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CODOC: A Computer-Based Processing and Retrieval System for Government Documents

Much has been written in the literature recently concerning the application of machine technology to complex library operations. This paper describes a computerized system specifically designed to provide a quick and economical method of in-depth access to individual publications within a government documents collection. The system, CODOC (COoperative DOCuments), is currently operated in a network configuration in Ontario and Quebec and independently by several other libraries in Canada and the United States.

GOVERNMENT DOCUMENTS do not respond well to conventional methods of organization and retrieval. The pros and cons of integrated versus separate collections have been vigorously debated in the literature,[1-5] with the separate collection approach being most favored.[6,7] More and more university libraries are following this trend as the increasing sophistication of information systems enables the formulation of processing and retrieval schemes that cater to the vagaries of governmental institutions and the special needs of the user.

One such system was pioneered in Canada at the University of Guelph, Ontario, in 1967.[8] Known as the Guelph Documents System, it is a new unique approach to the maintenance of and access to materials in a separate documents collection. It proposes a single arrangement (coding scheme) for all government documents, and it applies machine technology to reduce processing efforts and to provide detailed access to documents. The system was used

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jointly by Guelph and the University of Western Ontario until 1972, when ownership, operation, and further development was transferred to the newly created Ontario Universities' Library Cooperative System (OULCS) Documents Project, now called CODOC (COoperative DOCuments).

OULCS is an umbrella name given to those Ontario university libraries participating in various cooperative projects, of which CODOC is one. It is anticipated that libraries participating in CODOC and using common systems will develop a large common data base, which will reduce the duplication in collections and inform each library's users of the wide resources available to them. By sharing resources it is expected that a reduction in the duplication of staff and resources can be achieved.[9] Ontario university libraries are free to participate at any time, and participation must include commitment to the cooperative venture on the part of the university as well as the library administration.

Materials in the CODOC data base comprise the collections of the member libraries and include comprehensive collections of United States and other foreign documents at every level of government as well as the

publications of international and inter-governmental agencies. The system, therefore, is capable of treating a government document from any country or issuing agency. CODOC functions as an in-house system in which members use a common coding manual, use the same programs and coding forms, and employ similar procedures.

HOW THE CODING SCHEME WORKS

The coding scheme involves the transfer of information about a document from the title page to a coding form and the assignment of a unique document number for shelving and data manipulation. At the end of the data input process the library user will be able to retrieve the document from the collection by using any one of the six public catalogs produced in-house by the system: corporate author, personal author, title, series, serial, and KWOC (key-word-out-of-context) index.

A mnemonic document code number is used both for shelf location and as the prime entry to the master file of machine-readable records. The code number reflects the country of origin, level of government, issuing agency, year of publication, and series or title.[10]

The unique twenty-character alpha/numeric code number provides the capability of processing documents from all countries at all levels of government. The code number is composed of elements from the following: country, part, province/state, organization, year, and title Cutter/series number.

As examples, the code numbers for the following jurisdictions are: Department of the Environment and Conservation, Australia = AS1 EN; Statistical Office, United Nations = UN2 S30; U.S. Environmental Protection Agency, Office of Water Programs = US 1 EP33; Metropolitan Toronto Transit Commission = CA3 ØNTØ L87. The master file for a record will contain: code number, language, library owning the item, feature, form, source, a broad subject category using the LC classification, the corporate author(s), title(s), personal author(s), serial holdings, and series statement as required.

Each machine-readable document record consists of a combination of fixed and variable fields, which are tagged with unique codes. The fixed fields are contained in the header record and include the code number, language, physical features, and library. The bibliographic data are contained in a variable number of fixed-length segments; a maximum of fifteen segments can be accommodated in a record. The coding forms are batched and converted to machine-readable form by key punching, key-to-tape, or on-line input using a terminal; and the resulting transaction file is processed to update a library's master file. The system produces a number of catalogs available as paper printouts or on COM (computer output microfilm).

The entire process from library receipt of a document to its recording and entry into the bibliographic data base is displayed in an abbreviated flowchart (figure 1).

The coding scheme does not follow traditional cataloging practices. It determines the main entry from the document in hand and relies upon its own authority files. The classification is tied to the main entry and, unlike accepted classification schemes, does not reflect the subject of the document. Its hierarchy displays government jurisdictions in descending steps, from federal to local authorities, and provides a coherent shelving arrangement, of practical value to the user.

The CODOC system provides practical, speedy, and inexpensive access to government documents: (1) it is based on the way governments function and publish information; (2) the entries are multiple and direct; and (3) the coding system is based on the document in hand and is easily understood and quickly applied by nonprofessional coders, who require only a brief training period.

