

MINI-MICRO CDS/ISIS WORKSHOP

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ABSTRACT

A brief history of Mini-micro CDS/ISIS is given, together with an overview of the present position. Version 3.0, which can be networked, has recently been made available. The necessary steps to define and create a database are discussed, and there is a short description of the menu structure; the import and export of records using the ISO 2709 format; additional add-on Pascal programs; and searching, sorting and printing records in defined formats. Some limitations of the software are mentioned.

HISTORY

ISIS, the Integrated Set of Information Systems, was developed initially for IBM mainframe computers by the International Labour Organization (ILO) in the 1960's. ILO gave the software to a number of other UN agencies, and Unesco took on the task of maintaining and improving the package. At about the same time the International Development Research Centre in Ottawa had developed some software called MINISIS for minicomputers, for use in developing country projects. Unesco renamed the ISIS system CDS/ISIS, to indicate that the new version of the package came from the Unesco Computerized Documentation Service. Unesco was very keen to support the preparation and improvement of software for microcomputers for use in the developing countries, and to promote standardization and the easy exchange of bibliographic records between organizations. With support from the Italian government a microcomputer version was developed, Mini-micro CDS/ISIS.

Version 1 of Mini-micro CDS/ISIS, which operates under MS-DOS, was made available in 1985, and consisted of six separate programs (the Integrated Set of Information Systems). Version 2.3 was made available in 1988, and this version put the six programs together in one package, and added an option for additional Pascal programs. Version 3 has recently been released, and this allows the software to be used on a network, with the necessary record-locking to prevent access to those records that are being edited. A version for UNIX is now being beta-tested.

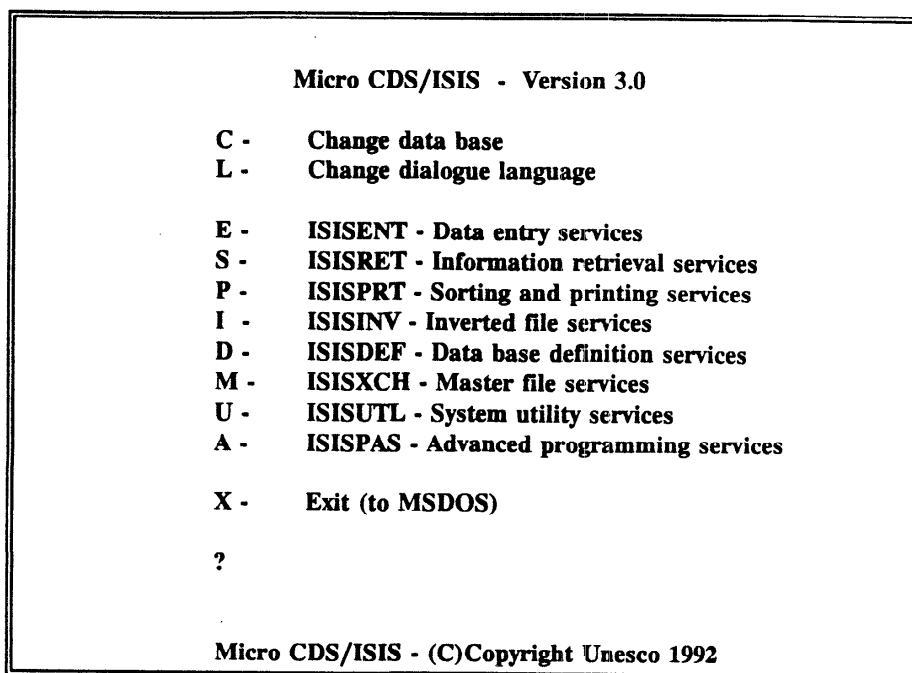


Figure 1. Mini-micro CDS/ISIS Main menu

OVERVIEW

Mini-micro CDS/ISIS is now well on the way to becoming the most popular software for information retrieval in the world, with versions in Arabic, Chinese, English, French, Hungarian, Spanish etc. It is quite simple to customize the program in other languages. There are thousands of registered users in every corner of the world, with particularly strong use in the developing world. The software is available free-of-charge from Unesco to any user who agrees to the conditions of the Unesco license. Unesco has appointed agents in some countries who may make a small handling charge to cover costs, for example for the supply of the discs and manual. The software is available for IBM PC's and compatible computers, and for the VAX and IBM minicomputers.

