MINISIS Users’ Group Meeting 1985
Proceedings of the Seventh Annual Meeting of the MINISIS Users’ Group

April 1986
The International Development Research Centre is a public corporation created by the Parliament of Canada in 1970 to support research designed to adapt science and technology to the needs of developing countries. The Centre's activity is concentrated in six sectors: agriculture, food and nutrition sciences; health sciences; information sciences; social sciences; earth and engineering sciences; and communications. IDRC is financed solely by the Parliament of Canada; its policies, however, are set by an international Board of Governors. The Centre's headquarters are in Ottawa, Canada. Regional offices are located in Africa, Asia, Latin America, and the Middle East.

Le Centre de recherches pour le développement international, société publique créée en 1970 par une loi du Parlement canadien, a pour mission d'appuyer des recherches visant à adapter la science et la technologie aux besoins des pays en développement; il concentre son activité dans six secteurs : agriculture, alimentation et nutrition; information; santé; sciences sociales; sciences de la terre et du génie et communications. Le CRDI est financé entièrement par le Parlement canadien, mais c'est un Conseil des gouverneurs international qui en détermine l'orientation et les politiques. Établi à Ottawa (Canadá), il a des bureaux régionaux en Afrique, en Asie, en Amérique latine et au Moyen-Orient.

El Centro Internacional de Investigaciones para el Desarrollo es una corporación pública creada en 1970 por el Parlamento de Canadá con el objeto de apoyar la investigación destinada a adaptar la ciencia y la tecnología a las necesidades de los países en desarrollo. Su actividad se concentra en seis sectores: ciencias agrícolas, alimentos y nutrición; ciencias de la salud; ciencias de la información; ciencias sociales; ciencias de la tierra y ingeniería; y comunicaciones. El Centro es financiado exclusivamente por el Parlamento de Canadá; sin embargo, sus políticas son trazadas por un Consejo de Gobernadores de carácter internacional. La sede del Centro está en Ottawa, Canadá, y sus oficinas regionales en América Latina, África, Asia y el Medio Oriente.

This series includes meeting documents, internal reports, and preliminary technical documents that may later form the basis of a formal publication. A Manuscript Report is given a small distribution to a highly specialized audience.

La présente série est réservée aux documents issus de colloques, aux rapports internes et aux documents techniques susceptibles d'être publiés plus tard dans une série de publications plus soignées. D'un tirage restreint, le rapport manuscrit est destiné à un public très spécialisé.

Esta serie incluye ponencias de reuniones, informes internos y documentos técnicos que pueden posteriormente conformar la base de una publicación formal. El informe recibe distribución limitada entre una audiencia altamente especializada.
MINISIS USERS' GROUP MEETING 1985

Proceedings of the Seventh Annual Meeting of the MINISIS Users' Group

Washington, DC, USA, 28 October -- 1 November 1985

Host: United States Agency for International Development, Bureau for Program Policy and Coordination, Centre for Development Information and Evaluation, Washington, DC, 20523, USA

The papers presented at the meeting are published in these proceedings in the original language of presentation. They are produced as submitted and have not been subjected to peer review or rigorous editing by IDRC Communications Division staff. Mention of proprietary names does not constitute endorsement of the product and is given only for information.
The International Development Research Centre is a public corporation created by the Parliament of Canada in 1970 to stimulate and support scientific and technical research by developing countries for their own benefit. The Information Sciences Division of IDRC has developed MINISIS, a multi-lingual, generalized data base management and information retrieval software package for the Hewlett-Packard 3000 family of mini-computers. The complete package—software, training and on-site implementation—is made available free of charge to non-profit-making organizations in developing countries, and for a fee to other organizations. When they acquire MINISIS, these organizations become members of the MINISIS Users' Group.

The members of the MINISIS Users' Group meet annually to share their experiences and expertise with the MINISIS system, and to participate in discussions with IDRC over the future development of the system. The first meeting, in 1979, took place at IDRC. Since then, other users have taken turns at hosting the annual Users' Group meeting.

The host for the seventh annual meeting of the MINISIS Users' Group in Washington, D.C. was the Agency for International Development (AID), the United States' international development cooperation agency. A MINISIS user since 1981, AID uses MINISIS for the management of their Development Information System (DIS). They have recently developed a menu interface system for MINISIS (described elsewhere in this volume) which they are offering to other MINISIS users as a contribution to the community at large.

The meeting was planned and organized by a special committee made up of staff from the AID Document and Information Handling Facility and other MINISIS users in the Washington area. We would like to thank all the members of the MUG '85 Committee, particularly Lee White and Virginia van Brunt, for ensuring that all the arrangements went so smoothly, from the booking of the conference facilities to the organization of local tours. In addition to their other tasks, this group was responsible for the preparation and publication of a MINISIS Applications Inventory based on responses from a questionnaire mailed out with the registration information.

We would also like to thank Hewlett-Packard for providing computer equipment used during demonstration of MINISIS and MINISIS-related software to the meeting participants.

Finally, we would like to thank all of the participants at the meeting for their presentations, their questions, their criticisms and suggestions. It is in answer to their needs and desires, and in large part because of their efforts, that MINISIS has continued to develop and change.

T.A.G. Gavin
Associate Director
Information Science Computer Systems
International Development Research Centre (IDRC)
Ottawa, Canada
Le Centre de recherches pour le développement international est une corporation instituée en 1970 par le Parlement du Canada pour encourager et subventionner des recherches techniques et scientifiques réalisées par les pays en développement pour leur propre bénéfice. La Division des sciences de l'information du CRDI a mis au point MINISIS, progiciel multilingue qui combine la création d'une base de données, les fonctions de gestion et la recherche de l'information et qui s'exploite sur les mini-ordinateurs de la famille Hewlett-Packard 3000. Le progiciel complet—logiciel, formation et installation—est offert gratuitement à des organisations sans but lucratif de pays en développement et contre paiement d'un droit aux autres organisations. Quand elles se procurent MINISIS, ces organisations deviennent membres du Groupe des usagers de MINISIS.

Les membres du Groupe des usagers de MINISIS se réunissent chaque année pour se faire part de leur expérience et de leurs connaissances en rapport avec MINISIS et pour discuter avec le CRDI du développement du système. La première réunion, en 1979, a eu lieu au CRDI. Depuis lors, d'autres usagers ont, à tour de rôle, servi d'hôte à ces réunions.

L'hôte de la septième réunion annuelle du Groupe des usagers de MINISIS, qui a eu lieu à Washington, D.C., a été l'Agence pour le développement international (AID), soit l'agence de coopération en développement international des États-Unis. Usager depuis 1981, l'AID utilise MINISIS pour gérer son Système d'information sur le développement (DIS). Elle a récemment mis au point une interface à base de menus pour le système MINISIS (décrite plus loin dans ce document), au profit de tous les usagers de MINISIS.

La réunion a été planifiée et organisée par un comité spécial composé de membres du personnel du Centre de manutention de l'information et de la documentation de l'AID, et d'autres usagers de MINISIS de la région de Washington. Nous voulons remercier tous les membres du Comité d'organisation de la réunion de 1985, plus particulièrement Lee White et Virginia van Brunt, qui ont tôt fait pour assurer le bon déroulement de la réunion, de la location des salles de conférences à l'organisation des visites locales. Ce groupe a été chargé, en outre, de dresser et de publier un inventaire des applications de MINISIS (MINISIS Application Inventory), à partir des réponses aux questionnaires qui ont été envoyés en même temps que le formulaire de participation à la réunion.

Nous tenons également à remercier la compagnie Hewlett-Packard qui a bien voulu fournir le matériel informatique qui a servi à faire, aux participants, des démonstrations, des programmes de MINISIS et des programmes connexes.

Enfin, nous remercions tous les participants pour leurs exposés, leurs questions, leurs observations critiques et leurs suggestions. C'est en réponse à leurs besoins, et en grande partie grâce à leur contribution, que MINISIS continue d'évoluer.

Le Directeur associé
Systèmes informatiques des Sciences de l'information
Centre de recherches pour le développement international (CRDI)
Ottawa (Canada)

T.A.G. Gavin
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OPENING REMARKS

Mr. W. Haven North
AID, Washington, D.C., U.S.A.
Welcome to the Seventh Annual Meeting of the Minisis Users Group sponsored by the IDRC. The US Agency for International Development is pleased to act as the host organization for this year's MUG meeting. I am told we have approximately 117 attendees here this morning representing 62 organizations from 28 countries around the world. We are particularly encouraged to see Minisis users attending this meeting from 17 organizations in 12 developing countries. Also 60% of the organizations attending this year's meeting are organizations either from developing countries or organizations whose principal function is supporting development assistance programs.

I approach this subject myself as a novice and depend on Lee White to lead me through the concepts, language, and functioning of Minisis. But since taking on the responsibility for the Center for Development Information and Evaluation in AID, I have come to have a great respect for use of Minisis in the operation of development and other technical information systems.

There is an enormous task ahead in putting to work the information that is available to promote economic and social development. The information age, as some refer to it, is rich in technological developments and owing in the speed and breadth of communications it permits. Perhaps the greatest achievement of the 1984 Olympics was the fact that 100's of millions of people could watch it together. The difficulty in this age of information, however, lies in our ability to choose and get the information that is most pertinent to question at hand.

Our interest in Development Information Systems and Minisis, of course, relates directly to our work with developing countries. Our responsibility in AID is helping to advance the economic growth of the low income countries. Information has a vital role in this effort though this role is perhaps not well appreciated. Information has been described as "organized data, refined into knowledge and combined into wisdom". It is from this base of knowledge and wisdom that we make our decisions as individuals and organizations.

In our work with developing countries we are learning that development related information has some important positive characteristics and some troubling problems.
First information is an important resource in economic growth. It is as important to productive activity as material goods or finance. Clearly some of the considerable achievements in economic growth over the past decade or two are a result of access to information on modern technology. Technological information available to programs in food production, in manufacturing, in health, in education, etc. has been central to the major achievements in these areas of international development.

Also the information business is becoming a major employer itself. In the US, it is projected that some 2/3's of the US work force by the year 2000 will be employed in the information based enterprises. We can anticipate that we will be seeing rapid, exponential growth in information services in the developing countries over the coming decade as well.

As one writer has expressed it: "The productivity of knowledge has already become the key to productivity, competitive strength and economic achievement. Knowledge has already become the primary industry, the industry that supplies the economy the essential and central resources of production."

A second characteristic of information is that it is hard to own or control. Harlan Cleveland of University of Minnesota, in an article "The Twilight of Hierarchy: Speculations on the Global Information Society" makes the point that information is sharable. If I sell you an idea or give you a fact, we both have it. This is not the case with a commodity. "An information rich environment is thus a sharing environment" The spreading of knowledge empowers the larger mass of people not just an elite few. Thus information can have an important role in advancing not only economic growth but more equitable growth. It also reduces remoteness - a problem of so many of the poorest people in developing countries and as elsewhere.

There are however other aspects of information for development that impede its utility to the development process. The most prominent is the overwhelming quantity of information. We have all experienced the problem of trying to keep up with the literature in our own fields of interest. We in AID frequently hear from our field staff "Don't send me anymore information; I have all that I can cope with". An excess of uncontrolled, unorganized information is in effect no information.

There is a second troublesome concern. Inspite of the great supply of knowledge on any one subject, development specialists are making decisions about development projects and technological applications that
are obsolete or uninformed. The recent World Development Report of the World Bank notes: “The aid process indeed has involved a large component of learning from experience. One of the major objectives of donor evaluations programs is in fact to identify and disseminate the lessons from successes and failures. The effectiveness of dissemination not only among donors but also within aid institutions is however considered by many to be inadequate. Lessons learned from aid assessments need to be exchanged among donors and transmitted to aid project managers to a much greater extent that currently occurs” A similar point has been made by the Development Assistance Committee of the OECD.

We ourselves have found instances of project designs prepared, technologies employed and implementation methods used that do not reflect agency experience with what works, what doesn’t work. Thus unsound projects are perpetuated. Opportunities for innovation are missed. The lack of knowledge of the responsible staff and their access to the relevant information were, in part, responsible. Most people working on development tasks operate under extraordinary pressures. They have little time to pull together knowledge on the experience of others. Some of course may feel they know what they need to know. One perhaps can challenge the operating staff for not seeking out the most relevant information. Given the demands on their time and often their isolation from information resources, we should not be overly critical. The source of this problem lies closer to home- in our own information management systems -in the need to be more sensitive to the consumer’s needs and interests.

Development information much like most commodities should be looked on as a resource to be marketed. It means that the consumer’s interest comes first; the processing, packaging, storing and delivery and the product itself must relate to the consumer’s requirements. Without this approach we are in danger of creating a vast and expensive storehouse of unused information. And in time of budget stress these storehouses may be among the first to be curtailed... If however we can establish that information on development issues is as important as money and people, we will see the priority change. The slogan may well be “Doing more with less through better knowledge”

In sum:
- development information is a valuable and essential resource for economic growth;
- it can facilitate broadbased development as well;
yet its utility and contribution suffers from a curious mix of over supply and under relevance, impeded access or simply low demand.

Among the challenges we face is the task to improve the package and the ease of access. This calls for close cooperation between those who are knowledgable about the relevant content of development information and those who are expert in the systems for storing and accessing this knowledge. It calls for a sensitivity to the consumers' needs and an interest in creating a demand for a resource the professional developer cannot do without.

The Minisis program has a key role in development information systems in helping to bridge the gap between supply and demand. I hope you will have the opportunity in your many technical discussions here to focus on the consumer's interest. The question is: How can Minisis in its application be developed further to facilitate, to stimulate a growing response from the development community for development information.

IDRC has taken a lead in developing and maintaining a powerful database software. It is designed to store, organize, facilitate access, and promote effective management and utilization of development and technical information by a wide variety of organizations. More specifically by a large number of organizations in developing countries, international development organizations and bilateral donors.

In developing countries the Minisis software can help bridge the technological gap between external information sources and developing country information needs in support of their economic growth. We are encouraged by the high percentage of development organizations who use Minisis as a principal software package for managing their information collections.

We believe that Minisis is well-suited to supporting all bibliographic, project, institution, expert roster, mailing list, thesaurus, records management, inventory and catalog systems applications for managing development information.

Also there will be many enhancements to the Minisis software developed by IDRC and Minisis user organizations. These will be presented at this meeting for improving system performance, information management capability, and easier access to information. The meeting will provide an opportunity to identify common problems and possible solutions to be
shared among the participants here.

We are pleased that so many of you have been able to come to this conference. In itself the meeting is a symbol of the information age and the spirit of information sharing. We in AID have as our goal helping to strengthen the capacities of developing countries to carry forward their own development. We thus welcome the opportunity to share our own experience and to be enriched by learning from each of you.
USAID DEVELOPMENT INFORMATION PROGRAM

Mr. Lee White
AID, Washington, D.C. U.S.A.
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

DEVELOPMENT INFORMATION PROGRAM

- Serves as "institutional memory" for U.S.-sponsored development activities.
- Program functions fully integrated with information systems via MINISIS
- Provides research and reference tools for project development
- Links official agency records to "institutional memory"
- Integrates bibliographic information system to project management information
- On-demand document or fiche delivery available for data base citations
- Serves as catalyst for transfer of development information to LDC's and USAID missions
# PROGRAM FUNCTIONS

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<tr>
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RELATION OF MINISIS DATA BASE STRUCTURE TO PROGRAM FUNCTIONS

- DOCUMENT ACQUISITIONS/ORDERING
  - PURCHASES DB
    - MICROCOMPUTER TRANSFER
      - SCI-MATE
      - MICRODIS
    - BIBLIOGRAPHIC PROCESSING
      - DOCUMENTS DB
      - PROJECTS DB
      - ABSTRACTS DB
      - THESAURUS DB
      - CATALOG DB
      - INVENTORY DB
      - IDRC FILES
      - ONLINE AID THESAURUS
      - MINISIS INSTALLATIONS
    - USER SERVICES
      - ORDER FULFILLMENT DB
      - MAILING LIST DB
      - CASH CONTROL/ACCOUNTING DB
      - REQUESTOR
    - INVENTORY CONTROL
      - WAREHOUSE STOCK DB
      - EQUIPMENT DB
      - ARCHIVE RETENTION
    - MANAGEMENT/STATISTICAL REPORTING
      - FILES BY ALL FUNCTIONS
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DEVELOPMENT INFORMATION
COMPUTER SYSTEM
CONFIGURATION

7935
404MB DISC DRIVE

7925 (SLAVE)
7925 120MB DISC DRIVES (MASTER)

7925 (SLAVE)
7925 (SLAVE)

7925 120 MB DISC DRIVE (MASTER)

7970E TAPE DRIVE

AID DATA CENTER
IBM HOST

AID INTERNATIONAL
COMMUNICATIONS SYSTEM

USAID MISSIONS

MINISIS
SOFTWARE
• COBOL
• HP/WORD
• TDP/3000
• DSG3000
• SPL

H-P/3000 SERIES 48
[4 MB MEMORY]

H/GIC

H-P/3000 SERIES 48

12 ATP PORTS

ADCC PORTS

LASER JET

2608A DOT MATRIX PRINTER

2619A HIGH SPEED PRINTER

2601A DAISY WHEEL PRINTER (slave)

17 HARDWIRED TERMINALS

(3 MAIN)
(3 EXTENDERS)

MODEMS

12 EXTERNAL USERS

DATA GRAPHIX
IBM/PC
WANG/PC

2601A DAISY WHEEL PRINTER (slave)

12 ATP PORTS

2608A
2622A
2622A
2622A
2622A
2622A
2628W
HP 150

2628W
2626W
2628A

2934A PRINTER (slave)

(2628W)

(2628W)
Operational Problems

- MINISIS Version E→F CONVERSION
  - Print Formats
  - Record Displays
  - Thesaurus Restructure Required
  - COBOL Support Program Problems

- Disk Storage Limitations
- Increased Number of Online Users
- Increased Number of MINISIS Data Bases
- More Time Required to Back Up System
- Increased System Maintenance Requirements
System Configuration Changes Made During Year to Improve Operational Efficiency

- Installed 404MB Disc Drive - Total Capacity = 1GB
- Installed Version F.01
- Tested use of HP 150 PC’s as work stations
Major Highlights/Achievements

- Created Directory and Data Base of MINISIS Installations
- Converted A.I.D. Word List to AID Thesaurus Terms
  - 5440 Terms
  - 3934 Did Not Match; Had to be Converted
  - A.I.D. Thesaurus Now Online:
    - 5000 Main Terms
    - 3285 Related Terms
    - 4985 Narrow Terms
    - 1472 Broader Terms
- Published Two Revisions to A.I.D. Thesaurus
- Performed HP37/MINISIS Testing
- Installed IDRC Data Bases - Developed User Guide
- Improved Security/Access System to HP 3000/48
- Developed Menu System Interface to MINISIS
  - MENUDIS - From User Viewpoint ........ Chris Wolter
  - MENUDIS - Technical Considerations ... Joan Wardell
- Developed DIS/MINISIS Training Program Strategy
Major Highlights/Achievements (Continued)

- Established Exchange Agreements with Qualified Institutions to Access to DIS Technical Information Through IDRC.

- Continued Work on AID/World Bank Exchange Agreement

- Created Pilot Regional Coordinator Position in REDSO/East Africa to Coordinate Transfer Activities

- Provided T/A, Training, and Support on CDIE Information Services to USAID Missions in:
  - Sudan
  - Ecuador
  - Egypt
  - Pakistan
  - India
  - Kenya
  - Haiti

- Supported Mission Sponsored Requests for Host Country Assistance:
  - Senegal - Gambia River Basin Project

- AID International Communications Systems
  USAID/Cairo - Washington Telecommunications Pilot Test

- MICRODIS Development/Testing (dBASE)
  - Supports Uploading/Downloading of MINISIS Files
  - Supports Local Cataloging/Indexing
  - Supports Access to Program Management Guides
  - Supports Access to Current Awareness Promoting Development Information Services

- Utilize HP37 for DIS Testing, Evaluation, and Training

- Created COM Indexes to DIS Technical Information
Future Plans

HARDWARE/SOFTWARE

• Establish RJE Link Between HP3000/48 and AID Data Center IBM Host
  — Permit Larger AID User Base
  — Access to International Communications System

• Officially Release MENUDIS to User Contributed Library
  — To IDRC by 1/1/86 Along with User Documentation
  — Compiled Version Only

• Add Additional Features/Capabilities to MENUDIS

• Release MICRODIS in 2nd Quarter of 1986 Following Pilot Test and Installation in USAID/CAIRO
  — Augment with Additional Features
    - Acquisitions Module
    - Circulation Module
    - Library User Statistical Module
    - Begin Research on Optical Disk Interface

• Investigate, Analyze Expanded Use of HP/PC LAN Within Facility Network

• Experiment with HP LASERJET Plus In Publications Development

• Upgrade Dialup Communications to HP 3000/48
  - 2400 Baud
  - Additional TTY Asynchronous Ports
Future Plans (Continued)

OUTREACH/TECHNOLOGY TRANSFER

- Expand/Train User Base Using MENUDIS
  - Orientation
  - Menu System Training
  - Indepth MINISIS Training

- Examine Feasibility of Expanding Regional Coordinator Role

- Install MICRODIS in Additional USAID Missions

- Provide Training to USAID Mission Development Information Center Staff
MENUDIS USER'S GUIDE (VERSION 1):
A DESCRIPTION OF THE MENUDIS APPLICATION
IN THE AGENCY FOR INTERNATIONAL
DEVELOPMENT ENVIRONMENT

Ms. Chris Wolter
AID, Washington D.C., U.S.A.
INTRODUCTION

The Development Information System (DIS) of the U.S. Agency for International Development (AID) was designed to support AID's information needs for:

- Program and Policy Planning
- Project Design
- Project Evaluation
- Transfer and Application of Development Technologies
- Basic and Applied Research in Development.

DIS provides access to project experience memory for AID development projects, project and program documentation for AID projects, and AID-funded technical research and development materials. DIS contains information on 6,000 development projects active since 1974 and 40,000 related documents.

DIS is maintained through the MINISIS information management system by the AID Bureau of Program Planning and Policy Coordination, Center for Development Information and Evaluation (PPC/CDIE). MINISIS, a software package developed by the International Development Research Centre in Canada, provides automated search capabilities for accessing the DIS.

In late 1984, an increasing number of AID project officers and program planners sought a more easy-to-use means of accessing DIS. To address this need, AID sponsored development of MENUDIS -- a menu-driven system designed to interface with MINISIS in a user-oriented manner.

A user is not required to master any "programming language" to operate MENUDIS. By simply selecting options presented to the user, MENUDIS leads one through the steps required to retrieve AID project or document information from DIS. MENUDIS also enables one to become aware of other services and sources of information available from PPC/CDIE.

The remainder of this manual describes the use of the MENUDIS system. A second manual entitled "MENUDIS Installation Manager's Guide" describes the technical aspects of the MENUDIS system and provides an Installation Manager with procedures for maintaining the tables and programs associated with the system.
SECTION 1

INITIATING A SESSION

The procedures for initiating a session with MENUDIS are common to procedures for initiating online communications with other computer-based systems. Communication with the host computer from a remote terminal is established by dialing into the computer using the appropriate telephone number.

After communication with the computer has been established, the user is asked to identify himself or herself by logging on at the colon prompt (:). The user is then further prompted to enter an account name and password.

Once accepted by the system, another colon prompt will appear. The word MENUDIS is typed in at this prompt in order to access the MENUDIS system. Several displays welcome the user and provide explanatory information about the system, followed by a menu of options which allow searching of databases on the system or retrieval of news and other textual information.

As explained in these introductory displays, there are several MENUDIS features which assist the user in understanding more about the options available in any menu, and in moving from one menu to another:

HELP IS ALWAYS AVAILABLE

MENUDIS provides textual explanations of its processes for every menu screen. If the options available at most points in MENUDIS are not clear, one can key in HELP at the colon prompt for additional information.

EXIT IS ALWAYS POSSIBLE

EXIT may be keyed at almost any time during MENUDIS operations. Keying EXIT will return the previous menu to the screen. Repeated keying of EXIT will display each previous screen until the first menu is displayed. Keying EXIT at the first or main menu will EXIT the user completely from MENUDIS.

The menu options currently available in MENUDIS are described in the following sections.
SECTION 2
SELECTING A MENU OPTION

The user is asked to select from among the following main options available (see Figure 1):

SEARCH A DATABASE

The user selects this option to retrieve information from AID's Development Information System (DIS). Databases of AID project information, AID document information and non-AID documents found in the AID Library are currently available. It is planned that other selected MINISIS databases will be available.

NEWS

This option allows one to view current information about recent and upcoming PPC/CDIE activities and about DIS developments. Information available under this option will be updated on a regular basis.

PROJECT MANAGER'S GUIDE

This option provides useful reference material for the planning, design, management, analysis, monitoring and/or evaluation of selected types of AID projects. The guides are intended to provide a concise overview of relevant issues and information pertaining to particular topics. Presently, MENUDIS offers the Potable Water Guide. Additional Project Manager's Reference Guides will be offered when available.

REFERENCE DESK

This option provides information on other information resources available at AID, such as the AID Library, research and reference services and commercial database services.

Sections 3-6 of this manual explain how to use each of the main menu options described briefly above.
FIGURE 1

MENU 0: MENUDIS

1. SEARCH A DATABASE
2. NEWS
3. PROJECT MANAGER'S GUIDE
4. REFERENCE GUIDE
SECTION 3
SEARCHING A DATA BASE

Selecting a Data Base

When the user chooses to search a database, a screen appears containing a list of databases which may be searched. The user selects the number which identifies the database of his/her choice (see Figure 2).

Selecting OPTIONS

After a database has been selected a menu appears which allows one to conduct a search of that database. Its display is in two parts: OPTIONS appearing on the left and FIELDS appearing on the right.

OPTIONS represent different steps which can be taken to help the user retrieve information, and are the same for every database. OPTIONS available are (see Figure 3):

OPTION 1: BEGIN A SEARCH

This option must be selected to begin the first search or begin a new search after completing a previous search.

Immediately following this selection, one is asked to select the FIELD one wishes to search. Following this, one is asked to enter the TERM one wishes to search on, appropriate to the field selected. After terms are retrieved, MENUDIS displays the field selected, the term(s) selected and the number of items found. At this point, one can choose another field to search, or search the same field with another term, or choose another option.

Options 2 through 4 assist the user in structuring his/her search strategy. They allow the user to display terms found in the database, review and combine search statements already created, and display references retrieved from a search statement. Finally, Option 5 is used to prepare a printed report of search results, if desired. Each of these options is described more fully below.

OPTION 2: SHOW SEARCH RESULTS AND COMBINE

This option numbers each search statement in the order entered and displays the fields searched, terms, and number of items found. Selecting this
FIGURE 2

MENU 1: SEARCH A DATABASE

1. SEARCH AID DOCUMENT INFORMATION
2. SEARCH AID PROJECT INFORMATION
3. SEARCH NON-AID DOCUMENT INFORMATION
4. SEARCH MINISIS SITES AND MUG 85 ATTENDEES
FIGURE 3
SEARCH AID DOCUMENT INFORMATION

<table>
<thead>
<tr>
<th>OPTIONS</th>
<th>FIELDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. START A NEW SEARCH</td>
<td>6. DOCUMENT ID</td>
</tr>
<tr>
<td>2. SHOW SEARCH DONE SO FAR OR COMBINE</td>
<td>7. AID PROJECT NUMBER</td>
</tr>
<tr>
<td>3. DISPLAY TERMS FOR SEARCHING</td>
<td>8. TITLE</td>
</tr>
<tr>
<td>4. DISPLAY DOCUMENTS FOUND</td>
<td>9. DESCRIPTORS</td>
</tr>
<tr>
<td>5. PRINT A REPORT OF CURRENT SEARCH</td>
<td>10. PERSONAL AUTHOR</td>
</tr>
</tbody>
</table>
option also allows one to combine any of the displayed search statements using Boolean operators. Boolean search techniques are explained in the HELP message for this screen. When finished, EXIT is entered to return to the previous menu.

OPTION 3: DISPLAY SEARCH TERMS

After choosing this option, one must first select the field one wishes to display appropriate terms for. After selecting a field, for example TITLE, valid terms and number of items for each term are displayed. When finished displaying terms for the field chosen, one is given the option to select another field to be displayed. When no other fields are desired, the user responds to the prompt, "FIELD TO BE DISPLAYED:" with EXIT to return to the previous menu.

OPTION 4: DISPLAY DOCUMENTS FOUND

By selecting this option, the documents found in the last search statement created are displayed on the screen. Also displayed are the field and term selected, and the number of documents found for the search statement being displayed. A specific document may be viewed by entering its number. For example, to display the 10th document found in a set, the user would type in "10". When finished displaying documents, EXIT is keyed to return to the previous menu.

OPTION 5: PRINT A REPORT

This option allows the user to prepare a printed report of the last search statement created. Limitations on the number of records that can be printed vary with each database. AID document information reports are arranged alphabetically by title; AID project information reports are arranged sequentially by project number.

Choosing a FIELD to Search

The right portion of the SEARCH A DATABASE menu differs with each database being searched (for example, see Figure 3). The first five fields available for searching appear in this display. If more than five fields are available, they will be listed when HELP is keyed.

