

# MINISIS

newsletter



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## FOREWORD

New members of the Users' Group are:

The Canadian International Development Agency (CIDA); CONICIT in Caracas, Venezuela; Entreprise Nationale des Systèmes Informatiques (ENSI) in Algiers; l'Institut du Sahel in Bamako, Mali; Système Services Conseils in Dakar, Senegal; Philippine Council for Industry and Energy Research and Development (PCIERD); Asian Vegetable Research and Development Center (AVRDC) in Tainan, Taiwan; Unimesa Co. Ltd and National Energy Administration (NEA) in Bangkok; Hong Kong Productivity Centre; and The Asian-Pacific Regional Research & Training Centre for Integrated Fish Farming in Wuxi, China.

CONICIT in Venezuela is another AGRIS MINISIS user - they will provide technical services to the AGRIS activities at REDIAGRO in Maracay. PCIERD plans to develop a data base of technological applications to industry and energy. Institut du Sahel will use MINISIS for their RESADOC information system. AVRDC will use MINISIS for a germplasm bank.

We have a new MINISIS distributor, IDO (Institut für Datentechnik und Organisation GmbH) in Dusseldorf, Germany. IDO are licensed to market and support the system in Germany.

Among the new MINISIS users licensed by our distributors are the National Conference of State Legislatures in Denver, Colo., CIBA-GEIGY, and the Historic New Orleans Collection in the United States, and the Institute of Sedimentary and Petroleum Geology in Canada.

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Some recent changes of name in the Users' Group:

- the BAS system at the Agricultural University, Wageningen, the Netherlands is now known as AGRALIN (Agrarische Literatuur Informatiesysteem Nederland)
- Systemhouse Ltd. of Ottawa, Canada is now known as SHL Business Systems Ltd.
- SOZACOM in Kinshasa, Zaire is now known as GECAMINES-COMMERCIALE
- Korea Institute for Industrial Economics & Technology is now known as Korea Institute for Economics & Technology

Addresses of these users remain unchanged.

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POPIN (the International Population Information Network) offered on-line search access to population information data bases during the International Conference on Population in Mexico City, August 1984, with some assistance from IDRC.

Excerpts from five of these data bases - DOCPAL, LABORDOC (from ILO), DOCPOP and two data bases from ESCAP (MANPINS and POPFILE) were stored in MINISIS format on IDRC's computer in Ottawa, and accessed via packet-switching networks from the POPIN reference centre at the Conference in Mexico City.

In order to convert the MANPINS and POPFILE data bases to MINISIS from EBIS format, we wrote an ISOCONV exit called **ESCAPCOV**. This exit will be distributed with the User-contributed Library for the next version of MINISIS. In the meantime, it is available on request to any user who may want to convert ESCAP tapes to MINISIS format.

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A revised edition of Robert Valantin's **CDS/ISIS and MINISIS: a functional analysis and comparison** is being prepared by IDRC and Unesco. The new edition will compare the latest versions of the two systems - CDS/ISIS Version 4.3 and MINISIS Version F.

Also in preparation is Vol. II in the series of Recommended Methods for Development-Information Systems. This volume is entitled **Guidelines for the building of authority files in development information systems**.

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Hewlett-Packard has a new member of the HP 3000 family on the market: the **Series 37** (also known as the "Mighty Mouse"). The Series 37 is a compact and inexpensive computer which can operate under office environment conditions, has a maximum capacity of 2Mb memory, runs under the MPE V operating system and is widely marketed by HP. These features make it an attractive option for many smaller documentation centres which need more automation capacity than that provided by a microcomputer, but perhaps cannot afford or maintain a large system.

With the help of the HP office in Rockland, Md., we tested MINISIS on the Series 37. We found that MINISIS runs without problems on the 37, although processing time is, understandably, about twice as long as on IDRC's computer, the larger Series 44. The results of our MINISIS benchmark on the 37 are published in this issue of the Newsletter. Please bear in mind that these results may differ for other installations, depending on their applications and hardware configurations.

The MINISIS users at the Canadian Department of Health and Welfare report that they were also able to run MINISIS successfully on the Series 37, for a demonstration to the International Register of Potentially Toxic Chemicals in Geneva.

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INFOTEC-CONACYT in Mexico City is presently translating the Introduction to MINISIS into Spanish. They have offered to co-operate with us in producing a Spanish version of the MINISIS documentation.

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The LOANS processor developed by the AGRALIN (formerly BAS) team in Wageningen is now being tested by the MINISIS installation at the **Agency for International Development**, Washington, D.C. AID will be documenting LOANS so that it can eventually be distributed with the User-contributed Library.

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We would like to express our thanks to the users from **SEARCA**, **Libro Datakonsult** and **Société Dataware** who contributed articles to this issue.

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### PRÉFACE

Les nouveaux membres du Groupe des usagers sont: **L'Agence canadienne le développement international (ACDI)**; le **CONCIT**, Caracas, Venezuela; **Entreprise nationale des systèmes informatiques (ENSI)**, Algiers; **L'Institut du Sahel**, Bamako, Mali; **Système Services Conseils**, Dakar, Senegal; **Philippine Council for Industry and Energy Research** (Conseil philippin pour la recherche et le développement de l'industrie et de l'énergie); **Asian Vegetable Research and Development Centre** (Centre de recherche et de développement sur les légumes en Asia), Tainan, Taiwan; **UNIMESA Ltée**, Bangkok; **National Energy Administration** (Administration nationale de l'énergie), Bangkok; **Hong Kong Productivity Centre** (Centre de productivité de Hong Kong); **Asian-Pacific Regional Research & Training Centre for Integrated Fish Farming** (Centre régional de recherche et de formation de l'Asie et du Pacifique pour l'exploitation piscicole intégrée), Wuxi, China.

Nous avons un nouveau distributeur en Allemagne RF, **l'IDO** (Institut für Datentechnik und Organisation GmbH) de Dusseldorf.

Au nombre des nouveaux usagers ayant reçu une license des distributeurs de MINISIS sont: **National Conference of State Legislatures** (Conférence nationale des corps législatifs des états), Denver, Colo.; **New Orleans Historic Collection** (Collection historique de Nouvelle-Orléans), Nouvelle-Orléans, Louisiane; **Institut de géologie sédimentaire et pétrolière**, Calgary, Canada.

L'équipe BAS à l'Université agricole des Pays-Bas, Wageningen, est maintenant connue sous le sigle **AGRALIN** (Agrarische Literatuur Informatiesysteem Nederland).

Systemhouse Ltd. à Ottawa, Canada est maintenant connue sous le nom SHL Business Systems Ltd.

