter Reed Army Institute of Research	143, 144

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Washington, D. C.	Army Map Service	148
White Sands Missile Range, New Mexico	Headquarters	164, 165, 166, 167, 169

NO EQUIPMENT INFORMATION AVAILABLE (12 Total Systems)

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Edgewood Arsenal, Maryland	Headquarters	30
Fort Detrick, Maryland	Biological Laboratories	52
Frankford Arsenal, Philadelphia, Pennsylvania	-	96
Harry Diamond Laboratories, Washington, D. C.	Harry Diamond Laboratories, Headquarters	104
Natick Laboratories, Natick Massachusetts	Headquarters	107

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Springfield Armory, Springfield, Massachusetts	Support Engineering Branch	131
Walter Reed Army Medical Center, Washington, D. C.	Armed Forces Institute of Pathology	139
	Walter Reed General Hospital	145
	Walter Reed General Hospital	146
Watertown Arsenal, Watertown, Massachusetts	Materials Research Agency	158
White Sands Missile Range, New Mexico	Headquarters	168
	Signal Radio Propagation Agency	171

SYSTEMS USING A COMBINATION OF EAM AND EDP EQUIPMENT (14 Total Systems)

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Aberdeen Proving Ground, Md.	Ballistic Research Labs. Weapons Systems Lab.	1 13
Fort Detrick, Maryland	Biological Laboratories	50, 59
Fort Huachuca, Arizona	Electronics Proving Ground	73
Fort Monmouth, N. J.	Electronics Research and Development Laboratory	85
Joliet, Illinois	Army Ammunition Procurement and Supply Agency	105
Vicksburg, Mississippi	Engineer Waterways Experiment Station	133, 134, 135 136, 138
Walter Reed Army Medical Center, Washington, D. C.	Walter Reed Army Institute of Research	143
White Sands Missile Range, N. M.	Headquarters	164

SYSTEMS USING A COMBINATION OF EDP EQUIPMENT AND GRAPHIC DEVICES

INSTALLATION	ORGANIZATION	SYSTEM NUMBER
Redstone Arsenal, Alabama	Army Missile Command	121

SYSTEMS USING A COMBINATION OF EAM EQUIPMENT AND GRAPHIC DEVICES

Fort Lee, Virginia	Research and Engineering Field Evaluation Agency	76

7.5 Identification of Existent Data Systems by Subject Field

This table presents the information from Table 7.2 in directory form. It illustrates a method of deriving D&I query direction using the discipline/field breakdown. Of particular interest is the listing of organization titles along with the installation name.

Further developments in this direction are not possible without detailed system information as to subject specialties, volume of D&I, and system availability.

Table 7.5 - IDENTIFICATION OF DATA SYSTEMS BY ORGANIZATION AND FIELDS

BIOLOGY

BACTERIOLOGY

Biological Laboratories

Fort Detrick, Maryland

BOTANY

Biological Laboratories

Fort Detrick, Maryland

Pioneering Research Division

Natick Laboratories, Natick, Mass.

ECOLOGY

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

ENTOMOLOGY

Armed Forces Pest Control Board

Walter Reed Army Medical Center,
Washington, D. C.

Biological Laboratories

Fort Detrick, Maryland

GENETICS

Biological Laboratories

Fort Detrick, Maryland

IMMUNOLOGY

Biological Laboratories

Fort Detrick, Maryland

Headquarters & Special Warfare Center

Fort Bragg, North Carolina

MICROBIOLOGY

Biological Laboratories

Fort Detrick, Maryland

Foreign Science & Technology Center

Fort Detrick, Maryland

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

MYCOLOGY

Biological Laboratories

Fort Detrick, Maryland

Headquarters

Natick Laboratories, Natick, Mass.

NUTRITION AND METABOLISM

Biological Laboratories	Fort Detrick, Maryland
Research & Engineering Field Evaluation Agency	Fort Lee, Virginia
Research & Nutrition Laboratories	Fitzsimmons General Hospital, Denver, Colo.

PATHOLOGY

Biological Laboratories	Fort Detrick, Maryland
Research & Nutrition Laboratories	Fitzsimmons General Hospital, Denver, Colo.
Walter Reed General Hospital	Walter Reed Army Medical Center, Washington, D. C.

PHARMACOLOGY

Biological Laboratories	Ft. Detrick, Maryland
Walter Reed Army Institute of Research	Walter Reed Army Medical Center, Washington, D. C.

PHYSIOLOGY

Army Surgical Research Unit

Ft. Sam Houston, Texas

Biological Laboratories

Ft. Detrick, Maryland

Chemical Research & Development
Laboratories

Edgewood Arsenal, Maryland

Prosthetics Research Laboratory

Walter Reed Army Medical Center,
Washington, D. C.

Research & Engineering Field
Evaluation Agency

Ft. Lee, Virginia

Research Institute of Environmental
Medicine

Natick Laboratories, Natick, Mass.

Walter Reed General Hospital

Walter Reed Army Medical Center,
Washington, D. C.

-

Fitzsimmons General Hospital,
Denver, Colorado

PHYTOPATHOLOGY

Armed Forces Pest Control Board

Walter Reed Army Medical Center,
Washington, D. C.

Biological Laboratories

Ft. Detrick, Maryland

Headquarters

Natick Laboratories, Natick, Mass.

VIROLOGY

Biological Laboratories

Fort Detrick, Maryland

AGRONOMY AND AGROLOGY

Biological Laboratories

Fort Detrick, Maryland

ANIMAL HUSBANDRY

Biological Laboratories

Fort Detrick, Maryland

FORESTRY AND RANGE SCIENCE

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

HORTICULTURE

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

OTHER BIOLOGICAL FIELDS

Armed Forces Institute of Pathology

Walter Reed Army Medical Center,
Washington, D. C.

Army Surgical Research Unit

Fort Sam Houston, Texas

Aviation Agency

Fort Rucker, Alabama

CDC Experimental Center

Fort Ord, California

Headquarters

Harry Diamond Laboratories,
Washington, D. C.

Headquarters

Natick Laboratories, Natick, Mass.

Headquarters

White Sands Missile Range, New Mexico

Madigan General Hospital

Fort Lewis, Washington

Medical Equipment Development
Laboratory

Fort Totten, New York

Medical R&D Command Headquarters

Washington, D. C.

Medical Research Laboratory

Fort Knox, Kentucky

Office of the Surgeon General

Washington, D. C.

Walter Reed Army Institute of Pathology

Walter Reed Army Medical Center,
Washington, D. C.

CHEMISTRY

ANALYTICAL CHEMISTRY

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

BIOCHEMISTRY

Biological Laboratories

Fort Detrick, Maryland

Chemical Research & Development Laboratories

Edgewood Arsenal, Maryland

Medical Research Laboratory

Fort Knox, Kentucky

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

Walter Reed Army Institute of Research

Walter Reed Army Medical Center,
Washington, D. C.

INORGANIC CHEMISTRY

Biological Laboratories

Fort Detrick, Maryland

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

ORGANIC CHEMISTRY

Biological Laboratories

Fort Detrick, Maryland

Chemical Research and Development
Laboratories

Edgewood Arsenal, Maryland

Engineering Research and Development
Laboratories

Fort Belvoir, Virginia

Materials Research Agency

Watertown Arsenal, Mass.

Plastics Technical Evaluation Center

Picatinny Arsenal, N. J.

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

PHYSICAL CHEMISTRY

Biological Laboratories

Fort Detrick, Maryland

Chemical Research and Development
Laboratories

Edgewood Arsenal, Maryland

Materials Research Agency

Watertown Arsenal, Watertown, Mass.

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

Walter Reed Army Institute
of Research

Walter Reed Army Medical Center,
Washington, D. C.

FIELD UNDETERMINED

Armed Forces Pest Control Board

Walter Reed Army Medical Center,
Washington, D. C.

Army Surgical Research Unit

Fort Sam Houston, Texas

Aviation Agency

Fort Rucker, Alabama

Ballistic Research Laboratories

Aberdeen Proving Ground, Maryland

Biological Laboratories	Fort Detrick, Maryland
Chemical Research and Development Laboratories	Edgewood Arsenal, Maryland
Frankford Arsenal	Philadelphia, Pennsylvania
Headquarters	Harry Diamond Laboratories, Washington, D. C.
Headquarters	Natick Laboratories, Natick, Mass.
Headquarters	Picatinny Arsenal, N. J.
Headquarters	White Sands Missile Range, New Mexico
Missile Command Headquarters	Redstone Arsenal, Alabama
Prosthetics Research Laboratory	Walter Reed Army Medical Center, Washington, D. C.
Rocky Mountain Arsenal	Fitzsimmons General Hospital, Denver, Colorado
Technical Library	Dugway Proving Ground, Utah

EARTH SCIENCES

ATMOSPHERIC DYNAMICS, CHEMISTRY AND PHYSICS

Cold Regions Research and
Engineering Laboratory

Fort Lee, Virginia

Research & Engineering Field
Evaluation Agency

Hanover, New Hampshire

CLIMATOLOGY

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

Research and Engineering Command

Natick Laboratories, Natick, Mass.

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

Transportation Board

Fort Eustis, Texas

METEOROLOGY

Cold Regions Research & Engineering Laboratory	Hanover, New Hampshire
Research & Engineering Command	Natick Laboratories, Natick, Mass.
Research & Engineering Field Evaluation Agency	Fort Lee, Virginia
	Dugway Proving Ground, Utah

AREA SPECIALIZATIONS

Research & Engineering Field Evaluation Agency	Fort Lee, Virginia

METEOROLOGICAL INSTRUMENTATION

Research & Engineering Field Evaluation Agency	Fort Lee, Virginia

GEOCHEMISTRY

Engineer Waterways Experiment Station	Vicksburg, Mississippi

Army Map Service

Washington, D. C.

GEOLOGY

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

Transportation Board

Fort Eustis, Texas

SOLID EARTH GEOPHYSICS

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

GEOGRAPHY

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

Research and Engineering Command

Natick Laboratories, Natick, Mass.

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

HYDROLOGY

Cold Regions Research and
Engineering Laboratory

Hanover, New Hampshire

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

OCEANOGRAPHY

Army Map Service

Washington, D. C.

Cold Regions Research &
Engineering Laboratory

Hanover, New Hampshire

Headquarters

Natick Laboratories, Natick, Mass.

PHOTOGRAMMETRY, SURVEYING, CARTOGRAPHY
AND PHOTOINTERPRETATION

Army Map Service	Washington, D. C.
Engineer Waterways Experiment Station	Vicksburg, Mississippi
Engineering Research and Development Laboratories	Fort Belvoir, Virginia
Research and Engineering Command	Natick Laboratories, Natick, Mass.
Research and Engineering Field Evaluation Agency	Fort Lee, Virginia

FIELD UNDETERMINED

CDC Experimental Center	Fort Ord, California
Development and Proof Services	Aberdeen Proving Ground, Maryland
Headquarters	Edgewood Arsenal, Maryland
Headquarters	Harry Diamond Laboratories, Washington, D. C.

Headquarters

Picatinny Arsenal, New Jersey

Headquarters

White Sands Missile Range, N. M.

Missile Command Headquarters

Redstone Arsenal, Alabama

Research and Development
Division

Springfield Armory, Springfield, Mass.

ENGINEERING

AERONAUTICAL ENGINEERING

Biological Laboratories

Fort Detrick, Maryland

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

AGRICULTURAL ENGINEERING

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

ARCHITECTURAL ENGINEERING

Army Tank Automotive Center

Detroit Arsenal, Warren, Michigan

CERAMIC ENGINEERING

Research & Engineering Field
Evaluation Agency

Fort Lee, Virginia

CHEMICAL ENGINEERING

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

CIVIL ENGINEERING

Cold Regions Research and
Engineering Laboratory

Hanover, New Hampshire

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

Engineering Research and
Development Laboratories

Fort Belvoir, Virginia

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

CONSTRUCTION ENGINEERING

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

ELECTRICAL ENGINEERING

Electronics Research and
Development Laboratory

Fort Monmouth, New Jersey

Engineering Research and
Development Laboratories

Fort Belvoir, Virginia

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

ELECTRONICS ENGINEERING

Air Defense Engineering Agency

Fort Meade, Maryland

Ballistic Research Laboratories
 Electronics Command Headquarters
 Electronics Defense Laboratories
 Electronics Proving Ground
 Electronics Research and
 Development Laboratory
 Engineering Research and
 Development Laboratories

Headquarters

Natick Laboratories

Aberdeen Proving Ground, Maryland
 Fort Monmouth, New Jersey
 Mountain View, California
 Fort Huachuca, Arizona
 Fort Monmouth, New Jersey
 Fort Belvoir, Virginia
 Harry Diamond Laboratories,
 Washington, D. C.
 Natick, Mass.

ENGINEERING MECHANICS

Engineer Waterways Experiment
 Station
 Materials Engineering Laboratory
 Research and Engineering Field
 Evaluation Agency

Vicksburg, Mississippi
 Watertown Arsenal, Mass.
 Fort Lee, Virginia

HYDRAULIC ENGINEERING

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

INDUSTRIAL ENGINEERING

Air Defense Engineering Agency

Fort Meade, Virginia

Army Ammunition Procurement and
Supply Agency

Joliet, Illinois

Army Logistics Management Center

Fort Lee, Virginia

Army Missile Command

Redstone Arsenal, Alabama

Ballistics Research Laboratory

Aberdeen Proving Ground, Maryland

Development and Proof Services

Aberdeen Proving Ground, Maryland

Director of Engineering and
Industrial Services

Edgewood Arsenal, Maryland

Electronics Proving Ground

Fort Huachuca, Arizona

Electronics Research and
Development Laboratory

Fort Monmouth, New Jersey

Frankford Arsenal

Frankford Arsenal, Pennsylvania

Human Engineering Laboratories

Aberdeen Proving Ground, Maryland

Materials Research Agency

Watertown Arsenal, Watertown, Mass.

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

Tank Automotive Center

Detroit Arsenal, Warren, Michigan

Technical Information Branch

Rock Island Arsenal, Illinois

Weapons Command

Rock Island Arsenal, Illinois

INTERNAL COMBUSTION POWER
PLANT ENGINEERING

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

MATERIALS ENGINEERING

Materials Engineering Laboratory

Watertown Arsenal, Massachusetts

Materials Research Agency

Watertown Arsenal, Massachusetts

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

Technical Information Branch

Rock Island Arsenal, Illinois

MECHANICAL ENGINEERING

Engineering Research and
Development Laboratories

Fort Belvoir, Virginia

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

Signal Research and Development
Laboratory

Fort Monmouth, New Jersey

METALLURGY AND METALLURGICAL
ENGINEERING

Materials Research Agency

Watertown Arsenal, Massachusetts

Pittman-Dunn Laboratories

Frankford Arsenal, Pennsylvania

Research and Engineering
Division

Watervliet Arsenal, New York

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

SANITARY ENGINEERING

Research and Engineering Field Evaluation Agency	Fort Lee, Virginia

STRUCTURAL ENGINEERING

Research and Engineering Field Evaluation Agency	Fort Lee, Virginia

VALUATION ENGINEERING

Research and Engineering Field Evaluation Agency	Fort Lee, Virginia

OTHER ENGINEERING

Air and Surface Material Command	St. Louis, Missouri
Army Ammunition Procurement and Supply Agency	Joliet, Illinois
Headquarters	Springfield Armory, Springfield, Mass.

Materials Research Agency

Watertown Arsenal, Watertown, Mass.

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

Weapons Command

Rock Island Arsenal, Illinois

FIELD UNDETERMINED

Aviation Agency

Fort Rucker, Alabama

Biological Laboratories

Fort Detrick, Maryland

CDC Experimental Center

Fort Ord, California

Deputy Post Commander

Aberdeen Proving Ground, Maryland

Development and Proof Services

Aberdeen Proving Ground, Maryland

Engineering Research and Development
Laboratories

Fort Belvoir, Virginia

Headquarters

Harry Diamond Laboratories, Washington, D.C.

Headquarters

Picatinny Arsenal, New Jersey

Headquarters

White Sands Missile Range, New Mexico

Medical Equipment and Development
Laboratories

Fort Totten, New York

Missile Command Headquarters

Redstone Arsenal, Alabama

Munitions Command Headquarters

Picatinny Arsenal, New Jersey

Office, Chief of Engineers

Washington, D. C.

Ordnance Weapons Command

Rock Island Arsenal, Illinois

Research and Development Division

Springfield Armory, Springfield, Mass.

Research and Engineering

Springfield Armory, Springfield, Mass.

Research Institute of Environmental
Medicine

Natick Laboratories, Natick, Mass.

Signal Radio Propagation Agency

White Sands Missile Range, New Mexico

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Picatinny Arsenal, New Jersey

MATHEMATICS & STATISTICS

ALGEBRA

Research and Engineering
Field Evaluation Agency

Fort Lee, Virginia

ANALYSIS AND FUNCTIONAL ANALYSIS

Chemical Research and
Development Labs

Edgewood Arsenal, Maryland

Engineer Waterways Experiment
Station

Vicksburg, Mississippi

Research and Engineering
Field Evaluation Agency

Fort Lee, Virginia

GEOMETRY

Research and Engineering
Field Evaluation Agency

Fort Lee, Virginia

MATHEMATICS OF RESOURCE USE

Air Defense Engineering Agency	Fort Meade, Maryland
Computing Laboratory	Aberdeen Proving Ground, Maryland
Electronics Proving Ground	Fort Huachuca, Arizona
Research and Engineering Field Evaluation Agency	Fort Lee, Virginia
Weapons Systems Laboratory	Aberdeen Proving Ground, Maryland

NUMBER THEORY

Research and Engineering Field Evaluation Agency	Fort Lee, Virginia

NUMERICAL METHODS AND COMPUTATION

Biological Laboratories	Fort Detrick, Maryland
Research and Engineering Field Evaluation Agency	Fort Lee, Virginia
-	Dugway Proving Ground, Utah

TOPOLOGY

Engineering Waterways Experiment
Station

Vicksburg, Mississippi

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

PROBABILITY

Research and Engineering
Field Evaluation Agency

Fort Lee, Virginia

STATISTICS

Aviation Accident Research
Board

Fort Rucker, Alabama

Ballistic Research Laboratories

Aberdeen Proving Ground, Maryland

Biological Laboratories

Fort Detrick, Maryland

Headquarters

Edgewood Arsenal, Maryland

Madigan General Hospital

Fort Lewis, Washington

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

Research and Nutrition Labs

Fitzsimmons General Hospital,
Denver, Colorado

Dugway Proving Ground, Utah

Frankford Arsenal, Philadelphia, Pa.

FIELD UNDETERMINED

Chemical Research and Development
Labs

Edgewood Arsenal, Maryland

CDC Experimental Center

Fort Ord, California

Harry Diamond Laboratories
Headquarters

Harry Diamond Laboratories,
Washington, D. C.

Headquarters

Edgewood Arsenal, Maryland

Headquarters

Natick Laboratories, Natick,
Massachusetts

Headquarters

Picatinny Arsenal, New Jersey

Headquarters

White Sands Missile Range, New Mexico

Missile Command Headquarters

Redstone Arsenal, Alabama

Rocky Mountain Arsenal

Fitzsimmons General Hospital,
Denver, Colorado

Signal Radio Propagation Agency

White Sands Missile Range, New Mexico

Technical Information Branch

Rock Island Arsenal, Illinois

-

Fitzsimmons General Hospital,
Denver, Colorado

PHYSICS

ACOUSTICS

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

ATOMIC AND MOLECULAR PHYSICS

Electronics Research and Development
Laboratory

Fort Monmouth, New Jersey

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

ELECTROMAGNETIC WAVES
AND ELECTRON PHYSICS

Electronics Research and Development
Laboratory

Fort Monmouth, New Jersey

Headquarters

Springfield Armory, Springfield,
Massachusetts

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

ELEMENTARY PARTICLE PHYSICS

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

MECHANICS

Engineer Waterways Experiment Station

Vicksburg, Mississippi

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

NUCLEAR STRUCTURE PHYSICS

Headquarters

White Sands Missile Range, New Mexico

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

OPTICS

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

SOLID STATE

Cold Regions Research and
Engineering Laboratory

Hanover, New Hampshire

Electronics Research and Development
Laboratory

Fort Monmouth, New Jersey

Harry Diamond Laboratories
Headquarters

Harry Diamond Laboratories,
Washington, D. C.

THERMAL PHENOMENA

Materials Research Agency

Watertown Arsenal, Watertown,
Massachusetts

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

BIOPHYSICS

Medical Research Lab

Fort Knox, Kentucky

Research and Engineering Field
Evaluation Agency

Fort Lee, Virginia

Walter Reed Army Institute of
Research

Walter Reed Army Medical Center,
Washington, D. C.

PHYSICS OF FLUIDS

Harry Diamond Laboratories
Headquarters

Harry Diamond Laboratories,
Washington, D. C.

FIELD UNDETERMINED

Aviation Agency

Fort Rucker, Alabama

Biological Laboratories

Fort Detrick, Maryland

CDC Experimental Center

Fort Ord, California

Deputy Post Commander

Aberdeen Proving Ground, Maryland

Development and Proof Services

Aberdeen Proving Ground, Maryland

Frankford Arsenal

Frankford Arsenal, Philadelphia,
Pennsylvania

Harry Diamond Laboratories
Headquarters

Harry Diamond Laboratories,
Washington, D. C.

Headquarters

Natick Laboratories, Natick,
Massachusetts

Headquarters

Picatinny Arsenal, New Jersey

Headquarters

White Sands Missile Range, New Mexico

Materials Research Agency

Watertown Arsenal, Watertown,
Massachusetts

Missile Command Headquarters

Redstone Arsenal, Huntsville, Alabama

Research and Development Division

Springfield Armory, Springfield,
Massachusetts

Research and Engineering Division

Springfield Armory, Springfield,
Massachusetts

PSYCHOLOGY

INDUSTRIAL AND PERSONNEL PSYCHOLOGY

Human Engineering Laboratories	Aberdeen Proving Ground, Maryland
Electronics Research and Development Laboratory	Fort Monmouth, New Jersey

EXPERIMENTAL, COMPARATIVE,
AND PHYSIOLOGICAL PSYCHOLOGY

Army Surgical Research Unit	Fort Sam Houston, Texas

FIELD UNDETERMINED

C Experimental Center	Fort Ord, California
Chemical Research and Development Labs	Edgewood Arsenal, Maryland
Headquarters	Natick Laboratories, Natick, Massachusetts
Headquarters	Picatinny Arsenal, New Jersey

Headquarters

White Sands Missile Range,
New Mexico

Medical Research Lab

Fort Knox, Kentucky

Research Institute of
Environmental Medicine

Natick Laboratories, Natick,
Massachusetts

Rocky Mountain Arsenal

Fitzsimmons General Hospital,
Denver, Colorado

SOCIAL SCIENCE

FIELD UNDETERMINED

Aviation Agency

Fort Rucker, Alabama

Harry Diamond Laboratories
Headquarters

Harry Diamond Laboratories,
Washington, D. C.

Headquarters

Natick Laboratories, Natick,
Massachusetts

Headquarters

Picatinny Arsenal, New Jersey

Medical R&D Command Headquarters

Washington, D. C.

Frankford Arsenal, Philadelphia,
Pennsylvania

APPENDICES

The appendices listed below present descriptions of data systems examined during this phase of Task I:

Appendix A - Existent Army Data Systems

Appendix B - Systems Used by the Army But
Operated by Another Agency or
Organization

Appendix C - Systems in the Process of Being
Studied, Planned, Developed, or
Acquired by the Army

Appendix D - Systems Which Could Be But Are
Not Used by the Army

A general discussion precedes each of the appendices on data systems.

Other appendices included are:

Appendix E - Sample classifications (by groups
and classes) from the Federal
Supply Catalog.

Appendix F - Index of Fields and Specialties

Appendix G - Bibliography

8.1 Existent Army Data Systems

Appendix A presents descriptions of all existent Army data systems studied in this phase of Task I.

To insure that the information gathered in this study will supply the EDIS network designers with a complete data base from which to construct EDIS, an attempt was made to define additional parameters on which to categorize information systems. These parameters are as follows: organization and geographical location; contents and scope of the system; method of storage; volume and rate of growth; personnel required for the system; equipment utilized in the system, and a description of the systems operation. The available information for these parameters is presented in this appendix.

Sources investigated for information on existent Army systems included primarily the Ballistics Research Laboratory Survey, the On-Site STINFO Survey, and the Computer Usage Company, Inc. Survey. In addition, several other sources were used to collect the information required for this task. (See Section 3.1).

System Number 1

Installation -	Aberdeen Proving Ground, Md.
Organization -	Ballistic Research Laboratories
Org. Element -	Ballistic Measurements Laboratory, Applied Physics Branch
Contents & Scope -	Rocket data, including Doppler data and timing signals; satellite data, including signal strength of satellite transmitter, tracking filter correlation, Doppler data, and timing signals
Method of Storage -	Key punch cards, magnetic tapes, paper tapes
Volume -	400,000 80-column cards; 50 reels of magnetic tape
Rate of Growth -	Held to a minimum: turnover of approximately 500,000 cards and 400 reels of tape
Personnel Required -	Supervisory mathematician, 1 geodesist, 3 electrical engineers (all 25% of time)
Equipment Utilized -	Verifier, keypunch, sorter, tabulator, reproducer, (all IBM); Ampex tape recorder (FR114), computers (EDVAC, ORDVAC, ERLESC, Transistorized Data Translator (TDT, General Development Corp.); Benson Lehner Electro Plotter
System Operation -	Doppler data and timing signals for rocket transmissions are digitized using the TDT. Results are stored on magnetic tape in ORDVAC format. Data is retrieved.