A FIELD is selected only after choosing OPTIONS 1 or 3.
SECTION 4:

NEWS

Information available by selecting this option includes (see Figure 4):

1. DIS System Developments
2. PPC/CDIE TDY Trips
3. PPC/CDIE Meetings and Conferences.
4. The Weather
5. MUG '85 Conference Information

Choosing any of the above selections will allow one to view additional text describing the activity selected. The narrative is updated on a regular basis.
FIGURE 4

MENU N: MENUDIS NEWS

1. DIS SYSTEM NEWS
2. PPC CDIE TDY TRIPS
3. PPC CDIE CONFERENCES AND MEETINGS
4. THE WEATHER
5. MUG 85 CONFERENCE
SECTION 5:
PROJECT MANAGER'S GUIDE

At this time, the one option available from AID is the Potable Water Guide. After choosing to view this Guide, a list of 29 sections contained in the Guide is displayed (see Figure 5 for an illustration of the first seven sections available). The user can choose to view any or all sections of the Guide as relevant to his/her needs.
POTABLE WATER GUIDE IMPACT EVALUATIONS

1. INTRODUCTION

2. POLICY AND PRIORITIES

3. OPERATIONAL ASSUMPTIONS

4. ISSUES

5. WHAT TENDS TO WORK WELL

6. SITE SELECTION

7. FEE STRUCTURES AND COST RECOVERY
Options available through this menu are as follows (see Figure 6):

1. The AID Library
2. The Economic and Social Databank
3. Commercial Databases
4. AID Research and Development Abstracts
5. PPC/CDIE/DI Technical Services
6. USDA Technical Inquiries Service

Selection of any one of these options provides the user with a textual explanation of these information services and how one can obtain these services.
FIGURE 6:
MENU R: REFERENCE DESK

1. THE AID LIBRARY
2. THE ECONOMIC AND SOCIAL DATABANK
3. COMMERCIAL DATABASES
4. AID RESEARCH & DEVELOPMENT ABSTRACTS
5. PPC CDIE DI TECHNICAL SERVICE
6. USDA TECHNICAL INQUIRIES SERVICE
MICRODIS

Mr. Paul Howard
Mr. Brian Bohall
AID, Washington, D.C., U.S.A.

I. INTRODUCTION

AID maintains in excess of 60 missions located throughout the world. Many of these missions contain small library/information centers. CDIE/DI is charged with providing technical as well as informational support to these centers. After evaluating the difficulties associated with supporting so large a number of sites it became obvious that in order to perform its duties, CDIE would have to provide some type of automated system. Further evaluation indicated that it would be impractical to advocate that each mission install their own personalized information system. As a result it was decided to develop a microcomputer based information system which could be uniformly installed at all locations. MicroDIS is the result of this decision.

II. DESCRIPTION

MicroDIS is a modular library/information center automation package. It is menu driven and it is written using dBase III (a database package from Ashton-Tate). The dBase III code is compiled using CLIPPER (a package from Nantucket, Inc.). The resulting executable module runs considerably faster than the original dBase III code, however, the integrity of MicroDIS is not compromised. This means that MicroDIS will run identically whether using native dBase III code or the compiled code. Currently, MicroDIS will run in compiled form on any IBM or fully compatible PC. In addition, MicroDIS will run, using native dBase III code, on a WANG PC equipped with an IBM emulation board. Regardless of the equipment used, it is necessary for the microcomputer to have a hard disk. It is estimated that MicroDIS will require 1MB of storage per 1000 items in the collection. MicroDIS maintains approximately 25 fields of information on each entry in the database. In addition, inverted files which enable fast access searching on such fields as author names, titles, and descriptors are maintained.

III. MODULES

MicroDIS is made up of six distinct modules. They provide most of the functions required by a mission library/information center:

Acquisitions: While not yet available, this module will permit the local library/information center to keep track of pending additions to the collection. In addition, it will produce management reports on demand.
Catalog: This module provides the basic processes required to maintain an on-line collection catalog. It includes facilities to add, modify, delete, search, and report on the collection. In addition, it includes a series of utilities which allow the user to backup and restore the database, import and export data, consolidate the storage, and redefine the document identification number.

Circulation: While not yet available, this module will provide the local library/information center with the means to keep track of items from its collection as they are placed on loan and returned. In addition, it will produce management reports and overdue notices on demand.

Daily Log: While not yet available, this module will permit the local library/information center staff to record their daily work effort and classify the tasks performed into ten categories (i.e. searching, xeroxing, acquisitions, etc.). Reports will be produced, on demand, showing distribution of work load using both raw numbers and percentages.

Reference Desk: This module contains several functions associated with an information center. It provides access to text files. These files contain (1) news (clippings), (2) other sources (names, addresses, descriptions of service, and contact points at other library/information centers), and (3) the AID project manager's reference guides. The news and other sources files are under the control of the local user and can be altered to reflect the needs of the local installation. The reference guides will be supplied by CDIE as they become available.

Tutorial: This module is not yet available. When developed it will provide an on-line training tool for new users of the MicroDIS system.

IV. FUTURE DIRECTIONS

Future enhancements to MicroDIS include creation of a version which will run in a multi-user environment making it possible to install it on a local area network (LAN). In addition, AID is investigating the use of high density, mass storage devises (optical/laser disk). This will enable MicroDIS to store, on-line, large amounts of textual information as well as diagrammatic and tabular information. Currently the cost of such devices are prohibitive for use within the AID community, however, it is anticipated that within the next few years such devises will become available at an affordable price.

V. SUMMARY

MicroDIS is currently undergoing development and refinement. It has recently undergone an preliminary test in Cairo. As a result of this test, MicroDIS is being streamlined in operation and enhanced in capability. Pre-release testing is scheduled for early 1986 with general availability scheduled for late 2nd quarter, 1986. While MicroDIS is being developed for installation in USAID missions, it will be made available, on a case-by-case basis, to qualified developing country institutions. Questions concerning availability should be directed to USAID/PPC/CDIE.
THE COMPUTER OPERATIONS AND APPLICATIONS SECTION
IDRC: THE TEAM'S ROLE AND ACTIVITIES

Mr. Alain Lamirande
IDRC, Ottawa, Canada
I. Introduction

The Computer Operations and Applications Section constitutes one of the three teams forming the Computer Systems Group, within the Information Sciences Division at I.D.R.C.

Its personnel consist of four staff members:

Richard Palmer, Head, Computer Operations and Applications
Alain Lamirande, MINISIS Applications Analyst
Bill Swift, I.S. Computer Systems Coordinator
Lorraine Vinette, Computer Operator/Secretary

This section is most likely unknown or invisible to MINISIS users due to the nature and scope of its work. Through this presentation I hope to correct that fact especially by addressing two activities which fall under our responsibilities: the User Contributed Library and the Benchmarking of new MINISIS versions.

As its name indicates, the Computer Operations and Applications Section is responsible for the operations of the Information Sciences' HP 3000 computer as well as for providing technical support to the in-house applications operating on that computer. The section also provides technical advice and assistance to Information Sciences' program staff and participants in projects of the Division. In the future, the section will become more actively involved in assisting with the training of MINISIS users.

My role, as MINISIS Applications Analyst, is to provide support to the users of the computer in many different ways and throughout the various phases of their applications (i.e. design, implementation, training, continuous maintenance and enhancement).

Via the use of several HP products (both software and hardware) and of the MINISIS package as applied to a variety of usage (be it bibliographical, administrative, correspondance, etc.) we definitely constitute a valid testbed for features introduced by the Future Systems Section, the team which develops and maintains MINISIS.

Our acquired experience as a MINISIS user as well as in depending on and evaluating several other computer products provides valuable resources of knowledge available to the MINISIS Outreach Section and to the entire MINISIS user community.
II. The User Contributed Library

As stated earlier, the User Contributed Library constitutes one of the many responsibilities of the Operations and Applications Group.

Upon the reception of the coming new release of MINISIS, it will be easy to appreciate the extended amount of work that was achieved between version F and version F.01.

This can be defined in terms of quantity, going from 6 to 42 new or revised contributions (i.e. a 700% increase). However the perception of the amount of work accomplished should also be made towards the structure of the contributions account and of the state of these contributions.

The nature and amount of contributions with their related submitted files and documents lead to the restructuring of the MINLIB account along with some discussion about the establishment of a policy regarding the UCL.

Part of the restructuring included the establishment of 7 groups (PUB, DOC, SOURCE, OBJECT, EXAMPLE, MINFILES and QUERY) as well as the creation of a temporary account parallel to MINLIB for testing purposes. Once a contribution proves to be fully successful in compilation (via the related MINFILES job) and in execution, plus accompanied by a minimum of documentation, guidelines are followed in placing all related files in the proper groups of the MINLIB account under related names if possible.

All contributions are indexed and easily searchable in the USERLIB database system which is also located in the MINLIB account. All contributions related files are mentioned in USERLIB which contains two inverted fields: NAME and the newly created TOPIC field.

In the subsequent release, plans have been drawn to further enhance the UCL by supporting all of the account's information especially in regards to the USERLIB database and to all IDRC's contributions in Canada's both official languages: English and French.
Much discussion occurred regarding the establishment of a policy about the contributions. While trying to encourage all MINISIS users to submit openly any work which could profit the MINISIS community, the policy draft addressed two issues:

a) the 2 minimum requirements of acceptability:
   i) a working source code;
   ii) a minimum document (preferably on magnetic tape or cartridge) explaining the purpose and possibly the context, i.e. parameters.

b) the definition of our responsibility in regards to:
   i) the verification and compilation of the source code;
   ii) our impartiality towards all contributions;
   iii) respecting the wishes of the contributor as to whether the source code will be distributed or not;
   iv) the editing of files submitted (limited to the standardization in implementing the contribution within the MINLIB account).

As the MINISIS distributor, all of the above activities are accomplished under our responsibility: management of the MINLIB account and of the USERLIB database, evaluation and implementation of all contributions.

As a MINISIS user, we further evaluate a contribution by incorporating it as an integral part of some of our own application structure. Just to name a few, at IDRC, most thesaurus related contributions (VERIFY, ARBO and RELATE) and special exits (PATCHCHECK, MANDEF and VALNUM) as well as for other programs or exits are now part of several applications' process and production such as the LIBRARY thesaurus construct and the MAILING list validation and code pattern checking.

Who knows: one of your contributions may well become a crucial process in one's application or help another user to find a missing MINISIS link!
III. Benchmarking

As stated earlier, our site constitutes one of the many user applications on the same level as any of your organizations' system. We just happen to be a bit closer to the developer. Therefore, we have the opportunity (with both positive and negative consequences) to install and test new versions ahead of the other users. The testing carried out by the Computer Operations and Applications Section supplements the testing done by Future Systems. It is by no means a complete test of every feature of MINISIS but a test of the software is our user environment.

Benchmarking is hence performed on a sample drawn from our major application: the library system.

This system is chosen for its importance in terms of:

a) nature (MINISIS was essentially designed for bibliographical databases)
b) size
c) amount of resources it takes on the system (approximately 50%) and finally
d) the great variety of activities frequently and constantly achieved (through all processors and sub-commands).

Basically, a sample of 10% is taken from the real system and processed via both old and new versions in the following set of activities:

1) dump with ISOCONV
2) reinvert key fields
3) build thesaurus
4) test various reports (QUERY/INDEX/PRINT and QUERY/INDEX/COMPUTE/PRINT sequences)
5) global modifications and releases
6) garbage clean-up and INVERT/Treemant

Another part of the benchmarking takes place. It consists in testing all possible types of DS join databases on which data sets are printed through both versions.

Overall, throughout the benchmarking process, all results are scrutinized with special attention given to

a) obviously old (corrected) or new (to be immediately corrected if possible) problems
b) differences in output (however not considered as problems)
c) differences in elapsed and CPU time (at all levels and steps).

The benchmarking is not considered to be perfect but it seriously makes an effort at getting an estimate hence conclusive about a new version.
The testing procedure is constantly revised and adapted to reflect changes to the real application (in our context being the Library system) and changes and enhancements to MINISIS.

It is evident that not all problems can be addressed. However, in the same framework as at our site, all MINISIS users are encouraged, upon receiving a new release, to perform their own benchmarking process (or other testing procedure) upon their own application and to communicate with us any problem encountered.

IV. Summary

This is a brief general overview of some of the activities of the Computer Operations and Applications Section of the Computer Systems Group. In the future, the section will be playing a more visible role in the support of the MINISIS program of the Information Sciences Division particularly in the area of training as well as technical advice and support.
<table>
<thead>
<tr>
<th>Module</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRISGEX</td>
<td>ISOCONV exit which dumps AGRIS geographic and object code fields into MINISIS fields. See also ISOAS.SOURCE.MINLIB.</td>
</tr>
<tr>
<td>ARBO</td>
<td>Program to list a thesaurus in its hierarchical display structure.</td>
</tr>
<tr>
<td>AUDITCHK</td>
<td>Program to monitor constant growth of a file, renaming it if EOF close to LIMIT, and creating new similar empty one with old name. Designed originally to check audit trail files.</td>
</tr>
<tr>
<td>BASUPORT</td>
<td>Set of external routines and intrinsics used in various AGRALIN contributions.</td>
</tr>
<tr>
<td>CARDEX</td>
<td>Serials registration module. See CARDEX documentation, particularly Section 5, for complete information on how to run.</td>
</tr>
<tr>
<td>EXTRACT</td>
<td>DATADEF Function code exit (USER'GENKEY call) providing three different types of key extraction. Affects all processors dealing with key extraction upon inverted fields (QUERY, ENTRY, MODIFY, INDEX, DATADEF, INVERT).</td>
</tr>
<tr>
<td>FILING</td>
<td>Two separate INDEX exits, FILING and FILING2, which modify the sorting sequence according to some pre-defined criteria. One possible use is to interfile numbers with letters (e.g. &quot;1&quot; as &quot;one&quot;).</td>
</tr>
<tr>
<td>GENDATAE</td>
<td>Menu-type program to 1) update/add entries, 2) delete entries, and 3) list entries, from MINISIS databases.</td>
</tr>
<tr>
<td>IBMSTRIP</td>
<td>The IBMSTRIP program strips off the first 8 bytes (binary length of the block and of the record) from tape records (usually IBM format).</td>
</tr>
<tr>
<td>INSERT</td>
<td>Batch MODIFY program which inserts an occurrence of a specified field in record. Input can be an INDEX output file or an ASCII file.</td>
</tr>
<tr>
<td>ISOAR</td>
<td>Converts AGRICOLA tapes in MARC II format to ISO 2709 format so that they can be dumped to a MINISIS data base.</td>
</tr>
<tr>
<td>ISOAS</td>
<td>Converts AGRIS ASCII tapes to ISO 2709 format so that they can be dumped into a MINISIS data base using ISOCONV.</td>
</tr>
<tr>
<td>ISOBI</td>
<td>Converts BIOSIS (Biosciences Information Service) tapes to ISO 2709 format so that they can be dumped to a MINISIS data base.</td>
</tr>
</tbody>
</table>
ISOCA: Converts Chemical Abstracts tapes to ISO 2709 format so that they can be dumped to a MINISIS database.

ISOCB: Converts CAB (Commonwealth Agricultural Bureaux) tapes in 8600-byte format to ISO 2709 format so that CAB records can be dumped to a MINISIS database.

ISOFS: Converts records on FSTA (Food Science and Technology Abstracts) tapes to ISO 2709 format, so that they can be dumped to a MINISIS database.

JOURNALX: ISOCONV exit written for the CAB (Commonwealth Agricultural Bureau) Abstracts database. It converts the JOURNAL ISSUE INFORMATION field to ASCII format. This exit is directly linked to the ISOCB program.

LCSORT: INDEX exit to sort LC call numbers.

MALMARCJ: Update of IDRC's MALMARCX exit. Processes 100-byte rules and adds pre-literals. No documentation, but comments in source file indicate changes made to original MALMARCX routine.

MALMARCX: ISOCONV exit to process subfields on MARC tape, where there are more than 9 subfields in field. Documented in MINISIS Newsletter, Vol. 2, No. 2 and released under Version E.

MANDEF: ENTRY/MODIFY record-level exit which checks for presence of certain fields and inserts specified default values into fields.

MARCEXIT: Set of eight exits which support MARC format in MINISIS.

MARCSUB: Program to massage repeatable subfields on MARC tape before running ISOCONV with MALMARCX exit.

MATCHUP: Thesaurus development tool which compares two INDEX files and reports non-matching values.

MATCHVAL: INDEX exit which allows user to perform free text search on INDEX keys.

MENU: Public query interface, i.e. Menu-Driver. Original example files require reworking before demonstration.

MENU1: Public query interface, i.e. Menu-Driver. This is an update of the original MENU program which begins with an additional terminal-type selection. All EXAMPLE files ready for demo or easy set-up once MEN1UDC.EXAMPLE.MINLIB or MEN1YUDC.EXAMPLE.MINLIB is set as UDC.
ENTRY/MODIFY exit to perform modulus 11 checking on any string of length from 2 to 15. Ideal for ISSN, ISBN, or other number types of validation.

ENTRY/MODIFY field level exit matching data to pattern table.

Program which calculates percentages out of frequency numbers from COMPUTE/PRINT output file.

Thesaurus-building tool which automatically creates term/narrower term records from manually-entered term/broader-term records.

Program which purges the contents of the security profile (usually KSAM SECUKEYD.SECU file) from non-SYSCHEMA databases and users not in account.

Program which lists the entire contents of the security profile (usually KSAM SECUKEYD.SECU file) flagging out non-SYSCHEMA databases and users not in account.

Program demonstrating various MINISIS intrinsics calls.

Program to allow user to switch to another group and/or account without re-logging. Requires PM capabilities.

Utility for checking records in a Master database. It can identify records with corrupted directories.

Utility for checking MINISIS B-tree and KSAM inverted files.

INDEX exit which allows user to perform free text search on any field.

Entry/Modify exit to manipulate Universal Decimal Classification (UDC) numbers.

The UNIMARC program strips the binary IBM blocking factor (8 bytes) off of UNIMARC tape records. It also handles logical records greater than 4096 bytes for entry (through ISOCONV) into a MINISIS database.

ENTRY/MODIFY field-level exit which validates field for numeric content.

Thesaurus-building tool which lists incomplete structural relationships by comparing INDEX output files.
INTRODUCTION

In collaboration with CENAGRI, BRASIL, we developed the MICRO DATA ENTRY PACKAGE to permit peripheral nodes in an information network to contribute references on diskette to a central site. The system was designed to allow the remote sites to do much of the validation and modification of the bibliographic records before sending them to the central site for further processing and searching.

The system permits the definition of database schemas, the entry and modification of records, and the displaying of records with user-defined print formats to the screen, to disk files or to the printer. It allows backup and garbage collection of databases, and the exchanging of database records in formats acceptable to MINISIS, ISIS and AGRIS installations.

A major constraint in most microcomputer configurations is the amount of data that can be stored on a floppy diskette. This micro system can accommodate databases that are split across several diskettes. The database manager can allocate the number of segments and the file space required for his database. The number of diskettes allocated may be increased at any time.

The system was designed for 16-bit micro computers, with a minimum of two disk drives or a hard disk, and with 256k RAM memory. Currently, the system can be run on the IBM PC and IBM PC compatible micro computers, including the CORONA, COLUMBIA, HP150 using MS DOS1.1 or later versions. The package is available free of charge to governmental and non-profit organizations in developing countries.

The source of the system will be distributed, to allow users to enhance the system, to add modules, or to rewrite the machine dependant routines to enable the system to run on a micro that is not compatible with the IBM PC. The programming language used was PASCAL. Only a subset of ISO PASCAL, common to most PASCAL compilers, was used, in order to make the package portable. Approximately five percent of the code is operating system and machine dependant. A few of these machine dependant routines are written in the assembly language to increase the response time of processors.

To install the system, the central site will run a series of programs that execute in approximately two hours. These programs will create and load seven system files. The package makes extensive use of the database format. There will be the user bibliographic databases, the database that will store the definitions of all user bibliographic databases, another database to store the definitions of all print
formats designed for user databases, and one to store the error and diagnostic messages and system parameters.

The files that store these databases reside on the system diskette. Other system files include the syntax tables, a disk directory file for the organization of database segments, and the data file for storing print formats.

The system files can be translated into different languages. The files translated would be the syntax table files, the definition file of the system database, and the message file, containing warning and error messages, diagnostics and date parameters.

With the system files, the database manager is ready to define bibliographic databases. Once the database definition is defined, the system diskette can be copied and given to each remote site. Each site can now enter bibliographic records into their database. Filling out the input sheet and then typing it, could be eliminated if the database definition reflects the input sheet. Some verifications can be done automatically by the ENTRY processor as the information is typed into the database. Those records can be dumped onto a new diskette in a format acceptable to the central site, and that diskette mailed to them. At the central site, the data can be loaded into the main database using their input and verification program.

The backing up of user databases is enforced at an interval determined by the database manager. The interval is stored in the system files. When the interval is reached, no access is permitted to the database until the backup is done.
THE SYSTEM PROCESSORS

The processors that currently exist are DATADEF, ENTRY/MODIFY, PRINT, EXCHANGE, BACKUP, and DUMP. Each of these processors, except the DUMP program, require the system files be mounted. Each processor has HELP menus to provide you with brief explanations of the available commands.

The DATADEF Processor

This processor allows you to create new database definitions, edit existing definitions, verify the database definitions, allocate the segments of the database, erase or purge segments of a database, and list in tabular format the existing databases defined in your set of system files.

The maximum logical record length of a database record is 4096 bytes. Records can be chain-linked together and treated as a large logical record, greater than 4096 bytes. The maximum field length is 4000 bytes. Fields can be elementary, subfielded or subfields of a subfielded field. Any of these types can be repeatable. The maximum number of fields defined can be approximately 256. The maximum number of repetitions of a field (elementary, subfielded or subfield) is limited to the amount of space left in the logical record.

When creating a new relational database, you will be prompted for the following information:

type of definition (RD/CD) -
DATABASE TYPE -
PHYSICAL DATA FILENAME -
PRINT FORMAT NAME -
AUTO-NUMBERING INDICATOR {Y|N} -
NUMBER OF ISNS FOR INITIAL SEGMENT -
DISKNAME FOR LABEL OF DISKETTE -
**EDIT FIELD DEFINITION**

ENTER COMMAND - ADD field
FIELD TITLE -
SUBFIELDED FIELD {Y|N} -
SUBFIELD {Y|N} -
SUBFIELDED FIELD IDENTIFIER -
MAXIMUM FIELD LENGTH - 200
NUMERIC DATA {Y|N} -
NUMBER OF DECIMAL PLACES -
REPEATABLE FIELD {Y|N} -
MAXIMUM NUMBER OF OCCURRENCE -
FIELD SORTING {Y|N} -
ASCENDING ORDER {Y|N} -
ALPHABETICAL CHECKING {Y|N} -
ALPHANUMERIC CHECKING {Y|N} -
FIELD MASK -
VALUE LIST -
"MANDATORY FIELD" CONDITION -
"FORBIDDEN FIELD" CONDITION -
"PROMPT FIELD" CONDITION -

When creating a new correspondence definition, you will be prompted for the following information:

type of definition (RD/CD) -
TYPE OF EXCHANGE FORMAT -
RECORD LENGTH OF EXCHANGE FILE -
FIELD DELIMITER -
EBCDIC EXCHANGE FILE {Y|N} -
ISN RECORDED ON REC' ID {Y|N} -

**EDIT FIELD DEFINITION**
ENTER COMMAND - ADD field
EXCHANGE IDENTIFIER -
SUBFIELDED FIELD {Y|N} -
SUBFIELD NUMBER -
SUBFIELD DELIMITER USED IN EXCHANGE FILE -
The ENTRY/MODIFY Processor

The ENTRY/MODIFY processor allows you to enter new records, edit old records, delete records, lock records for modification, purging and printing, and unlock records.

When locking, unlocking or purging records, the records can be listed on the screen to allow you to verify that you have chosen the right records. When listing a record within ENTRY, any existing print format can be specified.

If autonumbering is not enabled for the database, you will be prompted to select the record numbers. If auto-numbering is enabled for the database, the next available ISN will be presented. You will be prompted to enter data into all fields defined for prompting. The fields are prompted in the order that they are defined in DATADEF. Entering a null value into a field defined as mandatory is not accepted. Nor is a value accepted if a field is defined as forbidden. If the mandatory field is repeatable, at least one value must be entered. ENTRY will prompt for repeatable fields until a null value is entered or the maximum number of occurrences is reached.

The contents of a field can be transferred to another field. Records can be appended to another record. The joined records do not have to have consecutive or ascending ISNs. Appended records are retrieved for modification or printing by referring to the master ISN of the logical group, together.

The PRINT Processor

The PRINT processor allows you to define print formats for displaying records to the terminal, printer or disk file. The processor allows print formats to be edited or purged, and the definitions of the format can be listed on the screen or printer.

Print formats are defined in three parts: page specification, page heading specification, field format specification. The formats are generally database specific, but may be used for any database defined within the same system files and which contains the fields that have been included in the print format. The current date can be printed in six different formats. Subfields can be grouped within their subfielded field occurrence. Literals can be suppressed for repeatable occurrences.

Records selection is done by ISN only. Control-C or Control-break can be used to stop printing the selected range. Appended records will be printed by referencing the first record of the group.
The BACKUP Processor

The BACKUP processor performs backup and garbage collection functions on individual segments of databases. The STORE command will store only active records, ignoring records that were deleted in ENTRY and will reset the retention period. The RESTORE function retrieves wasted space, restoring only the active records from the previously stored file. The REORG function performs a GARBAGE collection on segments with logically deleted records by executing the STORE and RESTORE commands on the same segment and resetting the retention period. The MERGE function will merge records from two or more segments into a new segment.

The EXCHANGE Processor

The main function of EXCHANGE is to format the bibliographic references in the remote site's database, in a simple line format, into a file on a diskette. This diskette can be sent to the central computer installation and loaded into the MINISIS, ISIS or AGRIS database. The exchange program will compress records so that there is not wasted space. Only those records you choose are stored in the file to be exchanged. Records are stored in 256 byte physical blocks. Where a line will not fit into a physical block, it will be continued into the next block. Each line will be preceded by a length count of that line. Zero length indicates the end of the file.

The format of the exchange records will depend on the CD designed by the database manager in DATADEF. The database records can be exchanged in EBCDIC or ASCII format. The database manager decides upon the length of the lines, the format of records, and selects the fields to be exchanged.