Mini-micro CDS/ISIS allows the user to add additional features using Pascal programs, and many such programs have been written, for example to make global changes in a database; to prepare a simple thesaurus; and to convert records from other databases or from searches in online databases.

THE DATABASE

A **Database** is a file of related data that is collected to satisfy the information needs of a given user community. It may be a file of addresses, a library catalogue, a directory of scientists and their research interests etc. **Data elements** are stored in the database. In a library catalogue they may be authors, titles, dates etc. The data elements are stored in **Fields**, for example the author field. A field can be divided into **Subfields**, for example author surname and author first name. A field is **Repeatable** within a record, for example more than one author of a paper. Each field has a numeric, usually three figures, **Tag**, which is a label to identify it. A **Record** is the collection of fields for one unit of information, in the case of a library catalogue one reference or catalogue card. A record in the database may be up to 8,000 characters long, and up to 200 fields in a record are possible. Up to 16,000,000 records may be added to one database, and the maximum database size is 500MB.

SYSTEM FUNCTIONS

Mini-micro CDS/ISIS allows the user to:

- define a database structure containing the required data elements
- enter new records into a given database
- modify, correct or delete existing records
- automatically create and maintain indexes for each database to speed retrieval
- retrieve records by their contents, using a sophisticated search language
- display the records or parts of the records according to need
- sort the records in any order
- print partial or full catalogues and/or indexes
- develop special applications using Pascal programs

These facilities are provided through four System Services and four User Services:

System Services

- ISISDEF - definition of new databases and/or modification of existing databases
- ISISUTL - miscellaneous utility functions
- ISISXCH - exchange of data with other systems and Master File utilities
- ISISPAS - advanced Pascal programs, which can be added by users and integrated with the existing software

User Services

- ISISENT - data entry and record editing

- ISISRET - information retrieval
- ISISPRT - sorting and printing of outputs such as catalogues, lists and indexes
- ISISINV - maintenance of indexes and utility functions

CREATING A DATABASE

In order to create a database, four things must be done:

- define a **Field Definition Table (FDT)** which lists the fields and subfields [see Appendix 1]
- define a **Field Select Table (FST)** which tells the program how to select terms from each record for the index (inverted) file [see Appendix 2]
- define a **data entry worksheet(s)**, the layout of the form on the screen used for typing in records. Different worksheets can be defined for each type of record, e.g. monograph, journal article [see Appendix 3]
- define a **default format** for the display of records [see Appendix 4]

CDS/ISIS MENU STRUCTURE

Mini-micro CDS/ISIS works through a hierarchical series of menus. Each option on the Main Menu takes the user to another menu, and then to the various options available. Each menu can be edited, so it is possible to add or delete options, and for example one can remove the editing and database definition options to prevent users destroying records or deleting a database or its structures, or one can add additional options to give access to new features provided through extra Pascal programs. Every program message is held in a CDS/ISIS database, and they can therefore be easily changed if desired.

IMPORT/EXPORT OF RECORDS

Mini-micro CDS/ISIS allows data to be exported and imported in the ISO 2709 format record structure, which is the basis of MARC formats. An ISO 2709 format consists of a **Leader** part which specifies the length of the record and some parameters about the structure, a **Directory** part which gives information on the tag, the length and the start position of each field that is present, and a **Data Segment** consisting of the data for each field and an end of field marker such as #. One of the attractions of CDS/ISIS is this easy interchange of records conforming to an international standard. However it is more difficult to import records from other software for databases such as dBase or CAIRS, and to download and import records from online hosts. To make this possible a number of Pascal programs have been written.

PASCAL PROGRAMS

Mini-micro CDS/ISIS comes complete with a Pascal compiler, which means that the user can develop additional add-on options which are not available in the original programs. It is possible to do this by using the library of pre-defined features listed in the CDS/ISIS manual, or by getting programs available from other users, either free or at a small cost. Some agents distribute additional programs with the CDS/ISIS program discs. Pascal programs either run in stand-alone mode or as options from within CDS/ISIS. Unfortunately, it is not an easy matter to find out what additional options are available, and some are poorly documented, or are only in the language of the originating country.

