A Technical Index of Interactive Information Systems
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A Technical Index of Interactive Information Systems

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NATIONAL BUREAU OF STANDARDS, Richard W. Roberts, Director

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Despite a history marked by some significant failures and numerous partial successes, the field of computer software for information services now offers a wide and growing range of choices. Indeed, the variety and complexity of available software seems to overwhelm routine documentation and distribution as an effective means of dissemination. This report offers relief as a concise reference to technical features and operational status in the domain of interactive systems, i.e., those providing a "conversational" usage mode to a "non-programmer" through a data terminal device. The report was prepared under National Science Foundation support for NBS to assess the status of automated information services for scientific and technical information. (Grant NSF-CA68). The principal motivation for this report was a request for assistance from the COSATI Task Group on Interactive Systems, chaired by Mr. Alexander Hoshovsky, U. S. Department of Transportation.

We gratefully acknowledge the excellent cooperation of the system producers, the review assistance of the COSATI Task Group, and especially the support and thoughtful advice of Dr. Edward Weiss and Mr. Richard Lee of the Office of Science Information Service, NSF.

This report identifies computer systems by trade names as necessary to provide a descriptive characterization of their features. This in no case implies a recommendation or endorsement by the National Bureau of Standards, nor should the presentation be construed as a certification that any system provides the indicated capabilities. The information presented was primarily obtained from producer's documents and has been reviewed by each producer for accuracy and clarity, with the authors retaining final technical judgement on the information included. The report is only intended to be informative and instructive in state-of-the-art assessments, and not to be a competitive evaluation of systems for any specific application.
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A TECHNICAL INDEX OF INTERACTIVE INFORMATION SYSTEMS

Dennis W. Fife, Kirk Rankin, Elizabeth Fong
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This report constitutes a reference to technical features and operational status of interactive information systems, i.e. those providing a 'conversational' usage mode to a 'non-programmer' through a data terminal device. It is aimed at the ADP service manager, for his use in the state-of-the-art assessments preparatory to a detailed system selection process. It contains an index that describes 46 systems in terms of a list of over 50 technical features plus descriptive, identification, and background information. In addition, there are aids and examples contributing to the intended use of the index.

Key words: Bibliographic systems; computer programs; computer systems; data base; data management; information retrieval; information services; interactive system; query language; software selection; text processing.

1. INTRODUCTION

This report is written for the purpose of providing Federal ADP customers with information on a certain class of computer systems which are capable of handling scientific and technical information. The report attempts to show what is available and to characterize these systems in such a way as to answer questions which naturally arise prior to selecting such a system for a particular installation. The report is written at a level of technical detail which is aimed at information specialists rather than programming experts. It is intended to be informative and instructive, and not critical or evaluative.

We have reviewed for inclusion in this index over 200 systems which came to our attention from various published and unpublished sources as well as from word-of-mouth. The systems which were selected conform to the following definition: "Information Retrieval" or "Data Management" packages or services which are available to any Federal ADP installation, and which offer an interactive query and search capability that is geared for use by non-programmers. Various reasons for rejecting the systems which did not qualify for inclusion are listed at the end of Section 2 of this report.

The information contained here on each of the systems was obtained primarily from documentation received during 1972 and 1973. In cases where the available documentation did not provide sufficient data, further information was obtained by telephone. We believe that the reporting on these systems is accurate, for it has been reviewed and amended where necessary by the system producers. We regret if this report inadvertently omits any system which may meet the definition. Omissions and out-of-date information are inevitable in a survey of such an extremely active and evolutionary field as this.
A caveat on the use of this index must be mentioned. We have attempted to convey in a limited space information obtained from secondary sources. There are obvious limitations in such a treatment. The best way to gain in-depth familiarity with a system is, of course, to have hands-on experience with it. That has not been possible for most of our treatments, but that course is recommended to readers and users of this inventory.

This report is structured as follows: Section 2 elaborates on the definition of the scope of the survey and clarifies some of the important concepts and sometimes confusing terminology. Section 3 discusses evaluation for system selection, so that a manager can relate his needs to technical features which appear in our questionnaire. Section 4 presents the technical data on systems surveyed. Section 5 presents a brief description of the widely known, commercial data bases that are accessible on some of the surveyed systems. Section 6 presents a bibliography of related work that may also be helpful for information sources.

2. BASIC CHARACTERISTICS OF SYSTEMS UNDER STUDY

In this part, we discuss the rationale for including certain systems in this index and excluding others. The intention has been to include every system for which there are "yes" answers to the following questions:

(1) Does it have an interactive query and search capability?
(2) Is this capability geared for use by non-programmers?
(3) Is the system available to any Federal ADP customer?

We will now explain what is meant by the three questions. The first question is dealt with extensively, since arriving at an acceptable understanding of "interactive" has proved to be quite difficult.

2.1 Interactive Query and Search

The term "interactive system" is elusive when attempts are made to pin down an exact definition. The problem is complicated by the fact that this and related terms have been used for promotional and advertising reasons as much as for technical reasons. Rather than try to establish a hard definition, we sketch the intuitive meaning for the term by placing it in perspective with other terms.

Terms currently in use to describe the processing of jobs by a computer system are batch, remote batch\(^\star\), on-line, and interactive. Intuitively, batch processing requires that all steps in a job, together with any required input, be specified prior to the job's initiation. A dis-

\(^\star\)"Remote job entry" or "RJE" is often used and is synonymous with "remote batch".
tinction can be drawn between local batch and remote batch systems according to input via direct lines or via communication lines. The latter require an extra layer of protocol which sometimes must be specified by the user. A batch program is one in which all parameters are specified in advance, but also whose results are known only after completion of the whole job.

The term "on-line processing" is generally used to describe a spectrum of processing modes. The user communicates with an on-line system via a typewriter-like terminal (i.e., a terminal with a keyboard and possibly a display). The system actively acknowledges user input in some form, as opposed to the more passive remote batch systems. The spectrum of processing modes is determined by the extent of this acknowledgement, e.g., prompting after receipt of "input lines", prompting plus syntax check of control cards, and so on. Interactive systems form a portion of the on-line spectrum. They are characterized by "friendly" responses to input errors, relatively rapid response to system commands and the like. Generally, the interactive system links a system or user program directly with the user at all times, in contradistinction to other on-line systems. In the latter type, user and systems programs utilize the terminal mainly as a line printer.

The above distinctions are not rigorous, and from the user's view may be non-existent in a fast-response environment. The following discussion tries to focus on the "interactive" system from the user's point of view. In the survey we include systems from the entire on-line spectrum but we have attempted to restrict inclusion to those which present some indication of interactivity either from the above consideration or from those following.

Imagine a system which allows a user to formulate a query at his terminal and submit that query for searching against a file, and which prints out the records which satisfy that query, within a matter of seconds. Such a system qualifies as having an "interactive query and search capability", although it is at the weaker end of the spectrum compared to a system as now described.

This system allows the user to incrementally formulate a query, and responds with intermediate results (e.g. the number of records satisfying the query or similar terms or phrases which the user may also consider), based on which the user can re-formulate or extend his query. This cycle of system response with intermediate results leading to user re-formulation of query, etc. need have no upper limit. For example, the following user/system session is typical of one of the major applications of interactive systems, namely bibliographic search.

The user enters his query, e.g. "computers", which is checked for inclusion in an index of permitted terms. It is found to be included and found to be a descriptor of say 1,104 documents in the system. The system responds with "1,104 hits". At this point the user modifies his original request with "and the United States". The system responds with "52 hits". The user then modifies his new complex query with
"published since 1971". The system responds with "6 hits". The user requests the titles of these documents. On viewing them he then requests the full citations of three documents from that six that he really is interested in. Such a system would be at the stronger end of the "interactive" spectrum.

2.2 Use by Non-programmers

Many customers want the capability of having a user who is not a programmer formulate queries at a terminal in a way that is relatively natural for him. Many systems are designed in such a way that their interactive query and search components are geared for use by non-programmers: information specialists, managers, or clerical personnel. We have attempted to restrict our survey to such systems.

In some cases, the documentation for a system states that it is for use by programmers. All such systems have been rejected. In some cases not so rejected, inspection of a system's documentation forces us to reject it because there are requirements on the user to "do programming" of a sort. By this we mean that the user has to phrase some or all of his query (or operations preceding the query) in language constructs which are primitive and unnatural in relation to his task of query and search.

For example, one system defines its files in terms of physical storage structure. In querying files, the affected files must be described by such parameters as transport number, number of logical records per physical record, and address of first block (of tape) or sector (of disc).

Another system has essentially a high level programming language for querying files. Each query is bracketed by a BEGIN-END pair and language statements within are numbered hierarchically. Each statement potentially produces a result which can be referred to in other statements by giving the statement number. An example is:

```
BEGIN
1. FIND ALL RECORDS FOR WHICH GRADE = 2
2. COUNT RECORDS IN 1
3. PRINT ... COUNT IN 2
END
```

The primitive nature of the statements forces the user to construct a program to query the system, even for the most logically simple requests.

2.3 Availability

We are including in this index systems which are available to the Federal customer. Availability implies that the system is operational
(not in research or development) and still supported. There is also an understanding that there are no legal, security, or other problems in the way of availability. The systems included here are either available on a commercial basis or on a less formal and less costly basis in cases where the originator is not a commercial establishment. Further, we have included both those systems which are available on a service basis and those which are available as packages for lease or purchase.

To summarize, we have attempted to include every data management or information retrieval system for which there are "yes" answers to the three questions. Reasons for not including a system are: (1) it is a batch system; (2) its query language is not for use by non-programmers, (3) it (or its query language) is in research or development; (4) it is no longer supported; (5) the originator of the system is unlocatable or no longer in business; (6) there are legal or security problems in the way of releasing the system; and (7) documentation has been solicited but not yet received.

3. SYSTEM FEATURES AND EVALUATION REQUIREMENTS

3.1 Questionnaire with Explanatory Notes

Systems are built with different objectives and hence have different capabilities for different application situations. Since not all systems provide the same set of features to the same degree, it has been necessary here to establish features for describing systems relative to a broad range of possible user needs. The feature list or questionnaire used in this index is therefore the union of a wide number of possibly relevant capabilities, see Table 1. A specific system is characterized by a subset of the features covered.

3.2 Suggested Procedure for Use

The survey results, Section 4, represent a nearly complete inventory of available interactive software, and therefore are a basis for assessing the state-of-the-art in this field. The index is intended also to be informative in the preliminary, exploratory stage of a system selection activity. In this area, the index may aid a manager in articulating his requirements using the offered features as a starting point. Further, the index may be useful in forming a tentative set of candidate systems, by screening the inventory against a required subset of features. The latter of course imposes an inescapable burden on the user to relate his unique needs to applicable features.

The suggested procedure for using this index can be illustrated by briefly discussing questions arising in formulating requirements and evaluating information systems. Two basic alternatives would face an information service manager once he has decided to investigate the feasibility of automated service, see Figure 1. If the expected usage is very high and a computer facility is in place, an in-house service could be considered. Compatibility with the available mainframe may
### A. GENERAL DESCRIPTION

1. **SYSTEM NAME**  
   Additional names are given for alternative versions. System originator is developer and implementor.

2. **SOFTWARE AVAILABILITY**  
   Filled in if the computer program package itself is offered for customer installation.
   
   - a. **FOR PURCHASE**  
     - AT WHAT COST
   - b. **FOR LEASE**  
     - AT WHAT COST

3. **SERVICE AVAILABILITY**  
   Filled in if remote service is offered.
   
   - a. **SEARCH SERVICE**  
     - AT WHAT COST
   - b. **DATA BASES**
   - c. **TAKES CUSTOMER DATA BASES**

4. **HISTORY OF SOFTWARE**  
   Filled in where the package itself is offered.
   
   - a. **FIRST INSTALLATION**
   - b. **SIGNIFICANT INSTALLATIONS**

5. **HISTORY OF SERVICE**  
   Filled in where service is offered.
   
   - a. **SERVICE INITIATION**
   - b. **PRESENT USAGE**

### B. COMPUTER ENVIRONMENT

1. **MAIN FRAME**
2. **OPERATING SYSTEM**
3. **SOURCE LANGUAGE**
4. **TERMINAL TYPES**
5. **TRANSMISSION RATES**
6. **RE-ENTRANT FOR MULTIPLE USERS**
   Identifies systems which can serve multiple users simultaneously through re-entrant code, thus conserving storage.

### C. FILE DEFINITION

1. **USER DEFINABLE**
2. **VARIABLE LENGTH TEXT**
   Do individual records accommodate text of any length, or at least as much as a typical bibliographic abstract?
3. **REPEATED FIELDS**
   Is it possible to have a variable number of identically named fields in a record, e.g., keywords or authors?

### D. FILE MAINTENANCE

1. **ALLOWS ON-LINE**
   - a. **CREATION**
   - b. **UPDATE**
   
   - c. **DELETION**
   - d. **EDITING**
   
   "On-line updating" refers to change of the logical content of a record, while "on-line editing" refers to an associated capability to selectively indicate partial changes of the record content.

2. **PREPROGRAMMED DATA VALIDATION CHECKS**

3. **OPTIONAL ORDERING OF ENTERED DATA**

4. **AUTOMATIC OR MACHINE- AIDED CONTENT INDEXING**
   Can incoming data clerks and records be optionally ordered with respect to pre-existing elements and records in the file?

   Is there a preprogrammed automatic or machine-aided process to scan raw text and develop concept-indicating keywords and phrases?
**TABLE 1., CONTINUED**

**E. QUERY**

1. **USER-SYSTEM INTERACTION**
   a. MULTIPLE OPTIONS
      AT ANY POINT

   During a session with the system, does the user have the freedom to specify various actions at any time? For example, after entering a search term, is the user returned to a state where he may choose more terms, review previous choices, or execute the search?

b. **ENGLISH-LIKE PHRASING**

   Do the system commands have English or near-English names indicating their function?

c. **SYSTEM-FORCED DIALOGUE**

   Is the user completely "led along" by the system in a dialog completely controlled by the system?

2. **CONTENT SEARCHING**

   a. **CONTROLLED VOCABULARY**

      Is the user required to use a pre-established set of search terms?

      Can the user use any word expected in text (excepting perhaps an excluded list of stop words like "a", "of", "the")?

   b. **FULL TEXT INVERSION**

      Can the user specify a set of search terms by using a root expression such as "comput*", where * has all the values "a", "cr", "ers", etc.

      Does the system have the capability of specifying a class of semantically equivalent terms either in its vocabulary or else by definition?

   c. **STEMMING PERMITTED**

   d. **SYNONYMS**

   e. **DISPLAY OF RELATED TERMS**

      Can the system display terms from its vocabulary which are equivalent to a given term or are more or less specific, but related to it?

   f. **CHECKING TERM IN CONTROLLED VOCABULARY**

      Is there a command which checks a given input term for inclusion in a controlled vocabulary and perhaps gives immediate alphabetic neighbors?

3. **SEARCH SPECIFICATION**

   a. **MUST NAME FIELDS**

      Is it necessary to always specify fields in query formulation, e.g., "Author=Proud"?

   b. **MAY LIMIT FIELDS**

      Is it possible to specify fields in query formulation to limit or control the search?

   c. **BOOLEAN AND**

   d. **BOOLEAN OR**

   e. **BOOLEAN NOT**

   f. **NESTING OF BOOLEAN EXPRESSIONS**

   g. **PHRASE AND DISTANCE SEARCHING**

   h. **NATURAL ENGLISH**

   i. **RAIAR SEARCHING**

4. **TUTORIAL FEATURES**

   a. **"HELP" COMMAND**

      Is there a command which gives assistance to a user on what options are available to him at various points in a session?

   b. **DOCUMENTATION ON-LINE**

      Can the user get at documentation on-line which explains the system, the data bases, etc.?
TABLE 1. CONTINUED

5. SEARCH STRATEGY

- Refering to the file accessing technique used in the implementation, is an individual record uniquely located:
  a. from an index,
  b. by consecutive search of each record in the file,
  c. within a group of records?

F. REPORT GENERATION

1. LANGUAGE TYPE
   - STANDARD OUTPUT
   - SELECT AMONG OPTIONS
   - OWN CODE

2. MEDIA FLEXIBILITY
   - OFF-LINE PRINTING
   - DISPLAY OF GRAPHS
   - SPECIAL OUTPUTS

3. SPECIAL CAPABILITIES
   - SORTING
   - SEQUENCING
   - COUNTING
   - ARITHMETIC

G. SECURITY PROTECTION

1. TERMINAL

2. DATA BASE
3. RECORD
4. FIELD
then be the overriding factor in the selection of a software package to be installed. The index can be used to find as prime candidates the systems implemented on the given vendor hardware. However, if expected usage is low, say on the order of a few hours of terminal use per day, or if a computer center and necessary expertise are unavailable, a worthy alternative would be to obtain use of software as a service from an outside computing center. A pertinent question then is whether the service offers searching of a major commercial data base, if required, or takes customer data bases if a special private file is involved. The index also assists in finding initial candidates based on these factors.

Having pursued one of the above alternatives to identify a relevant subset of available systems, attention should turn to technical features desirable or necessary for the intended application. The questions in the index were purposefully selected to draw out distinctions in three broad classes of system application, called respectively formatted data processing, structured text searching, and personal text handling. As a tutorial guide for the index user to articulate his unique requirements, these classes will be individually discussed toward framing a representative list of essential and additional desirable features (Tables 2-4).

Formatted data processing is conceived as most typical of management information, military command/control, and other applications where data elements have mostly numerical, abbreviated text, or other encoded (e.g. date) values. Personnel, inventory, or production control files would be common examples. Data values in the file may need to be updated frequently as status changes occur in the application environment (e.g. personnel are reassigned, parts are used, or products moved from one manufacturing station to another). This is motivation for requiring on-line file maintenance as an essential capability. In Table 2, therefore, D.1 indicates that a qualifying system must allow update or editing transactions to be entered from the user's remote terminal (see Table 1 for explanation of items under D.1). Formatted data processing software must provide considerable flexibility to the user in manipulating file data in any logically correct order and with a wide range of arithmetic functions. These are essential because such systems are usually applied concurrently to a number of differently organized files. Also, they must help their user to answer an indeterminable variety of questions about relationships and quantities in the file data. In Table 2, the conclusion is reflected in choices of: an interaction language with multiple options (E.1.a), a full Boolean capability to express logical or comparison conditions (E.3.c through E.3.f), and arithmetic capabilities (F.3.c and d). Users of these systems also require a range of options in formatting output reports, so that essential factors can be made clearly visible and effectively ordered with respect to related data. For these reasons, optional formatting (F.1.b and c) and ordering (F.3.a) are included as essential in Table 2.

Related to these essential features are several additional ones that seem especially desirable and are often available. In some circumstances they may be considered essential. Repeatable fields (C.3)
are a great convenience in organizing and referencing the machine file when records have multiple occurrences of the same type of data (e.g., children or work experience in a personnel file). This may also save considerable machine storage for many files. English-like language phrasing (E.1.b) aids user comprehension and ease of use, in conjunction with the multiple option language characteristic. Range searching (E.3.i) and displays of graphs (F.2.b) significantly enhance selection of desired records and data presentation in a more readily perceived form. Tutorial aids (E.4.a or b) are highly desirable, even essential, to bring users quickly toward effective use of complex software or to help solve usage problems as they are encountered.

Structured text searching (Table 3) is conceived as representative of bibliographic information searching, legal text searching, and similar uses where the file records consist of prescribed segments of text, individually of variable length (C.2 in Table 1), possibly rather long (1000 characters or more). Examples of text segments would be report titles, abstracts, patent claims, paragraphs, statute sections. To identify a text record for selection there must be a technique for abbreviated content description, since requiring an exact match to all the text in a segment would be inconceivable and inconsistent with the intended function. Content description may be provided by indexing each file record by a set of keywords from a controlled vocabulary (E.2.a) which the user can inspect to check his desired term for acceptability (E.2.f). Or else, any significant word occurring in text may be provided as a valid search term (E.2.b). Because these systems are especially aimed at users unaccustomed to programming encoded forms, English-like phrasing is deemed essential as well. Because a search may select voluminous text records that would be exceedingly long to print on the usual 10 or 30 character/second terminals, off-line printing (F.2.a) at high speed is also essential. Moreover, these systems should present a count (F.3.c) of the records that would be selected by a proposed search so that a user can judge the desirability of continuing the search.