The DUMP Processor

The DUMP program will print the EXCHANGE output file to the line printer, screen or to another disk file in a line format, to allow you to examine the file that will be sent to the central site.
HEWLETT-PACKARD'S INTERCONTINENTAL SUPPORT

Mr. Paul Balnys
Hewlett-Packard, Cupertino, California, U.S.A.
WORLDWIDE CUSTOMER SUPPORT

Service Offices

300 Across 79 Countries

Customer Engineering Operation
3,780 CE's

Application Engineering Operation
2,410 SE's
HP’s Total Support Solution

PLANNING
- Understand and Recommend

IMPLEMENTATION
- Install and Implement

OPERATION
- Support and Enhance

HP’s Support Programs
- AD&I, HP-ASSIST
- On-Site Repair
- Network Consulting
- Customer Education
- Performance Consulting
- Return to HP Repair
- Project Centers
- Long Term Support

HP’s Support Process
Understand & Recommend

- Sales Support
- Consulting
- Customer Education

Understanding and Recommend

Planning - Implementation - Operation
HP Support Provides:

Expertise

- INDUSTRY
- APPLICATION
- PRODUCT
- TECHNOLOGY
- PROJECT MANAGEMENT

In Order to . . .
Understand Your needs & Recommend Your best solution
Install & Implement

AD&I, HP-ASSIST
Project Centers
Education
Network & Performance
Consulting

PLANNING

IMPLEMENTATION

OPERATION

Install and Implement
HP Support Provides:

System Installation

System Integration

Initial System Start-up

HP Assist Services

As Well As . . .
HP Support Provides:

Custom Project Consulting

Customer Education

- User Courses
- Application Courses
- Management Seminars

In Order to . . .
Your solution effectively
Implementation

&

Your solution effectively

Install


Enhance & Support

PLANNING  IMPLEMENTATION  OPERATION

Performance
Consulting
Return to HP Repair
On-Site Repair
Customer Education
Long Term Support

Enhance and Support
HP Support Provides:

- SOFTWARE SUPPORT
- MAINTENANCE & CALIBRATION
  - On-Site & Return to HP Agreements & Per-Incident
- LONG TERM SUPPORT
- ONGOING CONSULTING SERVICES
  - Performance Analysis
  - Capacity Planning
  - Custom Projects
- RESPONSE CENTER SUPPORT
- CUSTOMER EDUCATION
  - User & Application Courses
HP's Worldwide Customer Support Organization

Executive V.P., Marketing & International

Worldwide Customer Support Manager

Support Materials
- Corporate Parts Center

MAS Systems Support

Application Support Division
- Consulting
- Project Services
- AD&I
- HP-ASSIST
- Customer Education

Product Support Division
- Software Support
- Hardware Support
- Workstation Support
- CE Training

Response Center Operations
- Santa Clara
- Atlanta
- Pinewood
- Knowledge Systems Lab
HP Support And You

You

Your Local HP Support Resources

Applications Engineering Organization

Customer Engineering Organization

Response Center

• Sales/Marketing Support
• Account Management
• Customer Education
• Consulting
• HP-ASSIST
• Project Management
• Contract Programming

• Hardware & Software Remote Support
• Predictive Maintenance
• Telephone Software Assistance
• Software Problem Resolution
• Software Updates Patches
• Central Data Base
• After Hours Dispatch

• On-Site Hardware Maintenance
• Local HP Service Center
• Cooperative Support
• Customer Escalation Center
CHOOSE HEWLETT-PACKARD SUPPORT SERVICES

LOCAL ACCOUNT TEAM
- You know who you’re working with
- HP gains an understanding of your business needs and application
- Highly trained field engineers
  - High quality of service delivery
  - Can tailor service to your needs
  - Develop working partnership

FLEXIBLE SUPPORT SERVICES
- Many options from which to choose
  - Pay for only the services that are needed
  - Support can change as your business needs grow and change

LEADING EDGE IN SERVICE TECHNOLOGY
- Escalation Management
- Remote Support
- Predictive Support
- Knowledge Systems
- R&D investments
  - Increases effectiveness of service delivery
  - Increases system availability
  - Increases customer productivity
  - Holds down service costs
IMPLEMENTATION SUPPORT PLAN

Features and Benefits

Defines Support Capabilities

- Identifies all participants (HP and Customers)
- Identifies System Configuration(s)
- Identifies Support resource requirements and unique needs
- Identifies implementation plan and timeline
  - Minimizes unforeseen problems
  - Resources are pre-planned

Communication

- HP Selling and Supporting Offices work together
- Local and Worldwide Coordination
  - Assures smooth implementation
  - Reduces implementation time
  - Groundwork set for long term success
## CHOOSING AN HP HARDWARE MAINTENANCE SERVICE

### Feature Comparisons

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<tr>
<th></th>
<th>Guaranteed Uptime Service</th>
<th>Standard Systems Maintenance Service</th>
<th>Basic Systems Maintenance Service</th>
<th>Time and Materials Service</th>
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<tr>
<td><strong>Response Time</strong></td>
<td>4 hours</td>
<td>4 hours</td>
<td>Next Day</td>
<td>3 days</td>
</tr>
<tr>
<td><strong>Hours of Coverage</strong></td>
<td>24 hrs/day, 7 days/week</td>
<td>8am–9pm M–F up to 24 hrs/day</td>
<td>8am–5pm</td>
<td>8am–5pm</td>
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<tr>
<td></td>
<td>7 days/week (3 shifts)</td>
<td>7 days/week</td>
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<tr>
<td><strong>Relative Price</strong></td>
<td>1.6</td>
<td>1.4–1.0</td>
<td>.8</td>
<td>.9</td>
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<td><strong>Agreement</strong></td>
<td>Monthly</td>
<td>Monthly</td>
<td>Monthly</td>
<td>Per-incident</td>
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<tr>
<td><strong>Optional Services</strong></td>
<td>After hours coverage</td>
<td>Standard coverage uplift</td>
<td>Premium response option</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>After hours coverage</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- 24 hrs/day coverage
- 7 days/week (3 shifts)
- Premium response option
- After hours coverage
CHOOSING HP HARDWARE MAINTENANCE SERVICES

Features and Benefits

WORK-TO-COMPLETION

- Service call completed even if past coverage hours
  - increased system availability

ENGINEERING CHANGES

- Corrections and improvements provided when they occur
  - Increases system functionality
  - Maintains system compatibility
  - May improve system performance

PREVENTIVE MAINTENANCE

- Scheduled on-site calls to prevent failures from occurring
  - Increased system availability
  - Minimum system disruption
  - Holds down service costs
CHOOSING HP HARDWARE MAINTENANCE SERVICES

Features and Benefits

REMOTE SUPPORT

- 20% service calls solved without on-site visit
- For on-site visit, CE has right tools and parts
- Assists in distinguishing between hardware and software problems
- Temporary workarounds can be implemented quickly
  
  - Quicker resolution to service calls
  - Holds down service costs

PREDICTIVE SUPPORT

- Predict failures before they occur
- Schedule calls versus unplanned events
  
  - Increased system availability
  - Minimum system disruption
  - Increased user productivity
  - Holds down service costs
SOFTWARE SUPPORT PROGRAM

Features

CUSTOMIZED SUPPORT

PERSONALIZED SERVICES

TRAINING

CONSULTING

MULTI-SITE COORDINATION

SYSTEM MANAGER ASSISTANCE

ACCOUNT TEAM

SUPPORT MGMT. REVIEWS

SOFTWARE RELEASE PLANNING

ON-SITE ASSISTANCE

HPTREND

TELEPHONE ASSISTANCE

RESPONSE CENTER ACCESS

PROBLEM RESOLUTION ASSISTANCE

REMOTE SUPPORT

SOFTWARE UPDATES DOCUMENTATION UPDATES SOFTWARE STATUS BULLETIN COMMUNICATOR

SOFTWARE UPDATES

CSP

AMS

RCS

SMS
HP EUROPE CUSTOMER ENGINEER ORGANIZATION

Mike George
GENEVA

Horst Steder
GERMANY
280

Michael Madec
FRANCE
340

Dave Ellis
U.K.
400

G. Scruzi
ITALY
190

G. Bonham
NORTH
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R. Frieden
SOUTH
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- Local language terminals and software
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<th>HP3000</th>
<th>SOUTH</th>
<th>HP3000</th>
<th>AFRICA</th>
<th>HP3000</th>
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<tbody>
<tr>
<td>Norway</td>
<td>Full</td>
<td>Middle East</td>
<td>HP/D</td>
<td>Full</td>
<td>Algeria</td>
</tr>
<tr>
<td>Denmark</td>
<td>*</td>
<td>Israel</td>
<td>D</td>
<td>Full</td>
<td>Cameroon</td>
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<tr>
<td>Sweden</td>
<td>*</td>
<td>Saudi Arabia</td>
<td>D</td>
<td>Full</td>
<td>Congo</td>
</tr>
<tr>
<td>Finland</td>
<td>*</td>
<td>Egypt</td>
<td>D</td>
<td>?</td>
<td>Gabon</td>
</tr>
<tr>
<td>Holland</td>
<td>*</td>
<td>Kuwait</td>
<td>D</td>
<td>37/42</td>
<td>Ivory Coast</td>
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<tr>
<td>Belgium</td>
<td>*</td>
<td>Lebanon</td>
<td>D</td>
<td>37/39/48</td>
<td>Ethiopia</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>*</td>
<td>Oman</td>
<td>D</td>
<td>3X/4X/5X</td>
<td>Morocco</td>
</tr>
<tr>
<td>Iceland (New office)</td>
<td>?</td>
<td>Turkey</td>
<td>D</td>
<td>37/39</td>
<td>Senegal</td>
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<td></td>
<td>United Arab Emirates</td>
<td>D</td>
<td>3X/4X/5X</td>
<td>Zaire</td>
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<td>Emirates</td>
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<td>Tunisia</td>
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<td></td>
<td></td>
<td>Iraq</td>
<td>HP</td>
<td>3X/4X/5X</td>
<td>South Africa</td>
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<td>Portugal</td>
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<td></td>
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<td></td>
<td>Spain</td>
</tr>
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</table>

Note: Could plan for S37 in African countries
HP INTERCONTINENTAL CUSTOMER ENGINEERING

Paul Balnys
Palo Alto

Terry Wilde
Australasia
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Richard Hornor
Latin America
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FAR East
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Canada
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Mac Imahori
Japan
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- Local language terminals and software
- Region Response Centers - Singapore
  - Tokyo
  - Melbourne
  - Mexico City
<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>HP3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Japan</td>
<td>Full</td>
</tr>
<tr>
<td>Australia</td>
<td></td>
</tr>
<tr>
<td>New Zealand</td>
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<td>Canada</td>
<td></td>
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<tr>
<td>Singapore</td>
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<td>Taiwan</td>
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<td>Malaysia</td>
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<td>Hong Kong</td>
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<td>Korea</td>
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<tr>
<td>China</td>
<td></td>
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<tr>
<td>(Beijing)</td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
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</tr>
<tr>
<td>Venezuela</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
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<tr>
<td>Argentina</td>
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### DISTRIBUTORS

<table>
<thead>
<tr>
<th><strong>FAR EAST</strong></th>
<th><strong>HP3000</strong></th>
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<tbody>
<tr>
<td>Philippines</td>
<td>Full</td>
</tr>
<tr>
<td>Thailand</td>
<td>30, 4X</td>
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<td>Indonesia</td>
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<tr>
<td>India</td>
<td>3X, 40, 42</td>
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<td>Pakistan</td>
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<table>
<thead>
<tr>
<th><strong>LATIN AMERICA</strong></th>
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<td>Chile</td>
<td>37, 40, 44</td>
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<tr>
<td>Colombia</td>
<td>37, 39, 40, 44</td>
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<tr>
<td>Costa Rica</td>
<td>----</td>
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<tr>
<td>Dominican Republic</td>
<td>----</td>
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<td>Ecuador</td>
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<tr>
<td>El Salvador</td>
<td>40, 44</td>
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<td>Guatemala</td>
<td>37, 39, 40, 44</td>
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<tr>
<td>Panama</td>
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<td>Peru</td>
<td>37, 39, 40, 44, 48</td>
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<tr>
<td>Trinidad</td>
<td>37, 39, 40, 44, 48</td>
</tr>
<tr>
<td>Uruguay</td>
<td>----</td>
</tr>
</tbody>
</table>
INTERCONTINENTAL INSTALLED BASE

AUSTRALASIA
- 1000 = 423
- 3000 = 255
- 250 = 99
- 98XX = 1514

FAR EAST
- 1000 = 659
- 3000 = 374
- 250 = 112
- 98XX = 1357

JAPAN
- 1000 = 1392
- 3000 = 150
- 250 = 81
- 98XX = 1573

CANADA
- 1000 = 872
- 3000 = 556
- 250 = 239
- 98XX = 6172

LATIN AMERICA
- 1000 = 301
- 3000 = 446
- 250 = 190
- 98XX = 482
RESPONSE CENTERS

- SHARED DATA BASES
- APPLICATION, SYSTEM, AND PC SUPPORT
- REMOTE SUPPORT
HARDWARE MAINTENANCE TRAINING
- Self-Paced Learning Series
- Classroom/Lab Training
- Mentored Self-Paced
- Custom Programs

REFERENCE MATERIAL
- Service Manuals
- Hardware Subscription Service (HSS)
- Newsletter
- Service Notes
- Manual Updates
- Support Advisory Service

HP COOPERATIVE SUPPORT PROGRAM

BACKUP SERVICES
- Technical Assistance Service (TAS)
- Per-Call time and Material Service (T&M)

INVENTORY MANAGEMENT TOOLS
- Spare Parts List
- Customized Stoking Recommendations

SPARE PARTS AVAILABILITY
- Initial Stoking/New Parts
- Assembly Exchange Program
- Hotline Service
Hewlett-Packard Supports Your Business Success
ILO MINISIS SYSTEMS

Mr. Robert Wulf
International Labour Office, Geneva, Switzerland
ILO ACTIVITIES

* THE FORMULATION OF INTERNATIONAL POLICIES AND PROGRAMS TO HELP IMPROVE WORKING CONDITIONS, ENHANCE EMPLOYMENT OPPORTUNITIES, AND PROMOTE BASIC HUMAN RIGHTS.

* THE CREATION OF INTERNATIONAL LABOR STANDARDS TO SERVE AS GUIDELINES FOR NATIONAL AUTHORITIES IN PUTTING THESE POLICIES INTO ACTION.

* AN EXTENSIVE PROGRAM OF INTERNATIONAL TECHNICAL CO-OPERATION TO HELP GOVERNMENTS IN MAKING THESE POLICIES EFFECTIVE IN PRACTISE.

* TRAINING, EDUCATION, RESEARCH AND PUBLISHING ACTIVITIES TO HELP ADVANCE ALL THESE EFFORTS.
I.L.O. COMPUTERS

3 SYSTEMS - 3 FUNCTIONAL AREAS

* I.B.M. 4381 SYSTEM
  - ADMINISTRATIVE APPLICATIONS

* WANG VS AND OIS SYSTEMS
  - TEXT AND WORD PROCESSING APPLICATIONS

* H.P. 3000/64 SYSTEM
  - DOCUMENTATION APPLICATIONS

* LARGE DATA CENTER MAINFRAME USED FOR TELEX AND STATISTICAL APPLICATIONS
APPLICATION SOFTWARE:
1) MINISIS
2) POWERHOUSE

SCHEDULED END 1985:
UPGRADED SERIES 64 TO SERIES 68
96 ATP DIRECT CONNECT PORTS
X.25 NETWORK SUPPORT
COMPUTER OPERATION

* 24 HOURS / DAY

* 7 DAYS / WEEK

* DEDICATED TO ON-LINE ACCESS DURING DAY

* DEDICATED TO BATCH OPERATION AT NIGHT

* ALMOST NO OPERATOR INTERVENTION
  1) USER CONTROL OF PRODUCTION
  2) AUTOMATIC SCHEDULER

* DEDICATED TO MINISIS DBMS SOFTWARE AND TO POWERHOUSE FOURTH GENERATION LANGUAGE
MINISIS
DBMS

HIGHLIGHTS:

* RELATIONAL APPROACH
* MODULAR DESIGN
* FLEXIBLE DB STRUCTURES
* IMMEDIATE FILE UPDATING
* SPECIAL BIBLIOGRAPHIC FEATURES
* POWERFUL CHECKING
* USER EXITS FOR LOCAL REQUIREMENTS
* USER FRIENDLY
** POWER TO THE END USER
MINISIS TRAINING

* BI-YEARLY MINISIS TRAINING COURSE

* EVENTUAL REFRESHER COURSES ON DEMAND
SUMMARY OF ILO HEWLETT-PACKARD COMPUTER APPLICATIONS

1) CENTRAL LIBRARY AUTOMATION AND MANAGEMENT

2) SPECIALISED DOCUMENTATION CENTER MANAGEMENT
   - SOCIAL LABOUR INFORMATION
   - VOCATIONAL TRAINING AND EDUCATION
   - REHABILITATION
   - MANAGEMENT DEVELOPMENT
   - RURAL EMPLOYMENT

3) CENTRAL MAILING LIST MANAGEMENT

4) INTERNATIONAL OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT

5) REGISTRY CORRESPONDANCE AND MISSION LOGGING

6) CONDITIONS OF WORK CLEARING HOUSE MANAGEMENT

7) LABOUR CONVENTION AND RATIFICATION MANAGEMENT

8) INTERNATIONAL LABOUR LEGISLATION MANAGEMENT

9) I.L.O. PUBLICATIONS CATALOG

10) IIRA SECRETARIAT MANAGEMENT - MEMBERSHIP AND DUES CONTROL

11) EMPLOI FIELD PROJECTS AND EXPERTS GENERAL INFO MANAGE

12) TRAINING MATERIAL AND TRAINING INSTITUTION DIRECTORY MGMT.

13) SALE OF ILO PUBLICATIONS ACCOUNTING AND MANAGEMENT

14) INTERNAL FILE TRACING AND ARCHIVES MANAGEMENT (SCHED. 1985)

15) FREEDOM OF ASSOCIATION CASE JURISPRUDENCE (SCHED. 1985)

16) I.L.O. TRIBUNAL CASE JURISPRUDENCE (SCHED. 1985)
1985

ALLDOC
LABORDOC

INFSOC
FDOC
REHAB
EMPRU

FMAN

SERIALS
ILODOC
IGODOC

PROCESS

ILO CENTRAL LIBRARY DATABASE INFORMATION STRUCTURE
I) I.L.I.S. INTERNATIONAL LABOUR INFORMATION SYSTEM

OBJECTIVE:

A) TO PROVIDE REGIONAL OFFICES, DEVELOPING COUNTRIES, AND MEMBER STATES WITH INFORMATION ON LABOUR RELATED MATTERS

THREE STAGES:

A) DEFINE WHAT POTENTIAL DATA IN THE I.L.O. COULD BECOME PART OF I.L.I.S. (ANY FORM)

B) ORGANISE I.L.I.S. INSIDE THE I.L.O.

C) DEFINE AND IMPLEMENT HOW TO PROVIDE EXTERNAL USERS WITH DATA.
I.L.I.S. COMPUTER SYSTEM

SHOULD BE:

* SIMPLE TO USE

1) MENU DRIVEN - NO COMMAND LANGUAGE
2) AIMED AT USERS WITH NO COMPUTER EXPERIENCE

* ACCESSIBLE THROUGH PUBLIC NETWORKS

* A RAPID MEANS TO FIND OUT WHERE INFORMATION IS LOCATED, WHO TO CONTACT, AND EVENTUALLY VIEW INFORMATION ITSELF
3 LEVELS OF I.L.I.S
COMPUTER SYSTEM

* REFERRAL LEVEL

* DATA DESCRIPTION OR SUMMARY LEVEL

* FULL DATA TEXT LEVEL
MENU PROGRAM DEVELOPMENT

* PROGRAM TO LOAD EDITOR MENU PAGES FROM DATABASE

* FULL TEXT RETRIEVAL FROM COMPRESSED EDITOR FILES LINKED TO MINISIS RECORDS

* SEARCH STATISTICS

SUGGESTIONS ?? OTHER VERSIONS ??
POSSIBLE CONTRIBUTED LIBRARY PROGRAMS

* LISTSECU - LIST SECURITY PROFILES FROM MINISIS MENU (FOR USERS)

* LISTSDB - LIST ALL DATABASES (RD AND PS) FROM DATA MODEL AND FLAG FIELD ATTRIBUTE DIFFERENCE

* CHANGEJOB - CHANGE ALL JOB CARDS IN ACCOUNT TO REFLECT PASSWORD MODIFICATIONS.

* TREES - LIST INVERTED FILE STATUS WITH QUICK LOOK BAR CHART
* AUDFLD - (FIELD) CREATE ISN HITFILE WHEN FIELD MODIFIED
* AUDISN - (RECORD) CREATE HITFILE WHEN RECORD MODIFIED
* COPYDATA - (FIELD) COPY FIELD FROM ANOTHER RECORD (GIVE ISN NO.)
* MANDAFLD - (FIELD) MANDATORY FIELD. CANNOT PASS IF FIELD NOT ENTERED.
* TRADUC - (INDEX) AUTO TRANSLATION OF TERMS
* TEXT SEARCH - (INDEX) TEXT SEARCH FOR EXTRACTION
* ISBNCHK - (FIELD) VERIFY ISBN NUMBER (CHECK DIGIT)
* WORDNTERM - (INDEX) EXTRACT WORDS WITHIN TERMS
* MOD-RET - (INDEX) EXTRACT ONLY FROM RECORDS THAT ARE RELEASED FOR RET OR MOD.
INVERTED FILE PROBLEMS ???

** CORRUPTED BIT STRINGS

** GARBAGE KEYS IN DIRECTORIES

WE HOPE I.D.R.C. WILL PROPOSE POSITIVE ACTION TO LOCATE AND FIX THESE PROBLEMS.
NOTED INVERTED FILE PROBLEMS

** BLANKS CAN BE INVERTED BUT NOT DE-INVERTED

** MODIFY - "RECORD DOES NOT MEET INITIAL RESTRICTION
.......RE-EDIT RECORD"

** CAUSES GARBAGE KEYS TO BE ADDED TO
ALL INVERTED FILES OF DATABASE.
AGRALIN UTILITIES

Mr. Age Jan Kuperus
AGRALIN, Agricultural University, Wageningen, Netherlands
Introduction

AGRALIN is the short name for the AGRicultural Automated Literature Information system in the Netherlands. Although most of AGRALIN's functions were implemented using the standard MINISIS programs, a number of programs and intrinsics has been developed by the Automation Department Jan-Kopshouse, which is the current name of the former BAS project team. In this paper, we will describe some of these in-house developments.

TESTUPLE

TESTUPLE is a database test utility. It has been developed as a tool for the database manager to see what is really in a database. The primary reason to write it was to find the cause of some very frustrating MINISIS problems, but it proved to be a valuable tool for many other purposes as well. You can look at deleted records, for example, or even let it try to read a corrupted one. It can show you the cause of a "Bad directory entry", determine the maximum number of characters that is really used in a certain field, and many other things. Together with the MBCHECK intrinsic, it gives you the power to make your own database checking program without any programming.

MDBCHECK

MDBCHECK is a set of intrinsics, that enable you to write a database checking program in a very easy way. You only have to define a number of rules like "field A must be alphabetic", "field B must have a value of "YES", "NO" or "MAYBE"", "if field A contains a number, there must be an asterisk in field C", "in ISN-range 11-20 field E should not be less than 20 characters", etc.. The program will then do the rest of the job.

As MDBCHECK is a set of intrinsics, it can be called from any other program. We have written an interface to TESTUPLE, and an ENTRY/MODIFY exit that call it. So, if you want to check your databases, you don't need a programmer any more. Simply use our exit to check the new records, and use TESTUPLE for off-line checking of the full database.

TREETEST

TREETEST is a test utility for MINISIS key files (BTREE's and KSAM files). It can display almost everything that is in a BTREE, and key and bitstring information for MINYSIS KSAM files. It currently has six options, which can be selected in any combination. They include:
- display BTREE header information
- scan BTREE directory/directories
- display bitstring details
- display postings in hitfile form

Any errors found in directories or bitstrings are reported.

FILECONV

FILECONV is a general-purpose file conversion utility. It can handle files with or without carriage-control characters, print a number of input pages as one multi-column output page, and has a number of options for daisywheel printers. It also can convert MINISIS hitfiles and INDEX-files to ASCII and vice versa, and it has a special option to process MINISIS SDI output files.

A view in the future

As AGRALIN is still growing, we certainly will keep developing new tools or enhance existing ones. The only thing we can tell at this moment is that a program for offline duplicate checking is something we terribly need. We probably will write one in the near future.
Appendix 1: The AGRALIN software system

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<tr>
<td>MPE Kernel</td>
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</table>
Appendix 2: MDBCHECK input example

0010 numeric, length 1..5
0020 pattern "FICH-{T,J,D,A,U}{C,S}8d0d"
   or 0020 pattern "{BOEK,CURSUS,TIJD,APP,PROG,PAPIER}—?"
if 0030 present then 0030 pattern "d+.dd", length 4..8
0050 pattern "d+ [.d]", length 1..5
0070 pattern "[B]", length 0..1
0090 subfield pattern "13[4]"
if 0100 present then 0100 date: "0100 does not have DATE format"
if 0110 present then 0110 numeric, length 6
0240 subfield pattern "12"
0241 in "BERNA","JAAP","MGR","NICO"
0242 date
0250 subfield pattern "[12]"
if 0250 present then 0251 in "BERNA","JAAP","MGR","NICO"
if 0252 present then 0252 date
0260 in "FAKT","NAZIEN","OKE","PM","VERVAL"
if reclen > 3000 then display "ISN " ; isn;" recordlengte =
if reclen > 3000 then display "ISN " ; isn;" record length = "; reclen
Appendix 3: TESTUPLE/MDBCHECK example

testuple

TESTUPLE version AGRALIN/F.00.00 B2

database name <exit> ? datal

access mode <SRE> ?

file name for user defined checking <none> ? xa291

1 IF NOT A291 PATTERN "d+ p." THEN DISPLAY "ISN ";ISN;", status ";Dl 

", a291 = ";A291

first ISN <end> ? 100007

last ISN <one at a time, showing tuple> ?

ISN 100007, status RCMPL, a291 = Dl. 1-

ISN 100007, GETUPLE code 0: OK, unique record

ISN 100007

# tags = 41    # bytes = 636  flags = %000000  %000000

tag  loc  len  value
D100  1#   23
D101  278  10  1984-02-08
D102  288   8  MARIANNE
D103  266   5  RCMPL
A290  1#   6
A291  260   6  Dl. 1-
A210  229   5  1978-
A120  1#  12
A121  0   8  Kukachka
A123  8   4  B.F.
A090  1#   58
A091  12  42  Wood anatomy of the Neotropical Sapotaceae
A093  54  16  by B.F. Kukachka
A250  1#  17
A251  70   8  U.S.D.A.
A252  78   7  Madison
A253  85   2  US
C040  1#   50
C041  87  42  Research paper. Forest Products Laboratory
C042  234  8  FPL 325-
B510  1#  32
B511  129   6  630*17
B514  135  14  Sapotaceae sp.
B517  149   7  630*811
B518  156   5 (8=6)
B510  2#  12
B511  161   7  630*811
B512  168   5 (8=6)
B510  3#  34
B511  173   6  630*17
B514  179  14  Sapotaceae sp.
B517  193   7  630*811
B518  271   7 (8-011)
D030  1#  25
END OF PROGRAM
Appendix 4: TREETEST example

:treetest g064keyd 15

file: g064keyd  type: REG
keylength: 8  posting ptr length: 4  max entries/rec: 144
current posting record: 2  free words: 863  free records: 7
alloc for 1st dir: 1  2nd dir: 0
top of node 1st dir: 1  2nd dir: 0
next avail. 1st dir: 2  2nd dir: 0

-1 -1
-1 -1 ARCHIEF
-1 -1 ENH.REQ
-1 -1 FIXED
-1 -1 INTERN
-1 -1 NEW
-1 -1 OPEN
-1 -1 TEMP.FIX

level 0: 1  8  8  8  8
key value ? OPEN
record 1
-1 -1
-1 -1 ARCHIEF
-1 -1 ENH.REQ
-1 -1 FIXED
-1 -1 INTERN
-1 -1 NEW
-1 -1 OPEN

posting pointer: 2  99
posting pointer: 2  99
bitstring length = 20
bitstring length = 20
100: 1 zero (1)
101: 9 nonzero

  19 OPEN
  23 OPEN
  29 OPEN
  31 OPEN
  33 OPEN
  61 OPEN
  63 OPEN
  71 OPEN
  72 OPEN
  73 OPEN
  79 OPEN
  83 OPEN
  85 OPEN
  111 OPEN
  118 OPEN
  128 OPEN
  154 OPEN
111: 3 zero (13)
112: 3 nonzero
  216 OPEN
  217 OPEN
  220 OPEN
  221 OPEN
  222 OPEN
  223 OPEN
  237 OPEN
  240 OPEN
  248 OPEN
  250 OPEN
  255 OPEN

116: 3 zero (19)
117: 1 nonzero
  312 OPEN

119: 32747 zero (32767)
key value ?
record 1
  -1 -1
posting pointer: -1 -1
posting pointer: -1 -1
invalid record number
Appendix 5: FILECONV example

:file output;dev=lp
:fileconv

input filename ? abcde
Non-ASCII conversion - N -
Page numbering - N -
Physical page length - 84 -
Logical page length - 63 -
Top margin - 3 - 0
Align first nonblank line - Y - n
Number of columns per page - 1 -
Physical column width - 132 - 80
Logical column width - 132 - 80
Ignore first empty columns - N -
Change ' into ' - N - y
Strip 8th bit - N -
LIBRARY AUTOMATION IN THE UNIVERSITY OF SINGAPORE (NUS) LIBRARY: A PROGRESS REPORT

Mrs. Ong Gim Hong
National University of Singapore Library, Singapore

1. BACKGROUND INFORMATION

Singapore is an island nation, located at the southern end of the Malay Peninsula, the land area is approximately 620.2 square km. The population is about 2.529 million. (1)

The National University of Singapore comprises the Central Administration and 8 faculties with 44 teaching departments, and 3 postgraduate schools. In addition, the University maintains a Library System and a Computer Centre. At present, total student enrolment is approximately 14,000 with an academic staff strength of around 1,200.

The number of libraries in the unified NUS Library system are: Central Library, Chinese Library, Law Library, Medical Library, Science Library (end of 1985) and Hon Sui Sen Memorial Library (end of 1986).

The Library's total collection amounts to 1.20 million volumes of books and bound journals and 9,390 titles of current journals. The total registered user population is 23,000 (including students, staff and outside members).

2. LIBRARY AUTOMATION

2.1 The NUS Library is currently using two software packages, MINISIS and LACS (Library Automated Circulation System) for its various library functions, i.e., MINISIS for acquisitions, cataloguing, information retrieval and indexing, and LACS for loan transactions. Details of developments and applications of the two systems are elaborated in the following sections.

2.2 System Configuration

When the library started its computerization activities in 1981, 6 terminals were installed in the Library (Appendix A). These terminals were linked to the Computer Centre's HP3000/III, which the Library shared with the University Administration (i.e., the Bursar's Office, the Personnel Department and the Registrar's Office). The Library's dedicated computer, an HP3000/44 with 1 MB main memory, was installed in October 1983. The system has been upgraded to HP3000/48 with 3 MB memory. The present system configuration is:

(1) From Yearbook of Statistics Singapore 1984/85
Hardware Configuration

Processor: HP3000 Series 48 with 3 Megabytes of Memory

Disk Drive:
- 1 x 7920A = 50 MBytes
- 3 x 7933H = 1.2 Giga Bytes

Tape Drive: 1 x 7976A = 6250 BPI

System Printer: 1 x 2608S = 400 LPM

Software Configuration

Operating System: MPE V

Products:
- IMAGE
- QUERY
- VIEW

Compiler:
- Fortran
- Cobol
- Basic
- SPL
- Pascal

4th GL: RAPID

2.3 The Library Automation Unit

An Automation Unit was set up in the Library in October 1982. The major tasks of the Unit include the training of library staff in computerized operations and coordinating all library automation activities, including the housekeeping of the in-house computer and future developments in application programs. At present, the Unit consists of the Head (Senior Assistant Librarian), 2 Analyst/Programmers, 2 Assistant Librarians, 1 Console Operator, and 2 Clerical Officers.