System Number 1 Continued

System Operation -
(Cont'd)

transferred to punched cards, tabulated (time, Doppler, derivative) and stored. Data is retrieved, analyzed; trajectory data, velocity and acceleration components and positional errors are computed, stored on punched cards, and results are tabulated as a flight summary for the rocket firing. Satellite data is processed in a similar manner except that paper tape is used to store Doppler data vs. time, and final results, which are tabulated and plotted, and include the computation of the integrated electron content.

Discipline -

Engineering

System Number 2

Installation -	Aberdeen Proving Ground, Md.
Organization -	Ballistic Research Labs
Org. Element -	Computing Laboratory
Contents & Scope -	Data on electronic, digital computing systems
Method of Storage -	File cards and folders, tables
Volume -	300 file folders, 300 5x8 cards, and 17 multicolumn multipage tables
Rate of Growth -	20 file folders/yr. and 20 5x8 cards/yr.
Personnel Required -	Engineer 1(PT) Technician 1 (PT)
Equipment Utilized -	Manual
System Operation -	Data is gathered by means of a survey questionnaire to manufacturers and users of EDP equipment. Data is hand-sorted according to the respective computing system. Comparative tables are prepared. Results are published in a printed, bound catalog form.
Discipline -	Engineering

System Number 3

Installation -	Aberdeen Proving Ground, Md.
Organization -	Ballistic Research Laboratories
Org. Element -	Technical Library Branch No. 1
Contents & Scope -	Journals (or copies of journals) related to research and development in chemistry, chemical engineering, and related information
Methods of Storage -	Microcards
Volume -	21,600 microcards
Rate of Growth -	(Undetermined)
Personnel Required -	Librarian 1% time
Equipment Utilized -	Microcard card reader
System Operation -	Technical personnel use the system by seeking a particular journal and projecting it with the enlarger.
Discipline -	Chemistry, Engineering

System Number 4

Installation -	Aberdeen Proving Ground, Md.
Organization -	Ballistic Research Laboratories
Org. Element -	Weapons System Laboratory, Armored Systems Evaluation Branch
Contents & Scope -	Weapons systems data including vehicular geometries, neutron transport codes, tank duel in- puts and outputs, anti-tank guided missile trajectories, and gunner tracking error testing
Method of Storage -	Keypunch cards, data sheets
Volume -	88,000 80-column cards
Rate of Growth -	20,000 cards/year
Personnel Required -	(Undetermined)
Equipment Utilized -	IBM card punch, verifier, sorter, reproducer, and tabu- lator
System Operation -	(Undetermined)
Discipline -	Mathematics

System Number 5

Installation -	Aberdeen Proving Ground, Md.
Organization -	Ballistic Research Laboratory
Org. Element -	Weapons System Laboratory, Surveillance Branch
Contents & Scope -	Statistical data on stock-pile reliability and quality of var- ious types of rockets, missiles, special weapons and conventional ammunition
Method of Storage -	Key punch cards, file cards, data sheets
Volume -	350,000 80-column cards, 400,000 5x8 ammunition data cards, 70,000 firing records, 15,000 weapons inspection reports, 3,000 manuals
Rate of Growth -	70,000 80-column cards/year, 5,000 5x8 ammunition data cards, 1,000 firing records, 5,000 weapons in- spection reports, 200 manuals
Personnel Required -	Total of 38 mathematicians, mathematical statisticians, en- gineers, and chemists. (3% of their time - all part time)
Equipment Utilized -	IBM card punch, sorters, veri- fier, reproducer, and tabulator
System Operation -	Observations of ballistic func- tioning tests of conventional ammunition are stored on data sheets. Observations of field tests of rocket, guided missile and special weapon ammunition are stored on data sheets and punched cards. Results of in- spections and laboratory tests

System Number 6

Installation -	Aberdeen Proving Ground, Maryland
Organization -	Computing Laboratory
Org. Element -	Artillery & Missiles Ballistics Branch
Contents & Scope -	Firing tables and other ballistic information for rockets, guided missiles, and conventional weapons
Method of Storage -	Key punch cards, data sheets
Volume -	Several million punch cards
Rate of Growth -	3 million punch cards per year
Personnel Required -	24 mathematicians (7.5% of the time)
Equipment Utilized -	Computers (BRLESC, ORDVAC, EDVAC); EAM equipment (verifier, key punch, sorter, tabulator, reproducer)
System Operation -	Store test firing observations (atmosphere conditions, initial conditions, terminal observations, and projectile parameters) and results of range and wind-tunnel flights on punched cards, data sheets, and tab files. Retrieve data and compute mean values, probable error, and fitted curves for a given projectile-launcher system. Analyze results; use math model to compute mean values of other parameters. Store results on data sheets; retrieve data and compute sets of parameters; store results on punched cards. Sort and associate parameters; compute, punch and tabulate results as a firing table.
Discipline -	Mathematics

System Number 6 Continued

System Operation -
(Cont'd)

are stored on data sheets and punched cards. Data is retrieved, and means, standard deviations, defect rates, etc., are computed for each ammunition system. Results are analyzed and stored on data sheets. Final results are summarized in a report evaluating the quality and reliability of the various ammunition systems.

Discipline -

Mathematics, Engineering

System Number 7

Installation -	Aberdeen Proving Ground, Md.
Organization -	Deputy Post Commander
Org. Element -	Technical Library
Contents & Scope -	Information on the physical and engineering sciences, APG D&PS firing records and formal technical reports since 1918
Method of Storage -	File cards
Volume -	-
Rate of Growth -	-
Personnel Required -	Catalogers 7 (PT) Librarians and Assistants 10 (PT)
Equipment Utilized -	Manual
System Operation -	Subject entry cards are generated for cross referencing. Subject and main entry cards are filed alphabetically in card catalog. Dewey numbers, or letter combination of the issuing agency, and the report number are assigned each item. Catalog cards follow standard library practices. Subject headings are selected in accordance with established subject lists.
Discipline -	Engineering

System Number 8

Installation -	Aberdeen Proving Ground, Md.
Organization -	Development & Proof Services
Org. Element -	Automotive Division, Engineering Testing, Armor Branch
Contents & Scope -	Information on ballistics tests of armor plate, armored vehicles, and body armor
Method of Storage -	Edge-punched cards, file cards
Volume -	522 McBee cards (200 wds/card) 1,337 3x5 cards
Rate of Growth -	21 edge-punched cards/yr. 21 3x5 cards/yr.
Personnel Required -	3 (PT) Engineers, 1 (PT) typist Total time devoted per week is 1 hour
Equipment Utilized -	McBee edge punch card equipment
System Operation -	A report is written at completion of each test program. From this report certain results are extracted for typing on the McBee cards (one card for each report). The card is punched to indicate the contents of the report, including: thickness and type of armor plate, caliber and type of attacking projectiles, etc.
Discipline -	Engineering, Physics

System Number 9

Installation -	Aberdeen Proving Ground, Md.
Organization -	Development and Proof Services
Org. Element -	Engineering Laboratories Analytical Laboratory
Contents & Scope -	Records, in various forms, of development and ballistic acceptance tests of weapons, armor, and ammunition for data reduction and analysis.
Method of Storage -	File cards and folders, tabulated data and lab reports, oscillographic and photographic records
Volume -	1,100 8x10 1/2 laboratory reports, 300 5x8 gage records (Kardex files), 1,500 reels of 16mm, 35mm, and 70mm film and Bowen-Knapp oscillographic and instrumental records
Rate of Growth -	100 laboratory reports per year, 30 gage records per year
Personnel Required -	Mathematicians and Statisticians 3% time (to reduce and analyze data and retrieve from files)
Equipment Utilized -	Manual
System Operation -	Records are kept in cabinets for one year after completion of project with "selected" records being kept as reference for longer periods. Target accuracy data and data from acceptance tests are summarized and recorded on charts to provide continuing history. Lab reports are indexed and filed by serial number.
Discipline -	Mathematics & Statistics, Physics

System Number 10

Installation -	Aberdeen Proving Ground, Md.
Organization -	Development and Proof Services
Org. Element -	Engineering Testing
Contents & Scope -	Information on field tests of ordnance materiel such as armored vehicles, transport vehicles, mortars, mines, machine guns, fire control equipment. Also information on vulnerability test of tanks and aircraft. Much information is the result of acceptance testing.
Method of Storage -	File cards
Volume -	1,400 reports/year 25,000 3x5 cards (D&PS Library) 5,000 3x5 cards (Section & Branch files)
Rate of Growth -	8,000 3x5 cards/yr.
Personnel Required -	Engineers and Technicians - 50 - 3% time, Librarian and Typist - 2 - 1% time
Equipment Utilized -	Manual
System Operation -	File cards are kept by individual sections and branches on the results of tests they have conducted. These cover both acceptance and development tests of ordnance materiel. File cards are also kept by the D&PS Library. These cover all D&PS formal reports and development firing records.
Discipline -	Engineering

System Number 11

Installation -	Aberdeen Proving Ground, Md.
Organization -	Development and Proof Services
Org. Element -	Office of Director, Field Liaison Office
Contents & Scope -	Environmental analysis data developed from engineering test reports covering arctic and desert tests
Method of Storage -	File cards
Volume -	200 to 300 reports/year
Rate of Growth -	-
Personnel Required -	Engineer 70% time, Typist and Clerical 50% time
Equipment Utilized -	Manual
System Operation -	Information is obtained from report reviews made by an engineer. After compilation is completed, ratings are reviewed by D&PS test engineering personnel before final printing.
Discipline -	Engineering, Earth Sciences

System Number 1.

Installation -	Aberdeen Proving Ground, Md.
Organization -	Human Engineering Laboratory
Org. Element -	-
Contents & Scope -	Information on human performance capabilities and limitations as related to weapon requirements and affected by task related criteria such as information, processing, time constraints, work space conditions, etc.
Method of Storage -	File cards and folders updated, literature reviews
Volume -	37,000 3x5 cards (31 words/card) 5,100 documents (20 or more pages/doc.)
Rate of Growth -	600 3x5 cards/year
Personnel Required -	1 librarian, 5 military technicians, professional project personnel as required
Equipment Utilized -	Manual
System Operation -	Retrieval scheme consists of accumulating specific relative documents, i. e., abstracts and technical publications cataloged according to type (information processing, tracking, etc.). As information accumulates, an attempt is made to summarize specific information into guideline or standard documents.
Discipline -	Engineering, Psychology

System Number 13

Installation -	Aberdeen Proving Ground, Md.
Organization -	Weapons Systems Laboratory
Org. Element -	War Games Branch
Contents & Scope -	Information on TO&E, orders of battle, terrain, military tactics, weapons effects, etc. from published reports and conferences with military personnel and civilian scientists
Method of Storage -	Keypunch cards
Volume -	10,000 punched cards; 1,000 3x5 cards
Rate of Growth -	-
Personnel Required -	2 Mathematicians, 1 secretary
Equipment Utilized -	Computer, ORDVAC; EAM Equipment (keypunch, sorter, tabulator, reproducer)
System Operation -	Information is prepared for classified file folders. 3x5 card summary is prepared showing source of information, date received, unclassified description, date returned (for reports), and responsible person. Scenario describing war game, including foregoing information, is prepared for file folders. Scenario is prepared on punch cards; war game is processed by computer, and computer outputs are tabulated. Report is then prepared summarizing the results of computer play.
Discipline -	Mathematics & Statistics

System Number 14

Installation -	Detroit Arsenal, Warren, Michigan
Organization -	Army Tank Automotive Center
Org. Element -	Technical Data Branch
Contents & Scope -	Drawings related to basic and applied research and applicable to ATAC equip- ment items (tanks- automotive items)
Method of Storage -	10-Diebold Super
Volume -	1 to 1½ million aperture cards
Rate of Growth -	3,000 per month
Personnel Required -	-
Equipment Utilized -	Photo reproducers, photostat, ozalid, xerox
System Operation -	Drawings received are reviewed for adequacy, and filmed for preparation of aperture cards. (Additional copies, up to 14, are made for outside distribution)
Discipline -	Engineering

System Number 15

Installation -	Detroit Arsenal, Warren, Michigan
Organization -	Army Tank and Automotive Center
Org. Element -	Technical Data Coordination Branch
Contents & Scope -	Technical reports on all aspects of shaped charges
Method of Storage -	Key punch cards
Volume -	4,000 reports and 4,000 punch cards
Rate of Growth -	-
Personnel Required -	One engineer part-time
Equipment Utilized -	IBM card punches, sorters and collators
System Operation -	Some reports are abstracted. IBM cards are punched for each report to show the following information: serial number of card, source of report (code number for each institution), year of publication, topics covered (code number for each topic). The abstract, title, source, and date of publication are placed on the reverse side of each card. Searches are conducted by sorting the cards on the code number(s) that correspond to the desired topic(s).
Discipline -	(Undetermined)

System Number 16

Installation -	Detroit Arsenal, Warren, Michigan
Organization -	Tank-Automotive Center
Org. Element -	-
Contents & Scope -	"Engineering Drawing Data" drawing lists for procurement packages
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Computer
System Operation -	Engineering drawing data is key input from engineering parts lists which serve as indices to all parts depicted on assembly drawings, to all drawings required for assembly, and to all specifications required for the manufacture of an end item. The program arranges stored data to provide a drawing list for the Research & Engineering Dir. to be used as a control in the manual drawing retrieval operation.
Discipline -	Engineering

System Number 17

Installation -	Detroit Arsenal, Warren, Michigan
Organization -	Tank-Automotive Center
Org. Element -	-
Contents & Scope -	"Engineering Technical Data"- Engineering data (related to parts, assembly of parts, status of drawings, packaging standards, and specification lists).
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Computer
System Operation -	Computer inputs are provided by the Engineering Evaluation Branch of the Research and Engineering Dir.
Discipline -	Engineering

System Number 18

Installation -	Detroit Arsenal, Warren, Michigan
Organization -	Tank-Automotive Center
Org. Element -	-
Contents & Scope -	"Incident Report" - engineer- ing test data and vehicle incident reports
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Computer
System Operation -	Incident reports are received in source document format by R&E from engineers at various test sites. The incident data are transcribed to in- put formats in R&E and for- warded to the computers weekly. The incident report program manipulates the in- put data records received from the test sites to pro- duce report listings.
Discipline -	Engineering

System Number 19

Installation -	Detroit Arsenal, Warren, Michigan
Organization -	Tank Automotive Center
Org. Element -	-
Contents & Scope -	"Packaging & Preservation" - documentation on packaging data (procurement, supply control, contingency re- porting, tonnage reports)
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Computer
System Operation -	The packaging engineer reviews the drawings of an item and encodes the physical charac- teristics; i.e., bearing surface, length, width, depth and weight. This data is key punched and forwarded to the computer as input. The computer selects an appli- cable packaging standard which develops all necessary data for the packaged item. This data is stored in an Item Master Data Record for future use. The process now generates cards and listings reflecting weight, cube, length, width and depth of the packaged item. The cards and listings are forwarded to the packaging and storage center at Tobyhanna Army De- pot. Packaging data for ATAC managed items is broadcast to the field.

System Number 19 Continued

Discipline -

Engineering

System Number 20

Installation -	Dugway Proving Ground, Utah
Organization -	Technical Library
Org. Element -	Test Design and Analysis Office
Contents & Scope -	Books, journals, and classified documents on chemistry, biology and radiology
Method of Storage -	File cards
Volume -	7,000 volumes, 300 journals, 18,000 classified documents, 12,000 unclassified documents
Rate of Growth -	-
Personnel Required -	Prof. Librarians 2 (full-time) Library Assistant 1 (full-time) Clerk Typists (military) 3 (full-time) Typists 2 (full-time)
Equipment Utilized -	manual
System Operation -	Acquire, catalog, shelve, store, and service. They are currently studying ways in which EDP equipment can be used in retrieval in accordance with the Chemical Corps Technical Information and Evaluation System (TIES) program. Library holdings are being studied for conversion of references to punched cards. A pilot report is being made to list scientific, technical and contractural research efforts on punched cards as part of a technical effort locator (TEL) system.
Discipline -	Biology. Chemistry

System Number 21

Installation -	Dugway Proving Ground, Utah
Organization -	-
Org. Element -	Computer Center
Contents & Scope -	Meteorological data for each hour of day from Dugway and other testing sites. Weather forecasting data.
Method of Storage -	Punch cards
Volume -	86,000 80-column cards
Rate of Growth -	8,000 80-column cards per year
Personnel Required -	6 keypunch operators, 3 EAM operators, 3 computer programmers (all part-time)
Equipment Utilized -	1620 IBM computer, 024 Card Punch, 056 Verifier, 082 Sorter, 407 Printer.
System Operation -	Statistical analyses made from time to time on meteorological data in punch card form. Test data compiled from field samplers, punched on cards and analyzed in the 1620 computer.
Subject -	Earth Sciences, Mathematics

System Number 22

Installation -	Edgewood Arsenal, Maryland
Organization -	Chemical Research & Development Labs
Org. Element -	Industrial Liaison Office, Directorate of Research
Contents & Scope -	Data, such as structure, formula, and characteristics, for chemical compounds, particularly organic, which are related to each other through chemical structure, similarity of function or biological effort, etc.
Method of Storage -	Keypunch cards, file cards
Volume -	30,000 3x5 file cards; 15,000 80-column cards; 52 loose-leaf notebooks (170 8 1/2 x 11 pages each)
Rate of Growth -	15,000 3x5 cards/year; 40,000 80-column cards/year; 30 notebooks/year
Personnel Required -	(Based on percentage of time utilized for system) organic chemists (1.25), clerk typists (2.0), secretary (.50)
Equipment Utilized -	026 keypunch, 086 sorter, 407 tabulator
System Operation -	Lists of chemical structures in areas of special interest are obtained from industrial supplies of chemicals and pharmaceutical compounds. Information concerning compounds

System Number 22 Continued

System Operation -
(Cont'd)

is classified according to degree of accessibility permitted to the users. 3x5 file cards, containing molecular structure diagrams, inverted molecular formulas, line notation chemical structural formulation, and data on chemical and physical characteristics, are prepared. Punched cards are also prepared, containing serial numbers of compounds, line structural notations, category numbers, functional group fields, and activity data. Data is tabulated in line-notation order.

Discipline -

Chemistry, Biology

System Number 23

Installation -	Edgewood Arsenal, Maryland
Organization -	Chemical Research and Development Labs
Org. Element -	Statistics Branch, Medical Directorate
Contents & Scope -	-
Method of Storage -	Keypunched cards, paper tape
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Flexowriter, card punch, sorter, collater, reproducer, IBM 870 document system
System Operation -	-
Discipline -	Biology, Psychology

System Number 24

Installation -	Edgewood Arsenal, Maryland
Organization -	Chemical Research & Development Labs
Org. Element -	Systems Analysis Division
Contents & Scope -	-
Method of Storage -	Keypunched cards, magnetic tape
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Card punch, verifier and sorter; Xerox 914 copier
System Operation -	Draw organic structures and abstract data. Type 3 x 5 cards and proofread. Code (Wiswesser Line Notation) structures and biological data. Punch, verify, sort, and file code data. For output, Xerox 3 x 5 cards and decode data.
Discipline -	Mathematics, Chemistry, Biology

System Number 25

Installation -	Edgewood Arsenal, Maryland
Organization -	Chemical Research & Development Labs
Org. Element -	Systems Analysis Division
Contents & Scope -	-
Method of Storage -	Keypunch cards, magnetic tape
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Card punch, Univac SS 80/90 Model I computer
System Operation -	-
Discipline -	Mathematics, Chemistry, Biology

System Number 26

Installation -	Edgewood Arsenal, Maryland
Organization -	Chemical Research & Development Labs
Org. Element -	Toxicological Information Center
Contents & Scope -	-
Method of Storage -	-
Volume -	15,000 catalog cards
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Flexowriter, typewriter
System Operation -	-
Discipline -	Biology, Chemistry, Mathematics

System Number 27

Installation -	Edgewood Arsenal, Maryland
Organization -	Dir. Engrng & Industrial Services
Org. Element -	Engineering Documents Division, Cataloging Branch
Contents & Scope -	"Federal Catalog for CBR Complex" - Supply files
Method of Storage -	-
Volume -	35,000 Reports
Rate of Growth -	10,000 Reports/yr.
Personnel Required -	-
Equipment Utilized -	Computer
System Operation -	Supply items processed on punched paper tape, transmitted by Rapidware to DLSC, where data are processed into their Fed. Cata. List. Resultant data re-transmitted to Engineering Doc. Div., cataloging Br. for processing to punched cards. Cards are submitted along with add-on internal data on manual formats to Data Proc. Center at Edgewood Arsenal where follow-on cards are processed on PCM. All cards are then computer processed to master record output for dissemination as above.
Discipline -	Engineering

System Number 28

Installation -	Edgewood Arsenal, Maryland
Organization -	Headquarters
Org. Element -	Data Processing Division
Contents & Scope -	-
Method of Storage -	Magnetic tape and cards
Volume -	Magnetic tapes or cards, 773,000
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Honeywell 400 computer
System Operation -	-
Discipline -	Mathematics

System Number 29

Installation -	Edgewood Arsenal, Maryland
Organization -	Headquarters
Org. Element -	Data Processing Division
Contents & Scope -	-
Method of Storage -	Magnetic Tape
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Univac File I Computer
System Operation -	-
Discipline -	Mathematics

System Number 30

Installation -	Edgewood Arsenal, Maryland
Organization -	Headquarters
Org. Element -	Operations Research Group
Contents & Scope -	-
Method of Storage -	Magnetic Tape
Volume -	16,450 Internal Reports
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Biology, Earth Sciences, Mathematics

System Number 31

Installation -	Fitzsimmons General Hospital, Denver, Colorado
Organization -	Research & Nutrition Labs
Org. Element -	Pathology Division Statistics Branch
Contents & Scope -	Histologic and pathologic case study data
Method of Storage -	Edge-punched cards, diebold files
Volume -	8,000 master, 1,000 supple- mental, 5,000 genetic record cards (all 5x8). 8,000 case file folders, 160,000 histo- logic slides, 25,000 feet film, 1,000 photos, etc., mounted as slides, 6,000 photographs, 500 microphoto- graphs, 120,000 embedded tissue blocks, 120,000 wet tissue blocks.
Rate of Growth -	300-400 cases/month, 5,000 histologic sections/ month, 1,500 ft. film/month, 500 each supp. and generic cards/month, 1,000-2,000 bibliographic cards/year, 1,750 embedded blocks/month, 1,750 wet tissue/month, 1,000- 2,000 photos/year.
Personnel Required -	-
Equipment Utilized -	Keysort V Punch Sorting needle

System Number 31 Continued

System Operation -

Master code card (8x10) supplies identification items, numbers, classes, species, anatomic location, autopsy summation, etc. These cards are punched for sorting and supply 80% of the IR needs on cases coded. The supplemental code card offers an expanded code if it is necessary to record specific details of a case but it complements the master card in general information. Bibliography card is used for setting up coded reference files keyed to coded case material.

Discipline -

Biology, Mathematics

System Number 32

Installation -	Fitzsimmons General Hospital, Denver, Colorado
Organization -	Rocky Mountain Arsenal
Org. Element -	Data Processing Division
Contents & Scope -	-
Method of Storage -	-
Volume -	Punched cards, 6,200
Rate of Growth -	20%
Personnel Required -	-
Equipment Utilized -	Card punch, card sorter, card collator, card repro- ducer, printer, interpreter; IBM 604 calculator
System Operation -	-
Discipline -	Chemistry

System Number 33

Installation -	Fitzsimmons General Hospital, Denver, Colorado
Organization -	Rocky Mountain Arsenal
Org. Element -	Medical Division
Contents & Scope -	-
Method of Storage -	Edge-notched cards
Volume -	2,000 Audio Tapes
Rate of Growth -	8%
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Disciplines -	Biology, Chemistry, Mathema- tics, Psychology

System Number 34

Installation -	Fitzsimmons General Hospital, Denver, Colorado
Organization -	-
Org. Element -	Chief, Pulmonary Disease Section
Contents & Scope -	-
Method of Storage -	Edge-notched cards
Volume -	Medical case records, 2,000
Rate of Growth -	16%
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Biology

System Number 35

Installation -	Fitzsimmons General Hospital, Denver, Colorado
Organization -	-
Org. Element -	Chief, Dept. of Surgery
Contents & Scope -	Tumor Register
Method of Storage -	-
Volume -	Medical Case Records, 6,000
Rate of Growth -	7%
Personnel Required -	-
Equipment Utilized -	Document copying equipment
System Operation -	Summarize into physiological categories of diagnosis. Furnish group summaries of individual folders.
Discipline -	Biology, Mathematics

System Number 36

Installation -	Fort Belvoir, Virginia
Organization -	Engineering Research and Development Labs
Org. Element -	Logistical and Technical Information Section, Information Resources Branch
Contents & Scope -	Abstracts and retrieval data for reports, papers and intelligence documents covering military aspects of electrical, military and civil engineering, as well as mechanical equipment and basic research in explosives, corrosion, water purification, organic coatings, fire retardants, and new mapping techniques.
Method of Storage -	Edge-punch cards
Volume -	2,400 cards 8 x 10 1/2 (approximately 100 words per card)
Rate of Growth -	1200 cards per year
Personnel Required -	2 Intelligence Research Specialists, 2 Intelligence Clerks
Equipment Utilized -	Manual sorting equipment (McBee), Card Notching punch (McBee)
System Operation -	8 1/2 x 10 Technical Information Abstract Cards (TIAC) are prepared containing complete abstracts and retrieval data (report number, agency

System Number 36 Continued

System Operation
(Cont'd)

preparing the report, date of report, location of report, and subject identifiers). Subjects and data are analyzed using ASTIA Thesaurus and codes are edge punched on each card. Completed cards are filed by descriptor groups. Searches are conducted using McBee sorting equipment.