The data files of structured text searching systems would be expected to be unchanging in content and very large in volume. It would be expensive to reorder or restructure them as new data is received, so it would be desirable for the system to accept new data in any order (D.3). Other desirable features would extend content searching capability, for example by giving a synonym facility (E.2.d) or a presentation of other terms that are conceptually related (E.2.e). As in formatted data processing, tutorial aid is desirable. In contrast to that application however, full Boolean capability, optional report formatting, and optional ordering are suggested here as desirable rather than essential. Only a Boolean AND, allowing the conjunction of distinct search terms, is imperative for user convenience, to avoid a tedious selection from record subsets found by individual terms. Optional formatting and ordering may not be used often for such simple structured output records as bibliographic citations. A standard output presentation then is generally sufficient, unless text fields become numerous and frequently of marginal importance, requiring more selectivity to be given the user.
Personal text handling is conceived as a generalization of structured text searching to uniquely serve an individual researcher in creation, editing, and composition of text bodies as well as searching them. Examples arise in military intelligence work, legal case preparations, source book or encyclopedia preparation, etc. Most of the requirements of structured text searching apply. The most germane additions are for user definable file structures (C.1) and on-line file maintenance (D.1), which allow complete user flexibility to establish arbitrary new files in the course of his interactive usage. Optional output formatting becomes essential because of the potential variety and scope of file structures. A highly desirable search capability would be phrase and distance searching (E.3.g), to permit the researcher to more narrowly select desired records based on occurrence of phrases or words in context (separated by limited distance). As the researcher may establish many records with grossly similar content within his special interest, this additional selectivity has great importance.

The above rationale indicates the type of analysis which may lead the user to a pertinent feature list for his situation.

Table 5 illustrates using the worksheet for structured text searching to develop comparative presentations of system capabilities. These are the basic questions which the index user may answer in such fashion: are there systems offering the essential combination of features? is there a good number of desirable systems, portending a competitive choice in cost, types of vendor support, proven system reliability, etc.? is the cost range of desirable systems within the funds available for a purchase or subscription? Positive answers should build confidence that an economical, proven system can be obtained, while negative answers may indicate a presently infeasible set of requirements or a constrained area where further research and system development is advisable.

It is suggested that each index user develop his own worksheet of features for his needs. Table 1 shows that the index permits a sharper delineation of required features than used in Tables 2 to 5. It is expected also that individual readers will perceive special features for their need that are not used here, and will have to be specially investigated for all systems of interest. The index is meant to help draw attention to that subset of systems of greatest interest and relevance.

The index is primarily meant however to aid state-of-the-art assessments. We see in the index results many disparities calling attention to needed research, and also many common factors indicating a readily available, recognized feature. Regarding the former, we note particularly that only half of the systems have tutorial capability - yet none are considered trivial to use. The design of effective training aids and problem diagnosis features is a very important area for further development. On the other hand, almost all systems offer English-like phrasing in their language style. This is encouraging for it is clearly desirable and of little added cost to implement in terms of meaningful command names.
### Table 2. Illustrative Worksheet for Formatted Data Processing Application

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<tr>
<td>Takes customer data base (A.3.c)</td>
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<tr>
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</tbody>
</table>

**TECHNICAL FEATURES**

- On-line file maintenance (D.1)
- Multiple option interaction (E.1.a)
- Full Boolean capability (E.3.c-f)
- Optional report format (F.1.b-c)
- Optional output order (F.3.a)
- Arithmetic (F.3.c-d)

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<th>3</th>
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**TECHNICAL FEATURES**

- Repeatable fields (C.3)
- English-like phrasing (E.1.b)
- Range searching (E.3.1)
- Tutorial aid (E.4.a-b)
- Display of graphs (F.2.b)

### Table 3. Illustrative Worksheet for Structured Text Search Application

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</table>

**TECHNICAL FEATURES**

- Variable length text (G.2)
- English-like language (E.1.b or E.3.b)
- Content description (E.2.a and E.2.f or else E.7.b)
- Off-line printing (F.2.a)
- Counting of hits (F.3.c)

- Optional ordering of data (D.3)
- Content searching aids (E.2.c-e, E.3.b, E.3.i)
- Full Boolean capability (E.3.c-f)
- Tutorial aid (E.4.a-b)
- Optional report format (F.1.b-c)
- Optional output order (F.3.a-b)
### Table 4. Illustrative Worksheet for Personal Text Handling Application

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<td>Cost (A.2 or A.3.a)</td>
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### TECHNICAL FEATURES

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### Table 5. Illustrative Worksheet for Structured Text Searching, Completed for Representative Systems

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<tr>
<td>Offers required data base (A.3.b)</td>
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### TECHNICAL FEATURES

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<td>Tutorial aid (E.4.a-b)</td>
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<td>Optional report format (F.1.b-c)</td>
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<td>Optional output order (F.3.a-b)</td>
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Section 4 presents several matrices that illustrate how the features may be used individually and in combination to categorize systems as may be relevant to user needs. It is advisable however for a user to create his own worksheet of pertinent features and draw information from the survey, e.g. Table 5, to judge the capabilities that are available in the field.

It is neither intended or recommended that the survey results or the broad feature list should be adopted as the exclusive basis of a system selection. A competitive selection decision requires a much more detailed matching of user requirements with functional features, coupled with a productivity assessment addressing performance and cost factors. The background for this task necessarily involves familiarity with a user's organization and its forcing constraints, such as the needed data files and their characteristics, funds available, allowable implementation time, present computer equipment, and available programming skills. The tools to be employed in system evaluation include benchmark exercises, performance monitoring, simulation and modeling, hands-on experience, detailed documentation review, and thorough audit tests. Inasmuch as this survey has been based primarily on documentation review, it cannot be evaluative of one system against another. Managers facing a selection decision are advised then to acquire system documentation, at least to the level of a complete user's manual, and to undertake hands-on familiarization or benchmark exercises to thoroughly understand each system's capability for his user community and procurement constraints.

4. SURVEY RESULTS

4.1 Indexes To Systems

As an aid to the reader, this section presents several examples of classification of information systems drawn from the questionnaires. Following is a brief description of each of the four illustrative classifications.

Applications:

As examples of application classes, there are three types considered: formatted data, structured text and personal text. The relevant features have been described in Section 3.2. Table 6 presents a matrix for this categorization. This may help the reader direct his first attention to systems closely corresponding to an intended usage.

Main Frames:

The matrix of Table 6 dealing with mainframes correlates the systems in the survey with the (classes of) main frames on which each runs. The classification "other" is used for those main frames for which only one of the systems is available. For these systems, reference to the specific questionnaire will give the appropriate main frame (B.1).
### Table 6  Categorization of Systems

#### 1. Applications

|      | BASIS | CICERO | (Data/Control) | DIALOG | DYMOS | DYMOS/A | ENFOR | FLEXDES | GDM | GEM | HANS | HANS (GEP) | HANS (V) | HANS (VII) | HANS VI | HAPSI | HAPSI II | HAPSI III | IAPMAS | INFO | IAPMAS | IAPMFI | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMAS | JAPMA

### 2. Main Frame Series

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### 3. Type of Offering

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Type of Offering:

Questions A.2, 3 deal with the availability of a system and in particular answer whether the system is available as a software vendor's package to be installed at the user's site, or as a service running at the vendor's site.

Ownership:

Two categories are used to describe ownership of a system. The term "public" designates those systems in which the originator (or vendor) has not retained a substantial monetary interest, such as those which have been completely government funded. These systems are generally available (source and source listings) for a nominal fee, such as tape duplication. In some cases, the producer or vendor may only consider assistance for a fee, covering installation, modifications, and possibly maintenance. This assistance may be contractual and include on-site personnel in the case of packages, or resource costs, in the case of services.

The "proprietary" systems are those that are wholly owned by private concerns. Generally there is a purchase price on the system. However in the case of some main frame manufacturers, the system may be available without additional cost to the purchasers or lessors of their equipment.
4.2 The Inventory of Systems

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<td>IMARS</td>
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<td>IMS/360</td>
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<td>SYSTEM 2000</td>
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<td>TICON</td>
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</tr>
<tr>
<td>UNIDATA</td>
<td>63</td>
</tr>
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</table>
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   BASIS (Battelle Automated Search Information System)

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes, $1,500/mo.
   b. FOR LEASE
      AT WHAT COST
      Approx. $30,000

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      Battelle can develop a file and provide search service for it. Service also available through membership in Science Information Association (SIA). File implementation cost + on-line search cost ($0.50-0.75/min.) AMIC, NCIC, Copper Data, DOT-TRIS, BTIS (3 yrs.), Chemical Abstracts (3 yrs.), DOD Cost Data, and 26 others.
   b. DATA BASES
      Yes
   c. TAKES CUSTOMER DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      July, 1970
   b. SIGNIFICANT INSTALLATIONS
      Battelle, National Security Agency

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      July, 1970
   b. PRESENT USAGE
      Over 600 users, most at Battelle's Information Centers. Government users include EPA, DOT, DOD.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   CDC 6400, UNIVAC 1108

2. OPERATING SYSTEM
   CDC SCOPE 3.2, 3.3, 3.4

3. SOURCE LANGUAGE
   UNIVAC EXEC-8 95% FORTRAN, 5% Assembler

4. TERMINAL TYPES
   TTY compatible, CDC 200 series terminals

5. TRANSMISSION RATES
   110, 150, 300, 2000, 2400, 4800 baud
   No

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      Yes
   b. UPDATE
      Yes
   c. DELETION
      Yes
   d. EDITING
      Yes

2. PREPROGRAMMED DATA VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF ENTERED DATA
   Yes

4. AUTOMATIC OR MACHINE- AIDED CONTENT INDEXING
   Yes

5. SUPPORT SPECIFICATION
   a. JUST NAME FIELDS
      No
   b. MAXIMUM FIELDS
      No
   c. BOOLEAN AND
      No
   d. BOOLEAN OR
      No
   e. BOOLEAN NOT
      No
   f. NESTING OF BOOLEAN EXPRESSIONS
      Yes
   g. PHRASE AND DISTANCE SEARCHING
      Yes
   h. NATURAL ENGLISH
      Yes
   i. RANGE SEARCHING
      Yes

E. QUERY

1. USER-SYSTEM INTERACTION
   a. TR.string OPTIONS
      Yes, prompting PLUS command
   b. ENGLISH-LIKE PHRING
      Yes
   c. SYSTEM-FORCED DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes
   b. FULL TEXT INVERSION
      Yes
   c. STEMMING PERMITTED
      Yes
   d. SYNONYMS
      Yes
   e. DISPLAY OF RELATED TERMS
      Yes
   f. CHECKING TERM IN CONTROLLED VOCABULARY
      Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      Yes
   c. OWN CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY ON GRAPH
      Yes
   c. SPECIAL OUTPUTS plotting on microfilm

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      No
   c. COUNTING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   No
2. DATA BASE
   Yes
3. RECORD
   Yes
4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   CDMS
   System Development Corp.
   2500 Colorado Ave.
   Santa Monica, Calif. 90406
   213-393-9411

2. SOFTWARE AVAILABILITY
   Available from COHIC (Computer Software Management and
   Information Center of the University of Georgia)

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      Software service available
      (including on ARPA network)
      $2,100 per month minimum
      None public
   b. DATA BASES
      Yes
   c. TAKES CUSTOMER
      DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      TMS (predecessor of CDMS)
      installed in May 1968
   b. SIGNIFICANT
      INSTALLATIONS
      National Military Command
      System Support Center, and CIA
      Washington, D.C.

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      July 1969
   b. PRESENT USAGE
      2 accounts in Washington area
      (ARPA network), usage unknown

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   IBM 360/50, IBM 370/145 and up

2. OPERATING SYSTEM
   SDC's TS/EXEC, IBM OS/VS1

3. SOURCE LANGUAGE
   JOVIAL

4. TERMINAL TYPES
   IBM 2741, TTY models 33, 35

5. TRANSMISSION RATES
   10, 15, 30 ops

6. RE-ENTRANT FOR
   MULTIPLE USERS
   No

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   No, 255 char. max.

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   b. UPDATE
   c. DELETION
   d. EDITING
   Yes
   Yes
   Yes
   Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIMAL ORDERING OF
   FILTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
   b. ENGLISH-LIKE
      PHRASING
   c. SYSTEM-FORCED
      DIALOGUE
   Yes
   Yes
   No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
   b. FULL TEXT INVERSION
   c. STEMMING PERMITTED
   d. SYNONYMS
   e. DISPLAY OF
      RELATED TERMS
   f. CHECKING TERM IN
      CONTROLLED VOCABULARY
   Yes
   Yes, if user defined
   No
   Yes
   No
   No
   Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   b. SELECT AMONG
      OPTIONS
   c. OWN CODE
   Yes
   Yes
   Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
   b. DISPLAY OF GRAPHS
   c. SPECIAL OUTPUTS
   No
   No
   No

3. SPECIAL CAPABILITIES
   a. SORTING
   b. SEQUENCING
   c. COUNTING
   d. ARITHMETIC
   Yes
   Yes
   Yes
   Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes

2. DATABASE
   Yes

3. RECORD
   No

4. FIELD
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<tr>
<th>A. GENERAL DESCRIPTION</th>
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<tbody>
<tr>
<td>1. SYSTEM NAME ORIGINATOR</td>
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<tr>
<td>CIRCOL.</td>
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<td>Foreign Technology Division</td>
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<tr>
<td>Air Force Systems Command</td>
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<td>Wright-Patterson Air Force Base, Ohio 45433</td>
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<td>b. FOR LEASE AT WHAT COST</td>
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<td>b. DATA BASES</td>
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<tr>
<td>c. TAKES CUSTOMER DATA BASES</td>
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<td>b. PRESENT USAGE</td>
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<tr>
<th>B. COMPUTER ENVIRONMENT</th>
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<tr>
<td>CIRCOL is built on IBM's Document Processing System.</td>
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<tr>
<th>1. MAIN FRAME</th>
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<th>6. RE-ENTRANT FOR MULTIPLE USERS</th>
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<tr>
<td>1. USER-SYSTEM INTERACTION</td>
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<td>a. MULTIPLE OPTIONS AT ANY POINT</td>
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<th>2. CONTENT SEARCHING</th>
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<th>3. SPECIAL CAPABILITIES</th>
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<td>a. SORTING</td>
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<th>4. SECURITY PROTECTION</th>
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<tr>
<td>1. TERMINAL</td>
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| 2. DATA BASE |
| No |

| 3. RECORD |
| No |

| 4. FIELD |
| No |

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<th>b. DAY LIMIT FIELDS</th>
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| c. BOOLEAN AND |
| Yes |

| d. BOOLEAN OR |
| Yes |

| e. BOOLEAN NOT |
| Yes |

| f. NESTING OF BOOLEAN EXPRESSIONS |
| Yes |

| g. PHRASE AND DISTANCE SEARCHING |
| Yes |

| h. NATURAL ENGLISH |
| No |

| i. RANGE SEARCHING |
| Yes |

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<th>4. TUTORIAL FEATURES</th>
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<td>a. &quot;HELP&quot; COMMAND</td>
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| b. DOCUMENTATION ON-LINE |
| Yes, partial |

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<th>5. SEARCH STRATEGY</th>
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<td>a. RANDOM</td>
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| b. SEQUENTIAL |
| No |

| c. INDEXED SEQUENTIAL |
| Yes |

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<th>F. REPORT GENERATION</th>
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<tbody>
<tr>
<td>1. LANGUAGE TYPE</td>
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<tr>
<td>a. STANDARD OUTPUT</td>
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</table>

| b. SELECT AMONG OPTIONS |
| Yes |

| c. OMNI CODE |
| No |

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<th>2. MEDIA FLEXIBILITY</th>
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<tr>
<td>a. OFF-LINE PRINTING</td>
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<td>Yes</td>
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| b. DISPLAY OF GRAPHS |
| No |

| c. SPECIAL OUTPUTS |
| No |

<table>
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<th>3. SPECIAL CAPABILITIES</th>
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<tbody>
<tr>
<td>a. SORTING</td>
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<tr>
<td>No</td>
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</table>

| b. SEQUENCING |
| No |

| c. COUNTING |
| Yes |

| d. ARITHMETIC |
| Yes |
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR (Data/Central) Head Technology Laboratories Research Park Dayton, Ohio 45432

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE AT WHAT COST No
   b. FOR LEASE AT WHAT COST Yes $1500 a month for DOS, $1800 a month for OS

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE AT WHAT COST Yes $5,000 a month
   b. DATA BASES Yes American Psychology Abstracts, data base of statutory and decisional law in the state of Ohio, and many others.
   c. TAKES CUSTOMER DATA BASES Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION 1968
   b. SIGNIFICANT INSTALLATIONS Wright-Patterson Air Force Base, Union Carbide

5. HISTORY OF SERVICE
   a. SERVICE INITIATION 1969
   b. PRESENT USAGE 10 organizational users

B. COMPUTER ENVIRONMENT

1. MAIN FRAME IBM 360/40 and up

2. OPERATING SYSTEM DOS or OS

3. SOURCE LANGUAGE Assembly, COBOL, FORTRAN

4. TERMINAL TYPES CRT, TTY, all IBM hard copy

5. TRANSMISSION RATES 10, 30, 120 cps

6. RE-ENTRANT FOR MULTIPLE USERS Yes

C. FILE DEFINITION

1. USER DEFINABLE Yes

2. VARIABLE LENGTH TEXT Yes

3. REPEATED FIELDS Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION No
   b. UPDATE No
   c. DELETION Yes
   d. EDITING Yes

2. PREPROGAMMED DATA VALIDATION CHECKS Yes

3. OPTIONAL ORDERING OF ENTERED DATA No

4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS AT ANY POINT" Yes
   b. ENGLISH-LIKE PHRASING Yes
   c. SYSTEM-FORCED DIALOGUE No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY No
   b. FULL TEXT INVERSION Yes
   c. STIPMING PERMITTED Yes
   d. SYNONYMS Yes as equivalents
   e. DISPLAY OF RELATED TERMS
   f. CHECKING TERM IN CONTROLLED VOCABULARY

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT Yes
   b. SELECT AMONG OPTIONS Yes
   c. OWN CODE Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING Yes
   b. DISPLAY OF GRAPHICS Color CRT, Photocomposition

3. SPECIAL CAPABILITIES
   a. COUNTING Yes
   b. SEQUENCING Yes
   c. COUNTING Yes
   d. ARITHMETIC No

G. SECURITY PROTECTION

1. TERMINAL No

2. DATA BASE

3. RECORD

4. FIELD
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   DIALOG
   Lockheed Research Lab.
   3251 Hanover
   Palo Alto, Calif. 94304
   Dr. Roger Summit
   415-493-4411

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
         Yes, by Govt. agencies
         Negotiable
   b. FOR LEASE
      AT WHAT COST
         Yes, on installation and
         maintenance basis.
         Negotiable
   c. TAKES CUSTOMER DATA BASES
      Yes

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
         Yes, from Lockheed Palo Alto
         via telephone, TVX, and
         Tymshare Inc. network for
         dial-up user; also Lockheed
         high-speed leased line.
         Based on data base and
         elapsed terminal hours.
         Typically, $25/hr. on ERIC,
         $35/hr. on NIDIS, no minimum.
         NIDIS, ERIC, PANDEX, Psych.
         Abstracts, COMPENDEX, INSPEC,
         and others.
   b. DATA BASES
      No
   c. TAKES CUSTOMER DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      1968 at Lockheed, serving
      NASA--early version of RECOM.
   b. SIGNIFICANT INSTALLATIONS
      Lockheed, ABC (Oak Ridge), NASA,
      European Space Research
      Organization

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      1971 (ERIC), 1972 (NIDIS)
      Nat. Institute of Education,
      Dept. of Commerce (NIDIS),
      state, local and education
      agencies; and commercial users.
      (More than 1,500 searches,
      totally, per month)
   b. PRESENT USAGE
      Yes

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   IBM 360/370

2. OPERATING SYSTEM
   OS/MVT

3. SOURCE LANGUAGE
   Assembler

4. TERMINAL TYPES
   ASCII compatible, IBM 2260,
   CC 30

5. TRANSMISSION RATES
   10-480 cps

6. RE-ENTRANT FOR MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   No

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. PERMITS ON-LINE
   a. CREATION
   b. UPDATE
   c. DELETION
   d. EDITING
   None, but
   transaction
   file may be
   entered and
   edited on-line
   for later
   processing

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      No
   b. ENGLISH-LIKE
      PUBLISHER
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes
   b. FULL TEXT INVERSION
      Yes
   c. STEMMING PERMITTED
      Yes
   d. SYNONYMS
      No, but SEARCH
      table feature
      stores
      pre-selected
      terms
   e. DISPLAY OF
      RELATED TERMS
      Yes
   f. CHECKING TERM IN CON-
      TROLLED VOCABULARY
      Yes

3. SEARCH SPECIFICATION
   a. "MUST NAME" FIELDS
      No
   b. "MAY LIMIT" FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. RESTRICTING BOOLEAN
      EXPRESSIONS
      Yes
   g. PHRASE AND DISTANCE
      SEARCHING
      Yes
   h. NATURAL ENGLISH
      Yes
   i. RANGE SEARCHING
      Yes, by
      accession no.