SOZACOM à Kinshasa, Zaire s'appelle maintenant GECAMINES-COMMERCIALE.

Korea Institute for Industrial Economics & Technology a changé son nom pour Korea Institute for Economics & Technology.

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**POPIN** (le Réseau international d'information sur la population) a offert, avec l'aide du CRDI, la possibilité de faire des recherches en direct dans les bases de données sur la population au cours de la Conférence internationale sur la population qui s'est tenu à Mexico en août 1984.

Des extraits de cinq des bases de données suivantes - DOCPAL, LABORDOC (du BIT) et DOCPOP et de deux bases de données d'ESCAP (MANPINS et POPFILE) ont été emmagasinés, dans le format MINISIS, dans l'ordinateur du CRDI à Ottawa et on a pu y accéder par les réseaux de commutation par paquets depuis le centre de documentation POPIN à la conférence de Mexico.

En vue de convertir les bases de données MANPINS et POPFILE du format EBIS au format MINISIS, nous avons fait un sous-programme ISOCONV que nous avons appelé **ESCAPCOV**. Ce sous-programme sera distribué avec la bibliothèque de l'utilisateur lorsque sortira la nouvelle version de MINISIS. Entretemps, tout usager qui voudrait convertir les bandes ESCAP au format MINISIS peut se procurer ce sous-programme sur demande.

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Hewlett-Packard a mis sur le marché le dernier-né de sa famille HP 3000: le **Serie 37** (aussi connu sous le nom de "Mighty Mouse"). Le Series 37 est un petit ordinateur de table peu coûteux et utilisable dans un bureau, qui a une mémoire d'une capacité de 2Mb et opère sur MPE V.

Avec l'aide du bureau de la HP à Rockland, Md., nous avons testé MINISIS sur le Series 37. MINISIS passe très bien sur le Series 37 bien que, comme il fallait s'y attendre, le temps de traitement sur cet ordinateur est à peu près le double de celui de l'ordinateur du CRDI, le plus gros modèle Series 44. Les résultats de notre test de MINISIS sur le Series 37 sont publiés dans ce numéro-ci du bulletin. Veuillez noter que les résultats sont susceptibles d'être différents sur d'autres installations selon les applications de MINISIS.

Les usagers de MINISIS du Ministère canadien de la santé et du bien-être nous ont informé qu'ils ont pu faire une démonstration de MINISIS sur le Series 37 au International Register of Potentially Toxic Chemicals à Genève.

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Le CRDI prépare actuellement une édition révisée de la publication de Robert Valantin intitulée **CDS/ISIS and MINISIS: a functional analysis and comparison**. Cette nouvelle édition comparera les versions les plus récentes des deux systèmes suivants: CDS/ISIS version 4.3 et MINISIS version F.

Le deuxième volume intitulé **Guidelines for the building of authority files in development information systems** de la série "Recommended Methods for Development-Information Systems" est également en voie de préparation.

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L'Agence des États-Unis pour le développement international (AID) est en train d'effectuer des tests sur la fonction **LOANS** créée par l'équipe AGRALIN (connue antérieurement sous le sigle BAS), à l'Université des Pays-Bas. Cette organisation fournira par la suite la documentation sur la fonction **LOANS** afin de la distribuer via la bibliothèque de l'utilisateur.

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#### THE SIXTH ANNUAL MINISIS USERS' GROUP MEETING

The sixth annual meeting of the MINISIS Users' Group was held in Addis Ababa, Ethiopia, 1-4 October 1984. The host of the meeting was the **PADIS** group at the **United Nations Economic Commission for Africa** in Addis Ababa. Twenty-five MINISIS installations from seventeen countries were represented.

Since the meeting was, as usual, informal and all of the participants contributed, the discussions ranged from technically-oriented issues to the experiences of documentalists and librarians. Perhaps more so than in previous years, the discussions centered as much on what applications MINISIS is used for, as on how it is used. Judging by the questions asked after every user presentation, the participants seemed as interested in the nature of the data processed by the speaker's organization as they were in how MINISIS was used to process this data.

One of the highlights of the meeting was a visit to another MINISIS installation in Addis Ababa, at **ILCA** (International Livestock Centre for Africa). One of the features of their installation which was of great interest to the participants was their use of MINISIS **PRINT** to send data from a MINISIS data base to a photocomposition machine (the **LINOTYPE** made by **CRTronic** of West Germany). Output from **PRINT** is sent to an HP disc file and then directly copied via **HP FCOPY** to the **LINOTYPE**, which is connected to the **HP 3000** and is treated like any other logical device by the **FCOPY** utility.

We'd like to take this opportunity to thank the **PADIS** group for their efficient organization of the meeting and the warm and generous hospitality which they showed us.

IDRC will publish and distribute the papers presented at this meeting, and at the fifth meeting held in 1983.

At the close of the sixth meeting, the Users' Group voted to accept the offer made by the **Agency for International Development** to host the next meeting of the Users' Group Group in **Washington, D.C. on 27 October - 1 November, 1985.**

AID will do their best to ensure that invitations reach the members of the Users' Group in time for you to make plans to attend.

The MINISIS Outreach team hopes to see you in Washington next year. We would like to extend an open invitation to any user who plans to attend the meeting, to come and visit IDRC in Ottawa before or after the meeting in Washington. If you would like to pay us a visit, please let us know well in advance.

### MINISIS BENCHMARK ON HP 3000 MODEL 37

On 9 November 1984, a MINISIS benchmark was run on an HP 3000 Model 37 at the Hewlett-Packard office in Rockville, Maryland. The objective of this initial test was not to determine the limits of the Model 37 with respect to MINISIS, but simply to determine whether MINISIS operated on the new computer without modification and to acquire a feeling for the general performance of the machine. The results of these tests were as expected:

1. The MINISIS programs as transferred from IDRC's HP 3000 Model 44 operated successfully on the Model 37 without any modification.
2. Because of a slower CPU, the jobs generally ran slower, but not unacceptably slow.