Discipline -

Engineering, Chemistry,
Physics, Earth Sciences

System Number 37

Installation -	Fort Belvoir, Virginia
Organization -	Engineering Research and Development Labs
Org. Element -	Production Engineering Division
Contents & Scope -	Engineering Drawings & Associated Data (e.g., parts lists, data lists, inspection lists). EDS portable bridges, electric generators, vehicles (tanks, cranes)
Method of Storage -	Microfilm Aperture Cards
Volume -	100,000 aperture cards
Rate of Growth -	5,000 cards per month
Personnel Required -	-
Equipment Utilized -	Micro-camera processor, automatic card-to-card copier; Enlarger-Printer, special automatic equipment - Rem Rand-card-veyor
System Operation -	Create silver microfilm aperture cards using micro-camera processor. Produce duplicate diazo copy cards using automatic card-to-card copier. Produce hard copy utilizing variable enlarger with ultra-violet light source printer.
Discipline -	Engineering

System Number 38

Installation -	Fort Belvoir, Virginia
Organization -	Engineering Research and Development Labs
Org. Element -	Technical Documents Center, Information Resources Branch
Contents & Scope -	Technical reports and publications on physical sciences and engineering
Method of Storage -	File cards
Volume -	350,000 3x5 catalog cards, 55 words/card; 46,651 technical reports, 50 pages/report; 35,000 Department of the Army publications; 8,000 folders, 15 sheets/folder, 350 words/sheet.
Rate of Growth -	28,800 catalog cards/year, 3,600 technical reports/year.
Personnel Required -	Librarians (3), Library Assistants (2), Library Clerks (2)
Equipment Utilized -	-
System Operation -	Special Note: Information Resources Branch collects information on a world-wide scale and disseminates it to USAERDL personnel. Staff personnel can answer such questions as: What research on this subject is being performed elsewhere? Is there a similar piece of equipment in existence now? What has been published in my fields?, etc.
Discipline -	Earth Sciences, Engineering

System Number 39

Installation -	Fort Belvoir, Virginia
Organization -	Engineering Research and Development Labs
Org. Element -	Technical Library, Information Resources Branch
Contents & Scope -	Properties of manufactured engineering components including electronic equipment, ground support equipment for missiles, etc. 2,000 manufacturers are represented
Method of Storage -	16mm microfilm
Volume -	32 16mm microfilm cartridges (2,500 frames per cartridge)
Rate of Growth -	5 cartridges (12,500 frames) per year
Personnel Required -	1 Library Assistant
Equipment Utilized -	VSMF (Visual Search Microfilm File), 16mm Recordak Lodestar Reader-Printer
System Operation -	VSMF is an information service marketed by Information Handling Services, Inc. A vendor catalog provided as part of the service containing lists of engineering products arranged by categories is searched by the user. The catalog index provides a cartridge number and a frame number for each product type. The user inserts the desired microfilm

System Number 39 Continued

System Operation -
(Cont'd)

cartridge into the viewer-printer and runs the film at high speed. When the desired specification is brought into view, a photographic print may be made of the image.

Discipline -

Engineering

System Number 40

Installation -	Fort Belvoir, Virginia
Organization -	Engineering Research and Development Laboratory (ERDL)
Org. Element -	-
Contents & Scope -	Corps of Engineering Drawings, R&D Drawings are made into aperture cards - or reproduced for distribution touring agencies.
Method of Storage -	Original Drawings - Limited number aperture cards
Volume -	25,000 aperture cards - 200,000 drawings
Rate of Growth -	1,000 aperture cards/month
Personnel Required -	1 man operation
Equipment Utilized -	Photo reproduction - OZALID, Uniprinter
System Operation -	Practically non-existent (as of report date - Photo Lab had no person to support aperture card system for 10 months). Estimate 1 year to get up to date.
Discipline -	Earth Sciences, Engineering

System Number 41

Installation -	Fort Bragg, North Carolina
Organization -	Headquarters & Special Warfare Center
Org. Element -	Preventive Medicine Section
Contents & Scope -	-
Method of Storage -	Edge-notched cards
Volume -	Punched cards - edge notched 519
Rate of Growth -	100%
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Biology

System Number 42

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Aerobiology Division
Contents & Scope -	Journals, books, etc. on unhygienic particles and aerosols
Method of Storage -	Edge punched cards, file cards, file folders, magnetic tapes, lefax notebooks
Volume -	2 sets of 3000 3"x5" cards 2000 5"x8" edge-notched key-sort cards, 1 lefax notebook
Rate of Growth -	200 3"x5" cards/year
Personnel Required -	One (PT) Scientist
Equipment Utilized -	McBee Keysort Sorter
System Operation -	A 3"x5" card system involving approximately 5,000 references provides at least two cards for each reference, one of which is kept in a permanent alphabetical senior author file. An abstract is provided when possible. A second set, usually arranged by subject heading, is used as a working set and usually arranged by subject heading.
Discipline -	Biology, Chemistry

System Number 43

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Aerobiology Division
Contents & Scope -	Information from quarterly reports, Technical Memos and Laboratory Notes, and Papers on Experimental Aerobiology
Method of Storage -	File cards and a cross referenced index
Volume -	200 loose-leaf pages, 9 references per page
Rate of Growth -	14 loose-leaf pages per year
Personnel Required -	Scientist one (PT), one Secretary (PT)
Equipment Utilized -	-
System Operation -	The system is issued as loose-leaf reports to permit periodic up-dating and to keep references in a bound form for ready use. One copy of the index is kept in the Technical Library for general installation use and one is kept on file in the Division Office
Discipline -	Biology

System Number 44

Installation -	Fort Detrick, Md.
Organization -	Biological Laboratories
Org. Element -	Animal Farm Division
Contents & Scope -	Literature on the care and diseases of laboratory animals
Method of Storage -	File cards, file folders, histological-pathological slides
Volume -	-
Rate of Growth -	-
Personnel Required -	Two Veterinarians, one Administrative Assistant
Equipment Utilized -	-
System Operation -	Two Veterinarian survey literature-summaries on animals in laboratories (issued as monthly, semi-annual and annual reports). FD form 82, FD form 6-85, and CD form 6-253 is system of records to show observation and treatment, preliminary daily observations by caretakers, and post mortem observations respectively
Discipline -	Biology Chemistry

System Number 45

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Biomathematics Division, Numerical Analysis Branch
Contents & Scope -	Data from experiments conducted in divisions of the laboratory other than the Biomathematics Division
Method of Storage -	Key punch cards, file folders, paper tapes, forms
Volume -	-
Rate of Growth -	-
Personnel Required -	1 branch chief, 1 key punch operator, 1 computer operator (all part-time)
Equipment Utilized -	90 computer reproducing punch, mechanical sorter, tape to card converter, six-channel flexowriter (all Rem-Rand except flexowriter Friden)
System Operation -	Consultants in Bio-mathematics Division provide test sponsors from other divisions with advice on test design, review of test data resulting from the experiment, and outline for analysis of test data. A statistical clerk prepares instructions for computer processing of the test data and examines the computer output for accuracy after it has been run. The work is then returned to the consultant, who prepares a statistical report for the test sponsor. Records of all jobs are kept using punch cards
Discipline -	Mathematics

System Number 46

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Crops and Biomathematics Division
Contents & Scope -	Effects of chemicals on plants, with special interest on growth regulators and defoliants
Method of Storage -	Edge punch cards, key punch cards, file cards, paper tapes, photo plates
Volume -	60,000 punch cards (covering 10,000 compounds)
Rate of Growth -	160 compounds per month
Personnel Required -	1 programmer, 1 comp. operator (part-time)
Equipment Utilized -	Rem Rand 90 computer, Rem Rand reproducing punch, Rem Rand mechanical sorter, McBee keysort
System Operation -	Three files kept up to date. Sorter and tabulator are used for the Source and Empirical Formula Files. 90 computer is used for the Biological Activity File
Discipline -	Biology, Chemistry, Mathematics

System Number 47

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Entomology Division
Contents & Scope -	Reviewed literature and research data on the transmission of microorganisms by Arthropods
Method of Storage -	Edge punched cards, file cards, file folders, reprints, photostats, lab notebooks unisort analysis card
Volume -	-
Rate of Growth -	-
Personnel Required -	Literature investigators and one secretary. Time required unknown
Equipment Utilized -	Copycat Corp's "Economy Desk Model FS 99"
System Operation -	No special system i.e., conventional literature review and research data tabulation methods are followed.
Discipline -	Biology

System Number 48

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Intelligence Office and Security Office
Contents & Scope -	Papers on biological warfare are submitted for clearance & publication in professional journals, scientific symposia & the public.
Method of Storage -	File cards File Folders
Volume -	900 3" x 5" cards (50 words and no.'s/card)
Rate of Growth -	250 cards/year
Personnel Required -	Intelligence Officer 1 (PT) Secretary 1 (PT) Chief of Internal Security 1 (PT)
Equipment Utilized -	-
System Operation -	Manuscripts logged by subject and author on 3" x 5" card. After clearance, manuscript is returned to technical information division with recommendations for classification based on cited authority.
Discipline -	Biology, Chemistry

System Number 49

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Medical Bacteriology Division
Contents & Scope -	Information on microbiological sciences including genetics, physiology, nutrition, immunology pathology, aerobiology, biochemistry from journals and abstracts, indices
Method of Storage -	Edge punched cards, file cards, file folders, photographic plates, motion picture film, reprints, reports, photostatic copies
Volume -	-
Rate of Growth -	-
Personnel Required -	No one individual is assigned for this duty. Approximately 80 civilian and military personnel from GS-7 to GS-15 perform functions as necessary
Equipment Utilized -	-
System Operation -	No special system has been devised. In this division, information retrieval varies with the individual but conforms with conventional practice including requirements of Army regulations.
Discipline -	Biology, Chemistry

System Number 50

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Medical Investigation and Biomathematics Division
Contents & Scope -	Immunization records - date, event (skin test, titer, injection) and reaction or reading for tularemia
Method of Storage -	Punch cards, immunization records
Volume -	6000 record sheets (1 per patient)
Rate of Growth -	320 records per year two in six months (inquiries are rare due to press of other work)
Personnel Required -	One coder, one tab equipment operator, one physician, one nurse (all part-time)
Equipment Utilized -	UNIVAC 120 computer, Rem Rand mechanical sorter, Rem Rand Model 3 Tabulator
System Operation -	Tabulator is used to list results to be forwarded to investigator
Discipline -	Biology, Mathematics

System Number 51

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Medical Investigation Division
Contents & Scope -	Immunization records in- cluding personnel reactions, etc. to injections.
Method of Storage -	Immunization records (Special Procedures Form), Clinical Out-Patient & Hospital Records.
Volume -	1,000 9" x 11" Immunization record sheets (other) 6,000 9" x 11" Immunization records (Tularemia)
Rate of Growth -	250 to 300 9" x 11" Immuni- zation sheets/year
Personnel Required -	Physician 1 (PT) Nurses 3 (FT) Nurses 2 (PT)
Equipment Utilized -	-
System Operation -	Immunization forms record all immunizations; log books are used for advanced scheduling of injections and observations; clinical out-patient records and hospital records used to determine actual INC
Discipline -	Biology

System Number 52

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Munitions Development Division
Contents & Scope -	Reports on engineering, applied physics, explosives ordnance, initiators, high speed measurement, testing techniques, aerosol pro- duction & Assays, fabri- cation, general instru- mentation, aerodynamics, etc.
Method of Storage -	A listing.
Volume -	20 reports, 30 pages/report
Rate of Growth -	48 reports/year
Personnel Required -	Administrative Assistant 1 (PT)
Equipment Utilized -	-
System Operation -	A broad spectrum of reports is received by the Division Documents Room. Access or retrieval is made possible by a bi-weekly accession list from which interested readers may select those documents and reports of interest.
Discipline -	Engineering, Physics, Biology

System Number 53

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Munitions Development Div.
Contents & Scope -	Design engineering drawings related to munitions development.
Method of Storage -	File cards, file folders, engineering drawings (filed alphanumerically), log books, forms, receipt book.
Volume -	12,350 drafting room tracings
Rate of Growth -	500 tracings a year
Personnel required -	Engineer draftsman 1 (PT)
Equipment Utilized -	-
System Operation -	Follows conventional engineering practice specified by Army regulations.
Discipline -	Engineering

System Number 54

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Office, Director of Development
Contents & Scope -	Data on development of agent and hardware components in over-all field of biological warfare.
Method of Storage -	File folders and photographs.
Volume -	100 file folders (70 sheets per folder and 350 words per sheet) 30 documents (50 pages/doc.)
Rate of Growth -	35 file folders & 10 documents/year
Personnel Required ..	Scientist 1 (PT) Engineer 1 (PT) Admin. Officer 1 (PT) Secretary 1 (PT)
Equipment Utilized -	Manual
System Operation -	-
Discipline -	Biology

System Number 55

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Pathology Division
Contents & Scope -	Records and specimens (Gross and microscopic) of experimental animals used in the biological warfare program.
Method of Storage -	File cards, file folders, photographic plates, forms.
Volume -	-
Rate of Growth -	-
Personnel Required -	Scientist 1 (PT) (to maintain files)
Equipment Utilized -	Manual
System Operation -	Preliminary information logged in autopsy accession book and animal tissue record form. These are filed alphabetically according to agent. Specimens are put into containers. Paraffin block specimens are filed by case number. A separate numbered file is kept for both stained and unstained slides. The two files are cross-referenced by agent.
Discipline -	Biology, Chemistry

System Number 56

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Pathology Division
Contents & Scope -	Reference file on Florescent Antibody Technique and related subjects
Method of Storage -	Edge punched cards, file folders, paper tapes
Volume -	-
Rate of Growth -	-
Personnel Required -	One (PT) Research Scientist, one (PT) Research Technician, One (PT) clerk-typist
Equipment Utilized -	McBee KD 584B
System Operation -	Article or its summary contained on punched card. File copy of original article keep for those cards with only a summary. Complete Bibliographic citation typed on top of card. Article translations noted. Author's last name recorded with A 3-character alpha code. Year of publication, applications, etiologic agents, and disease syndromes included with adequate space for expansion.
Discipline -	Biology

System Number 57

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Physical Defense Division
Contents & Scope -	Data on the normal microbial flora of the air
Method of Storage -	File cards, file folders, intellofax tapes from CCIA
Volume -	-
Rate of Growth -	-
Personnel Required -	Scientist 1 (PT)
Equipment Utilized -	(Apeco) Uni-matic autostat (photocopier) 11" x 17"
System Operation -	This is a conventional manual system using 5" x 7" lined cards on which references, abstracts, and data are typed. The cards are arranged primarily according to author. The file folders are arranged according to country of origin
Discipline -	Biology

System Number 58

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Physical Defense Division
Contents & Scope -	Data on the usefulness of organic and inorganic chemicals as germicides, disinfectants, and fungicides
Method of Storage -	-
Volume -	2,835 3x5 commercial form file cards with approximately 40 words/ card
Rate of Growth -	60 to 70 3"x5" cards/year (over past three years)
Personnel Required -	One (PT) Scientist
Equipment Utilized -	Manual
System Operation -	Structural formulae, physical and chemical properties of compounds are coded numerically by marginal punches into the system. Information on the compounds is usually sent back to the organization originally sub- mitting the compound
Discipline -	Biology, Chemistry

System Number 59

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Physical Sciences Division
Contents & Scope -	Data and information on organic compounds, including chemical name, and the line notation formula
Method of Storage -	Key punch cards
Volume -	3800 90-col. cards
Rate of Growth -	About 60,000 punch cards (about 5,000 reports) accumulating at a rate of 2,000 cards per year
Personnel Required -	One scientist, one tab equipment operator (part-time)
Equipment Utilized -	Rem Rand Sorter, Rem Rand Tabulator, UNIVAC S.S. 90 for coding
System Operation -	Generic types of chemical compounds containing certain functional groups of interest to a particular project are selected by a chemist. A computer program is then used to provide a list of specific chemical compounds (number, chemical name, line notation formula, page, and catalog number) from a previously coded list. The Wiss Wesser Line Notation System is used
Discipline -	Chemistry

System Number 60

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Process Research Division
Contents & Scope -	Information on biological agent process development studies
Method of Storage -	File folders, case files, engineering drawing files.
Volume -	1,000 28" x 42" engineering drawings; 2,000 folders (25 sheets/folder); 1,000 documents (40 pages/document)
Rate of Growth -	1,000 engineering drawings, 100 folders, 150 documents/year
Personnel Required -	Draftsman 1 (PT)
Equipment Utilized -	Manual
System Operation -	Follows conventional engineering and administrative procedures specified by Army regulations
Discipline -	Biology

System Number 61

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Program Coordination Office
Contents & Scope -	Data from Technical Evaluation Division tests related to aerosol behavior and storage characteristics of biological warfare agents and to aerosol dissemination characteristics of munition end-items and test fixtures
Method of Storage -	Edge punch cards, file cards
Volume -	300 5x8 index cards (information is being transcribed onto 5x8 McBee keysort cards
Rate of Growth -	100 cards per year
Personnel Required -	Two scientists and one officer (part time)
Equipment Utilized -	Manual
System Operation -	-
Discipline -	Biology

System Number 62

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Program Coordination Office
Contents & Scope -	A cross-index file between document subject matter and security control number
Method of Storage -	File cards
Volume -	1,200 3" x 5" cards, 20 words/card
Rate of Growth -	180 cards/year
Personnel Required -	Scientist 1 (PT)
Equipment Utilized -	Manual
System Operation -	-
Discipline -	(Undetermined)

System Number 63

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Technical Evaluation Division, Methods Research & Agent Evaluation Branch
Contents & Scope -	Test Records from Studies of Biological Aerosols, Aerosol Stability, and Infectivity of Microbial Pathogens Under Controlled Environment
Method of Storage -	FD Form 6-28, National Form V521 & V521E, Lab Notebooks
Volume -	FD Form 6-28 (28 cys per year) Nat. Form V521 & V521F -1500 sheets (100 words/sheet)
Rate of Growth -	FD Form 6-28 24 pgs/yr. Nat. Forms (both) 200 sheets/yr. 300 pgs/month Nat Forms 10 sheets/mo.
Personnel Required -	Secretary 1 (PT)
Equipment Utilized -	Manual
System Operation -	Plans & records of tests are recorded in lab books. Form V521 contains abstract of any given test report. Quarterly & Summary Reports are prepared from these abstracts. Lab book data is recorded into Division log-book when in finished form
Discipline -	Biology

System Number 64

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Technical Evaluation Division, Methods Research & Agent Evaluation Branch
Contents & Scope -	Records of Microbial Pathogens, Aerosol Properties, & Test Animal Response, obtained under controlled aerosol conditions
Method of Storage -	Tabular Records
Volume -	3 sets 20 x 30" 15 pg. tables 5 sets 8 x 10" 20 pg. tables
Rate of Growth -	5 sets, 8 x 10 inches, 5 pg. tables/year
Personnel Required -	Scientists 1 - 3 (PT) Secretary 1 (PT)
Equipment Utilized -	Manual
System Operation -	Data is categorized by name of microbial agent (or agent & weapon), agent preparatory treatments, test conditions, parameters observed or measured and results reflecting statistical analysis
Discipline -	Biology

System Number 65

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Technical Evaluation Division
Contents & Scope -	System is used to schedule test in all of the Division's test facilities
Method of Storage -	Tabular records
Volume -	1 File Folder (50 Sheets) 8 Log Books, 9" x 17"
Rate of Growth -	50 Sheets/Year 1 Log Book/Year
Personnel Required -	Branch Chiefs 3 (PT) Secretaries 3 (PT)
Equipment Utilized -	Manual
System Operation -	System used to plan next fiscal year's program. The tentative schedules setup in planning are revised as program becomes operable in order to maintain efficient schedules of operations in all test facilities within current fiscal year. Finally, schedules are revised from period to period <u>within</u> a series of tests as needed
Discipline -	(Undetermined)

System Number 66

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Technical Evaluation Division Test Sphere Branch
Contents & Scope -	Records of test data on experimental Aerobiology and exposure of experimental animals to Biological Aerosols (includes testing of Disseminators and Biological Agents)
Method of Storage -	File cards, file folder, photographic data, forms, lab note-books, log books
Volume -	-
Rate of Growth -	-
Personnel Required -	1 Branch Chief, 1 Section Chief 2 Secretaries (PT) 1 Animal Caretaker Foreman 50% time
Equipment Utilized -	Manual
System Operation -	Each proposed test is put in logbook with pertinent number and other information. Test scheduling and animal test data is recorded on standardized forms to reduce clerical work, to insure uniformity and to reduce errors. Three of the forms are used for statistical analysis of data. The forms are also used as the basis of report writing
Discipline -	Biology, Chemistry

System Number 67

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Technical Evaluation Division
Contents & Scope -	Plans and records of tests conducted by TED in program to develop agents and end-items for dispersing biological agents
Method of Storage -	Edge punched cards, file cards, file folders
Volume -	1,600 plans and records of tests (average 15 8x10½" pages each)
Rate of Growth -	200 tests/year
Personnel Required -	One indexer-operator
Equipment Utilized -	-
System Operation -	Documents are indexed and coded by means of an alphanumeric coordinate system to provide maximum flexibility in combining terms when interrogating the system for document retrieval
Discipline -	Biology, Chemistry

System Number 68

Installation -	Ft. Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Technical Information Division
Contents & Scope -	Documents, Books, Journals, etc.
Method of Storage -	-
Volume -	25,000 Documents 125,000 3 x 5" cards 15,000 Books 10,000 Volumes of Journals 15 Formal Bibliographies 4 Supplemental Biblio- graphies (15 entries/pg., 100 pages/bibliography).
Rate of Growth -	150 Docs/month (50 pgs/doc) 750 New 3 x 5 cards/mo./50 words per card. 90 new books/mo. 500 Journals/mo. 150 inter-library loan books/mo.
Personnel Required -	-
Equipment Utilized -	Manual
System Operation -	-
Discipline -	Biology

System Number 69

Installation -	Fort Detrick, Md.
Organization -	Biological Laboratories
Org. Element -	Technical Library Branch
Contents & Scope -	Records of serial holdings
Method of Storage -	Magnetic tape
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	IBM computer number undetermined but it would be either a 1401 or 1410
System Operation -	Predicts and records acquisitions in order to maintain a master file of serial holdings. On a monthly basis, records may be added, up- dated or deleted and various list- ings provided, as requested. Several programs are used: update (run once a month), cumulative serial holdings, serial expiration dates, and serial suppliers (run whenever desired), edit routine and program to create routing list (run when system demands)
Discipline -	-

System Number 70

Installation -	Fort Detrick, Maryland
Organization -	Biological Laboratories
Org. Element -	Virus and Rickettsia Division
Contents & Scope -	Information on the characteristics of viral and rickettsial agents and the disease they produce in nature and under experimental conditions
Method of Storage -	File cards, file folders, photostatic copies, charts, slides
Volume -	-
Rate of Growth -	-
Personnel Required -	Principal Investigators, Clerical Assistants (PT) 30 persons are involved in routine functions
Equipment Utilized -	Thermofax (up-to-date size) Copycat (up-to-legal size)
System Operation -	No special system has been devised. Important aspects for data gathering are: (1) conducting a preliminary survey of published literature; (2) contributions to information by consultants and attendance at scientific meetings
Discipline -	Biology

System Number 71

Installation -	Fort Detrick, Maryland
Organization -	Foreign Science & Technology Center
Org. Element -	FSTC Field Office
Contents & Scope -	Intelligence documents pertaining to biological warfare; evaluations and/or comments on selected documents by scientists
Method of Storage -	Edge punched cards, file cards, file folders
Volume -	1582 Edge-punched cards, 304 3x5 comment cards, 1025 National Intelligence Survey 3x5 cards
Rate of Growth -	600 edge-punched cards, 150 comment cards, 144 NIS cards (all per year)
Personnel Required -	1 Scientist, 1 Secretary, 1 officer (all part time); 1 SFC enlisted man (full time)
Equipment Utilized -	McBee sorting needle and hand punch
System Operation -	Each intelligence document is logged. Potentially useful documents are categorized on edge-punched cards and distribution lists are concurrently prepared. Evaluation and/or comments are provided on selected documents by scientists. Subject matter information is retrieved on demand from edge-punched cards
Discipline -	Biology, Chemistry

System Number 72

Installation -	Fort Eustis, Texas
Organization -	Transportation Board
Org. Element -	-
Contents & Scope -	Service Test Results & Operational Evaluation records of Military Developed Equipment in CONUS or Polar/subpolar, tropic or desert environments and fall-out data from human factors, climate, terrain soil, etc.
Method of Storage -	5x8 file cards
Volume -	200 5x8 cards, 100 wds/card, 200 file folders, 20 sheets/folder, 300 words/sheet
Rate of Growth -	60 cards and folders/year
Personnel Required -	Secretary of the Board, Administrative Assistant (FT) (a military officer - 50% time)
Equipment Utilized -	Manual
System Operation -	5x8 project cards with title and project number, abstract of findings. Conclusions and recommendations are filed numerically. Cross reference cards are tabulated and filed alphabetically by general subject.
Discipline -	Engineering, Earth Sciences, Geology