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Yes
   b. DOCUMENTATION
      ON-LINE
      Yes

5. SEARCH STRATEGY
   a. RANDOM
      No
   b. SEQUENTIAL
      No
   c. INDEXED SEQUENTIAL
      Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      Yes
   c. OWN CODE
      No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUTS
      Yes

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. RESEQUENCING
      Yes
   c. COUNTING
      Yes
   d. ARITHMETIC
      No

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes, on terminal
   basis
3. RECORD
   No
4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   DMARS
   First Data Corp.
   490 Totten Pond Rd.
   Waltham, Mass. 02154
   617-890-6701

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      NA
   b. FOR LEASE
      AT WHAT COST
      YES

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      YES
      $0.36/cpu sec + $10/connect
      hour.
   b. DATA BASES
      DOT grants trace data base
      (soon to be public), other data
      bases on informal agreement
      with user-owners.
   c. TAKES CUSTOMER
      DATA BASES
      YES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   b. SIGNIFICANT
      INSTALLATIONS
   NA

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      3rd quarter, 1972
      30 users in DOT (off. of Sec.,
      UMTA) + others
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   DECsystem 10

2. OPERATING SYSTEM
   TSH (modified by First Data)

3. SOURCE LANGUAGE
   FORTRAN + MACRO-10

4. TERMINAL TYPES
   ASCII, IBM code compatible

5. TRANSMISSION RATES
   10, 15, 30, 120 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   YES

C. FILE DEFINITION

1. USER DEFINABLE
   YES
2. VARIABLE LENGTH TEXT
   YES
3. REPEATED FIELDS
   NO

D. FILE MAINTENANCE

1. ALLows ON-LINE
   a. CREATION
      YES
   b. UPDATE
      YES
   c. DELETION
      YES
   d. EDITING
      YES

2. PRE PROGRAMMED DATA
   VALIDATION CHECKS
   YES

3. OPTIONAL ORDERING OF
   ENTERED DATA
   YES

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   NO

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS
      AT ANY POINT
      YES
   b. ENGLISH-LIKE
      PHRASING
      YES
   c. SYSTEM-CONDUCTED
      DIALOGUE
      NO

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      NO
   b. FULL TEXT INVERSION
      NO, embedded string
      search in named
      field
   c. STEMMING PERMITTED
      YES, by string
      search
   d. SYNONYM
      NO
   e. DISPLAY OF
      RELATED TERMS
      NO
   f. CHECKING TERM IN
      CONTROLLED VOCABULARY
      NO

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS
      YES
   b. MAY LIMIT FIELDS
      YES
   c. BOOLEAN AND
      YES
   d. BOOLEAN OR
      YES
   e. BOOLEAN NOT
      YES
   f. NEETING OF BOOLEAN
      EXPRESSIONS
      YES
   g. PHRASE AND DISTANCE
      SEARCHING
      NO
   h. NATURAL ENGLISH
      NO
   i. RANGE SEARCHING
      YES

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      YES
   b. DOCUMENTATION
      ON-LINE
      YES

5. SEARCH STRATEGY
   a. RANDOM
      YES
   b. SEQUENTIAL
      YES
   c. INDEXED SEQUENTIAL
      YES

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      YES
   b. SELECT AMONG
      OPTIONS
      YES
   c. CAN CODE
      YES

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      YES
   b. DISPLAY OF GRAPHS
      NO
   c. SPECIAL OUTPUTS
      NO

3. SPECIAL CAPABILITIES
   a. SORTING
      YES
   b. SEQUENCING
      NO
   c. COUNTING
      YES
   d. ARITHMETIC
      YES

G. SECURITY PROTECTION

1. TERMINAL
   YES
2. DATA BASE
   YES
3. RECORD
   NO
4. FIELD
   NO
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR  
   DML
   Computer Sciences Corp.
   Information Network Div.
   650 N. Sepulveda Blvd.
   El Segundo, Ca. 90245
   213-678-0311

2. SOFTWARE AVAILABILITY  
   a. FOR PURCHASE AT WHAT COST  
   b. FOR LEASE AT WHAT COST

3. SERVICE AVAILABILITY  
   a. SEARCH SERVICE AT WHAT COST
   b. DATA BASES TAKE CUSTOMER DATA BASES

4. HISTORY OF SOFTWARE  
   a. FIRST INSTALLATION
   b. SIGNIFICANT INSTALLATIONS

5. HISTORY OF SERVICE  
   a. SERVICE INITIATION
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME  
   Univac 1108

2. OPERATING SYSTEM  
   CTS

3. SOURCE LANGUAGE  
   Assembler

4. TERMINAL TYPES  
   TTY models 33, 35, 37; IBM 2741; CRT devices.

5. TRANSMISSION RATES  
   10-240 cps

6. RE-ENTRANT FOR MULTIPLE USERS  

C. FILE DEFINITION

1. USER DEFINABLE  
   Yes

2. VARIABLE LENGTH TEXT  
   No, 128 char/field max.

3. REPEATED FIELDS

D. FILE MAINTENANCE

1. ALLOWS ON-LINE  
   a. CREATION  
   b. UPDATE  
   c. DELETION  
   d. EDITING

2. PREPROGRAMMED DATA VALIDATION CHECKS
   No, but programmable in DML

3. OPTIONAL ORDERING OF ENTERED DATA
   No, but programmable in DML

4. AUTOMATIC OR MACHINE-ALIENED CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION  
   a. MULTIPLE OPTIONS AT ANY POINT  
   b. ENGLISH-LIKE PHRASING  
   c. SYSTEM-FORCED DIALOGUE

2. CONTENT SEARCHING
   None directly provided but capabilities programmable in DML

   a. CONTROLLED VOCABULARY
   b. FULL TEXT INVERSION
   c. STEMMING PERMITTED
   d. SYNONYMS
   e. DISPLAY OF RELATED TERMS
   f. CHECKING TERM IN CONTROLLED VOCABULARY

F. REPORT GENERATION

1. LANGUAGE TYPE  
   a. STANDARD OUTPUT  
   b. SELECT ANY OPTIONS
   c. OWN CODE

2. MEDIA FLEXIBILITY  
   a. OFF-LINE PRINTING
   b. DISPLAY OF GRAPHS
   c. SPECIAL OUTPUTS

3. SPECIAL CAPABILITIES  
   a. SORTING
   b. SEQUENCING
   c. COUNTING
   d. ARITHMETIC

G. SECURITY PROTECTION

1. TERMINAL  
   Yes, through operating system

2. DATA BASE

3. RECORD

4. FIELD
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   DRS (Data Retrieval System)
   A.R.A.P., Inc.
   50 Washington Rd.
   Princeton, N.J. 08540
   TELEPHONE

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes
      $2300 (or IBM 1130 version),
      $2800 (16K IBM 1130 version),
      $950/month for IBM 360/370
      version.
   b. FOR LEASE
      AT WHAT COST
      Yes
      $115-140/month (2 year. payout for
      IBM 1130 versions.)

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Yes
      By arrangement
   b. DATA BASES
      NONE AVAILABLE
   c. TAKES CUSTOMER
      DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      1970 (IBM 1130), 1973 (IBM 370)
   b. SIGNIFICANT
      INSTALLATIONS
      Over 40 installations of IBM
      1130 version.

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      NA
   b. PRESENT USAGE
      About 12 users

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   IBM 1130, IBM 360/370

2. OPERATING SYSTEM
   OS/1130 version 2, OS/360, 370

3. SOURCE LANGUAGE
   FORTRAN

4. TERMINAL TYPES
   IBM 2741, 1050, ASR-33 TTY
   (with adapter)

5. TRANSMISSION RATES
   10-120 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   No

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   No, 1000
   field size

3. REPEATED FIELD
   No

D. FILE MAINTENANCE

1. ALLONS ON-LINE
   a. CREATION
      No
   b. UPDATE
      Yes
   c. DELETION
      Yes
   d. EDITING
      No

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING
   OF ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS
      AT ANY POINT"
      Yes
   b. "ENGLISH-LIKE
      PHRASING"
      No
   c. "SYSTEM-FORCED
      DIALOGUE"
      No

2. CONTENT SEARCHING
   a. "CONTROLLED VOCABULARY"
      Yes, if
      keyword field
      defined for
      a file
   b. "FULL TEXT INVERSION"
      No
   c. "STEMMING PERMITTED"
      No
   d. "SYNONYMS"
      No
   e. "DISPLAY OF
      RELATED TERMS"
      No
   f. "CHECKING TERM IN
      CONTROLLED VOCABULARY"
      No

3. SEARCH SPECIFICATION
   a. "HIST NAME FIELDS"
      Yes
   b. "DAY LIMIT FIELDS"
      Yes
   c. "BOOLEAN AND"
      Yes
   d. "BOOLEAN OR"
      Yes
   e. "BOOLEAN NOT"
      Yes
   f. "HEITING OF BOOLEAN
      EXPRESSIONS"
      Yes
   g. "PHRAZE AND DISTANCE"
      SEARCHING
      Yes, phrases
      only in one
      field

4. TUTORIAL FEATURES
   a. "HELP COMMAND"
      None
   b. "DOCUMENTATION
      ON-LINE"

5. SEARCH STRATEGY
   a. "AND"
      No
   b. "SEQUENTIAL"
      Yes
   c. "INDEXED SEQUENTIAL"
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. "STANDARD OUTPUT"
      No
   b. "SELECT AMONG
      OPTIONS"
      Yes
   c. "OWN CODE"
      Yes

2. "MEDIA FLEXIBILITY"
   a. "OFF-LINE PRINTING"
      Yes
   b. "DISPLAY OF GRAPHS"
      No
   c. "SPECIAL OUTPUTS"
      Yes, rag
      tape and
      hard copy

3. SPECIAL CAPABILITIES
   a. "SORTING"
      Yes
   b. "SEQUENCING"
      Yes
   c. "COUNTING"
      Yes
   d. "ARITHMETIC"
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   Yes
4. FIELD
   Yes
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   DF/3
   System Development Corp.
   2500 Colorado Ave
   Santa Monica, Calif. 90406
   213-893-9411

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes
      Terminal version-$35,000.
      Batch/TSO version-$30,000
   b. FOR LEASE
      AT WHAT COST
      Yes
      Terminal version-$1000/mo.
      Batch/TSO version-$500/mo.

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Run on SDC's 370/158
      Prices available on request.
      None
   b. DATA BASE
      TAKES CUSTOMER
      DATA BASES
      Uses customer-supplied data
      bases only.

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      April 1969
      Dept. of Health, Education &
      Welfare, Coast Community
      College District, Los Angeles
      Police Dept.
   b. SIGNIFICANT INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      May, 1973
      Under service agreements:
      National Commission on the
      Financing of Post Secondary
      Education, UCLA Vocational
      Education
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   IBM 360, model 40 and up,
   370/145 and up

2. OPERATING SYSTEM
   OS

3. SOURCE LANGUAGE
   BAL and "COL"

4. TERMINAL TYPES
   TTY model 13, IBM 2741 or
   compatible devices; TSO
   version-whatever devices TSO
   supports.

5. TRANSMISSION RATES
   10, 120, 240, 300 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      No
   b. UPDATE
      Yes
   c. DELETION
      No
   d. EDITING
      No

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   No

3. OPTIONAL ORDERING OF
   ENTITLED DATA
   No

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT Indexing
   No

E. OUTPUT

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS"
   "AT ANY POINT"
      Yes
   b. ENGLISH-LIKE
      PHRASING
      Yes
   c. SYSTEM-FOCUSED
      DIALOGUE
      No

2. CONTINUE SEARCHING
   None
   a. CONTROLLED VOCABULARY
   b. FULL TEXT INCLUSION
   c. STUMPING PERMITTED
   d. SUMMARY
   e. DISPLAY OF
      "RELATED TERMS"
   f. CHECKING TECH IN
      CONTROLLED VOCABULARY

3. SEARCH SPECIFICATION
   a. "RE-JOIN" FIELDS
   Yes
   b. "NO LITTLE FIELDS"
   Yes
   c. BOOLEAN AND
   Yes
   d. BOOLEAN OR
   Yes
   e. BOOLEAN NOT
   No
   f. LIMITING OF BOOLEAN
      EXTENSIONS
   Yes
   g. PHRASE AND DISTANCE
      SEARCHING
   No
   h. NATURAL ENGLISH
   No
   i. "SAME SPACING"
   Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Yes (EXPLAIN)
   b. DOCUMENTATION
      ON-LINE
      No

5. SEARCH STRATEGY
   a. "PAW" searching
   No
   b. SPOFICIAL
      Yes
   c. INDEXED SEQUENTIAL
      Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes, 3 kinds
   b. SELECTING OPTIONS
      Yes
   c. OWN CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUT
      Yes

3. SPECIAL CAPABILITIES
   a. SCYTHING
      Yes
   b. STATISTICS
      Yes
   c. COUNTING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. SECOND
   No
4. FIELD
   Yes
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   EMISARI
   Mathematics and Computation Laboratory
   Office of Emergency Preparedness
   7706 Old Springhouse Rd.
   McLean, Va. 22101
   703-893-7710

2. SOFTWARE AVAILABILITY
   Source free to government users; compiler is proprietary (see B.3)

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
   At what cost
   b. DATA BASES
   At what cost
   c. TAKES CUSTOMER DATA BASES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   Aug., 1971
   b. INSTALLATIONS
   Internal Revenue Service, Office of Emergency Preparedness

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   UNIVAC 1108

2. OPERATING SYSTEM
   EXEC 8

3. SOURCE LANGUAGE
   RBASIC (proprietary compiler; vendor: Language and System Development, Silver Spring, Md.)

4. TERMINAL TYPES
   ASCII compatible

5. TRANSMISSION RATES
   10 or 30 cps

6. RE-ENTRANT FOR MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   Yes
   b. UPDATE
   Yes
   c. DELETION
   Yes
   d. EDITING
   Yes

2. PREPROGRAMMED DATA VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF ENTERED DATA
   No

4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE PHRASING
      No
   c. SYSTEM-FORCED DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes
   b. FULL TEXT INVERSION
      No
   c. SPREADING PERMITTED
      No
   d. SYNONYMS
      No
   e. DISPLAY OF RELATED TERMS
      No
   f. CHECKING THEM IN CONTROLLED VOCABULARY
      Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      No
   c. OWN CODE
      No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      No
   b. DISPLAY IN CRAPSE
      No
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      No
   b. SPREADING
      No
   c. COUNTING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes, on text blocks
3. RECORD
   No
4. FIELD
   No
**A. GENERAL DESCRIPTION**

1. **SYSTEM NAME**
   - ENFROI
2. **ORIGINATOR**
   - Engineering Numerics Corp.
3. **ADDRESS**
   - 8583 N. Stemmons Pkwy.
4. **TELEPHONE**
   - Dallas, TX 75247
   - 214-630-0640

**B. COMPUTER ENVIRONMENT**

1. **MAIN FRAME**
   - CDC 6000 series
2. **OPERATING SYSTEM**
   - SCOPE or KRONOS
3. **SOURCE LANGUAGE**
   - FORTRAN, COBOL
4. **TERMINAL TYPES**
   - CDC 200 terminal, TTY-compatible
5. **TRANSMISSION RATES**
   - 10 ops to 2400 baud
6. **RE-ENTRANT FOR MULTIPLE USERS**
   - No

**C. FILE DEFINITION**

1. **USER DEFINABLE**
   - Yes
2. **VARIABLE LENGTH TEXT**
   - Yes
3. **REPEATED FIELDS**
   - Yes

**D. FILE MAINTENANCE**

1. **ALLOWS ON-LINE**
   - No on-line capability
   - a. CREATION
   - b. UPDATE
   - c. DELETION
   - d. EDITING

2. **PREPROGRAMMED DATA VALIDATION CHECKS**
   - Yes

3. **OPTIONAL ORDERING OF ENTERED DATA**
   - No

4. **AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING**
   - No

**E. QUERY**

1. **USER-SYSTEM INTERACTION**
   - a. MULTIPLE OPTIONS AT ANY POINT
   - b. ENGLISH-LIKE PHRASING
   - c. SYSTEM-FORCED DIALOGUE

2. **CONTENT SEARCHING**
   - a. FULL TEXT INVERSION
   - b. SYSTEM-FORCED DIALOGUE
   - c. STEMMING PERMITTED
   - d. DISPLAY OF RELATED TERMS
   - e. CHECKING TERM IN CONTROLLED VOCABULARY

**F. REPORT GENERATION**

1. **LANGUAGE TYPE**
   - a. STANDARD OUTPUT
   - b. SELECT AMONG OPTIONS
   - c. OWN CODE

2. **MEDIA FLEXIBILITY**
   - a. OFF-LINE PRINTING
   - b. DISPLAY OF GRAPHS
   - c. SPECIAL OUTPUTS

3. **SPECIAL CAPABILITIES**
   - a. SORTING
   - b. SEQUENCING
   - c. COUNCING
   - d. ARITHMETIC

**G. SECURITY PROTECTION**

1. **TERMINAL**
   - Yes
2. **DATA BASE**
   - Yes
3. **RECORD**
   - No
4. **FILE**
   - Yes (through dictionary)

**3. SEARCH SPECIFICATION**

a. **MUST NAME FIELDS**
   - Yes
b. **MAY LIMIT FIELDS**
   - Yes
c. **BOOLEAN AND**
   - Yes
d. **BOOLEAN OR**
   - Yes
e. **BOOLEAN NOT**
   - Yes
f. **NESTING OF BOOLEAN EXPRESSIONS**
   - Yes
g. **SIZE AND DISTANCE SEARCHING**
   - No
h. **NATURAL ENGLISH**
   - Yes
i. **RANGE SEARCHING**
   - Yes

**4. TUTORIAL FEATURES**

a. **"HELP" COMMAND**
   - No
b. **DOCUMENTATION ON-LINE**
   - None

**5. SEARCH STRATEGY**

a. **RANDOM**
   - Yes
b. **SEQUENTIAL**
   - Yes
c. **INDEXED SEQUENTIAL**
   - No

**6. HISTORY OF SOFTWARE**

a. **FIRST INSTALLATION**
   - About 1968
b. **SIGNIFICANT INSTALLATIONS**

**5. SERVICE AVAILABLE**

a. **SEARCH SERVICE**
   - NA
b. **SERVICE INITIATION**
   - NA

**C. SERVICE AT WHAT COST**

a. **FOR LEASE**
   - Minimum software $25,000
   - Two-year lease, approx. $1250/mo.
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR    FLEXIMIS
   General Electric Co.
   Information Services Business
   Division
   7735 Old Georgetown Rd.
   Bethesda, MD 20014
   301-657-2120

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
   b. FOR LEASE
      AT WHAT COST

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
   b. DATA BASES
   c. TAKES CUSTOMER
      DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   b. SIGNIFICANT
      INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   b. PRESENT USAGE
      1970
      Available on GE national network.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   GE 600 series

2. OPERATING SYSTEM
   GE MARK III time-sharing system

3. SOURCE LANGUAGE
   BASIC, some assembler

4. TERMINAL TYPES
   TTY compatible terminals

5. TRANSMISSION RATES
   10, 15, 30 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   No

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      Yes
   b. UPDATE
      Yes
   c. DELETION
      Yes
   d. EDITING
      Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes (with own code (BASIC))

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      No
   b. ENGLISH-LIKE
      PHRASING
      Yes (BASIC-like syntax)
   c. SYSTEM-FORCED
      DIALOGUE
      Yes

2. CONTEXT SEARCHING
   (None)

   a. CONTROLLED VOCABULARY
   b. FULL TEXT INVERSION
   c. STEMMING PERMITTED
   d. SYNONYMS
   e. DISPLAY OF
      RELATED TERMS
   f. CHECKING TERM IN
      CONTROLLED VOCABULARY

3. SPARCS SPECIFICATION
   a. MUST NAME FIELDS
      Yes
   b. MAY LIMIT FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes, in
      "but" form
   f. NESTING OF BOOLEAN
      EXPRESSIONS
      No
   g. PHRASE AND DISTANCE
      SEARCHING
      No
   h. NATURAL ENGLISH
      Yes
   i. RANGE SEARCHING
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
   b. DOCUMENTATION
      ON-LINE
      None

5. SPARCS STRATEGY
   a. RANDOM
   b. SEQUENTIAL
   c. INDEXED SEQUENTIAL
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      No
   b. SELECT AMONG
      OPTIONS
      No
   c. OWN CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      Yes
   c. COUNTING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME: GIN
   ORIGINATOR: TRW Systems Group
   TELEPHONE: 7600 Colshire Dr.
               McLean, Va. 22101
               703-893-2000

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      No
   b. FOR LEASE
      Yes
      Initial installation price $12,500; monthly lease price $1,750 to commercial users.
      Available to Government agencies by contract.