Before listing the actual CPU and elapsed times for the jobs in the benchmark tests, it is necessary to describe the environments under which the jobs were run. The first thing to note is that the MINISIS programs and the test data were copied by Hewlett-Packard Ottawa from a 1600 bpi tape created on IDRC's computer to a 67 megabyte tape cartridge compatible with the HP 9144 cartridge tape drive of the Model 37. The benchmark tests consisted of eight jobs with the following steps:

#### Job 1

- DATADEF to erase a B-tree file
- INDEX to generate 3,400 keys using whole field processing
- INVERT to update a regular B-tree file resulting in the generation of 136 keys
- TREEMANT to recover waste space

## Job 2

- DATADEF to erase B-tree file
- INDEX to extract 10,976 title words using word processing and a special word file
- INVERT to update an inverted file with 2735 keys
- TREEMANT to recover waste space in the inverted file

## Job 3

- GARBAGE to do a store of a Master data base with 2,340 logical records
- GARBAGE to do a restore of the same Master data base
- TREEMANT to recover waste space on 5 inverted files
- GARBAGE to do garbage collection on a KSAM data base of 3,818 records

## Job 4

- INDEX to sort 2,336 records by title and another field with work file record length of 374 bytes
- PRINT to print four fields from a Master data base using the INDEX results as the hitfile

## Job 5

- INDEX specifying 4 keys using whole field processing to generate 266 records
- FCOPY to select output file
- PRINT to print a number of fields from 266 records from a Master data base

## Job 6

- BATCHIN to enter 74 records of 3 fields each into a Master data base. There was online inversion for 2 of the fields.

## Job 7

- RELEASE to delete 74 records from a Master data base. There was online inversion on 7 of the fields.

## Job 8

- ISOCONV to load 6 fields from 3,818 records of KSAM data base

A set of jobs was run initially on the HP 3000 Model 44 at IDRC. The configuration consisted of 1.5 Mb of memory, 1.2 Gb of disk and 2 General I/O Channels (GICs). The operating system was MPE IV-Q. The configuration of the HP 3000 Model 37 consisted of 1 Mb of memory with 55 Mb of disk space and 1 GIC. The operating system was MPE V-T. In both cases the jobs were run stand-alone with the only other activity on the Model 37 being one terminal monitoring the status of the jobs using SHOWJOB, SPOOK and LISTF.



The following table shows the elapsed time and the CPU time for the benchmark jobs on both systems. Timings are also given for some of the SORT steps done with INDEX.

<u>Job/Step</u>	<u>CPU 44</u>	<u>Secs 37</u>	<u>% Diff</u>	<u>Elapsed 44</u>	<u>Min 37</u>	<u>% Dif</u>
Job 1	259	419	61.8	12	16	33.3
Job 2	816	419	63.7	39	64	64.0
Job 3	208	343	64.9	11	22	100.0
Job 4	316	491	55.4	9	15	66.7
Job 5	110	208	89.1	4	7	75.0
Job 6	50	109	118.0	3	5	66.7
Job 7	38	68	79.0	3	5	66.7
Job 8	168	323	92.3	5	9	80.0
Sort of 3,401 records of 10 bytes	26	38	46	.78	.79	1
Sort of 10,976 records of 74 bytes	126	193	53	2.66	4.43	66.5
Sort of 2,336 records of 374 bytes	69	101	46.4	1.6	2.6	62.5

From the table it is easy to see that the CPU of the Model 37 is generally slower than the Model 44. A certain amount of the difference in elapsed time can be explained by the fact that the Model 37 had only one disk drive. This is known to slow down functions. When doing online searches on the same data base and the standard MINISIS demonstration data base, there was a sense of slightly slower response than on the Model 44 but the response was quite acceptable.

In general the Model 37 and MPE V-T performed well with MINISIS and the combination should be ideally suited to an application with a limited number of simultaneous users.

IDRC would like to thank the staff at the Hewlett-Packard office in Ottawa and Rockville for arranging access to the hardware to conduct this test.

T.A.G. Gavin  
Manager, Systems and Outreach  
IDRC, Ottawa, Canada

## REPORT FROM FUTURE SYSTEMS

Items of priority on the Future Systems Group's work plan for 1985 are finishing the microcomputer-based data entry package and the data dictionary feature, enabling Chinese character set processing in MINISIS, and the release of Version F.01.

The microcomputer-based data entry package is now in the final stages of testing.

Work on the internals of the data dictionary feature has been finished, and the only remaining task is the modification of DATADEF. Although DATADEF needs to be extensively modified to handle the data dictionary, to the user it will not appear much different than it does now.

Our plans for Chinese character set processing within MINISIS is discussed elsewhere in this issue.

### **VERSION F.01**

We expect to release Version F.01 in May 1985. Version F.01 will be what we call a "fixes release". consisting mainly of fixes to bugs. However there will be a number of new features, such as:

- support for interchange of data in MINISIS and UNIMARC formats (discussed below);
- record locking - ie. if a user is updating a record, other users are not permitted to have update access to the record;
- "dynamic" updating of a DS component in MODIFY, where a user may create a new record in the joinee component if no such record exists;
- facility for user-written special exits in PRINT;
- ability to define a "mandatory" field in a data base;
- if the user modifies an RD data base definition, DATADEF will update the RD's default print format.

### **ARABIC CHARACTER SET**

Those users who use the Arabic alphabet will be interested to know that we have developed a handler for the HP 2608S line printer. This handler will also work with two new models, the HP 256X series of line printers and the HP 2934A terminal-printer, since these models are compatible with the 2608S. We have updated the HP 2622 and HP 2608A handlers for setting terminal mode and handling Arabic numbers respectively. These new and updated handlers

will be released with Version F.01 next spring, or can be obtained now by writing to MINISIS Outreach, IDRC, or to ALDOC (Documentation Centre of the Arab League), 37 Ave. Kheireddine Pacha, Tunis, Tunisia.

We have been informed by Hewlett-Packard that the problem of blanking out the screen when switching terminal mode in the HP 2622 has been fixed by the new G07 option which is now available from H-P.

### **SDI (SELECTIVE DISSEMINATION OF INFORMATION)**

We hope to have the SDI facility for Selective Dissemination of Information ready for release with Version F.01.

This facility has been extensively tested at Wageningen during the past year, and is now being tested at ILCA (International Livestock Centre for Africa) in Addis Ababa. ILCA have already been running a successful SDI service for the African continent using MINISIS QUERY (see the Newsletter, Vol. 4 No. 1).

All that remains is to document the SDI feature. ILCA and IDRC are cooperating with AGRALIN to finish this task.

### **THE MINISIS/UNIMARC INTERFACE**

The MINISIS/UNIMARC interface is not a new applications processor. Instead, it consists of changes to the existing MINISIS system, special exits, and specific data base and correspondence definitions. These procedures will enable libraries which use MINISIS to exchange data with libraries that accept records in UNIMARC or CCF format.

The changes to MINISIS are:

- changes to ISOCONV, to handle additional leader elements found in MARC records;
- changes to ISOCONV, to handle a special archival field which can store, in a MINISIS data base, the tag, indicators and data of MARC fields that are not uniquely defined in the MINISIS data base;
- table-driven procedures to handle fixed fields such as the UNIMARC fields 100, 105, 110, 115 and 12x or their equivalents in other MARC formats;
- table-driven procedures to handle a limited number of MINISIS fields with non-MINISIS subfield delimiters embedded in them - in effect, this will allow repeatable subfields within a subfielded group and more than 9 subfields in a group for MINISIS/UNIMARC applications.

