S I G C A T

*Special Interest Group on CD-ROM Applications & Technology*

# CD-ROM Consistent Interface Guidelines

Final Report

August 1991

Prepared by the CD-ROM Consistent INterface Committee
A SIGCAT Working Committee

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Table of Contents — Page



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CD-ROM Consistent Interface Guidelines


Executive summary

These are the guidelines for a consistent interface for CD-ROM, developed by the CD-ROM Consistent Interface Committee (CD-CINC), a working committee of the Special Interest Group on CD-ROM Applications and Technology (SIGCAT). E. J. (Jerry) McFaul, a computer scientist at the U. S. Geological Survey, is chair of SIGCAT. CD-CINC is co-chaired by Susan David, a specialist in automated information resources at the Library of Congress, and Fred Dürr, the president of a CD-ROM publishing company, National Information Services Corporation. The membership includes librarians and information professionals from government agencies, trade and professional associations, and industry.

CD-ROM is the first true publishing medium that makes huge amounts of data available to the user of personal computers. Without a set of conventions governing the use of all this data, there will be chaos, defeating the inherent value of CD-ROM. Any CD-ROM, regardless of its origin or the platform on which it is operated, should present to the user a consistent interface. This calls for standardization at the highest level, that of the man-machine interface. A consistent interface for CD-ROM is necessary because other efforts, including the Common Command Language (CCL) sponsored by the National Information Standards Organization (NISO), are not directly applicable to the CD-ROM environment.

The SIGCAT guidelines identify and name thirteen basic user functions. No matter what type of user interface is offered with a CD-ROM, whether it is menu-driven, graphical, keyboard input, or something else, these same basic functions are necessary for the smooth use of a CD-ROM. The functions are grouped into three areas: top level, operational, and navigational. Top level functions are *Help, Browse index, Search, Display, Print, Download, Restart, Change*, and *Quit*. Operational functions are *Execute, Break*, and *Escape*. Ten types of movement are identifed as basic for *Navigation*.

The SIGCAT guidelines define the functions conceptually and leave all details of implementation to the ingenuity of the designer. While the details of implementation are not part of the recommendations, SIGCAT strongly encourages the use of good design principles as they have become accepted in the field as a result of human-computer interaction research. Design issues are summarized in this report and emphasized in the detailed descriptions of the basic functions. A number of items on interface design are included in the bibliography. De facto implementation standards are noted. The guidelines include recommendations for the development of CD-ROM installation procedures.

## Introduction

CD-ROM (Compact Disc Read-Only Memory) represents the first true publishing medium for electronic data, providing convenient and relatively inexpensive access to huge amounts of data without requiring mainframe computers. The power and flexibility of personal computing software is fully available for use with CD-ROM products.

The CD-ROM publishing world may be viewed as an extension of the desktop publishing cottage industry. Creative forces are at work in the design of information products in this new age of electronic publishing. Many specialized products, which never would have made sense in an online or mainframe world, are now being published thanks to the economies of CD-ROM. Marketing, business, user expertise, and equipment barriers are all being broken.

Such a welcome and invigorating mix of new and divergent forces can quickly lead to chaos without at least some generic sense of how these products should work comparable to, for instance, conventions established for using a card catalog no matter the library, or using a software package no matter the platform, or, for that matter, driving a car no matter what the make.

It is to recommend the features basic to all CD-ROM user interfaces that the **CD-ROM Consistent Interface Committee** (CD-CINC) was formed as a working committee of the Special Interest Group on CD-ROM Applications and Technology (SIGCAT). The SIGCAT guidelines are specifically concerned with the highest level interface, that between the human and the machine. The primary focus of the guidelines is the conceptual interface, not the physical.

SIGCAT is a 4,700 plus professional group sponsored by the U.S. Geological Survey (USGS). E. J. (Jerry) McFaul, a computer scientist at USGS, is the founder and chair of SIGCAT. Its primary purpose is to provide a bimonthly forum for government and industry to meet to exchange ideas on CD-ROM technology. When Fred Dürr, president of NISC, a publisher of CD-ROM databases, suggested that SIGCAT begin to look at standards for user interfaces, McFaul contacted Susan David, then chair of the Special Interest Group on Library and Information Technology (SIGLIT), a SIGCAT subgroup that specializes in the use of CD-ROM in libraries and information centers. Many SIGLIT members became enthusiastic about seeing consistency develop in CD-ROM user interfaces, and they formed the core of the group that became CD-CINC.