The system can be easily integrated with existing library systems. For example, the CODOC system is compatible with MARC. One library using CODOC, University of Toronto, has elected to integrate its documents data base with the overall bibliographic data base of the University of Toronto network of libraries. A subset of the MARC format was developed and CODOC to MARC translation programs prepared. To illustrate, CODOC F/C11, corporate au-
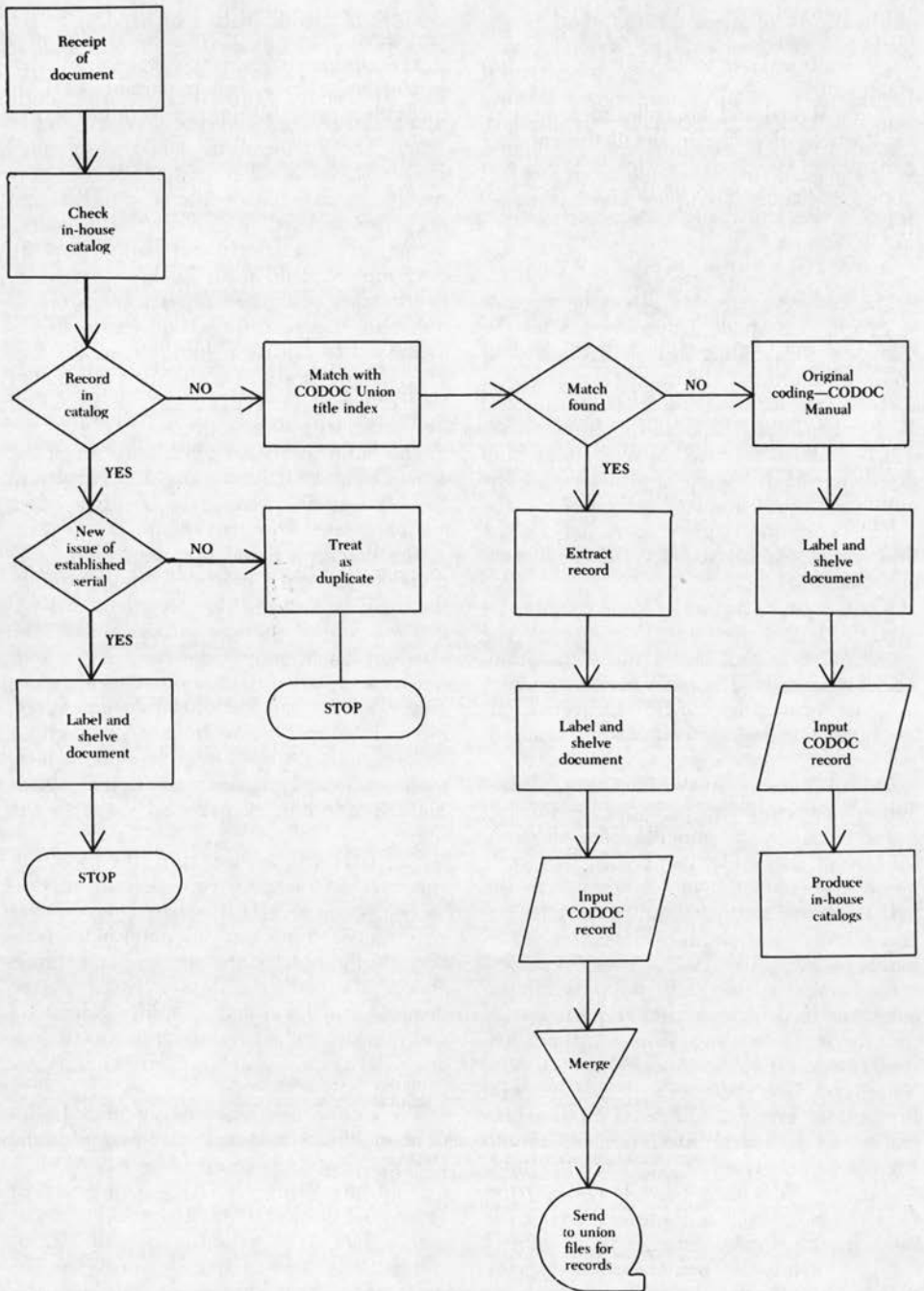
Fig. 1
Coding a Document

thor, translates to MARC tag 110, main entry—corporate name; and CODOC F/C 21, title, translates to MARC tag 245, title statement.

Peter Hajnal and his colleagues, in a recent article, describe in detail the compatibility of CODOC with MARC and modifications made to fit the CODOC subset into the University of Toronto's overall MARC format.[11]

CODOC FEATURES

The implementation of the CODOC system for a separate collection of government documents offers several attractive features to a library and its users. To a library faced with a growing collection of documents, CODOC provides a fast system for processing the documents received. The average coding time required has been identified as six minutes, as determined by time studies conducted by CODOC members. The total process from receipt of material to access

through the printed lists can be as little as ten days. Costs are kept to a minimum as the coding process is performed by non-professional staff. Most important, CODOC provides total bibliographic control of a document collection by providing catalogs capable of listing every item in a collection.

For library users, CODOC provides a single indexing scheme and browsing capability through the geographic arrangement of documents. Subject access to an entire collection is provided by multiple key-word access through the KWOC index. Because reports issued by governments reflect recent research and employ current or new terminology, users find it easier to retrieve information using key-word rather than the more traditional headings assigned by the Library of Congress.