System Number 73

Installation -	Fort Huachuca, Arizona
Organization -	Electronics Proving Ground
Org. Element -	-
Contents & Scope -	Technical & Physical characteristics and cost of signal equipment; performance characteristics of aircraft, weapons and vehicles; field army communications requirements; TO&E signal equipment authorized
Method of Storage -	Keypunch cards, magnetic tape
Volume -	-
Rate of Growth -	
Personnel Required -	4 communications specialists (5% of the time)
Equipment Utilized -	IBM 709 computer; keypunch, verifier, sorter, interpreter, reproducer, calculating punch, tabulator
System Operation -	Technical information on punched cards and magnetic tapes serves as input data to an IBM 709 computer war-gaming simulation model. The system produces large amounts of technical information as a by-product
Discipline -	Engineering, Mathematics, Statistics

System Number 74

Installation -	Fort Knox, Kentucky
Organization -	Medical Research Lab
Org. Element -	Technical Library
Contents & Scope -	Information on Biochemistry, Biophysics, Psychology, Radiobiology
Method of Storage -	File cards and folders
Volume -	-
Rate of Growth -	-
Personnel Required -	Library personnel, individual researchers
Equipment Utilized -	Manual
System Operation -	Library catalog cards and technical indexes are used. The latter include: Chemical Abstracts. index medicus psychological abstracts, Astia's TAB, etc. Dependence is placed on the large indexing services with mechanical retrieval systems
Discipline -	Physics, Psychology, Biology

System Number 75

Installation -	Fort Lee, Virginia
Organization -	Army Logistics MGMT Center, Logistics Research Analysis Division
Org. Element -	Logistics Research & Doctrine Dept.
Contents & Scope -	"Defense Logistics Studies Information Exchange" primarily Army research studies on logistics (selected external research studies, books, theses, and articles from periodicals are included)
Method of Storage -	-
Volume -	1,300 items
Rate of Growth -	100 added annually (obsolete items are deleted annually)
Personnel Required -	1 logistics staff officer, 1 reference analyst, 1 clerk-steno and (PT) services of keypunch operator, 4 printing (publication) personnel
Equipment Utilized -	IBM 305 R-MAC, IBM 407 printer & IBM 026 card punch
System Operation -	Copies of all completed Army logistics studies are received by the Division. Other source material; Army, Navy, Air Force Commands, service schools, civilian research organizations. Items to be included in bibliography are coded, and information is then put on IBM cards. Cards are inserted in Doc. Master File in the sequence that they are received. Bibliography is the final output
Discipline -	Engineering

System Number 76

Installation -	Fort Lee, Virginia
Organization -	Research & Engineering Field Evaluation Agency
Org. Element -	Technical Library
Contents & Scope -	-
Method of Storage -	Keypunched cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Microfilm camera, viewer, uniprinter (card-to-card), aperture card mounter; EAM equipment (sorter, punch, collator); light box
System Operation -	-
Discipline-	Biology, Chemistry, Earth Science, Engineering, Mathematics, Physics, Psychology, Social Sciences

System Number 77

Installation -	Fort Lee, Virginia
Organization -	Research & Engineering Field Evaluation Agency
Org. Element -	Technical Library
Contents & Scope -	Field test and evaluation of textiles, clothing, shelters, food items, cooking, baking, heating equipment, storage & materials handling, petroleum dispensing, etc.
Method of Storage -	File cards
Volume -	-
Rate of Growth -	-
Personnel Required -	Librarian (civilian) (1), Clerk- typist (military) (2)
Equipment Utilized -	Manual
System Operation -	-
Discipline -	Engineering

System Number 78

Installation -	Fort Lewis, Washington
Organization -	Madigan General Hospital
Org. Element -	Medical Records & Reports
Method of Storage -	Keypunched cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	EAM equipment: card punch, sorter, collator, reproducer, printer
System Operation -	-
Discipline -	Biology, Mathematics, Statistics

System Number 79

Installation -	Fort Meade, Maryland
Organization -	Air Defense Engineering Agency
Org. Element -	Engineering Dept. Comm. Dept., Support Dept.
Contents & Scope -	Records of Air Defense Fire Support Coordination Systems, Air Defense Electronics and Tel-Communications, Air Defense Equipment Installation, Testing Evaluation, Compatibility, Acquisition Radar, Display Systems, Air Vehicle Identification and Detection, etc.
Method of Storage -	Edge-punch cards, file cards and folders, magnetic plates, columnar data sheets, charts and graphs
Volume -	-
Rate of Growth -	-
Personnel Required -	Two (PT) Civilians and 7 (PT) Military to maintain File. Project Personnel (users) 26 10% time
Equipment Utilized -	Edge-Punch card equipment
System Operation -	-
Discipline	Engineering, Mathematics

System Number 80

Installation -	Fort Monmouth, New Jersey
Organization -	Electronics Comd. Hqs.
Org. Element -	Army Electronics Materiel Support Agency - (USAEMSA)
Contents & Scope -	Eng. drawings, gage lists spec. and standards, tech. requirements, parts lists - etc.
Method of Storage -	8-Simplafind Rotary Files
Volume -	900,000 Aperture Cards (plus 200,000 number asgmt. Tab. Cards)
Rate of Growth-	580 Aperture Cards/day
Personnel Required -	11 Mach. Operators, 4 Admin/ Clerical, 11 File Maint.
Equipment Utilized -	Recordals Microfilmers, card to card printers, viewers, mounters
System Operation -	Input data is checked for complete- ness, format and technical correctness before entering repro.facilities. Documents are filmed once and mounted in Aperture Cards. The orig. is used to produce 3 Diazo dupes. One of these is reproduced an average of 14x and distribution is made as necessary
Discipline -	Engineering

System Number 81

Installation -	Fort Monmouth, New Jersey
Organization -	Electronics Research & Development Laboratory
Org. Element -	Astro-Electronics Division, Astro-Communications Branch
Contents & Scope -	Data obtained during the in-orbit performance of communication experiments utilizing an active satellite repeater system
Method of Storage -	Microfilm, file cards
Volume -	-
Rate of Growth -	-
Personnel Required -	One Electronic Technician, one Secretary
Equipment Utilized -	Recordak Microfilm Machine (MRD-2) and Reader (MPE), Gerber Data Reduction System W/projection system (GADRS-3)
System Operation -	Microfilm machine is used to microfilm Sanborn roll charts containing analog test data resulting from the communication experiment. The microfilm reader is used to locate the areas of interest selected for full data retrieval. The Gerber GARDS-3 system is used to Scan the areas of microfilm selected for data retrieval, and to automatically process the data into printed copy in engineering units for analysis
Discipline -	Engineering

System Number 82

Installation -	Fort Monmouth, New Jersey
Organization -	Electronics Research & Development Laboratory
Org. Element -	Electron Tubes Division. Electronic Components Department
Contents & Scope -	Data on electron devices from scientific reports, product announcements, catalogs, special reports, etc.
Method of Storage -	Keypunch cards, file cards
Volume -	-
Rate of Growth -	-
Personnel Required -	1 EAM Supervisor, 2 Keypunch operators, and 6-10 technical personnel (for preparation of raw data and conduct- ing searches)
Equipment Utilized -	IBM card punch, sorter and cardatype (IBM 858)
System Operation -	Data is Keypunched and punched cards are filed. Upon request, sortings are made for specific characteristics or identification within a field. Listings from completed sortings are printed out on 858 cardatype and include the following: (1) Microwave Tube List, (2) Contract Reports List, (3) Project Briefs, (4) Government-sponsored Projects
Discipline -	Engineering

System Number 83

Installation -	Fort Monmouth, New Jersey
Organization -	Electronics Research & Development Laboratory
Org. Element -	Institute for Exploratory Research
Contents & Scope -	X-ray diffraction patterns, lattice structure of crystals, electron micrographs, recordings of satellite signals
Method of Storage -	Magnetic tape, photographic plates, file cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	All storage and retrieval is manual
System Operation -	-
Discipline -	Physics

System Number 84

Installation -	Fort Monmouth, New Jersey
Organization -	Electronics Research & Development Laboratory
Org. Element -	Office of Management Program Review and Analysis Branch
Contents & Scope -	Information on technical literature and documents, as well as personnel profiles, and project profiles for the Laboratory
Method of Storage -	Magnetic tapes
Volume -	-
Rate of Growth -	-
Personnel Required -	2 Systems Analysis, 4 Programmers, 4 Clerk-keypunch operators
Equipment Utilized -	Burroughs 220 Computer
System Operation -	Personnel and project profiles would be matched against the information on technical literature and documents using magnetic tapes and the Services of a central information center. A list of documents pertinent to each individual or project would be automatically produced
Discipline -	Engineering, Psychology

System Number 85

Installation -	Fort Monmouth, New Jersey
Organization -	Electronics Research & Development Laboratory
Org. Element -	Power Sources Division, Electronic Components Department
Contents & Scope -	Test data pertaining to primary batteries discharged under a variety of environmental and electrical conditions
Method of Storage -	Paper tape, Key punch cards
Volume -	70,000 80-column cards
Rate of Growth -	5,000-7,000 80-column cards per year
Personnel Required -	General engineer (50% time), electronic technician (50% time), engineering aide (full time)
Equipment Utilized -	Burroughs 220 Computer, IBM tape-to-card converter, sorter, tabulator, laboratory-made automatic data gathering equipment, reperforator, teletypewriter TT-107/FG
System Operation -	Data is collected on punched tape as batteries are discharged (using automatic data gathering equipment). IBM cards are prepared from the punched tape, sorted and tabulated. Data is reduced by computer processing. Final tabulations and graphs are prepared
Discipline -	Engineering

System Number 86

Installation -	Fort Monmouth, New Jersey
Organization -	Electronics Research & Development Laboratory
Org. Element -	Transmission Facilities Division, Long Range Radio Branch
Contents & Scope -	Data from radio communication and propagation experiments on "Firefly" type (artificially generated electron clouds) radio propagation
Method of Storage -	Magnetic tape, paper strip chart recordings
Volume -	10 reels magnetic tape (660,000 Words per reel)
Rate of Growth -	120 reels per year
Personnel Required -	1 mathematician (full-time), 3 engineers (PT)
Equipment Utilized -	Burroughs 220 computer, strip chart recorder, analog to digital converter
System Operation -	Signal levels and TTY error counts of radio signals propagated over experimental paths are stored in analog form on magnetic tape. Analog signals are converted to digital data on magnetic tape. Magnetic tapes are input to computer for data processing
Discipline	Physics

System Number 87

Installation -	Fort Monmouth, New Jersey
Organization -	Signal Research and Development Lab.
Org. Element -	Engineering Design Division Engineering Sciences Department
Contents & Scope -	Information on Mechanical Engineering, Mobility Engineering, Signal Corps Nomenclature, Drawings, and Specifications
Method of Storage -	File Cards and Folders
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Microfilm Reader (Film Sort Co.- Surveyor Model Dve)
System Operation -	There are four separate manual system for: (1) mechanical Engineering; (2) Mobility Engineering; (3) Signal Corps Nomenclature; (4) Signal Corps Drawings and Specifications
Discipline -	Engineering

System Number 88

Installation -	Fort Ord, California
Organization -	CDC Experimental Center
Org. Element -	Classified Files Branch
Contents & Scope -	-
Method of Storage -	Keypunched cards
volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Cardex File
System Operation -	-
Discipline -	Biology, Earth Science, Engineering, Mathematics, Physics, Psychology

System Number 89

Installation -	Fort Rucker, Alabama
Organization -	Aviation Accident Research Board
Org. Element -	Data Processing
Contents & Scope -	-
Method of Storage -	Keypunch cards
Volume -	Technical Reports - 8,300
Rate of Growth -	10%
Personnel Required -	-
Equipment Utilized -	Card punch, verifier reproducer, sorter, collator, 402 accounting machine
System Operation -	-
Discipline -	Mathematics

System Number 90

Installation -	Fort Rucker, Alabama
Organization -	Aviation Agency
Org. Element -	Archives Library
Contents & Scope -	-
Method of Storage -	Keypunched cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Card punch, sorter, collator, reproducer
System Operation -	-
Discipline -	Biology, Chemistry, Engineering, Physics, Social Sciences

System Number 91

Installation -	Ft. Sam Houston, Texas
Organization -	Army Surgical Research Unit
Org. Element -	Brooke Army Medical Center
Contents & Scope -	Clinical and laboratory records of mechanical and chemical trauma
Method of Storage -	Edge-punched cards, file folders, photographs, motion pictures
Volume -	Varies with patient load and studies in progress
Rate of Growth -	-
Personnel Required -	1 Surgical Technician, 1 Bacteriology Technician, 1 Renal Laboratory Technician, 1 Secretary (all 25% time) 1 Physician (Full Time)
Equipment Utilized -	Edge-punch, sorting needle
System Operation -	Retrieval system is not formally organized. No magnetic tapes or records are kept. Punch cards are being initiated. Laboratory notebooks, clinical charts and large work sheets are used for continuous reference. Photographic records of the medical course, progress, and complications are used. At present, information is laboratory obtained by examining records in both clinical and laboratory divisions.
Discipline	Biology, Chemistry, Engineering

System Number 92

Installation -	Ft. Totten, New York
Organization -	Medical Equipment Development Laboratory
Org. Element -	~
Contents & Scope -	Records on the status of medical equipment development
Method of Storage -	File cards
Volume -	200 3x5 cards, 40 words/card
Rate of Growth -	20 cards/year
Personnel Required -	Development engineers 12 (PT)
Equipment Utilized -	None - manual
System Operation -	Hand filing card system that records status of each development subtask as to requirement, approach and present status.
Discipline -	Biology, Engineering

System Number 93

Installation -	Frankford Arsenal, Philadelphia, Pa.
Organization -	-
Org. Element -	Automatic Data Processing Section
Contents & Scope -	-
Method of Storage -	Magnetic Tape
Volume -	Magnetic Tapes
Rate of Growth -	100%
Personnel Required -	-
Equipment Utilized -	IBM 1401 Computer
System Operation -	-
Discipline -	Engineering, Mathematics

System Number 94

Installation -	Frankford Arsenal, Philidelphia, Pa.
Organization -	-
Org. Element -	Health Services Division
Contents & Scope -	-
Method of Storage -	Edge-notched cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Key sort equipment
System Operation -	Punch edge of card by McBee System
Discipline	Social Science

System Number 95

Installation -	Frankford Arsenal, Philadelphia, Pa.
Organization -	Frankford Arsenal
Org. Element -	Objectives Analysis Office
Contents & Scope -	-
Method of Storage -	Edge-notched cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Engineering, Physics

System Number 96

Installation -	Frankford Arsenal, Philadelphia, Pa.
Organization -	Frankford Arsenal
Org. Element -	Plans Section
Contents & Scope -	-
Method of Storage -	Keypunched cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Chemistry, Engineering, Physics

System Number 97

Installation -	Frankford Arsenal, Pa.
Organization -	Frankford Arsenal
Org. Element -	Technical Data Office
Contents & Scope -	A fairly small documentation center, w/resp. for small number of items. Drawings and Documents filed are used to prepare Tech. Data Packages- for procurement
Method of Storage -	3 Diebold Super Elevator Files
Volume -	300,000 Drawings
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Micro Film Recorders, Printers and Viewers
System Operation -	Drawings on Linen - or photo - tracing - are rec'd, checked, and filmed (x6). Aperture Cards are produced for file and as req'd for use
Discipline -	Engineering

System Number 98

Installation -	Frankford Arsenal, Pa.
Organization -	Pitman-Dunn Laboratories
Org. Element -	Institute for Research
Contents & Scope -	Abstracts on Metallurgical Research
Method of Storage -	Edge punched cards
Volume -	2,000
Rate of Growth -	System unofficially discontinued
Personnel Required -	Scientific - number not available
Equipment Utilized -	-
System Operation -	Subject matter was encoded and put on cards
Discipline -	Engineering

System Number 99

Installation -	Hanover, N. H.
Organization -	Cold Regions Research & Engineering Lab.
Org. Element -	Experimental Engineering Div., Applied Research Branch
Contents & Scope -	Field Data, such as tests on ice strength and deformation, sea ice salinity, and load tests
Method of Storage -	Paper tapes, file cards
Volume -	50 computer tapes, 30 field data books; 20 main record books, 1500 file cards
Rate of Growth -	20 comp. tapes per year, 4 record books/yr., 200 file cards per year 5 field book/yr
Personnel Required -	15-20 Scientists or Technical personnel (PT) to take data and prepare reports
Equipment Utilized -	Bendix G150 computer
System Operation -	Raw field data are recorded in field books. Using the field data a main data book is prepared, checked and analyzed. A data report is prepared on the basis of the main data book. Technical notes and reports are also prepared. Large accumulations of data are punched on paper tape and analyzed using the G-150 computer
Discipline -	Earth Sciences, Engineering

System Number 100

Installation -	Hanover, N. H.
Organization -	Cold Regions Research & Engineering Laboratory
Org. Element -	Experimental Engineering Div., Construction Engineering Branch
Contents & Scope -	Field & Laboratory data on densification of snow, confined compressive strength of snow and deformation of footing foundations on snow
Method of Storage -	Paper tapes, file folders, microfilm
Volume -	50 Bendix G15 Computer tapes and Friden add punch tapes, 20 folders (30 sheets each), 20 microfilms of notebooks .
Rate of Growth -	50 tapes, 5 notebooks and microfilms
Personnel Required -	8-10 scientific or technical to obtain field data; 5-6 non-tech. to prepare reports (all part-time)
Equipment Utilized -	Bendix G 15 D Computer, Friden Add- punch
System Operation -	Raw field data recorded in field notebooks. Raw laboratory data recorded in loose-leaf notebook. Data reproduced on type-out by Bendix G15-D computer. Technical notes, special reports, research reports, and technical papers prepared for publication
Discipline -	Earth Sciences, Engineering, Physics

System Number 101

Installation -	Hanover, N. H.
Organization -	Cold Regions Research & Engineering Lab.
Org. Element -	Research Division, Environment Research Branch
Contents & Scope -	Field data on atmospheric conditions in the Arctic and Sub-Arctic observations on seasonal snow and neve, information, growth and decay and prop. of snow
Method of Storage -	Paper tapes, file cards and folders, letter file, field notebooks and recorder charts
Volume -	-
Rate of Growth -	-
Personnel Required -	6-7 scientific or technical, 1 non-technical (all part-time)
Equipment Utilized -	Bendix G15D computer
System Operation -	Data from field notebooks are reduced and analyzed; pertinent findings are documented in scientific or technical papers. Information received by mail is reduced and placed on file cards. When sufficient data is compiled it is analyzed for research reporting. Some data is punched on tape for computation by the G-15 computer
Discipline -	Earth Sciences, Engineering, Physics

System Number 102

Installation -	Harry Diamond Laboratories, Washington, D. C.
Organization -	Harry Diamond Laboratories Headquarters
Org. Element -	Services Branch
Contents & Scope -	-
Method of Storage -	EAM Aperture Cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Microfilm camera, printer, viewers, semi-automatic mounter, densitometer, microscope (100X)
System Operation -	-
Discipline -	Biology, Chemistry, Earth Sciences, Engineering, Mathematics, Physics

System Number 103

Installation -	Harry Diamond Laboratories, Washington, D. C.
Organization -	Harry Diamond Laboratories Headquarters
Org. Element -	Technical Information Office
Contents & Scope -	Technical reports on research in physics (solid state and plasma) and electronics (in- cluding materials and components), and in the design and produc- tion engineering of electronic and electromechanical devices especially those used in con- ventional and modern ammunitions
Method of Storage -	Key punch cards, file cards
Volume -	45,000 IBM cards/year
Rate of Growth -	-
Personnel Required -	1 Librarian and 1 EAM operator (part time); 2 Electronic Engineers
Equipment Utilized -	Card punch, verifier, interpre- ter, collator, sorter, reproducer, 407 accounting machine
System Operation -	Reports containing information pertinent to Army Ordnance and HDL R&D efforts are selected from currently acquired technical re- ports. Cataloging information, including descriptors, is pre- pared for each selected report, recorded on work sheets, and later punched on cards. Punched cards are used to prepare 3x5 catalog cards and acquisitions bulletins.
Discipline -	Engineering, Physics

System Number 104

Installation -	Harry Diamond Laboratories, Washington, D.C.
Organization -	Harry Diamond Laboratories Headquarters
Org. Element -	Technical Information Office
Contents & Scope -	-
Method of Storage -	Keypunched cards, magnetic tape
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	-
System Operation -	ABC (Approach by Concept) Dictionary is used to indicate location of concepts in card catalog. Items are filed under concepts in card catalog.
Discipline -	Biology, Chemistry, Earth Sciences, Engineering, Mathematics, Physics, Social Sciences

System Number 105

Installation -	Joliet, Illinois
Organization -	Army Ammunition Procurement & Supply Agency
Org. Element -	-
Contents & Scope -	"Operation Quest" information on quality control derived from in- spection and test data
Method of Storage -	-
Volume -	-
Rate of Growth-	-
Personnel Required -	-
Equipment Utilized -	Computer, key punch machine and verifier
System Operation -	-
Discipline -	Engineering

System Number 106

Installation -	Mountain View, California Electronics Research Unit
Organization -	Electronics Defense Laboratories Library
Org. Element -	-
Contents & Scope -	Reports on Electronic countermeasures; design and development of equip- ment and systems for electronic warfare
Method of Storage -	File 3x5 cards and generic term cards
Volume -	30,000 reports in collection; 6,000 term cards, 12,000 indexed reports, 5,000 kardex cards, 6 reports/card, 40,000 5x8 cards (13, 000 reports w/approx. 40 wds/card 3,000 term cards (5,000 reports, 15 control numbers/card
Rate of Growth -	15,000 5x8 cards/year
Personnel Required-	Acquisition and recording clerk (1) Clerk-typist (1), posting clerk (1) indexer-searcher (1)
Equipment Utilized -	Manual
System Operation -	Index is manually searched for each subject request by correlating the numbers on the term cards pulled from the file that correspond with the request
Discipline -	Engineering

System Number 107

Installation -	Natick Laboratories, Natick, Massachusetts
Organization -	Headquarters
Org. Element -	Mycology Laboratory-Pioneering
Contents & Scope -	-
Method of Storage -	Keypunched cards
Volume -	15,000 Punched Cards
Rate of Growth -	25%
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Biology, Chemistry

System Number 108

Installation -	Natick Laboratories, Natick, Massachusetts
Organization -	Headquarters
Org. Element -	Technical Library
Contents & Scope -	Books, periodicals and culture, social science, biological/ medical science, chemistry, earth sciences, (oceanography), electronics (elec. engr.) materials, mathematics, Mech., indus., civil and marine engi- neering, methods and equipment, military sciences, nuclear science, ordnance, physics, propulsion/fuels, space
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Microfilm reader; also used, but not located in this org. element: document copier and reproduction equipment
System Operation -	-
Discipline -	Biology, Chemistry, Earth Sciences, Engineering, Mathematics, Physics, Psychology, Social Sciences

System Number 109

Installation -	Natick Laboratories, Natick Massachusetts
Organization -	Pioneering Research Division
Org. Element -	National Index of Fungus Cultures
Contents & Scope -	Location, characteristics and availability of living fungus cultures maintained in U. S. laboratories
Method of Storage -	Key punch cards, file cards
Volume -	12,000 punch cards (based on 9,000 5x8 raw data forms)
Rate of Growth -	5,000 - 6,000 cards per year
Personnel Required -	1 Mycologist, 1 Clerk-Typist (both full time); 1 Chemist (5% time); data processing personnel (5% time)
Equipment Utilized -	IBM card punch, sorter, col- lator, tabulator
System Operation -	Pertinent information is ob- tained on fungus strains main- tained in several hundred U.S. laboratories. Information is abstracted and coded using pre- set, but open-ended coding in- dexes. Coded information is punched in IBM cards. Informa- tion is retrieved as needed internally or on outside request.
Discipline -	Biology

System Number 110

Installation -	Natick Laboratories, Natick, Massachusetts
Organization -	Research and Engineering Command
Org. Element -	Earth Sciences Division
Contents & Scope -	Climatic and other environmental data for each degree quadrangle of the earth's surface
Method of Storage -	Keypunch cards
Volume -	149,000 80-column EAM cards; 826 data maps
Rate of Growth -	50,000 EAM cards per year; 250 data maps per year
Personnel Required -	-
Equipment Utilized -	IBM 604 calculator; Keypunch, sorter, tabulator and collator
System Operation -	Isoline maps by world region are prepared for all climatic elements. Representative values for each degree quadrangle of the earth's surface are interpolated. These values are encoded and punched on cards. Punched data are specific enough for many uses; reasonably good maps can be reconstructed from the punched data.
Discipline -	Earth Sciences

System Number 111

Installation -	Natick Laboratories, Natick, Massachusetts
Organization -	Research and Engineering Command
Org. Element -	Earth Sciences Division
Contents & Scope -	Climatic and other environmental data
Method of Storage -	File folders and notebooks, microfilm (being discontinued)
Volume -	-
Rate of Growth -	-
Personnel Required -	Clerk Stenographer (20% time) and Geographer (10% time)
Equipment Utilized -	Recordak film reader but a "new system" with microcards is better suited
System Operation -	Personnel (Researchers) have stack privileges.
Discipline -	Earth Sciences

System Number 112

Installation -	Natick Labs, Natick, Mass.
Organiation -	Research and Engineering Command
Org. Element -	Earth Sciences Division
Contents & Scope -	Climatic Source materials
Method of Storage -	Microcards
Volume -	10,000 3x5 Microcards
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Microcard equipment
System Operation -	-
Discipline -	Earth Sciences

