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# Reference Manual for machine-readable bibliographic descriptions

PGI/81/WS/22

Second revised edition

General Information Programme and Unisist  
United Nations Educational, Scientific and  
Cultural Organization

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BIBLIOTHEQUE DU CERIST

# Reference Manual for machine-readable bibliographic descriptions

PGI/81/WS/22

Second revised edition

compiled and edited by

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Unisist International Centre for  
Bibliographic Descriptions (UNIBID)

General Information Programme and Unisist

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## INTRODUCTION

0.1 History

The previous (1974) edition of the Reference Manual, compiled by M D Martin, was prepared by the UNISIST/ICSU-AB Working Group on Bibliographic Descriptions (WGBD), as a result of some four years' work within the framework of UNISIST, the ICSU-UNESCO joint project to study the feasibility of a world science and technology information network. The WGBD included direct or indirect representation of all the ICSU-Abstracting Board member services, together with other experts serving in an individual capacity or as representatives of organizations with special interests in mechanized information processing, including ISO, FID, IFLA, IATUL, INIS, OECD and WIPO.

A first draft of the Reference Manual was completed early in 1972, and was the subject of a test conducted by an independent expert organization, the Postgraduate School of Librarianship and Information Science, University of Sheffield, UK, with the co-operation of an international group of libraries and secondary information services. The results of the test and subsequent discussions by the WGBD were incorporated in the 1974 edition.

In 1976 the UNISIST International Centre for Bibliographic Descriptions (UNIBID) was established by the British Library in co-operation with Unesco, within the framework of the UNISIST programme, with the major objective of revising the first edition of the Reference Manual and handling its future updating and promotion. The present edition is the result of this revision, carried out in close consultation with Unesco's Division of the General Information Programme and an Advisory Committee of actual and potential users.

Whereas, from the outset, the Reference Manual was conceived by representatives of and for use by Abstracting and Indexing (A&I) Services, it was "hoped, nevertheless, that" it would "find other applications in the wider field of information processing and exchange". The current revision reflects the latter objective as well as Unesco's policy since 1977 to have one single Division, i.e. the Division of the General Information Programme (PGI), co-ordinate all activities in support of libraries, secondary information and archive services. The present edition, therefore, includes guidelines for the description of serials, as entities in their own right and for subject description. This means that the Reference Manual is now suitable for use, not only by A&I services but also by libraries.

Reports on actual use of the Manual have revealed that it has served as a source for bibliographic description and cataloguing rules as much as an exchange format. This has encouraged the compilers of the current edition to strengthen the modular features of the Manual by: (1) making it suitable for use by computerized as well as non-computerized services and (2) making it hospitable to virtually an unlimited number of extensions to cover the description of a variety of materials. To date, extensions have been prepared for the bibliographic description of standards

and lexicographical material, as well as for the description of research projects and institutions (see the bibliography at the end of the Manual for the full title of these three extensions). A decision has still to be taken in what form these extensions will be published or otherwise made available. Consequently, no additional type of bibliographic entity codes have been allocated yet and incorporated into 3.1.2 and field B30. However, should any users require such a code, it will be provided by UNIBID on request.

To round off the above historical notes, mention should be made of the proposed Common Communication Format (CCF) which is being developed by the Unesco Ad Hoc Group on the Establishment of a Common Communication Format. The formulation of a CCF which is intended to satisfy the requirements of libraries as well as other information services was recommended by the International Symposium on Bibliographic Exchange Formats, sponsored by Unesco and organized by UNIBID, in co-operation with ICSU/AB, IFLA and ISO, held at Taormina, Sicily, in April 1978. Since the Reference Manual and UNIMARC are the major source formats for the CCF it is expected that the final version of the CCF will be compatible with both.

## 0.2 Purpose of the Reference Manual

The major objective of the Reference Manual is to serve as a standardized communication format for the exchange of machine-readable bibliographic information between bibliographic data bases or any other type of bibliographic information services, including libraries. This objective implies provision for adequate description and identification of the bibliographic items referred to in the records exchanged, as a basis for adequate and efficient storage and retrieval of both the items and the related records.

In particular the Reference Manual allows the following functions to be performed within or outside the context of its communication format function:

- (1) creating bibliographic descriptions with the inclusion of all necessary identifiable entry points for cataloguing (i.e. generating headings), identification, filing, search and other forms of processing;
- (2) providing a source for local systems design, including input and output procedures and computer processing formats;
- (3) to serve manual as well as computerized environments.

It should be noted that the Reference Manual, although containing all elements necessary for cataloguing, stops short of formulating any precise cataloguing rules. It is only concerned with rules for bibliographic description.

In order to avoid any possible misunderstanding some of the concepts used above to describe the major objectives and functions of the RM are defined below.

Any machine-readable format for the recording of bibliographic information has three major components:

- (1) The carrier format : the file and record structure, i.e. the prescribed fixed pattern for arranging and locating records in a machine-readable file and data elements within individual records. An important element of the record structure are the content designators : symbols such as tags, identifiers and indicators which identify or delimit data elements or provide additional information about them.
- (2) Data element names and definitions : the name and detailed specification of the content of each data element, including an indication of its components which must be separately identifiable in a computer-based system.
- (3) Data element sets : the specification of particular sets of data elements to be present in records describing particular types of bibliographic entities.

