ONLINE DATABASES

BY CAROL TENOPIR

A Common Command Language

IF YOU EVER SEARCH more than one online system you have grappled with the hassle of remembering different command languages for different systems. Even more important to searching are the subtle system differences such as what default is invoked by a blank in a search term (BRS defaults to OR; Knowledge Index, BRS/After Dark, and Mead to adjacent; DIALOG to a descriptor phrase), how the inverted indexes treat punctuation, and the priority order of Boolean operators.

If you search fairly regularly on only two or three systems, with practice you can probably keep the commands and conventions pretty straight. The thought of learning another command language may inhibit you from using a third or fourth or a fifth online system, even if the information in that system is of interest. If you don't actually restrict your searching because you don't speak the language, you may at least limit yourself to those few options you feel comfortable with in the strange language.

Menus are not a solution for the professional online searcher who wants to take advantage of a system's full power and control the direction or speed of a search. In the last few years we have seen some attempts at solving the polyglot problem of online systems.

The attempted solutions do better on beginning-level syntax than with subtleties of meaning or advanced grammar and they vary in sophistication. One that has received a lot of attention since its introduction late last year is the EasyNet gateway's implementation of the international standard Common Command Language (CCL). It offers a solution that potentially opens up many new systems to wary searchers.

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Some partial solutions

Implementation of a common search language is certainly not a new idea. Euronet has had its CCL for ten years. Front-end software packages such as Pro-Search and the Sci-Mate Searcher allow users to develop and input search strategies offline using the menus and simple commands adopted by the packages. These front-ends then log on to a selected host and translate the search into appropriate host system commands.

In a way, Online Inc.'s *International Command Chart*, a cardboard comparison grid of commands for all major online systems, is a manual command translator. Both ORBIT and WILSONLINE will let users set up a profile to change command names so they look more familiar to the searcher. None of these solutions is a true universal online searching language, however.

Common command language

For over a decade standards organizations have been working diligently toward specification of a universal command language. Having standard commands that online systems, front-end software, gateways, and inhouse software can follow offers a potential for large-scale solutions. In the United States in 1986, Committee G of the National Information Standards Organization (NISO) (formerly the Z39G Committee) proposed the "Common Command Language for Online, Interactive Information Retrieval."

On the international scene in 1987, the International Standards Organization (ISO) issued draft standards (ISO DP8777): "Commands for Interactive Searching." They are meant as an alternative, standardized way to search online databases, not as a replacement of the unique languages of existing online systems.

People involved with NISO and ISO hope that online systems, front-ends, and gateways will offer the CCL as an option for those who wish to use it. Users would still have the choice of learning each system's commands, relying on the CCL, or learning some major systems and using CCL for others. EasyNet has implemented parts of the ISO standard as EasyNet IV, one of four interfaces users can select on the EasyNet gateway system.

EasyNet

EasyNet has been of interest to professional searchers since it was introduced by Telebase Systems in the fall of 1984. It provides access to 13 American and European online systems, including such popular services as BRS, Data-Star, DIALOG, NewsNet, ORBIT, Questel, WILSONLINE, and VU/TEXT. Together that means access to over 900 databases.

EasyNet users don't need accounts with any of the online hosts, only with EasyNet or with one of the many services that remarket EasyNet under other names (ALANET PLUS, IQuest, Einstein, EasySearch, and InfoMaster are all really EasyNet).

Up until last year, EasyNet's target audience was end users, either from their home, workplace, or through the library. Costs are fixed per search and are kept relatively low by having the EasyNet system automatically download up to ten citations per search and then automatically logging off. The original EasyNet interfaces are menu driven and simple to use. The menus do not offer all of the features or power of the full online hosts, but allow even novice searchers the chance to access databases worldwide at a reasonable cost.

EasyNet's CCL

In the fall of 1988 EasyNet began more directly serving the information professional by adding a command-driven interface to its menu options. With the addition of the EasyNet Common Command Language, EasyNet can now bill itself as "the world's first gateway to multiple hosts permitting real-time direct searching with a single search language" and the first U.S.–based service to implement a standard common command language. It has been called "the searcher's Rosetta stone" that solves the online industry's "tower of Babel."[1]

EasyNet's CCL is based on the ISO standard; not all ISO recommended features are implemented, while some other features have been added. Some functions are implemented exactly as specified in the standard, others have been modified somewhat due to EasyNet's function as a third party gateway to multiple (and nonstandard) online systems.