Special exits for the UNIMARC-MINISIS interface will be distributed in source code format, and a user's manual will help the user to define MINISIS correspondence and data definitions and table values for establishing maximum compatibility with UNIMARC.

Because of the generalised nature of MINISIS, it is not possible to implement full MARC format, but the most frequently used MARC fields and features can be processed by MINISIS. Libraries that use the MINISIS/UNIMARC interface will acquire the following capabilities:

- data from UNIMARC records (and most other types of MARC records) can be converted to a MINISIS data base without extra programming;
- fixed fields can be handled in a user-friendly fashion;
- title and statement of responsibility can be compatible with the conventions of the Anglo-American Cataloguing Rules, 2nd edition, and the International Standard Bibliographic Description (ISBD);
- subject headings can be implemented;
- local data can be converted to UNIMARC records and exchanged with other libraries.

This work was done with the cooperation of the International Federations of Library Sciences and Institutions (IFLA), with support from the British Library, the Library of Congress and the National Library of Canada. Copies of the initial report on the feasibility of such an interface by Ms. Elaine Woods, an IFLA consultant, may be obtained free of charge by writing to MINISIS Outreach, IDRC.

#### NOTE TO APPLICATIONS PROGRAMMERS

If you are writing or plan to write MINISIS applications programs, you may want to call messages from the MESSnn and ERRnn files. In the newsletter which accompanied the Version F release tape, we told users that there was a limited amount of space available in the MESSnn file in the standard MINISIS system. To reserve space for every user-written program would not be possible - the file would rapidly become unmanageably large - and we would like to propose an alternative.

We are asking users who are writing programs which call messages from MESSnn to design their programs so that the message line numbers are position-relative. The starting line number of the block of messages will be stored at an assigned record number in MESSnn. This means that your programs must first read the record from MESSnn that contains the starting line number for all messages in the program, and then any calls to the DIALOGUE intrinsic would refer to messages relative to that starting line number. It is therefore necessary for users to notify IDRC if they wish to have record numbers in MESSnn and ERRnn assigned to them for their application programs.

When a new version of MINISIS is released, it may become necessary to move the messages in case of conflict - ie. if IDRC or another user is using the same area in MESSnn. In that case, messages can be moved to another area of MESSnn and the address changed to point to the new area.

Lines 2291/2349 in MESSnn and lines 1183/1199 in ERRnn will be set aside to hold the relative addresses of user messages. (Please note that lines 2289/2291 in MESSnn and 1180/1182 in ERRnn have already been reserved by a user).

For example, if you wanted to begin the block of messages for your program at the current end of file of MESSnn, which is record 2640, your program could get the starting line number from, for example, line 2292 in MESSnn. This line would contain the value 2640. The actual line number of a message is the sum of the starting line number and the relative line number; the messages in your program should be numbered relative to zero. When a new version of MINISIS is released, you can move your messages to the new MESSnn end of file, and change line 2292 to point to the new starting line number. The same technique will be used for ERRnn and the ERROR intrinsic.

If you want to be able to call your program from the MINISIS menu while running under security, you will need to assign a proc'id to the program; otherwise you cannot add it to your security profile. There is a very limited number of proc'ids available. For processors (a processor is a program which opens a data base), since they correspond with the position of the MINISIS processor names in lines 1350/1381 of MESSnn, relative to line 1350, there are only 32 proc'ids available at any time. At the moment, 14 are in use and another three are reserved (the latter are proc'ids 15, 16 and 17 corresponding to lines 1364/1366). There are another 32 proc'ids available for utilities (from 33 to 64, corresponding to lines 1382/1415 in MESSnn) of which seven are already in use.

Since they are scarce, we would prefer not to reserve a proc'id solely for one user. We prefer instead to make a pool of 5 processor proc'ids and 5 utility proc'ids available for all user-written programs. Conflict will arise when more than one user uses the same proc'id for a program, and another user wants to run both programs, but it is a simple matter for the user to change the proc'id in the source code of one of the programs.

The free processor proc'ids will be 28 to 32 (lines 1377/1381) and the free utility proc'ids will be 60 to 64 (lines 1409/1413). We would like to reserve lines 1367/1376 and 1389/1408 for our own software development. At the moment, there is a bug in MINISIS which makes it difficult to use the SECURE feature unless processor names are stored in an unbroken sequence in MESSnn from line 1350, but we intend to fix this. For proc'ids, therefore, you are free to use any available numbers in the understanding that they will have to be moved to the reserved area when the next version of MINISIS is released.

### STATUS REPORT ON THE USER-CONTRIBUTED LIBRARY

A new version of the UCL (User-contributed Library) will be released in the spring of 1985 with Version F.01 of MINISIS.

This version of the UCL will contain all of the programs and exits distributed with MINISIS Version F. Some of these have been updated by their developers. For example, the developers of CARDEX have added new features to this processor, including syntax checking, and enabling the use of a status code in undefined registrations in order to list and claim missing items.

As well, there will be new programs in the UCL for Version F.01. Some of these new programs are:

- a user-written extraction routine for Francophone data bases which will strip "l'" and "d'" from words before they are extracted from the field;
- the International Labour Office's ILIS menu driver. This is an interface between MINISIS QUERY and the user, which allows inexperienced users to search data bases using display menus and simple responses;
- QTHESAUR, a program written by SHL Business Systems Ltd. This is a user exit which will enable the user to directly update a Thesaurus KSAM file, without having to go through THLOADER to re-load the entire Thesaurus.

### LOANS

The LOANS module, developed by the AGRALIN team at the Agricultural University in Wageningen, has been tested during the past year in Wageningen. It is about to be implemented at the USAID installation in Washington, D.C., who have undertaken to write the LOANS documentation.

### Proprietary rights to user-written MINISIS programs

By now you are probably aware that as of 1 April 1985, the terms of the MINISIS licensing agreement pertaining to user-written software will be changed.

In the past, the proprietary rights to any user-written software which called the MINISIS intrinsics belonged to IDRC and could be distributed to the users through the UCL, incorporated into the common MINISIS system, or given back to the owner of the software.

However, we believe that it would encourage users to invest more of their resources in the development of MINISIS-related software if they were able to retain some control over their product, and were able to recover the costs of such an investment. Therefore we have decided to relinquish our claim to proprietary rights to user-written software.