A clear distinction must be made between a local or internal format and a communication or exchange format. Although both are composed of the three components listed above, they differ in the emphasis placed on each of these three constituent elements and particularly in the specific form the carrier format takes. These differences are the result of different objectives. An internal format is mainly concerned with ensuring efficient, effective and economic storage and retrieval of information; in other words the chief purpose is efficient and economic computer processing. This calls for a suitable file and record structure which will normally be different from that used for an exchange format. The latter's main objective is to provide a record structure which is hospitable to the requirements of a wide variety of systems and, hence, allows for the unambiguous identification of discrete data elements, appearing at well-defined places in the record, necessary for automatic conversion from the exchange to the local format and vice versa.

A further distinction to be made is that between cataloguing rules and rules for bibliographic description. Cataloguing rules relate to the entire bibliographic record, i.e. to the description of the physical appearance as well as to the intellectual content and responsibility for the bibliographic item, including the choice and form of headings (e.g. for identification, filing, etc). Rules for bibliographic description have the same objective as cataloguing rules but with the exclusion of choice and form of headings.

### 0.3 Summary of Contents

The Reference Manual contains the specifications for a comprehensive, self-contained machine-readable bibliographic communication format, composed of five parts.

Part 1 defines in broad outline the format and content of bibliographic records, the notions of type of bibliographic entity and of bibliographic level, and the sets of data elements regarded as essential (mandatory) or supplementary (optional) for the description of each type of bibliographic entity. A number of matrixes show the mandatory or optional status of each data element at each bibliographic level for each type of bibliographic entity considered in the Reference Manual.

Part 2 gives names and detailed definitions of each mandatory and optional data element and, where necessary, guidance on how the data element content is to be selected and entered on to the machine-readable medium (magnetic tape in the first instance).

Part 3 provides detailed specifications of the carrier format or record structure, character sets and coding, transliteration, physical standards for magnetic tapes, and other aspects which are primarily of concern to computer system designers.

Part 4 consists of a set of examples showing complete bibliographic descriptions prepared in accordance with the conventions described in the Manual.

Part 5 is a new feature which has been incorporated in the second edition. It contains general guidelines for providing documentation on individual implementations of the Reference Manual. These guidelines cover all topics which need to be addressed in the documentation, including computer-related aspects, types of bibliographic entity covered, indexing, abstracting and editorial policies and practices, selected choices from among alternatives allowed by the Reference Manual specifications, and extensions for user-defined data fields.

Additional background information is given in a series of appendices.

To the greatest extent possible, standards issued by the International Organization for Standardization (ISO) have been applied throughout. In particular, the bibliographic communication format upon which the Reference Manual is based is an implementation of the international standard ISO 2709 : Documentation - Format for bibliographic information interchange on magnetic tape.

### 0.4 Remarks on Use

It may be reiterated that, although the Manual is in the first place intended for use within computerized environments, it can also be used by non-computerized systems. Implementation of the Manual by the latter will make their possible computerization at a future stage easier.

It cannot be emphasized too strongly that the data elements defined in the Manual are not to be regarded as exclusive. The authors are well aware that for many applications the bibliographic description must be supplemented with additional information. The Manual's purpose is to define a minimum set of data elements which could be agreed upon by services, to facilitate the exchange of information between them, and to enable them to present their computer-based products to the user in a more compatible and therefore more easily usable form.

It should also be realized that the scope of the Reference Manual is limited to defining the representation of its recommended essential and supplementary data elements as they should appear in a computer-readable record for exchange purposes between two or more computer-based systems. Nothing in the Reference Manual should be interpreted as attempting to lay down standards for input or display formats. A local system may choose any input format which is convertible by computer program to the exchange format, and the exchange format has been designed with the aim of retaining the highest degree of flexibility for deriving different types and arrangements of output, whether in the form of computer printout or printed publications such as abstract journals, indexes and catalogues.

Manual information systems will need to consult only Parts 1,2,4, relevant sections of Part 5, and the Appendices. Computerized systems will need to consult the entire Manual. However, the Manual is not intended to be a tailor-made input manual for both computerized and non-computerized systems. It is to be regarded in the first place as a specification manual for technical management and system design staff to assist them in devising local systems in such a way that they can exchange files in either direction with other centres which have adopted the Reference Manual format. In other words, it is not an input manual but a source for drafting local input manuals. It is simply not possible to draft a standard input manual which would be suitable for use without any adaptation or addition by any system. On the other hand, as the Manual is meant to define all essential and a fair number of supplementary data elements necessary for the description of bibliographic materials, it should be possible to prepare local input manuals based on it with a minimum of effort and adaptation.

When occurring for the first time citations of standards and other works in the text include at least the full title or equivalent; full references are listed at the end of the Manual. Since the citations are relatively few and appear also with a fair amount of detail in the text, no numbering system to link the brief citations and the full references has been used. This procedure will facilitate future updating in as much as adding references will not necessitate renumbering of the entire set.

Future updating will also be facilitated because the Manual is now produced in loose-leaf form. Amendments and additions will be sent out as separate sheets to replace existing pages and to be inserted at the appropriate place in the loose-leaf volume. A check list of every page and its date of issue is inserted and will be replaced by an amended version each time updates or additions are distributed.

This second edition of the Reference Manual is being distributed with a questionnaire on the extent of actual or intended use and a request form for receiving updates. Users and all those interested in the Manual are hereby reminded that distribution of future amendments, extensions, etc. will not be automatic. These updates will only be sent to those who have completed and returned the supplied request form to the UNIBID office in London. Especially new users should bear this in mind and inform UNIBID of their plans so that they may receive the updates as well as any information on additional supporting services that meanwhile might have been developed.