3. MINISIS DATABASES

In November 1980, the National University of Singapore signed an agreement with the International Development Research Centre (IDRC) of Canada, thus enabling the Library to use MINISIS. A 10-month pilot project was carried out from June 1981 to March 1982. The result of the pilot project (MTP - MINISIS Test Programme) was positive, and the Library carried on with the various computerized operations toward full implementation of MINISIS in the NUS Library System. To date, there are a total of 8 MINISIS bibliographic databases (Appendix B) in the NUS Library System, of which two major ones are LIRNUS and PERIND.
3.1 LIBNUS (Cataloguing Database)

During the MINISIS Test Programme, new monographs and new serial titles were input into two separate databases, namely LIBNUS and LIRSER (Serials Cataloguing Database). Online access was by personal authors, keywords in titles and the Library of Congress Subject Headings. In May 1985, LIRSER was merged into LIBNUS. The move was to facilitate the use of the query function by end users. Online access points are by: personal authors and keywords in titles/Library of Congress Subject Headings/Series.

Following the arrival of the Library's HP3000/48, all acquisitions and cataloguing functions in the Central, Law and Medical Libraries were fully computerized using MINISIS software.

3.2 PERIND (Indexing Database)

PERIND is an online indexing database. The Central, Law and Medical Libraries all input into this database. However, the coverage is not exactly the same between the 3 libraries. The Central Library indexes a core list of journals and indexes/bibliographies for periodical articles relating to Singapore, Malaysia, Brunei and ASEAN (as an entity) in humanities and social sciences. For the Law Library, all legal journals published in Singapore/Malaysia are indexed cover-to-cover. The Medical Library indexes cover-to-cover most of the medical journals published in Singapore/Malaysia. They also selectively scan about 70 foreign journals for articles relating to Singapore, Malaysia, Brunei and ASEAN (as an entity).

3.3 Outputs

Four listings (author, title, subject, call no.) are produced monthly on computer printout with a quarterly cumulation on Comfiche. Another output from LIBNUS is the monthly Accessions List, and some irregular printouts such as titles in special collections (e.g. Singapore/Malaysia Collection, NUS Theses, etc.).

From the PERIND database, the first major output, "Index to Periodical Articles Relating to Singapore, Malaysia, Brunei, ASEAN, 1980-1982: Humanities and Social Sciences" was published in 1984. A supplement covering 1983/84 has just been published.

4. LIBRARY AUTOMATED CIRCULATION SYSTEM (LACS)

LACS, the computerized circulation system, is based on the HP Image/3000. The system was designed and developed by Mrs. Tan Chee Kiow, Deputy Director of the NUS Computer Centre. When the Library Automation Unit was set up in October 1982, the responsibility of maintenance and future enhancements was transferred to the Library Automation Unit.
Data capture of the LACS system is by barcode and light pens. The system was implemented after most of the barcoding of books (2) and patron cards was completed. The process was carried out in phases. We are pleased to report that during the different stages of implementation of the LACS project, we were able to allow the Library to operate as usual, i.e. we never had to close the Library or cause any disruption to our users. The LACS project was implemented first in the Law Library in December 1983, followed by Medical Library and finally the Central Library in June 1985. The Library's online circulation system is now fully operational in all the libraries.

5. FUTURE DEVELOPMENT

The development of two important projects, the Singapore Integrated Library Automation System (SILAS) and the NUS Office Automation Project would have direct impact on our future direction. Brief summaries of these two projects are given below.

5.1 SILAS

The Singapore Integrated Library Automation System (SILAS) is a national bibliographic database system. The SILAS project consultant, Mr Chris Hannan, formerly Executive Officer of the Australian Bibliographic Network (ABN), was in Singapore from January-February 1984. The SILAS project was officially approved by the Singapore Ministry of Finance in June 1984. The implementation of the project is mainly based on the consultant's report. Two of the recommendations of the Hannan report were:

- The acquisition of the Washington Library Network (WLN) software for the operation of SILAS
- The appointment of the Singapore National Library as the Central Agency of SILAS

The Singapore National Library will be the first participant in the network. The NUS Library, among others, will participate in the SILAS network in its second year of operation. It is expected to include other libraries in subsequent years and develop a national bibliographic database.

5.2 NUS Office Automation Project

The main objective of the NUS Office Automation Project is to enhance faculty and departmental office productivity and to minimize the need for additional clerical staff. The first phase of the project will cover the

(2) As of September 1985, the total volume of books barcoded and data captured is 650,000.
areas of information/text processing, electronic mailing, etc. During the initial stage, only heads of departments and their executive assistants will link up to the system. The system will be extended to the other members in phase two of development.

In September 1985, the University announced the link-up of the NUS Computer Centre to the BITNET Computer Network, which is connected to 400 universities worldwide for research purposes. It is a major step leading NUS towards the direction of an electronic campus.

6.3 Plan for Future Expansion of the NUS Library

When the Science Library and the Hon Sui Sen Memorial Library come up in 1985/86, all their operations, i.e. acquisitions, cataloguing, indexing, information retrieval, loans transactions, etc. will be computerized. Functions still to be computerized for the whole NUS Library System include serials management and control, and online catalog for public access. Future development also includes our Chinese Collection. At the moment, all our Chinese materials are input into the MINISIS database (CHILIB) by Hanyu pinyin. We are following very closely the development of the Chinese script enhancement which has been carried out by IDRC.

The most important implication of the planned expansion is the necessity for a much more powerful computer system by the end of 1986. Requirements for this are being considered and will be submitted to the authorities. The development of NUS Library computerization is within the framework of the NUS campus computerization. It is expected that as the Office Automation Project develops, the Library will be able to provide online access to the teaching departments through the infrastructure of the campus computerization network.
DISTRIBUTION OF WORKSTATIONS IN THE NUS LIBRARY

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<td>Science Library</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Hon Sui Sen Library</td>
<td>-</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>6</td>
<td>10</td>
<td>11</td>
<td>32</td>
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</table>
### MINISIS DATABASES IN THE NUS LIBRARY SYSTEM

<table>
<thead>
<tr>
<th>Database/No. of Rec</th>
<th>1981/82</th>
<th>1982/83</th>
<th>1983/84</th>
<th>1984/85</th>
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</thead>
<tbody>
<tr>
<td>LIBNUS</td>
<td>8,594</td>
<td>22,560</td>
<td>36,674</td>
<td>78,180</td>
</tr>
<tr>
<td>LIBSER</td>
<td>209</td>
<td>1,677</td>
<td>2,334</td>
<td>Merged with LIBNUS</td>
</tr>
<tr>
<td>PERIND</td>
<td>706</td>
<td>7,404</td>
<td>10,521</td>
<td>14,783</td>
</tr>
<tr>
<td>CONFIND</td>
<td>-</td>
<td>421</td>
<td>476</td>
<td>609</td>
</tr>
<tr>
<td>DAV</td>
<td>-</td>
<td>236</td>
<td>1,812</td>
<td>2,164</td>
</tr>
<tr>
<td>EPP</td>
<td>-</td>
<td>1,673</td>
<td>2,464</td>
<td>2,464</td>
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<tr>
<td>DCR</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,095</td>
</tr>
<tr>
<td>CHILIB</td>
<td>-</td>
<td>-</td>
<td>5,875</td>
<td>11,458</td>
</tr>
<tr>
<td><strong>Total No. of Records</strong></td>
<td><strong>9,509</strong></td>
<td><strong>33,971</strong></td>
<td><strong>59,156</strong></td>
<td><strong>110,753</strong></td>
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<tr>
<td><strong>% Increase</strong></td>
<td>-</td>
<td>25.7%</td>
<td>74.14%</td>
<td>87.22%</td>
</tr>
</tbody>
</table>

**Key to acronyms**

1. LIBNUS = Catalogue of books and audiovisual resources (in English)
2. LIBSER = Catalogue of serials (in English)
3. PERIND = Index to periodical articles relating to Singapore, Malaysia, Brunei and ASEAN (humanities, social sciences, law and medicine)
4. CONFIND = Index to papers presented at conferences held in Singapore (1970-)
5. DAV = Catalogue of audiovisual resources held by teaching departments, NUS
6. EPP = Catalogue of NUS Examination Papers
7. DCR = Directory of Current Research, NUS Academic Staff
32 TERMINALS
2621A
2621B
2622A
2392A

6 DATA CAPTURE TERMINALS (3075A)

(6250 BPI) TAPE DRIVE (7976A)
LINE PRINTER (400 LPM)
DISC DRIVES

7920A

7933 (404MB)

7933

4 DOT MATRIX PRINTERS (180 CPS)
(2601A) DAISY WHEEL PRINTER (40 CPS)
BARCODE PRINTER (INTERMEC)

HP3000/48
MPE V
3 MB
MINISIS APPLICATION AT THE
PHILIPPINE COUNCIL FOR INDUSTRY AND ENERGY
AND RESEARCH AND DEVELOPMENT (PCIERD)

Mr. Julius L. Manalo
PCIERD, Manila, Phillipines

INTRODUCTION

The Philippine Council for Industry and Energy Research and Development (PCIERD) was created on March 17, 1982 upon the reorganization of the National Science Development Board (NSDB) into the National Science and Technology Authority (NSTA). Under this reorganization, four councils were organized with each council assigned to a specialized area of research.

The PCIERD is mandated to plan, monitor and promote scientific and technological research and development activities directed to applications in the fields of industry, energy, infrastructure, and utilities, to rationalize the allocation of available resources, and to maintain the responsiveness and relevance of research and development efforts to the country's current and projected needs.

1 Presentation to the 7th MINISIS Users' Group Meeting, Washington, D.C., October 27-November 1, 1985

2 Science Research Specialist II, Research and Development Project Assistance Office, Philippine Council for Industry and Energy Research and Development
To enforce this task, the PCIERD has drawn up the Science and Technology Development Priorities Plan (STDPP) to define the priorities and scope of research objectives in line with national development thrusts. These are:

1. Adaptation and/or development of technologies for:
   1.1 Agro-forest-based industries
   1.2 Downstream chemical industries
   1.3 Indigenous material-based primary chemical industries
   1.4 Metal-mineral-based industries
   1.5 Engineering-based industries
   1.6 Ceramics and glass applications in cottage, small, and medium industries
   1.7 Housing and infrastructure
   1.8 Transportation and communication systems;

2. Identification, investigation and development of technological requirements for the utilization of conventional and non-conventional sources of energy;

3. Identification and development or adaptation of technological requirements of energy conservation systems/devices;

4. Strengthening the technological base of engineering industries to maximize local equipment and machinery for industry, the utilities and the consumer market;
5. Development of human resources to applied science and technology in the fields of industry, energy, transportation, communications and infrastructure.

The PCIERD extends a science and technology development package to R&D proponents, consisting of information base, technical and managerial expertise and funding support. Among its implementing strategies are to:

1. Identify and evaluate
   a. new products, processes and services with socio-economic potential, the stage of technological development and the R&D package for their commercialization;
   b. local and foreign R&D agencies with capabilities to conduct research;

2. Establish a repository of science and technology information in the industry, energy and utilities sectors for dissemination to end-users.

In essence, the objective of the PCIERD is to create the proper environment for promoting research and development projects in industry, energy, utilities and infrastructure systems. This environment includes providing researchers with adequate funding, resources, and information, as well as immediate areas of application for the results of their researches.

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MINISIS APPLICATIONS

Much has been said about researches not being responsive to the needs of the people. To reverse this perception, the PCIERD has adopted the demand-pull strategy in selecting which research projects to support under its Grants-in-Aid Program. This strategy ensures the immediate applicability or commercialization of research results by being oriented to the R&D requirements of various industrial sectors.

Consequently, the information system that we seek to develop should be complete enough to provide researchers with information on completed and on-going research projects whose results have not yet been fully appreciated, as well as on the current state of the industries so as to find appropriate solutions to their problems.

The MINISIS program was acquired in September 1984, and since then, nearly all information system development has been implemented using MINISIS. A PROJECTS database has already been created using MINISIS, containing information on completed and on-going researches performed by both government and private institutes in the industry, energy and infrastructure sectors. The information stored in this database was collected by the PCIERD's two technical departments, while some information was contributed by the NSTA library, which is also using MINISIS. Aside from the PROJECTS database, other databases which have been developed are as follows:
o RDINST - database which provides a profile of the capabilities of government research institutes and the services which they offer
o CORP - database on government and private companies, the products they market, and research activities that they conduct (if any)
o ASSN - database on professional and scientific organizations, including a mailing list of persons involved in research and development activities with whom the PCIERD has established the necessary liaison in order to accomplish its objectives

Soon to be implemented are the following:
o INVENT - database on registered and/or patented inventions
o EQUIP - database on available research equipment
o PERSONS - database on scientific manpower and their corresponding field of expertise.

MINISIS has also been used in the tabulation of survey material. This was implemented on the db ALCOGAS, a survey of the Philippines' alcogas (a mixture of gasoline and alcohol) program, and db TATT, a survey to technically assess the effects of technology transfer from other countries in the Philippines. This was done in a fairly straight-forward manner, with each item in the questionnaire corresponding to one MINISIS KSAM-validated field. The number of respondents for each item was then recorded using the QUERY facility,
which could also handle cases when the user required the number of respondents in "anded" fields. However, tabulation could only be done in an interactive manner, as there was no facility available to do it in batch, where the operator would merely specify the item numbers whose number of respondents he would like to be recorded for him. A number of problems were encountered, though, which included the occurrence of stack overflow conditions which usually "hung" the entire system.

System development is sadly hampered by the lack of manpower to implement the desired application, with only two full-time personnel available to complete all the tasks of an entire electronic data processing department. Another factor hampering the development of other applications in MINISIS is the fact that our programmers are not conversant in SPL, the only language that can be interphased with MINISIS, i.e., MINISIS exits. We propose that the MINISIS developers provide its users with the facility for using programs written in FORTRAN, COBOL, Pascal or BASIC to run in the MINISIS environment, similar to the IMAGE DBMS of HP.

INTERNATIONAL INFORMATION LINKAGE

The mere collection of information is not enough to effectively promote research and development in our country. We believe that information should be wielded as a vital discriminative tool for
identifying which researches and technologies are appropriate and, thus, need to be propagated. This is a point which needs to be stressed. Our country is currently in the throes of economic difficulty, largely due to the prevalence of outmoded technologies in our export industries, resulting in products which are more expensive and of lower quality than those of our competitors. Inasmuch as the PCIERD is a government agency that funds research in the aforementioned areas, these researches should be geared towards direct application in the current system.

Information is then necessary to determine which kind of technology is appropriate for the existing system. We realize that not all state-of-the-art technologies are appropriate for application in our country. Instead, we are looking for technologies of proper vintage.

To this end, we intend to establish linkages and share our information with other installations, as we realize that a large volume of research activities have been completed outside our country. Currently, we are also a contributor to the INNERTAP (New and Renewable Sources of Energy) network. We aim to enter into cooperative efforts with other international libraries having information on research activities in the industry, energy and infrastructure sectors, as well as current and existing technologies available for our applications.
We are hoping that, by using MINISIS, we can be part of an international network and share information with international databanks containing the kind of information that we need. In so doing, we will be able to screen out inappropriate technologies, and promote the technologies which we believe will be beneficial to our country's development and prosperity.
THE ACTIVITIES OF THE ARAB CENTRE
FOR AGRICULTURAL DOCUMENTATION AND INFORMATION (ACADI)

Mr. Sargious Ramiz
Arab Organization for Agricultural Development, Khartoum, Sudan
INTRODUCTION

The Arab Organization for Agricultural Development (AOAD) is an autonomous agency of the League of Arab States, Established 1972 in Khartoum (Sudan), by a charter signed by 14 Arab countries. Thereafter, seven other countries joined the organization bringing the number of participating countries to 21.

The Council of the Organization is composed of the agricultural ministers in member states and which is responsible for laying down the general policy which constitutes the guidelines of the organization with respect to planning, followup of programmes and activities in addition to the control of technical, financial and administrative activities.

The birth of the Arab Organization for Agricultural Development was an upshot of the idea of developing the tremendous agricultural and economical resources in the Arab World to reach a state of self-sufficiency.

Activities of AOAD.

The activities of the organization can be summarized as follows:

1. Regional, joint and national feasibility studies in the field of agricultural development.
2. Implementation of pilot projects.
3. Technical cooperation.
4. Collection and dissemination of agricultural data from Arab States, national and international organizations.
The Arab Centre for Agricultural Documentation and Information (ACADI):

In its lifetime, AOAD completed more than 600 technical and economic feasibility studies and reports during which the persisting need for an agricultural documentation and information centre has been realized, not only to keep the experts of the organization up-to-date, but also to keep the concerned organizations, institutes and scientists in member countries aware of the agricultural development in the Arab World. Consequently, during its ordinary annual meeting in December 1983, AOAD ministerial council has passed a decree realizing the documentation centre of AOAD as "The Arab Centre for Agricultural Documentation and Information" (ACADI).

The Main Functions of ACADI:

The main functions of ACADI could be summarized as follows :-

- Storage, processing and dissemination of publications produced by AOAD staff, consultants and experts.

- Collection, storage, processing and dissemination of relevant agricultural publications produced inside and outside the Arab Countries.

- Promotion of cooperation among Arab Countries in view of a more effective participation in the use of AGRIS, eventually, the establishment of a regional Arab AGRIS centre.

- Liaison with the documentation centre of the League of Arab States and international, regional and national centres existing in the region.
The Main Sections of ACADI:

Since the nomination of our documentation centre by the council of Ministers in 1983, as "The Arab Centre for Agricultural Documentation and Information", AOAD has developed and equipped the centre in order to be able to play its expected role.

The Arab Centre for Agricultural Documentation and Information consists of the following four sections:-

1. The Library: which holds over twenty thousands documents, both conventional and non-conventional, classified according to Dewey's Decimal Classification.

2. The Computer Section: which is equipped with an HP/3000 series 40 computer that has the following peripherals:
   - CPU of one megabyte memory
   - One bilingual (Latin/Arabic) line printer with a speed of 400 lines/minute;
   - One disc drive with a storage capacity of 404 megabyte
   - One magnetic tape drive
   - Six bilingual (Latin/Arabic) terminals

3. The Microfiche Unit: which has the following Canon equipments:
   - One Canonfile 100 Camera
   - One Autoprocessor 165
   - One Diazo duplicator, kal fisher 480
   - One Inserter Trimmer
   - Canorama Reader 360T
4. The Printing Section where all the publications of AOAD is produced.

**Applications Using MINISIS:**

Several data bases are now in operation using MINISIS:

1. The ACADI data base which has more than ten thousands bibliographic citation entered in Arabic and English languages. The descriptors used for the Arabic records are entered in English; this is because the AGROVOC which is adopted to be the most suitable thesaurus for indexing is not translated into Arabic and for this purpose, FAO is currently raising funds. A great effort is needed to translate AGROVOC, since the Arabic terms must be chosen and punctuated carefully. When entered into the computer, the Arabic descriptors will have to be entered with punctuation to avoid noise retrievals. We can see the problem of using Arabic, descriptors without punctuation; for example "Oman" and "Amman" the capital of Jordan will have the same spelling in Arabic which is عمان and the only differentiating factor between the two is the punctuation without which a noise retrieval will be the result.

Currently, fields in Arabic records, Such as the TITLE, AUTHOR NAME(S) and AFFILIATION, CORPORATE AUTHOR NAME.....etc. are entered without punctuation to speed-up the operation of documents indexing and entering the input sheets to the
computer, since punctuation in Arabic is difficult and time consuming matter, besides, the fact that noise retrievals from such fields can easily be avoided.

2. The Arabic Agricultural Dictionary data base. The aim of this dictionary, which is produced in three languages: Arabic, English and French and comprising about twenty thousands terms, is to unify the Arabic agricultural terminology. The dictionary is produced by a group of scientists and linguists. The main objectives of entering this dictionary into the computer are:-

- to single-out the duplication of terms in any of the different volumes of the dictionary and make it easy for participating scientists to find out the reason behind the duplication and their different meanings, if any, that have been used in each of the occurrences of the duplicate terms;

- to record the different suggestions of the participating scientists for adding, changing, deleting or replacing one term by another;

- to make an online translation of agricultural terms from one language to the other two, and

- to make it easy to update and alphabetically re-index the dictionary in any of the three different languages.
3. The Arab Agricultural Experts database which comprises over 1500 names of Arab experts working in the field of agricultural production. This database is mainly used to select experts needed in any of the feasibility studies conducted by AOAD or member states, and hence encourage the exchange of expertise in the Arab World. The selection of an expert can be by specialization, nationality, period of availability, educational background, working experience .........etc.

4. The AGRIS database comprises over 20000 records, being the input of Arab countries to AGRIS in the last decade. These records shall form the bases for the establishment of a regional ARAB AGRIS centre within ACADI.

5. The FAO database, which is mainly acquired for the following reasons:

   - to run an SDI service for ACADI'S users;

   - to search, select and acquire the relevant agricultural documents and hence enrich ACADI'S library;

   - to avoid re-indexing of FAO documents which are amongst ACADI'S holdings. This is done by searching the database for each FAO document and once a record(s) concerning the document is found it will be modified to show the classmark of the document, accession number or microfiche number in ACADI's library;
6. The Extension data base which comprises agricultural extension citations collected by AOAD in coordination with IDRC in order to encourage exchange of information in this field between the Arab countries and, hence, develop agricultural methodologies in the Arab World.

7. The Mailing List data base which holds names and addresses of subscribers in the different publications of AOAD.

In addition to that, a data base which contains data from the International Food Information Service (IFIS) will be built as soon as the data is available in the ISO 2709 format.

SDI Service:

The search on the above data bases are made upon request and free of charge to ministries, organizations and institutes in member countries. To widen its services, ACADI is now preparing an SDI sheet which will be distributed to scientists, researchers, lecturers, ....etc. to select their subject(s) of interest and, hence, benefit from the service made available by ACADI.

Documents Collection:

In its effort to collect agricultural documents from member countries; AOAD has set a project whereby a microfiche team shall tour the Arab countries to identify and photograph the relevant non-conventional agricultural documents and hence, achieve the main tasks of ACADI which are:
1. Preservation of agricultural documents from being lost through time.

2. To make agricultural documents available for a wider range of users.

The microfiche team will be accompanied by a documentalist who shall have the following tasks:

1. To identify the sources of documents such as universities, ministeries, research stations .... etc.

2. To ensure the selection of relevant non-conventional agricultural documents.

3. To report on the needs for development of existing agricultural documentation centres or establishment of one in countries which do not have any.

Such an ambitious project requires a great technical and financial support in order to be successfully executed. The IDRC has been approached to support the project which will last for three years and will start early 1986.

The Agricultural Statistics Data Base:

For over ten years, AOAD has been collecting and manually processing statistical data from its member countries; and annually produces the Arab Agricultural Statistics Yearbook. ACADI is now acquiring the necessary software to computerize the collection and processing of the statistical data to make an online statistical information system plus the production of the Agricultural Statistical Analysis Book and any other analysis that might be needed for the feasibility studies of AOAD.
ACADI Supporting Staff:

The centre which comes under the authority of the Technical Advisor for the Director General have the following supporting staff:-

1 Documentation Manager
1 Chief Librarian
2 Indexers
3 Library Assistants
1 System Manager
1 Programmer
2 Data Entry Clerks
1 Microfiche Technician
1 Microfiche Technical Assistant

Future Hardware Expansion:

1 Removable Disc Drive
6 Bilingual (Arabic/Latin) Terminals
AOAD Member States:

United Arab Emirates
Bahrain
Saudi Arabia
Oman
Qatar
Kuwait
Tunisia
Algeria
Libya
Morocco
Djibouti
Sudan
Jordan
Palestine
Syria
Iraq
Lebanon
Yemen Democratic Republic
Yemen Arab Republic
Somalia
Mauritania
AOAD Regional Offices:

Baghdad, Iraq
Damascus, Syria
Tripoli, Libya
Sana'a Yemen Arab Republic
Amman, Jordan
Rabat, Morocco
Nouakchott, Mauritania

ACADI Address:

The Arab Centre for Agricultural Documentation and Information
P. O. Box 474 - Khartoum,
Sudan.

Tel: 78760-3
Telex: 22554 AOAD SD
MINISIS APPLICATION - THE PHILIPPINE EXPERIENCE

Dr. Irene D. Amores
Science Promotion Institute
National Science and Technology Authority
Manila, Philippines

BACKGROUND

In order to appreciate fully the application of MINISIS in processing S & T information in the Philippine scientific environment, a background of the National Information System for Science and Technology (NISST) is described. There is a great need, especially in a developing country like the Philippines, for national programs to guide the development of our information service infrastructure (manpower, information resources, delivery systems, libraries, etc.) and a national focal point is essential to the planning/coordinating and promoting of infrastructure development.

A literature survey showed that many countries have established their national focal points in association with the national agency responsible for scientific and technological development. In some, close liaison had been arranged with a national planning agency; in others not. In some, the national focal point is responsible for policy development and coordination only; in others, it has operational responsibilities as well and functions as a national center for scientific and technological information services. In each country, there is no fixed formula which can represent adequately the differences in the political and social structure of these countries; each national focal point must accommodate its own governmental structure and needs.

In the planning of the NISST, we took into consideration the role and mode of operation of the national focal point -- advisory, operational, funding organization, coordination, the subsystems to be developed, hierarchical relationships, principal service functions, the development of man-machine systems, allocation of document holding responsibilities, cost of recovery and other policy considerations.

When the NISST was launched in 1983, it was the consensus among the member-participants that a focal point be designated and the Scientific Clearinghouse and Documentation Services Division of the NSTA was designated in view of its well-established government support, notwithstanding its official designation as the UNISIST focal point and (by law) the science arm of the country's National Library.

The structural organizational chart of NISST on page 142, shows the NSTA, the premier science agency of the government, the national node; the Scientific Clearinghouse and Documentation Services Division, the focal point/main base of NISST; the various specialized mission/discipline-oriented information networks,
some of which have been established and operating and some of which are in the process of establishment; and the subsystems of such specialized networks, consisting of institutions from government, academe and industry.

As focal point of NISST, the Clearinghouse (with the support of NSTA) has to see to it that considerable strengthening of the capacity of the focal point for information provision and for networking and sharing of information resources and facilities in the country are taking place, since these are essential in the development of a functional NISST capable of effectively responding to the challenge of development.

APPLICATION OF MINISIS

One primary function of the national focal point, is the application of information technology to make possible the effective transfer of information with the understanding that the use of the technology is appropriate to the socio-economic level and realistic aspirations of the country. As part of the UNDP-sponsored project, "Strengthening of the National Scientific Information System", a decision had to be made as to the kind of software NISST was to acquire. MINISIS, which as everybody knows, can only be used in the HP3000 computer was selected. We acquired an HP3000 computer and signed licensing agreement with IDRC concerning the acquisition of MINISIS.

The staff members and users underwent training in various areas of information handling and processing.

At this writing, substantial developments in science information services and products have been achieved. They are as follows:

Services

* Information clearing and referral services
* Document delivery service tailored to user needs
* Better utilization of information services
* Application of appropriate norms, standards, codes and guidelines to information handling and system
* Closer interaction of the Clearinghouse and the NISST with international and regional information systems, services and programs
* Improvements in the dissemination, distribution capability conducive to savings in foreign exchange of scientific publications

Products

* R & D projects profile
  - R & D (Philippines (annually))
  - Bulletin of Researches (quarterly)
* On-going Research Information
* Current Awareness and SDI
* S & T Experts Profile
  - Philippine Men of Science
* S & T Institutions Profile
  - Mailing List
  - Directory of Publishers
* Documents Data Base
  - Union List of S & T Serials
  - Union Catalog of Books and Monographs
* Foreign Analytics Data Base
* Filipiniana Serials Analytic Data Base
  - Philippine Abstracts/Bibliography on Science and Technology
* Seminar Reports Data Base
* Acquisition and Circulation Control - being started

Updating processes made on these data bases are done continuously. Any new development that is encountered in S & T is added to each profile. This operation has been going on for two years; since then no major problems have been encountered except for some minor ones which immediately were solved.

However, enumerated below are some problems which we have encountered very recently:

Problem 1: Entry aborts with %.1 % 5470 PUSL % 13.% 17
Program Error # 20: stack overflow on next command in a PS DB

Problem 2: Entry aborts with Input (E 386) Unexpected I/O error on $STDN in an RD DB which contains bibliographic/textual information upon reaching 4K bytes

Problem 3: Stack overflow after entering 3 or 10 records through a PS

Problem 4: Entry aborts with stack overflow % 1.%5670:PUSL.%13.% 7 at write time in a PS DB

Modify

Problem 5: Modify on repeatable fields with lengthy occurrence aborted with bounds violation

Renum

Problem 6: Renum aborts with: RENUM. UTILITY. MINESIS. % 0.% 521:PUSL .% 13.% 7
Program Error # 20: Stack overflow on a PS DB
The National Conference of State Legislatures is a non-profit organization of the 50 state legislatures in the United States. Its purpose is to facilitate information exchange among the states and to provide technical assistance to state legislatures in both issues and management areas.