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      Planned for Sept., 1973 under Computer Sciences Corp. INFONET time-sharing service.
   b. DATA BASES
   c. TAKES CUSTOMER DATA BASES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION: January 1968
   b. SIGNIFICANT INSTALLATIONS: Department of Agriculture's Forest Service, NASA's Manned Space Flight Center

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

(2 versions exist; corresponding data on separate lines)

1. MAIN FRAME
   IBM 360 series
   Univac 1100 series

2. OPERATING SYSTEM
   OS, PCF/MFT or MVT, TSO
   EXEC 8, EXEC 2

3. SOURCE LANGUAGE
   Assembler P
   Univac Assembler

4. TERMINAL TYPES
   IBM 1050, 2420, 2741, 2780,
   TTY, Uniscope, 1005

5. TRANSMISSION RATES
   30 cps
   120 cps

6. RE-ENTRANT FOR MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   No, approx. 600 char/field max. Longer text handled indirectly.

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   Yes
   b. UPDATE
   Yes
   c. DELETION
   Yes
   d. EDITING
   Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes, elements only

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE
      PARASING
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes
   b. FULL TEXT INVERSION
      No
   c. STEMMING PERMITTED
      No
   d. SYNONYMS
      Yes
   e. DISPLAY OF
      RELATED TERMS
      No
   f. CHECKING TERM IN
      CONTROLLED VOCABULARY
      No

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS
      Yes
   b. "ANY" LIMIT FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. HESTING OF BOOLEAN
      EXPRESSIONS
      Yes
   g. PHRASE AND DISTANCE
      SEARCHING
      No
   h. NATURAL ENGLISH
      No
   i. RANGE SEARCHING
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      No
   b. DOCUMENTATION
      ON-LINE
      No

5. SEARCH STRATEGY
   a. RANDOM
      Yes
   b. SEQUENTIAL
      No
   c. INDEXED SEQUENTIAL
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      Yes
   c. OWN CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      Yes
   c. COUNTERING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   Yes
4. FIELD
   Yes
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   GIPSY
   University of Oklahoma, Office of Research Admin.,
   1808 Newton Drive, Norman, Oklahoma 73069
   405-321-6872

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes, federal government and non-profit organizations.
      $8,000 + $550 per month during first year; includes training,
      installation, and maintenance. Monthly charge reduced after
      one year.
   b. FOR LEASE
      AT WHAT COST
      No

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Yes, through Univ. of Oklahoma
      Computing Center
      By arrangement
   b. DATA BASES
      U.S. Geological Survey and
      American Petroleum Institute
      data bases, by special
      arrangement.
   c. TAKES CUSTOMER
      DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      Operational at University of
      Oklahoma since July 1968
   b. SIGNIFICANT
      INSTALLATIONS
      Department of Interior (USGS),
      University of Missouri,
      Oklahoma State Univ., U.S.
      Dept. of Commerce (NOAA)

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      1973
   b. PRESENT USAGE
      Not available

B. COMPUTER ENVIRONMENT

1. MAINFRAME
   IBM 360 series, minimum of two
   2311 disk drives, 90K bytes
   storage

2. OPERATING SYSTEM
   OS/360

3. SOURCE LANGUAGE
   360 Assembler

4. TERMINAL TYPES
   IBM 1050, 2741, and TTY
   terminals

5. TRANSMISSION RATES
   110 to 150 Baud

6. RE-ENTRANT FOR
   MULTIPLE USERS
   No

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      No
   b. UPDATE
      No
   c. DELETION
      No
   d. EDITING
      No

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes, syntax
   errors only

3. OPTIONAL ORDERING OF
   ENTERED DATA
   No

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   Yes, via a
   separate program

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE
      PHrasing
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes
   b. FULL TEXT INVERSION
      Yes
   c. STIMULATING PERMITTED
      Yes
   d. SYNONYM
      No
   e. DISPLAY OF
      RELATED TERMS
      No
   f. CHECKING TERMS IN
      CONTROLLED VOCABULARY
      No

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS
      Yes
   b. MUST NAME FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. NESTING OF BOOLEAN
      EXPRESSIONS
      Yes
   g. PHRASE AND DISTANCE
      SEARCHING
      Yes
   h. NATURAL ENGLISH
      Yes
   i. RANGE SEARCHING
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Yes
   b. DOCUMENTATION
      ON-LINE
      Yes

5. SEARCH STRATEGY
   a. RANDOM
      No
   b. SEQUENTIAL
      Yes
   c. INDEXED SEQUENTIAL
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG
      OPTIONS
      Yes
   c. OWN CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      No
   c. SPECIAL OUTPUTS
      Yes, microfilm

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      Yes
   c. COUNTING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   No
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   IHARS
   Interactive Sciences Corp.
   60 Brooks Dr.
   Braintree, Mass. 02184
   617-848-2660

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes, on perpetual license
      $5k
   b. FOR LEASE
      AT WHAT COST

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Yes
      Surcharge for use over normal
      time-sharing cost
      ($3.75/connect hour + $0.0025/resource unit)
   b. DATA BASES
   c. TAKES CUSTOMER
      DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   b. SIGNIFICANT
      INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      4th quarter, 1972
   b. PRESENT USAGE
      Data not available

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   DECsystem 10

2. OPERATING SYSTEM
   TSM

3. SOURCE LANGUAGE
   FORTRAN + MACRO-10

4. TERMINAL TYPES
   ASCII, IBM Correspondence code
   terminals

5. TRANSMISSION RATES
   10, 15, 30 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes, up to 2,000
   characters long

3. REPEATED FIELDS
   No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   Yes
   b. UPDATE
   Yes
   c. DELETION
   Yes
   d. EDITING
   Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS
      AT ANY POINT"
      Yes
   b. ENGLISH-LIKE
      PHRASING
      Yes
   c. "SYSTEM-FORCED
      DIALOGUE"
      Partial; some
      modules are
      dialogue driven

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      No
   b. FULL TEXT INVERSION
      No
   c. STEMMING PERMITTED
      Yes (character
      string search)
   d. SYNONYMS
   e. DISPLAY OF
      RELATED TERMS
      No
   f. CHECKING "TOP" TO
      CONTROLLED VOCABULARY
      No

3. SEARCH SPECIFICATION
   a. "JUST NAME FIELDS"
   Yes
   b. "AY LIMIT FIELDS"
   Yes
   c. BOOLEAN AND
   Yes
   d. BOOLEAN OR
   Yes
   e. BOOLEAN NOT
   No
   f. NESTING OF BOOLEAN
      EXPRESSIONS
   No
   g. PHRASE AND DISTANCE
      SEARCHING
      Yes, by character
      string search
      No
   h. NATURAL ENGLISH
   i. RANGE SEARCHING
   Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
   Yes
   b. DOCUMENTATION
      ON-LINE
   No

5. SEARCH STRATEGY
   a. "RANDOM"
   Yes
   b. SEQUENTIAL
   Yes
   c. INDEXED SEQUENTIAL
   Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   Yes
   b. SELECT AMONG
      OPTIONS
   Yes
   c. ORH CODE
   Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
   Yes
   b. DISPLAY OF GRAPHS
   No
   c. SPECIAL OUTPUTS
   No

3. SPECIAL CAPABILITIES
   a. SORTING
   Yes
   b. SEQUENCING
   No
   c. COUNTING
   Yes
   d. ARITHMETIC
   Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
### A. GENERAL DESCRIPTION

1. SYSTEM NAME: IMS of Office of Emergency Preparedness
   ORIGINATOR: Executive Office of the President, Office of Emergency Preparedness
   TELEPHONE: 202-395-4831

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE: Yes
      AT WHAT COST: Free for government users
   b. FOR LEASE: NA

3. SERVICE AVAILABILITY: NA

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION: The random access version was operational since 1971
   b. SIGNIFICANT INSTALLATIONS: None

5. HISTORY OF SERVICE: NA

### B. COMPUTER ENVIRONMENT

1. MAIN FRAME: UNIVAC 1108

2. OPERATING SYSTEM: EXEC 8

3. SOURCE LANGUAGE: VULCAN (a string processing language) plus assembly language plus FORTRAN interface

4. TERMINAL TYPES: Any TTY and CRT terminals in use on the 1108

5. TRANSMISSION RATES: 10,15,30 cps

6. RE-ENTRANT FOR MULTIPLE USERS: Yes, due to property of VULCAN

### C. FILE DEFINITION

1. USER DEFINABLE: Yes
2. VARIABLE LENGTH TEXT: Yes
3. REPEATED FIELDS: No

### D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION: Yes
   b. UPDATE: Yes
   c. DELETION: Yes
   d. EDITING: Yes

2. PREPROGRAMMED DATA VALIDATION CHECKS: Yes

3. OPTIONAL ORDERING OF ENTERED DATA: No

4. AUTOMATIC OR "MACHINE-AIDED" CONTENT INDEXING: No

### E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT: Yes
   b. ENGLISH-LIKE
      PHRASING: command-like
   c. SYSTEM-FORCED
      DIALOGUE: No

2. CONTEXT SEARCHING
   a. CONTROLLED VOCABULARY: No
   b. FULL TEXT INVERSION: Yes
   c. STUMPING PERMITTED: Yes
   d. SYNONYMS: No
   e. DISPLAY OF RELATED TERMS: No
   f. CHECKING TERM IN CONTROLLED VOCABULARY: No

### F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT: Yes
   b. SELECT AMONG OPTIONS: Yes
   c. OWN CODE: Yes

2. "INDIA FLEXIBILITY"
   a. OFF-LINE PRINTING: Yes
   b. DISPLAY OF GRAPHS: No
   c. SPECIAL OUTPUTS: No

3. SPECIAL CAPABILITIES
   a. SORTING: Yes, but runs off-line
   b. SEQUENCING: No
   c. COUNTING: Yes
   d. ARITHMETIC: Yes

### G. SECURITY PROTECTION

1. TERMINAL: No
2. DATA BASE: Yes
3. RECORD: No
4. FIELD: No

### 3. SEARCH SPECIFICATION

a. "JUST NAME FIELDS" Yes
b. "BY LIMIT FIELDS" Yes
c. BOOLEAN AND: Yes
d. BOOLEAN OR: Yes
e. BOOLEAN NOT: Yes
f. NESTING OF BOOLEAN EXPRESSIONS: Yes
g. PHRASE AND DISTANCE SEARCHING: Yes
h. NATURAL ENGLISH: Yes
i. RANGE SEARCHING: Yes

### 4. TUTORIAL FEATURES

a. "HELP" COMMAND: No
b. DOCUMENTATION ON-LINE: No

### 5. SEARCH STRATEGY

a. RANDOM: Yes
b. SEQUENTIAL: Yes
c. INDEXED SEQUENTIAL: No
C. FILE DEFINITION

1. USER DEFINABLE Yes
2. VARIABLE LENGTH TEXT No
3. REPEATED FIELDS Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION Yes
   b. UPDATE Yes
   c. DELETION Yes
e. EDITING Yes
2. PREPROGRAMMED DATA
   VALIDATION CHECKS No
3. OPTIONAL ORDERING OF
   ENTERED DATA Yes
   CONTENT INDEXING No
4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS AT ANY POINT
      ENGLISH-LIKE Yes (using "null" words)
e. SYSTEM-FORCED
   DIALOGUE

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY None
   b. FULL TEXT INVERSION
   c. STEMMING PERMITTED
   d. SYNONYMS
   e. DISPLAY OF RELATED TERMS
   f. CHECKING TERM IN CONTROLLED VOCABULARY

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT Yes
   b. SELECT AMONG OPTIONS No
c. OWN CODE No

2. "FREE" FLEXIBILITY
   a. OFF-LINE PRINTING Yes, with CRT
   b. DISPLAY OF GRAPHS
   c. SPECIAL OUTPUTS

3. SPECIAL CAPABILITIES
   a. SORTING Yes
   b. SEQUENCING No
c. COUNTING Yes
d. ARITHMETIC Yes

G. SECURITY PROTECTION

1. TERMINAL Yes
2. DATA BASE Yes
3. RECORD No
4. FIELD No
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   IMS-8
   SPERRY RAND Corp.
   UNIVAC Div.
   2121 Wisconsin Ave., N.W.
   Washington, D.C. 20007
   202-338-8500

2. SOFTWARE AVAILABILITY
   Available at no charge to
   UNIVAC 1108 users
   a. FOR PURCHASE
   b. FOR LEASE
   c. AT WHAT COST
   d. AT WHAT COST

3. SERVICE AVAILABILITY
   NA
   a. SEARCH SERVICE
   b. AT WHAT COST
   c. DATA BASES
   d. TAKES CUSTOMER DATA BASES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   b. SIGNIFICANT INSTALLATIONS
   1969-1970
   About 15, incl. HUD, NASA, SSA, other Government agencies.

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   UNIVAC 1108

2. OPERATING SYSTEM
   EXEC 8

3. SOURCE LANGUAGE
   COBOL, Assembler

4. TERMINAL TYPES
   TTY-compatible

5. TRANSMISSION RATES
   10-30 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   No

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   b. UPDATE
   c. DELETION
   d. EDITING
   No

2. PREPROGRAMMED DATA VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS
     AT ANY POINT"
   b. "ENGLISH-LIKE
     PHRASING"
   c. "SYSTEM-FORCED
     DIALOGUE"
   Yes

2. CONTENT SEARCHING
   a. "CONTROLLED VOCABULARY"
   b. "FULL TEXT INVERSION"
   c. "STEMMING PERMITTED"
   d. "SYNONYMS"
   e. "DISPLAY OF RELATED TERMS"
   f. "CHECKING TERM IN CONTROLLED VOCABULARY"
   No

3. SEARCH SPECIFICATION
   a. "MULTIPLE OPTIONS
     AT ANY POINT"
   b. "ENGLISH-LIKE
     PHRASING"
   c. "SYSTEM-FORCED
     DIALOGUE"
   d. "CONTROLLED VOCABULARY"
   e. "FULL TEXT INVERSION"
   f. "STEMMING PERMITTED"
   g. "SYNONYMS"
   h. "DISPLAY OF RELATED TERMS"
   i. "CHECKING TERM IN CONTROLLED VOCABULARY"
   Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
   b. DOCUMENTATION ON-LINE
   None

5. SEARCH STRATEGY
   a. RANDOM
   b. SEQUENTIAL
   c. INDEXED SEQUENTIAL
   Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   b. SELECT AMONG OPTIONS
   c. "CMI CODE"
   Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
   b. DISPLAY OF GRAPHS
   c. SPECIAL OUTPUTS
   No

3. SPECIAL CAPABILITIES
   a. SORTING
   b. SEQUENCING
   c. COUNTING
   d. ARITHMETIC
   No

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
### A. General Description

1. **System Name**  
   **Originator:** Inqdata Systems, Inc.  
   **Telephone:** 703-524-6700  

2. **Software Availability**  
   a. **For Purchase**  
      Yes  
      **At What Cost:** $38,500  
   b. **For Lease**  
      Yes  
      **At What Cost:** $1,325/mo.  

3. **Service Availability**  
   a. **Search Service**  
      NA  
   b. **Data Bases**  
      NA  
   c. **Takes Customer Data Bases**  
      NA  

4. **History of Software**  
   a. **First Installation**  
      July, 1969  
   b. **Significant Installations**  
      E. R. Squib & Sons, State of Ohio, LEAA, ESSO  

5. **History of Service**  
   a. **Service Initiation**  
      NA  
   b. **Present Usage**  
      NA  

### B. Computer Environment

1. **Main Frame**  
   **IBM 360, 370, mod 40 & up**  

2. **Operating System**  
   **OS**  

3. **Source Language**  
   **PL/I**  

4. **Terminal Types**  
   **TTY, IBM 2741, or compatible**  

5. **Transmission Rates**  
   As supplied by particular environment  

6. **Re-entrant For Multiple Users**  
   No  

### C. File Definition

1. **User Definable**  
   Yes  

2. **Variable Length Text**  
   Yes  

3. **Repeated Fields**  
   Yes  

### D. File Maintenance

1. **Allows On-line**  
   a. **Creation**  
      Yes  
   b. **Update**  
      Yes  
   c. **Deletion**  
      Yes  
   d. **Editing**  
      Yes  

2. **Preprogrammed Data Validation Checks**  
   Yes  

3. **Optional Ordering of Entered Data**  
   Updates indices, new records appended  

4. **Automatic or Machine-Aided Content Indexing**  
   No  

### E. Query

1. **User-System Interaction**  
   a. **Multiple Options**  
      At Any Point  
      Yes  
   b. **English-Like Phrasing**  
      Yes  
   c. **System-Forced Dialogue**  
      Optional  

2. **Content Searching**  
   a. **Controlled Vocabulary**  
      Yes, via AVOCON, an associated thesaurus handling package  
   b. **Full Text Inversion**  
      Yes  
   c. **Stemming Permitted**  
      Yes  
   d. **Synonym Use**  
      with AVOCON  
   e. **Display Of Related Terms**  
      with AVOCON  
   f. **Checking Term In Controlled Vocabulary**  
      Yes  

### F. Report Generation

1. **Language Type**  
   a. **Standard Output**  
      Yes  
   b. **Select Among Options**  
      Yes  
   c. **Own Code**  
      Yes  

2. **Media Flexibility**  
   a. **Off-Line Printing**  
      Yes  
   b. **Display of Graphs**  
      No  
   c. **Special Outputs**  
      No  

3. **Special Capabilities**  
   a. **Sorting**  
      Yes  
   b. **Sequencing**  
      Yes  
   c. **Counting**  
      Yes  
   d. **Arithmetic**  
      Yes  

### G. Security Protection

1. **Terminal**  
   Yes  

2. **Data Base**  
   Yes  

3. **Record**  
   Yes, if requested  

4. **Field**  
   Yes, if requested
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   INSYTE (Information Systems Technology)

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE Yes
      AT WHAT COST $27,000
   b. FOR LEASE Yes
      AT WHAT COST $12,500 + $425 month

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE AT WHAT COST
   b. DATA BASES
   c. TAKES CUSTOMER DATA BASES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION 1970
   b. SIGNIFICANT INSTALLATIONS Remote Computing Corp., Univ.
      of Washington

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   Burroughs B-5500

2. OPERATING SYSTEM
   Burroughs Time-sharing

3. SOURCE LANGUAGE
   COBOL

4. TERMINAL TYPES
   TTY compatible

5. TRANSMISSION RATES
   10, 15, 30 cps

6. RE-ENTRANT FOR MULTIPLE USERS Yes

C. FILE DEFINITION

1. USER DEFINABLE Yes
2. VARIABLE LENGTH TEXT No
3. REPEATED FIELDS No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION Yes
   b. UPDATE Yes
   c. DELETION Yes
   d. EDITING Yes

2. PREPROGRAMMED DATA VALIDATION CHECKS Yes

3. OPTIONAL ORDERING OF ENTERED DATA Yes

4. AUTOMATIC OR MACHINE- AIDED CONTENT INDEXING No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS AT ANY POINT No
   b. ENGLISH-LIKE Yes
   c. SYSTEM-FORCED DIALOGUE No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY Yes
   b. FULL TEXT INVERSION Yes
   c. STEMMING PERMITTED Yes
   d. SYNONYMS
   e. DISPLAY OF RELATED TERMS No
   f. CHECKING TERM IN CONTROLLED VOCABULARY No

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS Yes
   b. PAY LIMIT FIELDS Yes
   c. BOOLEAN AND Yes
   d. BOOLEAN OR Yes
   e. BOOLEAN NOT Yes
   f. NESTING OF BOOLEAN EXPRESSIONS Yes
   g. PHRASE AND DISTANCE SEARCHING Yes
   h. NATURAL ENGLISH Yes
   i. RANGE SEARCHING Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND No
   b. DOCUMENTATION ON-LINE No

5. SEARCH STRATEGY
   a. RANDOM Yes
   b. SEQUENTIAL No
   c. INDEXED SEQUENTIAL No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT Yes
   b. SELECT AMONG OPTIONS Yes
c. OWN CODE No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING Yes
   b. DISPLAY OF GRAPHS No
c. SPECIAL OUTPUTS No

3. SPECIAL CAPABILITIES
   a. SORTING Yes
   b. SEQUENCING Yes
c. COUNTING Yes
d. ARITHMETIC Yes

G. SECURITY PROTECTION

1. TERMINAL No
2. DATA BASE Yes
3. RECORD Yes
4. FIELD Yes
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   LEADERMART
   Center for Information Science
   Lehigh University
   Bethlehem, Pennsylvania 18015
   215-691-7000, X631

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
   At what cost
   $55.00 per connect hour ($45.00
   for government users)
   b. FOR LEASE
   At what cost
   $55.00 per connect hour ($45.00
   for government users)

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
   Chemical Abstracts, Engineering
   Index, Civil Engineering, and
   Tall Buildings (locally
   defined)
   b. DATA BASES
   Yes (by arrangement)
   c. TAKES CUSTOMER
   DATA BASES
   Yes by arrangement

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   Only implemented at Lehigh
   b. SIGNIFICANT INSTALLATIONS
   March, 1971

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   Currently serving 12
   interdisciplinary research
   centers at Lehigh, seven local
   colleges, Federal agencies, and
   industrial customers.
   b. PRESENT USAGE
   Presently serving 12
   interdisciplinary research
   centers at Lehigh, seven local
   colleges, Federal agencies, and
   industrial customers.