After 31 March 1985, any user-written MINISIS-related software remains the property of the developer. IDRC will claim only the right to use the software, and distribute it free of charge to our direct licensees, without paying any fee to the owner of the software. Our direct licensees are those organizations - usually non-profit-making organizations in developing countries - which have received MINISIS directly from IDRC. However, the developer of the software will have the right to sell it to MINISIS distributors and sub-licensees.

Since we are making a distinction between two groups of organizations, this will mean that two different versions of the UCL will be distributed with new releases of MINISIS. The direct licensees will receive the full UCL containing all contributions. Distributors and their sub-licensees will receive a smaller UCL containing only those items which the developer contributes to the UCL with no intention of charging a fee.

We should point out that software that has already been distributed in the UCL (including CARDEX) will continue to be distributed **free of charge** to all users.

Some MINISIS users have been generous enough to freely donate a program to the User-contributed Library for the benefit of all MINISIS users, including distributors and sub-licensees. These users are the International Labour Office, who have donated their ILIS menu-driver to the next release of the UCL, and the AGRALIN team at the Agricultural University in Wageningen, who have promised that their LOANS module will be available free of charge to all users when it is ready for release.

However, if you are not a direct licensee, you can expect to be charged a fee for software such as the FullScreen program that is being developed by LIBRO Datakonsult, and the programs being developed by Societe Dataware, that are discussed elsewhere in this issue of the Newsletter.

What this means to you, as a user, is: If you develop any software which calls the MINISIS intrinsics, you are still required to let IDRC know. We will use our discretion to decide whether or not this software would be of interest to other users; if yes, we will ask you for the software so that we can put it in the UCL for our direct licensees. If you want to charge the other MINISIS users a fee for your software, we will inform them that this product is available from you at a fee.

If you are a direct licensee of MINISIS, you will receive any user-written software that we decide to develop free of charge in the UCL.

Distributors and sub-licensees will receive a smaller UCL of software that is freely available, and can expect to pay a price for any other user-written software.

We feel that this new direction will benefit the entire community of MINISIS users, by encouraging the development of new MINISIS tools and user expertise.

### CHINESE CHARACTER PROCESSING IN MINISIS

Currently, MINISIS can handle any alphabet with a character set of less than 256 characters, using I/O handlers which process, translate, read and write data. However, this technique does not work very well with languages such as Chinese where as many as 10-12,000 characters must be accommodated.

Many of the MINISIS users in China and Singapore have asked us to find a solution to this problem. Earlier this year, we engaged a consultant, Mr. Damon Koach, to see if it was feasible to process Chinese characters in MINISIS. Mr. Koach's report was generally favourable; the conclusion of his study was that it is indeed possible for MINISIS to handle Chinese characters. (Copies of Mr. Koach's report can be obtained free of charge by writing to MINISIS Outreach, IDRC).

Since the report was written, we have had a chance to use a Hewlett-Packard Chinese terminal, the HP-2692, with MINISIS. In this experiment, we were actually able to input, modify, retrieve, sort and print Chinese characters with the current version of MINISIS.

Significant problems still exist, some of which can be resolved by minor changes to the MINISIS software. For example, the system would have to be modified to recognize that for Chinese, each character is two bytes long, rather than one byte for alphabetic characters such as Roman or Arabic. Another problem is that of sorting, since there does not seem to be an accepted standard collating sequence for sorting Chinese characters.

However, despite these problems we feel that over the next year we will be able to enhance MINISIS to permit the processing of Chinese characters. In our work we are assuming that there are I/O devices available to input and output Chinese characters in either traditional or simplified form, to the satisfaction of the user. For this work we are not specifically interested in the input method used, as long as the output from the terminal is in, or can be translated through an I/O handler to, a 2-byte representation. For MINISIS users, it appears as though the HP-269X family of terminals are a workable and affordable alternative.

#### **HP-CIOS solution**

MINISIS sites in Beijing have also been investigating methods of handling Chinese characters in MINISIS. One of these organizations, STIC-CMP (the Documentation Centre of China's Mechanical Engineering Society), has written a program to convert telegraph codes to Chinese characters which can be output to HP 2608 and 2631G printers and 2648A terminals. Their data base contains some fields in which data is input in the form of telegraph codes; these fields can then be converted to Chinese characters for display. However, the telegraphic codes cannot be used for indexing or inversion. Inverted fields must contain terms in Pin Yin (a phonetic alphabet in which Chinese is represented in Roman characters).



STIC-CMP is very interested in developing an interface between HP-CIOS (Hewlett-Packard's Chinese Character Input/Output Processing System) and MINISIS. HPCIOS software provides a means of displaying full Chinese text on a terminal screen or printer by using HP intrinsics to graphically draw the characters. The Chinese characters are stored in numeric code. Chinese text is entered into the system as Pin-Yin and is transformed by non-HP-CIOS software to a numeric code from which Chinese characters can be generated for display. IDRC will co-operate with STIC-CMP to develop I/O handlers to permit the input of Pin-Yin and the display of Chinese characters using HP-CIOS directly with MINISIS. (A copy of a STIC-CMP paper on this subject can be obtained free of charge by writing to MINISIS Outreach, IDRC).

The basic difference between these two approaches lies in the fact that with the HP-CIOS interface, the Chinese character generation is done by the HP-CIOS software package. With the other approach, Chinese character generation is done by firmware in the I/O device. With the generalised MINISIS solution, we hope to be able to accommodate both techniques. In the MINISIS solution, Chinese characters will be entered from the keyboard and processing will be done by I/O handlers, as is the procedure for processing Arabic and other non-Roman scripts.

We would like to stress that any modifications made to the MINISIS software to enable Chinese character processing will not be extensive, and should not impact upon the performance of the system for users of Roman and other alphabets. In fact, it is not MINISIS that is being changed to handle Chinese characters, as much as it is the development in the last few years of standards for the internal representation of Chinese characters and suitable hardware that is making it possible for MINISIS to deal with Chinese character sets.

We will be looking for a generalised solution for non-conformable alphabets. In other words, assuming that suitable hardware exists, if we find a solution within MINISIS for Chinese character processing, it is most likely that we will also resolve the problems of processing Japanese, Korean and other large alphabets.

Over the last three years, we have been exchanging ideas with Chinese-speaking MINISIS users about ways to accommodate the Chinese alphabet. One of these users, Mr. Qi Zhi-feng of the Centre of International Economic Information in Beijing, once told us, "MINISIS is a very powerful piece of software - it is like a tiger. With the capability of processing Chinese characters it would be like a tiger with wings."

#### GENERATION OF AGRIS INPUT THROUGH MINISIS

In Technical Note 13 (May 1982), the AGRIS processing Unit introduced a simple format for their inputting requirements to give the participating centers capability to send their data to APU on magnetic tape.