COOPERATION

At present, CODOC is being used cooperatively by fifteen libraries in Ontario

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L060 JULY 05/76                    CODOC ... UNION MASTER ...                          Page 1623
DOC. NO.                             BIBLIOGRAPHIC DATA
                                    ********************

CA1  EP  22-76T10    ENG   CANADIAN FORESTRY SERVICE                                      111   76/03/24
                           WOOD PRESERVATIVES:  THEIR DEPLETION AS FUNGICIDES AND FATE IN THE ENVIRO  211
                           NMENT.                                                         212
                           STRANKS, D.W.                                                  311
                           10                       CANADIAN FORESTRY SERVICE FORESTRY TECHNICAL REPORT.  611
                           OHM      D  BL A SD  8
                           OLU      GP PF A SD  8

CA1  EP  26-73R21    ENG   CANADIAN FORESTRY SERVICE. PACIFIC FOREST RESEARCH CENTRE.     111   76/02/07
                           REPRODUCTIVE CYCLE OF DOUGLAS-FIR.                             211
                           OWENS, JOHN W.                                                 311
                           OGU      D  PF M SD  2
                           OLU      GP PF M SD  1
                           OPAL     D  PF M SD  2

CA1  EP  30-  A56    ENG   CANADA.  CENTRE FOR INLAND WATERS                              111   75/10/22
                           ANNUAL REPORT - CANADA CENTRE FOR INLAND WATERS.               211
                           OLU      L  AM O GC  8 1969 -

CA1  EP  30-  C55    ENG   CANADA.  CENTRE FOR INLAND WATERS                              111   75/01/30
                           CANADA CENTRE FOR INLAND WATERS.                               211
                           OGU      D  AM 0 GC  1 1973-
                           OLU      GP AM 0 GC  8 1969,1971,1973-
                           OPAL     D  AM 0 GC  8 1969,1971,1973-
                           OSUL     D  AM 0 GC  8 1969, 1973-
                           OWTL     D  AM 0 GC  4 1969, 1973-

CA1  EP  30-  P71    ENG   CANADA. DEPT. OF THE ENVIRONMENT.  INLAND WATERS DIRECTORATE   111   75/05/14
                           PUBLICATIONS - CANADA DEPT. OF THE ENVIRONMENT INLAND WATERS DIRECTORATE  211
                           OLU      GP IR S 2   8 1973-

CA1  EP  30-  W16    EXF   CANADA. DEPT. OF THE ENVIRONMENT.  INLAND WATERS DIRECTORATE   111   75/07/23
                           WATER RESOURCES RESEARCH SUPPORT PROGRAM.                      211
                           PROGRAMME DE SUBVENTION A LA RECHERCHE SUR LES RESSOURCES EN EAU.  221
                           OGU      D  AM S GC  1 1973/74-
                           OHM      D  AH 0 GB  2 1974-1975-
                           OLU      GP AM S GC  8 1973/74-
                           OPAL     D  AM S GC  8 1973/74-
                           OSUL     D  AM 0 TD  8 1973/74-
                           OWTL     D  PF A GC  1 1973/74-

C.O.D.O.C.                 JUNE 1976
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Fig. 2
Sample Page of the CODOC Union Shelf List

and Quebec: Carleton University, Ottawa; Lakewood University, Thunder Bay, Laurentian University, Sudbury; McMaster University, Hamilton; Queen's University, Kingston; University of Guelph, Guelph; University of Ottawa, Ottawa; University of Toronto, Toronto; University of Waterloo, Waterloo; University of Western Ontario, London; University of Windsor, Windsor; Wilfrid Laurier University, Waterloo; École Polytechnique, Montreal; Université de Sherbrooke, Sherbrooke; and a federal government library, Department of External Affairs, Ottawa.

Twice a year, in June and December, each library's master files are merged to create a union shelf list of documents, a title listing that is also an index to the union shelf list, and an index to the corporate authors and series names appearing on the union shelf list. The current cumulated union shelf list contains approximately 350,000 records. Monthly cumulated supplements are also produced.

Figure 2 displays a sample page of the CODOC union shelf list, indicating which libraries own a document. Because many of the documents are received at more than one installation, each library has been made responsible for coding the publications of a specific jurisdiction. Thus the others in the group need only consult the union shelf list and extract the record required for its in-house data base, making changes where necessary. On a monthly basis, extract runs are processed in batch mode against the machine readable union file, and tapes are returned to the appropriate library. This procedure makes it unnecessary to code a document more than once.

FUTURE DEVELOPMENTS

The success of CODOC in Ontario has encouraged the participants to offer the system through a leasing agreement.[12] Agreements have been made with several libraries in Canada and the United States. These institutions, it is hoped, will develop networks similar to the one in Ontario. In addition, CODOC will soon be available on-line through the Canada Institute for Scientific Technical and Information CAN/OLE (Canadian on-line enquiry) data bases and QL Systems Limited, Kingston, Ontario.

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