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   CDC 6400

2. OPERATING SYSTEM
   SCOPE 3.3, INTERCOM 3.0

3. SOURCE LANGUAGE
   Primarily FORTRAN

4. TERMINAL TYPES
   CRT and CRT

5. TRANSMISSION RATES
   300, 1200, 2400 baud

6. RE-ENTRANT FOR
   MULTIPLE USERS
   No

C. FILE DEFINITION

1. USER DEFINABLE
   Yes, with
   assistance

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   No
   b. UPDATE
   No
   c. DELETION
   No
   d. EDITING
   No

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes, merge records
   into file, but not
   fields into record

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   Yes, a separate
   package exists

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE
      PHrasing
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      No
   b. FULL TEXT INVERSION
      Yes
   c. STEMMING PERMITTED
      Yes
   d. SYNONYMS
      Yes
   e. DISPLAY OF
      RELATED TERMS
      Yes
   f. CHECKING TERM IN CON- 
      TROLLED VOCABULARY
      NA

3. SEARCH SPECIFICATION
   a. MUST HAME FIELDS
   No
   b. MAY LIMIT FIELDS
   No
   c. BOOLEAN AND
   No
   d. BOOLEAN OR
   No
   e. BOOLEAN NOT
   No
   f. NESTING OF BOOLEAN
      EXPRESSIONS
   No
   g. PHRASE AND DISTANCE
      SEARCHING
   No
   h. NATURAL ENGLISH
   Yes
   i. RANGE SEARCHING
   No

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
   No
   b. DOCUMENTATION
   ON-LINE
   Yes

5. SEARCH STRATEGY
   a. RANDOM
   Yes
   b. SEQUENTIAL
   No
   c. INDEXED SEQUENTIAL
   Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   Yes
   b. SELECT AMONG
     OPTIONS
   Yes
   c. OWN CODE
   No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
   Yes
   b. DISPLAY OF GRAPHS
   No
   c. SPECIAL OUTPUTS
   No

3. SPECIAL CAPABILITIES
   a. SORTING
   No
   b. SEQUENCING
   Yes
   c. COUNTING
   Yes
   d. ARITHMETIC
   No

G. SECURITY PROTECTION

1. TERMINAL
   Yes

2. DATA BASE
   Yes

3. PROGRAM
   Yes

4. FIELD
   Yes
### A. GENERAL DESCRIPTION

1. **SYSTEM NAME**
   - MARS III
   - ORIGINATOR: CONTROL DATA Corp.
   - ADDRESS: 5272 River Rd.
   - TELEPHONE: 301-652-2268

2. **SOFTWARE AVAILABILITY**
   - **FOR PURCHASE AT WHAT COST** No
   - **FOR LEASE AT WHAT COST** $500 initial + $300/mo. royalty

3. **SERVICE AVAILABILITY**
   - **SEARCH SERVICE AT WHAT COST** NA
   - **DATA BASES**
   - **TAKES CUSTOMER DATA BASES**

4. **HISTORY OF SOFTWARE**
   - **FIRST INSTALLATION** April, 1970
   - **SIGNIFICANT INSTALLATIONS** U.S. Coast Guard, New York Dept. of Education, Hughes Aircraft Corp.

5. **HISTORY OF SERVICE**
   - **SERVICE INITIATION** NA
   - **PRESENT USAGE**

### B. COMPUTER ENVIRONMENT

1. **MAIN FRAME**
   - CDC 3300, 3500

2. **OPERATING SYSTEM**
   - MASTER

3. **SOURCE LANGUAGE**
   - COMPASS (90%), American National Standards Institute COBOL (10%)

4. **TERMINAL TYPES**
   - CRT, TTY

5. **TRANSMISSION RATES**
   - Up to 4800 baud

6. **RE-ENTRANT FOR MULTIPLE USERS**
   - No

### C. FILE DEFINITION

1. **USER DEFINABLE** Yes
2. **VARIABLE LENGTH TEXT** No, but length is defined by user
3. **REPEATED FIELDS** Yes

### D. FILE MAINTENANCE

1. **ALLOWS ON-LINE** No on-line maintenance
2. **PREPROGRAMMED DATA VALIDATION CHECKS** Yes
3. **OPTIONAL ORDERING OF ENTERED DATA** Yes, automatic
4. **AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING** No

### E. QUERY

1. **USER-SYSTEM INTERACTION**
   - **MULTIPLE OPTIONS**
   - **AT ANY POINT**
   - **ENGLISH-LIKE PHrasing**
   - **SYSTEM-FORCED DIALOGUE**

2. **CONTENT SEARCHING**
   - **CONTROLLED VOCABULARY**
   - **FULL TEXT INVERSION**
   - **SYNONYMS**
   - **DISPLAY OF RELATED TERMS**
   - **CHECKING TERM IN CONTROLLED VOCABULARY**

### F. REPORT GENERATION

1. **LANGUAGE TYPE**
   - **STANDARD OUTPUT**
   - **SELECT AMONG OPTIONS**
   - **OMI CODE**

2. **MEDIA FLEXIBILITY**
   - **OFF-LINE PRINTING**
   - **SPECIAL OUTPUTS**

3. **SPECIAL CAPABILITIES**
   - **SORTING**
   - **SEQUENCING**
   - **COUNTING**
   - **ARITHMETIC**

### G. SECURITY PROTECTION

1. **TERMINAL**
2. **DATA BASE**
3. **RECORD**
4. **FIELD**
5. **OWNER**
6. **OPERATOR**
7. **USER**

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**Notes:**
- The text appears to be a technical specification or documentation, possibly for a software system or computer hardware. It includes details on system capabilities, software availability, file maintenance, query features, and security protection.
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR: MARS VI
   CONTROL DATA CORP.
   5272 River Rd.
   WASHINGTON, D.C. 20016
   TELEPHONE: 301-652-2268

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE: No, but perpetual license available for $18K
   b. FOR LEASE: $600/mo. (commercial royalty)

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE: NA
   b. DATA BASES: NA
   c. CUSTOMER TAKES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION: late 1969
   b. SIGNIFICANT INSTALLATIONS: NSDP, Univ. of Texas, Michigan State Univ.

5. HISTORY OF SERVICE
   a. SERVICE INITIATION: NA
   b. PRESENT USAGE: NA

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   CDC CYBER/70, 6000 series

2. OPERATING SYSTEM
   SCOPE 3, INTERCOM 4

3. SOURCE LANGUAGE
   FORTRAN, COMPASS

4. TERMINAL TYPES
   TTY 33, 35; CRT

5. TRANSMISSION RATES
   10-30 cps, 100 cps, 2400 baud

6. RE-ENTRANT FOR MULTIPLE USERS: No

C. FILE DEFINITION

1. USER DEFINABLE: Yes
2. VARIABLE LENGTH TEXT: No
3. REPEATED FIELDS: Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION: Yes
   b. UPDATE: Yes
   c. DELETION: Yes
   d. EDITING: Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS: Yes

3. OPTIONAL ORDERING OF ENTERED DATA: Automatic

4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING: No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS AT ANY POINT: Yes
   b. ENGLISH-LIKE PHRASING: Yes
   c. SYSTEM-FORCED DIALOGUE: No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY: Yes
   b. FULL TEXT INVERSION: No
   c. STEMMING PERMITTED: Yes
   d. SYNONYM: Yes
   e. DISPLAY OF RELATED TERMS: Yes
   f. CHECKING TERM IN CONTROLLED VOCABULARY: No

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS: Yes
   b. LIMIT FIELDS: Yes
   c. BOOLEAN AND: Yes
   d. BOOLEAN OR: Yes
   e. BOOLEAN NOT: Yes
   f. NESTING OF BOOLEAN EXPRESSIONS: Yes
   g. PHRASE AND DISTANCE SEARCHING: No
   h. NATURAL ENGLISH: No
   i. RANGE SEARCHING: Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND: None
   b. DOCUMENTATION ON-LINE: None

5. SEARCH STRATEGY
   a. RANDOM: No
   b. SEQUENTIAL: Yes
   c. INDEXED SEQUENTIAL: Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT: Yes
   b. SELECT AMONG OPTIONS: No
   c. OWN CODE: Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING: None
   b. DISPLAY OF GRAPHS: None
   c. SPECIAL OUTPUTS: None

3. SPECIAL ABILITIES
   a. SORTING: Yes
   b. SEQUENCING: No
   c. COUNTING: Yes
   d. ARITHMETIC: Yes

G. SECURITY PROTECTION

1. TERMINAL: Yes
2. DATA BASE: Yes
3. RECORD: No
4. FIELD: No
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   MASTER CONTROL (Version 3)
   Information Research Group
   Lawrence Livermore Laboratory
   University of California
   P.O. Box 808
   Livermore, California 94550
   415-647-1108, X3322

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Information available on
      request
   b. FOR LEASE
      AT WHAT COST
      No

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Yes
      Information available on
      request
   b. DATA BASES
      Yes, if programmatically
      related to Lawrence Livermore
      Laboratory
   c. TAKES CUSTOMER
      DATA BASES
      Yes, if programmatically
      related to Lawrence Livermore
      Laboratory

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      December, 1968
   b. SIGNIFICANT
      INSTALLATIONS
      Lawrence Livermore Laboratory

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      December, 1968
   b. PRESENT USAGE
      1,400 searches per month

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   CDC-6600/7600

2. OPERATING SYSTEM
   FROST/FLOE

3. SOURCE LANGUAGE
   LLTRAN

4. TERMINAL TYPES
   TTY and CRT

5. TRANSMISSION RATES
   4800 baud (110 baud with
   acoustic couplers)

6. RE-ENTRANT FOR
   MULTIPLE USERS
   No, not necessary

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      Yes
   b. UPDATE
      Yes
   c. DELETION
      Yes
   d. EDITING
      Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE- AIDED
   CONTENT INDEXING
   Optional

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE
      PURSING
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Optional
   b. FULL TEXT INVERSION
      Yes, also
      arbitrary
      string
      matching
   c. STEMMING PERMITTED
      Yes, if provided
      by user

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS
      Yes
   b. "MAY LIMIT FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. HETING OF BOOLEAN
      EXPRESSIONS
      Yes
   g. PHRASE AND DISTANCE
      SEARCHING
      Yes

D. NATURAL ENGLISH
   Yes
   i. RANGE SEARCHING
      No

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Some prompting;
      error correction
   b. DOCUMENTATION
      ON-LINE
      No

5. SEARCH STRATEGY
   a. RANDOM
      Yes, optional
   b. SEQUENTIAL
      Yes, optional
   c. INDEXED SEQUENTIAL
      Yes, optional

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      No
   b. SELECT AMONG
      OPTIONS
      No
   c. OWN CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUTS
      Microfiche, 16
      and 35 mm film

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      Yes
   c. COUNTING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
A. GENERAL DESCRIPTION

1. **SYSTEM NAME**
   - ORIGINATOR: MICROTEXT
   - ADDRESS: MITRE Corp., Bedford, Mass., 01730
   - TELEPHONE: 617-271-2552

2. **SOFTWARE AVAILABILITY**
   a. FOR PURCHASE: Yes
   b. FOR LEASE: By arrangement with MITRE Corp.
   c. AT WHAT COST: None

3. **SERVICE AVAILABILITY**
   a. SEARCH SERVICE: By arrangement with MITRE Corp.
   b. DATA BASES: None
   c. TAKES CUSTOMER DATA BASES: None, other than MITRE

4. **HISTORY OF SOFTWARE**
   a. FIRST INSTALLATION: 1972
   b. SIGNIFICANT INSTALLATIONS: None

5. **HISTORY OF SERVICE**
   a. SERVICE INITIATION: None
   b. PRESENT USAGE: None

B. **COMPUTER ENVIRONMENT**

1. **MAIN FRAME**
   - IBM 360/370 (MICROTEXT requires 200K bytes of core)

2. **OPERATING SYSTEM**
   - OS/MVT with TSO

3. **SOURCE LANGUAGE**
   - PL/I

4. **TERMINAL TYPES**
   - Any terminals supported by TSO

5. **TRANSMISSION RATES**
   - From 10 (Teletype) to 800,000 (IBM 3270 displays) cps

6. **RE-ENTRANT FOR MULTIPLE USERS**
   - No reliance on TSO to support multiple users

C. FILE DEFINITION

1. **USER DEFINABLE**
   - Yes

2. **VARIABLE LENGTH TEXT**
   - Yes

3. **REPEATED FIELDS**
   - Yes

D. FILE MAINTENANCE

1. **ALLOWS ON-LINE**
   a. CREATION: Yes
   b. UPDATE: Yes
   c. DELETION: Yes
   d. EDITING: Yes

2. **PREPROGRAMMED DATA VALIDATION CHECKS**
   - No

3. **OPTIONAL ORDERING OF ENTERED DATA**
   - No

4. **AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING**
   - No

E. QUERY

1. **USER-SYSTEM INTERACTION**
   a. MULTIPLE OPTIONS AT ANY POINT: Yes
   b. ENGLISH-LIKE PUNISHING: No
   c. SYSTEM-FORCED DIALOGUE: No

2. **CONTENT SEARCHING**
   a. CONTROLLED VOCABULARY: Yes
   b. FULL TEXT INVERSION: Yes
   c. STEMMING PERMITTED: Yes, left, right, or both
   d. SYNONYMS: Yes (user definable)
   e. DISPLAY OF RELATED TERMS: No
   f. CHECKING TERM IN CONTROLLED VOCABULARY: No

3. **SEARCH SPECIFICATION**
   a. "MUST NAME FIELDS":
      - Yes, may limit to pre-established text segments or to given lines of text
   b. "MAY LIMIT FIELDS":
      - Yes

   c. BOOLEAN AND:
   d. BOOLEAN OR:
   e. BOOLEAN NOT:
   f. USES OF BOOLEAN EXPRESSIONS:

   g. PHRASE AND DISTANCE SEARCHING:
   h. NATURAL ENGLISH:
   i. RANGE SEARCHING:

4. **TUTORIAL FEATURES**
   a. "HELP" COMMAND:
   b. DOCUMENTATION ON-LINE:

5. **SEARCH STRATEGY**
   a. RANDOM:
   b. SEQUENTIAL:
   c. INDEXED SEQUENTIAL:

F. REPORT GENERATION

1. **LAYOUT TYPE**
   a. STANDARD OUTPUT:
   b. SELECT AMONG OPTIONS:
   c. OWN CODE:

2. **INQUIRY FLEXIBILITY**
   a. OFF-LINE PRINTING:
   b. DISPLAY OF GRAPHS:
   c. SPECIAL OUTPUTS:

3. **SPECIAL CAPABILITIES**
   a. SORTING:
   b. SEQUENCING:
   c. COUNTING:
   d. ARITHMETIC:

G. SECURITY PROTECTION

1. **TERMINAL**
   - Provided by TSO

2. **DATA BASE**
   - Yes

3. **RECORD**
   - No

4. **FIELD**
   - No
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   MINIDATA (for small data bases)
   United Computing Systems
   3130 Broadway
   Kansas City, Mo. 64106
   816-753-4500

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes (limited license)
      Approx. $10,000
   b. FOR LEASE
      AT WHAT COST
      Yes
      Approx. $400-$500/mo.

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Yes
      $17.50 (10 cps), $21.00 (30
      cps) /connect hour
      None
   b. DATA BASES
   c. TAKES CUSTOMER
      DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      Aug., 1971
   b. SIGNIFICANT
      INSTALLATIONS
      Only UCS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      Aug., 1971
   b. PRESENT USAGE
      More than 500 users

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   CDC 6000 series

2. OPERATING SYSTEM
   MAX (in-house) or KRONOS (CDC)

3. SOURCE LANGUAGE
   FORTRAN, COMPASS

4. TERMINAL TYPES
   All low speed terminals; CDC
   200 USER terminal compatible

5. TRANSMISSION RATES
   10-30 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   No

3. REPEATED FIELDS
   No

D. FILE MAINTENANCE

1. ALLows ON-LINE
   a. CREATION
      Yes
   b. UPDATE
      Yes
   c. DELETION
      Yes
   d. EDITING
      Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

5. SEARCH SPECIFICATION

   a. "JUST NAME FIELDS"
      Yes
   b. "ANY LIMIT FIELDS"
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. NESTING OF BOOLEAN
      Yes
   g. EXPRESSIONS
      Yes
   h. PHRASE AND DISTANCE
      Searching
      No
   i. RANGE SEARCHING
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      None
   b. DOCUMENTATION
      ON-LINE

5. SEARCH STRATEGY
   a. RANDOM
      No
   b. SEQUENTIAL
      Yes
   c. INDEXED SEQUENTIAL
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG
      OPTIONS
      Yes
   c. OMR CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      No
   c. COUNTING
      Yes
   d. ARITHMETIC
      Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   MIRADS
   Data Center Division
   NASA
   Marshall Space Flight Center, Alabama 35812
   205-453-1206 (technical)
   205-453-4181 (administrative)

2. SOFTWARE AVAILABILITY
   Available through COONIC
   (Computer Software Management and Information Center at the University of Georgia)

   a. FOR PURCHASE AT WHAT COST
   b. FOR LEASE AT WHAT COST

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE AT WHAT COST
   b. DATA BAYS
   c. TAKES CUSTOMER DATA BAYS

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION late 1971
   b. SIGNIFICANT INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   UNIVAC 1108

2. OPERATING SYSTEM
   EXEC 8

3. SOURCE LANGUAGE
   80% COBOL, 19% FORTRAN, 1% Assembler

4. TERMINAL TYPES
   UNISCOPE CRT, DCT 500 hard copy, DCT 2000, TTY, UNIVAC 9300, UNIVAC 1004

5. TRANSMISSION RATES
   Device dependent

6. RE-ENTER FOR MULTIPLE USERS
   No

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes, abstract length only

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   b. UPDATE
   c. DELETION
   d. EDITING

2. PREPROGRAMMED DATA VALIDATION CHECKS
   Yes

3. OPTIMAL ORDERING OF ENTERED DATA
   Yes, for records in file but not fields within record

4. AUTOMATIC OR MACHINE-MADE CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
   b. FULL TEXT INVERSION
   c. PHRASING
   d. PHRASING
   e. SYSTEM-ORIENTED DIALOGUE

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
   b. FULL TEXT INVERSION
   c. STEMMING PERMITTED
   d. SYNONYMS
   e. DISPLAY OF RELATED TERMS
   f. CHECKING TERM IN CONTROLLED VOCABULARY

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS
   b. MAY NAME FIELDS
   c. BOOLEAN AND
   d. BOOLEAN OR
   e. BOOLEAN NOT
   f. HIERARCHY OF BOOLEAN EXPRESSIONS
   g. PHRASE AND DISTANCE SEARCHING
   h. NATURAL ENGLISH
   i. RANGE SEARCHING

4. TUTORIAL FEATRUES
   None

5. SEARCH STRATEGY
   a. RANDOM
   b. SEQUENTIAL
   c. INDEXED SEQUENTIAL

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   b. SELECT AMONG OPTIONS
   c. OWN CODE

2. "MEDIA FLEXIBILITY"
   a. OFF-LINE PRINTER
   b. DISPLAY OF GRAPHICS
   c. SPECIAL OUTPUTS

3. SPECIAL CAPABILITIES
   a. SORTING
   b. SEQUENCING
   c. COUNTING
   d. ARITHMETIC

G. SECURITY PROTECTION

1. TERMINAL
2. DATA BASE
3. RECORD
4. FIELD
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   DATE
   ORIGINATOR
   TELEPHONE

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes
      Negotiable
   b. FOR LEASE
      AT WHAT COST
      Yes
      Negotiable

3. SERVICE AVAILABILITY
   Software service has been
   available on Tymshare
   a. SEARCH SERVICE
      AT WHAT COST
      Yes
      Negotiable
   b. DATA BASES
   c. TAKES CUSTOMER
      DATA BASES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      Installed briefly at Department
      of Commerce. No current
      installations.
   b. SIGNIFICANT
      INSTALLATIONS
      Xerox Corp.

