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Media-related Identification and Metadata Standards

an EDItEUR Survey

[5th December 2002]

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Contents

ABC Reference Model
(Harmony Digital Library Project)

Acronym	ABC is not an acronym
Organisation	A project jointly funded by DSTC (Australia), JISC (UK), and NSF (USA)
Reference Code	
Scope	A reference model rather than a standard; developed as part of a project dedicated to understanding issues relating to the interoperability of metadata describing complex resources.
Media Type	Multimedia
Description	The objective of this digital libraries project, as stated on the project Web site, was to "investigate some the key issues involved in describing complex multimedia resources in digital libraries". The primary aim was to develop a conceptual reference model, and to investigate its use as an aid to interoperability between metadata schemes used by different communities of interest in the broadly defined digital library community. A priority was that the model should be able to "represent the complex structural and semantic relationships in multimedia resources." One element of the project was to explore mechanisms for expressing such conceptual models in XML and RDF (the project has published an RDF schema for the model); and to understand how these might be used for mapping between different vocabularies. For a full description of the project, see Lagoze, C & Hunter, J (2001) "The ABC Ontology and Model" *Journal of Digital Information* 2, 2.

	The project has significant points of similarity with <indecs>, although it does not share the same intellectual property rights perspective. Significant efforts were made during the course of the project (through the DELOS Working Group on Ontology Harmonization) to understand and document differences between the ABC conceptual reference model (originating in the digital library community) and the CIDOC conceptual reference model (originating in the museum community). The results of this collaboration will reported in Doerr M, Hunter J & Lagoze C (submitted for publication) "Towards a Core Ontology for Information Integration" *Journal of Digital Information.*
Status	Completed project
Availability	A number of documents are freely available.
Governance	Project – no Governance structure beyond its partners. Contact via Website: http://metadata.net/harmony **Note**: we have found that a number of the links on this site are dead.

CIDOC Conceptual Reference Model

Acronym	CIDOC
Organisation	The International Committee for Documentation of the International Council of Museums (ICOM-CIDOC); ISO TC46/SC4
Reference Code	ISO CD 21127

Scope

"A conceptual reference model for the interchange of cultural heritage information.

"The intended scope of the CRM may be defined as all information required for the scientific documentation of cultural heritage collections, with a view to enabling wide area information exchange and integration of heterogeneous sources."

For more detail of the scope statement see the CIDOC Conceptual Reference Model Web Pages

Media Type

Not limited to media; intended to cover information about any item that might be found in a museum.

Description

The "CIDOC object-oriented Conceptual Reference Model" (CRM), was developed by the ICOM/CIDOC Documentation Standards Group. ICOM is the International Council for Museums.

CIDOC is described as an 'ontology' for cultural heritage information; it expresses in a formal language the explicit and implicit concepts and relations relevant to the documentation of cultural heritage. The primary role of the CRM is: "to serve as a basis for mediation of cultural heritage information and thereby provide the semantic 'glue' needed to transform today's disparate, localised information sources into a coherent and valuable global resource."

Although it originated in the museum world, it is intended to facilitate communication between museums and libraries.

It is expressed in the form of an object model, but it is intended that the model could equally be expressed in the form of an RDF schema.

See also ABC.

Status	Currently undergoing formal ISO standardisation procedures through ISO TC46/SC4; closing date of the ballot was mid-November 2002. We understand that the Committee Draft is fundamentally unaltered from the CIDOC documents.
Availability	Complete CIDOC documentation is freely available.
Governance	As and when formally standardised as ISO 21127, the CIDOC reference model will fall under ISO Governance. Contact the CIDOC CRM via its chairman: Martin Doerr Institute of Computer Science, Foundation for Research and Technology, Vassilika Vouton, P.O.Box 1385,GR 711 10 Heraklion, Crete, Greece E-mail: martin@ics.forth.gr Tel: +30(81)39 16 25

cIDF Specification v1.1

Acronym	cIDF
Organisation	Content ID Forum
Reference Code	
Scope	A system for assigning a unique identifier and description (called the “Content ID”) to packages of digital content (whether containing one or many items of digital content) intended for distribution. As part of a common global system, the Content ID would be persistently associated with the package of digital

content through the use of watermarking or other technologies.

Media Type Multimedia

Description The main objective of the cIDf is to standardize the Content ID and its associated metadata. The cIDf intends, as a first step, to make the Content ID and its associated metadata a *de facto* standard in Japan. However, the cIDf will take into account other global standardization activities in order to ensure that the Content ID and its associated metadata remain consistent with the international standards framework.

Identification
There are two distinctive identifiers which form part of the Specification. One is a 'Work ID'; this identifier, which, although specifically associated with a digital file, appears to be intended as an abstraction identifier (on the model of the ISWC or the forthcoming ISTC); it is anticipated that in many instances an ISO standard identifier will be used as the Work ID.

However, much more significant to the cIDf Specification is the Content ID Center Management Number (IDCMN) which is the primary key to the cIDf system. The IDCMN identifies a specific instantiation of a digital manifestation of a work. This specific 'copy' of the digital manifestation is the one which is passed from the Content ID Management Center (or other content repository) to a distributor, after that distributor has reached an agreement with the copyright owner that allows them to have a copy for onward distribution.

Content Description

The cIDf Specification proposes a small core metadata set describing the content to which it relates. The descriptive metadata specifications cover the following

high-level elements:

- Creator
- Production information
- Description of the content
- Classification of the content
- For derivations, information about the original (or 'root') works from which they have been derived
- Identifiers from other schemes
- Free text annotations

From reading the detailed specification, it is clear that this metadata is essentially designed to be 'human readable' (primarily as an aid to discovery) rather than machine interpretable. Many aspects of the metadata scheme is seen within the cIDf as being in need of substantial additional development. For example, it is clear that only very initial consideration has been given to questions about which metadata elements (if any) should be regarded as mandatory as part of a metadata declaration relating to an IDCMN.

Rights Description (Copyright Attributes)

The approach to describing rights depends on naming a list of rights (without attempting to define them) and then identifying the manager, owner or exerciser of those rights. The metadata model recognizes the following types of rights and rights holder:

- Author's Rights: there is the potential to identify the different rights (from a list) claimed by the owner of the authors rights and to identify and locate that owner (including provision for a unique ID)
- The same approach is taken to Neighbouring Rights
- With Moral Rights, there is no explicit indication of ownership, but only of whether or not the rights have been exercised.

No attempt is made to define specific 'rights'. Rights are defined under law (and will be defined differently under different national jurisdictions). This means that the 'rights description' metadata segment is also intended for human readable discovery purposes only, and does not provide any platform for the automated management of those rights.

Agreement Description

The metadata scheme is designed to allow the description of three different types of agreement relating to content and rights:

- a license to use the content
- a transfer of rights management responsibility for the content
- a transfer of rights ownership in the content.

Each follows a similar structure, and includes similar elements like the unique identification of parties to the agreement, and the period and territory of their validity. It should be noted that almost all conditions relating to any of these agreements are expressed in free text, which implies that the metadata is only of value for human interpretation rather than for formal machine-to-machine management of rights.

Status

Current

Availability

The Specification v1.1 is freely available for download in English.