INFORMATION RETRIEVAL

Mini-micro CDS/ISIS offers most of the normal search procedures required for information retrieval. It uses symbols for the various search facilities, so that it is language-independent:

AND	*	right truncation	\$
OR	+	proximity search	. or \$
NOT	^	field qualification	/(field tag)
		previous set number	#[set number]

Searching is very fast, due to the use of the inverted files.

SORTING/PRINTING SEARCH RESULTS

Mini-micro CDS/ISIS provides worksheets for sorting and printing the results of a search. Records can be sorted in up to four stages, for example by country, organization, department and individuals in a directory, or by author and date in a bibliography, and the records can be printed in any required format. The user can define standard worksheets for sorting and printing, and can specify the search result or range of records to be sorted and printed, headings for the pages, a format for the records, how many columns, lines per page, etc. It is also possible to include in the format printer control characters to define bold, italic etc. Indexes can be prepared by selecting the field and record numbers to be printed.

DISPLAY OR PRINT FORMATS

Mini-micro CDS/ISIS allows the user to define any number of output formats, using the following symbols:

"A" Prints the enclosed characters if the following field is present
 'A' Prints the enclosed characters whether or not the following field is present
 / Puts the next field on a new line
 # Puts a blank line between fields
 v210 The format to describe the content of field 210
 if..then...else a conditional instruction
 mfn The record number
 mpl } The three different modes in which records are displayed, where mp
 mdl } = proof mode, md = data mode, mh = heading mode, and where
 mhu } l = lower case and u = upper case

LIMITATIONS OF MINI-MICRO CDS/ISIS

Mini-micro CDS/ISIS is not an easy program for the user to follow. Although the menus are clear, and help messages can be added, the number of options is rather daunting, and the use of the format language and the use of the sort and print worksheets needs a lot of practice. Searching for data to correct records is not as easy as it might be. It is necessary to carry out a search, then either note the corrections or save the search, exit from the search module, enter the editing module and call up the records to edit. However, the manual is clear and well-written, with many examples.

Mini-micro CDS/ISIS, unlike many modern programs, does not have any WIMP (Windows, Icons, Mouse, Pull-down menu) features, although a Windows version should be available in 1993. Nor are there any graphic features; it is still character-based. But this does mean that it will run on older PC computers.

USE OF MINI-MICRO CDS/ISIS

Mini-micro CDS/ISIS is used at Plymouth for a variety of different purposes, and a number of these have been demonstrated during the workshop. Demonstrations included a library catalogue PML1; a loans database Loan1; a serials list Ser1; the EURASLIC directory of aquatic sciences libraries and information centres, Eura; the BIASLIC directory of organizations, scientists and research engineers, UKD1, demonstrated by Allen Varley; and ASFA, a database showing the record structure for input of records into *Aquatic Sciences and Fisheries Abstracts*. In addition Jean Collins from FAO demonstrated the REPDOG package, developed to facilitate the distribution of subsets of library databases; Ganeshan Rao from the Pacific Islands Marine Resources Information System demonstrated the PIMRIS bibliographic database on marine resources of the Pacific Island countries; and the NAGA bibliographic database, developed by the International Center for Living Aquatic Resources Management, was also made available.

Appendix 1. File PML1.FDT

W:PML1 MGR MGRAN	[Worksheets]
F:PML1 LIBCATLIBPUBLIBTAGLIBRW	[Formats]
S:PML1 SORTAU	[Sortworksheets]

[The columns below give the name of the field, the tag, the length of the field, the type, whether repeatable, and whether there are subfields]