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   b. PRESENT USAGE

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   XDS-940
2. OPERATING SYSTEM
   940 Time-sharing System
3. SOURCE LANGUAGE
   ARPA-assembly language for
   940
4. TERMINAL TYPES
   Any TTY compatible terminal
5. TRANSMISSION RATES
   10, 15, 30 eps
6. RE-ENTRY FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes
2. VARIABLE LENGTH TEXT
   No
3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOW ON-LINE
   a. CREATON
   b. UPDATE
   c. DELETION
   d. EDITING
   Yes
2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes
3. OPTIMAL ORDERING OF
   ENTERED DATA
   Yes
4. AUTOMATIC OR
   MACHINE-ASSISTED
   CONTEXT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
   b. ENGLISH-LIKE
      PHRASING
   c. SYSTEM-FORCED
      DIALOGUE
   Yes
   Yes
   No
2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Dictionary used
      to understand
      natural language
      queries, not for
      indexing
   b. FULL TEXT INTERPRET
      No
   c. SCIENTIFIC PERMITTED
      No
   d. SYNONYMS
      No
   e. DISPLAY OF
      RELATED TERMS
      No
   f. CHECKING TYPE IN CON-
      TROLLED VOCABULARY
      No

3. SEARCH SPECIFICATION
   Natural language
   Input
   a. MUST NAME FIELDS
      No
   b. ANY LIMITS FIELDS
      No
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. INVERSION OF BOOLEAN
      EXPRESSIONS
      Yes
   g. PHRASE AND DISTANT
      SEARCHING
      No, not in
      text field
   h. NATURAL ENGLISH
      Yes
   i. RANGE SEARCHING
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      No
   b. DOCUMENTATION
      ON-LINE
      No

5. SEARCH STRATEGY
   a. RADIUS
      Yes, using
      coordinate
      indexing
   b. SEQUENTIAL
   c. INDEXED SEQUENTIAL
      No
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      Yes
   c. ORI CODE
      No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      No
   c. SPECIAL OUTPUTS

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEGMENTING
      Yes
   c. CORRELATING
   d. ARITHMETIC

G. SECURITY PROTECTION

1. TERMINAL
   No
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
<table>
<thead>
<tr>
<th>A. GENERAL DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SYSTEM NAME ORIGINATOR: NASIS Computing Services Division NASA, Lewis Research Center, Cleveland, Ohio 44135</td>
</tr>
<tr>
<td>2. SOFTWARE AVAILABILITY: a. FOR PURCHASE AT WHAT COST: Yes b. FOR LEASE AT WHAT COST: No</td>
</tr>
<tr>
<td>3. SERVICE AVAILABILITY: a. SEARCH SERVICE AT WHAT COST: No b. DATA BASES: NA c. TAKES CUSTOMER DATA BASES: No</td>
</tr>
<tr>
<td>5. HISTORY OF SERVICE: a. SERVICE INITIATION: NA b. PRESENT USAGE:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. COMPUTER ENVIRONMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. MAIN FRAME: IBM 360 or 370</td>
</tr>
<tr>
<td>2. OPERATING SYSTEM: OS/VDT</td>
</tr>
<tr>
<td>3. SOURCE LANGUAGE: Mostly FL/1, some Assembler</td>
</tr>
<tr>
<td>4. TERMINAL TYPES: IBM 2741/1050 and TTY compatible devices</td>
</tr>
<tr>
<td>5. TRANSMISSION RATES: 110, 150, 300 or 1200 baud</td>
</tr>
<tr>
<td>6. RE-ENTRANT FOR MULTIPLE USERS: Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. FILE DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. USER DEFINABLE: Yes</td>
</tr>
<tr>
<td>2. VARIABLE LENGTH TEXT: Yes</td>
</tr>
<tr>
<td>3. REPEATED FIELDS: Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. FILE MAINTENANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ALLOWS ON-LINE a. CREATION: Yes b. UPDATE: Yes c. DELETION: Yes d. EDITING: Yes</td>
</tr>
<tr>
<td>2. PREPROGRAMMED DATA VALIDATION CHECKS: Yes</td>
</tr>
<tr>
<td>3. OPTIONAL ORDERING OF ENTERED DATA: Yes</td>
</tr>
<tr>
<td>4. AUTOMATIC OR MACHINE-IZED CONTENT INDEXING: Yes, separate utility package</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E. QUERY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. USER-SYSTEM INTERACTION a. &quot;MULTIPLE OPTIONS AT ANY POINT&quot;: Yes b. &quot;ENGLISH-LIKE PHRASING&quot;: Yes c. &quot;SYSTEM-FORCED DIALOGUE&quot;: No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F. REPORT GENERATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. LANGUAGE TYPE a. STANDARD OUTPUT: Yes b. SELECT AMONG OPTIONS: Yes c. OWN CODE: Yes</td>
</tr>
<tr>
<td>2. MEDIA FLEXIBILITY a. OFF-LINE PRINTING: Yes b. DISPLAY OF GRAPHS: Yes c. SPECIAL OUTPUTS: No</td>
</tr>
<tr>
<td>3. SPECIAL CAPABILITIES a. SORTING: Not on-line b. SEQUENCING: Yes c. COUNTING: Yes d. ARITHMETIC: Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G. SECURITY PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. TERMINAL: No</td>
</tr>
<tr>
<td>2. DATA BASE: Yes</td>
</tr>
<tr>
<td>3. RECORD: Yes</td>
</tr>
<tr>
<td>4. FIELD: Yes</td>
</tr>
</tbody>
</table>
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   THE NEW YORK TIMES INFORMATION BANK
   Information Services Division
   The New York Times
   229 West 43rd St.
   New York, N.Y. 10036
   TELEPHONE
   212-556-1031

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      No
   b. FOR LEASE
      AT WHAT COST
      Planned for future.

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Yes
      $675 per month minimum, exclusive of equipment.
      Abstracts of New York Times articles (1970 to present) plus
      selected abstracts from other sources
   b. DATA BASES
      Not at present

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      NA
   b. SIGNIFICANT INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      Late 1972
   b. PRESENT USAGE
      64 in-house terminals. Around
      15 outside subscribers, including Department of State,
      Library of Congress, and
      University of Pittsburgh

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   IBM 370/145

2. OPERATING SYSTEM
   DOS

3. SOURCE LANGUAGE
   PL/1, IBM 370 BAL, COBOL

4. TERMINAL TYPES
   Inco term SPD-10/20 CRT terminal
   for outside subscribers

5. TRANSMISSION RATES
   2000 or 2400 bps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   No

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes, for index terms and certain
   bibliographic elements

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      Yes, to establish
      temporary file;
      permanent file
      established via
      later batch run
      Yes, in
      temporary file
      Yes
   b. UPDATE
   c. DELETION
   d. EDITING

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   No, with certain
   exceptions

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Not relevant to
   users

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE
      PHrasing
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      Yes, except when
      entering
      search terms

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes, open-ended
      vocabulary now
      contains about
      200,000 terms
      No
   b. FULL TEXT INVERSION
      Yes
   c. STEMMING PERMITTED
      Yes
   d. SYNONYMS
      Yes
   e. DISPLAY OF
      RELATED TERMS
      Yes
   f. CHECKING TERM IN
      CONTROLLED VOCABULARY
      Yes

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS
      No
   b. "ANY" LIMIT FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. NESTING OF BOOLEAN
      EXPRESSIONS
      No
   g. PHRASE AND DISTANCE
      SEARCHING
      No
   h. NATURAL ENGLISH
      No
   i. RANGE SEARCHING
      Yes, for
      date of
      publication

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Not needed
      because of
      tutorial
      sequence
   b. DOCUMENTATION
      ON-LINE
      Yes, with
      abbreviation
      optional

5. SEARCH STRATEGY
   a. RANDOM
      Yes
   b. SEQUENTIAL
      No
   c. INDEXED SEQUENTIAL
      Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG
      OPTIONS
      Yes
   c. OUI CODE
      No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      No
   c. SPECIAL OUTPUTS
      Yes, microfilm,
      microfiche

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes, by date
      Yes
   b. SEQUENCING
      Yes
   c. COURTING
      Yes
   d. ARITHMETIC
      No

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   OLIVER
   On-Line Systems, Inc.
   115 Evergreen Heights Dr.
   Pittsburgh, Pa. 15229
   412-931-7600

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
      Yes
      $10.00/connect hour
      + $0.05/computer processing unit
      + $1.50/psu/mo.
   b. FOR LEASE
      AT WHAT COST
   c. DATA BASES
      Standard & Poor's Daily Report
   d. TAKES CUSTOMER
      DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   NA
   b. SIGNIFICANT
      INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      1970
   b. PRESENT USAGE
      About 50 companies, 10-20 users each

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   DMSYSTEM 10

2. OPERATING SYSTEM
   TOPS-10 Monitor (variant)

3. SOURCE LANGUAGE
   MACRO-10 (assembler)

4. TERMINAL TYPES
   TTY-compatible, 2741-compatible

5. TRANSMISSION RATES
   10-120 cps

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      Yes
   b. UPDATE
      Yes
   c. DELETION
      Yes
   d. EDITING
      Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   New records are appended or else go into holes left by deletions

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      No
   b. ENGLISH-LIKE
      PHRASING
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      Yes

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      No
   b. FULL TEXT INVERSION
      No
   c. STRIPPING PERMITTED
      Yes; also embedded string searching
   d. SYNONYMS
   e. DISPLAY OF
      RELATED TERMS
      No
   f. CHECKING TERM IN CON-
      TROLLED VOCABULARY
      NA

3. SEARCH SPECIFICATION
   a. MUST NAME FIELDS
   b. MAY LIMIT FIELDS
   c. BOOLEAN AND
   d. BOOLEAN OR
   e. BOOLEAN NOT
   f. NESTING OF BOOLEAN
      EXPRESSIONS
   g. PHRASE AND DISTANCE
      SEARCHING
   h. NATURAL ENGLISH
   i. RANGE SEARCHING
   Yes
   Yes
   Yes
   Yes
   Yes
   Yes
   Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
   b. DOCUMENTATION
      ON-LINE
   None

5. SEARCH STRATEGY
   a. RANDOM
   b. SEQUENTIAL
   c. INDEXED SEQUENTIAL
   No
   Yes
   Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   b. SELECT AMONG
      OPTIONS
   c. DMI CODE
   Yes
   Yes
   Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
   b. DISPLAY OF GRAPHS
   c. SPECIAL OUTPUT
   Yes, limited capability through own code
   No

3. SPECIAL CAPABILITIES
   a. SORTING
   b. EQUIDISTANCING
   c. COUNTING
   d. ARITHMETIC
   No
   Yes
   Yes
   Yes

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   Yes
4. FIELD
   Yes
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   ORBIT III
   System Development Corp.
   2500 Colorado Ave.
   Santa Monica, Calif. 90406
   213-393-9411

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      Yes
      $47,500
   b. FOR LEASE
      Yes
      $950 per month plus $2,000 startup charges

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      Yes
      $22.00 to $35.00 per hour.
      ERIC, CA Condensates, and CAIN.
      MEDLINE available to a restricted customer set.
   b. DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      1970
   b. SIGNIFICANT INSTALLATIONS
      National Library of Medicine, SDC, Carolinans Institute of
      Stockholm, Dept. State, SUNY (Syracuse)

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      1972
   b. PRESENT USAGE
      Over 50 organizations

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   IBM Series 360, 370

2. OPERATING SYSTEM
   OS/MVT, OS/MVT, VS/2

3. SOURCE LANGUAGE
   PL/I

4. TERMINAL TYPES
   TTY, IBM 2741, and others

5. TRANSMISSION RATES
   10, 15, 30 gpa

6. RE-ENTRANT FOR MULTIPLE USERS
   Yes

C. FIELD DEFINITION

1. USER DEFINABLE
   Yes, with assistance

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      No
   b. UPDATE
      Yes
   c. DELETION
      Yes
   d. EDITING
      Yes

2. PREPROGRAMMED DATA VALIDATION CHECKS
   No

3. OPTIONAL ORDERING OF ENTERED DATA
   No

4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING
   Yes, via an optional separate package

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE PHRASING
      Yes
   c. SYSTEM-FORCED DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes, if user supplied
   b. FULL TEXT INVERSION
      No
   c. STEMMING PERMITTED
      Yes
   d. SYNONYMS
      Yes, if established at file creation
      Yes, with special programming
   e. DISPLAY OF RELATED TERMS
      Yes, if user supplied

3. SEARCH SPECIFICATION
   a. "HISTORY" COMMAND
      Yes
   b. DOCUMENTATION ON-LINE
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Yes
   b. DOCUMENTATION ON-LINE
      Yes

5. SEARCH STRATEGY
   a. RANDOM
      Yes
   b. SEQUENTIAL
      No
   c. INDEXED SEQUENTIAL
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      Yes
   c. OWN CODE
      No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHIC
      No
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      No
   b. SEQUENCING
      Yes
   c. COUNTING
      Yes, for number of hits
   d. ARITHMETIC
      No

G. SECURITY PROTECTION

1. TERMINAL
   No

2. DATA BASE
   Yes

3. RECORD
   Yes, using security at print level

4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   PIRETS (Pittsburgh Information RETrieval System)

2. ORIGINATOR
   Knowledge Availability Systems Center
   University of Pittsburgh
   Pittsburgh, Pa. 15213
   Contacts: Mr. Edmond Hacoc, Prof. Dale Isenb (system designer)

3. TELEPHONE
   412-624-5211

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      A copy of the program and of
      the documentation are available
      for reproduction costs.
   b. FOR LEASE
      AT WHAT COST

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Search services on approximately
      10 data bases are available.
      For prices, contact Associate
      Director of KASC.
   b. DATA BASES
   c. TAKES CUSTOMER
      DATA BASES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   b. SIGNIFICANT INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      Aug., 1972
   b. PRESENT USAGE
      U. of Pitt. campus + over 100
      outside clients

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   PDP10

2. OPERATING SYSTEM
   TSM

3. SOURCE LANGUAGE
   MACRO-10

4. TERMINAL TYPES
   ASR-33 TTY compatible

5. TRANSMISSION RATES
   10-30 cps.

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      Yes, by conversion
      of (card or text)
      input file
   b. UPDATE
      Yes, source file
   c. DELETION
      Yes, source file
   d. EDITING
      Yes, source file

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   No

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No (full text
   inversion for
   search on words
   and phrases)

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS
      AT ANY POINT
      Yes, via system
      controlled dialogue
   b. ENGLISH-LIKE
      PHrasing
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      Yes

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      No
   b. FULL TEXT INVERSION
      Yes
   c. STANDING PERMITTED
      Yes (truncation)
   d. SYNONYMS
      No
   e. DISPLAY OF
      RELATED TERMS
      No
   f. CHECKING TERM IN CON- CTROLLED VOCABULARY
      No
   g. PHRASE AND DISTANCE
      SEARCHING
      Yes (phrases)

3. SEARCH SPECIFICATION
   a. "JUST NAME FIELDS
      No
   b. "ANY LIMIT FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. INVERTING OF BOOLEAN
      EXPRESSIONS
      No
   g. PHRASE AND DISTANCE
      SEARCHING
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Yes, via separate
      tutorial package
   b. DOCUMENTATION
      ON-LINE
      Yes

5. SEARCH STRATEGY
   a. RANDOM
      Yes
   b. SEQUENTIAL
      Yes
   c. INDEXED SEQUENTIAL
      Yes

6. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG
      OPTIONS
      Yes
   c. OEN CODE
      Yes

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUTS
      Yes

3. SPECIAL CAPABILITIES
   a. SORTING
      No
   b. SEQUENCING
      No
   c. COUNTING
      Yes
   d. ARITHMETIC
      No

4. SECURITY PROTECTION
   a. TERMINAL
      Yes
   b. DATA BASE
      Yes
   c. RECORD
      No
   d. FIELD
      No
C. FILE DEFINITION

1. USER DEFINABLE
2. VARIABLE LENGTH TEXT
3. REPEATED TEXT

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   b. UPDATE
   c. DELETION
   d. EDITING
2. PREPROGRAMMED DATA
   VALIDATION CHECKS
3. OPTIONAL ORDERING OF
   ENTERED DATA
4. AUTOMATIC OR
   MACHINE- AIDED
   CONCEPT INDEXING

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
   b. ENGLISH-LIKE
      PHRASING
   c. SYSTEM-FORCED
      DIALOGUE
2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
   b. FULL TEXT INVERSION
   c. STEMMING PERMITTED
   d. SYNONYMS
   e. DISPLAY OF
      RELATED TERMS
   f. CHECKING TERMS IN
      CONTROLLED VOCABULARY

3. SEARCH SPECIFICATION
   a. "JUST NAME" FIELDS
   b. "IN LIMIT" FIELDS
   c. BOOLEAN AND
   d. BOOLEAN OR
   e. BOOLEAN NOT
   f. NESTING OF BOOLEAN
      EXPRESSIONS
   g. PHRASE AND DISTANCE
      SEARCHING
   h. NATURAL ENGLISH
   i. RANGE SEARCHING

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   b. SELECT AMONG
      OPTIONS
   c. OWN CODE
2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
   b. DISPLAY OF GRAPHS
   c. SPECIAL OUTPUTS
3. SPECIAL CAPABILITIES
   a. SORTING
   b. SEQUENCING
   c. COUNTING
   d. ARITHMETIC

G. SECURITY PROTECTION

1. TERMINAL
2. DATA BASE
3. RECORD
4. FIELD
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   RECON/STIMS, JURIS, ENVIRON, TOXICON (same system);
   Lockheed's DIALOG is technically the same.

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AVAILABLE VIA COSMIC. Extended
      version available by late 1973
   b. FOR LEASE
      AVAILABLE VIA COSMIC. Extended
      version available by late 1973

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      No, in-house services only at government agencies; NLM
      service publicly available at special centers.
   b. DATA BASES
      NLM (TOXICON) has CBAC,
      Toxicity Bibliography; NASA has
      STAR, IIA; Justice (JURIS) has
      JURIS data base;
   c. TAKES CUSTOMER
      DATA BASES
      Yes (with help from a
      contractor)

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      1967 for NASA
   b. SIGNIFICANT
      INSTALLATIONS
      NASA, NLM, Justice, NEC, EPA,
      Federal Mediation and
      Conciliation Service

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      NA
   b. PRESENT USAGE
      NA

B. COMPUTER ENVIRONMENT

1. MAINFRAME
   IBM 360/50

2. OPERATING SYSTEM
   OS/JW and MFT

3. SOURCE LANGUAGE
   RECON (the interactive
   subsystem) is all assembler;
   STIMS (the batch file
   maintenance subsystem) is PL/1
   + assembler.