One of the vehicles of information exchange is LEGISNET, an on-line data base of both abstracted and full-text documents, which is available to all 50 state legislatures through direct dial access. Originally developed in 1979, this data base comprises research reports and program evaluations contributed from the states and documents prepared by NCSL staff. In addition to this file of legislative- and NCSL-related documents, which is called Legislative Information System (LIS), is a recently created data base of documents contributed by private sector associations and companies, the Public/Private Legislative Exchange (PPLE). The LIS file contains nearly 5000 documents, while the newly created PPLE contains fewer than two dozen. Other data bases implemented in MINISIS include records of requests for information from constituents, a file which is searchable by NCSL staff only; a library catalog; a list of LEGISNET users; and INDEX, a word searchable form of the Thesaurus file. Forthcoming is a data base containing information on automation in state legislatures.

Some documents in LEGISNET are available in full text online; the majority, however, are in abstracted form. The originals of the abstracted documents are maintained in a clearinghouse for distribution to legislative researchers. These include legislative research reports that range in length from a few pages to a few hundred pages. The documents in full text on the system are (1) those that have been produced for the NCSL magazine or (2) issue briefs and 50-state surveys produced by NCSL staff; they do not exceed 8 pages of typewritten text.

Access to the system is currently available only to legislative staff. Users include legislative research analysts, librarians, and an increasing number of legislators from 46 states and the Virgin Islands.

LEGISNET runs on an HP3000 Series 42 with 3 MB of RAM, 2 IO channels, and 2 disk drives with a combined total of 500 MB of memory.

The original LIS was implemented with the IMAGE data base. In 1983, it was decided that a new data base management system
would be needed, for the following reasons: IMAGE has a non-user friendly and non-standard search language; it is relatively difficult to make changes to the IMAGE system; and a decision had been made to make some of the documents available on-line in full text.

NCSL contracted with Systemhouse, Inc., to lease the MINISIS software and to convert our 2800-term search Index to the MINISIS Thesaurus structure. Conversion of IMAGE data files was done in-house; IMAGE data sets were processed through an "Archiver" program, which created a flat file of lines coded with two digits. A conversion program then translated these into a file marked with MINISIS field tags for batch-in.

The structure of the data base is fairly simple. Since all records share certain types of bibliographic information, these data are stored in a single RD (called DOC). Abstracts of abstracted documents are also stored in the DOC file. Several Projected Subsets were created for data entry purposes; these conform to particular document types in LEGISNET and exclude irrelevant fields for each document type. For querying and browsing, a Data Submodel called LIS (Legislative Information System) is used; this DS links a Projected Subset called LIS1 (a non-entry subset of DOC fields), the Thesaurus file, and the RD that contains the text of full-text documents.

The Thesaurus is somewhat unusual in that we modified the second language structure to accommodate a numeric coding system that is used for data entry. That is, the "English" language is the multi-word term, and the second language is the four-digit corresponding numeric code. The numeric code is used to simplify data entry and can also be used for query.

Full-text documents are broken up into manageable segments and entered as separate records into the DOCT ("Document-Text") file. The Data Submodel link between PS LIS1 and the RD DOCT is made on a field (ID Continue--IDCONT) that is a duplicate of the subfiled field containing our in-house identification code. By using this field to link portions of each document and manipulating the print formats, we were able to avoid the 32K character/8 record limit set by MINISIS. Rather, the records that are joined (by a LEFTOUTER join) create a virtually unlimited series of flattened records. Each of the flattened records "contains" the bibliographic information from the DOCT file. Because each flattened record of the document "shares" the same ISN, the number of records posted in a search accurately reflects the number of actual documents retrieved, not the number of records retrieved.

The print format is the key to the appearance of each document as a single entity. After the first record displays the bibliographic information, subsequent displays of this information are suppressed; this was accomplished by suppressing identical field contents whenever the ISN is identical (which it is in each of the flattened records).
In addition to the IDCONT field, which is used for linking purposes only, the DOCT file contains two other fields -- one for textual information and one for charted information. The textual information is inverted into a LEFT-ADJACENT type of file, while the charted information, because of its general lack of meaningful words, is not inverted.

The Text field (which can contain up to 4000 characters) is presented in paragraph form by preceding the field with 5 blank spaces for a paragraph indentation and by following the field by 79 spaces to the right. This later choice appeared to be the easiest option to force a line feed at the end of each of the repeatable fields (which equals a paragraph). The Chart field (79 characters long) is not preceded by any blank spaces and is also followed by 79 spaces to the right, again to force a line feed.

Our biggest problem with full-text implementation is really the size of the Index file that is created. Because of the current MINISIS requirement to reinvert the entire contents of a LEFTADJ file, our Index file (which we can maintain on the system and build by appending) is large; in the future or until the time when the entire file does not have to be inverted, it will be kept on tape.

We chose to make the Text field of full-text documents LEFT-ADJACENT searchable because of the greater likelihood of erroneous hits using AND with such a large field. When LEFT-ADJACENCY becomes more manageable on an ongoing basis, the Abstract and Title fields will be altered to this format as well.

The major problems we see with our system include the following:

1. The number of total records displayed at the end of a LIST OFFLINE is erroneous, because each flattened record is counted. In order to avoid confusion, this sheet is detached from printouts before being mailed to our users.

2. It is impossible to begin each document on a new page by choosing the PAGE CONFIGURATION option "1 record/page", since each record-segment of the document is treated as an individual record.

3. Spacing between paragraphs and chart lines is awkward as MINISIS does not allow for blank fields. To effect the appearance of a blank line or double space, some character or characters must be inserted into the field. So far, the only characters I have found to work are visible characters (such as a single period or hyphen). When many "blank lines" are needed in a single record, we insert, for example, a single period. However, this creates a problem when the record is modified: if several occurrences of the Chart field hold the same character or characters, the MODIFY processor reorders this group, usually placing field occurrences with identical data together toward the beginning or the end of the record. Thus, several lines of chart
that should be separated by "blank" lines are regrouped together
and are followed by several lines containing, for example, a
single period. Thus, modifying these records must be done with
extreme care and/or the characters that break the lines of chart
must vary in kind or quantity, which does not yield the most
attractive and clear format.

4. Although the record limit is stated to be 4096 characters
and the Text field has a variable length of 4096 characters, in
fact our experience has been that far fewer characters can
actually be held in a given record. At a certain point, any
attempt to modify the record results in abortion of the MODIFY
processor.
This memorandum provides a brief overview of legislative uses of computers. Without going into great detail, the memo outlines some of the major areas of legislative computer usage and provides a short summary of the "state of the art" in each area.

**BILL DRAFTING**

Legislatures have turned increasingly to computers to:
1. enter and edit the original text,
2. make modifications for the legislator prior to introduction,
3. make amendments to the text during the legislative process, and
4. prepare a new, printed version of the bill at each step of the process.

Approximately 16 states now use a package of computer programs called ALTER (marketed by the Data Retrieval Corporation) and 13 states use a package called ATMS (marketed by IBM) to carry out these various automated bill drafting functions in the legislatures. Both of these major program packages currently operate on IBM mainframe computers. Several states have developed their own custom program packages to handle bill drafting, and the remainder rely on stand-alone word processing equipment or electric typewriters. The trend, however, is clearly toward the use of larger computers for two reasons:
1. the larger computers offer greater capabilities to manipulate and search the text of bills, and
2. the larger minicomputers and mainframes have recently made significant strides in the programs that are available for use in bill drafting.

**STATUTORY RETRIEVAL AND CODE REVISION**

If a bill becomes law, the legislature then needs a convenient way to add to or change the existing statutory code to reflect the intent of that law. Over 30 states have turned to computer packages to assist with this large task. Many states use a computer program package called SIRS (marketed by the Data Retrieval Corporation) to revise the contents of their statutory codes, while others use a program package called STAIRS (marketed by IBM) for this revision function. A few states (Minnesota, Louisiana, Mississippi, and Washington) have developed their own programs on larger computers for statutory retrieval and code revision.

The power of these programs is generally remarkable. A legal researcher
INTRODUCTION

The Joint Bank-Fund Library serves both the World Bank and International Monetary Fund. The Joint Library is physically located in the Fund and has many of its facilities, including computer services, provided by the IMF. However, the Joint Library works together with 12 other network libraries in the World Bank and IMF to provide information services to the staff of both of these organizations. These libraries cover a wide range of topic areas from international economics at the Joint Library to agriculture, transportation, and population, health and nutrition at the Sectoral Library.

The Joint Library currently supports MINISIS applications in the area of cataloging, bibliographic indexing, acquisitions, periodicals routing and check-in.

CATALOGING

Our cataloging application consists of the collections in the participating network libraries, which include approximately 110,000 records. Each library is in the process of converting to the online system, so this figure represents a little over a third of our total collections. By using different PS views based on a holding library code, each library can have its own file for entry or modify or use a combined view for searching across all collections. Records can be entered either directly through the entry processor or by loading a tape of our activity from a local cataloging network called OCLC. From this network, we are able to take advantage of cataloging work already done either by the Library of Congress or by others. Our future plans include downloading these records directly into MINISIS via an IBM-PC, rather than waiting for a weekly tape of these transactions.
ACQUISITIONS

Our acquisitions application supports ordering for all of the network libraries as well as any individual or department in the Bank or the Fund. Orders are entered by the Joint Library's acquisitions staff or by the network libraries from their respective locations. Receipt of items and invoices are recorded in the order record and the status of the order is always indicated. Prooflists are printed and checked daily. Purchase orders and claim notices are printed twice a week. Cancellation notices and payment reports are produced once a week, and statistics are run once a month. The payment of invoices in the IMF has been automated such that a tape of transactions is produced for the Treasurer's BASIC 4 minicomputer, the data verified, and the checks are printed. In addition, the Treasurer's Dept. sends the library a tape of transactions of paid invoices with check and voucher numbers. We load this tape into another RD and use the data when checking statements. The search access has been a most valuable tool for the order system, providing access by author, title, order date, status, vendor, requestor, and invoice number just to mention a few.

Last spring we decided to add our interlibrary loan ordering to the acquisitions database. The procedures are different, but the record structure is basically the same. American Library Association approved forms, recall notices, and recall phone lists are produced daily. All interlibrary loan reports are produced using MINISIS.

BIBLIOGRAPHY

The bibliography database includes records indexed by the Joint Library from 1500 different working paper series and periodicals. Several others also use the bibliography database for their own projects. For example, the IMF SURVEY which is the official Fund newsletter enters its index for each issue into the file. Their annual index is produced by downloading to a floppy disk and sending the disk to a local typesetter for final copy. A number of special bibliographies such as Women in Development and the World Bank Bibliography are also included.
PERIODICALS CHECK-IN

The last application, periodicals check-in, is our latest development. We began a year ago working on the requirements and design and now are in the process of implementing the check-in system.

The Joint Library receives nearly 4,300 different periodical titles, including 6,700 copies of these titles. We order from approximately 2,000 different vendors/publishers to get these periodicals.

The library decided that it needed to automate the periodicals check-in function in order, first to make the record of our current periodical holdings available in more than one location and, secondly, to have more control over our periodicals for claiming, binding, and reports.

Some of our general requirements included the following:

1. That the program should predict an issue's volume/number and/or date for the next expected issue of a periodical and also allow for entry of the number of copies received for that expected issue.

2. Due to the many copies we received to support our routing function, the ability to handle multiple copies of an issue which could arrive on different days, was essential.

3. Many retrieval points were needed in order to provide search access by title words, frequency, country of publication, ISSN or by ISN. In other words, by any field which helps to identify the item.

4. Early in the design stage we had to decide between storing the check-in transactions in some type of packed format or in ASCII format. We opted for the ASCII format because of the compatibility with other MINISIS processors. We of course forfeited some valuable space, and as a result are limited to 50-60 occurrences of periodical issues. To reclaim check-in space we summarize the oldest transactions into a holdings summary field. For a daily, this will happen once a month and less frequently for others.
5. One of the overriding goals of the Joint Library was to preserve the ease of use and speed of the manual Kardex system for checking in periodicals. All through the design process, alternative features discussed were weighed against this criteria.

The periodicals staff was included where possible in the design phase. Their suggestions on what was needed and what would or would not work were invaluable.

CHECK-IN OPERATION

The user begins by entering search terms which can include any word in the title or authoring body, country of publication, serial type (periodical, newspaper, or gazette), or frequency.

The search will return 1 to 3 records. If there are no records, you simply try your search again. If you get more than 3 hits, you are informed that there are too many hits and will have to redo the search. If you have 2 or 3 hits and the first record is not the one you want, you can move to the next record by entering "next."

The full heading of the first record is automatically listed. With the next expected issue prompted. To register this issue one must enter: (1) the number of copies received, (2) "y" to accept with maximum number of copies expected, (3) "c" to not accept expected issue but to get access to the record for other changes, or (4) "n" or "s" to move to the next record or a new search.

The notations are an integral part of the check-in system and are used to represent the data required to identify an issue. Y/M/D/V/N is an example of a notation where the year, month, day, volume and number are of importance. There are approximately 23 different notations which are stored in a KSAM file for validation. There is a separate field to indicate numbering, such as how many numbers are in a volume. If a season is part of the notation, this field should indicate whether a publisher has designated Winter or Spring or another season as the first season of their year. Also indicated here is a code for "irregular" which is a signal to the program that the notation date of the issue might not be regular even though the volumes and numbers are. The program will prompt the user to change the date in relationship with the next volume/number. This process helped us to assign another 300 titles with a notation for
automatic prediction allowing for faster receipt.

We do have titles which are too irregular to predict either by notation or by frequency. We assign a notation of UNDEF to these titles.

In order for the program to predict an issue, the user must have previously entered the number of copies expected, a frequency, notation, notation numbering, and one issue receipt which matches the notation. The program also predicts the next expected arrival date of an issue based on the frequency and the current date. The "days to wait" field provides a tolerance figure for use in claim report comparisons. One claim test will declare a periodical late if the expected arrival date plus the days to wait is the same as or older than the current date.

CHECK-IN FUNCTIONS

The "receive" command allows one to identify an occurrence either by occurrence number or by issue ID. In order to change any of the parameters including number of copies, receipt dates, status code or date, or note field. One can also receive a future issue which has been received ahead of the expected issue. In this case, the program will predict all of the issues since the last one up to 10 issues, using a status code of missing and no. of copies received equal to zero.

By using the "receive next" command, one can also receive the next predicted issue. This is used if you accept the first expected issue prompt and you need to receive the next issue as well.

"List" and "browse" commands allow the user to see either the header part of the record (title, notes, etc.) and the receipt occurrence together or separately.

"Delete" and "summarize" commands are used to clean up the existing periodical receipt occurrences.

Certain fields can be changed from the check-in program. Any other changes can be made in the modify processor.
CONCLUSIONS

We are a little better than half way through the Kardex transfer at this time. Once we have all of our periodical information entered online, we intend to join the current holdings with the corresponding catalog record, thus providing the reference services with an integrated view of our holdings. The check-in program will also become available to other network libraries. Our future plans include assignment of barcodes for each circulating copy of a periodical and perhaps the inclusion of routing slip production with the check-in program.
**Sample Record**

**ENTER PERIODICAL NAME OR 'EXIT'**

Information technology

1 HIT(S)

**ISN:** 1665

**TITLE:** INFORMATION TECHNOLOGY AND LIBRARIES (Continues: Journal of Library Automation)

**COUNTRY:** U.S.

**FREQ:** Q

**SERTP:** P

**WAIT:** 60

**EXPECTED ARR DATE:** 1985-12-27

**HOLDINGS SUM:** 1982/Mar v.1 n.1 - 1985/Mar v.4 n.1

**REGISTER?**

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<th>ISSUE</th>
<th>COP NOTE</th>
<th>REC'D</th>
<th>LAST REC'D</th>
<th>STAT</th>
<th>DATE</th>
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<td>1</td>
<td>1985-06-27</td>
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<tr>
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<td>1985/SEP v.4 n.3</td>
<td>1</td>
<td>1985-09-27</td>
<td>PRES</td>
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<td></td>
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</table>

**NEXT EXPECTED ISSUE IS 1985/DEC v.4 n.4**
DESCRIPTION OF CHECKIN COMMANDS

Any command may be spelled out or abbreviated to the first underlined letter(s).

VALID COMMANDS ARE:


<issueid> can be a full issue id., an occurrence no., or NEXT.

Examples: R 1985/MAY/13 V.12 N.5 (either same, next or up to 10 issues ahead)
R NEXT (receive next issue if notation is defined)
R 3;C=4 (add 4 copies to 3rd occurrence)
R NEXT;C=2 (receive only 2 copies for next predicted issue)
R 3;ID=1985/OCT/15 V.23 N.32 (change date from Oct.14 to Oct.15)

LIST ( <nn> )
( [ALL] )

Examples: LIST (see heading only)
LIST 3 (see heading and last 3 checkin lines)
LIST ALL (see whole record, heading plus all checkin lines)

BROWSE ( <nn> )
( [ALL] )

Examples: BROWSE (used to see checkin lines only)
BROWSE 10 (see last 10 checkin lines)
BROWSE ALL (see all checkin lines)

FORMAT <printformatfilename> (to change which fields are displayed)

DELETE <occurrence number>[/<occurrence number>] (use to delete checkin lines)
SUM [<occurrence number>/<occurrence number>] (deletes occurrences and holdings summary and prompts for new summary)

NOTATION <notation>

To change notation with another in the approved list (including UNDEF)

FREQUENCY <frequencycode> (use to change frequency of periodical or newspaper)

ARRIVAL <yyyymmdd> (use to change expected arrival date if different than what is predicted.)

WAIT <nnn> (use to change days to wait past exp.arrival date or date last rec'd before appearing on a claim list.)

SKIP (no changes are kept)

EXIT or END (changes are added to record; go back to select periodical)

*Note: Any other changes must be made in modify.
MINISIS FULL SCREEN DATA ENTRY SYSTEM

Mr. Hans Hjelm
Libro Software, Uppsala, Sweden
**FullScreenEntry - FEntry and Entry**

**Entry**

**Enter** function (ADD/DEL/LIST/CL/NEXT/END/QUIT/SKIP/?)

- **ADD FIELD ID [, FIELD ID....]**
  - To add a field not prompted for or to add an occurrence of a repeatable field

- **DEL FIELD ID [, FIELD ID....]**
  - To delete a value previously entered

- **LIST FIELD ID [, FIELD ID....]**
  - To list the contents of field(s)

- **LIST ALL**
  - To list the contents of all fields entered

- **CL**
  - Change bibliographical level

**FEntry**

- **Previous Page**
  - Display the previous page

- **Next Page**
  - Display the next page

- **Previous Form**
  - Display the previous form

- **Next Form**
  - Display the next form

**Both Processors**

- **Next**
  - Write this record, let me start on a new one

- **End**
  - Write this record, exit from (FS)ENTRY

- **Quit**
  - Do not write this record, exit from (FS)ENTRY

- **Skip**
  - Do not write this record, let me start over again

Form and page give different results only if the current form is repeatable.
FULLSCREEN ENTRY - FSENTRY AND ENTRY

Prompting Sequence

Entry

1. Those fields with bibilographic level indicators are prompted first, according to the bibliographic level selected in the following order:
   - Collective level - C and A fields prompted
   - Serial level - S and A fields prompted
   - Analytic level - A and M fields prompted
   - Monograph level - M fields prompted

2. Fields which are used to check for duplicate records.

3. Fields which are to be validated.

4. All other fields which are to be prompted - in the order they are defined in DATADef.

FSENTRY

No "prompting" takes place. Fields are entered according to screen layouts and form sequence.
FSENTRY/FSMODIFY

NON - REPETABLE FROM

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<th>LANG.CODE (A100)</th>
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<th>PRICE (A305)</th>
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FSENTRY/FSMODIFY

NON - REPETABLE FORM

ISN

LANG. CODE (A100)

TITLE (1) (A200)

TITLE (2) (A200)

ORDER DATE (A303) ORDER DATE (A303) ORDER DATE (A303)

NO. OF COPIES (A301) NO. OF COPIES (A301) NO. OF COPIES (A301)

PRICE (A305) PRICE (A305) PRICE (A305)

PUBLISHER (A400)
FSENTRY/FSMODIFY

YOUR FSDEF-FILE

THE FSENTRY OR FSMODIFY PROCESSOR

YOUR FORMS FILE

(OPENED VIA THE FSDEF FILE)

YOUR DATA BASE

(OPENED VIA THE FSDEF FILE)
FULLSCREEN DEFINITION - FSDEF

Each FSDEF file will link one database (RD, PS or DS) to one Forms file.
NORDISKA MUSEETS FÖREMÅLSREGISTRERING - SIDA 1
********** ********** ********** ********** ********** **********

ISN ISN. NORDISKA MUSEET - REGISTRERING Sida 1 (2)

Inv.nr INVNR. Litt LITT Realnr RNR1 RNR2 RNR3 Antal AN

Sakord SAKORD. Specialbenämning SPECBEN.

Material MAT1, MAT2. Teknik TEKN1, TEKN2.

Tillv.tid TID. Anv.tid ATID. Mått MAATT. Förvärvsdat FDAT.

KLASSIFIKATION

A1 A2 A3

KLA1. KLA2. KLA3.

B1 B2 B3

Färg FARG. Negativnr NEGNR.

Anmärkning ANM.

********** ********** ********** ********** ********** **********

NORDISKA MUSEETS FÖREMÅLSREGISTRERING - SIDA 2
********** ********** ********** ********** ********** **********

NORDISKA MUSEET - REGISTRERING Sida 2 (2)

Namn NAHN. Titel TITEL.

Land LAND. Landskap LS KOD KD

Härad/ Socken/
Stad HDST. Stadsdel SHST.

By/Kvarter snr BYKV. Gård/Gate nr GAARDGATA.

********** ********** ********** ********** ********** **********
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<td>Gård/ gata nr</td>
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INTRODUCTION

The Sahel is a strip of land located south of the Sahara between the 7° and the 20° N. Latitude. About 600 Km wide and 4,500 Km long, east to west, it covers an area of 5.3 million square kilometers.

There are eight countries in this zone with their combined populations of 30 million people. These are Burkina Faso, Cape Verde Islands, Gambia, Mali, Mauritania, Niger, Senegal and Chad. Six of these states are among the least developed nations of the United Nations and five are totally landlocked.

With their economies essentially based on agro-pastoralism, the Sahelian states are very vulnerable to climatic hazards. An example is the 1968-73 continuous drought which decimated about 25-50 percent of livestock in the area (USED, Etudes & Travaux de l’USED, n° 2).

CILSS

In order to present a common front against drought and economic underdevelopment, the eight Sahelian states decided to put their resources together. As a result of several consultations, a permanent inter-states committee for drought control in the Sahel was created on September 12, 1973. This organization known as Comité Permanent Inter-Etats de lutte Contre la Sècheresse au Sahel (CILSS) is headquartered in Ouagadougou, capital city of Burkina Faso.

CILSS aims are: 1) coordination of drought control actions; 2) sensibilization of world community to the problems created by drought; 3) mobilization of necessary resources for the realization of drought control programs of the member states; and 4) collaboration with other African organizations whose objectives are similar to CILSS.

The long term objective of CILSS is food self-sufficiency in the Sahel. It is important to indicate at this point that in line with this strategy, 600 first generation projects were established for the period 1978-1982, totalling about 3 billion dollars (USED, Etudes & Travaux de l’USED, n° 2).

INSTITUT DU SAHEL

CILSS runs two specialized bodies: AGRHYMET in Niamey, Niger and INSTITUT DU SAHEL in Bamako, Mali. The MINISIS application will be discussed within the regional framework of Institut du Sahel whose role in the field of development
consists of coordination, analysis and diffusion of research results; coordination, promotion and harmonization of research; transfer and adaptation of technologies; and training of researchers and technicians.

**RESADOC**

One of the programmes established by the Institut was concerned with the creation of a regional Sahelian network for scientific and technical documentation and information known as Réseau Sahélien d'Information et de Documentation Scientifique et Technique (RESADOC). The network would comprise national and sectorial centers at national level and regional centers at the regional level. Within the framework of the Institut, RESADOC would provide information and documentary services supports to the various activities and programmes of the Institut, and set up and run a regional information and documentation system.

The coordinating centre of RESADOC was set up in 1979 in Bamako within the headquarters of the Institut. To date, this center regroups 31 sectorial centers in 5 of the 8 member states of CILSS and 17 regional centers located in the region (See chart, page 171).

The programme receives financial and technical assistance from IDRC, USAID, German Ministry of Economic Cooperation, French Ministry of Cooperation and Development, UNDP, UNESCO and FAO.

The programme's fields of coverage are: plant production; crops protection; animal husbandry; fisheries; forestry; ecology and environment; energy; hydraulics; technology; transport and infrastructures; marketing, prices and storage; demography; nutrition and health; human resources (training, labor); rural economy and sociology; planning and economic development; information and documentation, etc.

In November 1979, the Council of Sahelian Documentalists at a meeting in Bamako recommended the creation of a computerized bibliographic data base within Institut du Sahel using MINISIS. The preparatory and operational phases for the implementation of RESADOC programmes including the implementation of an experimental MINISIS Data Base were financed by IDRC over a period of seven years at an estimated cost of about 750,000 $ CAD. The RESADOC Data Base using MINISIS was installed on 2 S-C's HP3000/39 computer on September 10, 1984 in Dakar, Senegal, for a two year experimental period. It was inaugurated on July 24, 1985.

Parallel to the experimental operation of this data base in Dakar, another experiment has been carried out in Bamako using IBM PC/XT microcomputer with a software called PCISIS developed from USAID funding (about 200,000 US $). Even though the project has been an interesting one, the results obtained have not been conclusive.

**STRUCTURE OF THE DATA BASE**

RESADOC is operating a standard MINISIS bibliographic data base with the following characteristics (see figure on page 172).
Size: 10,000 Records
Number Data Bases: 6 (all RDs)
Number of Authority Files: 8

Presently, there are 3,715 physical records in the data base. Of these, 1,100 records have been published in the RESINDEX and 7,388 records have been collected as of August 1985.

ACHIEVEMENTS

Visitors

Since its inception in September 1984, the Data Base received numerous professional visitors from 28 institutions (see Appendix).

Publications

Between September 1984 and October 1985, two RESINDEX were published totalling 1,100 records.

QUERIES

To date 59 query services were rendered; most of these went to researchers and students writing their term/thesis papers.

TRAINING

Eight training programmes were carried out for CNDST (2), ENDA (4), IER (1) and RESADOC (1).

MINISIS APPLICATION TESTS

RESADOC carried out five application tests for the following institutions: USAID (Dakar), Bibliothèque Universitaire (Dakar), Archives Nationales du Sénégal, CNDST (Dakar) and Ministère du Développement Rural (Dakar). A DDT was worked out for compatibility between CNDST and RESADOC worksheets.

Presently, a test to use the RESADOC worksheet for both AGRIS and RESADOC input is underway. This test is being carried out in collaboration with FAO, IDRC and the Ministry of Rural Development of Senegal. If successful, RESADOC centers participating in AGRIS, will fill out a single worksheet for both AGRIS and RESADOC usage.

PEDAGOGICAL SUPPORT TO EBAD

The RESADOC Data Base is providing pedagogical support to the Ecole des Bibliothécaires, Archivistes et Documentalistes (EBAD), an institute of the University of Dakar. This institution is the only inter-state school teaching library science in Francophone Africa, Madagascar, Mauritius, Reunion, etc.
At the end of their course work, all EBAD students receive two-week practical training at RESADOC where they are given first hand experience of using a documentary data base. Last year, 95 ERAD and CESTI students received training in Dakar. From this experience, it appears that MINISIS is also a tool most suited to students learning.

**COMPUTER FACILITIES UTILIZATION**

- **Type of computer used**: HP3000/39
- **Disk space available**: 50 Mb; used 42 Mb
- **CPU hour available**: 100 h/y; used 40 h/y

The percentage utilization of total CPU time by nature of activities is given in histogram on page 173.

**PROBLEMS AND NEEDS**

Although considerable results have been achieved, RESADOC Data Base is encountering numerous logistics problems inherent to its being installed away from headquarters, in the form of increased communication needs (phone calls, travels, per diem and postages). With just one terminal on hand, data entry operation can not be speeded up. In addition, due to its location within a commercial company, RESADOC has no control over the facilities and must cope with a low priority access to the computer.

In the light of the above, in order to reduce costs, to improve the quality of services and to effectively manage the data base, RESADOC needs to acquire its own mini-computer. This need is furthermore quickened by the phasing out of IDRC's funding of the experimental phase in Dakar in May next year. Afterwards, the Data Base is expected to be transferred to Bamako, Mali.

As far as MINISIS software is concerned, the performance has been satisfactory and encouraging. Of the menu functions used, two have given trouble: the QUERY function adds an extraneous record to the hit lists, and even when the corresponding RD exists on disk; the ISOCONV function does not read from tape to disk except from disk to disk. There is a need for French documentation on MINISIS.