	1 10 0 0	[Header]
ANALYTIC LEVEL author(s)	100 320 0 1	
Corporate author(s)	110 320 0 1	
English Title	120 320 0 0	
Original Title	124 320 0 0	
MONOGRAPHIC LEVEL author(s)	200 320 0 1	
Monographic source author(s)	202 320 0 1	
Corporate author(s)	210 320 0 1	
Corporate source author(s)	212 320 0 1	
English Title (monogr.)	220 320 0 0	
Original Title (monogr.)	224 320 0 0	
Edition	225 30 0 0	
Report/Doc. no.	230 144 0 0	
Imprint (Place, Publ., Date) abc	240 160 0 0	
Collation	250 30 0 0	
Serial/Journal title	324 320 0 0	
Date of publication	343 25 0 0	
Collation	350 70 0 0	
Annotation	610 149 0 0	
Abstract	700 1200 0 0	
Shelf No/Location	810 62 0 0	
Reprint Location	820 63 0 0	
Indexing	830 71 0 0	
Identifiers	835 68 0 0	
Publ.codes	840 149 0 0	
Search terms	845 307 0 1	
Added entries	850 146 0 0	
ECDIN/IRPTC comments	890 59 0 0	
ECDIN/IRPTC compounds	891 1360 0 0	
ECDIN No.	892 20 2 0	
ECDIN Date	893 20 2 0	

Appendix 2. File PML1.FST

[The columns below given the field tag, the indexing technique and the data extraction format]

1 4 MHL,v1
100 4 mhl,v100+ |%|
110 4 mhl,v110+ |%|
120 4 v120
124 4 v124
200 4 mhl,v200+ |%|
202 4 mhl,v202+ |%|
210 4 mhl,v210+ |%|
212 4 mhl,v212+ |%|
220 4 v220
224 4 v224
225 4 v225
230 4 v230
240 1 mpl,v240^a
240 1 mpl,v240^b
240 0 v240^c
250 4 v250
324 4 v324
343 0 v343
350 4 v350
610 4 v610
700 4 v700
810 4 v810
820 4 v820
830 3 v830
835 3 v835
840 3 v840
845 4 v845+ |%|
850 4 v850
890 4 v890
891 3 v891
892 0 v892
893 0 v893

Appendix 3. PML1 Data Entry Worksheet Page 1

HEADER PMLMBA _____ [PML1] Sheet 1 ANALYTIC ENTRY

ANALYTIC LEVEL author(s)

Arfi, R.%Blanc, F. _____

Corporate author(s)

Title

Organic pollutants in the sea: consequences, evaluation, and sampling strategies in
the pelagic area _____

Serial/Journal title

Marine Pollution

Bulletin _____

| + - Next page | B - Previous page | M - Modify | N - New record | X -
Exit | D - Delete | C - Cancel | T - End revise |

More ...

MFN= 1

Appendix 4a. PML1 Format

Data Base Name: PML1

Format name: PML1

mpl,f(mfn,1,0)/v810,mpu/v100+ |; |,v110+ |; |,v200+ |; |,v210+ |; |,mpl/v124".
";In: "D202,v202+ |; |". ";In: "D212,v212+ |; |". ";v224". ";v225". ";v250".
";v240^a": ";v240^b", ";v240^c". ";/v324", ";v350", ";v343,("v230")"/["v610"]/"See:
"v820/"Index: "v830/"Ident: "v835/"Publs: "v840/"Search terms:
"v845/v850/"ECDIN/IRPTC Comments: "v890/"Compounds:
"v891/v892"/"v893/"Abstract: "v700/#

EDIT: Replace

Appendix 4b. Display in PML1 Format

1

ARFI, R.; BLANC, F.

Organic pollutants in the sea: consequences, evaluation, and sampling strategies in the pelagic area. In: Giam, C.S.; Dou, H.J.-M., <editors>. Strategies and advanced techniques for marine pollution studies. p.231-236. Springer-Verlag, 1986.

(NATO ASI Series G: Ecological Sciences, Vol. 9)

Ident: /tf/

Publs: /m1/

2

GOLDBERG, E.D.

The assimilative capacity of the oceans for wastes. In: Giam, C.S.; Dou, H.J.-M., <editors>. Strategies and advanced techniques for marine pollution studies. p.1-8. Springer-Verlag, 1986. (NATO ASI Series G: Ecological Sciences, Vol. 9)

Ident: /tf/

Publs: /m1/

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