Governance

CIDf Secretariat
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Tel: +81 3 3261 0372
Email: info@cidf.org
Web site: http://www.cidf.org/english.html

CrossRef

Acronym	CrossRef
Organisation	CrossRef
Reference Code	
Scope	A Registration Agency for the Digital Object Identifier, established as a co-operative venture by leading STM (scientific, technical and medical) publishers; initially limited to scientific journal articles, but extended to related reference works and conference proceedings.
Media Type	Text
Description	Established to facilitate citation linking through automated metadata matching, CrossRef has a relatively simple metadata deposit scheme which is consistent with IDF application profile specifications. There is a commitment to ensure future compatibility between the CrossRef metadata scheme and ONIX for Serials. The CrossRef metadata scheme was originally developed before the IDF developed its own approach to metadata, and ultimately some minor changes may be necessary for full compliance. CrossRef is currently investigating the feasibility of extending its service offering to the provision of a cross-publisher full text search facility. It has made no commitment to implementing this service.
Status	Membership now extends to over 160 publishers, plus about 25 intermediaries and over 50 libraries. CrossRef

	is by far the most prolific of DOI RAs with over 5 million DOIs issued.
Availability	The CrossRef metadata scheme is available in the form of an XML DTD.
Governance	CrossRef is a co-operative, not-for-profit organization and is managed by an elected Board of Directors (who are all representatives of publishers, both commercial and not-for-profit). The DOI itself is Governed by the International DOI Foundation. Contact CrossRef via its Executive Director: Ed Pentz 40 Salem Street Lynnfield, MA 01940 USA Email: epentz@crossref.org Tel: +1 (781) 295-0072 ext. 2

Digital Object Identifier

Acronym	DOI
Organisation	National Information Standards Organization
Reference Code	ANSI/NISO Z39.84-2000
Scope	The Digital Object Identifier (DOI) System provides a unique identification mechanism for content in all media, and a way to link users of the materials to the rights holders or their agents to facilitate automated digital commerce.
Media Type	Multimedia

Description

This standard is limited to defining the syntax of the DOI character string. Policies governing the assignment and use of DOIs are determined by the International DOI Foundation (IDF) and are outside the scope of this document.

The DOI is composed of the prefix and the suffix. Within the prefix are the Directory Code <DIR> and the Registrant Code <REG>. The suffix is made up of the DOI Suffix String <DSS>.

The syntax of the DOI string is:
<DIR>.<REG>/<DSS>

There is no limit on the length of a DOI string, or any of its components. The Digital Object Identifier (DOI®) is a system for identifying and exchanging intellectual property in the digital environment. It provides a framework for managing intellectual content, for linking customers with content suppliers, for facilitating electronic commerce, and enabling automated copyright management for all types of media. Using DOIs makes managing intellectual property in a networked environment much easier and more convenient, and allows the construction of automated services and transactions for e-commerce.

The DOI System

The Digital Object Identifier (DOI) System provides a unique identification mechanism for content in all media, and a way to link users of the materials to the rights holders or their agents to facilitate automated digital commerce.

The DOI System is an implementation of the Handle System®, developed by the Corporation for National Research Initiatives (CNRI). The Handle System® is a distributed computer system that stores names, or handles, of digital items. It can quickly resolve those

names into the information necessary to locate and access the items. It was designed by CNRI as a general purpose global system for the reliable management of information on networks such as the Internet over long periods of time.

Resolution

The DOI System enables resolution of the DOI. A resolution system takes a URN and returns a list of services or instances of the information identified by the URN, commonly one or more URLs. Resolution is used here to mean the act of submitting an identifier to a network service and receiving in return one or more pieces of current information related to the identifier. In the case of the Domain Name System (DNS), as an example, the resolution is from domain name, e.g., www.doi.org , to a single IP address, e.g., 132.151.1.146, which is then used to communicate with that Internet host. In the case of the Handle System, the resolution is from a handle, e.g., 10.1000/140, to one or more pieces of typed data, e.g., three URLs representing three copies of the object.

Status

Current

Availability

All NISO standards and technical reports can be downloaded as PDF files for no charge from the NISO website (www.niso.org) by clicking on the NISO Press icon.

Governance

The appointed Maintenance Agency (the International DOI Foundation) shall review suggestions for new data elements, interpret the rules prescribed by this standard, and maintain a listing of inquiries and responses that may be used for potential future enhancement of this standard. Questions concerning the implementation of this standard and requests for information should be sent to the Maintenance Agency. The functions assigned to the Maintenance Agency will

be administered by the International DOI Foundation (http://www.doi.org/).

Contact the IDF via its Executive Director:

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OX5 1XU, U.K.
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Tel: +44 1865 843798

Dublin Core

Acronym	DC
Organisation	The Dublin Core Metadata Initiative (DCMI) (also NISO; ISO TC46/SC4)
Reference Code	NISO Z39-85; ISO DIS 15836
Scope	Resource discovery metadata for online resources
Media Type	Multimedia
Description	Dublin Core was developed to provide a very simple "lowest common denominator" set of 15 elements that could be used for the description of any types of online resource. It's purpose is perhaps best described by quoting directly from the NISO Standard (Z39-85):

> "The Dublin Core is not intended to displace any other metadata standard. Rather it is intended to co-exist — often in the same resource description — with metadata standards that offer other semantics. It is fully expected that descriptive records will

> contain a mix of elements drawn from various metadata standards, both simple and complex.
>
> "The simplicity of Dublin Core can be both a strength and a weakness. Simplicity lowers the cost of creating metadata and promotes interoperability. On the other hand, simplicity does not accommodate the semantic and functional richness supported by complex metadata schemes. In effect, the Dublin Core element set trades richness for wide visibility… Richer schemes can…be mapped to Dublin Core for export or for cross-system searching."

The use of the term "interoperability" may be misleading here. Dublin Core is explicitly designed to support human–machine discovery not machine–machine transaction.

The "15 elements" have been specialised through the development of sets of domain-specific "qualifiers". However, DC has no underlying data model to relate the different elements which limits its use in the management of rich descriptive information since it means that any extension to the elements is essentially arbitrary. It has, though, received widespread support.

The 15 elements are:

Title
Creator
Subject
Description
Publisher
Contributor
Date
Type
Format
Identifier
Source
Language
Relation
Coverage
Rights

Status	Very widely used for basis resource discovery applications on the World Wide Web. The element set is a NISO Standard (Z39-85); and is currently being "fast tracked" as an ISO standard (ISO DIS 15836).
Availability	Dublin Core Metadata Element Set, Version 1.1 is available for free download. This is what has been standardized by NISO and is being standardized by ISO. Many other documents are also freely available (including XML and RDF expressions).
Governance	DCMI is managed by a Board of Trustees, which appears not to be elected. Although there is a "Structure and Operations" proposal for DCMI dating back to 1999, it appears that this has not been implemented. DCMI has a two person executive directorate; and a forty person advisory board made up of chairs of working groups and "invited experts". To the extent that it is a standard (the element set), currently governed by NISO; assuming approval, will be governed by ISO. Contact with DCMI is entirely by email; no other contact information is provided.

ebXML

Acronym	ebXML
Organisation	Sponsored by UN/CEFACT and OASIS
Reference Code	

Scope	This standard aims to provide an open XML-based infrastructure to facilitate global use of electronic business information in a method that is interoperable, secure and consistent for all parties.
Media Type	Multimedia
Description	Electronic Business eXtensible Markup Language (ebXML) is sponsored by UN/CEFACT and OASIS. It is a "modular suite of specifications" that should enable all organisations to conduct business over the Internet, irrespective of size or location. The objective of ebXML is to standardize the: • exchange of business communications • method of conducting trading relationships • data in common terms • definition and registration of business processes. ebXML also enables organisations to complement and extend current EC/EDI investment and expand electronic business to new and existing trading partners. This standard also facilitates the convergence of current and emerging XML efforts.
Status	In development
Availability	There are four categories of deliverables: Technical Specifications Technical Reports Reference Materials White Papers All can be freely downloaded
Governance	Simon Nicholson Chair, ebXML Joint Coordination Committee Email: simonn@eng.sun.com Website: http://www.ebxml.org/

Functional Requirements and Numbering for Authority Records

Acronym	FRANAR
Organisation	IFLA
Reference Code	FRANAR
Scope	Extending to library Authority Records the approach taken to Bibliographic Records by the FRBR Working Group
Media Type	Multimedia
Description	An analysis, based on a structured entity/attribute/relationship model of the data associated with “persons”, corporate bodies, titles and subject that typically form part of library authority records.
Status	In development
Availability	Little information is publicly available.
Governance	IFLA UBCIM (The IFLA Core Programme for "Universal Bibliographic Control and International MARC") The FRANAR group is chaired by: Glenn Patton OCLC

Functional Requirements for Bibliographic Records

Acronym	FRBR
Organisation	IFLA
Reference Code	
Scope	An analysis of the requirements for bibliographic records, based on a structured entity/attribute/relationship model
Media Type	Multimedia
Description	The IFLA Study Group on the Functional Requirements for Bibliographic Records (FRBR) published its Final Report in 1998. This study group, established in 1990, was given the following terms of reference: "The purpose of this study is to delineate in clearly defined terms the functions performed by the bibliographic record with respect to various media, various applications, and various user needs. The study is to cover the full range of functions for the bibliographic record in its widest sense, ie a record that encompasses not only descriptive elements, but access points (name, title, subject, etc.), other "organizing" elements (classification, etc.), and annotations. "The aim of the study was to produce a framework that would provide a clear, precisely stated, and commonly shared understanding of what it is that the bibliographic record aims to provide information about, and what it is that we expect the record to achieve in terms of answering user needs.