4. TERMINAL TYPES
   ASCII compatible terminals, IBM
   2260, Bunker Ramo 2200, and TTY
   compatible

5. TRANSMISSION RATES
   10-300 cps

6. RE-ENTRY FOR
   MULTIPLE USERS
   No

C. FILE DEFINITION

1. USER DEFINABLE
   No

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLows ON-LINE
   a. CREATION
   None
   b. UPDATE
   c. DELETION
   d. EDITING

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS
      AT ANY POINT"
   Yes
   b. "ENGLISH-LIKE
      PHRASING"
   Yes
   c. "SYSTEM-FORCED
      DIALOGUE"
   No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
   Yes
   b. FULL TEXT INVERSION
   Yes
   c. STEMMING PERMITTED
   Yes
   d. SYNONYMS
   Yes
   e. "DISPLAY OF
      RELATED TERMS"
   Yes, via
   f. "CHECKING TERM IN CONTROLLED VOCABULARY"
   Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
   Yes
   b. SELECT AMONG
      OPTIONS
   Yes
   c. OWN CODE
   No

2. "MEDIA FLEXIBILITY"
   a. "OFF-LINE PRINTING"
   Yes
   b. "DISPLAY OF GRAPHS"
   No
   c. SPECIAL OUTPUTS
   No

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   No
4. FIELD
   No
A. GENERAL DESCRIPTION

1. SYSTEM NAME
   ORIGINATOR
   NFI (Remote File Inquiry System)
   NASA
   John F. Kennedy Space Center
   Automatic Data Processing Center
   Kennedy Space Center, Fla.
   32899
   305-867-4166

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
   AT WHAT COST
   b. FOR LEASE
   AT WHAT COST
   Available to government agencies

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
   AT WHAT COST
   NASA technical data on parts
   reliability, financial
   management, master personnel,
   etc.
   No, in-house use only
   b. DATA BASES
   NASA Headquarters, NASA Space Center
   NA
   c. TAKES CUSTOMER
   DATA BASES

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
   1969
   b. SIGNIFICANT
   INSTALLATIONS
   NASA Headquarters, NASA Space Center
   A combination of a, b, and c

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
   1969
   b. PRESENT USAGE
   See 4. b.; supplied to Army
   Safeguard Command and House of
   Representatives, but usage
   there unknown
   c. INDEXED SEQUENTIAL

B. COMPUTER ENVIRONMENT

1. MAIN FRAME
   Minimum 360/40
   OS/MVT(QTAM), MVT at NASA
   Headquarters

2. OPERATING SYSTEM
   Assembler (level F)
   TTY compatible

3. SOURCE LANGUAGE

4. TERMINAL TYPES

5. TRANSMISSION RATES
   110 baud

6. RE-ENTRANT FOR
   MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   Yes
   b. UPDATE
   Yes
   c. DELETION
   Yes
   d. PRINTING
   Yes

2. PREPROGRAMMED DATA
   VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF
   ENTERED DATA
   Yes

4. AUTOMATIC OR
   MACHINE-AIDED
   CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      No
   b. ENGLISH-LIKE
      PHrasing
      Yes
   c. SYSTEM-FORCED
      DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      Yes
   b. FULL TEXT INVERSION
      No
   c. STEMMING PERMITTED
      No
   d. SYNONYMS
      Yes, of
      keywords
   e. DISPLAY OF
      RELATED TERMS
      No
   f. CHECKING TERM IN
      CONTROLLED VOCABULARY
      Yes

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      No
   b. SELECT AMONG
      OPTIONS
      Yes
   c. OWN CODE
      No

2. MEDIA FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      No
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      Yes
   c. COUNTING
      Yes
   d. ARITHMETIC
      No, but
      automatic total
      for arithmetic
      fields

G. SECURITY PROTECTION

1. TERMINAL
   No

2. DATA BASE
   Yes

3. RECORD
   Yes

4. FIELD
   Yes
### A. GENERAL DESCRIPTION

1. **SYSTEM NAME**
   - **ORIGINATOR**: RIGS
   - **Vogelback Computing Center Northwestern Univ.**
   - **Evanston, Ill. 60201**
   - **TELEPHONE**: 312-492-3741

2. **SOFTWARE AVAILABILITY**
   - **FOR PURCHASE**: By arrangement
   - **AT WHAT COST**: To non-profit or educational organisations
   - **DATA BASES**: Mostly bibliographies (Computer science, physics, etc.), journal abstracts for social sciences, others
   - **TAKES CUSTOMER DATA BASES**: Yes

3. **SERVICE AVAILABILITY**
   - **SEARCH SERVICE**: To non-profit or educational organisations
   - **AT DATA-COST**: Cost-reimbursable

4. **HISTORY OF SOFTWARE**
   - **FIRST INSTALLATION**: Sept. 1969
   - **SIGNIFICANT INSTALLATIONS**:

5. **HISTORY OF SERVICE**
   - **SERVICE INITIATION**: Sept., 1969 (demonstration of prototype)
   - **PRESENT USAGE**: Heavy usage, over 50 data bases in Chicago area.

### B. COMPUTER ENVIRONMENT

1. **MAIN FRAME**: CDC 6400
2. **OPERATING SYSTEM**: SCOPE 3.3 + in-house built interactive front-end (on-line subsystem)
3. **SOURCE LANGUAGE**: FORTRAN + COMPASS
4. **TERMINAL TYPES**: TTY-compatible; IMILAC graphics terminal (15k baud, local connection)
5. **TRANSMISSION RATES**: 10, 15, 30 cps
6. **RE-ENTRANT FOR MULTIPLE USERS**: No

### C. FILE DEFINITION

1. **USER DEFINABLE**: Yes
2. **VARIA rotates LENGTH TEXT**: Yes
3. **REPEATED FILEDS**: Yes

### D. FILE MAINTENANCE

1. **ALLOWS ON-LINE**: No on-line capability
   - **CREATION**: a.
   - **UPDATE**: b.
   - **DELETION**: c.
   - **EDITING**: d.
   - **PREPROGRAMMED DATA VALIDATION CHECKS**: Yes (user specified)
   - **OPTIONAL ORDERING OF ENTERED DATA**: Yes
   - **AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING**: Yes

### E. QUERY

1. **USER-SYSTEM INTERACTION**
   - **MULTIPLE OPTIONS**
   - **AT ANY POINT**: a.
   - **ENGLISH-LIKE PHRASING**: b.
   - **SYSTEM-FORCED DIALOGUE**: c.
   - **CONTROLLED VOCABULARY**
   - **FULL TEXT INVERSION**

2. **CONTENT SEARCHING**
   - **CONTROLLED VOCABULARY**: No
   - **FULL TEXT INVERSION**: Yes, user may request in-volved index, or else full text search occurs on all items

3. **STEMMING PERMITTED**: No
4. **DISPLAY OF RELATED TERMS**: No
5. **CHECKING TERM IN CONTROLLED VOCABULARY**: No

### F. REPORT GENERATION

1. **LANGUAGE TYPE**
   - **STANDARD OUTPUT**: Yes
   - **SELECT AOMIC OPTIONS**: No
   - **OWN CODE**: Yes

2. **MEDIA FLEXIBILITY**
   - **DISPLAY OF GRAPHS**: Yes
   - **SPECIAL OUTPUTS**: No

3. **SPECIAL CAPABILITIES**
   - **SORTING**: Yes, batch mode only
   - **SEQUENCING**: No
   - **COUNTING**: Yes
   - **ARITHMETIC**: Yes

### C. SECURITY PROTECTION

1. **TERMINAL**: No
2. **DATA BASE**: Yes
3. **RECORD**: No
4. **FIELD**: No
## A. GENERAL DESCRIPTION

### 1. SYSTEM NAME ORIGINATOR
- **SHOEBOX**
- **MITRE Corp.**
- **Bedford, Mass. 01730**
- **Contact:** Henry A. Bayard
- **617-271-2582**

### 2. SOFTWARE AVAILABILITY
- **a. FOR PURCHASE AT WHAT COST**
  - Yes
  - By arrangement; probably at reproduction cost to government users
- **b. FOR LEASE AT WHAT COST**

### 3. SERVICE AVAILABILITY
- **a. SEARCH SERVICE AT WHAT COST**
  - Yes
  - By arrangement with MITRE Corp.
- **b. DATA BASES**
  - None
- **c. TAKES CUSTOMER DATA BASES**
  - Yes

### 4. HISTORY OF SOFTWARE
- **a. FIRST INSTALLATION**
  - 1970
- **b. SIGNIFICANT INSTALLATIONS**
  - None, other than MITRE

### 5. HISTORY OF SERVICE
- **a. SERVICE INITIATION**
- **b. PRESENT USAGE**

## B. COMPUTER ENVIRONMENT

### 1. MAIN FRAME
- IBM 360 or 370 (SHOEBOX requires 186 K bytes of core)

### 2. OPERATING SYSTEM
- OS/PCP, MFT, MVT

### 3. SOURCE LANGUAGE
- TREAT (LISP derivative)

### 4. TERMINAL TYPES
- IBM 2260 alphanumeric display

### 5. TRANSMISSION RATES
- 2500 cps (in local configuration)

### 6. RE-ENTRANT FOR MULTIPLE USERS
- Yes (Up to 8 concurrent users)

## C. FILE DEFINITION

### 1. USER DEFINABLE
- **Yes**

### 2. VARIABLE LENGTH TEXT
- **Yes**

### 3. REPEATED FIELDS
- **Yes**

## D. FILE MAINTENANCE

### 1. ALLOWS ON-LINE
- **a. CREATION**
  - **Yes**
- **b. UPDATE**
  - **Yes**
- **c. DELETION**
  - **Yes**
- **d. EDITING**
  - **Yes**

### 2. PREPROGRAMMED DATA VALIDATION CHECKS
- **No**

### 3. OPTIONAL ORDERING OF ENTERED DATA
- **Yes**

### 4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING
- **No**

## E. QUERY

### 1. USER-SYSTEM INTERACTION
- **a. MULTIPLE OPTIONS AT ANY POINT**
  - **Yes**
- **b. ENGLISH-LIKE PHRASING**
  - **Yes**
- **c. SYSTEM-FORCED DIALOGUE**
  - **No**

### 2. CONTENT SEARCHING
- **a. CONTROLLED VOCABULARY**
  - **No**
- **b. FULL TEXT INVERSION**
  - **Yes**
- **c. STEMMING PERMITTED**
  - **Yes, left, right, or both**
- **d. SYNONYMS**
  - **Yes (user definable)**
- **e. DISPLAY OF RELATED TERMS**
  - **No**
- **f. CHECKING TERM IN CONTROLLED VOCABULARY**
  - **No**

## F. REPORT GENERATION

### 1. LANGUAGE TYPE
- **a. STANDARD OUTPUT**
  - **Yes**
- **b. SELECT AMONG OPTIONS**
  - **No**
- **c. OWN CODE**
  - **Yes**

### 2. MEDIA FLEXIBILITY
- **a. OFF-LINE PRINTING**
  - **Yes**
- **b. DISPLAY OF GRAPHS**
  - **Yes (punched cards)**
- **c. SPECIAL OUTPUTS**
  - **Yes**

### 3. SPECIAL CAPABILITIES
- **a. SORTING**
  - **Yes**
- **b. SQUEEZING**
  - **No**
- **c. COMPUTING**
  - **Yes**
- **d. ARITHMETIC**
  - **No**

## G. SECURITY PROTECTION

### 1. TERMINAL
- **No**

### 2. DATA BASE
- **Yes**

### 3. RECORD
- **No**

### 4. FIELD
- **No**
### A. GENERAL DESCRIPTION

1. **SYSTEM NAME ORIGINATOR**
   - SOLAR
   - Washington State University
   - Pullman, Washington, 99163
   - Telephone 509-335-3564

2. **SOFTWARE AVAILABILITY**
   - a. FOR PURCHASE
      - Yes
      - Not established
   - b. FOR LEASE
      - No

3. **SERVICE AVAILABILITY**
   - a. SEARCH SERVICE
      - Yes
      - $500 annual subscription plus costs per demand searches
      - subset of CBAC plus local literatures
   - b. DATA BASES
      - No
   - c. TAKES CUSTOMER
      - DATA BASES
      - No

4. **HISTORY OF SOFTWARE**
   - a. FIRST INSTALLATION
      - Since 1971
   - b. SIGNIFICANT INSTALLATIONS
      - None yet

5. **HISTORY OF SERVICE**
   - a. SERVICE INITIATION
      - Since 1971 for internal use only
   - b. PRESENT USAGE
      - Very infrequent, about ten times per month

### B. COMPUTER ENVIRONMENT

1. **MAIN FRAME**
   - IBM 360/67 operating as a 65

2. **OPERATING SYSTEM**
   - OS MVT

3. **SOURCE LANGUAGE**
   - PL/1 plus assembly

4. **TERMINAL TYPES**
   - Any TTY compatible with IBM 1050, and 2741

5. **TRANSMISSION RATES**
   - 10, 14.7 and 15 cps

6. **RE-ENTRANT FOR MULTIPLE USERS**
   - Yes

### C. FILE DEFINITION

1. **USER DEFINABLE**
   - No

2. **VARIABLE LENGTH TEXT**
   - Yes

3. **REPEATED FIELDS**
   - No

### D. FILE MAINTENANCE

1. **ALLOWS ON-LINE**
   - a. CREATION
     - No
   - b. UPDATE
     - No
   - c. DELETION
     - No
   - d. EDITING
     - No

2. **PREPROGRAMMED DATA VALIDATION CHECKS**
   - Yes

3. **OPTIONAL ORDERING OF ENTERED DATA**
   - No

4. **AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING**
   - Yes, in batch mode only

### E. QUERY

1. **USER-SYSTEM INTERACTION**
   - a. MULTIPLE OPTIONS AT ANY POINT
     - Yes
   - b. ENGLISH-LIKE PHRASING
     - Yes
   - c. SYSTEM-FORCED DIALOGUE
     - No

2. **CONTENT SEARCHING**
   - a. CONTROLLED VOCABULARY
     - Yes, special vocabulary for use in the CBAC data base
   - b. FULL TEXT INVERSION
     - Yes
   - c. STEMMING PERMITTED
     - Yes
   - d. SYNONYMS
     - Yes
   - e. DISPLAY OF RELATED TERMS
     - Yes, separate dictionary used on-line in browse mode
   - f. CHECKING TERM IN CONTROLLED VOCABULARY
     - No

### F. REPORT GENERATION

1. **LANGUAGE TYPE**
   - a. STANDARD OUTPUT
     - Yes
   - b. SELECT AMONG OPTIONS
     - Yes
   - c. OWN CODE
     - No

2. **MEDIA FLEXIBILITY**
   - a. OFF-LINE PRINTING
     - Yes
   - b. DISPLAY OF GRAPHS
     - No
   - c. SPECIAL OUTPUTS
     - No

3. **SPECIAL CAPABILITIES**
   - a. SORTING
     - No
   - b. SEQUENCING
     - No
   - c. COUNTING
     - No
   - d. ARITHMETIC
     - No

### G. SECURITY PROTECTION

1. **TERMINAL**
   - No

2. **DATA BASE**
   - No

3. **RECORD**
   - No

4. **FIELD**
   - No
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR
   SPINES II
   Institute for Communication Research
   Stanford Univ.
   Stanford, Ca. 94305
   TELEPHONE 415-321-2300, X2755

2. SOFTWARE AVAILABILITY
   a. FOR PURCHASE
      AT WHAT COST
   b. FOR LEASE
      AT WHAT COST

3. SERVICE AVAILABILITY
   a. SEARCH SERVICE
      AT WHAT COST
      Based on resources used + $3.50/connect hour
   b. DATA BASES
   c. TAKES CUSTOMER DATA BASES
      Yes

4. HISTORY OF SOFTWARE
   a. FIRST INSTALLATION
      NA
   b. SIGNIFICANT INSTALLATIONS

5. HISTORY OF SERVICE
   a. SERVICE INITIATION
      Fall, 1972
   b. PRESENT USAGE
      People are still learning how to use it. There have been many outside inquiries.

B. COMPUTER ENVIRONMENT

1. MAINFRAME
   IBM 360/67

2. OPERATING SYSTEM
   ORYX under OS/MFT-II

3. SOURCE LANGUAGE
   PL360

4. TERMINAL TYPES
   Primarily IBM 2741. Other types can be supported.

5. TRANSMISSION RATES
   10, 15 cps

6. RE-ENTRANT FOR MULTIPLE USERS
   Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes

2. VARIABLE LENGTH TEXT
   Yes

3. REPEATED FIELDS
   Yes

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
      Yes
   b. UPDATE
      Overnight
   c. DELETION
      Overnight
   d. EDITING
      Yes

2. PREPROGRAMMED DATA VALIDATION CHECKS
   Yes

3. OPTIONAL ORDERING OF ENTERED DATA
   Yes

4. AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. MULTIPLE OPTIONS
      AT ANY POINT
      Yes
   b. ENGLISH-LIKE PHRASING
      Yes
   c. SYSTEM-FORCED DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      user-defined
      Yes
   b. FULL TEXT INVERSION
      on user-designated files
      Yes
   c. STEMMING PERMITTED
      Yes
   d. SYNONYMS
      Yes
   e. DISPLAY OF RELATED TERMS
      Yes
   f. CHECKING TERMS IN CONTROLLED VOCABULARY
      Yes

3. SEARCH SPECIFICATION
   a. "USE" NAME FIELDS
      No
   b. "ANY" LIMIT FIELDS
      Yes
   c. BOOLEAN AND
      Yes
   d. BOOLEAN OR
      Yes
   e. BOOLEAN NOT
      Yes
   f. NESTING OF BOOLEAN EXPRESSIONS
      Yes
   g. PHRASE AND DISTANCE SEARCHING
      No
   h. NATURAL ENGLISH
      No
   i. RANGE SEARCHING
      Yes

4. TUTORIAL FEATURES
   a. "HELP" COMMAND
      Yes
   b. DOCUMENTATION ON-LINE
      Yes

5. SEARCH STRATEGY
   a. RANDOM
      Yes
   b. SEQUENTIAL
      No
   c. INDEXED SEQUENTIAL
      No

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      Yes
   c. OWN CODE
      No

2. MEDIA FLEXIBILITY
   a. OPT-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      Yes
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      No
   c. COUNTING
      Yes
   d. ARITHMETIC
      No

4. SECURITY PROTECTION
   a. TERMINAL
      Yes
   b. DATA BASE
      Yes
   c. RECORD
      Yes
   d. FIELD
      Yes
A. GENERAL DESCRIPTION

1. SYSTEM NAME ORIGINATOR

STAIRS
IBM Corporation
Data Processing Division
1113 Westchester Ave.
White Plains, N.Y. 10604
Local representative

TELEPHONE

2. SOFTWARE AVAILABILITY
a. FOR PURCHASE
   AT WHAT COST
   No
b. FOR LEASE
   AT WHAT COST
   Yes $500.00 per month

3. SERVICE AVAILABILITY
a. SEARCH SERVICE
   AT WHAT COST
   NA
b. DATA BASES
   NA
c. TAKES CUSTOMER DATA BASES
   NA

4. HISTORY OF SOFTWARE
a. FIRST INSTALLATION
   July, 1972
b. SIGNIFICANT INSTALLATIONS
   Not available

5. HISTORY OF SERVICE
a. SERVICE INITIATION
b. PRESENT USAGE

6. COMPUTER ENVIRONMENT

1. MAIN FRAME
IBM 360, 370 Series

2. OPERATING SYSTEM
OS/MFT or MVT (with CICS)

3. SOURCE LANGUAGE
Assembly, with some PL/1

4. TERMINAL TYPES
IBM 2741, 2260, 2265

5. TRANSMISSION RATES
15, 120 or 240 cps

6. RE-ENTRANT FOR MULTIPLE USERS
Yes

C. FILE DEFINITION

1. USER DEFINABLE
   Yes
2. VARIABLE LENGTH TEXT
   Yes
3. REPEATED FIELDS
   No

D. FILE MAINTENANCE

1. ALLOWS ON-LINE
   a. CREATION
   No
   b. UPDATE
   No
   c. DELETION
   Yes (marked for deletion during batch update)
   d. EDITING
   No
2. PREPROGAMMED DATA VALIDATION CHECKS
   No
3. OPTIONAL ORDERING OF ENTERED DATA
   Yes, merge records into file, but not fields within record
4. AUTOMATIC OR MACHINE- AIDED CONTENT INDEXING
   No