**CONCLUSION**

The RESADOC Data Base has become a reality for professionals, researchers and policy makers in the Sahel. It is a positive instrument in the regional cooperation endeavors of the Sahelian states in the field of information management for effective drought control. It has become a sound academic tool for library science education for Francophone African states, and has helped in sensitizing the Sahelian information specialists in and out of the Sahel to provision of better services through regional cooperation among information centers. The numerous visits indicate that there is maturity and strong need in the region to justify the operation of computerized data bases and MINISIS has been the favorite choice.
The RESADOC information system installed in the member states has become one of the most important regional information systems in Africa. This importance will be extended across the borders of the Sahelian states because countries such as Guinea, Ivory Coast and Cameroon, for example, are now affected by drought. It is interesting to note also that FAO recommends RESADOC Methodology in their project for the setting-up of documentation systems in Africa.

I thank IDRC for making my participation possible and for the confidence put in my person. Thank you.

APPENDIX

INSTITUTIONAL VISITS TO RESADOC DATA BASE
September 1984 - October 1985

1) Archives Nationales, Dakar (SN)
2) Association Bois de Feu, Aix-en-Provence (FR)
3) AUA, Accra (GH)
4) BCEAO, Dakar (SN)
5) Bibliothèque Universitaire, Dakar (SN)
6) Bureau Organisation et Méthode, Présidence de la République, Dakar (SN)
7) CAFRAD, Tanger (Maroc)
8) Centre de Documentation, Présidence de la République, Dakar (SN)
9) CEQESTI, Dakar (SN)
10) CNDA, Ouagadougou (BF)
11) CNDST, Dakar (SN)
12) CRAT, Dakar (SN)
13) EBAD, Dakar (SN)
14) ENEA, Dakar (SN)
15) ENDA, Dakar (SN)
16) FAO, Rome (Italy)
17) IER, Bamako (ML)
18) IFAN, Dakar (SN)
19) ISRA, Dakar (SN)
20) ISTA, Libreville (Gabon)
21) KNOWLES Corp, Chapel Hill, N.C. (US)
22) Ministre de l'Equipement, Dakar (SN)
23) Ministère du Développement Rural, Dakar (SN)
24) OMVS, Saint-Louis (SN)
25) Présidence du Faso, Ouagadougou (BF)
26) Projet PAADA, Nouakchott (MR)
27) UNESCO, Paris (FR)
28) USAID, Dakar (SN)
REGIONAL STRUCTURE OF THE NETWORK

Regional Centres

Sectorial Centres

National Centres

COORDINATION CENTRE
SAHEL INSTITUTE

CALCULATION CENTRE

February 1982
PERCENTAGE UTILISATION OF CPU TIME BY NATURE OF ACTIVITIES
September 1985

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0 | 10 | 20 | 30 | 40 | 50

173
CONVERSION OF THE
INTERNATIONAL REGISTER FOR POTENTIALLY TOXIC
CHEMICALS (IRPTC) DATABASES
FROM AN ADABAS TO A MINISIS ENVIRONMENT

Ms. Ruth Whittaker
Bureau of Chemical Hazards, Health and Welfare Canada, Ottawa, Canada
1. INTRODUCTION

In recent years, interest in the human environment has been growing rapidly. This is especially true in the case of the effect of chemicals on human health. However, some awareness concerning pollution was already expressed several centuries ago. "The Shambles" is both a street and an area in London, and during the eighteenth and nineteenth centuries was a highly commercialized area, with meat packing as a major industry. The butchers in these days would throw all of their wastes into the street where it was washed away by rainwater into drainage ditches. The condition of the area was so bad that it contributed its name to the English language. Almost a year ago, large quantities of methyl iso-cyanate were released from a pesticides manufacturing plant in Bhopal, India. Questions were raised concerning the immediate and long term effects of methyl iso-cyanate on human health. The mere mention of Love Canal evokes revulsion; we have all been sensitized to the dramatic effects on human health of the improper disposal of industrial chemical wastes.

There now are 60,000 to 70,000 chemicals in common use. Millions of tons of pesticides are produced each year to be released into our environment and may ultimately enter water systems, food chains and our bodies.

The greatest obstacle to the safe use and disposal of chemicals is ignorance. When the properties of chemicals are known, their use can be managed by authorities responsible for environmental health and safety.
Because vast quantities of chemicals are produced world-wide, there is a need for an international clearing-house for scientific, technical, legal and regulatory information for assessment and control of chemical hazards, independent of governmental and commercial interests. The International Register of Potentially Toxic Chemicals (IRPTC) is a response to that need.

IRPTC was created by the Governing Council of the United Nations Environment Programme in 1974, to serve both as a chemicals register and a global network for information exchange.

The main objectives are:

(1) To make data on chemicals available to those who need it.

(2) To locate and draw attention to major gaps in the available information and encourage research to fill those gaps.

(3) To identify the potential hazards of using chemicals and make people aware of them.

(4) To assemble information on existing policies for control and regulation of hazardous chemicals at national, regional and global levels.

A working list containing 600 compounds has been identified by IRPTC staff according to parameters regarding use, toxicity, quantity of production and rate of accumulation in organisms. Information is then gathered on the working list chemicals so as to permit an assessment of the risks and hazards posed by
a chemical compound to human health and the environment. This information is then stored in a computerized data bank, running on the IBM370 facilities of the United Nations Computing Centre in Geneva, using ADABAS Software. The various components of the database are shown in the next slide.

The Environmental Health Directorate at Health and Welfare Canada obtained a copy of legal database tape in late 1983. Because the in-house computer was the HP-3000, Series III, and the department had been using MINISIS for several years, it was decided to attempt a conversion from ADABAS to MINISIS, first using the least complex file, the Legal file, and subsequently the most complex one, the Mammalian Toxicity file.

2. CONVERSION CHALLENGES

To appreciate some of the challenges of the conversion process, a brief look at ADABAS file structures may be in order. Four distinct element types occur:

1) Elementary
2) Group
3) Multiply Occurring
4) Periodic Group

Elementary items represent the most basic type of field, with a direct MINISIS correspondence.
Group items identify related groups of elementary items. Because these fields have no intrinsic effect on lower level fields, it was decided to remove these fields entirely.

Multiply occurring fields are repeating and do not retain their absolute position within the array. A multiply occurring item may have up to 191 occurrences.

Periodic group fields presented a special challenge mainly because a periodic group is a group of items which may repeat from zero to many times and within which the occurrences of the many elementary fields bear fixed relationships to one another. While a Periodic group with non-repeating elementary fields could be easily converted to repeating subfielded field with the necessary number of subfields at the elementary level, the case differed for the Periodic ADABAS Group with multiply occurring fields. The MINISIS structure cannot accommodate repeatable subfields and the only resolution of this problem was the creation of separate RD's. Thus, when the conversion routine encountered an occurrence of a multiply fields group situation, all the group fields were output together to a separate magnetic tape file.

The Conversion process itself was achieved by writing a NATURAL Access Program for the ADABAS file, decompressing the data and outputting one or several EBCDIC tape files in a format suitable for input to the MINISIS BATCHIN processor.
Transposition to Hewlett-Packard hardware was achieved through the HP FCOPY utility to convert from EBCDIC to ASCII format.

Finally, the BATCHIN processor was run to accomplish the loading of the files to the created MINISIS database.

The problems encountered during the conversion process were in general not serious.

Embedded exclamation marks present in the ADABAS tape were removed using a global edit and changed to the "#" character.

The actual loading procedure was occasionally somewhat cumbersome. The BATCHIN processor was used to load B-TREE files and sometimes these files became full. The problem was resolved by reducing the size of the input files.

3. **LEGAL DATABASE**

The IRPTC legal database contains recommendations and legal mechanisms from twelve countries and six international organizations. These regulations are related to chemical substance control in media such as air, water, drinking water, wastes, soil, sediments, animal and plant tissues, food and beverages, drugs, consumer goods (including cosmetics and toiletries), agriculture and animal husbandry. This organization allows for rapid access to the regulatory
mechanisms of many nations and to international recommendations for safe handling and use of chemicals. The IRPTC legal database does not contain the whole text of the legislation; rather it summarizes the legislation and indicates the location of the reference from which the information was extracted. All references are given a unique six-letter (CODEN) which identifies publications. When available, CODENS prepared by the United States Chemical Service, are used. When no CODEN can be found for a particular reference, the IRPTC prepares a "pseudo-coden" which is identified as such by the inclusion of at least one asterisk following the abbreviation. The legal database was the first IRPTC file to undergo conversion to a MINISIS format. During the update and second conversion phase, it was decided to replace the original design consisting of two relation definitions (RD's) coupled by means of a left outer join. A single relation definition (RD) replaced the former structure, eliminating the need for join procedures and certain extra control fields.

The simplicity of the ADABAS structure for the legal file with no periodic fields present allowed for the redesign. A data definition module (DDM) was created. A NATURAL conversion program was written to extract data from the IRPTC ADABAS file for output to a magnetic tape compatible with MINISIS Structures. The magnetic tape was later converted from an EBCDIC to an ASCII format for loading to disc in the HP-3000 computer utilizing FCOPY. The MINISIS BATCHIN processor was run 16 times to load each of the smaller edit files into the MINISIS LEGAL database. The original file was broken in smaller segments of approximately 20,000 lines each. This was necessary to overcome the sheer size of the tape (322,000 edit lines).
4. **MAMMALIAN TOXICITY DATABASE**

This database contains toxicity data regarding mammalian systems (including human) gathered from literature reviews. The types of studies included range from laboratory to epidemiological. Doses, test-substances, descriptions of organisms, species and strains are stated. The measured effects of these studies are recorded. Included comments and evaluations by groups of experts provide invaluable information concerning chemical toxicity.

The presence of periodic group fields in the ADABAS structure of this database presented a design challenge. Fortunately, there was only one instance of this field type -- the TEST RESULTS Group. It was decided to remove this group from the main body of data and to hold it in a separate file. The RECORD-NO field was incorporated in this file so as to provide the essential link between the separate file and the main body of data.

The MINISIS design for the Mammalian Toxicity database obviously had to consist of two relation definitions (RD's) to accommodate the envisaged files. These RD's were joined by a left outer join into a Data Submodel (DS). In this manner, all available fields present in the ADABAS Structure were made available in the MINISIS Structure as well.

The conversion process is schematically illustrated in Figure 1. The procedure was very similar to the one used for the LEGAL database, with the exception of the presence of two files created to accommodate two relation definitions (RD's).
THE MAMTOX CONVERSION PROCESS

FIGURE 1
5. SPECIAL TOXICITY STUDIES DATABASE

This database consists of eleven files:

- Carcinogenicity
- Biochemical Interactions
- Mutagenicity
- Neurotoxicity
- Behaviour
- Sensitization
- Interacting Agents
- Irritation
- Immunotoxicity
- Reproduction
- Teratogenicity

The file names are self-explanatory. Very specific toxicological information is contained in each file, in an organizational format similar to the Mammalian Toxicity file. Once more, all files were converted into the form of two relation definitions (RD's), with the exception of the Interacting Agents file, which required a single RD since no periodic groups were present. Data Submodels (DS's) were created using left outer joins on a key of RECORD-NO. All RD's and DS's were ultimately combined in a single data model. The mechanics of the conversion process were essentially similar to those previously described.

6. FUTURE DEVELOPMENT PLANS

The successful conversion of thirteen IRPTC files provided an impetus to proceed with the conversion of the environmental fate tests files, consisting of eight separate files. This conversion will be completed by the end of November 1985; half of all the IRPTC files will have then been converted. Further conversion will occur as funding is made available by national and international governments and organizations.
A great deal of interest was registered by developing countries during a demonstration of Legal File on the HP-3000 model S37 during a training course for IRPTC National Correspondents held in Geneva, Switzerland in November 1984. Approaches have been initiated for a tentative pilot project. This will require the support of several international organizations.

At the national level, the databases could be made available to Canadian provincial institutions by means of a commercial data network distribution system as soon as administrative details are finalized.

7. CONCLUSIONS

Database conversion from an ADABAS to a MINISIS environment was successfully accomplished without loss of data. The MINISIS System being more "user-friendly" than ADABAS and operable on the much smaller HP-3000 computer, allows the IRPTC files to be distributed to a much wider audience world-wide.
THE INDIAN SUBCONTINENT: 
A CASE FOR NETWORKING ECONOMIC INFORMATION

Ms. Nivedita Namboodiri 
National Council of Applied Economic Research, New Delhi, India
The South Asian region which comprises the Indian Subcontinent (India, Pakistan, Bangladesh, Nepal, Bhutan) and the two island republics (Sri Lanka, Maldives) has in recent years made a beginning of regional integration which has now come to be institutionalised in what is known as the South Asian Regional Cooperation (SARC). In many ways, this region stands out as a potential area of immense economic cooperation among its constituents. In terms of area and resources it is one of the top five in the world and in population it is second only to China inhabiting nearly one-fifth of the world population. The Subcontinent is one of the top eight in manufacturing industries in world ranking and it produces substantial agricultural and other primary products. It has also a large transportation, communication and trading network.

Yet, the Subcontinent is also one of the poorest regions. High population, low per-capita income, severe unemployment and under-employment, low hygiene and health standards, high reliance on fluctuating fortunes of the monsoon, and low literacy are all characteristics of this region. It is a mosaic of intensely contrasting features like urban and rural economies, affluence and destitution, modern industries and village handicrafts and also traditional and modern value systems.

Even then the whole region falls into one single socio-cultural-economic unit, largely derived from its ancient, rich past and two centuries of colonial deprivation. These are now interphased with political
independence and the efforts for modernisation and progress largely through a technological revolution in various aspects of economic life. The success of the SARC, therefore, mainly depends upon the economic integration of the region through sharing of each others knowledge and experience.

With this brief background, it is now possible to examine the current and future potential of the NCAER-MINISIS system for networking economic information in the region in furtherance of the objectives of the SARC.

1. NCAER-MINISIS system

The National Council of Applied Economic Research (NCAER) was established in New Delhi in 1956 as an independent, non-profit research organisation. Today it has become a premier Indian national institution, the only one of its kind in the region that undertakes substantial research in applied economics. The NCAER research projects have direct bearing on the policies and processes of economic development in India. Although a major part of the NCAER research is sponsored by the Government departments, it has also been undertaking projects sponsored by public and private sector organisations and international agencies. The NCAER on its own has been undertaking ongoing research in areas of national importance as well.

In the last three decades of its activities, the NCAER has built up an enormous base for primary data relating to Indian economy. It has brought out more than 200 reports on a variety of topics ranging from rural economy to high technology (See attached list). Its quarterly journal, Margin is regarded as a competent commentary on Indian economic scene. It has also been able to collect together an excellent team of experts in economic data-handling.
The NCAER Library, with its rich collection of books, reports, journals, newspapers, press clippings and microfiche documents, exists primarily as a support to NCAER research activities. With a collection of over 50,000 books, reports and journals in the field of economics and development literature, the library has acquired the status of a specialised library, serving the needs not only of its parent body but also the requirements of a large community of researchers, faculty, students, planners and policy-makers in the wide field of economic management.

The NCAER library's collection is particularly strong in Indian government reports, published as well as unpublished. In addition, it has also been designated as a depository library of World Bank publications. With this varied collection, the library provides to its clientele regular services like reference, circulation, inter-library loans, current awareness, bibliographies, literature searches and documentation.

With the acquisition of the MINISIS package, the NCAER has become the first in India to use the package for various library applications. Creation of an online bibliographic database on Indian economic literature, as available in the library, has been started since July 1983. In the printed version, this is now available as Artha Suchi, a quarterly publication with an annual cumulation. This database is an ongoing project with an annual input of about 2,000 records. Although the bulk of references currently is to journal articles and newspaper write-ups, the emphasis now on would be to bring under bibliographic control government reports, seminar proceedings, unpublished documents, reports emanating from various research institutions,
govern, 11 ent agencies, universities, and so on which do not normally surface out in the conventional indexing and abstracting services.

As part of the activities in the first stage of MINISIS introduction in NCAER, other steps have also been taken. For instance, the entire circulation system of the library is being processed on MINISIS, resulting in quick and accurate storing and retrieval of circulation data. This has also helped generation of computerised overdue reminders, thus eliminating substantial manual effort. Similarly, serials received in the library are already on MINISIS giving information on the frequency, country of origin and mode of receipt. Preparation of subject bibliographies has been taken up. A bibliographical database of the library holdings in the field of energy is already in existence with over 300 documents. The mailing list for Artha Suchi as well as the exchange list for Margin have also been put into the MINISIS system.

Before the second phase of the MINISIS use at national (Indian) level and the third at regional (SARC) level are contemplat ed, a first stage expansion is planned in the NCAER library in the immediate future. The activities in this expansion stage would involve broadening the Artha Suchi database to include relevant and current literature available in other libraries and information centres of similar research institutions than NCAER. The objective is to create a central, growing database of economic literature, which would provide a comprehensive coverage of developmental and research activities in various fields of economic life, instantly available to researchers and planners.
It has also been proposed, in this phase of MINISIS application within NCAER library, to concentrate efforts in developing a single and complete database of the entire book and report collection of the library. It would then become possible to create various "projected sets" as needed at different stages according to user requirements. We have currently undertaken an exercise on the acquisition services that can be put on MINISIS and very shortly hope to start inputting information into this database. Other in-house operations to be brought within the control of MINISIS include processing of pertinent data on serials ordering and acquisition; creation of a bibliographic data base of NCAER publications (both published and unpublished); generation of a cumulative index for our journal Margin. Selective Dissemination of Information (SDI) is also aimed at being generated through MINISIS during this phase of expansion.

2. An Indian National Network

Between now and the time when a Subcontinental network on economic information can be set up, there is an interim requirement of a national networking within each of the seven countries in the region. With its vast infrastructure already available, India can set an example for others in this respect. Let us see what can be done in India.

As in the case of all developing countries, in India also it is the government which is the premier agency which collects, analyses and disseminates data on virtually everything, including economics. The government is the largest information bank and the only factory for statistics. There are very few institutions outside the Government which undertake the task of
collection of primary statistics and NCAER is one of them. However, in their cases, such efforts are limited in scope and there is no automatic updating of such data. The constant and updated flow of statistics is only from one source, i.e. the government.

The purpose of national networking, it should be understood, is to tap the vast reservoir of economic information through firstly identifying and collecting, at various levels, existing information in the form of reports, documents, working papers, thesis, studies and so on (published or unpublished). Secondly, this collection then is to be made available to researchers through a depository library. The NCAER Library could perhaps function as such a depository library from where information could be disseminated after bringing the collection under proper bibliographic control through MINISIS.

In India there are two sets of governments and government agencies involved in collection, analysis and dissemination of information. Being a federal country it consists of 30 odd units classified as States and Union Territories. Except for a few small Union Territories which are directly under the control of the Federal government, the rest of the country is administered by State governments, numbering 22, who enjoy a large measure of autonomy, especially in economic matters. The Central government administers foreign trade, banking, communication, currency etc., while the State governments are in charge of agriculture, education, health, transport, etc. Subjects like industry are in the realm of concurrent legislation by both the Central and State governments.
The statistical system in India, therefore, also runs at two parallel levels, both at the Central and the State levels. At the Central level broadly there are three groupings. The first concerns those organisations processing data coming as byproducts of administration, such as the Central Board of Revenue, Railways, Post and Telegraph etc. The second set deals with organisations associated with control agencies such as Textile Commissioner, Coal Controller, Iron & Steel Controller and Directorate General of Technical Development, and so on. Thirdly and finally there are those organisations engaged in collection and compilation of data such as National Sample Survey, Central Statistical Organisation and the Registrar-General of India.

At the State and Union Territories level there are Statistical Bureaus which coordinate statistics collected by different departments at their levels and compile economic indicators and also publish statistical abstracts and handbooks.

Besides the Central and State governments, two important organisations outside them are also involved in statistical research and they are the Indian Statistical Institute and the Reserve Bank of India. Further, there are innumerable academic institutions and universities which also generate economic information.

The problem currently seems two-fold. There is no single coordinating information agency outside the government set-up to act as a reference point for researchers. The second, of course, is lack of adequate documentation and comprehensive bibliographic service in a vast number of specialised areas.
of the country's economic activities. Both these can be overcome by instituting a network based on the NCAER-MINISIS system as shown below:

3. A Subcontinental Network

Compared to India, the other members of SARC have less complex statistical systems and, therefore, national networking for them should not be a major problem. However, the need for a depository library in each of the countries and their professional competence and commitment to a regional economic information system must be stressed. The Subcontinent as a whole must be seen as one single economic unit and the objective of certain amount of economic integration is to achieve more even development of various parts of it. Uneven growth and consequent population movements are at the root of many political problems currently facing the countries of the region. Therefore, economic cooperation must be seen as precondition for greater political understanding and for reducing tensions.

While this is the larger, long-term objective of our present proposal, exchange of economic information among Subcontinental partners enables the parties to know each other better and enhance their information and perceptions
without depending for them invariably on third parties such as the World Bank. Data on economic performance and governmental policies of each of the constituent countries are vital inputs into others' policies and programmes. Trade, for instance, is a major input into such regional integration. But to have a long-term perspective on regional trade, each one should know the demand and investment patterns and fiscal and monetary instruments of other states. Without a central coordinating agency, such data is unlikely to be available easily.

As a central bank for economic information, the NCAER-MINISIS system must be able to establish a two-way flow for effective and timely sharing of data between it and the central depository libraries of the countries. The libraries should be able to input into the system regularly all relevant information and in turn receive from the system on a periodical basis index, bibliographies and reference services and also other needs when demanded.

It is not only vis-a-vis each other, but is also a question of the Subcontinent evolving common policies and programmes in its overall dealings with the rest of the international community. As in the case of EEC or ASEAN, the SARC also would be able to come into its own only when such an identity is established. And it is here that NCAER-MINISIS system should be able to play an effective role by initializing and establishing a data bank for economic information.
# LIST OF PUBLICATIONS

## Agriculture

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## Area Surveys

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(i) Publishing year is given within brackets.

(ii) Asterisk (*) indicates out of print

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68. Appraisal of Demand for Oxygen, Dissolved Acetylene, Welding Electrodes, Gas Cylinders* (Rotaprinted) (1961) 5.00
69. Appraisal of Steel Demand* (1960) 10.00

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173. Contribution of Road Transport to Public Exchequer* (1960)  
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26. Survey of Resource Use, Productivity and Land Reforms in Uttar Pradesh
27. Socio-Economic Survey of Rajasthan Canal
28. Socio-Economic Baseline Studies for Six Medium Irrigation Projects in Rajasthan*
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19. Demand for Cement in Jammu and Kashmir*
20. Demand and Supply for Cotton Textile Machinery
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23. Demand for Forged Hand Tools
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25. Demand for Fractional Horse Power Motors
26. Demand for Harvester Combines
27. Demand for High Powered Diesel Engines: Phase—I
28. Demand for High Powered Diesel Engines: Phase—II
29. Demand for High Pressure Valves and Steel Castings
30. Demand for Industrial Wood
31. Demand for Man-made Fibres in India

Sponsors

State Government
Union Government
State Government
International Org.

International Org.
Public Sector Org.
Union Government
Public Sector Org.
Public Sector Org.

Public Sector Org.


Union Government
Union Government


State Government

*In progress.
32. Demand for Machine Tools  
33. Demand for Mopeds  
34. Demand for Nitrogenous Fertilizers  
35. Demand for PVC Coated Cloth in India  
36. Demand for Passenger Cars  
37. Demand for Pesticides  
38. Demand for Power Tillers  
39. Demand for Scooters  
40. Demand for Shellac in India  
41. Demand for Single Spindle Automatic Lathes  
42. Demand for Steel—1975 and 1980  
43. Demand for Steel Castings  
44. Demand for Steel Pipes and Tubes  
45. Demand for Surgical Instruments  
46. Demand for Seeds  
47. Demand for Tractors  
48. Demand for Welding Fittings  
49. Demand Study for Carbon Products  
50. Demand Study for Pumps  
51. International Market Survey of Cement  
52. Long Term Projections for Iron and Steel  
53. Long Term Projections of Demand and Supply of Selected Agricultural Commodities, 1960-61 to 1975-76  
54. Market Potential for Petro-chemicals for Haldia Petro-chemicals Complex  
55. Market Survey for Lead, Zinc and Cadmium  
56. Market Survey of Refrigerators  
57. Market Survey of Two-wheelers  
58. Marketing System for Government Managed Textiles Mills  
59. Marketing Survey for Atta, Maida and Rava  
60. Marketing Survey for Chip Board in India  
61. Marketing Survey of Controlled Cloth  
62. Marketing Survey of Cardamom and Oranges in Sikkim  
63. Marketing Survey of Malleable Castings  
64. Marketing Survey of Open Die Forgings  
65. Marketing Survey of Shellac in UK and France  
66. New Perspectives in Marketing  
67. Pesticides in Indian Agriculture  
68. Power Availability & Demand in Rajasthan

*Sponsors

Public Sector Org.  
—do—  
—do—  
Union Government  
—do—  
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—do—  
Union Government  
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—do—  
Public Sector Org.  
Union Government  
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Public Sector Org.  
Union Government  
International Org.  
—do—  
—do—  
Public Sector Org.  
—do—  
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Public Sector Org.  
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Public Sector Org.  
—do—  
Union Government  
Others  
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2. Effect on Employment of Change in Technology in Coffee and Tea Plantations in India
3. Employment in Road Transport and Road Construction
4. Study of Unemployment in the Urban Areas
5. Study of Effectiveness of Employment in India
6. Time Allocation Study for the Involvement of Women and Children in Rural Household*

#### IV. Energy

1. All India Household Energy Consumption Survey with Emphasis on Kerosene
2. Comparative Costs of Alternative Sources of Generating Capacity
3. Consumption Pattern of Domestic Fuels
4. Demand for Energy in Eastern India
5. Demand for Energy in India, 1960-75
6. Demand for Energy in Northern India (1965)
7. Demand for Energy in Southern India
8. Demand for Energy in Western India
9. Demand for Liquified Petroleum Gas*
10. Domestic Energy Survey in the Northern Region
11. Domestic Fuel Consumption in Rural India
12. Domestic Fuel in India
13. Economics of Rural Electrification in Kerala
14. Energy Demand in Greater Bombay

*In progress.

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15. Energy in Agriculture in South India
16. Energy Production and Consumption in India
17. Evaluation Survey of Households Bio-Gas Plant in Bihar, Uttar Pradesh, Madhya Pradesh and Andhra Pradesh*
18. Impact of Rural Electrification in Punjab
19. Problems of Energy
20. Role of Diesel Engines in Rural Electrification
21. Rural Energy Consumption in Northern India
22. Study of Economics of High Speed Diesel Oil Retail Outlets
23. Location of Farm Fuel Outlets (Phase-I)
24. Location of Farm Fuel Outlets (Phase-II)
25. Survey of Soft Coke in the Northern Region
26. Power Availability/Demand in Rajasthan in 1980's
27. Rural Electrification, Social Cost Benefit Analysis and Load Development*
28. Socio-Economic Impact of Rural Electrification
29. Survey of Electricity Demand, Consumption Attitude and Delivered Cost of Power for Rural Consumption in Punjab
30. Study of the Methodology for Estimating the Potential for LPG in Rural and Urban Areas
31. Study to Evaluate the Social, Economic and Administrative Aspects of Community Bio-Gas Plants
32. Study on Impact of Power Shortage in Agriculture and Industry
33. Technology and the Development of Energy Industries in India*

V. Industry and Trade

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2. Capital and Rate of Return in Manufacturing Industries
3. Cost Price Structure of Bicycles
4. Cost Price Structure of Cement
5. Cost Price Structure of Iron Ore
6. Cost Price Structure of Sewing Machines
7. Cotton and Tobacco in Andhra Pradesh—Production and Marketing
8. Demand for Flax Products
9. Development of Ancillaries Industries for Heavy Electicals Ltd.
10. Difference in the Estimated and Actual Personnel Requirements in Public Sector Undertakings

*Sponsors

Others

Union Government —do—
Pvt. Business Org. —do—

Public Sector Org. —do—
Pvt. Business Org. —do—


State Government

Public Sector Org.

Union Government —do—

International Org.


Union Government —do—
Pvt. Business Org. —do—

Public Sector Org.