Input data is output in "line format" i.e., AGRIS tag number followed by tag delimiter and data in free format.

The two variations of "line format" are the simple line and the compressed line formats. AIBA/SEARCA opted to use the simple line format through MINISIS PRINT.

As soon as the AGRIS input records are validated, the records are selected through QUERY and sorted by Temporary Record Number (TRN) through INDEX. To send the output records from PRINT to a disk file, use file equation:

```
FILE OUTFL;REC=-72,10,F,ASCII;DEV=DISC;NOCCTL;SAVE
```

Through PRINT, the sorted records are transformed into AGRIS input format into a disk file with a record length of 72.

To highlight some of the output field requirements, the PRINT format should have the following specifications:

- use AGRIS field tag and tag delimiter (which is !) as LITERAL 1 for each AGRIS field to be generated. However, for AGRIS field tag 008 (which is equivalent to multiple MINISIS tag) use ; as LITERAL 2, followed by the next MINISIS field tag with / as LITERAL 1 to serve as delimiter and so on, until all data of Tag 008 is output.
- for AGRIS field tags 001 to 007, there are no special considerations, since the data is merely being moved from a MINISIS field to an AGRIS field.
- for input generation of bibliographic levels, the bibliographic field in MINISIS should be defined as a subfielded field with three subfields; e.g., X600 with subfield X601 containing the value A (for Analytic), X602 containing M and X603 containing S. These subfields are used as CHECKED FIELD ID to print the fields at each bibliographic level. For example, to print the Analytic fields, generate all fields at this level with X601 as CHECKED FIELD ID, and "yes" for DISPLAY WHILE FIND.
- the above procedure should also be applied to other bibliographic levels.

Use FCOPY to transfer the file to a magnetic tape. The FCOPY procedure should exclude blank records and change record length to 80.

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## THE FULLSCREEN CONCEPT FOR MINISIS

### **General**

The FullScreen concept for MINISIS (FSDEF, FSENTRY and FSMODIFY) is developed by LIBRO Datakonsult AB, Uppsala, Sweden on behalf of IMATRAN VOIMA, Helsinki, Finland.

We think the MINISIS users will benefit from having the possibility to choose between character mode and fullscreen (block mode) when entering and modifying records in a data base, as each mode has its pros and cons.

The fullscreen processors use the HP subsystem VPLUS/3000 for forms handling, which requires terminals capable of handling the HP block mode concept and at least one person who is familiar with the FORMSPEC program for designing forms. The people (e.g. librarians) that are to use FSENTRY/FSMODIFY do NOT have to know the technique of forms designing, however.

The description of the FullScreen concept that follows, consists partly of excerpts from the manual and partly of summaries made by me in order to keep this article on a reasonably general level.

### **Considerations using FullScreen vs. Character Mode**

The following rules apply:

- a) Data is sent (the entire form) to the computer ONLY by pressing the ENTER key - the RETURN key is not used.
- b) As a consequence of the above, data is NOT sent to the computer when you press a function key (f1-f8). Only a code is sent.
- c) You may use the keys "Insert Character", "Delete Character", "TAB" and all the keys with arrows.
- d) "What you see is what you get". The data that is sent to the computer when you press ENTER is the data you see on the screen. The concept of backspace and having to retype the characters you passed on your way back does not apply here.

### **FSDEF**

To use the FSENTRY/FSMODIFY processors, you have to take the following steps:

- A) Create a MINISIS data base (DATADEF processor)
- B) Create a Forms File (HP program FORMSPEC.PUB.SYS)
- C) Create an FSDEF-file (FSDEF utility)

FSDEF creates, modifies and lists a so-called FSDEF-file, which later is used by FSENTRY/FSMODIFY. It serves as a "cross-reference file" between a data

base and a Forms file. There is no limit to the number of FSDEF-files that can be created and maintained. Each file will, however, link only ONE data base to ONE Forms file. The maximum number of forms in the file (i.e. forms per MINISIS record) is thus determined by the HP software FORMSPEC. The data base can be an RD, PS or DS. A Forms file consisting of 5 forms which are used by FSDEF is supplied and the literals shown and the meaning of the function keys (f1-f8) can be customized by altering lines in the MESSnn-file supplied (e.g. one key always has to mean "EXIT", but the user decides which key it should be). In this utility you specify - for each form in a Forms file you have designed and for each screen field - the field tag or mnemonic of a MINISIS field. The possibility to concatenate two or more screen fields into a long MINISIS field also exists.

### **FSENTRY/FSMODIFY, General**

The order in which your forms appear is decided by the designer of the Forms file. The following rules apply (when you have pressed ENTER):

- a) If the data entered is correct, the next form is shown with all fields set to initial values as specified in the Forms file or data already entered if you have previously used this form for the current record (FSENTRY) or with values fetched from the data base (FSMODIFY).
- b) If the form is repeatable, the same form is shown again with all fields set to spaces (FSENTRY) or with values fetched from the data base if there is another occurrence of a field (FSMODIFY).
- c) If an error is detected, the form stays on the screen and you cannot leave it without supplying a correct value or spaces in the field(s) concerned. An error message is shown.
- d) If the form is the last one in sequence order, it stays on the screen even if all values are correct.

The terms "correct" and "error" above, refer to field validation which is done for

- type (i.e. numeric or character)
- ISN consistency (for MASTER databases only)
- validity of contents
- against an authority file
- through a field level user exit (not yet implemented)
- contents matched against a pattern specified in "processing specifications" in the Forms file (very powerful).

The user may - to a certain extent - override the normal forms sequence, but that is an "advanced feature" and should only be considered for experienced users.

The processors have four function keys in common, namely

- PREVIOUS PAGE
- NEXT PAGE
- PREVIOUS FORM
- NEXT FORM

These keys mean, that as long as you have not written the record to the data base, you may go forwards or backwards (PAGE and FORM give different results only if the current form is repeatable) and change/add/delete data in the fields presently on the screen at will or add/delete occurrences of repeatable fields.

The meaning of the function keys can be customized by altering lines in the MESSnn-file supplied. One key always has to mean "PREVIOUS PAGE", but the user decides which key it should be.

While our goal is that the processors ultimately will contain every feature of their standard counterparts, we immediately recognized that we would not attempt to achieve this in one single step. After the installation at the IMATRAN company, LIBRO has taken over all the responsibility for the maintenance of the FS software. This also means that in order to offer an up-to-date software in the future, we hope that IDRC will permit us to charge the customer a reasonable fee.

## FSENTRY

Initially - in character mode - you have to reply to the request

PLEASE ENTER NAME OF FSDEF-FILE OR "EXIT"

with the name of the FSDEF-file you want to use for this session. All information concerning the Forms file and the MINISIS data base is contained in that file.