> "The terms of reference also gave a second charge to the study group: to recommend a basic level of functionality and basic data requirements for records created by national bibliographic agencies."

The study was intended to address the issue of reducing the cost of cataloguing while continuing to meet the needs of users.

The study took into account the requirements of a very broad range of users and the full range of different media.

The study did not analyse the data associated with "persons", corporate bodies, titles and subject that typically form part of library authority records. This is the work being undertaken in the FRANAR working group.

Status

"The Standing Committee of the IFLA Section on Cataloguing has agreed that the International Standard Bibliographic Description (ISBD) Review Group should initiate a full-scale review of IFLA's 'family of ISBDs' to ensure conformity between the provisions of the ISBDs and those of FRBR - in particular, to achieve consistency with FRBR's data requirements for the 'basic level national bibliographic record'."

Availability

The report is freely available in both HTML and PDF

Governance

This is a completed study. There is no continuing "governance".

Contact:

IFLA UBCIM (The IFLA Core Programme for "Universal Bibliographic Control and International MARC")

Die Deutsche Bibliothek
Adickesallee 1
60322 Frankfurt am Main
Germany

GILS

Acronym	GILS
Organisation	GILS
Reference Code	ISO 23950
Scope	The Global Information Locator Service (GILS) has been developed to allow users to search and recover content easily. GILS is an open and scalable standard. The standard can be implemented in organisations of any size and structure. Content such as printed documents and online data can be defined by GILS
Media Type	Text
Description	The purpose of the GILS standard is to provide basic information descriptions for searching. Companies including Internet search engines like Alta Vista, DOCS-Fulcrum, and Ultraseek; database systems like Oracle; or traditional library catalogue systems like SIRSI offer locator records over the Internet through GILS-compliant software. GILS is based on the ISO 23950 search standard and includes a commonly understood structure such as the ones found in information sources in libraries. It includes components such as Title, Author, Publisher, Date, and Place. The GILS standard can be combined with several standards for network searching.

It includes:

- Structured Query Language (SQL)
- Lightweight Directory Access Protocol (LDAP)
- Extensible Markup Language (XML)

Status Current

Availability GILS Application Profile can be downloaded from http://www.gils.net/standards.html

Governance Contact for GILS in the EU:
Ken Inglis, European Commission
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Global Release Identification Standard

Acronym GRID

Organisation RIAA/IFPI

Reference Code

Scope The primary aim of the GRID standard is to enable the unique identification and description of releases (the record industry's 'fundamental unit of transaction for trade') and licences associated with the releases issued by music rights societies. The description scheme is required to interoperate with other identification and information management systems that are already in use including the International Standard Recording Code (ISRC) and the International Standard Musical Work Code (ISWC). The goal is for the scheme to become the basis for standardising description across the music industry to support message transactions

between record companies, music rights societies and their business partners.

Media Type

Audio

Description

In the future it is possible to envisage a world where automated message transactions are generated between record companies, music rights societies, retailers and other business partners to communicate and exchange key information about their business relationships. Such a world will critically depend upon standardised information about releases, licences, sound recordings, musical works, and the relationships between these entities.

The RIAA and the IFPI commissioned a project in September 2000 with the goal of developing an integrated approach to the identification systems deployed by the key stakeholders from across the record industry. The objective was to develop a proposal for a new system to identify releases of sound recordings for electronic distribution. The music rights societies, represented by CISAC and BIEM, joined the project in January 2001, thus broadening the project to take account of their requirements for the identification of the licences that will be associated with releases and the musical works to which those licences refer. The project has also attempted to take into account the requirements of many other participants in the music industry including retailers, electronic music distributors, the providers of Digital Rights Management (DRM) services and information management specialists. A framework was therefore established for conducting a global music industry project.

These new Release and License identification systems must be capable of integrating with the existing and future identification systems employed by the music industry. This has been achieved in a number of ways:

Firstly, by the development of a description scheme

that supports the description of a release, licence, asset and work. The scheme allows for the application of existing identification standards such as EAN/UPC, ISRC and ISWC.
Secondly, it accommodates a host of proprietary identification schemes that are used by different organisations in different territories for the identification of physical products, the parties associated with those products, and the identifiers of different business partners.
Thirdly, it demonstrates how the principle message transaction formats in use across the music industry can be interoperable with the GRID description scheme.
Finally, the ability to declare the use of different metadata namespaces within the dictionary allows for the introduction of terms that are already widely used by many communities where additional granularity of description is required.

Status

The second phase of the project, which concluded in October 2002, concentrated on establishing the governance framework for the standard and developing the design specification. Phase 3 will include its full implementation and an outreach program to encourage its adoption.

Availability

Expected availability from 1st November 2002

Governance

IFPI is the proposed candidate for managing the governance of the GRID Standard.

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IMS

Acronym	IMS
Organisation	IMS Global Learning Consortium
Reference Code	N/A
Scope	The IMS Global Learning Consortium aims to develop and promote open specifications for facilitating online distributed learning activities. Activities include locating and using educational content, tracking learner progress, reporting learner performance, and exchanging student records between administrative systems. IMS concentrates on defining the technical specifications for interoperability of applications and services in distributed learning. IMS also supports the incorporation of the IMS specifications into various eLearning products and services worldwide.
Media Type	Multimedia (Education)
Description	IMS came into existence as a project within the National Learning Infrastructure Initiative of EDUCAUSE. At the beginning IMS focused on higher education only, and later expanded its scope towards other learning contexts, including other school levels and corporate and government training. One of the interesting specifications that IMS has developed is the Learning Resources Meta-data Specification.

List of IMS Specifications:

IMS Content Packaging Specification

IMS Digital Repositories

IMS Enterprise Specification

IMS Learner Information Package Specification

IMS Learning Design

IMS Learning Resource Meta-data Specification

IMS Meta-data Specification

IMS Question & Test Interoperability Specification

IMS Question & Test Specification

IMS Reusable Competencies Definition Information Model Specification

IMS Reusable Definition of Competency or Educational Objective

IMS Simple Sequencing Public Draft Specification

Status Current

Availability Specification documents are listed at the project web site and linked for public access once approved by the IMS Technical Board. Draft specifications in the process of final refinements and/or interoperability trials, are only available during the draft period.

Governance

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Interoperability of Data for eCommerce Systems

Acronym	<indecs>
Organisation	<indecs> project
Reference Code	
Scope	A framework proposing mechanisms to support interoperability of metadata in e-commerce in Intellectual Property.
Media Type	Multimedia
Description	The <indecs> project was established at the end of 1998, with support from the European Commission's Info 2000 Programme. Partners of the project were drawn from a very diverse background, with a common interest in the management of intellectual property in the network environment. The Commission evaluated the project as having been very successful when it came to an end in March 2000. The <indecs> Framework proposes a set of principles to be adopted for secure machine-to-machine management of transactions related to Intellectual Property. The most important of these is probably the principle of Unique Identification. <indecs> devised a high level events-based data model, which provides a basis for transformation of metadata between different namespaces without loss of semantic integrity. The <indecs> project has been influential in the metadata community; its influence is acknowledged in many developments including ONIX, DOI metadata specifications, and ABC.