Union Government

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11. Exports Markets for Indian Lac
12. Export Prospects of Electric Fans
13. Export Prospects for Fish Products
14. Export Prospects for Diesel Engines
15. Export Prospects of Footwear
16. Export Prospects for Oil and Oilseeds
17. Export Prospects of Paper and Paper Products
18. Export Prospects of Pepper
19. Export Prospects of Tobacco
20. Export of Sophisticated Labour Intensive Products
21. Export Strategy for India
22. Factor Affecting Fertilizer Consumption
23. Feasible Report on Copper and Zinc Smelters
24. Feasible Study of Paper and Pulp in Nepal
25. Feasible Study of Paper and Pulp in Sikkim
26. Feasible Study of Setting Up of Smelters
27. Feasibility Studies in Selected Industries in Manipur
28. Foreign Capital Participation and Corporate Performance
29. Foreign Technology and Investment
30. Identification of Growth Centres and Their Industrial Potential in 10 Districts of Uttar Pradesh (1975)
31. India’s Export Potential in Selected Countries—Vols. I and II
32. Implications of High, Medium and Low Technologies in Selected Industries
33. Industrial Potentiality Survey of 15 Backward Districts in Uttar Pradesh
34. Industrial Potentiality Survey of Five Selected Industries of Uttar Pradesh
35. Industrial Potentiality Survey of 17 Districts of Uttar Pradesh
36. Industrial Potentiality Survey of Growth Centres in 10 Districts of Uttar Pradesh
37. Investment Plans and Decisions of Business Firms
38. Location & Size of Plants in Indian Industry
39. Loss in Industrial Production and Agriculture Due to Power Shortage
40. Maintenance Imports (1966)
41. Maintenance Imports (1971)
42. Managing Agency System

Sponsors

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Others
Union Government
Public Sector Org.
Union Government
—do—
State Government
Union Government
—do—
State Government
International Org.
Public Sector Org.
State Government

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79. Survey of Ancillary Industries in Maharashtra, Madras and Bihar States
80. Survey of Ancillary Industries in Other States
81. Survey of Economically Weak Tea Gardens
82. Survey of Silk and Art Silk Industry
83. Survey of Small Industry—Pilot Study
84. Survey of the Handloom Industry in Karnataka and Sholapur
85. Taxation and Price Structure of Automobile Industry
86. Transfer of Technology from Developed to Under-Developed Countries
87. Under-utilisation of Industrial Capacity
88. Wage Differentials in Indian Industry

VI. Income & Saving

1. Additional Rural Income Study with Special Reference to Agricultural Development and Fertilizer Use
2. All India Consumer Expenditure Survey—Vol. I (Methodology)
3. All India Consumer Expenditure Survey—Vol. II
4. All India Household Sample Survey of Income and Saving
5. All India Rural Household Survey, 1962—Vol. I (Methodology)
6. All India Rural Household Survey, 1962—Vol. II (Saving, Income and Investment)
7. All India Rural Household Survey, 1962—Vol. III (Basic Tables with Notes)
8. All India Rural Household Survey, 1962—(New Insights into Propensity to Save in India)
9. All India Survey of Household Income, Saving & Consumer Expenditure
10. All India Survey of Economic and Demographic Relationship at the Household Level in Rural Areas*
11. Analysis of Distribution of Income in Rural India
12. Analysis of Data from Rural Economic and Demographic Survey*
13. Analysis of the Structure of Saving in the Indian Economy
14. Additional Rural Income Survey—Data Tape
15. Attitudes Towards and Motivation for Savings
16. Contractual Saving in Urban India
17. Delhi Saving Survey—A Pilot Study

*Sponsors

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Private Sector Org.
Others
Union Government
Others
International Org.
Union Government
—do—

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<td>Review of Sales Tax in Andhra Pradesh (1971)</td>
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<td>Sales Tax System in Andhra Pradesh (1963)</td>
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<td>Sources of External Finance for the Development of Indian Railways</td>
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<td>20</td>
<td>Structure of Working Capital</td>
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<td>Study of the India's Balance of Payments Problem</td>
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</tr>
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<td>22</td>
<td>Study of the Resources of Municipal Bodies</td>
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<td>Study of Indirect Taxation</td>
<td>State Government</td>
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<td>24</td>
<td>Taxation and Economic Development</td>
<td>State Government</td>
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<td>25</td>
<td>Taxation and Foreign Investment</td>
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<td>Taxation and Private Investment</td>
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<td>27</td>
<td>Tax Incentives and Their Effects on Investment</td>
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<tr>
<td>28</td>
<td>Tax Incidence on Housing</td>
<td>State Government</td>
</tr>
</tbody>
</table>

*In progress.*

NCAER
Projects

29. Tax Structure in Sikkim
30. Tax Incidence on Housing—Updating Data
31. Wage Structure in Banking Industry

IX. Transport

1. Air Traffic Survey of Bombay Region
2. Air Traffic Survey of Saurashtra
3. Air Traffic Survey of Southern Region
4. Bihar Origin & Destination Survey
5. Coastal Waterways of Mysore
6. Contribution of Road Transport to the Public Exchequer
7. Cost Benefit Study of Ganga Bridge
8. Economics of Diesel and Electric Traction
9. Employment Potential of Road Transport
10. Employment Potential of Road, Road Transport and Railways—Case Study in Punjab
11. Ganga Traffic Survey
12. Long Term Traffic Survey of Cochin Port
13. Regional Transport Survey of Jammu & Kashmir
14. Rationalisation of Bus Routes in Bombay (Phase I)
15. Rationalisation of Bus Routes in Bombay (Phase II)
16. Regional Transport Survey of Kerala
17. Regional Transport Survey of Madras & Pondicherry
18. Regional Transport Survey of Mysore State
19. Regional Transport Survey of North Eastern Region
20. Socio-Economic Survey of Rural Roads
21. Socio-Economic Aspects of Road Development in Rural Areas of Mikir Hills in Assam*
22. Socio-Economic Aspects of Rural Roads in Bhiwani District and Thanesar Block of Haryana State
23. Study of Road Transport Industry
24. Study on Bus Student Concession in Bombay
25. Study to Determine Extent and Scale of Roads Side Amenities: NH-I—Delhi to Amritsar
26. Traffic Congestion in the Walled City of Delhi and Its Vicinity
28. Traffic Potential of Feeder Air Service Routes in Maharashtra
29. Traffic Potential of Air Routes in Himachal Pradesh

Sponsors

Union Government

—do—


Public Sector Org.

—do—

State Government

—do—

Union Government

Public Sector Org.

Union Government

—do—

—do—

—do—

—do—

—do—

Public Sector Org.

State Government

Union Government

State Government

—do—

—do—

State Government


State Government

Public Sector Org.

State Government

—do—

—do—

*In progress.

NCAER

213
Projects

30. Traffic Potential Survey of Inland Water Transport on the River Jhelum
31. Traffic Potential Survey of Inland Water Transport between Allahabad and Calcutta
32. Traffic Potential Survey of Inland Water Transport of Indravati River in Bastar District of M.P.
33. Traffic Survey of Beypore Port
34. Traffic Survey of Cochin Port
35. Traffic Survey of Coondapur Canal
36. Traffic Survey of the Gandak River
37. Traffic Survey of Karwar, Honawar and Coondapur Ports
38. Traffic Survey of Madras Port
39. Traffic Survey of Mormugao Port
40. Traffic Survey of Mangalore and Malpe Ports
41. Traffic Survey of Paradeep Port
42. Traffic Survey of the Port of Tuticorin
43. Traffic Survey of Ulhas River—Thana Creek-Bassien and Creek Waterways
44. Traffic Survey of Visakhapatnam Port
45. Transport Requirements of Iron and Steel Belt
46. Transport Model for Steel Industry
47. Transport and Storage of Foodgrains
48. Transport Synthesis of the North-Eastern Region
49. Transportation Plan for Eight Hill Districts of Uttar Pradesh
50. Transportation Modelling on Regional Base on Trunk Route System*
51. Trunk Line Coding

Sponsors

State Government
Union Government
State Government
—do—
State Government
—do—
Public Sector Org.
State Government
—do—
—do—
Others
Public Sector Org.
—do—
—do—
State Government
Union Government
Public Sector Org.

X. Other Projects

1. An Assessment of Export Incentive Scheme
2. An Assessment of Regulation Controls in the Indian Economy
3. Computable General Equilibrium Model for Indian Economy*
4. Changes in the Relative Prices in 1960's and Their Effects on Output Structure
5. Choice of Transport Technology in the Rural Areas
6. Cost Price Structure of Kiran Training Chetak Helicopters
7. Cost Benefit Study of Tourism

*In progress.

NCAER

214
8. Cost Benefit Analysis of Kovalam Beach in Kerala and Gulmarg Resort in Kashmir
9. Cost Benefit Study of Rural Electrification Scheme
10. Current Problems of Planned Economy
12. Excise Duties on Selected Commodities
13. Excise Duty on Aluminium Foils—The Impact on Demand for Foils
14. Evaluation of Environmental Implements Programme for Urban Slum Areas
15. Evaluation of the Performance of Public Sector
16. Evaluation of Flood Damages Data and Assessment of Flood Damage in Bagmati Basin
17. Evaluation of the Working of National Small Industries Corporation
18. Evaluation of Fish Farmers Development Agency Programme
19. Evaluation of Naujhil Integrated Rural Project for Health and Development (NIRPHAD)
20. Future Raw Material Mix for Textiles—The Role of Synthetic Fibres
21. Forward and Backward Linkage of Non-Ferrous Metals and Coal
22. Formation of Cost Indices for Chemical Equipment
23. Formulation of Village Clusters for Telecommunications Network
24. Growth Without Inflation
25. Household Expenses on Medical Care and Medicines
26. Household Preferences for Cooking Medium*
27. How Far the Public Housing Has Benefited the Poor?
28. Impact of the Rise in Petroleum Prices for the Production of Major Cereal Crops in India
29. Indian Economy, 1961-63 (Conditions and Prospects)
30. Indian Economy, 1962-64 (Review and Prospects)
31. Indian Export: An Overview
32. Indian Economy, 1961-66
33. Impact of Indirect Taxes on Room Airconditioners and Refrigerators
34. Integrated Monitoring and Economic and Intelligence System for the Ministry of Finance*

*In progress.

NCAER
Projects

35. Looking Ahead (Prospects of India's Economy and Trade in 1981)
36. Longitudinal Study of Birth Interval Dynamics in the Khanna Study Villages of Punjab*
37. Market Towns and Spatial Development in India (1965)
38. Market Towns and Spatial Development in India (1971)
39. Operation of Credit Policies at Bank Level
40. Problems of Credit in the Handicrafts Sector
41. Public Distribution System in Foodgrains
42. Price Control Mechanism for Selected Commodities
43. Perspective Plan for Rural Electrification in Telangana Region of Andhra Pradesh
44. Reafforestation Study in Nagaland*
45. Research and Training in India
46. Review of Premium Structure Under Insurance Policies of ECGC*
47. Review Paper—AIMA
48. Rural Public Programmes
49. Saving in Structural Steel Through Standardisation
50. Socio-Economic Survey of Bullock Carts
51. Socio-Economic and Resource Survey of Balasore District of Orissa
52. Socio-Economic Impact of Telecommunications in Rural Areas
53. Some Aspects of Economic Growth of Underdeveloped Areas
54. Study of Integrated Approach to Edible Vegetable Oils Problems
55. Study of the Assessment of Flood Damages
56. Study on Behavioural Correlates of Child Health and Mortality*
57. Study of Darjeeling Tea Estates
58. Study of Viability of Coffee Holdings*
59. Study on the Working of Housing Cooperatives
60. Study of Asset Preferences
61. Study of Rural Public Call Offices
62. Study of Credit Management System of Punjab National Bank
63. Study of the Potential of General Insurance Business and Clients' Attitude
64. Study on Reservoir Fisheries Management and Development*

*Sponsors

Others

International Org.
Union Government
—do—
—do—
—do—

Public Sector Org.
State Government
International Org.
Public Sector Org.
Union Government

Public Sector Org.
Union Government
—do—

Public Sector Org.
Union Government

International Org.
Union Government
—do—

Public Sector Org.

Union Government

*In progress.

CAER
<table>
<thead>
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<th>Projects</th>
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<tr>
<td>65. Survey of Controlled Cloth in the Mill Sector and Janata Handloom Cloth Buyers</td>
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<tr>
<td>66. Study of Export Subsidies</td>
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<tr>
<td>67. Survey of Indian Bank Industry</td>
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<tr>
<td>68. Survey of Book Industry—Small Publishers</td>
</tr>
<tr>
<td>69. Survey of Economic Conditions, Social Problems and Welfare Needs of Police Constables in Delhi and Uttar Pradesh</td>
</tr>
<tr>
<td>70. Technology Development and Policy*</td>
</tr>
<tr>
<td>71. TCM Participants Evaluation Survey</td>
</tr>
<tr>
<td>72. Technical Co-efficients for Selected Industries</td>
</tr>
<tr>
<td>73. Techno-Economic Study of Modernisation of Water Courses and Recovery of Water Charges in the Haryana Irrigation Project</td>
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</tbody>
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<th>Sponsors</th>
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<td>Union Government</td>
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<td>Others</td>
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<td>International Org.</td>
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<td>—do—</td>
</tr>
<tr>
<td>Union Government</td>
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<tr>
<td>State Government</td>
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</tbody>
</table>

*In progress.

NCAER
L'expérience Zairoise sur l'utilisation du Minisis

Cit. Mananga Ma-Mbumba
Service Présidentiel pour la Promotion de l'Informatique au Zaïre,
Kinshasha, Zaïre

En République du Zaïre, la nécessité de créer un système central d'information remonte à l'année 1970 où une initiative en la matière fut prise à la Présidence de la République.

En 1972, l'Ordonnance-Loi n° 72-419 chargea notamment le Service de l'Informatique du Zaïre (S.I.Z.) de :
- recueillir, centraliser en traiter par ordinateur des données économiques, sociales et autres
- communiquer aux différents services de l'Etat, à leur demande, des informations dont ils ont besoin.

La procédure adoptée fut donc de créer une Banque de Données destinée à compléter les instruments statistiques existants.

Sa conception, sa mise en place et son développement ont été confiés au Service Présidentiel pour la Promotion de l'Informatique au Zaïre, S.P.I.Z. en sigle, qui est un des services spécialisés du Bureau du Président de la République zaïroise (Ordonnance n° 83-033).

La structure organique ainsi que les objectifs assignés à ce Service figurent dans les annexes 1 et 2 de la présente communication.

Après cette brève présentation de notre institution, disons d'emblée que c'est par le truchement du Centre de Documentation Agricole (C.D.A.) que le S.P.I.Z. qui venait d'acquérir un système informatique HP-3000, a pu être mis en contact avec les experts du C.R.D.I. chargés d'implanter le MINISIS dans leur site.

En retour, le C.D.A. a bénéficié de l'encadrement de notre institution pour la réalisation de sa base documentaire du secteur agricole.

La gestion documentaire a d'abord utilisé le logiciel ISIS, a compatible avec le matériel IBM 370 avant l'utilisation du MINISIS suite à l'introduction au Zaïre des ordinateurs de marque Hewlett-Packard dont le S.P.I.Z. a été parmi les tout premiers acquéreurs.

**Potentiel matériel et humain du S.P.I.Z.**

Comme il sera donné de le constater dans les annexes 3 et 4, le S.P.I.Z. dispose d'un patrimoine informatique comprenant trois (3) miniordinateurs HP-3000, Série II, modèles 6 et 8.
- Chaque ordinateur a une taille de 512 K (extensible par upgrading jusqu'à 2,048 K).

- Les armoires à disque sont de modèle HP-7925 ayant une capacité de 120 Megabytes pour chaque discpac.

- Les dérouleurs de bandes sont de modèle HP-7070E pourvus de plusieurs canaux à 9 pistes acceptant des bandes de 800 et 1600 BPI.

- Des terminaux de différents modèles tels que HP-2640R, HP-2654A, HP-2647A.

- Des imprimantes modèle 2470 type DATA PRODUCT.

- et d'un lot de matériels annexes tels que :
  . le matériel de microfichage (COMP)
  . le matériel de photocopie
  . le matériel graphique CALCOMP
  . le matériel graphique TEKTRONIC
  . les lecteurs de microfilm
  . des HARD COPY PRINTERS.

Quant au potentiel humain, le secteur du MINISIS utilise principalement 2 ingénieurs-systèmes et 4 analystes-indexeurs.

Utilisation du MINISIS

Il existe, à l'heure actuelle, une vingtaine de centres informatiques dotés d'ordinateurs Hewlett-Packard et donc susceptibles de devenir utilisateurs du MINISIS.

Trois centres seulement ont acquis ce logiciel qui, devons-nous le rappeler, au terme des accords nous liant au C.R.D.I. ne peut être utilisé à titre onéreux. Il s'agit du :

- Service Présidentiel pour la Promotion de l'Informatique au Zaïre, principal utilisateur et promoteur du logiciel au Zaïre

- Centre de Documentation Agricole

- GECAMINES-COMMERCIALE, antérieurement dénommée SOZACOM.

Au niveau du S.P.I.Z., le MINISIS est utilisé pour l'exploitation des bases de données suivantes :

1. C.D.A.BIB : Base de données dont le traitement manuel est réalisé au Centre de Documentation Agricole, tandis que le traitement informatique se passe au S.P.I.Z. Elle couvre l'ensemble de références bibliographiques du secteur agricole zaïrois et contient jusqu'à présent 2.500 unités documentaires.
2. **I.P.T.J.** : Base de données des textes de lois, ordonnances-lois et arrêtés publiés dans le Journal Officiel (Moniteur) de la République du Zaire.

Périodique bi-mensuel publié par le Bureau du Président de la République, le S.P.I.Z. y trie les textes de lois promulgués dans sa première partie et ce depuis 1960 (période de l'accès-sion du pays à l'indépendance) jusqu'à ce jour.


Elle contient 260 références.

4. **CARIS** : (Current Agricultural Research Information System).

Système d'information sur les recherches agronomiques en cours. Cette base centralise les données des pays de la Communauté des Grands Lacs (CEPGL) qui regroupent le Zaïre, le Rwanda et le Burundi.

Elle comporte, au total, 287 références dont 70 pour le Burundi, 44 pour le Twanda et 173 pour le Zaïre.

5. **GESRIR** : Base de données qui gère les bibliothèques du Bureau du Président. Elle contient 600 références.

Le MINISIS est également utilisé dans l'application DIDDOC de la GECAMINES dans l'exploitation des données bibliographiques des métaux non-ferreux de la GECAMINES-HOLDING.

Comme on peut le remarquer, les applications de type documentaire demeurent jusqu'à ce jour la principale branche d'usage du MINISIS au Zaïre. L'explication peut être trouvée dans le fait que les premiers techniciens formés en la matière étaient des documentalistes.

D'autre part, l'utilisation de la langue anglaise dans ses premières versions a, à quelques proportions près, handicapé l'élan que ce puissant logiciel pouvait susciter auprès des utilisateurs potentiels.

Nous nous réjouissons de constater qu'avec l'acquisition de la version française du MINISIS, récemment implantées avec la précieuse collaboration des experts du C.R.D.I., le MINISIS devient un outil plus souple et plus maléable par nos techniciens et bon nombre de lacunes apprues antérieurement tendent à se dissiper grâce à une banalisation plus facile à établir.

Les échanges fréquents de correspondance entre le C.R.D.I. et le S.P.I.Z. ont permis au dernier de résoudre certains problèmes locaux et envisager l'extension du MINISIS à d'autres secteurs de gestion.
La vocation du S.P.I.Z. étant entre autre chose de promouvoir l'informatisation des institutions et organismes quelle qu'en soit leur nature, il nous revient alors de suggérer quelques mesures pratiques en vue de la vulgarisation du MINISIS auprès des centres informatiques ad hoc et des utilisateurs potentiels. Il s'agit notamment :

- de l'organisation au Zaïre d'un séminaire de sensibilisation sur la présentation de tous les aspects du MINISIS.

Ce séminaire qui serait placé sous l'égide du C.R.D.I. avec la collaboration logistique du S.P.I.Z. regrouperait les représentants :

- des sociétés de construction de matériel HP ou leurs représentants au Zaïre utilisant le logiciel,
- des centres informatiques équipés de matériel susceptibles d'utiliser le MINISIS,
- des institutions ou organismes aptes à se servir du MINISIS comme outil d'aide à la gestion (bibliothèques, archives, centres de recherches, facultés d'universités, etc ...).

A l'issue du séminaire, l'on pourra être en mesure d'appréhender la portée effective de la diffusion du MINISIS au Zaïre.

- de l'organisation des cycles de formation à l'intention des formateurs locaux par les experts du C.R.D.I. ou d'autres désignés par eux.

Ces sessions de formation s'articulerait autour de la maîtrise du système ainsi que des techniques d'analyse et d'indexation et à l'élaboration des différents thésaurus qui nous font encore défaut dans certains domaines.

Cette nécessité de diffusion et de formation s'avère impérative dans la mesure où le Zaïre, par le biais du S.P.I.Z., avait exprimé, dans un passé assez proche, au Directeur du PADIS, les souhaits d'abriter en son sein le Centre National d'Informatique et de Documentation pour le Développement, en sigle CNID, et plus tard de coordonner les activités du Centre Sous-Régional du PADIS.

Avant de clore notre communication, je voudrais m'acquitter du devoir de réitérer nos remerciements au C.R.D.I. qui a bien voulu permettre à notre institution de se joindre à cette assemblée afin de participer à la Septième Réunion Annuelle du Groupe des Usagers du MINISIS.
LE LOGICIEL "SOFTWARES"

SYSTÈME D'EXPLOITATION (OPERATING SYSTEM)

SYSTÈME D'EXPLOITATION DU HP/3000: MPE-III
Voir SOFTWARES DE BASE "TOP"

PROGRAMMES DE TRAITEMENT
- LANGAGES DE PROGRAMMATION: COBOL, BASIC, RPG, FORTRAN
- SYSTÈME DE GESTION DE BASE DES DONNÉES: IMAGE 3000
- UTILITAIRES: EDITOR, SORT, MERGE, SEGMENTER, UTILITAIRES SYST
- AUTRES SOUS SYSTÈMES: KASIM 3000, DEC/3000, VIEW/3000, DB/3000

PROGRAMMES DE CONTRÔLE

PROGRAMME PRODUITS DU S.P.I.Z. (SOFTWARES SPIZ)
MINISIS SYSTEM APPLICATIONS, PROBLEMS AND FUTURE APPLICATIONS AT THE HONG KONG PRODUCTIVITY COUNCIL (HKPC)

Mr. Nelson Tse
Hong Kong Productivity Council
Kowloon, Hong Kong

Ladies and gentlemen, I am very glad to have this opportunity to share with you my experience with the MINISIS software. In the next 20 minutes, I'll present to you the background of using MINISIS in my organization, the problems we encountered, and the future applications of the software.

First and foremost, I would like to give a very brief description of the Hong Kong Productivity Council, or HKPC.

HKPC is a non-profit-making organization established in 1967 to assist local manufacturers to enhance their productivity. At present, it has about 250 staff distributed among the 9 divisions (see Figure 1).

I am now working as a Senior Consultant in the Computer Services Division.

In 1984, the Information Services Division undertook a project to compile a union list of serial holdings for libraries in Hong Kong. Although they heard about MINISIS a couple of years ago when we were using an ICL 2903 computer, they seemed to have forgotten the software altogether because they did not understand fully its capabilities. As a result, we held a number of meetings to discuss the development of a tailor-made software for the project.

As a computer professional, I realised that it was not easy at all to develop a piece of software to handle textual information. I was thinking very hard about methods which I hoped would allow me to retrieve, within a tolerable response time, long descriptive serial titles that may contain a few hundred characters.

Last October, just before we started to develop the software, we met Mr. Michael Sherwood of IDRC when he passed by Hong Kong to the People's Republic of China after the MINISIS User Group Meeting in Ethiopia. Immediately, we felt that MINISIS would be a good solution to our problems. In order to ascertain the applicability of MINISIS to our project, I went to the Asian Vegetable Research and Development Centre in Taiwan to attend the MINISIS training course conducted by Mr. Michael Sherwood. Eventually, I realised that MINISIS was applicable to our situation and we have become a MINISIS user since then.

One of the problems we faced in our project is the large record size. Our basic record structure is outlined in Figure 2.

Since there will be a total of 60-70 libraries participating in the project, a single record would very likely be larger than 4K characters which is not
allowed in a RD master file. As a result, we have to store the global information in a 'global database' and the holdings in a 'holdings database' and build data submodels for the ENTRY and PRINT processors. User exits are required to handle duplicate checking so that global information is entered only once and holding records are added for every occurrence. Thus, there is a one-to-many relation between the two databases (see figure 3). Linkages to the holdings database are handled by a repeatable field in the 'global database' which contains the ISNs of the holding records. Likewise there is a field in the 'holdings database' which points to the corresponding global record.

The system is running smoothly and we have so far captured about 8000 records which is about one-half of the target data.

The other application which we plan to use MINISIS are:

1. Company information data bank.

   Consists of about 20,000 records of local establishments with more than 20 employees in various sectors of commerce and industry.

2. Directory of local trees.

   Consists of about 20,000 records which contain the information of individual trees in Hong Kong.

3. Centralised filing system.

   This will contain abstracts of files which are related to activities of HKPC such as administration, external and internal projects, training courses, etc.

Apart from these possible applications, we are also looking into the possibility of using MINISIS for the legal profession. There are a few technical problems which we yet have to solve before we can proceed further. I'll describe each of these briefly:

Flattening of Repeatable Field

We have a repeatable field which is optional, i.e. not necessarily having any contents at all (namely the addressee(s)).

There is a report which require this field to be flattened (in this case the mailing label), i.e. each occurrence of the field should appear in a record on its own, with all other fields identical.

The trouble with flattening is that records without this field are not included in the set.

The way around it at present is to use INDEX to sort on the field (which we definitely do not need at all) before PRINTING. This would mean an extra process.
We could have input a space in the field since then it can be flattened; however, then if the field is absent, another literal has to be substituted. With a space, this is impossible. It would be nice if we could check the content value of the checked field in the print format.

**Selection of Number of Records to PRINT**

We have criteria to pick a defined number of records to print in a report (particularly, the mailing list). There is no way to specify this number. We could have used the LIST OFFLINE command in the QUERY processor but because of the flattening problem we cannot.

The method we use now is to direct the full report onto a disk file and then use FCOPY, with the SUBSET option limiting the number of output lines, to direct the file to printing device. This only partially solved the problem because it is always the first records that get printed.

It would be nice to have a choice of number of records as well as the method of selection (say, the first N records, the last N records or a random pick).

**PROOFLIST of BATCHIN**

Even when we specify LIST = NO in the BATCHIN options, we still get a listing of ISN's and asterisks which is a waste of both printer time and paper when the volume of conversion is big (which is usually the case for a BATCHIN).

Is it possible to do without the listing at will?

**Looking in BATCHIN When Inverted File(s) Overflows**

Because of the large volume of conversion, we STREAMED the BATCHIN job and left it running overnight. When the inverted file gets full, BATCHIN kept working on the same record until we aborted the job. (Pages and pages of the same error on the same record were printed.)

It would be better if the process can terminate in such condition with a summary report on the last record entered and the cause of such terminations.

**Search on the Starting Word in QUERY or MODIFY**

It is very nice to have the fields inverted by words so that any record containing word(s) starting with a particular alphabet can be selected easily (e.g. all records with word A-something can be obtained by the wildcard search A@). But this is not very useful for searching in a title field when say we want all books with titles beginning with A. We would want only the first word.

Is there any way to do this?

I don't know whether you have encountered these problems before. I should be grateful if you or IDRC would help us to solve them so that we can enlarge the scope of application of the MINISIS software.

Thank you.
(1) Administration
(2) Management and Industrial Consultancy
(3) Metals Development
(4) Management Training
(5) Environment Management
(6) Electronic Services
(7) Engineering Services
(8) Information Services
(9) Computer Services

Figure 1
### 1. Global Information

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<thead>
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</tr>
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<td>500</td>
<td>-</td>
</tr>
<tr>
<td>Variant SEE</td>
<td>500</td>
<td>Y</td>
</tr>
<tr>
<td>1st title change</td>
<td>500</td>
<td>Y</td>
</tr>
<tr>
<td>2nd title change</td>
<td>500</td>
<td>Y</td>
</tr>
<tr>
<td>1st merger title change</td>
<td>500</td>
<td>Y</td>
</tr>
<tr>
<td>2nd merger title change</td>
<td>500</td>
<td>Y</td>
</tr>
<tr>
<td>1st split title change</td>
<td>500</td>
<td>Y</td>
</tr>
<tr>
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<td>500</td>
<td>Y</td>
</tr>
<tr>
<td>3rd split title change</td>
<td>500</td>
<td>Y</td>
</tr>
<tr>
<td>1st absorbed title change</td>
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### 2. Holdings Information

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<th>Field</th>
<th>Length (character)</th>
<th>Repeatable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library code</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Holdings line</td>
<td>60</td>
<td>-</td>
</tr>
</tbody>
</table>

Figure 2
IN GLOBAL RECORD
LINK TO HOLDINGS RECORDS = 26,121,320,1245

IN HOLDINGS RECORDS
LINK TO GLOBAL RECORD = 17
TIPOBIBLIOTECOGRAFIA

Sr. Max Diaz
Colorimetria, S.A., Mexico, Mexico

y

Ing. Luz Marina Quiroga
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Ciudad Universtaria, Mexico, Mexico
1 Resumen

Las bases de datos bibliográficas y los sistemas de tipografía automatizada han evolucionado considerablemente en los últimos años. Sin embargo, con frecuencia, las primeras utilizan aún la tecnología antigua de impresoras de impacto con muy mala calidad de impresión; o bien se tienen que utilizar métodos costosos de tipografía (o mecanografía) tradicional para la generación de reportes, tarjetas catalográficas, etc. En este trabajo examinaremos algunos ejemplos de lo que hemos llamado “tipobibliotecografía”: es decir, la tipografía automatizada de los sistemas bibliográficos.

