BASIS

ON-LINE RETRIEVAL AND ANALYSIS SYSTEM OVERVIEW

Battelle
Columbus Laboratories

BASIS SYSTEM

BASIS is an information storage, retrieval, and analysis system that has been operational since 1970. The system can be utilized from an on-line terminal or in batch mode. The storage and retrieval module was designed to allow users (not necessarily knowledgeable in computer programming) to search large files of textual or numeric information by subject area or data value and rapidly retrieve information satisfying the search criterion. Other **BASIS** modules are designed to allow the user to perform data analysis and data base management tasks. Users from Government and industry are located throughout the United States and Canada. **BASIS** is operational on five different types of computers; CDC 6000 series, DEC 10 and DEC 20, IBM 360/370 series, UNIVAC, and SIGMA computers. The **BASIS** system is similar in many respects to other on-line storage and retrieval systems, but it provides a wide range of additional capabilities including:

(1) Combined **TEXTUAL** and **NUMERIC DATA** retrieval and analysis

(2) On-line **DATA MANIPULATION** and **STATISTICAL ANALYSIS**

(3) On-line **SORTING**

(4) On-line **REPORT GENERATOR**

(5) On-line **THESAURUS**

(6) Complete system interaction **MONITORING**

(7) User search and save procedures—**PROFILE**

(8) **INVERTED FILE** or **SEQUENTIAL FILE** searching

(9) Ability to execute external programs (**OWNCODE**) from **BASIS**

(10) User-oriented **RETRIEVAL AIDS**

(11) Extremely fast retrieval for **SMALL** and **LARGE** files

(12) Sophisticated file **CREATION** and **MAINTENANCE** packages (including the ability to easily update very large files).

All of the above features are fully integrated, tested, and operational in a real-world production environment.

Since 1970 **BASIS** has been used to access and analyze information and data for several hundred applications including:

- *National Library of Medicine's (NLM) baseline information and data on control animals called the Laboratory Animal Data Bank (LADB). This data bank is projected to grow to several billion characters*
- *TRIS-ON-LINE, the principal on-line access component of the national network of transportation information services, TRISNET, providing selected information on recent technical transportation literature, research in progress, and other data*
- *National Cancer Institute's (NCI) information and data on chemotherapeutic-compound toxicology tests*
- *Information on environmental legislation*
- *Battelle Energy Information Center (BEIC) information on all types of energy, with numeric data on petroleum-refining-facilities production in the U.S. and Canada*
- *Chemical Abstracts Condensates (over one million records)*

- *Ohio College Library Center (OCLC) subject searching*
- *Library circulation and ordering*
- *Department of Defense estimating cost of aircraft and other systems*
- *Personnel Files*
- *Cost of Living Council (CLC) price-control information*
- *Copper Development Association's (CDA) information on copper*
- *ALCAN's information on aluminum*
- *Japan Society for the Promotion of Machining Industry's (JSPMI) information and data on machining.*

SYSTEM UTILIZATION

Organizations interested in utilizing the **BASIS** software may choose to implement their data base on Battelle's computer or may acquire usage rights to operate the **BASIS** software on their own computer. Battelle's facility consists of two large Control Data Corporation mainframes (a CDC 6400 and a CYBER 73) with over one billion characters of shared disk storage. The facility is operated and maintained 7 days a week on a 19-hour-per-day (8:00 a.m. EST to 3:00 a.m. EST) schedule. Access is available via standard telephone dial-up service or via a communication network (TYMNET) for long distance economy. If the interested organization desires to operate the **BASIS** software at their own facility on any one of the five available mainframes (CDC 6000 series, DEC 10 and DEC 20, IBM 360/370 series, UNIVAC, and SIGMA computers), the software can usually be adjusted to be compatible with the selected facility within a couple of weeks depending upon the amount of tailoring required for the desired application. In either case, organizations selecting **BASIS** for utilization with their data-base application are always given close personal assistance by qualified individuals including:

- An understanding of the organization's overall information needs
- Assistance in file creation and maintenance procedures
- Construction of a prototype/demonstration file
- Training of users
- Developing application user guides
- Training of the data-base manager on utilization of the software
- Training systems programmers to maintain **BASIS**
- Understanding the system documentation which includes source code listings of all **BASIS** modules.

An organization can choose to maintain **BASIS** with internal staff or have Battelle provide this support.

Careful design attention has been paid to ensuring both the portability and ease of modification of all **BASIS** software, and Battelle is committed to ongoing development of the system features. Users can be assured that **BASIS** will remain a state-of-the-art retrieval system and that its continued evolution will not render existing applications obsolete. Users who have chosen to install **BASIS** on their own machines do so with the knowledge that a change of computers, even between vendors, will not require the complete redesign of applications using **BASIS** that would be required if vendor or other non-machine-independent software had been used.