You have four function keys to choose between when you decide what to do with the record. These are QUIT, SKIP and END as in ENTRY. Any of these keys can be pressed regardless of which form that is currently on the screen.

The features for current date, checking for forbidden character, duplicate checking and recursive entry are all supported, as is the possibility to overwrite a record if the autonumbering feature is not used for a MASTER DB and the user has access to the RELEASE processor.

Please note that there are NO commands to type - everything is taken care of by the eight function keys and ENTER.

## **FSMODIFY**

Initially - in character mode - you have to reply to the request

PLEASE ENTER NAME OF FSDEF-FILE OR "EXIT"

as in FSENTRY, and

PLEASE ENTER NAME OF HITFILE, JUST "RETURN" OR "EXIT"

Records can be selected one by one through ISN (Master) or keyvalue (KSAM) in a specially designated field in the main form of your Forms file (i.e. the form is shown first for every record) or through the use of a QUERY Hitfile as input (Master data base only).

You have four function keys to choose between when you decide what to do with the record. These are SKIP, QUIT, END and STOP as in MODIFY (well, QUIT is new but it is rather obvious what it does). Any of these keys can be pressed regardless of which form that is currently on the screen.

The current date feature is supported. Please note that there are NO commands to type - everything is taken care of by the eight function keys and ENTER.

Mr. Hans Hjelm  
Libro Datakonsult  
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## **UTILISATION DU LOGICIEL MINISIS PAR LA SOCIÉTÉ DATAWARE**

La Société DATAWARE est actuellement le distributeur du logiciel MINISIS pour la France.

L'essentiel de notre activité technique consiste à adapter le logiciel MINISIS aux besoins de nos différents clients et éventuellement étendre ses possibilités afin de répondre à des exigences spécifiques.

Nous vous proposons ici un exposé de quelques situations rencontrées et des solutions que nous avons pu y apporter le cas échéant.

Le logiciel MINISIS ayant fortement évolué depuis 2 ans, un certain nombre d'extensions a pu être envisagé, surtout avec la nouvelle version F.

Tout d'abord, nous pouvons dire que MINISIS ne nécessite jamais d'extensions lorsque l'application est de type purement documentaire et traite des documents indexés. Dans ce cas, l'ensemble des demandes exprimées par les utilisateurs est couvert.

## Extensions entreprises dans le domaine bibliothécaire

### 1. Jeux de caractères étendus:

Nos clients, travaillant généralement sur des ouvrages français, ont toujours souhaité pouvoir utiliser l'ensemble des caractères accentués propres à notre langue. Jusqu'à la version F, la méthode d'introduction des diacritiques n'a pas été jugée satisfaisante pour les raisons suivantes:

- les diacritiques ne sont pas visualisables sur l'écran;
- on ne peut utiliser les touches spéciales des terminaux français;
- la modification des zones contenant les diacritiques est mal aisée, du fait de leur visualisation sous forme de 3 symboles différents;
- cette méthode ne répond pas au traitement de tous les diacritiques, notamment l'apostrophe, qui engendre des problèmes en RECHERCHE.

Jusqu'à présent, ces caractères ont donc été très peu utilisés, mais il semble que la version F résolve une grande partie des problèmes rencontrés.

Ce problème est d'autant plus vaste que beaucoup d'utilisateurs souhaitent utiliser simultanément MINISIS en français, anglais, allemand, sans pour autant changer de terminal, selon la langue. Il semble important, puisque ces langues n'ont que des différences mineures, de pouvoir visualiser sur un écran unique des documents de différentes langues latines, en éliminant les caractères spéciaux non visualisables.

### 2. Traitement du texte intégral:

Le traitement de l'intégralité du texte est vital dans bon nombre d'applications comme la consultation d'archives par exemple.

Le matériel HP 3000 ayant largement étendu ses possibilités au cours de ces dernières années, il devient tout à fait envisageable d'introduire directement en machine l'intégralité des documents. De plus, on peut éviter l'étape longue et coûteuse de la saisie grâce, en particulier, à l'utilisation de lecteurs optiques.

Cependant, le traitement de ces documents introduit un certain nombre de contraintes pour le logiciel documentaire. En effet un document peut largement dépasser la taille maximum permise pour un ISN. Les recherches sur du texte libre peuvent entraîner rapidement du bruit dans les réponses et nécessitent des opérateurs très sélectifs. L'introduction apporte, à notre avis, une amélioration évidente dans ce domaine, grâce aux opérateurs d'adjacence et de troncature à gauche.

Nous avons pour notre part écrit un petit programme qui découpe les documents en "pages" pouvant être introduites dans des ISN (chaque page faisant moins de 4000 caractères) et qui les chaîne logiquement en ajoutant la référence du document dans chaque ISN. Il suffit alors de

créer un DATA SUBMODEL reliant les pages d'un même document et d'y inverser le texte intégral dans un fichier permettant les recherches sur adjacence et troncature. Cette possibilité ouvre de nouveaux horizons à MINISIS qui peut rivaliser sur ce point avec des logiciels ne pouvant fonctionner, jusqu'à aujourd'hui, que sur de gros systèmes matériels informatiques.

### **3. Gestion de Commandes:**

Toute bibliothèque publique doit offrir un fonds documentaire complet, mais elle doit également gérer un budget des ses acquisitions. Il lui est donc nécessaire de gérer ses commandes d'ouvrages.

Comme ce problème avait déjà été analysé par les utilisateurs du BAS à Wageningen, nous avons essayé de profiter de leurs expériences dans ce domaine.

Le module CARDEX nous a ainsi été fourni gracieusement et nous l'avons installé (dans une version traduite en français) à l'INSTITUT DU MONDE ARABE, où il semble parfaitement convenir pour le traitement des périodiques.

Pour ce qui concerne les commandes d'ouvrages (monographies ou multitomes) nous avons dû réaliser un module de gestion de commandes (GECO) qui gère: l'envoi, la réception et l'indexation des ouvrages.

Afin de ne pas se lancer dans une programmation complète qui s'appuierait sur les INTRINSIC de base de MINISIS, nous avons tout d'abord développé 6 nouvelles INTRINSIC de haut niveau et à partir desquelles nous écrivons tous nos nouveaux programmes. Elles permettent notamment:

- de travailler sur plusieurs bases de données simultanément;
- de ne plus faire de distinction entre des modes SAISIE (ADD) et modification (UPD) dans les programmes;
- de simuler, par une seule instruction, les modules de SAISIE, MODIFICATION et RECHERCHE.

Ces intrinsic constituent 2 nouveaux segments de la SL de MINISIS.