The first CD-CINC meeting was held on April 20, 1990. The first order of business was to identify other related efforts currently underway and to sharpen the focus of our deliberations. We read articles, contacted organizations and individuals with professional interests in CD-ROM, and invited speakers who helped define the scope of our work. A bibliography of the background material we used is attached. Paul Peters from the Coalition for Networked Information, Gary Marchionini from the University of Maryland at College Park, and Sally McCallum from the Library of Congress were very helpful guest speakers.

CD-CINC identified and defined the basic functions required by all CD-ROM user interfaces; prepared a first draft report; sent the report to a small, targeted group; reviewed and revised the report based on comments and feedback; and, completed this final report, which is being widely distributed and will be submitted to NISO for consideration.

Around the time CD-CINC was forming to work on CD-ROM user interface standards, a number of others were at early stages of standard proposals for other layers of CD-ROM technology. To our knowledge, no one else was working on recommendations for CD-ROM user interfaces.

The Common Command Language for Online Interactive Information Retrieval (CCL), a standard sponsored by the National Information Standards Organization (NISO), ANSI/NISO Z39.58-199x, was the closest match we could find. CCL has been in the works for more than ten years. It "specifies the vocabulary, syntax, and operational meaning of commands" used by command-driven online information retrieval systems.

CD-CINC paid particular attention to the recommendations of CCL, and used the same terms wherever appropriate. CCL terms are identified in this report. CCL splits some functions more finely than does CD-CINC. For example, Help and Browse Index are CD-CINC functions that CCL splits into smaller units, Help, See, and Explain for the first, and Scan and Relate for the second. On the other hand, CD-CINC splits output functions (Display, Print, Download) more finely than does CCL (Display, Print). CCL does not address navigation functions, which are crucial to using CD-ROM.

When we found a CCL term equal to the basic CD-ROM function defined by CD-CINC, we used it. Given the microcomputer-based origins of CD-ROM, the personal computer software environment was a another influence in our choice of terms. Both the online interactive information retrieval environment, which is traditionally mainframe based, and the microcomputer environment lent insights to the selection and naming of basic functions for CD-ROM user interfaces, but neither provided an exact fit to CD-ROM, a newer information technology.

In Europe, the CD-ROM Standards and Practices Action Group (SPAG) formed in May, 1990. SPAG announced a four pronged approach to the problem of CD-ROM user standards: installation, functionality, operating systems, and standards, with installation the first agenda item.

Other related standards initiatives that we learned about during our work were the CD-ROM Read-Only Data Exchange (CD-RDx) by the intelligence community, the Structured Fulltext Query Language by the Air Transport Association, and the CD-ROM Index Architecture Specification by another SIGCAT working group. These three projects are studying interoperability problems of CD-ROM, from the point of view of the index structure and interfaces between internal software modules, e.g. client server models.

The U.S. Patent and Trademark Office is in the midst of an international effort to develop standards for patent data on CD-ROM. The Department of Defense also plans to publish documents on CD-ROM, and is interested in a

single set of standards for what promises to be a huge publishing effort. The same is true for the IEEE. All three organizations were interested in and supportive of the work of CD-CINC.

CD-CINC contacted NIST, NISO, AIIM, and the Society of Automotive Engineers to find out what other work on standards for CD-ROM user interfaces they knew of, and to inform these standards groups of our work.

The professional organizations called by CD-CINC members at the outset were the American Library Association (Library and Information Technology Association and Machine-Assisted Reference Section of the Reference and Adult Services Division); the Special Libraries Association; American Society for Information Science; the District of Columbia Library Association; Information Industry Association; Optical Publishers Association; and the Software Publishers Association. None knew of any efforts that duplicated those being launched by CD-CINC.

All our meetings were open. We met whenever the work required a meeting, which averaged about once a month. Meetings ranged from 2 hours to all day sessions. Meetings were held in Washington, D.C. and all attendees were welcome to participate. However, only active CD-CINC members who were users of CD-ROM (as distinct from publishers) were eligible to vote. This never became an issue because no votes were close. Most were unanimous.

CD-CINC published a press release in many trade publications. The press release and periodic announcements at SIGCAT and SIGLIT meetings elicited a steady flow of communication from interested parties during the course of our work. Respondents included interface developers, CD-ROM publishers, librarians, standards organizations, engineers, and educators in the information field. CD-CINC received encouraging words and support from almost everyone. These continuing contacts helped CD-CINC keep its work on target.