E. QUERY

1. USER-SYSTEM INTERACTION
   a. "MULTIPLE OPTIONS"
      AT ANY POINT
      Yes
   b. "ENGLISH-LIKE" PURSING
      Yes
   c. "SYSTEM-FORCED" DIALOGUE
      No

2. CONTENT SEARCHING
   a. CONTROLLED VOCABULARY
      No
   b. FULL TEXT INVERSION
      Yes
   c. STUMPING PERMITTED
      Yes
   d. SYNONYMS
      Yes
   e. DISPLAY OF RELATED TERMS
      No
   f. CHECKING TERM IN CONTROLLED VOCABULARY
      NA

F. REPORT GENERATION

1. LANGUAGE TYPE
   a. STANDARD OUTPUT
      Yes
   b. SELECT AMONG OPTIONS
      Yes
   c. OWN CODE
      Yes

2. TEXT FLEXIBILITY
   a. OFF-LINE PRINTING
      Yes
   b. DISPLAY OF GRAPHS
      No
   c. SPECIAL OUTPUTS
      No

3. SPECIAL CAPABILITIES
   a. SORTING
      Yes
   b. SEQUENCING
      Yes
   c. COUNTING
      Yes
   d. ARITHMETIC
      No

G. SECURITY PROTECTION

1. TERMINAL
   Yes
2. DATA BASE
   Yes
3. RECORD
   Yes
4. FIELD
   Yes
### A. GENERAL DESCRIPTION

<table>
<thead>
<tr>
<th>1. SYSTEM NAME</th>
<th>TICON (Timeshared Information Control System)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORIGINATOR</td>
<td>Advanced Computer Systems, Inc. 3131 S. Dixie Dr. Dayton, Ohio 45439</td>
</tr>
<tr>
<td>TELEPHONE</td>
<td>513-294-0586</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. SOFTWARE AVAILABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. FOR PURCHASE AT WHAT COST</td>
</tr>
<tr>
<td>b. FOR LEASE AT WHAT COST</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. SERVICE AVAILABILITY</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SEARCH SERVICE AT WHAT COST</td>
<td>NA</td>
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<tr>
<td>b. DATA BASES</td>
<td>NA</td>
</tr>
<tr>
<td>c. TAKES CUSTOMER DATA BASES</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. HISTORY OF SOFTWARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. FIRST INSTALLATION</td>
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<td>b. SIGNIFICANT INSTALLATIONS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. HISTORY OF SERVICE</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SERVICE INITIATION</td>
<td>NA</td>
</tr>
<tr>
<td>b. PRESENT USAGE</td>
<td>NA</td>
</tr>
</tbody>
</table>

### B. COMPUTER ENVIRONMENT

<table>
<thead>
<tr>
<th>1. MAIN FRAME</th>
<th>IBM 360, 370</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. OPERATING SYSTEM</td>
<td>OS</td>
</tr>
<tr>
<td>3. SOURCE LANGUAGE</td>
<td>Assembler</td>
</tr>
<tr>
<td>4. TERMINAL TYPES</td>
<td>CRT, TTY, any BITAM or GRAPHIC supported terminal.</td>
</tr>
<tr>
<td>5. TRANSMISSION RATES</td>
<td>80 cps, 10 cps</td>
</tr>
<tr>
<td>6. RE-ENTRANT FOR MULTIPLE USERS</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### C. FILE DEFINITION

| 1. USER DEFINABLE | Yes |
| 2. VARIABLE LENGTH TEXT | Yes |
| 3. REPEATED LENGTH TEXT | Yes |

### D. FILE MAINTENANCE

<table>
<thead>
<tr>
<th>1. ALLOWS ON-LINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. CREATION</td>
</tr>
<tr>
<td>b. UPDATE</td>
</tr>
<tr>
<td>c. DELETION</td>
</tr>
<tr>
<td>d. EDITING</td>
</tr>
</tbody>
</table>

| 2. PREPROGRAMMED DATA VALIDATION CHECKS | Yes |

| 3. OPTIONAL ORDERING OF ENTERED DATA | Yes |

| 4. AUTOMATIC OR MACHINE-ALIENED CONTENT INDEXING | Yes |

### E. QUERY

<table>
<thead>
<tr>
<th>1. USER-SYSTEM INTERACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. MULTIPLE OPTIONS AT ANY POINT</td>
</tr>
<tr>
<td>b. ENGLISH-LIKE PHRASING</td>
</tr>
<tr>
<td>c. SYSTEM-FORCED DIALOGUE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. CONTENT SEARCHING</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. CONTROLLED VOCABULARY</td>
</tr>
<tr>
<td>b. FULL TEXT INVERSION</td>
</tr>
<tr>
<td>c. STIMULATING PERMITTED</td>
</tr>
<tr>
<td>d. SYNONYMS</td>
</tr>
<tr>
<td>e. DISPLAY OF RELATED TERMS</td>
</tr>
<tr>
<td>f. CHECKING TERM IN CONTROLLED VOCABULARY</td>
</tr>
</tbody>
</table>

### F. REPORT GENERATION

<table>
<thead>
<tr>
<th>1. LANGUAGE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. STANDARD OUTPUT</td>
</tr>
<tr>
<td>b. SELECT AMONG OPTIONS</td>
</tr>
<tr>
<td>c. OCR CODE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. MEDIA FLEXIBILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. OFF-LINE PRINTING</td>
</tr>
<tr>
<td>b. DISPLAY OF GRAPHIC SPECIAL OUTPUTS</td>
</tr>
<tr>
<td>c. SPECIAL OUTPUTS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. SPECIAL CAPABILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. SORTING</td>
</tr>
<tr>
<td>b. SEQUENCING</td>
</tr>
<tr>
<td>c. COUNTING</td>
</tr>
<tr>
<td>d. ARITHMETIC</td>
</tr>
</tbody>
</table>

### G. SECURITY PROTECTION

| 1. TERMINAL | Yes |
| 2. DATA BASE | Yes |
| 3. RECORD | Yes |
| 4. FIELD | Yes |
### A. GENERAL DESCRIPTION

1. **SYSTEM NAME**
   - ORIGINATOR: UNIDATA
   - ADDRESS: United Computing Systems, 3130 Broadway, Kansas City, Mo., 64106
   - TELEPHONE: 816-753-4500

2. **SOFTWARE AVAILABILITY**
   - a. FOR PURCHASE: Yes
   - b. FOR LEASE: Yes

3. **SERVICE AVAILABILITY**
   - a. SEARCH SERVICE:
     - AT WHAT COST: Yes
     - Variable, ave. $25-$35/week
   - b. DATA BASES: None
   - c. TAKES CUSTOMER DATA BASES: Yes

4. **HISTORY OF SOFTWARE**
   - a. FIRST INSTALLATION: Fall 1969
   - b. SIGNIFICANT INSTALLATIONS: Only UCS

5. **HISTORY OF SERVICE**
   - a. SERVICE INITIATION: Fall 1969
   - b. PRESENT USAGE: Data not available

### B. COMPUTER ENVIRONMENT

1. **MAIN FRAME**
   - CDC 6600 series

2. **OPERATING SYSTEM**
   - UX (in-house) or KRONOS (CDC)

3. **SOURCE LANGUAGE**
   - FORTRAN, COMPASS

4. **TERMINAL TYPES**
   - All low-speed terminals; remote
   - batch CDC 200 USER terminal
   - compatible. Also CRT devices.

5. **TRANSMISSION RATES**
   - 10-30 cps, 2400-3600 baud

6. **RE-ENTRANT FOR MULTIPLE USERS**
   - Yes

### C. FILE DEFINITION

1. **USER DEFINABLE**
   - Yes

2. **VARIABLE LENGTH TEXT**
   - Yes

3. **REPEATED FIELDS**
   - Yes

### D. FILE MAINTENANCE

1. **ALLOWS ON-LINE**
   - a. CREATION: Yes
   - b. UPDATE: Yes
   - c. DELETION: Yes
   - d. EDITING: Yes

2. **PREPROGRAMMED DATA VALIDATION CHECKS**
   - Yes

3. **OPTIONAL ORDERING OF ENTERED DATA**
   - Yes

4. **AUTOMATIC OR MACHINE-AIDED CONTENT INDEXING**
   - Yes

### E. QUERY

1. **USER-SYSTEM INTERACTION**
   a. MACHINE OPTIONS
     - AT ANY POINT: Yes
     - ENGLISH-LIKE PHrasing: Yes
     - SYSTEM-FORCED DIALOGUE: Limited

2. **CONTENT SEARCHING**
   - a. CONTROLLED VOCABULARY: None
   - b. FULL TEXT INVERSION: Yes
   - c. STUMBLING PERMITTED: Yes
   - d. SYNONYMS: Yes
   - e. DISPLAY OF RELATED TERMS: Yes
   - f. CHECKING TERM IN CONTROLLED VOCABULARY: Yes

### F. REPORT GENERATION

1. **LANGUAGE TYPE**
   - a. STANDARD OUTPUT: Yes
   - b. SELECT AMONG OPTIONS: Yes
   - c. OWN CODE: Yes

2. **MEDIA FLEXIBILITY**
   - a. OFF-LINE PRINTING: Yes
   - b. DISPLAY OF GRAPHS: Yes
   - c. SPECIAL OUTPUTS: Yes, mag tape.

3. **SPECIAL CAPABILITIES**
   a. SORTING: Yes
   b. SEQUENCING: Yes
   c. COUNTING: Yes
   d. ARITHMETIC: Yes

### G. SECURITY PROTECTION

1. **TERMINAL**
   - Yes

2. **DATA BASE**
   - Yes

3. **RECORD**
   - No

4. **FIELD**
   - No
5. GLOSSARY OF COMMON DATA BASES

APA - American Psychological Association has created a data base containing the past four years' Psychological Abstracts.

COMPENDEX - Computerized Engineering Index, issued monthly by Engineering Index, Inc., is the computer-readable version of the printed publication, Engineering Index Monthly, which contains references spanning all engineering disciplines. These references are taken from professional and trade journals, publications of engineering organizations, papers from conferences and symposiums, books, and other documents.

CA-C - Chemical Abstracts Condensate issued by Chemical Abstracts Service is the computer searchable complement to the printed publication, Chemical Abstracts (CA), which covers the full range of chemistry, referencing 250,000 articles per year.

CA-Condensates is issued weekly; the content corresponds to an issue of CA. The tape version, CA-Condensates, precedes the corresponding printed issue of CA by several weeks due to the time required to print, bind, and distribute CA printed issues.

The abstracts in CA and CA-Condensates are grouped into five categories: Biochemistry, Organic Chemistry, Macromolecular Chemistry, Applied Chemistry and Chemical Engineering, and Physical and Analytical Chemistry. The first two groupings are published as an odd numbered issue one week, and the last three groupings are published as an even numbered issue the following week. Searches may be limited to odd or even numbered issues if desired.

CAIN - A data base distributed by the National Agricultural Library, it covers literature from all over the world concerned with agriculture in a broad sense. Ten per cent of the coverage consists of monographs; the remaining 90% consists of journal articles. The 90% comes from a review of 1,200 journals.

CT - Chemical Titles, also issued by Chemical Abstracts Service, contains journal references to approximately 4,500 articles per issue appearing in 650 important U. S. and non-U. S. chemical and engineering journals. Titles that appear in CT represent over 65% of the total abstracts that later appear in Chemical Abstracts. Chemical Titles offers journal references to articles approximately 70 days before their abstracts are published in Chemical Abstracts. In many cases titles appear in Chemical Titles before the journal containing the article is published. Thus Chemical Titles is valuable as an alerting service.
CBAC - Chemical-Biological Activities, also issued by Chemical Abstracts Services, provides up-to-date coverage of published work concerned with the interaction of organic compounds (drugs, pesticides, etc.) with biological systems. Also covered are metabolism studies and studies of in-vitro chemical reactions of biochemical interest. Nearly 700 journals are monitored. CBAC is a consolidated source of information in the chemical-biological field, and especially appeals to scientists involved in biochemical and physiological research.

The tape version of CBAC corresponds to the Chemical-Biological Activities hard-copy version; however, tape issues are usually available two-four weeks ahead of the printed copy. Each issue contains 500-600 digests.

ENVIRON - Environmental Information Retrieval On-line is a modified version of RECON operating at Environmental Protection Agency (EPA). It services the EPA and maintains a data base of 8 separate files as follows:

1. Selected literature reference on noise abatement and control.
2. Selected literature on industrial waste.
3. Data and abstracts on on-going EPA contracts and grants research effort.
4. Data and abstracts on final reports of EPA contracts and grants research effort.
5. Information on oil spills.
6. Information on lists of potentially toxic chemicals.
7. Information on water quality monitoring stations and parameters.
8. Information on administrative records.

EKIC - Educational Resources Information Center is a nation-wide information network for acquiring, selecting, abstracting, indexing, storing, retrieving, and disseminating the most significant and timely educational research reports and projects. It is a project of the U. S. Office of Education, and produces two data bases, RIE (Research in Education) and CIJE (Current Index to Journals in Education).

IAA - See STAR

INSPEC - A data base distributed by England's Institution of Electrical Engineers, it covers the fields of physics, electrical and electronic engineering, computers, and control engineering. Seventy-five percent of the coverage comes from a review of about 2,000 journals. The other 25% are reports, monographs, patents, etc.

MARC II - is a data base containing bibliographic citations prepared by the Library of Congress.
NTIS - is a data base issued by National Technical Information Service of the U. S. Department of Commerce. It consists of unclassified government reports resulting from government-sponsored research. The reports are compiled in a publication now called Government Reports Announcements (GRA). GRA is available in machine readable form from the Department of Commerce.

The tapes contain standard bibliographic information such as author and title, as well as abstracts, descriptor terms, and information on how to order copies. The information consists mainly of science, engineering and mathematics, but also includes reports on behavioral and social sciences.

JURIS - Justice Retrieval and Inquiry System is a data base developed by the U. S. Department of Justice. It is designed to serve lawyers for the Federal government in their research process. The data base contains selected legal periodicals and reported cases, advisory opinions, supreme court briefs, solicitor general's memoranda, selected appellate briefs, selected legal memoranda, legal correspondence, legal memoranda on points of authority, agency general counsel specialized briefs and memorandum, etc.

MEDLINE - MEDLARS On-line data base is a special subset of the MEDLARS file, developed by the National Library of Medicine through their screening and analysis of the world's biomedical literature. MEDLINE covers over 1,100 biomedical journals from 1970 to present, whereas MEDLARS covers 2,400 biomedical journals from 1961 to present. The current file contains 400,000 records, and approximately 12,000 new records are added monthly.

PANDEX - The PANDEX tape contains current index to scientific and technical literatures appearing in more than 2400 journals. The bibliographic information includes the title of the articles, name(s) of the author(s), name of the journal, Coden abbreviation, issue number, page number, and subject heading taken from a PANDEX thesaurus. PANDEX is produced by CCM Information Corporation, New York.

SPIN (Searchable Physics Information Notices) - a data base distributed monthly by the American Institute of Physics, it covers over one-half of the world's physics and astronomy literature. Over 30,000 items are included every year from a journal coverage of 70 journals.

STAR - Scientific And Technical Aerospace Reports and International Aerospace Abstracts - are two data bases issued by NASA. They contain reports and journal articles that the NASA scientific and technical information program has collected. These data bases represent significant findings of Government, industrial, and academic researchers throughout the world on matters of interest to the aerospace community.
TOXICON - A data base collected by the Toxicology Information Program, National Library of Medicine of the Department of Health, Education and Welfare. It contains bibliographic citations of literature primarily in the area of toxicology, pharmacology and environmental health. The citations include all the principal components of a literature reference; namely, author, title, journal, journal coden, volume, issue, pagination and year. Most references are annotated with index terms, an abstract or both. Where possible and appropriate, Chemical Abstracts Service Registry Numbers are made part of the annotation.
6. BIBLIOGRAPHY

There have been a number of surveys and other works done in recent years which are similar in intent to ours but not identical in scope or form. A selective bibliography is now presented.


**A Technical Index of Interactive Information Systems**

**Authors:**
Dennis W. Fife, Kirk Rankin, Elizabeth Fong, Justin C. Walker, Beatrice A. Marron

**Performing Organization:**
National Bureau of Standards
Department of Commerce
Washington, D.C. 20234

**Sponsoring Organization:**
National Science Foundation
1800 G Street, NW
Washington, D.C. 20550

**Abstract:**
This report constitutes a reference to technical features and operational status of interactive information systems, i.e. those providing a 'conversational' usage mode to a 'non-programmer' through a data terminal device. It is aimed at the ADP service manager, for his use in the state-of-the-art assessments preparatory to a detailed system selection process. It contains an index that describes 46 systems in terms of a list of over 50 technical features plus descriptive, identification, and background information. In addition, there are aids and examples contributing to the intended use of the index.

**Key Words:**
Bibliographic systems; computer programs; computer systems; data base; data management; information retrieval; information services; interactive system; query language; software selection; text processing.

**Availability Statement:**
[ ] Unlimited.
[ ] For official distribution. Do not release to NTIS.

**Security Class:**
This report: Unclassified
This page: Unclassified

**Price:**
$1.20
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CURRENT REPORTS ON RETAIL TRADE

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- Monthly Retail Trade Report—Estimates of monthly retail sales for the United States by major kind-of-business groups and selected individual kinds of business; separate figures shown, in more limited kind-of-business detail, for firms operating 11 or more retail stores. Summary sales data presented for geographic regions and divisions, and for 15 large States, the 20 large standard metropolitan statistical areas and the five largest cities. Also included are national estimates of end-of-month accounts receivable balances for retail stores.

- Annual Retail Trade Report—Estimates of annual sales and purchases, and of year-end accounts receivable, balances and inventories held by retailers in the United States by major kind-of-business groups and selected individual kinds of business. Separate figures shown in more limited kind-of-business detail for firms operating 11 or more retail stores. Also shown are sales-inventory ratios and per capita sales by kind-of-business for the United States, by major kind-of-business groups. Per capita sales estimates are also shown in limited kind-of-business detail for geographic divisions, and for the larger States and standard metropolitan statistical areas.

- Advance Monthly Retail Sales—Advance estimates of monthly retail sales for the United States (including data adjusted for seasonal variations and trading day differences) are compiled by major kind-of-business groups about 10 days after the month covered.

- Monthly Department Store Sales for Selected Areas—Monthly dollar sales volume and the percent change in sales compared with the previous month and the same month in the previous year; cumulative year-to-date comparisons with data for the previous year. The number of department stores in the current month is also shown. Data are collected in about 200 standard metropolitan statistical areas, cities, and other areas.

WHEAL TRADE

- Monthly Wholesale Trade Report—This report includes estimates of dollar sales, end-of-month inventories, and stock-sales ratios of merchant wholesalers, by kind of business for the current month, with comparisons for previous months. Dollar volume sales estimates are shown by geographic division in total and for durable and nondurable kind-of-business subtotals. Sales and inventory trends (percent changes) are shown by detailed kinds-of-business at the national level and for selected kinds-of-business by geographic division. Measures of sampling variability are given. United States data are shown adjusted for seasonal variations and in the case of sales, also for trading day differences.

SELECTED SERVICES TRADE

- Monthly Selected Services Receipts—This report provides data on monthly receipts of six major kind-of-business groups of services: Hotels, motels, tourist courts, trailer parks, and camps; personal services; business services; automotive services; miscellaneous repair services; and motion picture, amusement, and recreation services. Comparable data for the previous months and for the same month in the previous year are also shown, in addition to the percent changes. Data are shown both unadjusted and adjusted for seasonal variations and trading day differences.

U.S. DEPARTMENT OF COMMERCE • Social and Economic Statistics Administration • BUREAU OF THE CENSUS
CURRENT POPULATION REPORTS
From the Bureau of the Census

In addition to the findings of the Census of Population, conducted every 10 years, the Bureau of the Census publishes continuing and up-to-date statistics on population counts, characteristics, and other special studies on the American people. Data are issued in the eight separate series of reports described herein and released under the general title, Current Population Reports.

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