The <indecs> framework itself has been further extended by the Contecs:DD Consortium in the development of the draft MPEG-21 RDD standard (ISO 21000-6); separately, the Directory of Party proposals have been further extended by the InterParty project.

Status A completed project

Availability Both the <indecs> Framework and the Directory of Parties specification are available.

Governance The intellectual property in the <indecs> project is jointly controlled by EDItEUR and the International DOI Foundation, on behalf of the original project partners

Contact

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InterParty

Acronym –

Organisation InterParty is a project sponsored by the European Commission IST Programme. It is an accompanying measure to the <indecs> project.

Partners in InterParty are:

From Europe: EDItEUR; British Library; Royal Swedish Library; IFLA; Nielsen Book Data; KOPIOSTO

From the US: Library of Congress; OCLC; International DOI Foundation; CNRI

Reference Code

Scope

Interoperability of identifiers for people and organizations involved in the creation and dissemination of intellectual property.

Media Type

Multimedia

Description

InterParty is developing a demonstration of the functionality of the "Directory of Parties" concept developed by the <indecs> project. Recognising the significance of the unique identification of individuals and organisations for many different applications on the network – from discovery to rights management – InterParty is seeking to show how a relatively simple, federated mechanism can be invoked linking "public identity identifiers" in different namespaces.

"Public identities" are identities that are recognised through the attributes of people and organisations that are in the public domain. This eases (but does not eliminate) data protection and privacy concerns.

A continuing implementation of InterParty is conceived as a membership organisation, a network of organisations that maintain unique identification and metadata records relating to relevant individuals and organisations. There is considerable interest among libraries, commercial bibliographic agencies and rights management organisations about the potential to share disambiguation data, and to establish authoritative relationships between identifiers in

different namespaces as an aid to automated processing. In this context, it is important to stress that InterParty is not proposing the development of a new identifier, simply the interoperation of existing identification systems.

Work is also continuing within the project on the development of a draft business model and Governance plan for the development of the InterParty Network.

The project is devising two different metadata schemes:

- A simple "common metadata" schema which is the mechanism by which each member of the InterParty network will "publish" the information that they hold about "public identities" as an aid to disambiguation
- An InterParty "link record", the mechanism for recording relationships between "public identity identifiers" in different namespaces

Status

A project, which is expected to end in mid-2003.

Availability

None of the results of this project are currently publicly available (largely because it remains a work-in-progress). However, we would anticipate that more information will be available before the end of the year.

Governance

A project managed by its partners. Governance plans for any future implementation of the InterParty Network will be advanced during the course of the project.

International Performers' Database Number

Acronym	IPDN
Organisation	The International Performers Database Association
Reference Code	IPDN
Scope	Identification of performers in membership with performing rights organisations which are in membership of the IPDA.
Media Type	Music recording artists.
Description	The Societies' Council for the Administration of Performers' Rights (SCAPR), which is an association of 16 performers' organisations, has been developing the International Performers Database since 1994. All parties who participate in the database pay an initial fee towards its maintenance. Subsequently each organisation pays a fee determined by how many numbers are applied for in each year. Any performers' organisation wishing to participate in the database applies for membership to the general assembly of the IPD. The International Performer Number is simply a sequential number (i.e. a 'dumb' number). It consists of 8 digits, starting from the value 10,000,000. To allocate an IPN to a performer a society submits data about the performer whose details are already entered on their local database. The performer will subsequently be registered in the IPD and allocated an IPN. The information is submitted in a standard format. Some fields have multiple values because a performer can, for example, have more than one role or pseudonym.

Description	**Mandatory**	**Multiple**	**Note**
IPD number	Yes	No	Generated by the IPD
Society number	Yes	No	Member organisation ID
First name	Yes	No	
Last name	Yes	No	
Sex	Yes	No	
Date of birth	Yes	No	In the format YYYY-MM-DD
Country of residence	Yes	No	
Role	Yes	Yes	Role Codes
Country of birth	No	No	
Instrument type/name	No	Yes	Instrument type codes

Group name/date/info
No
Yes

Pseudonym
No
Yes

Additional info
No
Yes

Local ID
No
No

Status Trade standard. Extent of application unknown.

Availability No information is publicly available.

Governance

Interested Party Information System

Acronym IPI

Organisation SUISA on behalf of CISAC

Reference Code IPI

Scope The IPI system provides a global and unique identification of a natural person or legal entity, active in various creation classes, roles and rights. The IPI system contains all the names of rights owners (natural persons and legal entities) of copyrighted and “public domain” works which have been notified to the

IPI Centre. The data it contains serves the documentation, distribution and accounting work of the CISAC societies linked to the IPI system.

Media Type

Audio and Text

Description

The benefit of contributing to information held on the IPI system is to identify writers and publishers and their society of affiliation for different rights. This is crucially important for writers, who depend on societies using the IPI system to direct royalty payments according to each writer's society of membership. As well as supporting the exchange of information between CISAC societies, the IPI system helps to improve the accuracy of information exchanged worldwide with third parties, user organisations such as radio and TV stations, recording manufacturers, etc.

The IPI system holds a unique identifier assigned to each interested party and supporting metadata including:

- Interested Party name (patronym of interested parties, modification references of interested parties, pseudonyms for natural persons and other references for legal entities
- Nationality (The linking of natural persons to countries)
- Date (parameters for birth date, death date, etc)
- Creation class (a class of products of human imagination and/or endeavour)
- IPI right (combinations of creation classes and rights)
- Membership agreement (agreements between IP's and their IPI administration societies)
- Role (represents the roles of interested parties, or the functions played by interested parties)
- Territory (territory of a membership agreement)

Societies may report their membership information to the IPI centre in the following ways:

- Membership lists and supplements; societies may send a copy of their membership lists and their supplements immediately upon publication.
- On-line mode; using the SUISA on-line application (real time) through a communication link, one or more users per society can query the IPI system and administer their own membership information. Direct input by the society is restricted to data relating to their own members.
- Batch mode; using a proprietary EDI format, societies can upload files to the IPI centre using FTP, or the communication link used for the on-line connection. In case of an on-line connection these batch transactions can be real time processed.

The IPI system supercedes an earlier system called the Compositeurs, Auteurs et Editeurs (CAE) file developed by the Swiss copyright society SUISA. SUISA administers the IPI system and in this capacity has to abide by the Common Information System guidelines and regulations drawn up by CISAC.

The identification of writers by their IPI name number is mandatory as part of the process for issuing an ISWC to a musical work.

Status

Current

Availability

The IPI system is presently available to CISAC societies.

Governance

The International Confederation of Societies of Authors and Composers (CISAC) in Paris is responsible for the IPI system.

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International Standard Audiovisual Number

Acronym	ISAN
Organisation	The International Organization for Standardization
Reference Code	ISO 15706:2002
Scope	The ISAN identifies an audiovisual work throughout its life and is intended for use wherever precise and unique identification of an audiovisual work would be desirable. As an identifier, it may be used for various purposes, such as to assist allocation of royalties among right holders, to track the use of audiovisual works, for information retrieval and for anti-piracy purposes, such as verifying title registrations. The ISAN can also provide a basis for supplementary identification systems when version or product information is required (e.g. for supplementary identification systems when version or product information is required (e.g. for applications such as broadcast automation and automated storage and retrieval systems).
Media Type	Audiovisual
Description	The definition of an audiovisual work according to the standard is “a work consisting of a sequence of related images, with or without accompanying sound, which is intended to be made visible as a moving image through the use of devices, regardless of the medium of initial or subsequent fixation”. An ISAN should apply to the audiovisual work itself. It should not be related to the physical medium of such an audiovisual work, or the identification of that medium. The issuance of an ISAN should in no way be related to any process of

copyright registration, nor should the issuance of an ISAN provide evidence of the ownership of rights in an audiovisual work.