## Statement of Purpose

The SIGCAT guidelines propose a conceptual interface, not a physical one. The goal is to identify the functions that are basic to the ready use of any CD-ROM product. Thirteen basic functions are named and defined, but their implementation is left to the software designer. No matter what type of user interface is offered with a CD-ROM, whether it is menu-driven, graphical, keyboard input, or something else, the same basic functions are necessary for smooth use of a CD-ROM. Creativity and innovation will find plenty of room to flourish within these guidelines for a basic user interface for CD-ROM.

The basic functions are summarized in chart form on page nine. Each basic function is also described in depth in the pages following the chart. The name of the function, its definition, related terms, a description of the function, and remarks on why the function is basic and why a particular term was selected are part of the background pages. Related terms are those which closely represent the basic function but are insufficiently precise to be selected as the term/word of choice. Common Command Language terms are identified. Appendix A compares CD-CINC-suggested terms and other terms in chart form.

These guidelines do not go into how to implement the basic functions. Wherever we knew of obvious function keys that are de facto standards, we mention them in the basic user function pages. Only two functions generally have standard keyboard implementation across the board. F1 is usually used for HELP, and the ESC key is used to go back one step. It was our original intention to define standard implementation for various interfaces (i.e., function key assignments, graphical icons, etc.). But as our work progressed, it became clear that the central problem was to identify and define basic functionality.

Although the look of a screen and the actions required to initiate a function are not formally part of this report, design issues were recurring elements of our discussions. A successful user interface is more than the sum of its functions; it is also the look and feel and ease of use that confronts the user of a CD-ROM product. For these reasons, we include general notes on design issues as part of this report.

Another area that users feel strongly about is how to install CD-ROM applications. Installation is a specialized function that usually affects the managers of CD-ROM rather than searchers. For this reason, we did not include installation as part of basic user functions. However, installation is relevant to successful use of CD-ROM, so general guidelines are included here.

Rounding out the report is a bibliography of the background material used by the committee during the course of its work.

This standard is intended to serve as a guide for designers of commercially available CD-ROM authoring software, proprietary inhouse CD-ROM publishers, and any other CD-ROM product developers. The ultimate beneficiaries will be all users.

CD-CINC Membership

*Potential members from the library community were called by Susan David and potential members from the publishing arena were called by Fred Dürr. A press release describing CD-CINC was widely circulated. Membership was open to all.*

*The first CD-CINC meeting was held on April 20, 1990. The following people contributed their time, energy, experience, and creativity to the development of a consistent interface for CD-ROM products.*

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*CD-CINC is grateful for the advice and support of **Gary Marchionini and Paul Peters.** Both offered us guidance and encouragement that were significant in shaping the direction these user interface standards took.*

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## SUMMARY OF CD-ROM CONSISTENT INTERFACE GUIDELINES

*These basic user interface functions, as identified by the SIGCAT subcommittee, CD-ROM CONSISTENT INTERFACE COMMITTEE (CD-CINC), are discussed in detail in the following pages. There are three general categories of functions: top level, operational, navigation. The functions listed here are all essential to basic use of CD ROM. The exact implementation of the functions is left to the designer.*

| BASIC FUNCTIONS | DEFINITION |
|---|---|
| *Top level functions:* | |
| Help | Shows explanatory information or menus leading to more help. Help information can be context sensitive or lists of choices. Choices may include tutorials. |
| Browse Index | Shows terms in indexes, which can range from field specific to full text and controlled terms. |
| Search | Looks for information that satisfies a search statement. |
| Display | Shows information on the screen. |
| Print | Directs output to a hardcopy device. |
| Download | Directs output to electronic media. |
| Restart | Go back to the beginning, but not out, of the application. |
| Change | Change disc within same database; change database on same disc; change to another database on another disc without reloading search software. |
| Quit | Ends the application. |
| *Operational functions:* | |
| Execute | Alerts the application to begin processing. |
| Break | Interrupts an activity in progress. |
| Escape | Backs up one step at a time. |
| *Navigation functions:* | |
| Navigation | Movement within a database or search set. Following is a list of **basic** movement: |
| | Move down the display, line by line.<br>Move up the display, line by line.<br>Move down one screen or window.<br>Move up one screen or window.<br>Move to the next item or record.<br>Move to the previous item or record.<br>Move to next hit (occurrence of search term or match).<br>Move to the previous hit.<br>Move to a specified location.<br>Move across the display horizontally.<br>(As from menu to menu or field to field.) |

Basic Function: Help*

Definition: Shows explanatory information of menus leading to more help. Help information can be context sensitive or lists of choices. Choices may include tutorials.

