Contents

Page

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 46, *Information and Documentation*, Subcommittee SC 4, *Technical interoperability*.

This second edition cancels and replaces the first edition. Yet valid first edition records will be compliant with this second edition of the standard.

UNI ISO 25577:2019

Introduction

In 2001, the US Library of Congress developed a framework for working with MARC data in an XML environment. The core of the framework is a MARCXML schema that allows lossless round-trip conversion of an ISO 2709 MARC 21 record and an XML-encoded MARC 21 record.

MARCXML is tightly coupled to ISO 2709. It was obvious to generalize this to an XML-based alternative for ISO 2709 such that any existing format based on ISO 2709 could be represented.

This International Standard describes a schema which is a generalized version of, and with as few changes as possible to, MARCXML but which retains the original MARCXML structure. The resulting schema is an XML extension to ISO 2709. Thus, the original elements of MARCXML are reused and verbal links to the terminology of ISO 2709 have been added. MarcXchange is useable as a framework for conversion of all records using the ISO 2709 syntax into XML. Extensions to MarcXchange might be required to retain the definition and application of fields, subfields, and control characters employed in data representation techniques specific to implementations of ISO 2709. The international exchange of records uses local variations of internationally recognized formats as much as it uses internationally recognized formats in the precise way in which they are prescribed for international exchange. MarcXchange, as an internationally recognized format, is mainly intended as a framework for making local schemas, or to which local extensions can be added. Experience has shown that there is a need for local deviations – even if MARC 21 or UNIMARC is chosen as the local format. This schema provides a specification for the development of local specific schemas, ensuring compatibility.

The relationship of the schema described in this International Standard to MARC and ISO 2709 are as follows.

— The XML schema is constructed to contain MARC data.

— The schema can be used for the exchange of MARC records or to act as a "bus" to enable MARC data records to go through further transformations such as to Dublin Core and/or processes such as validation.

The basic components of ISO 2709 are treated in the following way in the XML schema.

— The record label is treated as a simple string.

— The directory has no counterpart in the schema; when converting from MarcXchange to ISO 2709 the directory has to be recalculated.

— The record identifier field and the control fields are treated as elements with the tag as an attribute.

— Data fields are treated as elements with the tag and indicators as attributes.

— Subfields are treated as sub-elements with the subfield code as an attribute.

Information and documentation — MarcXchange

1 Scope

This International Standard specifies the requirements for a generalized XML-based exchange format for bibliographic records as well as other types of metadata.

It does not define the length or the content of individual records and does not assign any meaning to tags, indicators, or identifiers, these specifications being the functions of an implementation format.

This International Standard describes a generalized structure, a framework designed primarily for communication between data processing systems, but can also be relevant for use as a processing format within systems.

MarcXchange could potentially be used as follows:

— for representing a complete MARC record or a set of MARC records in XML;

— for original resource description in XML syntax;

— as an extension schema to METS (Metadata Encoding and Transmission Standard);

— for exchange of MARC records in XML;

— for transfer of MARC records in web services like SRU (search/retrieval via URL);

— for publisher transmission of data;

— as a temporary format in all kinds of data transformation or manipulation, e.g. conversion, publication, editing, validation;

— for metadata in XML that can be packaged with an electronic resource.

Validation of MARC records content is not enforced by the schema but by dedicated software tailored for the specific usage (e.g. the specific MARC-format).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2709, *Information and documentation — Format for information exchange*

ISO/IEC 646, *Information technology —* ISO 7*-bit coded character set for information interchange*

ISO/IEC 10646, *Information technology — Universal Coded Character Set (UCS)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.