System Number 113

Installation -	Natick Laboratories, Natick, Massachusetts
Organization -	Research and Engineering Command
Org. Element -	Earth Sciences Division, Cartographic Section
Contents & Scope -	Geographic data in map form
Method of Storage -	Photographic plates and negatives, original maps and charts
Volume -	3,000 World Aeronautical Charts 2,000 International Map of the World Charts 1,000 Topographic Maps 1,200 Outline Maps 600 Original maps 600 photographic negatives
Rate of Growth -	50 topographic, 100 outline, 150 original, 150 photographic negatives
Personnel Required -	Cartographer 1 (5% time)
Equipment Utilized -	Manual
System Operation -	Reference files of maps filed by geographic area. Numerical and alphabetical filing systems are used within particular map groups such as World Aeronautical Charts and the Inter. Map of the World. Original maps and graphs are filed by publication number or by date of preparation. Photographic negatives are filed by publication number or by geographical area.
Discipline -	Earth Sciences

System Number 114

Installation -	Natick Laboratories, Natick, Massachusetts
Organization -	Research Institute of Environ- mental Medicine
Org. Element -	-
Contents & Scope -	Data on physiological, biologi- cal, and psychological responses of man and/or animals to the effects of natural and military environments
Method of Storage -	Keypunch cards, paper tapes, magnetic tapes, folders, data books
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	024 card punch, 026 punch, 075 sorter, 077 collator, 407 ac- counting machine, 514 reproducing punch, 521 summary punch, 604 calculator (all IBM equipment); Friden Tape Reader
System Operation -	Raw data is stored directly on paper tape, magnetic tape or cards. All data is converted to card storage for processing on the IBM 604 calculator. The 407 accounting machine is used for tabulation.
Discipline -	Biology, Engineering, Psychology

System Number 115

Installation -	Picatinny Arsenal, New Jersey
Organization -	Feltman Research Labs
Org. Element -	Scientific Services Branch, Technical Information Library
Contents & Scope -	Internally generated reports
Method of Storage -	Columnar cards and book form
Volume -	625,000 3x5 catalog cards, covering about 125,000 reports, 5 cards/report (divided into Corporate Author and Subject) 5,000 5x8 10 column cards with one term, 2,700 3x5 cards with approximately 250 words/card, in- cluding abstract
Rate of Growth -	18,000 reports or 90,000 cards/yr.
Personnel Required -	Library Assistant 1 (PT), Librarian (1) (PT)
Equipment Utilized -	Manual
System Operation -	-
Discipline -	-

System Number 116

Installation -	Picatinny Arsenal, New Jersey
Organization -	Headquarters
Org. Element -	Technical Library
Contents & Scope -	Books, periodicals, and technical reports
Method of Storage -	Edge-notched cards, keypunched cards, magnetic tape
Volume -	Books 20,400, periodicals 1,000 (U) tech. reports 100,000 (C) tech. reports 50,000
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	IBM 7090, & 1401
System Operation -	-
Discipline -	Chemistry, Earth Sciences, Engineering, Mathematics, Psychology, Physics, Social Sciences

System Number 117

Installation -	Picatinny Arsenal, New Jersey
Organization -	Munitions Comd. Headquarters
Org. Element -	Engineering Documents Branch, Administrative Service Division
Contents & Scope -	Drawing and specifications related to conventional and nuclear Munitions procurement
Method of Storage -	Rotary files
Volume -	500,000 Aperture Cards (x 3 files- master/work and offsite security)
Rate of Growth -	7000 new/mo. 3500 deletions through purge per month
Personnel Required -	54-
Equipment Utilized -	Micro Film Recorders, printers and viewers
System Operation -	Approximately 300 drawings per day from on-post engineering segments and outside contractors are received and checked for format, revisions and other basic information then filmed, reproduced and distributed to file and users as necessary
Discipline -	Engineering

System Number 118

Installation -	Picatinny Arsenal, New Jersey
Organization -	Plastics Technical Evaluation Center
Org. Element -	-
Contents & Scope -	Reports and periodicals with information on plastics
Method of Storage -	-
Volume -	Small number of periodicals, manufacturers catalogs, specs and standards 7,100 reports
Personnel Required -	-
Equipment Utilized -	Computer used to sort, arrange and print list. <u>Retrieval is Manual</u>
Discipline -	Chemistry

System Number 119

Installation -	Picatinny Arsenal, New Jersey
Organization -	-
Org. Element -	-
Contents & Scope -	"Federal Cataloging Program" Federal stock numbers, nuclear weapons master item data file, repair parts lists
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	IBM Mod 047, IBM Mod 1944, Recordax Mod PES, Friden Flexowriters, Minn. Mining & Mfg. Co. Reader Printer Mod Filmac 200
System Operation -	Screening and/or reproduction of technical documentation prior to item identification; processing of new and/or revised item identifi- cations for assignment of Federal Stock numbers and up-dating of exist- ing data to the Defense Logistics Services Center of Defense Atomic Support Agency. Receipt of newly assigned stock numbers and updated file data for inclusion in Nuclear Weapons Master Item Data File, technical manuals and supply manuals; preparation and transmission of current and advanced copies of repair parts lists to the U. S. Army Ammunition Procurement and Supply Agency in order to initiate procurement for items of supply peculiar to a Nuclear Weapons System
Discipline -	Engineering

System Number 120

Installation -	Picatinny Arsenal, New Jersey
Organization -	-
Org. Element -	-
Contents & Scope -	"Nuclear Weapons Data Feedback System" containing data on nuclear weapons
Method of Storage -	-
Volume -	-
Rate of Growth --	-
Personnel Required -	-
Equipment Utilized -	Cal. Comp. Digital Plotter
System Operation -	-
Discipline -	Engineering

System Number 121

Installation -	Redstone Arsenal, Alabama
Organization -	Army Missile Command
Org. Element -	-
Contents & Scope -	"Army Data Retrieval Engineering System (ADRES)" current data on military standards & AMC common parts, specifications, and contractor vendor catalog information
Method of Storage -	Microfilm
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	16 mm Microfilm Reader-Printer (Recordak Lodestar)
System Operation -	Coding film for retrieval is by horizontal opaque bars placed between film frames. Opaque bars appear as indicators which are adjacent to a number placed on the edge of the reader screen
Discipline -	Engineering

System Number 122.

Installation -	Redstone Arsenal, Alabama
Organization -	Missile Command Headquarters
Org. Element -	Reader's Service Section Library
Contents & Scope -	-
Method of Storage -	-
Volume -	-
Rate of Growth --	-
Personnel Required -	-
Equipment Utilized -	Manual
System Operation -	-
Discipline -	Chemistry, Earth Science, Mathematics, Statistics, Physics

System Number 123

Installation -	Redstone Arsenal, Huntsville, Alabama
Organization -	Missile Command Headquarters
Org. Element -	Research & Development Directorate, Research Library
Contents & Scope -	Bibliographic Information for scientific and technical reports
Method of Storage -	Keypunch cards, file cards, paper tape
Volume -	-
Rate of Growth -	-
Personnel Required -	Librarians, library assistants, clerk typists, microphotography technicians
Equipment Utilized -	024 Keypunch, 056 Verifier, 087 collator, 519 Reproducing punch, 557 Interpreter, 082 Sorter
System Operation -	Scientific and technical reports are analyzed, abstracted, catalogued, microfilmed and filed. Flexowriters are used to prepare catalog cards and tapes for weekly announcements bulletin masters. catalog cards are filed for manual searching and retrieval. 35 mm microfilm is mounted in punched aperture cards
Discipline -	--

System Number 124

Installation -	Redstone Arsenal, Hunstville, Alabama
Organization -	Missile Command Headquarters
Org. Element -	Scientific Digital Computation Division, Computation Center
Contents & Scope -	Information concerning technical reports available from the Re- search Library
Method of Storage -	Information not available
Volume -	70,000 books, 300,000 documents, 2000 title journal subscription list
Rate of Growth -	-
Personnel Required	-
Equipment Utilized -	IBM 7090 Computer
System Operation -	-
Discipline -	-

System Number 145

Installation -	Rock Island Arsenal, Illinois
Organization -	Ordnance Weapons Command
Org. Element -	Research & Development Division Research Branch
Contents & Scope -	Accession Lists and Reports on the Development of conventional weapons or future weapons possibilities, as well as basic research studies and results
Method of Storage -	File cards and folders plus a uniterm system
Volume -	30,000 3x5 File Cards (100 wds/card) 8,000 File Folders (40 pgs/folder, 400 wds/pg)
Rate of Growth -	3,000 3x5 cards/yr. 800 file folders/yr
Personnel Required -	1 Steno-clerk (filing and distribution) 2 technical personnel 2 (for literature searches)
Equipment Utilized -	Manual
System Operation -	-
Discipline -	Engineering

System Number 126

Installation -	Rock Island Arsenal, Illinois
Organization -	Technical Information Branch
Org. Element -	-
Contents & Scope -	Technical reports on rocket launchers; artillery; materials such rubber, recoil oils, lubricants and corrosion preventives, mathematics and scientific fields and industrial processes
Method of Storage -	File cards
Volume -	12,000 technical reports, 20 pages/report, 21 file folders, 150 sheets/folder, 400 words/sheet (technical information reports) 50,000 sheets of Ordnance Technical Committee Minute (OTCM's), 70,000 catalog cards to technical reports and OTCM's, 5,000 technical magazines, 3,000 books on technical subjects
Rate of Growth -	1,000 technical reports, 350 technical books, 750 magazines
Personnel Required -	1 Librarian, 1 Library Assistant, 1 Clerk-Typist
Equipment Utilized -	Manual
System Operation -	-
Discipline -	Engineering, Mathematics, Statistics

System Number 127

Installation -	Rock Island Arsenal, Illinois
Organization -	Weapons Command
Org. Element -	Product Engineering Branch.
Contents & Scope -	R&D Drawings related to functions of the weapons command
Method of Storage -	2 monarch files
Volume -	100,000 aperture cards
Rate of Growth -	200-300 new cards/mo. and approximately 600 revisions/mo.
Personnel Required -	-
Equipment Utilized -	Print request camera, photo reproduction, printers, xerox
System Operation -	E&E drawings received are redrawn on vellum, before they are micro-filmed. 5 or 6 exposures are arranged for each drawing and aperture cards are created and distributed and/or filed as necessary for later use in preparing technical data packages
Facilities -	Existing

System Number 128

Installation -	Springfield Armory, Springfield, Mass.
Organization -	Headquarters
Org. Element -	Photo Lab
Contents & Scope -	-
Method of Storage -	-
Volume -	Slides 700-10%, Silent Motion Pictures 4500-10%, photographs 5000-25%, sound motion pictures 250-10%, Photographic neg. 5000- 25%
Rate of Growth -	-
Personnel Required -	1 clerk (full-time)
Equipment Utilized -	Gerber Film Readers Analog Program Control, IBM Electro-Typewriter, Benson-Lehner Electro- Plotter, Silent Hi-speed camera, silent projector
System Operation-	-
Discipline -	Engineering, Physics

System Number 129

Installation -	Springfield Armory, Springfield, Mass.
Organization -	Research & Engineering Division
Org. Element -	Technical Information Section
Contents & Scope -	Technical and scientific documents on small arms research, development, and engineering (e.g., ballistics ammunition, weaponry, special warfare, test procedures, etc.
Method of Storage -	file cards, file folders
Volume -	30,000 3x5 file cards, 5000 documents
Rate of Growth -	-
Personnel Required -	1 information clerk (full time), 1 information specialist (10% of time), 1 editor (10% term)
Equipment Utilized -	manual
System Operation -	3x5 index cards are prepared for all documents and filed by subject heading. Material is filed in folders or by individual documents. Information retrieval is manual
Discipline -	Engineering, Physics

System Number 130

Installation -	Springfield Armory, Springfield, Mass.
Organization -	Research & Development Div.
Org. Element -	Technical Reference Center
Contents & Scope -	Technical and Scientific Documents on Small Arms Research, Development & Engineering, E. G., Ballistics, Ammunition, Physical Sciences, Mechanics Research, Weaponry, Test Procedure, Special Warfare, Foreign Material, Ordnance Technical Committee Meetings, etc.
Method of Storage -	File cards and folders
Volume -	29,700 3x5 file cards (10-75 wds/card) 4,300 3x5 File cards (10-75 wds/card) 4,360 Documents, 180 File Folders (400 Sheets/Folder, 250 Wds/sheet)
Rate of Growth -	400 3x5 cards/yr
Personnel Required -	Information specialist 10% time Information clerk full time
Equipment Utilized -	manual system
System Operation -	Armory receives technical and scientific documents on both automatic distribution and on special request. a 3x5 card is prepared for all documents received by the TRC and they are filed by subject heading. Classified documents are registered in a log for record and inventory purposes. Material is file in folders or by individual documents. Retrieval is performed manually
Discipline -	-

System Number 131

Installation -	Springfield Armory, Springfield, Mass.
Organization -	Support Engineering Branch
Org. Element -	Technical Records Section
Contents & Scope -	Engineering drawings of weapons (small arms) and small weapons systems
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Engineering

System Number 132

Installation -	St. Louis, Missouri
Organization -	Air & Surface Materiel Command
Org. Element -	Office of the Deputy for RDT&E Systems
Contents & Scope -	Engineering drawings of aircraft components, assemblies, parts etc; engineering evaluations and technical reports
Method of Storage -	Microfilm, file folders
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	-
System Operation -	Drawings are received in print form and reduced to microfilm for storage convenience. A file of technical evaluations, published infrequently by this command, is maintained
Discipline -	Engineering

System Number 133

Installation -	Vicksburg, Miss.
Organization -	Engineer Waterways Experiment Station
Org. Element -	Army Mobility Research Center, Mobility Section
Contents & Scope -	Data on mobility tests of scale model tires; data on soil tests
Method of Storage -	Key punch cards, file folders, columnar data sheets
Volume -	60,000 80-col cards
Rate of Growth -	30,000 cards per year
Personnel Required -	2 key punch operators, 1 machine operator, 1 engineer, 1 engineering aide
Equipment Utilized -	IBM 650 computer, 056 verifier, 026 punch, 082 sorter, 077 collator, 407 tabulator, 514 reproducer
System Operation -	Test observations are stored on punch cards. Data is retrieved. Parameters are computed. Results are stored on punch cards and tabulated. Information is retrieved and data transmittals are tabulated
Discipline -	Earth Sciences, Engineering

System Number 134

Installation -	Vicksburg, Miss.
Organization -	Engineer Waterways Experiment Station
Org. Element -	Army Mobility Research Center, Trafficability Section
Contents & Scope -	Data on soil tests (rainfall amount, measured moisture contents, measured cone index measured rating cone index) for approx. 800 traffic- ability sites
Method of Storage -	Keypunch cards
Volume -	60,000 80-col cards (6 words per card)
Rate of Growth -	6000 80-col cards per year
Personnel Required -	2 Engineers, 1 soil scientist
Equipment Utilized -	IBM 650 computer, 026 keypunch. 407 tabulator
System Operation -	Information is retrieved and used in the process of development and testing soil moisture and traffic- ability prediction methods, using special IBM programs
Discipline -	Earth Sciences, Engineering

System Number 135

Installation -	Vicksburg, Miss.
Organization -	Engineer Waterways Experiment Station
Org. Element -	Army Mobility Research Center, Trafficability Section
Contents & Scope -	Soil and site data for trafficability studies in humid-temperate areas of the United States from 1950-present
Method of Storage -	Keypunch cards
Volume -	3000 80-col cards (2cards per site)
Rate of Growth -	500 cards per year
Personnel Required -	1 mathematician and 1 enginner (PT)
Equipment Utilized -	IBM 650 Computer, 026 Keypunch, 056 Verifier, 082 Sorter, 407 Tabulator, 514 Reproducing Punch
System Operation -	Soil and site data from the field is tabulated and summarized for each site. Data on site location topographic position, soil type, moisture contents, strength and density are punched on IBM cards. The data is processed by the computer to provide mean and standard deviation values of each soil variable for a given soil type-- moisture condition -- topographic position
Discipline -	Earth Sciences, Engineering

System Number 136

Installation -	Vicksburg, Miss.
Organization -	Engineer Waterways Experiment Station
Org. Element -	Army Mobility Research Center, Trafficability Section
Contents & Scope -	Data on soil properties and classifications, topography, climate vegetation, etc. for approx. 800 field test sites
Method of Storage -	Punch cards
Volume -	6600 80-col cards (7 words per card)
Rate of Growth -	1000 80-col cards per year
Personnel Required -	2 Engineers, 1 soil scientist
Equipment Utilized -	IBM 650 Computer, 026 Key punch, 407 Tabulator
System Operation -	Data from punch cards is stored in computer memory. Then, by use of control cards, specified variables to be used in a multiple linear regression are selected and punched on new cards. These new cards are used with a multiple regression program 600 d1
Discipline -	Earth Sciences, Engineering

System Number 137

Installation -	Vicksburg, Mississippi
Organization -	Engineer Waterways Exper. Station
Org. Element -	Hydrodynamics Branch, Hydraulics Division, Special Investigation Section
Contents & Scope -	R&D Projects on the effects of nuclear weapons on structures, terrain, & waterways. (includes theoretical and analytical studies, small-scale high explosives tests, special lab tests, full-scale weapons tests and large HE test programs
Method of Storage -	File folders, "trasfiles" (heavy duty paper-board)
Volume -	49 file folders, 100 sheets/folder (6linear ft. of "transfile")
Personnel Required -	Engineering Technicians, 2 (PT) for storing and retrieving
Equipment Utilized -	Manual
System Operation -	The Dept. of the Army Records Administration Program is used currently as the information retrieval scheme. Upon completion of a project, all reports, papers, drawings, etc. are listed on a form and sent to records office for storage. After storing records office sends form to preparing office with file location indicated
Discipline -	Earth Sciences, Physics, Engineering

System Number 138

Installation -	Vicksburg, Mississippi
Organization -	Engineer Waterways Experiment Station
Org. Elements -	Soils Division, Area Evaluation Section
Contents & Scope -	Data on topographic surfaces, including x-y coordinates and normalized fourier coefficients of profiles and radial distribution of surface configuration features
Method of Storage -	Key punch cards, topographic maps, profile diagrams
Volume -	20,000 Punch cards
Rate of Growth -	-
Personnel Required -	1 mathematician, 1 engineering aide 1 machine operator, 1 key punch operator
Equipment Utilized -	IBM 650 Computer, 099 Reader (Telecomputer Corp.) Analog -Digital converter (Telecomputer Corp), 026 keypunch, 407 tabulator, 082 sorter, 514 reproducing punch
Discipline -	Mathematics, Engineering, Earth Sciences

System Number 139

Installation -	Walter Reed Army Medical Center, D.C.
Organization -	Armed Forces Institute of Pathology
Org. Element -	Professional Records Service
Contents & Scope -	Medical case records, microscopic slides and parrafin
Method of Storage -	Control cards
Volume -	Medical case records - 1,133,000 Microscopic slides -18,000,000 Parafin Blocks -16,000,000
Rate of Growth -	5%
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Biology

System Number 140

Installation -	Walter Reed Army Medical Center, Washington, D. C.
Organization -	Armed Forces Pest Control Board
Org. Element -	Military Entomology Information Section
Contents & Scope -	Technical books, handbooks, dictionaries, technical reports, periodicals, technical reports, papers, manuscripts, and catalogs
Method of Storage -	Paper tape
Volume -	Technical books - 1,062 Periodicals current - 8,449
Rate of Growth -	50%
Personnel Required -	-
Equipment Utilized -	SCM 2215 Automatic coding type- writer, Termatrex optical coin- cidence system
System Orientation -	-
Discipline -	Biology, Chemistry

System Number 141

Installation -	Walter Reed Army Medical Center, D.C.
Organization -	Prosthetics Research Lab.
Org. Element -	-
Contents & Scope -	Literature relating to materials and applications of mechanical products and chemical compounds related to Biomechanical Restorative (external and internal) Devices for the Human body
Method of Storage -	File cards, file folders, photographic slides
Volume -	16,000 C rds
Rate of Growth -	-
Personnel Required -	Librarian(F7) Clerk 50% time
Equipment Utilized -	-
System Operation -	Search Literature and index systems for published information and patents in field of prosthetics. Useable data is classified and cataloged according to accepted Library procedure on 3x5 cards. Information is extensively cross-referenced to facilitate retrieval. Technical reports are issued and are available through ASTIA
Discipline -	Biology, Chemistry

System Number 142

Installation -	Walter Reed Army Medical Center, D.C.
Organization -	Walter Reed Army Institute of Research
Org. Element -	Department of Biophysics, Division of Nuclear Medicine
Contents & Scope -	Medical Statistical data
Method of Storage -	Keypunch cards
Volume -	-
Rate of Growth -	-
Personnel Required -	1 Mathematician (Part-time)
Equipment Utilized -	IBM Card punch, sorter, tabulator, interpreter
System Operation -	-
Discipline -	Physics, Biology

System Number 143

Installation -	Walter Reed Army Medical Center, Wash. D. C.
Organization -	Walter Reed Army Institute of Research
Org. Element -	Department of Biophysics, Division of Nuclear Medicine
Contents & Scope -	Radiobiological Statistical data, chemical structures and data
Method of Storage -	Paper tapes, graph paper
Volume -	5000 6x8 cards (25bits of data/card)
Rate of Growth -	1000 cards per year
Personnel Required -	1 Mathematician Full Time
Equipment Utilized -	RPC 4010 Computer, RPC 4480 Tape-Typewriter, Auxiliary Tape - Typewriter, Reader-punch Unit (RPC 4430), Auxiliary Reader-punch unit, Autograph (Moseley 25)
System Operation -	Compute mean values and standard deviations, analyze statistical data, solve simultaneous equations, compute and process lengthy calculations and complex mathematical problems. Rearrange and process chemical structures and data. Process and evaluate radiobiological statistical data. Prepare x-y plots of gamma-ray spectra.
Discipline -	Physics, Chemistry

System Number 144

Installation -	Walter Reed Army Medical Center, Washington, D. C
Organization -	Walter Reed Army Institute of Research
Org. Element -	Department of Radiobiology
Contents & Scope -	Data on drug tests - chemical protection against radiation; in- formation on compounds contemplated by contractors for synthesis
Method of Storage -	Paper tapes, edge punch cards
Volume -	-
Rate of Growth -	-
Equipment Utilized -	RPC 4000 Computer, McBee Edge- punched Card Equipment, Chemical coding typewriter
System Operation -	Data from drug tests and open literature on testing performed elsewhere is recorded. Contemplated synthesis of compounds by contractors is monitored. Chemical structures are recorded; information is filed by interpolated formula on 3x5 cards. Edge notched cards are punched for chemical functions and for biological activity
Discipline -	Biology, Chemistry

System Number 145

Installation -	Walter Reed Army Medical Center, D. C.
Organization -	Walter Reed General Hospital
Org. Element -	Pathology Service
Contents & Scope -	-
Method of Storage -	-
Volume -	Clinical Reports 180 Tissue Specimen Slides 47,000 Surgical Reports 11,560
Rate of Growth -	5%
Personnel Required -	-
Equipment Utilized -	Document copying equipment
System Operation -	-
Discipline -	Biology

System Number 146

Installation -	Walter Reed Army Medical Center, D. C.
Organization -	Walter Reed General Hospital
Org. Element -	Radiology Service
Contents & Scope -	Name list for special x-ray studies
Method of Storage -	List
Volume -	X-ray Films 4,000 Civilian X-ray 80 studie
Rate of Growth -	25% 10%
Personnel Required -	-
Equipment Utilized -	-
System Operation -	-
Discipline -	Biology

System Number 147

Installation -	Walter Reed Army Medical Center, Washington, D. C.
Organization -	Walter Reed General Hospital
Org. Element -	Tumor Registry Section
Contents & Scope -	-
Method of Storage -	3x5 file cards
Volume -	Internal reports 9,000
Rate of Growth -	6%
Personnel Required -	-
Equipment Utilized -	Cardex File
System Operation -	-
Discipline -	Biology

System Number 148

Installation -	Washington, D. C.
Organization -	Army Map Service
Org. Element -	-
Contents & Scope -	"Mapping, Geodesy and Intelligence" graphic information and intelligence on space technology, earth sciences and oceanography, military sciences
Method of Storage -	-
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Honeywell H-800, IBM 1620, IBM 1401 and (2) CDC G-15 electronic digital computers
System Operation -	-
Discipline -	Earth Sciences

System Number 149

Installation -	Washington, D. C.
Organization -	Office, Chief of Engineers
Org. Element -	-
Contents & Scope -	"105mm Photographic Supplies and Service System, engineering drawings
Method of Storage -	On 105 mm film
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Projector-printer viewer
System Operation -	The 30x40" Engineer Construction Drawing is reduced photographically to a 105 mm film which can be placed in an envelope and filed.
Discipline -	Engineering

System Number 150

Installation -	Washington, D. C.
Organization -	Medical R&D Command Headquarters
Org. Element -	Research Division
Contents & Scope -	-
Method of Storage -	Edge-notched cards
Volume -	Punched Cards - Edge-notched 1,472
Rate of Growth -	30%
Personnel Required -	-
Equipment Utilized -	E-Z Sort Equipment
System Operation -	-
Discipline -	Biology, Social Science

System Number 151

Installation -	Washington , D. C.
Organization -	Office of the Chief of Transportation
Org. Element -	Transportation Aviation Field Office
Contents & Scope -	Reports on R&D Projects & Records on initiation, Revision and termina- tion of projects and type-classifica- tion of material
Method of Storage -	5x8 File cards
Volume -	-
Rate of Growth -	-
Personnel Required -	Admin. Assistant 12% time
Equipment Utilized -	Manual
System Operation -	Data, documents and reports on projects are filed by project number in standard filing cabinets. Index cards are prepared and maintained to index and cross-reference technical committee actions to projects, etc.
Discipline -	-

System Number 152

Installation -	Washington, D. C.
Organization -	Office of the Surgeon General
Org. Element -	Reports Branch
Contents & Scope -	Reports on U.S. Army Medical Research and Development (includes other related reports of U.S. Army Technical Services, U.S. Government Agencies and Foreign Governments)
Method of Storage -	File Cards and folders
Volume -	1,550 3x5 cards
Rate of Growth -	150 3x5 cards/year
Personnel Required -	2 Editors
Equipment Utilized -	Manual
System Operation. -	Reports are obtained through the use of ASTIA, National Library of Medicine, and the Bio-Sciences Information Exchange
Discipline -	Biology

System Number 153

Installation -	Watertown Arsenal, Mass.
Organization -	Materials Engineering Lab.
Org. Element -	Theoretical and Applied Mechanics Branch
Contents & Scope -	Documents on applied mechanics
Method of Storage -	Edge punched cards
Volume -	1,500 5x8"
Rate of Growth -	75 Cards/year
Personnel Required -	Mathematicians and Enginners (23), Clerk-Typist (1)
Equipment Utilized -	Spindles and notch punchers (Zator Corp.) Sorting needle (Zatar Corp.)
System Operation -	-
Discipline -	Engineering

System Number 154

Installation -	Watertown Arsenal, Watertown, Mass.
Organization -	Materials Research Agency
Org. Element -	Administrative Management Office
Contents & Scope -	Reports on Armor and kinetic energy armor-defeating ammunition
Method of Storage -	Key punch cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	EAM equipment (IBM and Rem Rand)
System Operation -	Abstracts are prepared for each report of interest card numbers and code numbers are assigned to items of interest and punched in cards. Searches are conducted by use of sorting equipment. A manual index of code numbers (arranged numerically) and associated card numbers is used if sorting machines are not available
Discipline -	Engineering

System Number 155

Installation -	Watertown Arsenal, Mass.
Organization -	Materials Research Agency
Org. Element -	Administrative Management Office
Contents & Scope -	Information on Titanium and its Alloys
Method of Storage -	Edge punched cards, file folders
Volume -	400 cards with avg. 8 entries each
Rate of Growth -	20 cards per year
Personnel Required -	Library Assistant (1), Typist (1)
Equipment Utilized -	Punch and sorting needles
System Operation -	Cards are punched (1-12 holes on each card) to reflect bibliographic information, WAL classification catalog code (if pertinent) and sub- jects (assigned from ASM-SLA Metallurgical classification if consonant with WAL mission and internal WAL subject index and classi- fication code) Search and Retrieval is accomplished by needling hole or holes
Discipline -	Chemistry, Engineering

System Number 156

Installation -	Watertown Arsenal, Mass.
Organization -	Material Research Agency
Org. Element -	Administrative Management Office
Contents & Scope -	Classified textbooks, encyclopedias, treatises, handbooks, journals, periodicals, documents, tech. manuals, and pamphlets on general technical and scientific subjects
Method of Storage -	File cards
Volume -	90,000 3x5 cards (books), 14,000 books, handbooks, and bound periodicals 153,000 3x5 index cards, 75 wds/card 60,000 Technical Docs. (Tech. Doc.) 10,000 cards/yr. (Books)
Rate of Growth -	26,200 cards/yr. (Tech. Docs) inquiries and 650 searches/month
Personnel Required -	Library Assistants (2), Typist (1)
Equipment Utilized -	Manual
System Operation -	For Documents, the source, author, identifying number and subjects are typed on bond paper layout with guide lines in blue ink for card size and perforation, by clerk. Six copies are reproduced in card stock of each item typed. Additional copies are reproduced on bond paper, stapled together and circulated as listing of acquisition.) Each set of cards is identified for filing word by underlining in red and filed in alphabetic or numeric sequence
Discipline -	-

System Number 157.