### **4. Visualisation d'images simultanément au texte:**

Nous avons effectué l'analyse de l'interfaçage de MINISIS à un vidéo-disque et sommes en train de réaliser les programmes nécessaires à cette application. Cette extension peut permettre de visualiser par exemple du texte intégral, des diapositives ou des manuscrits par ailleurs indexés dans une base documentaire.

### **5. Extension aux normes vidéotexte françaises:**

La France a adopté un certain nombre de spécifications qui permettent, à des utilisateurs, d'interroger à distance, par le réseau téléphonique et grâce à des terminaux spéciaux appelés "écrans-vidéotexte", les bases de



données des centres serveurs. Nous avons donc écrit un programme permettant d'interroger les bases de données MINISIS à partir de ces terminaux qui sont d'un usage très simple et auxquels les personnes sont déjà habituées (sachant que nombre d'entre elles sont rebutées par l'apprentissage de l'usage du clavier et de la syntaxe d'interrogation).

#### 6. Renumérotation des ISN dans une base:

Pour répondre aux besoins de certains de nos utilisateurs, nous avons écrit un programme qui permet de réinsérer les documents dans une base MINISIS, en fonction d'un ordre de tri choisi. En effet, MINISIS, dans le module de Recherche, fait apparaître les documents par ordre croissant d'ISN. Hors ce sont les documents les plus anciens qui correspondent aux premiers ISN, on est donc souvent obligé d'attendre l'affichage de tous les documents pour connaître les références les plus récentes.

Ce programme effectue toutes les inversions en ligne lorsqu'il réintroduit les documents. Il suffit alors de relancer les inversions offline.

Nous vous enverrons bientôt les résultats de nos travaux en dehors du domaine bibliographique.

M. X. Henri-Bourgain  
Société Dataware  
Paris, France

#### USE OF MINISIS SOFTWARE BY SOCIÉTÉ DATAWARE

The DATAWARE company has a non-exclusive license to market the MINISIS software in France. Our technical activities consist essentially of adapting MINISIS software to the needs of our various users and, when necessary, expanding its capabilities to meet specific requirements. This report describes some of the problems that have been encountered and the solutions that we have been able to apply to them.

Because the MINISIS software has evolved a great deal in the past two years, it has been possible to envisage a number of extensions, especially of Version F.

First of all, we can say that MINISIS never requires extensions when it is used to process indexed material in purely documentary applications. All of the users' requests in such a case are covered.

## EXTENSIONS IN THE LIBRARY FIELD

### 1) Expanded Character Sets

Our customers, who generally work with French material, have always wanted to be able to use all of the accents proper to French. The method used to introduce diacritics before Version F became available was judged unsatisfactory, for the following reasons:

- The diacritics did not appear on the screen;
- The special keys on the French terminals could not be used;
- Modification of fields that contained diacritics was difficult, because they were represented by three separate symbols;
- The method was ill-suited to certain diacritics, such as the apostrophe, and this caused problems during a QUERY.

Little use was therefore made of these characters, but it seems that Version F has solved many of the problems that were encountered.

The situation is complicated by the fact that many users want to be able to use MINISIS to process French, English and German material simultaneously, without changing terminals. It seems important, since there are only minor differences between these languages, that users be able to view on one screen material written in different variations of the Latin alphabet, once the special nondisplayable characters have been eliminated.

The potential of the HP 3000 equipment has been greatly expanded in the past few years, and it is becoming quite possible to enter entire texts into the machine directly. Moreover, the long and expensive capture step can be avoided - in particular through the use of optical readers.

However, the processing of these documents makes special demands on documentary software. The length of a document may far exceed the ISN maximum. Free-text searches can very quickly produce noise in the responses and require highly selective operators. We feel that the adjacency and left-truncation operators have produced a marked improvement in this area.

We have written a short program to divide documents into "pages" that can be put into ISNs (each page containing fewer than 4,000 characters), link them logically and insert the document reference in each ISN. It is then enough to create a DATA SUBMODEL that links the pages of a given document and invert the entire text in a file that permits adjacency and truncation searches. MINISIS therefore now rivals software packages capable of operating only on large hardware systems.

### 3) **Orders Management**

Every public library must offer a complete documentary collection, but it must also manage an acquisitions budget. It must therefore be able to manage its orders.

This problem has already been analysed by the BAS users in Wageningen, and we have attempted to benefit from their experiences.

The CARDEX module was provided to us free of charge, and we installed a translated French version of it at the INSTITUT DU MONDE ARABE, where it seems perfectly suited to the processing of periodicals.

We were obliged to create an orders management module (GECO) to manage the dispatch, reception and indexing of monographs and multivolume works.

In order to avoid complete programming based on MINISIS's basic INTRINSICs, we developed six new high-level INTRINSICs and used them to write all our new programs. They make it possible, among other things, to:

- work on several data bases simultaneously;
- no longer make a distinction between the ENTRY (ADD) and MODIFY (UPD) modes in programs; and
- simulate, by means of a single instruction, the ENTRY, MODIFY and QUERY modules.

These INTRINSICs constitute two new segments of MINISIS's SL.

### 4) **Simultaneous Display of Text and Images**

We analysed the interfacing of MINISIS and a video disc and are in the process of writing the programs required by this application. This extension may make it possible to display such things as texts in their entirety, slides, or manuscripts indexed in a documentary base.

### 5) **French Videotex Standards**

France has adopted a number of specifications that make it possible for users to perform long-distance consultations of the data bases of information retrieval centres through the telephone system and special videotext-screen terminals. Knowing that many people are intimidated by the effort required to learn keyboard operating procedures and consultation syntax, we wrote a program that makes it possible to consult the MINISIS data bases using these terminals, which are very simple to operate and with which people are already familiar.

### 6) **Renumbering ISNs in a Data Base**

In order to meet the needs of some of our users, we wrote a program that makes it possible to reinsert documents in a MINISIS base in a specific

sorting order. MINISIS's QUERY module displays the documents by ISN in ascending order of sequence. However, because the first ISNs correspond to the oldest documents, users must often wait until all the documents have been displayed to see the most recent references.

The program performs all the on-line inversions when it reintroduces the documents. It is then enough to restart the off-line inversions.

(Translated from the original French at IDRC)

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## MINISIS BIBLIOGRAPHY

Copies of the following publications can be obtained free of charge by writing to MINISIS Outreach, Information Sciences Division, IDRC, P.O. Box 8500, Ottawa, Canada K1G 3H9. We are interested in hearing from other users who have written papers on their experiences with MINISIS, and who would be willing to have their publications distributed by IDRC as part of our MINISIS information package.

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