Related Term: Explain*, See*

Description: *Help* may provide the user with information on the CD-ROM interface software or the contents of the disc which is not available on the normal user interface screen. The information provided from within the software should be duplicated within the printed documentation.

Remarks: On-screen help should not substitute for the printed documentation. *Help* may provide 1) context-sensitive information about steps which may be taken from the current screen, 2) advice for the user who is having problems, and/or 3) an index or table of contents of all Help topics from which the user may choose those which interest him or her the most. *Help* should be available from any screen and should not in any way disturb the user's existing input. F1 is used by most IBM® standard keyboards with PC compatible software packages to invoke the *Help* function.

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* Common Command Language (CCL) terms.

Basic Function: Browse Index

Definition: Shows terms in indexes, which can range from field specific to full-text and controlled term.

Related Terms: Browse, Index, Expand, Root, Neighbor, Scan*, Relate*

Description: *Browse Index* allows the user to view a list of terms, often from the same field of the database. For example, it may allow the user to view a list of controlled vocabulary terms, authors, journals, or full-text words from throughout the CD-ROM's contents.

Remarks: *Browse Index* may display terms on a full-screen or in a window on the screen. The CD-ROM should allow the user to mark or select terms from this display but may require that the user enter any desired terms from a keyboard or other input device. The Committee felt that the ability to display such terms is central to a CD-ROM because it allows the user to put his or her desired search in the context of the material available on the CD-ROM. *Browse Index* also allows a user with a loosely or undefined search to gather information about the contents of the CD-ROM product.

* Common Command Language (CCL) terms.

## BASIC USER FUNCTIONS: SEARCH

Basic Function: Search

Definition: Looks for information that satisfies a search statement.

Related Terms: Find*, Select, Get, Retrieve, Fetch, Lookup, Query

Description: *Search* is that function which, when invoked, retrieves information which satisfies a specifically constructed search statement. That is, the process creates a "hit list" by searching index files or via a "string search" of text files.

Remarks: This standard does not define types of indexes or search methodology (sequential file and search, inverted file with binary search, balanced binary tree, etc.). Nor does this standard define methodologies for constructing the search statement (Boolean, proximity, statistical weighting, etc.). These considerations are all implementation dependent. *Search* does not imply any characteristics of display but only creates an addressable list of retrieved data or an indication that the search statement was not satisfied. The form of response to the *Search* function is considered to be a design issue, and is not addressed by this standard.

The term *Search* was selected as the one that best describes the process the computer undertakes to locate information on the CD-ROM which meets the criteria of the search statement. The committee agreed that the term *Search* was least confusing to the user. *Query* describes the act of questioning, but the term did not adequately represent the action taken by the computer. *Find* and *Retrieve* do not fully describe the process the computer goes through to locate information meeting the requirements of the search statement. *Select* is more of an action following the search process than a description of the process itself. *Look-up* is inadequate to describe the process.

* Common Command Language (CCL) term.

Basic Function: Display*

Definition: Shows information on the screen.

Related Terms: Type, Print*, View, See*, Browse

Description: The *Display* function shows information on the screen to the user, typically -- although not invariably -- after a search has been performed.

Remarks: As intended by the Committee, *Display* has broad application. It may pertain to a menu; a table of contents; a list of terms; a complete bibliographic record or part of a bibliographic record; a history of the search criteria; full text; graphics; a sequential display of the database; or to relational material in the database relative to a highlighted term. *Display* may be invoked as a result of a search or as a separate action by the user; this is a design issue and the method of implementating this function, as with other functions, is not addressed in this standard.

Although *Display* and *Browse* are sometimes used synonymously, the Committee decided to use the latter exclusively in connection with the *Browse Index* function by which the contents of one or more indexes are displayed.

* Common Command Language (CCL) terms.

## BASIC USER FUNCTIONS: PRINT

Basic Function: Print*

Definition: Directs output to a hardcopy device.