In order to adequately describe the specific audiovisual work to which an ISAN is assigned, registrants will be required to supply the ISAN agency with a specified amount of descriptive information about the audiovisual work being registered as defined in Annex D of the standard.

The ISAN database will initially be established from an existing database of over 500,000 audiovisual works contributed from the AGICOA database. AGICOA will retrospectively assign an ISAN to each of these works. This information will be supplemented by a contribution from CISAC's IDA documentation system on audiovisual works. The combination of these two sources will provide the foundation for the population of the central database administered by the ISAN Foundation. From that point onwards, the registration of new audiovisual works will be done through regional or sectoral ISAN agencies.

Status

Voting on Final Draft International Standard (FDIS) 15706 ended on September 11, 2002. The ISAN standard was approved for publication as International Standard ISO 15706 by 100% of the members who voted.

Availability

Current

Governance

Plans for an industry consortium to establish and manage the Registration Authority for ISO 15706 (to be known as the ISAN Foundation) are being finalized. The Registration Authority, to be known as the International ISAN Agency, will be established by an agreement between AGICOA (Association of International Collective Management of Audiovisual Works), CISAC (International Confederation of

Societies of Authors and Composers), and FIAPF (International Federation of Film Producers Associations). Each of these three international organizations has been integrally involved in the development of the ISAN standard.

International Standard Book Number

Acronym	ISBN
Organisation	ISO TC46/SC9 (Working Group 4)
Reference Code	ISO 2108 (currently under revision as ISO Project 2108; this revision, assuming it is approved, will be the 4th Edition of ISO 2108).
Scope	Identification of monographic "tradable items" in the booktrade supply chain. In the current implementation, the ISBN has no associated metadata; the revision includes an ISBN metadata set.
Media Type	Text (primarily) but also applied to other media in the booktrade supply chain.
Description	The ISBN is one of the oldest and the most widely implemented media identification systems. It is currently under revision because of concerns that it is reaching the limits of its capacity, and will be extended from 10 characters to 14. At the same time, an ISBN registration metadata set will be included in the standard. It appears at this point that metadata registration and maintenance will not be mandatory for all ISBN registration agencies from the outset, although it will be strongly recommended.

The proposed metadata set is relatively simple, and is designed to be ONIX-compliant:

ISBN
Title
ISTC
Contributors
Edition
Language(s) of text
Imprint
Publisher
City or town of publication
Country of publication ISO 3166-1
Publication date

There has been considerable discussion during the course of the ISBN revision about its use to identify both parts (fragments) of monographic publications and different digital formats of the same monographic publication (or fragment). There are deeply entrenched views on this issue; these are unlikely to be entirely reconcilable.

Status

ISO 2108 is almost universally implemented to identify tradable items in the book trade. The revision process is on track for publication of a new international standard early in 2005.

Availability

ISO 2108 is available from ISO. Papers on the ISBN revision are available from TC46/SC9. The most recent Working Draft of the standard was published in August 2002.

Governance

ISO.

The Registration Authority is the International ISBN Agency; significant changes in ISBN Governance will be necessary in the current revision to meet current ISO standards.

Director: Dr. Hartmut Walravens

International ISBN Agency
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Preussischer Kulturbesitz
10772 Berlin, Germany
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Tel (+49) 30 266 2496

International Standard Music Number

Acronym	ISMN
Organisation	The International Organization for Standardization
Reference Code	ISO 10957
Scope	The International Standard Music Number specifies a means of uniquely identifying printed music publications. It standardizes and promotes internationally the use of numbers of printed music publications in order that one edition of a title or one separate component of an edition can be distinguished from all other editions or components by means of a unique international standard music number. To this end, it specifies the construction of an international standard music number and the location of the number on printed music publications. This International Standard is applicable to printed music publications, whether for sale, hire, gratis or for copyright purposes only. The ISMN may also be used to identify material in other media that form an integral part of a music publication (e.g. a sound recording that together with the printed music forms a

composition). The ISMN is not used, however, to identify material in other media that are issued separately [e.g. an independently issued sound or video recording, in which case ISO 3901 (International Standard Recording Code) shall be applied].

Media Type Printed music

Description When the ISBN proved to be a comprehensive rationalization tool for the book trade, the music publishers also advocated a similar standard number for printed music. However, there was a lack of consensus over whether a simple identification number would suffice or a bibliographic code was needed which represented the link between a musical score and its individual parts.

When the International Association of Music Librarians, Archives and Documentation Centres (IAML) - UK Branch - addressed the International ISBN Agency with a proposal for a ten-digit number without bibliographic codes this scheme was published in *ISBN Review* and immediately found wide support. ISO/TC 46 accepted the proposal officially as a work project, and an agreement between European and American publishers and specialists was reached at a meeting of European and North American experts in Ottawa after intensive discussions. The main arguments to support discarding the previous idea of a 13-digit number were the long-standing experience with the ISBN and the option of incorporating a ten-digit number in the 13-digit international bar code system, by simply extending the ISBN system. The ISMN draft was processed by ISO working groups in record time and was officially available as of the end of 1993 when the standard was published in Geneva.

In principle ISMN may be considered a sub-set of ISBN. In order to prevent any confusion between the two ten digit sets of numbers a few differences to the ISBN

system were introduced into the ISMN scheme:

- The first digit is the constant «M»,
- There is no group number on the grounds that music is international,
- The check digit is calculated according to modulus 10.

While both numbers may be integrated in the 13 digit bar code system one should keep in mind that they are usually used without any bar code prefix, e.g. for ordering, bibliographic identification and internal processing purposes. Therefore these differences are necessary in order to avoid confusion.

The ISMN offers the options of a complete rationalization of music publishing and the music trade as well as music libraries.

Status

Current

Availability

ISO 10957 is available for purchase, in separate English and French editions, from the ISO and its national member organizations.

Governance

The central registration authority for the ISMN is:

International ISMN Agency
Staatsbibliothek zu Berlin
Preussischer Kulturbesitz
D-10772 Berlin
Germany
Telephone: +49 (030) 266 2498
E-mail: ismn@sbb.spk-berlin.de

ISO 11179

Acronym	–
Organisation	ISO
Reference Code	ISO 11179
Scope	A standard, for the definition and description of data schemes
Media Type	Not applicable
Description	ISO 11179 is frequently used in the design and specification of schemes, to ensure consistency (in support of interoperability between schemes). It is in six separate parts: ISO/IEC 11179-1:1999 Information technology – Specification and standardization of data elements – Part 1: Framework for the specification and standardization of data elements ISO/IEC 11179-2:2000 Information technology – Specification and standardization of data elements – Part 2: Classification for data elements ISO/IEC 11179-3:1994 Information technology – Specification and standardization of data elements – Part 3: Basic attributes of data elements ISO/IEC 11179-4:1995 Information technology – Specification and standardization of data elements – Part 4: Rules and guidelines for the formulation of data definitions

	ISO/IEC 11179-5:1995 Information technology – Specification and standardization of data elements – Part 5: Naming and identification principles for data elements ISO/IEC 11179-6:1997 Information technology – Specification and standardization of data elements – Part 6: Registration of data elements
Status	Published standard, frequently used as a reference
Availability	Available from ISO
Governance	ISO

International Standard Recording Code

Acronym	ISRC
Organisation	The International Organization for Standardization
Reference Code	ISO 3901:2001
Scope	The International Standard Recording Code (ISRC) provides a means of identifying audio recordings and music video recordings internationally. An ISRC identifies the recording throughout its life and is intended for use by producers of recordings as well as by copyright organizations, broadcasting organizations, media libraries and archives, etc.
Media Type	Audio
Description	The purpose of this International Standard is to define

and promote the use of a standard code for the unique identification of recordings. The International Standard Recording Code (ISRC) may be applied to audio recordings and music video recordings regardless of whether they are in analogue or digital formats. The ISRC shall not be used for the numbering of audio or audio-visual carriers (e.g. compact discs or videocassettes). Audiovisual recordings, other than music video recordings produced in conjunction with an audio recording, are excluded from the scope of this International Standard. Such audiovisual recordings should be assigned an International Standard Audiovisual Number (ISAN) in accordance with ISO 15706.