The ISO/EasyNet implementation includes commands for all basic search functions, e.g., selecting a database, formulating a query, scanning an index, displaying retrieved records, and ending a search session. Within the important area of query formulation, EasyNet supports ISO standard commands for: specifying search terms, phrases, or set numbers; Boolean operations including nesting; some proximity operations such as adjacency; right hand truncation with unspecified number of variable characters; field specification; and range searching.

EasyNet does *not* support intermediate set building from a single search statement, internal truncation, left hand truncation, specified character truncation, proximity operators with an unspecified distance between words, proximity operators with an unspecified word order, limiting, sorting, multiple database searching, or saving searches.

At the International Online Meeting in London in December 1988, Telebase Systems presented the first EasyNet version of CCL (CCL 1.0). In a chart showing 42 ISO functions, Telebase claimed EasyNet CCL 1.0 supports 31. Of these 31 functions, 19 are supported to ISO specifications, while the rest have been modified somewhat for EasyNet.[2]

Some of the features not supported in this first version (e.g., saving searches) will be supported in later versions. Enhancements to the ISO standard include better help commands and the use of function keys. Features added include document ordering and a TOTAL command to see accumulated charges for an EasyNet session.

In a typical search on EasyNet's CCL 1.0, you would select EasyNet option 4 from the main menu, then when prompted enter a database name of your choice to be searched. (e.g., Medline). The search from that point on might look like this:

FIND titanium <return>
(The system will come back with postings for Set 1)
FIND set=1 and (knee or patella) <return>
(The system shows a total of 22 items retrieved for Set 2)
SHOW s=2 f=2 e=1-22 <return>
(You are shown all 22 items in Set 2 in short format 2)
SHOW s=2 f=4 r=11,13 <return>
(You are shown full records for the 11th and 13th items)
STOP (return)
(You end the CCL session and are shown the cost and time for your CCL search)
L <return>
(Logs off from EasyNet)

Unlike the EasyNet menu interfaces, EasyNet's CCL is billed on a connect-time basis. The charges are those imposed by the online host for the database searched, with a surcharge added by EasyNet. EasyNet's CCL is thus not budget-rate searching on a search-by-search basis. Its economies and benefits come from the searcher not having to maintain accounts with, keep documentation for, or spend time learning and practicing on multiple online systems.

CCL for selected systems

One of the most difficult parts of imposing a standard interface in a gateway environment is having to translate commands for online systems that vary in power and the search features supported. EasyNet made its task somewhat easier initially by offering CCL for only selected online systems. Of EasyNet's 13 hosts, only BRS, Datatimes, DIALOG, Profile, VU/TEXT, and WILSONLINE can be accessed via CCL 1.0. According to a Telebase spokesperson, the systems were chosen on the basis of amount of use, coverage of major subjects, and "transferability to the CCL environment."

When all the systems have the same feature working in approximately the same way, EasyNet's CCL is just a matter of command word translation. Highly specialized commands that are available on only one system are not implemented, either because they are not in the ISO standard (e.g., DIALOG's MAP command) or they are in the standard but work only on a single system (e.g., BRS's PURGE command that erases previous sets and WILSONLINE's thesaurus matching features).

Most of the discussion so far has been on *command* translation, but the bigger problem is standardizing the many search conventions and procedures that affect the power or capabilities of searching. Many of these conventions are specified in the ISO and NISO standards. If a new online system was being started from scratch following these standards, the search conventions could be programmed into the design. Adopting the standards as an optional interface for an existing single online system or as a gateway for existing multiple systems makes it more difficult.

For example, the ISO standard specifies a priority order of searching for Boolean operations. In existing systems when Boolean operators are mixed in a single search statement, some will process NOTs first, some will process ORs first, and some will process AND first. Although EasyNet supports all of these Boolean operators and will allow a user explicitly to specify processing order with parenthetical nesting, it uses the host system's priority order when no parentheses are input by the searcher. The same is true for proximity operators.

A common command language does not solve all of the inconsistencies with online systems or databases. Inconsistencies are difficult to change because they involve thousands of different database producers, each perhaps with a different purpose or audience in mind for their data, and hundreds (or at least dozens) of online vendors. Sometimes differences are necessary or desirable for customizing products for a particular audience. Many inconsistencies are things with which experienced searchers have learned to cope.

Still, moving toward a universal command language provides new options for online searchers. In a gateway implementation like EasyNet's, the common command language opens up new systems, new databases, and new information for database searchers throughout the world.

References

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