Installation -	Watertown Arsenal, Watertown, Mass.
Organization -	Materials Research Agency
Org. Element -	Ordnance Materials Research Office
Contents & Scope -	Information on Materials Research and Development, and Properties of Materials
Method of Storage -	File Cards and folders
Volume -	-
Rate of Growth -	-
Personnel Required -	Materials Engineers (25), plus Assistants, Stenographers and Clerk-Typists
Equipment Utilized -	Manual System
System Operation -	Use of card files for retrieval of information is at discretion of the individual and varies from routine and profunctory systems to rather elaborate cross-indexed files
Discipline -	Engineering

System Number 158

Installation -	Watertown Arsenal, Watertown, Mass.
Organization -	Materials Research Agency
Org. Element -	Ordnance Materials Research Office
Contents & Scope -	Military Specifications
Method of Storage -	Key punch cards
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	-
System Operation -	Specification information is coded and punched. Federal supply classification numbers are used. Information includes originating agency, date of adoption, status of revision, subject items, and other pertinent information
Discipline -	Engineering

System Number 159

Installation -	Watertown Arsenal, Watertown. Mass.
Organization -	Materials Research Agency
Org. Element -	Ordance Materials Research Office
Contents & Scope -	Papers on thermo-dynamics of metals and compounds in relation to structure and properties
Method of Storage -	File Folders
Volume -	-
Rate of Growth -	-
Personnel Required -	Physical Chemist (1)
Equipment Utilized -	Manual
System Operation -	Only completed papers, either photo copies or reprints are collected. A card file is not maintained. The chief reference sources are "Physics Abstracts", "Chemical Abstracts", and "Physical Review".
Discipline	Physics, Engineering, Chemistry

System Number 160

Installation -	Watertown Arsenal, Watertown, Mass.
Organization -	Materials Research Agency
Org. Element -	Ordinance Materials Research Office
Contents & Scope -	Data on the Preparation and properties of Pure Metals
Method of Storage -	Edge punched cards
Volume -	4,000
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Search needles
System Operation -	A Zator card file will be used. This uses an edge punched card, a special code, and searching is done by needles
Discipline	Engineering

System Number 161

Installation -	Watertown Arsenal, Watertown, Mass.
Organization -	Materials Research Agency
Org. Element -	Ordance Materials Research Office
Contents & Scope -	Information on metallurcy, physical Chemistry, Solid State Physics, Nuclear Science
Method of Storage -	Edge punched cards
Volume -	-
Rate of Growth -	-
Personnel Required -	Scientists use it on an individual basis
Equipment Utilized -	-
System Operation -	Users can devise their own codes at OMRO but some use the various coding schemes that accompany the abstracts and articles. Abstracts are typed on ASM-SLA cards and punched in accordance with codes. Cards are handwritten or typed, arranged by 1st order categories, and searched by one or two needles, either separately or simultaneously
Discipline -	Engineering, Chemistry, Physics

System Number 162

Installation -	Watertown Arsenal, Watertown, Mass.
Organization -	Materials Research Agency
Org. Element -	Non destructive testing branch
Contents & Scope -	Reports and abstracts of reports on non destructive testing
Method of Storage -	Termatrex cards, file cards
Volume -	500 4x7 cards containing report abstracts, 600 technical reports, 400 Termatrex descriptor cards
Rate of Growth -	1200 reports and 1200 abstract cards per year
Personnel Required -	7 Engineers (6% time), 1 Clerk (50% time), 1 Supervisory Engineers (20% time)
Equipment Utilized -	Termatrex equipment (reader, drill)
System Operation -	-
Discipline -	Engineering, Physics

System Number 163

Installation -	Watervliet Arsenal, N. Y.
Organization -	R&E Division
Org. Element -	Arsenal Technical Library
Contents & Scope -	Documents and reports manufacture, concept, modification and design of New and unusual weapons, as well as conventional artillery
Method of Storage -	File Cards and folders
Volume -	9,400 3x5 File cards, 300 Linear ft. of Documents
Rate of Growth -	1,650 3x5 cards/year
Personnel Required -	Clerk-Typist (Full-Time), Tech. Librarian 75% Time
Equipment Utilized -	Manual
System Operation -	3x5 Title Descriptive cards are made to identify report. These cards are then filed
Discipline -	Engineering

System Number 164

Installation -	White Sands Missile Range, New Mexico
Organization -	Headquarters
Org. Element -	Data Reduction Division
Contents & Scope -	-
Method of Storage -	Keypunched cards, magnetic tape
Volume -	Technical Reports 1,000 Magnetic Tapes/Cards 5,000
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	IBM 1401 and 7094 Computers, EAM Equipment (IBM-all types)
System Operation -	-
Discipline -	Biology, Engineering, Mathematics, Physics

System Number 165

Installation -	White Sands Missile Range, New Mexico
Organization -	Headquarters
Org. Element -	Flight Simulation Laboratory, Analog Simulation Branch
Contents & Scope -	Analog data
Method of Storage -	(planned)-Magnetic Tape
Volume -	-
Rate of Growth -	-
Personnel Required -	-
Equipment Utilized -	Analog to-digital converter; digital computer
System Operation -	In planning stage (1962) - Analog information generated by the analog computer will be digitized and recorded on magnetic tape. Recorded on magnetic tape. Recorded information will then be reproduced off-line, producing charts, plots and graphs. Recorded data will be processed, analyzed, or listed, as required.
Discipline -	Mathematics

System Number 166

Installation -	White Sands Missile Range, New Mexico
Organization -	Headquarters
Org. Element -	Flight Simulation Laboratory, Digital Simulation Branch
Contents & Scope -	Missile Trajectory data; 60 trajectory parameters for each 0.1 second
Method of Storage -	Magnetic Tapes
Volume -	400 magnetic tapes (3000 records/tape, 40 words/record), 510,000 punched cards (8words per card)
Rate of Growth -	100 magnetic tapes per year 30,000 punched cards per year
Personnel Required -	Mathematicians
Equipment Utilized -	Computers- IBM 704 and IRM 1401
System Operation -	-
Discipline -	Mathematics, Statistics

System Number 167

Installation -	White Sands Missile Range, New Mexico
Organization -	Headquarters
Org. Element -	Management Engineering Office
Contents & Scope -	-
Method of Storage -	-
Volume -	Internal Reports 62,500
Rate of Growth -	50%
Personnel Required -	
Equipment Utilized -	IBM 1401 Computer, Card punch
System Operation -	
Discipline -	Mathematics

System Number 168

Installation -	White Sands Missile Range, New Mexico
Organization -	Headquarters
Org. Element -	Nuclear Effects Laboratory
Contents & Scope -	-
Method of Storage -	Keypunched cards
Volume -	Punched cards 600
Rate of Growth -	100%
Personnel Required -	-
Equipment Utilized -	Xerox 813 & 914, Bruning, Print plant equipment
System Operation -	-
Discipline -	Chemistry, Engineering, Physics

System Number 169

Installation -	White Sands Missile Range, New Mexico
Organization -	Headquarters
Org. Element -	Rocket Vehicle Laboratory
Contents & Scope -	Technical Reports, dictionaries, handbooks, magnetic tapes and cards
Method of Storage -	Magnetic Tape
Volume -	Technical books 275, Magnetic tapes 24
Rate of Growth -	10%
Personnel Required -	-
Equipment Utilized -	CDCG15D Computer, PA-3 Plotter and MTA 2 Tape Handler
System Operation -	-
Discipline -	Physics, Chemistry, Earth Sciences, Engineering, Mathematics

System Number 170

Installation -	White Sands Missile Range, New Mexico
Organization -	Headquarters
Org. Element -	Technical Library
Contents & Scope -	-
Method of Storage -	-
Volume -	Technical Reports 31,500, Technical Books 16,567, Periodical Current 616, Periodicals Cumulative 42,000, Microfilm 204.
Rate of Growth -	50%
Personnel Required -	-
Equipment Utilized -	Microfilm Reader/Copier, Xerox 914, Flexowriter
System Operation -	-
Discipline -	Astronomy, Biology, Chemistry, Earth Sciences, Engineering, Mathematics, Physics, Social Science

System Number 171

Installation -	White Sands Missile Range, New Mexico
Organization -	Signal Radio Propagation Agency
Org. Element -	Office of the Area Frequencies
Contents & Scope -	-
Method of Storage -	-
Volume -	Technical Books 44, Handbooks 15, Technical Reports 55, Specifica- tions and Standards 15, Corres- pondence 400
Rate of Growth -	15%
Personnel Required -	-
Equipment Utilized -	Xerox
System Operation -	-
Discipline -	Engineering, Mathematics

8.2 Systems Used by the Army but Operated by Another Agency or Organization

In addition to identifying existent Army systems operated by the Army, an effort was made to identify selected systems which are used by the Army, but are operated by another agency or organization. These systems were included in this study due to the possibility of these systems integrating with the EDIS network.

Accordingly, data was collected for a sampling of those non-Army operating systems using the same parameters as used for existent Army systems. The results are shown in Appendix B.

The sources used for this study included available DOD information system surveys and studies and Nonconventional Technical Information Systems in Current Use. (See Section 3.1).

APPENDIX B

DEFENSE DOCUMENTATION CENTER (DDC) CAMERON STATION, ALEXANDRIA

Contents and Scope -	All areas of science and technology.
Method of Storage -	Magnetic tape, microfilm and microfiche.
Volume -	750,000 documents
Rate of Growth -	4,000 new titles per month
Personnel Required -	-
Equipment Utilized -	Xerox Copyflo for output Univac.1107
Systems Operation -	The Center processes and stores the reports for retrieval, announces their availability for official use, retrieves them on request, and supplies copies.

APPENDIX B

CLEARINGHOUSE FOR FEDERAL SCIENTIFIC AND TECHNICAL INFORMATION (CFSTI) SPRINGFIELD, VA.

Contents and Scope -	Technical documentation covering all phases of science and technology including foreign translation.
Method of Storage -	Hard copy (500,000), microfilm and microfiche (50,000).
Volume -	Over 600,000.
Rate of Growth -	1,000 new titles per month.
Personnel Required -	-
Equipment Utilized -	Three Xerox Copyflo microfilm reproducers for output, microcard camera for input. DDC computer for search.
System Operation -	Search is done manually.

8.3 Systems in the Process of Being Studied, Planned, Developed or Acquired by the Army

Appendix C identifies scientific and technical data systems that are in the study, planning, developmental, or acquisition stage by the Army. The primary source of information for this phase of the study was the Technical Data Systems Inventory, which utilized DD Form 1498 (Research and Technology Resume) to locate and inventory current technical, scientific, engineering, and technical-logistics information and data systems. The criteria for selecting systems to be mentioned included the following:

- a. The systems are Department of Army projects in the study, planning, development, or acquisition stage.
- b. The systems must be automated or mechanized to a degree which clearly differentiates them from manual systems.
- c. They must use and manipulate the technical data and information which describes design, manufacturing, procurement, operational, or maintenance characteristics of systems, components, materials, or processes.
- d. They must serve personnel engaged at the working level in scientific, engineering, procurement, inspection, and technician occupations.

The data to be presented on these systems was considered as relevant to forming an integral part of the data base upon which to base the over-all EDIS design concept. Thus, an effort was made to identify these

systems according to the following parameters: organization and geographical location; contents and scope of the system; method of storage; volume; rate of growth; personnel required; equipment utilized; and a description of the systems operation. Where information was not available for inclusion in this report, a notation was made for eventual updating of the material. In addition, every effort should be expended to update information on the status of these evolving systems.

Installation -	Redstone Arsenal Ala.
Organization -	Army Missile Command
Org. Element -	
Title of System -	MIRACODE- Microfilm Information Retrieval Access Code System
Contents & Scope -	
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Will use computer
System Operation -	In ultimate system, computer feeds both graphic and range code information onto cathode ray converter. High speed camera photographs the picture tube of the converter onto the film. Print- out of data sheets, punching of range code cards, and their conver- sion to binary code, are eliminated.

Installation -	Redstone Arsenal, Alabama
Organization -	Army Missile Command
Org. Element -	
Title of System -	Army Missile Command Engineering Drawings (Aperture Card) Retrieval System
Contents & Scope -	Engineering drawings
Method of Storage -	Magnavox mylar cards
Volume -	670,000 drawings in film chip form
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Computer CDC 160
System Operation -	Magnavox cards will store a 35 mm DIAZO microfilm image from which a diazo copy card is made. The remainder of the card will be used to store characters of photo optical data which identified the image.

Installation -	Redstone Arsenal, Alabama
Organization -	Army Missile Command
Org. Element -	
Title of System -	Engineering Data Systems EDS-0016
Contents & Scope -	Engineering data documentation for support of research, level, design, procurement, supply, and maintenance of military materiel.
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Computer
System Operation -	

Installation -	Redstone Arsenal, Alabama
Organization -	Army Missile Command
Org. Element -	
Title of System -	Documentation Automated Retrieval Equipment (DARE)
Method of Storage -	
Volume -	900,000 drawings taken from a master file of 1.7 million drawings
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Documentation automated retrieval equipment
System Operation -	

Installation -	Washington , D. C.
Organization -	Army Research Office
Org. Element -	
Title of System -	Scientific & Technical Information - Chemical Information & Data System (CIDS)
Contents & Scope -	Technical information and data chemistry
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	
System Operation -	

Installation - Washinton, D. C.

Organization - Office, Chier of Engineers

Org. Element -

Title of System - Army Technical Library
Improvement Studies (ATLIS) Project.

Contents & Scope -

Method of Storage -

Volume -

Rate of Growth -

Personnel Required -

Equipment Utilized -

System Operation - Current technical library organizations, procedures, resources, and regulations will be examined and documented, criteria developed to measure performance, and specific problem areas identified. Solutions to certain problems or operation, management, and the initial distribution of does well be recommended. Studies will be undertaken such as to develop and recommend techniques for automating and centrattizing certain operations. S ective pilot tested, and methods for disseminating abstracts in advance of publication will be evaluated.

Installation -	Savannah, Georgia
Organization -	Army Engineer District
Org. Element -	
Title of System -	Pilot Study of 35mm Microfilm and Half-size Construction Drawing System
Contents & Scope -	
Method of Storage -	Microfilm
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Electronic Computer
System Operation -	A study of electronic data transmission and the related possibilities of a centralized storage and retrieval system.

Installation -	Rock Island Arsenal, Ill.
Organization -	Management Science and Data Systems Office
Org. Element -	Weapons Command
Title of System -	Automated Microfilm Aperture Card Updating System (AMACUS)
Contents & Scope -	
Method of Storage -	Microfilm
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Computer
System Operation -	System will accept microfilm aperture cards which require updating of digital data. The system will display film image for operator visibility in such a fashion that additions, deletions, or corrections may be made using standard data processing techni- ques. Following updating, the system will produce a new up- dated microfilm ready for mounting in an aperture card and subsequent storage, reproduction and dis- tribution while simultaneously purging the original input.

Installation - Joliet, Illinois

Organization - U. S. Army, Ammunition Procurement
and Supply Agency

Org. Element -

Title System - Engineering Data Micro-Reproduction
System (EDMS)

Contents & Scope - Engineering documentation

Method of Storage -

Volume -

Rate of Growth -

Personnel Required -

Equipment Utilized -

System Operation -

Installation -	St. Louis, Missouri
Organization -	USAVCOM
Org. Element -	Cataloging & Standardization
Title of System -	Technical Data in Integrated Master Data Record (Installation)
Contents & Scope -	Technical and logistics data information (maintenance in relation to commodity command and articles/weapons systems)
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Computer
System Operation -	

Installation -	St. Louis, Missouri
Organization -	USAVCOM
Org. Element -	Cataloging and Standardization
Title of System -	AVCOM Technical Data Repository (DOD)
Contents & Scope -	Data Bank for Storage and Dissemination of Graphical (IMAGE) Engineering Data
Method of Storage -	Microfilm
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	
System Operation -	

Installation -	St. Louis, Missouri
Organization -	USAVCOM
Org. Element -	Cataloging and Standardization
Title of System -	AVCOM Library (Installation)
Contents & Scope -	"Scientific and technical information"
Method of Storage -	Microfilm
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Microfilm equipment
System Operation -	

Installation -	St. Louis, Missouri
Organization -	Aviation Command
Org. Element -	Cataloging and Standardization
Title of System -	The Army Equipment Record System (TAERS)
Contents & Scope -	Records pertaining to current Maintenance and inventory status and major serial numbered components.
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	
System Operation -	The plan is to accumulate and structure a record of current maintenance and inventory status as well as history on all Serial Numbered End Items and Major Serial Numbered Components, both installed and uninstalled. Outputs to be provided are current status, readiness, location, performance, and include historic evaluation of performance usage, reliability, and failure analysis.

Installation -	Dover, New Jersey
Organization -	Army Munitions Command
Org. Element -	
Title of System -	Technical Data Package Listings for Procurement Packages
Contents & Scope -	Records file of engineering product drawings, inspection equipment drawings, specifications packaging data
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	
System Operation -	

Installation -	Dover, New Jersey
Organization -	Army Munitions Command
Org. Element -	(AMSMU-MT)
Title of System -	Conversion of graphic information into digital information for computer input
Contents & Scope -	Engineering drawings and associated lists (Parts lists, Procurement Packages)
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Computer, cathode display unit light pen, and microfilm viewing attachment with optical scanner
System Operation -	Graphic information, consisting of engineering drawings and associated lists, will be converted into digital information for programming into a computer. The system is in direct communication with the computer and has the ability to translate graphics information into digital information by utilizing either light pen or scanning techniques.

Installation - Picatinny Arsenal, N. J.

Organization -

Org. Element -

Title of System - Engineering Data Micro-Reproduction
System (EDMS)

Contents & Scope - Engineering documentation

Method of Storage -

Volume -

Rate of Growth -

Personnel Required -

Equipment Utilized - Computer

System Operation -

Installation -	Picatinny Arsenal, New Jersey
Organization -	
Org. Element -	
Title of System -	Engineering Records and Procurement Packages
Contents & Scope -	Engineering records and procurement packages (parts lists, data lists, inspection -equipment lists, provisioning lists, repair parts lists, drawing usage and specification usage report, engineering-change control and configuration-management reports.
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	
System Operation -	

Installation - Picatinny Arsenal, N. J.

Organization -

Org. Element -

Title of System - PA Microfilm Random Access
Information Retrieval System (EDS-0009)

Contents & Scope - Data on nuclear weapons

Method of Storage -

Volume -

Rate of Growth -

Personnel Required -

Equipment Utilized - Film processing equipment (MIRACODE film)

System Operation -

Installation -	Frankford Arsenal, Phila. Pa.
Organization -	
Org. Element -	
Title System -	Engineering Data Micro-Reproduction System (EDMS) for Frankford Arsenal Mission Materiel
Contents & Scope -	Engineering documentation
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	
System Operation -	Microfilming of engineering documentation and the integration of this medium with tabulating and operture cards

Installation -	Frankford Arsenal, Pa.
Organization -	
Org. Element -	
Title of System -	Engineering Parts Lists for Engineering Drawings
Contents & Scope -	Documentation and technology, engineering lists
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Computer
System Operation -	

Installation - Frankford Arsenal, Phila., Pa.

Organization -

Org. Element -

Title of System - Qualitative Development Requirements Information -QDRI - Registered Organization Data (RODATA)

Method of Storage -

Volume -

Rate of Growth -

Personnel Required -

Equipment Utilized - Considering use of IBM Formatted File in conjunction with other STINFO and TLDI projects. Designing IBM card input mechanisms.

System Operation -

Installation -	Philadelphia, Pa.
Organization -	Army Electronics Materiel Agency
Org. Element -	
Title of System -	Item Identification File on Magnetic Tape
Contents & Scope -	Federal item Identification cards (DD Form 146) for Department of Army Supply Manuals
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Electronic equipment in FS Group 66
System Operation -	(1) Computer programs will enable the ADPS equipment to produce a listing of homogeneous groups of items in alphabetic sequence, for use in preparation of Department of Army Supply Manuals. (2) Item descriptions will be in tabular form, and in format compatible with the Federal Description Patterns (DD-146)

Installation	Arlington, Virginia
Organization -	Army Research Office
Org. Element -	Scientific & Technical Information
Title of System -	Department of Defense Form 1498 Reporting System - Army Portion
Contents & Scope -	Scientific & Technical information reported on DD Forms 1498
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Punched card equipment and Termatrex
System Operation -	

Installation -	Arlington, Virginia
Organization -	Army Research Office
Org. Element -	(OCDP-P)
Title of System -	Scientific and Technical Information Data Bank
Contents & Scope -	
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	Computer
System Operation -	The mechanized information will serve as a primary source of data for future planning and coordination of the Army Scientific and Technical Information Program.

Installation -	Arlington, Virginia
Organization -	Army Research Office
Org. Element -	
Title of System -	Scientific and Technical Information - Technical Information Centers
Contents & Scope -	Covers many disciplines
Method of Storage -	
Volume -	
Rate of Growth -	
Personnel Required -	
Equipment Utilized -	
System Operation -	

8.4 Systems Which Could Be, But Are Not Used By The Army

This phase of Task I included efforts to study various data systems which are not currently used by the Army, but which offer potential to the Army. The design of EDIS should not necessarily be confined to existent Army data systems; consideration should be given to those functional information systems that contain areas of specialized D&I which is relevant to the needs of EDIS. An index of these systems should be maintained at the switching center(s) to assist EDIS in locating specific or unique areas of information.

Appendix D offers a basis upon which to construct an index of pertinent non-Army information centers handling D&I salient to Army RDT&E activities. The systems presented here are identified by the following parameters: title and geographical location; contents and scope of system; volume; rate of growth; method of storage; operating personnel; equipment used; and system description.