ISRC provides a common key code to the cataloguing of information about recorded music, providing the means to uniquely identify sound recordings internationally. As ISRCs are issued by record producers the task of identification is being carried out by those who are closest to the point of authority about the origin of sound recordings.

Perhaps the single factor which has most constrained the speed of adoption of ISRC is the lack of a common source of reference for ISRCs and their related metadata. When the standard was first conceived it was expected that each record producer would be responsible for keeping a register of all the ISRCs they had previously issued. Access to accurate and authoritative information about the worldwide repertoire of sound recordings for both the purpose of the record industry and its many customers would have considerable benefits. This situation is now changing with various separate record industry initiatives currently under development on a territorial basis to establish computerised databases of information about sound recordings including ISRCs for identification.

The integration of the metadata associated with a unique identification system for sound recordings will become an important tool to support a range of electronic copyright management transactions. Such a tool can be used to provide an organised and structured approach to monitoring and tracking the use of sound recordings for broadcasting and other contexts. Current rights holder identification related to the unique identification of sound recordings will be critical to support the fast, high volume transaction environment induced by electronic commerce. It will also become an essential tool for exercising anti-piracy measures against the fraudulent use of copyright audio material in a network environment.

Status

Current

Availability

Copies of ISO 3901 are available for purchase, in separate English and French editions, from the ISO and its national member organizations.

Governance

The International Federation of the Phonographic Industry in London provides the Registration Authority for ISO 3901. It coordinates the international implementation of the ISRC system and publishes the ISRC Handbook.

Contact

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International Standard Serial Number

Acronym	ISSN
Organisation	ISO
Reference Code	ISO 3297
Scope	An identification scheme for periodical publications, including electronic serials with a limited metadata set.
Media Type	Text
Description	ISSNs are issued on request for the identification of serial publications, typically (but not exclusively) to their publishers. A very limited metadata set is collected for the description of the serial identified: ISSN Key title Abbreviated key title Title proper Place of publication Publisher CODEN DDC number Status Start date End date Country Frequency ISSN Centre Type Alphabet Language Media
Status	More than a million ISSN numbers have been issued, and the ISSN is very widely implemented.

Availability	ISO 3297 is available from ISO; the standard is not available online.
Governance	ISO; Registration authority: ISSN International Centre, 20 rue Bachaumont 75002 Paris, France Email: issnic@issn.org Tel: +33 (0)1 44 88 22

International Standard Textual Work Code

Acronym	ISTC
Organisation	ISO TC46/SC9 (Working Group 3)
Reference Code	ISO Project 21047 (if approved, will be ISO 21047)
Scope	An identifier for textual abstractions, with mandatory metadata registration.
Media Type	Text
Description	This developing standard is the equivalent of the ISWC, but for textual works rather than musical works. It is seen as having a number of different potential applications in rights management, contracts management and collocation of different editions and versions of the same work (particularly digital formats).

ISTC is designed to be applied to any predominantly textual abstraction. Metadata is essential, since what is being identified is an abstraction and can only be meaningfully identified in terms of its relationship with other entities.

The relatively simple mandatory ISTC registration metadata (which is ONIX compliant) covers the following elements:

- Title information (at least one title)
- Contributor information (at least one contributor, preferably at least one author)
- Work origination information (whether the work is original or derivative and, if derivative, information about the source work)
- Language information
- Registrant information

There are (and will always be) significant complications in deciding when "a work" is the same as "another work" – or when it is different enough to require a different identifier. This is a matter of "functional granularity" (a concept first defined in the <indecs> Framework); essentially, this leaves the question of deciding whether a different ISTC is required as a functional decision for the registrant.

Status

The revised text of CD 21047 is currently being translated into French and processed for distribution and voting as Draft International Standard 21047. It is too early to predict the extent to which ISTC is likely to be implemented.

Availability

The current version of the draft is not publicly accessible.

Governance

ISO. A proposal for the establishment of a Registration Authority has been made by a consortium comprising OCLC, CISAC, Nielsen Book Data and R R Bowker.

Contact

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International Standard Musical Work Code

Acronym	ISWC
Organisation	International Organization for Standardization, Technical Committee 46 Steering Committee 9
Reference Code	ISO 15707:2001
Scope	This International Standard specifies a means of uniquely identifying a musical work. It standardizes and promotes internationally the use of a standard identification code so that musical works can be uniquely distinguished from one another within computer databases and related documentation and for the purposes of collecting societies involved in the administration of rights to such works.
Media Type	Audio
Description	The ISWC was conceived in 1995 by composers, music publishers and music rights societies to identify musical works. It forms a key component of the information architecture of the music rights societies that is being developed as part of their Common Information System plan, coordinated by CISAC. It is likely, and indeed intended, that within the databases of music organisations ISRC numbers will be linked to an ISWC to establish the relationship between sound recordings of musical works. Unlike ISRC, the structure of the number is informal and makes no attempt to designate meaning (such as a date or country code) within it. The ISWC identifier syntax is comprised of a prefix element, followed by a nine-digit number between 000000001 and 999999999 and finally a single check digit. The prefix element of an

ISWC shall be the letter 'T". If necessary, the International ISWC Agency may, at its discretion, designate another alphanumeric character in place of 'T' in order to expand the numbering capacity of the ISWC system and/or to indicate the beginning of a new phase in the assignment of ISWC to musical works. In addition to the ISWC identifier, the standard specifies a minimum set of associated metadata that must be registered with an ISWC. This includes information about the title of a musical work and its creators (composers and authors) who must be identified using their applicable CAE/IPI number.

The ISWC identifies musical works as intangible creations. It is not used to identify manifestations of or objects related to a musical work. Such manifestations and objects are the subject of separate identification systems, such as the International Standard Recording Code (ISRC) for sound recordings, the International Standard Music Number (ISMN) for printed music, and the International Standard Audiovisual Number (ISAN) for audiovisual works.

Status

Current

Availability

Copies of ISO 3901 are available for purchase, in separate English and French editions, from the ISO and its national member organizations.

Governance

The International Confederation of Societies of Authors and Composers (CISAC) in Paris provides the Registration Authority for ISO 15707. It coordinates the international implementation of the ISWC system.

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LOM

Acronym	Learning Object Metadata (LOM)
Organisation	Learning Technology Standards Committee of the IEEE
Reference Code	IEEE 1484.12.1-2002
Scope	LOM aims to specify the syntax and semantics of Learning Object Metadata. Learning Objects are defined as “any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning.” (LOM Website)
Media Type	Multimedia
Description	The LOM standard has many purposes: • To enable learners or instructors to search, evaluate, acquire, and utilize Learning Objects. • To allow the sharing and exchange of Learning Objects across any technology supported learning systems. • To enable the development of learning objects in units that can be combined and decomposed in meaningful ways. • To allow computer agents to automatically and dynamically compose personalized lessons for an individual learner. • To allow Learning Objects to work together within a open distributed learning environment. • To provide education, training and learning organizations, both government, public and private a standardised format that is independent of the content itself. • To provide researchers with standards that support the collection and sharing of comparable data concerning the applicability and effectiveness of Learning Objects.

- To define a standard that is simple and extensible to multiple domains and jurisdictions.
- To support necessary security and authentication for the distribution and use of Learning Objects.

Status	In development
Availability	Copies of the standard can be ordered directly from the IEEE
Governance	Wayne Hodgins Email: wayne.hodgins@autodesk.com Tel: 415-507-5759

Multilingual Access to Subjects

Acronym	MACS
Organisation	MACS Project
Reference Code	MACS
Scope	Multilingual interoperability of subject classifications between library catalogues.
Media Type	Any
Description	A project being undertaken under the auspices of the Conference of European National Librarians (CENL) to explore the provision of multilingual access to library catalogues by *subject*. The partners in the project are: the Swiss National Library (SNL); the Bibliothèque nationale de France (BnF); The British Library (BL); and Die Deutsche Bibliothek (DDB).