2 Requerimientos de automatización en bibliotecas

En una biblioteca típica, se tienen los siguientes requerimientos para una base de datos bibliográfica:

1. Recuperación, en línea, de la información contenida en sus bases de datos.

2. Obtención de productos impresos “efímeros” a partir de sus bases de datos. Listados de trabajo, listas locales de adquisición, etc.

3. Obtención de documentos impresos, producidos con fines de publicación y distribución; es el caso de catálogos, directorios y bibliografías. En este caso se exige una presentación y tipografía adecuada. Para esto hay una variedad de mecanismos que enumeramos a continuación.

Un procedimiento bastante empleado, por la facilidad y disponibilidad de recursos que requiere, es el de generar una matriz para reproducción que se obtiene directamente de una fotografía de los listados producidos por el sistema de cómputo. Respecto a calidad tipográfica el producto naturalmente deja mucho que desear. El medio ambiente de trabajo sería como ilustra la figura:
Un segundo procedimiento, consiste en recoger en una cinta magnética la imagen del listado producido y someterlo a un proceso de fotocomposición, frecuentemente en una imprenta externa a la institución. Básicamente consiste en obtener, a partir de los datos de la cinta, una matriz con mejor tipografía (posiblemente utilizando una impresora de buena calidad). En ocasiones, este proceso implica volver a escribir toda la información, si no se cuenta con una conexión física de la computadora original con el aparato de composición. Por ejemplo:

Tenemos otra posibilidad con el software de tipografía automatizada. Se diferencia de los procedimientos 1 y 2 en que hay un paso intermedio antes de obtener la matriz y de esta manera, mediante programas adecuados, se pueden incluir ciertas instrucciones de formateo para que el tipógrafo automatizado produzca la matriz final.
3 Tipografía automatizada

La tipografía automatizada, conocida en la antigüedad como "procesamiento de palabras", es la tecnología para realizar trabajos de tipografía (i.e., composición de documentos) por medio de computadoras. Los sistemas modernos de tipografía automatizada son mucho más que simples formadores de texto justificado (alineado en el márgen derecho) y su utilización permite, entre otras muchas cosas, manejar automáticamente:

- Varias fuentes entremescladas, fuentes de otros idiomas (cirílico, devanagari, etc.), o simbología especial.
- Manejo de capítulos, secciones, subsecciones.
- Generación de encabezados, números de página, pies de página, notas al pie.
- Tablas de materias e índices.
- Tablas y tabulaciones.

Los sistemas de tipografía aún más modernos son de hecho lenguajes de programación que sirven para manipular texto y definir "formatos" para manejar ciertas categorías de documentos especiales. Queremos referirnos a uno en particular que es posiblemente el más sofisticado y completo que se haya diseñado: TeX de Donald E. Knuth de la Universidad de Stanford [Knuth 84]. Este sistema además ha sido transportado a una inmensa variedad de computadoras de todos los tamaños, desde computadoras personales hasta grandes mainframes en todo el mundo – y por consecuencia se está convirtiendo en un estándar importante para la descripción de documentos.

4 Tarjetas catalográficas

Recordando el proverbio chino "una ilustración vale por mil palabras", empecemos por comparar cuatro tipos de tarjetas catalográficas:
Figura 4. Tarjeta catalográfica mecanografiada

Figura 5. Tarjeta catalográfica por computadora

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Figura 6. Tarjeta catalográfica de la Biblioteca del Congreso

Held, Jacqueline.

[Expedición imprévus sur le planète Eras. Español. 1982]

8 p. : il. ; 20 cm. — (Las 4 estaciones)

En la cubierta: "Ilustraciones de Sophie Mathéy".

ISBN 848-498-143-4

I. Held, Claude. II. Kraft, Cristina. III. Mathéy, Sophie. IV. t. V. Ser.

048.9

Biblioteca Nacional 83-3472

Figura 7. Tarjeta catalográfica con \TeX

Como se puede apreciar además de la creciente mejora en la calidad tipográfica, el aspecto global de la última tarjeta es más agradable a la vista en cuanto a la distribución de la información, la distinción de la misma por las diferentes fuentes, la excelente formación de los párrafos (evitando automáticamente cortes de línea indeseables), etc.

Pero más importante aún, la tarjeta catalográfica fue generada automáticamente a partir de datos obtenidos de una base de datos bibliográfica y utilizando un formato de \TeX previamente definido.

Tanto para la impresión de las tarjetas como para la producción de la Bibliografía Mexicana (véanse los anexos), se utilizaron datos provenientes del manejador de bases datos llamado MINISIS, con el que se crea, actualiza y consulta la base de datos bibliográfica. Para una parte de la producción impresa (listados de trabajo) se usan simplemente opciones de impresión que ofrece el mismo manejador por
medio de su función de impresión. Sin embargo hay cosas que no es posible hacer directamente con esta función, como lo son el manejo de distintas fuentes, silabico, simbología especial, etc. — en suma, precisamente las funciones que provee un sistema de tipografía automatizada.

El procedimiento utilizado para lograr esta interfase entre MINISIS y TeX consistió en usar la función de impresión de MINISIS para producir otro archivo intermedio con los datos y con ciertas "literals" intercaladas. Por ejemplo, una ficha tipica del archivo intermedio podría ser:

```
\begintarjeta 843.9[|88--3472]
\ppal
\titul
[Exp\'edici\'on impr\'\~nue sur le plan\'ete Er\'\~nas. Espa\'\~na\'\~nol. 1982]
\titprop
Expedici\'on imprevista hacia el planeta Eras / Jac\'-que\'-line Held ;
\descfis
3 p. : il. ; 20 cm. --- (Las 4 estaciones)
\begnotas
\notat En la cubierta: "Ilustraciones de Sophie Mathey".
\notat ISBN 968--409--162--6
\endnotas
\temas
I. Held, Claude\. II. Krafft, Cristina, tr\. III. Mathey, Sophie, il\.
IV. t\. V. Ser.
\endtarjeta
```

Estas literales son "macroinstrucciones" de TeX correspondientes a un formato catalográfico previamente definido. Nótese que el formato del archivo intermedio es realmente simple y no requiere inteligencia tipográfica por parte de MINISIS. Pero esta simplicidad no es para facilitarle la vida a la computadora, sino al programador de la base de datos que desea escribir una interfase tipobibliotecográfica, como la que hemos ilustrado para el caso particular de MINISIS.

4.1 Presentación mecanografiada

Para la presentación de una ficha catalográfica existen reglas exactas (ISBD, ACCR) que definen su formato: márgenes, espaciados, uso de mayúsculas y minúsculas, etc. Todo esto con el fin de identificar y separar las diferentes áreas de un registro catalográfico, como son: entrada principal, mención de responsabilidad, pie de imprenta, descripción física, notas, asientos secundarios, números de clasificación. Una tarjeta mecanografiada según las reglas ISBD se mostró en la figura 4 (ver [Wynar 76]).

4.2 Presentación en impresoras comunes de computadora

El formato seguido es el mismo, solo que normalmente se tienen restricciones mayores: con frecuencia hay sólo mayúsculas, no hay acentos y el tamaño de los tipos es demasiado grande. Una de estas tarjetas aparece en la figura 5.

4.3 Presentación con tipografía automatizada

Las reglas que utilizamos para el formato definido por medio de TeX son esencialmente imitación de
las utilizadas por la Biblioteca del Congreso (figura 6), dado que no tuvimos acceso a estas reglas con todo detalle.

Sin embargo, mirando los ejemplos en libros, tarjetas del NUC y las tarjetas de la Biblioteca del Congreso, es claro que con tipografía de calidad las tarjetas así producidas se acercan más a los objetivos que de hecho dieron origen a las reglas de formateo y presentación de las tarjetas catalográficas; i.e.,

- Resaltar la entrada principal.
- Dentro de ésta diferenciar la entrada principal de los datos complementarios.
- Separación clara de las áreas de descripción física y notas.
- Identificación de temas y elementos de recuperación.
- Separar el área de números de clasificación.

Un ejemplo del resultado de una ficha sometida a TpX se muestra en la figura 7. Más específicamente, las reglas que utilizamos son las siguientes:

1. Fuentes:
   - Entrada principal en negrillas, diez puntos.
   - Datos complementarios a la entrada principal en itálicas.
   - Título uniforme en ocho puntos.
   - Mención de responsabilidad y pie de imprenta en diez puntos.
   - Descripción física, serie, notas y "registro", igual que el título uniforme.

2. Márgenes y espaciado:
   - Márgen 1: 0.75", usado sólo para iniciar la entrada principal.
   - Márgen 2: 0.9375", para continuación de cualquier elemento de los datos.
   - Márgen 3: 1.09375", para iniciar las demás áreas.
   - La entrada principal o primera línea siempre se colocará a 0.425" del margen superior. El pie de la tarjeta ocupará 0.625" e incluye los números de clasificación.
   - El espaciado entre las demás áreas es variable ya que se ajusta automáticamente según la cantidad de información que vaya en la tarjeta; teniendo en cuenta solamente de dejar mayor espacio antes y después del área de "registro" del que se deja entre las demás áreas.

3. Tarjetas de continuación (cuando la información de una ficha catalográfica no cabe en una tarjeta):
   - En las tarjetas después de la primera, se repiten las primeras palabras de la entrada principal (en negrillas) y del título. Todo esto en fuente de diez puntos.
   - El pie de las tarjetas es igual para todo el juego.
   - Las tarjetas de continuación van numeradas a partir del número dos e incluyen una indicación ...

5 Generación de reportes

Quizá empezamos este trabajo con un pésimo ejemplo. Parece que la tendencia moderna es a eliminar
por completo el engorro de las tarjetas catalográficas y sustituirlas por consulta en línea. Para borrar la mala impresión, reconsideremos nuestros ejemplos anteriores a la luz de la generación de un reporte bibliográfico; por ejemplo, la Bibliografía Mexicana, publicada mensualmente por la Biblioteca Nacional.

La estructura de esos reportes consiste de tres partes:
- Una lista de fichas catalográficas.
- Un índice de autores y/o títulos y temas.
- Una tabla de materias.

Como se puede apreciar en los anexos, la formación del texto se hace a dos columnas, incluyendo la página del índice. Compárese con la correspondiente formación utilizando $\text{TPX}$.

Para la generación de esos reportes utilizamos el mismo formato intermedio, descrito en la sección 4, y solamente le indicamos a $\text{TPX}$ que generará un reporte, en base naturalmente a otro estilo previamente definido. Como puede observarse, en este caso no son necesarias las convenciones de continuación de tarjetas; en cambio, es necesario el manejo de tres niveles de clasificación, con los que se generan los encabezados de las páginas y las tablas de materias. Similmente, las entradas principales, temas y autores deben aparecer en el índice. Las dos últimas partes son generadas automáticamente por $\text{TPX}$, después de haber formado las páginas conteniendo la lista de fichas.

6 Conclusiones

Hemos querido mostrar solamente un par de ejemplos para ilustrar el uso de la tipografía automatizada en ambientes de bibliotecas. Como hemos podido ver, el potencial de la tipobibliotecografía es inmenso, y un sistema como $\text{TPX}$ provee facilidades excelentes para realizar las labores de impresión de calidad a partir de casi cualquier base de datos bibliográfica.

Esto en particular permite un mayor control de todo el proceso de tipografía "in house" y directamente de la base de datos a la imprenta. También vale la pena mencionar que los formatos que hemos descrito permiten una estandarización precisa de los formatos de impresión, especialmente para el manejo de acentos y simbología especial en las fichas, lo cual es sumamente importante para el intercambio de datos entre bibliotecas.

7 Referencias


(25 de Octubre de 1985)

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"Se para solía"


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6 p. ; 23 cm. — (México. Secretaría de Programación y Presupuesto. Dirección General de Difusión y Relaciones Públicas. Ser. Intervenciones y entrevistas ; no. 76)

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"Los más vistosos trajes típicos regionales de México".

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83-3324
MINISIS IN THE CARIBBEAN

Ms. Audrey Chambers
Caribbean Documentation Centre, United Nations Economic Commission for Latin American and the Caribbean, Subregional Headquarters for the Caribbean, Port-of-Spain, Trinidad and Tobago

The experience of the Caribbean Documentation Centre (CDC) during its initiation into the MINISIS family probably followed a pattern broadly similar to that of the older siblings. With an unusual twist — prior to the installation of MINISIS at CDC in June of this year, a data base containing a significant portion of the Centre's records was demonstrated at the annual meeting of the Caribbean Development and Co-operation Committee (CDCC), whose members comprise 16 United Nations member governments and 4 associate member territories in the Caribbean area.

Caribbean Documentation Centre

The CDCC, created in 1975, holds the status of a permanent subsidiary body of the Economic Commission for Latin America and the Caribbean (ECLAC). The ECLAC Subregional Headquarters for the Caribbean, located in Port-of-Spain, provides the Secretariat to the Committee; its activities relate basically to the promotion of co-operation for economic and social development among CDCC member countries and between them and other developing countries, especially those in Latin America.

Information and documentation systems is one of the priority issues in CDCC's programme of work. The CDC, therefore, was established in 1977 not only to provide supportive services to the staff at Port-of-Spain Office, but to play a dynamic role as a catalyst to strengthen and develop at national and regional levels resources of Caribbean libraries and documentation units.
Caribbean Information System

These objectives are achieved within the framework of a decentra-
lised comprehensive Caribbean Information System consisting of sectoral
networks of libraries and information units. The first sector brought
on stream was the Caribbean Information System in Economic and Social
Planning (CARISPLAN). CARISPLAN derives its input from a network of
14 national focal points (usually information centres of national
planning agencies), over 100 participating units and the co-ordinating
centre, CDC.

CDC is responsible for providing advisory and training service in
the operation of the system, collection and quality control of input,
producing the quarterly publication CARISPLAN Abstracts and offering
output services including searches on demand and document delivery.

From its inception in 1979, CARISPLAN's record format was designed
to ensure compatibility with other development-oriented information
systems, in particular the Information System for Planning in Latin
America and the Caribbean (INFOPLAN). Although the current manual
for bibliographic entry is the third since the commencement of
CARISPLAN, our records prior to MINISIS was a fairly cohesive amalgam
with comparatively minor variations in format.

For the past five years, the data base has been externally serviced
at the computing facilities at ECLAC, Santiago, Chile. Delays and
problems usually associated with relatively small jobs at large-scale
computer sites were compounded by the additional disadvantage of
considerable distance between computers and service point without the
benefit of an interactive link.

Implementation of MINISIS forms part of a two-year project
reinforcing the International Development Research Centre's continuing
support for the information component in development and co-operation
activities in Latin America and the Caribbean.

Transition

Tapes representing over 6,300 records of the network in ISIS
format were transferred from ECLAC, Santiago to IDRC, Ottawa. The
total holdings were divided into several groups, reflecting input
fashioned by each of the three manuals used to date. Utilizing
ISOCONV, staff of the Systems and Outreach Group at IDRC converted the
most recent records and created several print formats for display.

Hewlett-Packard personnel delivered the equipment to the conference
hotel and assisted Mary Campbell, IDRC's appointee to conduct the
training sessions at CDC, to mount the data base, CARBIB, on the Friday
afternoon for presentation the following Monday. Searches were executed
over the next two days at the request of delegates attending CDCC IX.

Implementation
The HP 3000 Series 37 minicomputer (2Mb memory and a 55Mb hard disk),
9144A tape cartridge drive, LaserJet and 2563A printers and a Support
Link II modem were installed at CDC after the meeting. All staff at
CDC as well as the librarian of the focal point in Trinidad and Tobago
attended the training.

Conversion of the remaining ISIS records was completed as part of
the training exercise. The trilingual Macrothesaurus for Information
Processing in the Field of Economic and Social Development (1978 edition),
the foundation for CDC's subject authority control, was also loaded.

An IBM PC-AT microcomputer was later purchased for data entry and
other general office data processing functions. Approximately 1,100
further records which had been entered onto diskettes by the Radio
Shack TRS-80 microcomputer at CDC were transferred by the Data
Entry Operator to the IBM. He has written several programs to change
data from the Wordstar Document Datafile to sequential text file
format, to replace ISIS by MINISIS field tags and has organized the
physical shift from 8" CP/M to 5 1/4" MS-DOS format. Use of BATCHIN
is the final stage of this transfer.

The small size and capacity of the TRS-80 had placed serious
constraints on access to information at CDC. Abstracts had been
eliminated from the local version of the data base and search was
possible only against a few of the data elements available. With the
entire data base in-house, we are in the improved position to assume
greater control over both the access to and quality of the data base.
Housekeeping tasks such as the update of authority files and review of
earlier records to ensure uniformity are underway.
Patents

Apart from the bibliographic data base related to CARISPLAN, another of information on patents registered in the Caribbean territories has been created. As the Patent Information and Documentation Unit was established in May of this year with a staff of one, holdings at present are minimal.

Other sectoral information networks in agriculture, energy and science and technology are at varying stages of development.

Imminent Applications

Experimentation with MINISIS has been limited to the three months since its installation at CDC. Expansion of disk capacity at least five fold is expected shortly. By the end of the first year, the following plans should have been realised:

- implementation of an SDI service to the staff of ECLAC, Port of Spain

- generation of print-ready copies of our publications, CARISPLAN Abstracts (formerly prepared in Santiago) and the Current Awareness Bulletin (manually produced to date)

- creation of a specialized data base through a pilot project on a regional referral system on research in progress in science and technology

- integration of at least one data base of development-related information held by another sub-regional organisation

- link through the local data communications network with the Trinidad and Tobago national focal point.
The National Energy Information Center (NEIC) was established by a Cabinet decision in November 1978, at the National Energy Administration (NEA), Bangkok, Thailand. The objectives are as follows:

1. to serve as a comprehensive energy data center which will collect and provide statistical, technical, and other related data on energy for NEA, other government sectors and private sectors.

2. to provide library service for reports, textbooks, journals and other documents on energy and related subjects.

In 1980, NEIC became one component of 14 separate components involved in "The Nonconventional Renewable Energy Project". This project was jointly funded by the United States Agency for International Development (USAID) and the Royal Thai Government and implemented by NEA. The purpose of this component was the collection and dissemination of information on energy by using computers.

In 1983, NEA and USAID studied all possibilities for selecting a suitable computer system for NEIC which would serve the purpose of the project. The report of this study recommended the purchase of a Hewlett-Packard 3000/40 minicomputer, on which the MINISIS software package of IDRC could be utilized to build a bibliographic database.

Then, in June 1984, a Hewlett-Packard 3000/40 was installed with configuration of 0.5 Mb memory for CPU, one 120 Mb disc drive, one 64 Mb disc drive, one 1600 BPI tape drive, four local terminals and one slow printer. After that, in July 1984, NEIC got the MINISIS software package from IDRC and the MINISIS training was conducted by the expert from IDRC.

Since then, MINISIS software has been used at NEIC. About 2500 documents have been entered into our first bibliographic database. These are all types of information on energy from various international publications such as research papers, proceedings, textbooks, and articles. Information retrieval on this database serves not only NEA but also other government sectors as well as private sectors.

At the present time all entered documents are in English. NEIC proposed that MINISIS should be modified to use with Thai language feature. With the co-operation of IDRC and the representative of Hewlett-Packard in Thailand (UNIMESA) the MINISIS software package was modified at UNIMESA. Now UNIMESA has nearly finished this work. It is hoped that the modified MINISIS software
package could be loaded into our system soon. This would be beneficial since our database could be used both in Thai language mode as well as English language mode.

Up to the present, our system is not totally dedicated to MINISIS. Only one terminal is located in the NEIC library where most of the activities of MINISIS are centered. We plan to add more local terminals, to add more disc storage capacity and to link our system via telephone line to the system of Ministry of Science, Technology and Energy where an HP3000/39 and MINISIS software were installed in September 1985.
APPENDIX

MINISIS Users Group
1985 Meeting (MUG'85)
Technical and User Presentation List

Monday, October 28, 1985

Mr. Lee White
- Opening Remarks
- Adopt Meeting Agenda (Paper)
- Review MUG'85 Attendees List (Paper)
- Review MINISIS Installation Survey Publication (Paper)
- MINISIS Installation Survey Statistics
- MUG'85 Attendees Statistics

Mr. W. Haven North
- MUG'85 Welcoming Address (Paper)

Mr. L.B. Guindo
Institut du Sahel, Bamako, Mali and Elected Co-Chairman for MUG'85
- Opening Remarks

Mr. Terry Gavin
International Development Research Centre, Ottawa, Canada
- Review of New MINISIS Installations (Paper)
- Review of new IDRC Accomplishments
- Introduction to IDRC Technical Presentations

Mr. Nick Cop
International Development Research Centre, Ottawa, Canada
- MINISIS Outreach Activities
- Upcoming MINISIS Installations
- Experienced MINISIS Users Assist in MINISIS Training Programs
- MINISIS Documentation
- Status of International Development Research Information System (IDRIS)
Mr. Richard Lee
International Development Research Centre, Ottawa, Canada
- MINISIS Version F.01 Overview (Paper)
- On-Demand Demos of Chinese Character Processing with MINISIS

Mr. Mike Sherwood
International Development Research Centre, Ottawa, Canada
- MINISIS Unimarc Interface

Mr. Paul Balnys
Hewlett Packard Corporation, Cupertino, California, U.S.A.
- HP Intercontinental Support (Paper)

Ms. Denise Baum
Hewlett Packard Corporation, Rockville, Maryland, U.S.A.
- HP Productivity Center Demo

Tuesday, October 29, 1985

Mr. Lee White
- USAID Development Information Program (Paper)

Ms. Chris Wolter
- Menu System (MENUDIS) Overview (Paper)
- MENUDIS Demo

Ms. Joan Wardell
A.I.D. Document and Information Handling Facility, Chevy Chase, Maryland, U.S.A.
- Menu System (MENUDIS) Technical Presentation
- HP 3000/37 MINISIS Demo

Mr. Paul Howard
A.I.D. Document and Information Handling Facility, Chevy Chase, Maryland, U.S.A.
- Microcomputer Development Information System (MICRODIS) Demo (Paper)
Mr. Brian Bohall  
A.I.D. Document and Information Handling Facility, Chevy Chase, Maryland, U.S.A.  
- Microcomputer Development Information System (MICRODIS) Demo (Paper)

Mr. Ron Wiles  
A.I.D. Document and Information Handling Facility, Chevy Chase, Maryland, U.S.A.  
- AID Product Display and MUG'85 Demo Coordinator

Mr. Alain Lamirande  
International Development Research Centre, Ottawa, Canada  
- Benchmarking User Contributed Library Software (Paper)

Ms. Ellen Ruygrok  
International Development Research Centre, Ottawa, Canada  
- Microcomputer Data Entry Package  
- On-Demand Demos of Microcomputer Software

Mr. Robert Wulf  
International Labour Office, Geneva, Switzerland  
- ILO MINISIS Systems (Paper)

Mr. Dirk Janssens  
International Labour Office, Geneva, Switzerland  
- ILO Menu System (Paper)  
- On-Demand Demos of ILO Menu System

Dr. B.F.M. Leemreize  
AGRALIN, Agricultural University, Wageningen, Netherlands  
- AGRALIN MINISIS Systems

Dr. Age Jan Kuperus  
AGRALIN, Agricultural University, Wageningen, Netherlands  
- AGRALIN User Contributed Library Utilities (Paper)  
- On-Demand Demos of AGRALIN UCL Utilities
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<td>Mrs. Gim Hong Ong</td>
<td>National University of Singapore, Singapore</td>
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<td>Library Automation in the National University of Singapore (NUS) (Paper)</td>
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<td>Mr. Julius Manalo</td>
<td>Philippine Council for Industry and Energy Research &amp; Development, Manila, Philippines</td>
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<td>MINISIS Application at the Philippine Council for Industry and Energy Research and Development (PCIERD) (Paper and Brochure)</td>
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<td>Mr. Sargious Ramiz</td>
<td>Arab Organization for Agricultural Development, Khartoum, Sudan</td>
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<td>The Activities of the Arab Center for Agricultural Documentation and Information (ACADI) (Paper)</td>
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<td>Dr. Irene Amores</td>
<td>National Science &amp; Technology Authority, Manila, Philippines</td>
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<td>MINISIS Applications - The Philippine Experience (Paper)</td>
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<td>Ms. Pam Lewark</td>
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<td>Full-Text Implementation (on MINISIS) (Paper)</td>
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<td>Mr. Xavier Henri-Bourgain</td>
<td>Dataware, Paris, France</td>
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<td>MINISIS Support from Dataware</td>
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<td>Ms. Susan Turner</td>
<td>Joint Bank/Fund Library, Washington, D.C., U.S.A.</td>
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<td>MINISIS at the joint Bank/Fund Library (Paper)</td>
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<td>Mr. John Nesbitt</td>
<td>Joint Bank/Fund Library, Washington, D.C., U.S.A.</td>
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Mr. Hans Hjelm
Libro Software, Uppsala, Sweden
- MINISIS Full-Screen Data Entry System

Mr. Arne Lonn
Libro Software, Uppsala, Sweden
- On-Demand Demos of MINISIS Full-Screen Data Entry System

Ms. Brigitte Duces
Joint Bank/Fund Library, Washington, D.C., U.S.A.
- Joint Bank/Fund Library Luncheon Host and Tour Coordinator

Ms. Leighton Cumming
Joint Bank/Fund Library, Washington, D.C., U.S.A.
- Acquisitions System Demo (Paper)

Ms. Linda Proudfoot
Joint Bank/Fund Library, Washington, D.C., U.S.A.
- Cataloging System Demo

Ms. Jane Keneshea
Joint Bank/Fund Library, Washington, D.C., U.S.A.
- Periodicals Check-in System Demo

Ms. Anne Salda
Joint Bank/Fund Library, Washington, D.C., U.S.A.
- Bibliography Index Demo

Ms. Marie Keech
Joint Bank/Fund Library, Washington, D.C., U.S.A.
- Reference System and Interlibrary Loan Module Demo

Mr. Donald K. Bloomfield
World Bank, Washington, D.C., U.S.A.
- World Bank Applications of MINISIS

Mr. Salvatore Iuculano
World Bank, Washington, D.C., U.S.A.
- World Bank Integrated Bibliographic Information System (IBIS)

Thursday, October 31, 1985

Mr. L.B. Guindo
Institut du Sahel, Bamako, Mali
- RESADOC: One year of MINISIS Experience in the Sahel (Paper)
Ms. Ruta Whittaker

Health and Welfare Canada, Ottawa, Canada
- Conversion of the International Register for Potentially Toxic Chemicals (IRPTC) Databases from an ADABAS to a MINISIS Environment (Paper)

Mrs. Nivedita Nomboodiri

National Council of Applied Economic Research, New Delhi, India
- The Indian Subcontinent: A Case for Networking Economic Information (Paper)

Dr. Hugo Ullrich

Institut fur Datentechnik und Organisation GmbH, Dusseldorf, Federal Republic of Germany
- MINISIS Applications at IDO

Mr. Mananga ma Mbumba

Service Présidentiel de l'Informatique, Kinshasha, Zaïre
- Communication du Service Présidentiel pour la Promotion de l'Informatique au Zaïre (S.P.I.Z.) (Paper)

Mr. Ad Reyngoud

Ministry of Foreign Affairs, Den Haag, Netherlands
- Ministry of Foreign Affairs of the Netherlands Allowances System (Paper)

Mr. Nelson Tse

Hong Kong Productivity Center, Hong Kong
- MINISIS System Applications, Problems and Future Developments at the Hong Kong Productivity Council (Paper)

Mr. Ahmed Saidane

Arab Industrial Development Organization, Baghdad, Iraq
- MINISIS Applications at AIDO

Ms. Luz Marina Quiroga

Biblioteca Nacional, Mexico City, Mexico
- Tipobibliotecografia (Paper)
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<td>Ms. Audrey Chambers</td>
<td>Caribbean Documentation Center, Port-of-Spain, Trinidad &amp; Tobago</td>
<td>MINISIS in the Caribbean (Paper)</td>
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<td>Ms. Janice Graham-Foscarini</td>
<td>Ontario Education Communications Authority, Toronto, Ontario</td>
<td>Educational System Applications of MINISIS</td>
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<td>Mr. François Beauvais</td>
<td>L'Institut du Monde Arabe, Paris, France</td>
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<td>Mr. Schroedt-Girard</td>
<td>Sénat Français, Paris, France</td>
<td>MINISIS Applications at the Sénat Français (Paper)</td>
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<td>Ms. Marie Velardi</td>
<td>U.N. Program Planning and Coordination Office, New York, N.Y.</td>
<td>United Nations Development Information System and the OECD Macrothesaurus Publication</td>
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<td>Mr. Ukrit Soontornsrarutun</td>
<td>National Energy Administration, Bangkok, Thailand</td>
<td>National Energy Information Center in MINISIS (Paper, but no Presentation)</td>
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**Friday, November 1, 1985**

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<td>Mr. L.B. Guindo</td>
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<td>M. Terry Gavin</td>
<td>International Development Research Centre, Ottawa, Canada</td>
<td>Closing Remarks</td>
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<tr>
<td>Mr. Lee White</td>
<td>U.S. Agency for International Development, Washington, D.C., U.S.A and Chairman, MUG'85</td>
<td>Selection of Next MUG Site (Singapore)</td>
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