APPENDIX D

SCIENCE INFORMATION EXCHANGE (SIE) OF THE SMITHSONIAN INSTITUTION

Contents & Scope -	Summaries of unpublished re- search plans for all basic and applied fields of the life, social, physical and engineer- ing sciences.
Method of Storage -	Computer tapes, visible files
Volume -	75,000 current research pro- jects, 25,000 proposals
Rate of Growth -	1,000 to 2,000 projects a week
Personnel Required -	160 people total 50 professional analysts - engineering science 25 supervisory/management administration 10 programmers 75 clerical personnel
Equipment Utilized -	IBM 1460 series for storage and search - terminated pro- ject go on microfilm for fu- ture reproduction
System Operation -	The file contains six items of information: the agency name, short title, names of investigators, location, and a summary. Search either manual using the visible files or by computer, depending on the question.
Discipline -	Chemistry, Engineering, Social Science, Biology, Earth Science

Installation -	China Lake, California -
Organization -	Naval Ordnance Test Station
Org. Element -	-
Contents & Scope -	Technical documents from DOD agencies and their contractors on ordnance, missiles, propulsion systems, and related subjects such as physics, chemistry, mathematics, metallurgy and electronics
Method of Storage -	Magnetic tape
Volume -	Approx. 80,000 reports
Rate of Growth -	10,000 annually reports
Personnel Required -	3 professional librarians 2 library assistants mathematician (PT)
Equipment Utilized -	IBM 7090 h.s. computer for search (related to IBM 1401 printer), key-punch and card-to-tape converter.
System Operation -	Descriptors are keypunched and used as input for search program. Unit records for descriptors used in search are first read from descriptor tape and written on a working tape. The 2 records are compared for report numbers in common and equals are matched against a third record, etc. until this part of search is completed. Second tape is then read for descriptive information for each common document number. The information is printed in a prescribed format and presented to the requester.

**NATIONAL LIBRARY OF MEDICINE - MEDLARS SYSTEM
BETHESDA, MARYLAND**

Contents & Scope -	The world's scientific literature in the fields of medicine and Biology.
Method of Storage -	Magnetic tape
Volume -	Over 200,000 documents
Rate of Growth -	4,900 per week
Personnel Required -	-
Equipment Utilized -	15 Friden Flexowriters for input, Honeywell 800 system with seven magnetic tape units, paper tape reader, card reader and punch, and high speed printer for storage and search, and a Photon 900 computer photo-typesetter for output
System Operation -	Articles are indexed by trained literature analyst and from the index sheets punched paper tape is prepared for computer input on Flexowriter typewriters. The computer is used to compile and print the monthly listings for Index Medicus, to produce periodical lists of citations in specialized subject areas and for demand bibliographies.

NATIONAL BUREAU OF STANDARDS

Contents & Scope -	Documents and reports on instrumentation
Method of Storage -	Documents are stored on shelves by accession number. Peek-a-boo (PAB) cards containing 18,000 positions. Citations and abstracts for each document are on microfilm.
Volume -	18,000 documents
Rate of Growth -	8,000 new documents per year
Personnel Required -	3 1/2 technically trained personnel (physics background preferred)
System Operation -	In searching the index, serial numbers of documents are read from the corresponding holes by means of a ruled transparent overlay, or the peek-a-boo (PAB) cards

APPENDIX E - FEDERAL SUPPLY CATALOG - GROUPS AND CLASSES

GROUP 23

MOTOR VEHICLES, TRAILERS, AND CYCLES

- CLASS 2310 Passenger Motor Vehicles
- 2320 Trucks and Truck Tractors
- 2330 Trailers
- 2340 Motorcycles, Motor Scooters, and Bicycles
- 2350 Tanks and Self-Propelled Weapons

GROUP 96

ORES, MINERALS, AND THEIR PRIMARY PRODUCTS

CLASS 9610	Ores
9620	Minerals, Natural and Synthetic
9630	Additive Metal Materials and Master Alloys
9640	Iron and Steel Primary and Semifinished Products
9650	Nonferrous Base Metal Refinery and Intermediate Forms
9660	Precious Metals Primary Forms
9670	Iron and Steel Scrap
9680	Nonferrous Metal Scrap

GROUP 68

CHEMICALS AND CHEMICAL PRODUCTS

CLASS 6810 Chemicals

6820 Dyes

6830 Gases: Compressed and Liquefied

6840 Pest Control Agents and Disinfectants

6850 Miscellaneous Chemical Specialties

GROUP 13

AMMUNITION AND EXPLOSIVES

CLASS 1305	Ammunition, through 30mm
1310	Ammunition, over 30mm up to 75mm
1315	Ammunition, 75mm through 125mm
1320	Ammunition, over 125mm
1325	Bombs
1330	Grenades
1336	Guided Missile Warheads and Explosive Components
1337	Guided Missile and Space Vehicle Explosive Propulsion Units, Solid Fuel; and Components
1338	Guided Missile and Space Vehicle Inert Propulsion Units, Solid Fuel; and Components
1340	Rockets and Rocket Ammunition
1345	Land Mines
1350	Underwater Mine Inert Components
1351	Underwater Mine Explosive Components
1355	Torpedo Inert Components
1356	Torpedo Explosive Components
1360	Depth Charge Explosive Components
1365	Military Chemical Agents
1370	Pyrotechnics
1375	Explosives, Solid Propellants, and Explosive Devices
1380	Military Biological Agents
1385	Explosive Ordnance Disposal Tools, Surface
1386	Explosive Ordnance Disposal Tools, Underwater
1390	Fuzes and Primers
1395	Miscellaneous Ammunition
1398	Specialized Ammunition Handling and Servicing Equipment

APPENDIX F

Index of Fields of Specialties

Listed below are the major fields and subfields for various disciplines. To identify a specific specialty under a field, turn to the page indicated.

- 1 **ASTRONOMY**
(See page A-1)
90 Astronomy
- 2 **BIOLOGY**
(See page A-2)
7Y Anatomy
7X Bacteriology
70 Biftany
71 Ecology
72 Entomology
73 Genetics
7K Hydrobiology
74 Immunology
7M Microbiology
7P Mycology
7R Parasitology
76 Pathology
77 Pharmacology
78 Physiology
79 Phytopathology
8Y Virology
8X Zoology
84 Agronomy and Agrology
85 Animal Husbandry
86 Fish and Wildlife
87 Forestry and Range Science
88 Horticulture
89 Other Biological Specialties
- 3 **CHEMISTRY**
(See page A-3)
00 Analytical Chemistry
91 Agriculture and Food Chemistry
92 Biochemistry
01 Inorganic Chemistry
02 Organic Chemistry
07 Physical Chemistry
02 Pharmaceutical Chemistry
06 Other Chemistry
- 4 **EARTH SCIENCES: ATMOSPHERIC, LITHOSPHERIC, AND HYDROSPHERIC SPECIALTIES**
(See page A-4)
50 Atmospheric Sciences, Chemistry and Physics
51 Climatology
52 Meteorology
53 Area Specializations
54 Meteorological Instrumentation
55 Oceanography
- 5 **ENGINEERING**
(See page A-5)
6Y Aeronautical Engineering
6K Agricultural Engineering
6F Architectural Engineering
6X Ceramic Engineering
60 Chemical Engineering
61 Civil Engineering
61 Construction Engineering
62 Electrical Engineering
64 Electronics Engineering
63 Engineering Mechanics
6R Hydraulic Engineering
64 Industrial Engineering
6T Internal Combustion Power Plant Engineering
6E Marine Engineering
6N Materials Engineering
65 Mechanical Engineering
66 Metallurgy and Metallurgical Engineering
67 Mining and Petroleum Engineering
68 Sanitary Engineering
6V Structural Engineering
6A Valuation Engineering
69 Other Engineering
- 6 **MATHEMATICS AND STATISTICS**
(See page A-6)
2X Algebra
20 Analysis and Functional Analysis
21 Geometry
22 Logic
23 Mathematics of Resource Use
24 Number Theory
25 Numerical Methods and Computation
26 Topology
27 Probability
28 Statistics
- 7 **PHYSICS**
(See page A-7)
4Y Acoustics
4X Atomic and Molecular Physics
40 Electromagnetic Waves and Electron Physics
41 Elementary Particle Physics
42 Mechanics
43 Nuclear Structure Physics
44 Optics
46 Solid State
48 Thermal Phenomena
47 Theoretical Physics
93 Biophysics
45 Physics of Fluids
49 Other Physics
- 8 **PSYCHOLOGY**
(See page A-8)
50 Clinical Psychology
51 Counseling and Guidance
52 Developmental Psychology
53 Educational Psychology
54 General Psychology
55 Industrial and Personnel Psychology
56 Personality
5Y Programmed Learning
5X School Psychology
57 Social Psychology
95 Experimental, Comparative, and Physiological Psychology
- 9 **SOCIAL SCIENCES, HUMANITIES AND OTHER SPECIALTIES**
(See page A-9)
Y0 Social Sciences, Humanities and Other Specialties

- 90 - Astronomy
- 9001 - Astrometry
- 9017 - Astrophysics
- 9018 - Celestial mechanics
- 9004 - Cosmogony
- 9005 - Cosmology
- 9006 - Design of astronomical instruments
- 9007 - Navigation, geodetic astronomy
- 9008 - Photoelectric photometry
- 9010 - Physics of planets, satellites
- 9011 - Physics of the interstellar
medium
- 9012 - Physics of the sun
- 9013 - Radio astronomy
- 9014 - Spectroscopy of astronomical
sources
- 9015 - Star systems and statistical
astronomy
- 9016 - Stellar energy sources and
nucleogenesis
- 9009 - Astronomy, other (specify)

11/12

- 7M03 - Metabolism of microorganisms
- 7M04 - Physiology of microorganisms
- 7M05 - Bionessy
- 7M06 - Clinical microbiology
- 7M07 - Epidemiology
- 7M08 - Immunology
- 7M10 - Fermentation products
- 7M11 - Serology
- 7M12 - Nat. microbiology
- 7M13 - Taxonomy and morphology
- 7M14 - Virology and rickettsial diseases
- 7M15 - Food microbiology
- 7M16 - Biotechnology
- 7M17 - Dairy microbiology
- 7M18 - Medical microbiology

TP - Mycology
TP01 - Mycology, general
TP02 - Experimental
TP03 - Technology

- 75 - Nutrition and Metabolism
- 7501 - Animal nutrition
- 7502 - Clinical nutrition
- 7504 - Nutrient value of foods
- 7505 - Requirements and deficiencies
- 7506 - Metabolism
- 7507 - Carbohydrates
- 7508 - Proteins, amino acids
- 7509 - Fats, lipids
- 7511 - Trace elements
- 7512 - Vitamins, enzymes
- 7513 - Food quality and use
- 7514 - Human nutrition

7R - Parasitology
7R01 - Medical
7R02 - Medical chemotherapy
7R03 - Veterinary
7R04 - Veterinary chemotherapy

76 - Pathology
7601 - Clinical
7602 - Cooperative
7603 - Cytopathology, histopathology
7604 - Experimental
7605 - Hematology
7606 - Oncology

- 72 - Pharmacology
- 721 - Anesthetics and narcotics
- 722 - Cardiac stimulants
- 723 - Chemical pharmacology
- 724 - Chemotherapy
- 725 - Drug enzymology
- 726 - Experimental therapeutics, clinical
- 727 - Industrial chemicals
- 728 - Insulin
- 729 - Neuropharmacology
- 73 - Organ systems
- 731 - Organic arsenicals
- 732 - Pharmacodynamics
- 733 - Psychopharmacology
- 734 - Sex hormones
- 735 - Standardization
- 736 - Toxicology

- 7A - Physiology
- 7A04 - Cellular, comparative
- 7A05 - Endocrine
- 7B06 - Gastrointestinal
- 7B07 - Heart, circulation, blood
- 7B01 - Neurophysiology
- 7B02 - Reproduction
- 7B03 - Respiratory
- 7B08 - Renal: salt, water balance
- 7B10 - Work-exercise

- 79 - Phytopathology
- 7901 - Bacterial
- 7902 - Disease control, chemical
- 7903 - Disease control, other
- 7904 - Fungal
- 7905 - Host resistance

7906 - Nematodal
7907 - Physiogenic
7910 - Survey, identification
7908 - Viral

- SN - Zoology
- SN10 - Annelide and helminths
- SN11 - Coelenterates
- SN12 - Crustacea
- SN13 - Echinoderm
- SN14 - Herpetology
- SN15 - Ichthyology
- SN16 - Invertebrate
- SN17 - Mammalogy
- SN18 - Mollusks
- SN19 - Ornithology
- SN20 - Parasitology
- SN21 - Protozoology
- SN22 - Vertebrate

03 - Animal Husbandry
0301 - Large animal
0302 - Poultry
0303 - Small animal

- #7 - Forestry and Range Science
- #701 - Erosion control
- #702 - Forestry management
- #703 - Forest products
- #704 - Forest protection
- #705 - Irrigation
- #706 - Range management
- #707 - Silviculture
- #708 - Watershed management

89 - Other Biological Specialties
8901 - Aerobiology
8902 - Biogenesis, evolution
8903 - Biogeography, biophysiology
8904 - Blood banking
8905 - Techniques, methodology
8906 - Biometrics and biostatistics
8907 - Biological warfare agents
8908 - Biology, other (specific)

76. - Anatomy
77. - Bacteriology
78. - Botany
79. - Zoology
80. - Entomology
81. - Insects
82. - Immunology
83. - Nutrition
84. - Pathology
85. - Pharmacology
86. - Physiology
87. - Microbiology
88. - Hydrobiology
89. - Microbiology
90. - Mycology
91. - Parasitology
92. - Virology
93. - Zoology
94. - Agriculture
95. - Animal husbandry
96. - Fish and wildlife
97. - Forestry and range
98. - Horticulture

2

CHEMISTRY

00 - Analytical Chemistry
 0001 - Absorption spectroscopy
 0016 - Assaying
 0002 - Chemical microscopy
 0003 - Chromatographic analysis
 0017 - Classical methods
 0004 - Electrode analysis
 0005 - Emission spectroscopy
 0018 - Forensic chemistry
 0006 - Gas analysis
 0007 - Gravimetric analysis
 0008 - Mass spectroscopy
 0010 - Microchemistry
 0011 - Nucleonics
 0012 - Qualitative analysis
 0013 - Solvent extraction
 0019 - Tracer methods
 0014 - Volumetric analysis
 0015 - X-ray analysis
 0009 - Other (specify)

91 - Agriculture and Food Chemistry
 9101 - Alcoholic beverages
 9102 - Animal and vegetable fats, oils
 9103 - Animal feeds
 9104 - Bakery and confectionery products
 9114 - Beverages
 9105 - Cereals, carbohydrates
 9106 - Fertilizers, plant growth regulators
 9107 - Food and feed additives
 9108 - Fruits, vegetables, juices
 9110 - Meat, fish, dairy and poultry products
 9111 - Nonalcoholic beverages
 9112 - Nonfood crop products
 9113 - Pesticides (insect, herbicide-fungicides, etc.)
 9115 - Phytochemistry
 9109 - Other (specify)

92 - Biochemistry
 9201 - Antineoplastics
 9202 - Biochemical mechanisms
 9203 - Biochemophysics
 9204 - Clinical
 9205 - Cyto-histo-chemistry
 9206 - Endocrine
 9207 - Enzyme, co-enzyme
 9208 - Intermediary metabolism, biosynthesis
 9210 - Microbiological
 9211 - Natural pigments (carotenoids)
 9212 - Neurochemistry
 9213 - Nucleic acids (purines, pyrimidines)
 9214 - Physical
 9215 - Radiation biochemistry
 9216 - Amino acids, peptides, proteins
 9214 - Carbohydrates
 9217 - Immunology
 9218 - Lipids, phospholipids, glycerol, fats, oils
 9219 - Technology, methodology
 9220 - Oncology, carcinogenesis
 9221 - Steroids
 9222 - Other (specify)

9999 - Chemistry, other (specify)

01 - Inorganic Chemistry
 0101 - Alkalies and compounds
 0102 - Alkaline earths and compounds
 0103 - Atomic nuclei
 0104 - Boron family
 0105 - Building products, cement, lime, etc.
 0106 - Carbon family
 0107 - Clay and clay products

0108 - Coordination compounds
 0110 - Electronic materials; semi-conductors, ferroelectrics, ferromagnetics
 0111 - Explosives, rocket fuels
 0112 - Extranuclear structure
 0126 - Fine chemicals
 0127 - Fluorescent minerals
 0113 - Glass, fused silica
 0114 - Halogen family
 0128 - Heavy chemicals
 0115 - Hydrogen
 0116 - Industrial carbon, graphite, carbon black
 0129 - Industrial and other gases
 0117 - Inner-transition elements
 0130 - Inorganic syntheses
 0118 - Nitrogen family
 0119 - Nonmineral products; asbestos, vermiculite, etc.
 0120 - Oxygen family
 0121 - Pigments and industrial minerals
 0122 - Radioactive minerals and products
 0131 - Refractories, enamels for metals
 0123 - Solutions and solvent theory
 0124 - Theoretical inorganic chemistry
 0125 - Transition elements
 0109 - Other (specify)

02 - Organic Chemistry
 0201 - Adhesives
 0202 - Agricultural chemicals
 0203 - Aliphatic chemistry
 0204 - Alkaloids
 0205 - Amino acids and proteins
 0206 - Antibiotics
 0207 - Aromatic hydrocarbons, derivatives
 0208 - Carbohydrates
 0210 - Coal
 0211 - Dyestuffs
 0212 - Elastomers and related products
 0213 - Explosives and rocket fuels
 0236 - Fine chemicals
 0214 - Fluorine compounds
 0215 - Free radical
 0237 - Heavy chemicals
 0216 - Heterocycles
 0217 - Ion exchange resins
 0238 - Leather, tanning materials, collagen
 0218 - Oils, fats, waxes
 0239 - Organic syntheses
 0240 - Organo-halogen compounds
 0219 - Organometallics
 0241 - Paints, enamels, and varnishes
 0220 - Petroleum
 0242 - Petroleum by-products, derivatives, synthetic fuels, asphalts, gases
 0221 - Pharmaceuticals
 0222 - Phosphorus compounds
 0223 - Photo products
 0224 - Plastics and synthetic resins
 0225 - Protective coatings
 0226 - Reaction mechanisms
 0227 - Rubber, natural or synthetic, related products
 0228 - Silicon compounds
 0229 - Small ring compounds
 0229 - Soaps, detergents, surfactants
 0230 - Stereochemistry
 0231 - Steroids
 0244 - Synthetic alcohols and esters
 0232 - Terpenes and other allylics
 0233 - Textiles and related products
 0243 - Theoretical organic
 0234 - Use of isotopes
 0235 - Waxes, paper and cellulose
 0209 - Other (specify)

93 - Physical Chemistry
 9301 - Adsorption and absorption
 9302 - Atomic and molecular structure, radiochemistry
 9303 - Catalysis

9702 - Chemical kinetics
 9703 - Colloid chemistry
 9729 - Corrosion and inhibition
 9730 - Crystallography
 9704 - Determination of physical constants
 9731 - Dielectrics
 9705 - Electrochemistry
 9706 - Electrodeposition
 9707 - Flows and explosives
 9708 - Fused salts
 9710 - Gaseous state
 9711 - High temperature chemistry
 9712 - Homogeneous chemical equilibrium
 9713 - Ion exchange and applications
 9714 - Liquid state
 9715 - Molecular structure
 9716 - Phase equilibria
 9717 - Photochemistry
 9733 - Polymers and elastomers
 9718 - Polymer chemistry
 9719 - Quantum theory
 9720 - Radiation chemistry
 9732 - Radioisotopes
 9721 - Solid, including X-ray methods
 9722 - Solutions of electrolytes
 9723 - Solutions of nonelectrolyte
 9724 - Surface chemistry
 9734 - Theoretical (including reaction mechanisms and kinetics)
 9725 - Thermochemistry
 9726 - Thermodynamics
 9735 - Vacuum techniques
 9709 - Other (specify)

9X - Pharmaceutical Chemistry
 9X01 - Cosmetics
 9X02 - Drugs and medicines (natural and synthetic)
 9X03 - Pharmacology and pharmacognosy

9K - Other Chemistry Specialties
 9K01 - Chemical warfare agents
 9K02 - Water, sewage, and sanitation chemistry
 9K09 - Other (specify)

EARTH SCIENCES. ATMOSPHERIC,
LITHOSPHERIC, AND HYDROSPHERIC
SPECIALTIES

30 - Atmospheric Dynamics, Chemistry
and Physics

- 3001 - Aeronomy
- 3002 - Airflow
- 3003 - Atmospheric chemistry
- 3004 - Atmospheric electricity
- 3005 - Atmospheric optics and acoustics
- 3006 - Atmospheric thermodynamics
- 3007 - Auroras
- 3008 - Cloud and precipitation physics
- 3010 - Composition
- 3011 - Dynamics of atmospheric motion
- 3012 - Magneto hydrodynamics
- 3017 - Physics of the upper atmosphere
- 3013 - Planetary atmospheres
- 3014 - Radiation
- 3015 - Solar-terrestrial relationships
- 3016 - Turbulence and diffusion
- 3009 - Other (specify)

31 - Climatology

- 3101 - Bioclimatology
- 3102 - Microclimatology
- 3103 - Paleoclimatology
- 3104 - Physical climatology
- 3105 - Synoptic climatology
- 3109 - Other (specify)

10 - Geochemistry

- 1001 - Cosmochemistry
- 1002 - General inorganic geochemistry
- 1003 - Isotopes and geochronology
- 1004 - Mineral synthesis and stability relations of minerals
- 1005 - Organic geochemistry
- 1009 - Other (specify)

11 - Geodesy

- 1101 - Earth motions
- 1102 - Geodetic instrumentation
- 1103 - Geodetic surveying
- 1403 - Gravity
- 1104 - Navigation, geodetic astronomy
- 1109 - Other (specify)

12 - Geology

- 1201 - Areal geology
- 1202 - Engineering geology
- 1203 - General field geology
- 1204 - Geology of ground water
- 1205 - Geology of mineral deposits
- 1206 - Geology of petroleum deposits
- 1207 - Geology of solid fuels
- 1208 - Glacial geology
- 1210 - Geomorphology
- 1318 - Laboratory
- 1219 - Military geology
- 1211 - Mineralogy and crystallography
- 1220 - Museum
- 1212 - Petrography and petrology, igneous and metamorphic
- 1213 - Petrography and petrology, sedimentary
- 1214 - Photogeology
- 1215 - Stratigraphy
- 1216 - Structural geology, igneous and metamorphic
- 1217 - Structural geology, sedimentary
- 1209 - Other (specify)

13 - Paleontology and Paleobotany

- 1301 - Micropaleontology
- 1302 - Paleobotany
- 1303 - Paleontology, invertebrate
- 1304 - Paleontology, vertebrate
- 1305 - Palynology
- 1309 - Other (specify)

14 - Solid-earth Geophysics

- 1411 - Exploration, petroleum and natural gas

1412 - Exploration, mineral deposits

- 1401 - Geomagnetism and electricity
- 1402 - Geophysical surveying
- 1403 - Gravity
- 1404 - Heat flow
- 1413 - Instrumentation
- 1405 - Physical properties of materials
- 1406 - Physics of volcanoes
- 1407 - Seismology, induced vibrations
- 1408 - Seismology, natural vibrations
- 1410 - Tectonophysics
- 1409 - Other (specify)

15 - Geography

- 1501 - Biogeography
- 1502 - Cultural geography
- 1503 - Economic geography
- 1504 - Historical geography
- 1505 - Military geography
- 1506 - Philosophy of geography
- 1507 - Physical geography
- 1508 - Political geography
- 1510 - Regional geography (specify region)
- 1511 - Theoretical geography
- 1512 - Toponymy
- 1509 - Other (specify)

16 - Hydrology

- 1601 - Chemistry of water
- 1602 - Erosion and sedimentation
- 1603 - Evaporation and transpiration
- 1604 - Glaciology
- 1605 - Ground waters
- 1606 - Precipitation
- 1607 - Snow, ice and permafrost
- 1608 - Soil moisture
- 1610 - Surface waters
- 1609 - Other (specify)

17 - Oceanography

- 1701 - Biological oceanography
- 1702 - Chemical oceanography
- 1703 - Descriptive oceanography
- 1711 - Dynamic oceanography
- 1704 - Hydrography
- 1705 - Ocean-bottom processes
- 1706 - Physical oceanography
- 1707 - Sea-air interactions
- 1708 - Shore and near shore processes
- 1710 - Underwater sound
- 1709 - Other (specify)

96 - Photogrammetry, Surveying,
Cartography and Photo-
interpretation

- 9601 - Aerial photography
- 9602 - Analytical photogrammetry
- 9603 - Ballistic and satellite photogrammetry
- 9604 - Cancellation cartography
- 9616 - Cadastral surveys
- 9605 - Design cartography
- 9617 - Engineering surveys
- 9606 - Interpretation: cultural features
- 9607 - Interpretation: military features
- 9608 - Interpretation: natural features and resources
- 9610 - Interpretation: space features
- 9611 - Reproduction cartography
- 9612 - Sensor imagery
- 9613 - Stereo plotting
- 9614 - Terrestrial photogrammetry
- 9615 - Graphic arts
- 9609 - Other (specify)

- 1909 - Atmospheric, lithospheric, and hydrospheric specialties, other (specify)