Related Terms: none

Description: The *Print* function directs output to a hardcopy device for reproduction onto paper, film, fiche, transparencies, card stock, etc.

Remarks: The committee considered combining the functions of output to hardcopy and output to electronic media. We decided that this would create a source of confusion for users, so *Print* became the function specifically for directing output to hardcopy, and *Download* became the function for directing output to electronic media.

* Common Command Language (CCL) term, albeit not a functional equivalent.

## BASIC USER FUNCTIONS: DOWNLOAD

Basic function: Download

Definition: Directs output to electronic media.

Related Terms: Save*, Export, Print-to-disk, Keep, Transfer, Copy

Description: The *Download* function directs output to electronic media, for example, tape, disk, another computer, etc.

Remarks: The committee considered combining the functions of output to hardcopy and output to electronic media. We decided that this would create a source of confusion for users, so *Print* became the function specifically for directing output to hardcopy, and *Download* became the function for directing output to electronic media.

*Download* seems the most precise term for directing output to electronic media. *Save* has other meanings, for example, saving a search strategy. *Keep* and *Transfer* seem less specific. *Print-to-disk* is too cumbersome. *Export* implies changing formats.

* Common Command Language (CCL) term.

## BASIC USER FUNCTIONS: RESTART

Function: Restart

Definition: Go back to the beginning, but not out, of the application.

Related Terms: Begin, Start*

Description: Allows the user to return to the beginning of the application. The user will normally be returned directly to the first screen presented to the user when the application is initiated (or the main screen or menu for the application).

Remarks: Allows the user to quickly start a new session without having to use the *Escape* function to back up one function at a time, or to *Exit* then reenter the application.

* Common Command Language (CCL) term.

## BASIC USER FUNCTIONS: CHANGE

Function: Change

Definition: Change disc within same database; change database on same disc; change to another database on another disc without reloading search software.

Related Terms: Exchange

Description: Change has three uses:

1) Change disc within the same database (one database, multiple discs), without losing search strategy or reloading search software.

2) Change database on same disc (multiple databases, one disc), without losing search strategy, if the search strategy transfers appropriately between the databases.

3) Change to another database on another disc (multiple databases, many discs, one search software), without reloading search software. This applies to distinct databases that are utilizing a common search engine.

Remarks: Changing databases, and changing discs, should be designed to least inconvenience the user. The software may be capable of handling this without explicit or separate instructions from the user.

## BASIC USER FUNCTIONS: QUIT

Basic Function: QUIT

Definition: Ends the application.

Related Terms: Exit, Stop*, Bye, Goodbye, End, Logoff, Logout, Off, Disconnect

Description: Terminates the session and application, and returns control to the previous application or environment. No portion of the session or application should remain active after the application is exited. To reenter the application, it must be re-executed.

Remarks: Allows the user to exit the application quickly from anywhere within the application.

* Common Command Language (CCL) term.

Basic Function: Execute

Definition: Alerts the application to begin processing.

Related Terms: Initiate. Begin. Start*, Transmit

Description: *Execute* is what the user must do to "tell" a machine to perform, for example, by pressing a transmit, enter or carriage return key, clicking a mouse, or typing a selection from a menu. *Execute* is not necessarily a separate function because it may be bundled with the act of another function, such as selecting a menu item. Whether the user is aware of invoking a machine procedure or not, CD-CINC views *Execute* as a basic user interface function.

Remarks: There are many more examples of ways to "tell" a machine to perform at the user interface level. CD-CINC is not recommending one specific method, but the committee strongly urges that interface designers be consistent within a single system. Too often, depending on the context, the software requires different actions to cause the computer to begin processing. This almost always causes confusion for the user.

* Common Command Language (CCL) term.

## BASIC USER FUNCTIONS: BREAK

Basic Function: Break

Definition: Interrupts an activity in progress.

Related Terms: Halt, Interrupt

Description: Allows the user to terminate a function that is currently being performed.

Remarks: When the system performs a function that requires more than a few seconds of processing time by the computer, such as a keyword search through a large database, the *Break* function gives the user the option to stop the processing. The user is left at the screen or function from which the interrupted processing was initiated. The CTRL and BREAK keys are often used in tandem by IBM® standard keyboards with PC compatible software packages to invoke the *Break* function.

Function: Escape

Definition: Backs up one step at a time.

Related Terms: Cancel, Back*, Backup

Description: Returns the user to the previous screen or function within the application.