MACS has developed an architecture and prototype for mapping equivalent concepts in the three different indexing languages used by the partners in subject classification: SWD (German); RAMEAU (French); and LCSH (English):

> "Topics (headings) from the three lists are analysed to determine whether they are exact or partial matches, of a simple or complex nature. The end result is neither a translation nor a new thesaurus but a mapping of existing and widely used indexing languages".

Status Continuing project

Availability Some documents are publicly available, including the Prototype Architecture and an online prototype.

Governance Project governance only. Contact the MACS helpdesk:

Email: MACS@slb.admin.ch

Machine-Readable Cataloging Record

Acronym MARC

Organisation The MARC Standards Office

Reference Code MARC

Scope The MARC formats are standards for the representation and communication of bibliographic and related information in machine-readable form.

Media Type All

Description

A "cataloguing record" is a bibliographic record, or the information traditionally shown on a library catalogue card. The record includes: 1) a description of the item; 2) main entry and added entries; 3) subject headings; and 4) the classification or call number. (MARC records often contain a great of additional information.)

1) Description: includes the title, statement of responsibility, edition, material specific details, publication information, physical description, series, notes, and standard numbers.

2) Main entry and added entries: define the "access points" to the record, and the form that these access points should take. Access points are the points in the library catalogue where patrons should be able to look up the item.

3) Subject headings: the subjects under which the item will be listed, selected from a standardised list of subjects.

4) Call number: an indexing system to ensure that items on the same subject are placed in the same location in the library.

Status

MARC has been universally implemented throughout the library community worldwide. There are several variants of MARC. MARC 21 is the version that is used within North America, and the British Library has recently announced a decision to migrate from UKMARC, the national cataloguing standard in the UK, to MARC 21

Considerable efforts are being made to migrate bibliographic cataloguing in the direction of a more “object-oriented” approach, exemplified by FRBR and FRANAR.

Availability The complete MARC 21 concise formats, along with all of the code lists and specifications are available online.

Governance The Library of Congress and the National Library of Canada serve as the maintenance agency for the MARC 21 formats for bibliographic, authority, holdings, classification, and community information data for the MARC 21 user community.

Information Technology – Multimedia Framework (MPEG 21) Part1

Acronym MPEG-21 Part 1

Organisation Motion Picture Expert Group

Reference Code ISO/IEC TR 21000-1:2001(E)

Scope A Technical Report that:

- Sets out a vision for a multimedia framework to enable transparent and augmented use of multimedia resources across a wide range of networks and devices to meet the needs of all Users (A User is any entity that interacts in the MPEG-21 environment or makes use of a Digital Item)
- Facilitates the integration of components and standards in order to harmonise technologies for the creation, management, manipulation, transport, distribution and consumption of content
- Provides a strategy for achieving a multimedia framework by the development of specifications and standards based on well-defined functional requirements through collaboration with other bodies.

Media Type Multimedia

Description	Today, many elements exist to build an infrastructure for the delivery and consumption of multimedia content. There is, however, no 'big picture' to describe how these elements, either in existence or under development, relate to each other. The aim for MPEG-21 is to describe how these various elements fit together. Where gaps exist, MPEG-21 will recommend which new standards are required. ISO/IEC JTC 1/SC 29/WG 11 (MPEG) will then develop new standards as appropriate while other relevant standards may be developed by other bodies. These specifications will be integrated into the multimedia framework through collaboration between MPEG and these bodies. The result is an open framework for multimedia delivery and consumption for use by all the players in the delivery and consumption chain. This open framework thus provides content creators and service providers with equal opportunities in the MPEG-21 enabled open market. This will also be to the benefit of the content consumer providing them access to a large variety of content in an interoperable manner.
Status	Completed
Availability	The MPEG-21 Technical Report can be downloaded from http://isotc.iso.ch/livelink/livelink/fetch/2000/2489/Ittf_Home/
Governance	The **ITTF** is responsible for the day-to-day planning and coordination of the technical work of JTC 1 relative to IEC and ISO, and supervises the application of the ISO and IEC Statutes and rules of Procedure.

Information Technology – Multimedia Framework (MPEG 21) Part2

Acronym	MPEG-21 Part 2
Organisation	Motion Picture Expert Group
Reference Code	ISO/IEC 21000-2 FDIS
Scope	Digital Item Declaration is designed to provide a highly flexible structure, in the form of a model, for organising content and its associated description (a Digital Item is a structured digital object with a standard representation, identification and metadata within the MPEG-21 framework). As a Digital Item is the fundamental unit of distribution and transaction within the framework, the Digital Item Declaration specification will ensure that Digital Items can be communicated and expressed unambiguously so that they can be managed and processed by networks and terminals in a predictable manner.
Media Type	Multimedia
Description	The purpose of this specification is to describe a set of abstract terms and concepts to form a useful model for defining Digital Items. Within this model, a Digital Item is the digital representation of "a work", and as such, it is the thing that is acted upon (managed, described, exchanged, collected, etc.) within the model. The goal of this model is to be as flexible and general as possible, while providing for the "hooks" that enable higher-level functionality. This, in turn, will allow the model to serve as a key foundation in the building of higher-level models in other MPEG-21 elements (such as Digital Item Identification or Intellectual Property Management and Protection). This model specifically

does not define a language in and of itself. Instead, the model helps to provide a common set of abstract concepts and terms that can be used to define such a scheme, or to perform mappings between existing schemes capable of Digital Item Declaration, for comparison purposes. The DID technology is described in three normative sections:

Model
The Digital Item Declaration Model describes a set of abstract terms and concepts to form a useful model for defining Digital Items.

Representation
This provides a normative description of the syntax and semantics of each of the Digital Item Declaration elements, as represented in XML. This section also contains some non-normative examples for illustrative purposes.

Schema
This provides a normative XML schema comprising the entire grammar of the Digital Item Declaration representation in XML. A binary version is expected to be developed shortly.

Status In development

Availability MPEG standards can be purchased directly from ISO (sales@iso.ch) or from a National Standards Body.

Governance The **ITTF** is responsible for the day-to-day planning and coordination of the technical work of JTC 1 relative to IEC and ISO, and supervises the application of the ISO and IEC Statutes and rules of Procedure.

Information Technology – Multimedia Framework (MPEG 21) Part 3

Acronym	MPEG-21 Part 3
Organisation	Motion Picture Expert Group
Reference Code	ISO/IEC 21000-3 FCD
Scope	Digital Items are the basic unit of transaction in the MPEG-21 framework. Many MPEG-21 applications have the requirement to uniquely identify Digital Items. There is also a requirement to identify the description schemes that are used to describe multimedia content encapsulated within a Digital Item.
Media Type	Multimedia
Description	Digital Item Identification (DII), specifies: • How to uniquely identify Digital Items (and parts thereof); • How to uniquely identify Description Schemes; • The relationship between Digital Items (and parts thereof) and existing identification systems. Annex B of the standard contains a list of relevant identification systems. This is not an exhaustive list and is subject to change over time; • The relationship between Digital Items (and parts thereof) and relevant description schemes. Annex B contains a list of relevant description schemes. This is not an exhaustive list and is subject to change over time. ISO/IEC 21000-3 specification does not specify: • New identification systems for the content elements for which identification and description schemes already exist and are in use (e.g.,

ISO/IEC 21000-3 does not attempt to replace the ISRC (as defined in ISO 3901) for sound recordings)

- Normative description schemes for describing content

Identifiers covered by this specification can be associated with Digital Items by including them in a specific place in the Digital Item Declaration. This place is the STATEMENT element. Examples of likely STATEMENTs include descriptive, control, revision tracking and/or identifying information.

Digital Items and their parts within the MPEG-21 Framework are identified by encapsulating Uniform Resource Identifiers (URIs) into the Identification DS.

If the URI is of the form urn:mpeg:mpeg21:dii:sss:nnn sss denotes the identification system and nnn denotes a unique identifier within that identification system. Further identification systems will be added through the process of a Registration Authority for sss.