Best Available Copy

ENGINEERING

AV - Aeronautical Engineering

AV01 - Aerodynamic loads

AV16 - Aerodynamic heating

AV02 - Aerodynamics

AV17 - Aerodynamic theory

AV18 - Aeronautical engineer and pilot

AV24 - Aircraft fuel combustion

AV26 - Aircraft performance

AV20 - Aircraft structural loads

AV04 - Aircraft structures

AV05 - Airports, air transport

AV21 - Automatic stability and control

AV06 - Compressors, turbines

AV22 - Flight systems

AV07 - Flight test and research

AV08 - Flutter, vibration

AV10 - Hydrodynamics

AV11 - Instrumentation

AV12 - Landing loads

AV23 - Propeller performance

AV13 - Propulsion systems, materials, structure

AV14 - Rotary wing

AV15 - Stability, control

AV24 - Stress analysis

AV25 - Structures theory

AV09 - Other (specify)

BA - Agricultural Engineering

BA01 - Conservation

BA02 - Farm electrification

BA03 - Farm machinery

BA04 - Farm structures

BA05 - Processing machinery

BA06 - Other (specify)

BE - Architectural Engineering

BE01 - Aerobically control vehicles

BE02 - Armored high-speed tractors

BE03 - Armored utility carriers

BE04 - Automotive components

BE05 - Buses

BE06 - Combat vehicles

BE07 - Trucks

BE08 - Fighting tanks

BE09 - Gun motor carriers

BE10 - Tractor trunks

BE11 - Tractors

BE12 - Transport vehicles

BE13 - Trucks

BE14 - Other (specify)

CE - Ceramic Engineering

CE01 - Alloys

CE02 - Clay products

CE03 - Ceramics, cements, glazes

CE04 - Glass

CE05 - Kitchens, furnaces

CE06 - Plastic tile and refractories

CE07 - Refractories for metals

CE08 - Refractories

CE09 - Other (specify)

CH - Chemical Engineering

CH01 - Adsorption and absorption

CH02 - Chemical separation

CH03 - Electrochemical operations

CH04 - Fluid flow

CH05 - Heat transfer

CH06 - Inorganic processes

CH07 - Isotopes separation

CH08 - Mass transfer

CH09 - Materials handling

CH10 - Measurement and control

CH11 - Mechanical operations

CH12 - Mixing

CH13 - Nuclear processes

CH14 - Organic processes

CH15 - Size reduction

CH16 - Other (specify)

CI - Civil Engineering

CI01 - Airport construction

CI02 - City planning

CI03 - Construction survey

CI04 - Construction light

CI05 - Dams and steel canals

CI06 - Highways

CI07 - Irrigation and reclamation

CI08 - Navigation and water way

CI09 - Other (specify)

CI10 - Other (specify)

CM - Construction Engineering

CM01 - Airfields

CM02 - Air navigation facilities

CM03 - Buildings

CM04 - Canals and laterals

CM05 - Dams

CM06 - Fortifications

CM07 - Industrial plants

CM08 - Powerlines and switchyards

CM09 - Powerplants and pumping stations

CM10 - Process plants (atomic and nuclear)

CM11 - Railroads

CM12 - Technical buildings

CM13 - Underground utilities

CM14 - Waterborne structures

CM15 - Waterfront structures

CM16 - Waterways and harbors

CM17 - Other (specify)

EE - Electrical Engineering

EE01 - Aircraft systems

EE02 - Illumination

EE03 - Power generation

EE04 - Power transmission and distribution

EE05 - Rotating machinery

EE06 - Telecommunications

EE07 - Shipboard systems

EE08 - Transportation, traffic

EE09 - Wire communication systems

EE10 - Other (specify)

EL - Electronic Engineering

EL01 - Circuit theory

EL02 - Computer design and development

EL03 - Electronic tubes

EL04 - Electronic circuitry

EL05 - Guidance and control

EL06 - Guidance and control (radar) systems

EL07 - Instrumentation (including computers)

EL08 - Instrumentation (atomic and nuclear)

EL09 - Instrumental measurement (principally electronics)

EL10 - Radar

EL11 - Radio communication

EL12 - Semiconductor

EL13 - Signal state devices, other

EL14 - Sonar

EL15 - Telecommunication (specific systems)

EL16 - Telemetry

EL17 - Time delay systems

EL18 - Wire communication (telemetry)

EL19 - Wire communication (other)

EL20 - Other (specify)

EN - Engineering Mechanics

EN01 - Dynamics

EN02 - Electricity

EN03 - Fluid dynamics

EN04 - Plasticity

EN05 - Properties of materials

EN06 - Statics

EN07 - Thermodynamics

EN08 - Other (specify)

EP - Environmental Engineering

EP01 - Air pollution

EP02 - Noise and vibration

EP03 - Solid waste disposal

EP04 - Water pollution control

EP05 - Other (specify)

ET - Environmental Engineering

ET01 - Environmental engineering

ET02 - Facility plans

ET03 - Facility utilization

ET04 - Environmental analysis

ET05 - Environmental control

ET06 - Environmental engineering

ET07 - Environmental engineering

ET08 - Environmental engineering

ET09 - Environmental engineering

ET10 - Environmental engineering

ET11 - Environmental engineering

ET12 - Environmental engineering

ET13 - Environmental engineering

ET14 - Environmental engineering

ET15 - Environmental engineering

ET16 - Environmental engineering

ET17 - Environmental engineering

ET18 - Environmental engineering

ET19 - Environmental engineering

ET20 - Environmental engineering

EW - Internal Combustion Power Plant Engineering

EW01 - Aeronautical gas turbine powerplant

EW02 - Aeronautical jet powerplant

EW03 - Aeronautical powerplant (combustion)

EW04 - Aeronautical powerplant (design evaluation)

EW05 - Aeronautical powerplant (installation)

EW06 - Aeronautical powerplant (cycle and combustion)

EW07 - Aeronautical powerplant (propulsion system control)

EW08 - Aeronautical powerplant (propulsion system control theory)

EW09 - Aeronautical powerplant (structure)

EW10 - Aeronautical powerplant (theory)

EW11 - Aeronautical powerplant (reciprocating)

EW12 - Aeronautical powerplant (reciprocating)

EW13 - Aeronautical powerplant (reciprocating)

EW14 - Aeronautical powerplant (reciprocating)

EW15 - Aeronautical powerplant (reciprocating)

EW16 - Aeronautical powerplant (reciprocating)

EW17 - Aeronautical powerplant (reciprocating)

EW18 - Aeronautical powerplant (reciprocating)

EW19 - Aeronautical powerplant (reciprocating)

EW20 - Aeronautical powerplant (reciprocating)

EX - Marine Engineering

EX01 - Boilers and combustion equipment

EX02 - Boat construction

EX03 - Machinery and piping arrangements

EX04 - Pipes, valves, fittings

EX05 - Plant design

EX06 - Propellers and shafting

EX07 - Pumps, blowers, compressors

EX08 - Reciprocating engines

EX09 - Turbines and reduction gears

EX10 - Other (specify)

FM - Materials Engineering

FM01 - Nuclear materials

FM02 - Other (specify)

GN - Mechanical Engineering

GN01 - Air conditioning

GN02 - Automotive engineering

GN03 - Boilers and steam engineering

GN04 - Construction

GN05 - Internal combustion engines

GN06 - Lubrication (lubricating)

GN07 - Machine design

GN08 - Machine tools

GN09 - Materials handling

GN10 - Refrigeration

GN11 - Steam engines and turbines

GN12 - Thermodynamics

GN13 - Welding engineering

GN14 - Other (specify)

GP - Metallurgy and Metal Fabrication

GP01 - Aluminum technology

GP02 - Copper technology

GP03 - Iron and steel extraction

GP04 - Metal structure and treatment

GP05 - Nonferrous extraction

GP06 - Physical metallurgy

GP07 - Powder metallurgy

GP08 - Metallurgy, other (specify)

GP09 - Metallurgical engineering

GP10 - Other (specify)

GS - Mining and Petroleum Engineering

GS01 - Drilling

GS02 - Mining

GS03 - Mining equipment and machinery

GS04 - Mining methods

GS05 - Mining methods

GS06 - Mining methods

GS07 - Mining methods

GS08 - Mining methods

GS09 - Mining methods

GS10 - Mining methods

GS11 - Mining methods

GS12 - Mining methods

GS13 - Mining methods

GS14 - Mining methods

GS15 - Mining methods

GS16 - Mining methods

GS17 - Mining methods

GS18 - Mining methods

GS19 - Mining methods

GS20 - Mining methods

HA - Naval Architectural Engineering

HA01 - Arrangements

HA02 - Hull design and construction

HA03 - Hull piping

HA04 - Hydrodynamics

HA05 - Scientific design and construction

HA06 - Small craft and boats

HA07 - Structural

HA08 - Other (specify)

HE - Sanitary Engineering

HE01 - Air pollution

HE02 - Sewer and refuse

HE03 - Water and waste control

HE04 - Water supply

HE05 - Water supply

HE06 - Water supply

HE07 - Water supply

HE08 - Water supply

HE09 - Water supply

HE10 - Water supply

HO - Structural Engineering

HO01 - Building

HO02 - Building structures

HO03 - Foundations

HO04 - Hydraulic structures

HO05 - Other (specify)

HM - Telecommunication Engineering

HM01 - Communications

HM02 - Electronic communications

HM03 - Gas and vacuum tubes

HM04 - Industrial plants

HM05 - Wiring

HM06 - Pipelines

HM07 - Railroads

HM08 - Other (specify)

HN - Other Engineering

HN01 - Aircraft engineering

HN02 - Automotive engineering

HN03 - Construction and production

HN04 - Electrical engineering

HN05 - Electronic engineering

HN06 - Industrial engineering

HN07 - Mechanical engineering

HN08 - Metallurgical engineering

HN09 - Mining and petroleum engineering

HN10 - Other (specify)

HO - Telecommunication Engineering

HO01 - Communications

HO02 - Electronic communications

HO03 - Gas and vacuum tubes

HO04 - Industrial plants

HO05 - Wiring

HO06 - Pipelines

HO07 - Railroads

HO08 - Other (specify)

HO - Telecommunication Engineering

HO01 - Communications

HO02 - Electronic communications

HO03 - Gas and vacuum tubes

HO04 - Industrial plants

HO05 - Wiring

HO06 - Pipelines

HO07 - Railroads

HO08 - Other (specify)

HO - Telecommunication Engineering

HO01 - Communications

HO02 - Electronic communications

HO03 - Gas and vacuum tubes

HO04 - Industrial plants

HO05 - Wiring

HO06 - Pipelines

HO07 - Railroads

HO08 - Other (specify)

HO - Telecommunication Engineering

HO01 - Communications

HO02 - Electronic communications

HO03 - Gas and vacuum tubes

HO04 - Industrial plants

HO05 - Wiring

HO06 - Pipelines

HO07 - Railroads

HO08 - Other (specify)

HO - Telecommunication Engineering

HO01 - Communications

HO02 - Electronic communications

HO03 - Gas and vacuum tubes

HO04 - Industrial plants

HO05 - Wiring

HO06 - Pipelines

HO07 - Railroads

HO08 - Other (specify)

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MATHEMATICS AND STATISTICS

- 2X - Algebra
 - 2X01 - Boolean algebra
 - 2X02 - Combinatorial analysis
 - 2X03 - Differential algebra
 - 2X04 - Fields, rings, algebras
 - 2X05 - Groups, generalizations
 - 2X06 - Homological algebra
 - 2X07 - Lattices
 - 2X08 - Linear algebra and matrix theory
 - 2X10 - Order, total and partial
 - 2X11 - Polynomials
 - 2X12 - Representation theory
 - 2X09 - Other (specify)
- 20 - Analysis and Functional Analysis
 - 2001 - Banach spaces and algebras
 - 2002 - Calculus of variations
 - 2003 - Convexity, inequalities
 - 2004 - Difference equations, functional equations
 - 2005 - Functions of real variables
 - 2006 - Functions of a complex variable
 - 2007 - Functions of several complex variables
 - 2008 - Hilbert spaces
 - 2010 - Integral equations
 - 2011 - Integral transforms
 - 2012 - Interpolation, approximation
 - 2013 - Lie groups and algebras
 - 2014 - Measure, integration, area
 - 2015 - Operational calculus
 - 2016 - Ordinary differential equations
 - 2017 - Partial differential equations
 - 2018 - Potential theory, subharmonic functions
 - 2019 - Series, summability
 - 2020 - Set theory
 - 2021 - Special functions
 - 2022 - Trigonometric series and integrals
 - 2009 - Other (specify)
- 21 - Geometry
 - 2101 - Affine geometry
 - 2102 - Algebraic geometry
 - 2103 - Complex manifolds
 - 2104 - Convex domains, extremum problems
 - 2105 - Differential geometry, tensor analysis
 - 2106 - Euclidean geometry
 - 2107 - Finite geometries
 - 2108 - Foundations
 - 2110 - Integral geometry
 - 2111 - Projective, non-Euclidean geometries
 - 2112 - Riemannian geometry
 - 2109 - Other (specify)
- 22 - Logic
 - 2201 - Applications of logic
 - 2202 - Formal and symbolic logic
 - 2203 - Foundations of mathematics
 - 2204 - Intuitionism
 - 2205 - Recursive functions
 - 2209 - Other (specify)
- 23 - Mathematics of Resource Use
 - 2301 - Activity analysis
 - 2302 - Actuarial mathematics
 - 2303 - Biometrics, biostatistics
 - 2304 - Control systems
 - 2305 - Cryptography
 - 2306 - Dynamic programming
 - 2307 - Econometrics
 - 2308 - Game theory
 - 2310 - Information and communication theory
 - 2311 - Logistics, inventory
 - 2312 - Operations research

- 2313 - Weapons systems evaluation
- 2309 - Other (specify)
- 24 - Number Theory
 - 2401 - Algebraic number theory
 - 2402 - Analytic number theory
 - 2403 - Diophantine approximation
 - 2404 - Elementary number theory
 - 2405 - Geometry of numbers
 - 2409 - Other (specify)
- 25 - Numerical Methods and Computation
 - 2501 - Algorithm construction
 - 2502 - Analogue systems, coding and programming
 - 2503 - Difference and functional equations
 - 2504 - Digital computers, coding and programming
 - 2505 - Digital computers, logic and design
 - 2506 - Eigenvalues, Raleigh-Ritz method
 - 2507 - Error analysis
 - 2508 - General methods, iteration
 - 2510 - Interpolation, approximation, curve-fitting
 - 2511 - Integral and integro-differential equations
 - 2512 - Linear equations, matrices
 - 2513 - Nomography, tables
 - 2514 - Numerical differentiation, quadrature
 - 2515 - Ordinary differential equations
 - 2516 - Partial differential equations
 - 2517 - Special functions
 - 2509 - Other (specify)
- 26 - Topology
 - 2601 - Abstract spaces
 - 2602 - Applications to analysis
 - 2603 - Fibre bundles and spaces
 - 2604 - Graphs
 - 2605 - Homology, cohomology
 - 2606 - Homotopy
 - 2607 - Manifolds, Kahler spaces
 - 2608 - Mappings
 - 2610 - Point-set topology
 - 2611 - Topological dynamics
 - 2613 - Topological groups
 - 2609 - Other (specify)
- 27 - Probability
 - 2701 - Analytic probability theory
 - 2702 - Applications of probability
 - 2703 - Foundations of probability
 - 2704 - Limit theorems
 - 2705 - Stochastic processes, general
 - 2706 - Markov processes
 - 2707 - Theory of generating functions
 - 2708 - Time series
 - 2709 - Other (specify)
- 28 - Statistics
 - 2801 - Analytical statistics
 - 2802 - Decision theory, sequential analysis
 - 2803 - Design and analysis of experiments
 - 2804 - Estimation and testing, parametric
 - 2805 - Multivariate analysis
 - 2806 - Non-parametric methods
 - 2807 - Quality control
 - 2808 - Sampling techniques
 - 2810 - Survey methods: including forms design, data collection and data processing
 - 2811 - Theory of statistical inference
 - 2812 - Time series analysis
 - 2809 - Statistics, other (specify)
- 2909 - Mathematics, other (specify)

PHYSICS

4V - Acoustics
 4Y01 - Applied acoustics, instruments and apparatus
 4Y02 - Architectural acoustics
 4Y03 - Bioacoustics
 4Y04 - Ear and hearing
 4Y05 - Electroacoustics
 4Y06 - Mechanical vibrations and shock
 4Y07 - Musical instruments and music
 4Y08 - Noise and vibrations
 4Y10 - Sound transmission
 4Y11 - Speech and singing
 4Y12 - Ultrasonics
 4Y13 - Underwater sound
 4Y09 - Other (specify)

4X - Atomic and Molecular Physics
 4X01 - Atomic mass and abundance
 4X02 - Atomic and molecular beams
 4X06 - Isotopes
 4X07 - Photoelectric phenomena
 4X03 - Structure and spectra
 4X04 - X-ray phenomena
 4X05 - X-ray technology
 4X09 - Other (specify)

40 - Electromagnetic Waves and Electron Physics
 4001 - Antenna theory
 4002 - Electrical measurements and instruments
 4010 - Electromagnetic fields
 4003 - Electron dynamics
 4004 - Gas discharge
 4005 - Masers and similar devices
 4006 - Microwaves
 4007 - Physical electronics
 4008 - Radio waves
 4011 - Thermionic and secondary emission
 4009 - Other (specify)

41 - Elementary Particle Physics
 4101 - Cosmic rays
 4102 - High energy accelerators
 4103 - High energy particles
 4109 - Other (specify)

42 - Mechanics
 4202 - Aerodynamics and shockwaves
 4201 - Analytical mechanics
 4204 - Flight dynamics
 4203 - Gravity and gravitation
 4206 - High pressure phenomena
 4207 - High vacuum techniques
 4212 - Hydrodynamics
 4208 - Instrumental measurement (principally mechanical)
 4210 - Rheology
 4209 - Other (specify)

43 - Nuclear Structure Physics
 4301 - Accelerators
 4302 - Detectors
 4307 - Magnetic resonance
 4303 - Nuclear reactions and scattering
 4304 - Nuclear spectroscopy
 4305 - Radiation and isotope use
 4306 - Reactors
 4308 - Other (specify)

44 - Optics
 4401 - Atmospheric optics
 4402 - Color colorimetry and photometry
 4403 - Films and coatings
 4404 - Geometrical optics
 4405 - Illumination
 4410 - Infrared
 4406 - Lenses
 4407 - Optical instruments
 4408 - Photography

4410 - Physical optics
 4414 - Physiological and psychological optics
 4411 - Spectroscopy
 4412 - Vision
 4409 - Other (specify)

46 - Solid State
 4601 - Crystallography
 4602 - Dielectrics (including fluids)
 4603 - High polymers and glasses
 4604 - Luminescence
 4605 - Magnetic resonance
 4606 - Magnetism in solids
 4607 - Photoelectric phenomena
 4608 - Physics of metals
 4610 - Piezo and ferro-electricity
 4611 - Radiation damage
 4612 - Semiconductors
 4613 - Superconductivity
 4614 - Surface physics
 4615 - Thin films
 4609 - Other (specify)

48 - Thermal Phenomena
 4801 - Cryogenics
 4802 - Heat radiation and transmission
 4803 - Temperature and its measurement
 4804 - Thermodynamics
 4809 - Other (specify)

47 - Theoretical Physics
 4701 - Field theory
 4702 - Quantum mechanics
 4703 - Relativity and gravitation
 4704 - Statistical mechanics and kinetic theory
 4709 - Other (specify)

93 - Biophysics
 9301 - Bioacoustics and transmission
 9302 - Biochemical physics
 9303 - Bioelectricity and transmission
 9304 - Bio-systems, control, communications
 9305 - Biothermics and bioenergetics
 9306 - Biotransport and membrane physics
 9307 - Cellular biophysics
 9308 - Fluid biomechanics
 9310 - Health physics
 9311 - Mathematical biophysics
 9312 - Methodology, instrumentation, and measurement
 9313 - Molecular biophysics
 9309 - Radiation biology
 9315 - Solid biomechanics
 9316 - Theoretical physical biology
 9353 - Bio-optics (physical and geometric)
 9385 - Electron microscopy
 9309 - Other (specify)

45 - Physics of Fluids
 4501 - Boundary layer effects
 4502 - Compressible fluid dynamics
 4503 - Incompressible fluid dynamics
 4504 - High-temperature flow
 4505 - Magneto fluid dynamics
 4506 - Plasma physics
 4507 - Plastic flow
 4508 - Rarefied gas flow
 4510 - Shock wave phenomena
 4511 - Structure and properties
 4512 - Structure and properties of liquids
 4513 - Superfluidity
 4514 - Turbulence
 4509 - Other (specify)

49 - Other Physics
 4901 - Ballistics
 4902 - Continuum mechanics
 4903 - Astrophysics
 4904 - Celestial mechanics
 4905 - Physics of gases (specify)

PSYCHOLOGY

- 50 - Clinical Psychology
 - 5001 - Behavior problems
 - 5002 - Crime and delinquency
 - 5003 - Experimental psychopathology
 - 5004 - Group therapy
 - 5005 - Individual diagnosis and therapy
 - 5006 - Mental deficiency
 - 5007 - Objective tests
 - 5008 - Projective techniques
 - 5010 - Speech pathology
 - 5009 - Other (specify)
- 51 - Counseling and Guidance
 - 5101 - Educational counseling
 - 5102 - Nondirective therapy
 - 5103 - Personal adjustment
 - 5104 - Rehabilitation
 - 5105 - Vocational counseling
 - 5109 - Other (specify)
- 52 - Developmental Psychology
 - 5201 - Nursery and pre-school
 - 5202 - Childhood and adolescence
 - 5203 - Maturity and old age
 - 5209 - Other (specify)
- 53 - Educational Psychology
 - 5301 - Educational measurement
 - 5302 - School adjustment
 - 5303 - School learning
 - 5304 - Special education
 - 5305 - Student personnel
 - 5306 - Teacher personnel
 - 5309 - Other (specify)
- 54 - General Psychology
 - 5401 - History and biography
 - 5402 - Theory and systems
 - 5409 - Other (specify)
- 55 - Industrial and Personnel Psychology
 - 5501 - Employee and executive training and development
 - 5502 - Employee morale and attitudes
 - 5503 - Job analysis and position classification
 - 5504 - Labor-management relations
 - 5505 - Market research, advertising
 - 5506 - Performance evaluation, criterion development

- 5507 - Recruiting, selection, placement
- 5508 - Safety research and training
- 5510 - Salary and pay plans
- 5509 - Other (specify)

- 56 - Personality
 - 5601 - Development
 - 5602 - Measurement
 - 5603 - Personality and body
 - 5604 - Personality and learning
 - 5605 - Personality and perception
 - 5606 - Personality theory
 - 5607 - Structure and dynamics
 - 5609 - Other (specify)

5Y01 - Programmed Learning

5X01 - School Psychology

- 57 - Social Psychology
 - 5701 - Culture and personality
 - 5702 - Group interaction
 - 5703 - Language and communication
 - 5704 - Leadership
 - 5705 - Mass media communication
 - 5706 - Role differentiation
 - 5707 - Social attitudes
 - 5708 - Social perception and cognition
 - 5710 - Surveys and polls
 - 5709 - Other (specify)

95 - Experimental, Comparative, and Physiological Psychology

- 9501 - Aesthetics
- 9502 - Animal learning
- 9503 - Apparatus design & evaluation
- 9504 - Audition
- 9505 - Autonomic functions
- 9506 - CNS functions
- 9507 - Communications research, information theory
- 9508 - Electroencephalography
- 9510 - Engineering psychology
- 9511 - Fatigue
- 9512 - Feeling and emotion
- 9513 - Motivation
- 9514 - Motor skills
- 9515 - Perception
- 9516 - Psychophysics
- 9517 - Sensory processes
- 9518 - Symbolic processes, problem solving
- 9509 - Other (specify)

Y0 - Social Sciences, Humanities and
Other Specialties
 Y001 - Archeology
 Y002 - Area studies
 Y003 - Business administration
 Y004 - Business and commerce
 Y005 - Economics
 Y006 - Education
 Y007 - Fine and applied arts
 Y008 - History
 Y010 - History of science and mathematics
 Y011 - Home economics
 Y012 - International relations
 Y013 - Journalism
 Y014 - Law, jurisprudence
 Y015 - Library and archival science
 Y016 - Music
 Y017 - Patent law
 Y018 - Philosophy of science
 Y019 - Political science
 Y020 - Public administration
 Y021 - Religion and theology
 Y022 - Sociology
 Y023 - Speech
 Y048 - Anthropology
 Y052 - Scientific and technical documentation
 Y062 - Demography (including vital statistics)
 Y074 - Industrial hygiene and occupational
health
 Y009 - Other (specify)

APPENDIX G
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13. ABSTRACT This report, prepared for EDIS (Engineering Data and Information System) Task I, presents the results of Work Unit 1.9, <u>Categorization of Existent Data Systems</u>. Findings on individual data systems that were examined during this phase are presented under four groups: 1) systems that are currently being used by the Army; 2) systems used by the Army but operated by some other agency or organization; 3) systems which are being studied, planned, developed, or acquired by the Army; and 4) extant systems handling relevant data that <u>could</u> be but are <u>not</u> used by the Army at this time. The data gathered on these systems are discussed as relevant to forming an integral part of the data base upon which the over-all EDIS design concept will be built. Possible ramifications of these data on interfaces, security procedures, priority, controls, indexing, communication, and the switching center(s), are included in the report. Discussions are supported graphically by categorizing existent Army systems by: disciplines and item categories; disciplines and fields; and geographical location. These systems are identified by the type of equipment each uses (manual, EAM, graphic devices, and EDP). A directory or organizations by field is also given. An analysis of the consistency and validity of gathered data is made. Lastly, recommendations and conclusions that have evolved from this effort are offered. A bibliography is included.			

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