Remarks: Allows the user to return to the function or functions previously performed without requiring the user to remember the name of the previous function. The ESC key is used by most PC compatible software packages to invoke the *Escape* function.

* Common Command Language (CCL) term.

## BASIC USER FUNCTIONS: NAVIGATION

Basic Function: Navigation

Definition: Movement within a database or search set.

Description: Navigation is the process of movement within a database or a search set. The committee chose ten different types of motion as basic movement.

- Move down the display, line by line.
- Move up the display, line by line.
- Move down one screen or window.
- Move up one screen or window.
- Move to the next item or record.
- Move to the previous item or record.
- Move to the next hit (occurrence of search term or match).
- Move to the previous hit.
- Move to a specified location.
- Move across the display horizontally, as from menu to menu or field to field.

Remarks: The ability to navigate within a database or a subset of a database is basic to using a CD-ROM product, and should be as clear as possible so that the searcher always knows where he or she is and how he or she got there.

The committee considers the ten different types of motion listed above to be basic to the comfortable use of any CD-ROM product. It is not intended to be a comprehensive list of movement, but a list of basic navigation minimally necessary to use a CD-ROM.

The means of causing movement depends entirely on the interface. Typically, on a standard keyboard, directional keys are used while directional icons are used in windowing and graphical user interfaces.

Design Issues

The intention of CD-CINC is to make recommendations that will make it easier to use the CD-ROMs from various producers. In the course of our work, design issues have been discussed repeatedly by the Committee. SIGCAT strongly encourages the use of good design principles as they have become accepted in the field as a result of human-computer interaction research.

Principles of good design include consistency, standardization, navigability, economy, simplicity, clarity, legibility, readability, and an appropriate use of color. The following examples illustrate how these good design principles can be applied by developers to CD-ROM interfaces.

1. Consistency within packages. For example, if a user types a character to indicate a menu choice, either the action will be activated upon typing that character or a key must be pressed to execute the action. Either way, the trigger for actions must be consistent throughout the package.

2. Provision for both error handling and for easy reversal of actions. Users must know how to undo, stop, cancel, and backup.

3. Flexibility of design for both inexperienced and experienced users. Users at different levels of expertise want screens with varying amounts on information on them.

4. Continuous availability of *Help* and *Quit*. These functions should be displayed at the same places on each screen in the system.

5. Standardization of all functions within the package. Whenever possible, CD-ROM packages should identify the basic functions in the same order (*Help; Browse Index; Search; Display; Print; Download; Restart; Change; Quit; Execute; Break;* and. *Escape)* and place. The operation of navigational aids, such as move down and move up the screen, should be standardized.

6. Keep the user informed. The user should not feel "stuck" about what action to take next. On-screen hints or in-context help, or an extremely intuitive interface, should guide the user along.

Guidelines for Development of CD-ROM Installation Procedures

A user should be required only to mount the CD-ROM disc and execute a single command to begin the application; in other words, run an application directly from the CD-ROM. This is not always possible given licensing requirements, software restrictions and, in some cases, the need for files to exist on a local drive. The following guidelines are recommended to make the installation of CD-ROM products as easy as possible for administrators of CD-ROM workstations.

1. Installation procedures should be menu driven and interactive.

2. No changes should be written to a workstation (for example, the autoexec.bat or config.sys files) without the installer's confirmation.

3. The basic installation configuration should offer defaults so that the installer is not forced to make choices. However, the installer should be able to override the defaults in order to specify the drive, directory, sub-directory, or folder where the installation is to occur. Documentation should identify clearly the system requirements.

4. The installation program should provide the administrator the option of assigning the letter to the CD-ROM drive.

5. The installation program should have a file which starts the application and, on termination, returns to a menu, shell, or specified directory, depending on the local set-up. It should be easy for the local administrator to customize a local workstation.

6. The version of the software should display on startup. Updates should change only affected files. There should be options for archiving the old version when an application is updated, as well as de-archiving should problems occur with the new version. Complexity of update procedures should be kept to a minimum.

7. The installer should be capable of exiting the installation process at any point through a controlled exit procedure. The installer should be capable of resuming the installation at that point. Future changes or additions should be made through a simple entry to the configuration menu. Deinstallation should be available.

8. Keep random access memory (RAM) requirements to a minimum. Upon exiting, the software should not take up any part of RAM. If the software is to run as a Terminate and Stay Resident (TSR) program, the resident portion should be as small as possible. TSRs should be easy to remove from RAM.

9. The producers should be aware that a product will probably share a workstation with other CD-ROMs and software, such as local menus, shells, and network connections. The widespread implementation of networks should be anticipated

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Comparison of CD-ROM Basic Functions to CCL and Other Related Terms

| BASIC FUNCTIONS | CCL EQUIVALENT | CCL RELATED | OTHER RELATED TERMS |
|---|---|---|---|
| *Top level functions:* | | | |
| Help | Help | See, Explain | |
| Browse Index | | Scan, Relate | Browse, Index, Expand, Root, Neighbor |
| Search | | Find | Select, Get, Retrieve, Fetch, Lookup, Query |
| Display | Display | Print, See | Type, View, Browse |
| Print | | Print | |
| Download | | Save | Export, Print-to-disk, Keep, Transfer, Copy |
| Restart | | Start | Begin |
| Change | | | Exchange |
| Quit | | Stop | Exit, Bye, End, Goodbye, Logoff, Logout, Off, Disconnect |
| *Operational functions:* | | | |
| Execute | | Start | Initiate, Begin, Transmit |
| Break | | | Halt, Interrupt |
| Escape | | Back | Cancel, Backup |
| *Navigation functions:* | | | |
| Navigation | | | |

Automation Office
Congressional Research Service
The Library of Congress

# *Memorandum*

August 16, 1991

TO: CD-CINC Committee Participants

FROM: Susan David, CD-CINC co-chair

SUBJ: Attached

With fanfare and drumrolls, let me present The Final Report of the CD-ROM Consistent Interface Committee! When Jerry McFaul returns from Brazil, he will write a forward to the report, which he will send out as part of the SIGCAT mailing.

As decided by our committee, the report will be distributed widely as a SIGCAT standard and sent to NISO (by Jerry) for consideration. Feel free to copy the report and send it out widely to your own contacts.

It has been a real pleasure working with you on the CD-ROM Consistent Interface Standards Committee of SIGCAT. I hope our paths will cross in future endeavors.

Automation Office
Congressional Research Service
The Library of Congress

# *Memorandum*

October 23, 1991

TO: CD-CINC Committee Participants

FROM: Susan David, CD-CINC co-chair

SUBJ: CD-CINC: update

Just a quick update.

Most important: Mike Rubinfeld has agreed to be a point of contact for anyone requesting a copy of the CD-CINC report. Mike's essentials are:

Mike Rubinfeld
National Institute of Standards and Technology
Building 225
Mail Stop B266
Gaithersburg, MD 20899

Telephone: 301/975-3064
Internet: MIKER@MML.NCSL.NIST.GOV

In other news: Jerry McFaul submitted the SIGCAT guidelines on CD-ROM interfaces (also known as the CD-CINC report) to NISO in early September. NISO circulated the report to the CCL committee (Z39.58) for comment, due by 11/11/91. Their recommendations will be discussed at the NISO Standards Development Committee meeting of December 16th. This will be an open meeting, somewhere in DC. Where and what time are not set yet. Anybody interested in attending?

NIST is also sending a CD-ROM standards package to NISO for consideration, and the SIGCAT guidelines are likely to be included in this package. At the same time, NIST is discussing Federal Information Processing Standard (FIPS) guidelines for CD-ROM, and the SIGCAT guidelines are in the running for that.

The U.S. Patent and Trademark Office includes the SIGCAT guidelines as part of international negotiations for CD-ROM standards for patent disks.

The National Center for Automated Information Retrieval used language from our report to summarize standards issues for legal and accounting electronic publishing. This is even better than endorsing our report, it's incorporating our ideas into their own documents.

Software developers are becoming aware of the CD-CINC report. For example, I heard it through the grapevine that Boeing received a copy for consideration. I know that a key standards player from SilverPlatter saw the report on the CD-RDx disc.

What else? Please keep on talking up CD-ROM consistent interface guidelines in your own professional circles. Write articles about consistent interfaces, offer to speak about them at conferences, be an advocate for them. As a member of the CD-CINC committee, each of us is an "official spokesperson". As you hear, talk, or read about CD-ROM interfaces, give me a call, drop me a line, or send me a copy. I'm keeping track of the impact of our work. I hope you feel as satisfied as I do about the reactions of others so far.