In some cases, it may be necessary to use an automated resolution system to retrieve the Digital Item (or parts thereof) or information related to a Digital Item from a server (e.g. in the case of an interactive on-line content delivery system).

XML-based Description Schemes to be used within MPEG-21 will be identified through their XML namespace identifier. To include non-XML-based descriptors into MPEG-21, the description scheme will need to be identified through a unique namespace identifier (i.e. a URI).

Status In development

Availability MPEG standards can be purchased directly from ISO (sales@iso.ch) or from a National Standards

Governance	The **ITTF** is responsible for the day-to-day planning and coordination of the technical work of JTC 1 relative to IEC and ISO, and supervises the application of the ISO and IEC Statutes and rules of Procedure. MPEG-21 Part 3 will also require a Registration Authority to manage the registration of identification systems and description schemes. WG11 document number w4941 (July 2002) sets out the requirements for a registration authority and asks parties who are interested in becoming a registration authority for ISO/IEC 21000-3 to contact: Niels Rump Project Editor ISO/IEC 21000-3 Rightscom Ltd, 10 Leake Street London SE1 7NN, United Kingdom Niels.rump@rightcom.com

MPEG-21000, Part 5, Rights Expression Language

Acronym	REL
Organisation	ISO/IEC JTC1 SC29 WG11
Reference Code	MPEG 21000/5 (Committee Draft)
Scope	The MPEG Rights Expression language is a machine-interpretable language for issuing rights to Users to act upon Digital Items, Components, Fragments, and Containers.
Media Type	Multimedia

Description

The MPEG Rights Expression Language specification describes the syntax and semantics of the language. The REL adopts a simple and extensible core data model for many of its key concepts and elements. The data model for a rights expression consists of four basic entities and the relationship among these entities. This basic relationship is defined by the REL assertion "grant". Structurally, an MPEG REL grant consists of the following:

- The principal to whom the grant is issued
- The right that the grant specifies
- The resource to which the right in the grant applies
- The condition that must be met before the right can be exercised

The Core data model will be enhanced by a number of so-called "Extensions" which will add both functionality and applicability. For instance, the Standard Extension greatly enhances the range of Conditions that can be applied to grants, thus providing extra functionality. And of crucial importance to rights owners is the Content Extension, which defines a specific set of rights, such as Play and Print, which are applicable to content. It is anticipated that the REL will quickly have many Extensions of this type. For while MPEG has defined a basic Content Extension it is quite likely that distinctive content verticals will require rights not defined in the Standard.

Status

Committee Draft July 2002. International Standard anticipated Autumn 2003.

Availability

Nearly all MPEG documents are publicly available up to and including the Committee Draft. From Final Committee Draft onwards, the documents are removed from publication and only made public again when the International Standard is public. International Standards may be purchased from ISO.

Governance	The governance of the REL is as yet not defined. However, it is anticipated that governance of the Core of the language will be the responsibility of a single, international standards organisation.
Contact	Yukiko Ogura Secretary, ISO/IEC JTC 1/SC 29 Secretariat IPSJ/ITSCJ Room 308-3 Kikai-Shinko-Kaikan Bldg 3-5-8 Shiba-koen Minato-ku Tokyo 105-0011 Japan Tel: +81-3-3431-2808 Fax: +81-3-3431-6493 E-mail: ogura@itscj.ipsj.or.jp

MPEG-21000, Part 6 (Rights Data Dictionary)

Acronym	RDD
Organisation	ISO/IEC JTC1/SC29/WG11 (MPEG)
Reference Code	MPEG-21000/6 (Committee Draft)
Scope	The Rights Data Dictionary specification comprises a set of clear, consistent, structured, integrated and uniquely identified Terms to support the MPEG-21 Rights Expression Language (ISO/IEC 21000-5).
Media Type	Multimedia
Description	The Rights Data Dictionary (RDD) comprises a set of clear, consistent, structured, integrated and uniquely identified Terms to support the MPEG-21 Rights Expression Language (ISO/IEC 21000-5).The MPEG-21 Standard specifies the structure and core of this

Dictionary, and specifies how further Terms may be defined under the governance of a Registration Authority.

Taken together, these specifications and the Dictionary and Database together make up the RDD System. Use of the RDD System will facilitate the accurate exchange and processing of information between interested parties involved in the administration of rights in, and use of, Digital Items, and in particular it is intended to support the MPEG-21 REL.

As well as providing definitions of Terms for use in the REL, the RDD System is designed to support the mapping and transformation of metadata from the terminology of one namespace (or Authority) into that of another namespace (or Authority) in an automated or partially-automated way, with the minimum ambiguity or loss of semantic integrity.

The Dictionary is a prescriptive Dictionary, in the sense that it defines a single meaning for a Term represented by a particular RDD name (or Headword), but it is also inclusive in that it recognizes the prescription of other Headwords and definitions by other Authorities and incorporates them through mappings. The RDD also supports the circumstance that the same name may have different meanings under different Authorities. The RDD has audit provisions so that additions, amendments and deletions to Terms and their attributes can be tracked.
RDD recognises legal definitions as and only as Terms from other Authorities that can be mapped into the RDD. Therefore Terms that are directly authorized by RDD neither define nor prescribe intellectual property rights or other legal entities.

Status

Committee Draft published July 2002. International Standard anticipated Autumn 2003.

Availability	Nearly all MPEG documents are publicly available up to and including the Committee Draft. From Final Committee Draft onwards, the documents are removed from publication and only made public again when the International Standard is public. The texts of International Standards may be purchased from ISO.
Governance	It is anticipated that the RDD will require a Registration Authority, requirements for which are presented in the text of the MPEG-21 standard.
Contact	Yukiko Ogura Secretary, ISO/IEC JTC 1/SC 29 Secretariat IPSJ/ITSCJ Room 308-3 Kikai-Shinko-Kaikan Bldg 3-5-8 Shiba-koen Minato-ku Tokyo 105-0011 Japan Tel: +81-3-3431-2808 Fax: +81-3-3431-6493 E-mail: ogura@itscj.ipsj.or.jp

Multimedia Content Description Interface (MPEG-7)

Acronym	MPEG-7
Organisation	Motion Picture Expert Group
Reference Code	ISO/IEC 15938
Scope	MPEG-7, formally named “Multimedia Content Description Interface”, is a standard for describing the multimedia content data that supports some degree of interpretation of the information’s meaning, which can be passed onto, or accessed by, a device or a computer code. MPEG-7 is not aimed at any one

application in particular; rather, the elements that MPEG-7 standardizes support as broad a range of applications as possible.

Media Type Multimedia

Description MPEG-7 addresses many different applications in many different environments, which means that it needs to provide a flexible and extensible framework for describing audiovisual data. Therefore, MPEG-7 does not define a monolithic system for content description but rather a set of methods and tools for the different viewpoints of the description of audiovisual content. Having this in mind, MPEG-7 is designed to take into account all the viewpoints under consideration by other leading standards such as, among others, TV Anytime, Dublin Core, SMPTE Metadata Dictionary, and EBU P/Meta. These standardisation activities are focused to more specific applications or application domains, whilst MPEG-7 has been developed as generic as possible. MPEG-7 uses also XML as the language of choice for the textual representation of content description, as XML Schema has been the base for the DDL (Description Definition Language) that is used for the syntactic definition of MPEG-7 Description Tools and for allowing extensibility of Description Tools (either new MPEG-7 ones or application specific). Considering the popularity of XML, usage of it will facilitate interoperability with other metadata standards in the future.

The main elements of the MPEG-7's standard are:

- Description Tools: Descriptors (D), that define the syntax and the semantics of each feature (metadata element); and Description Schemes (DS), that specify the structure and semantics of the relationships between their components, that may be both Descriptors and Description Schemes;
- A Description Definition Language (DDL) to define the syntax of the MPEG-7 Description Tools and to allow the creation of new

Description Schemes and, possibly, Descriptors and to allow the extension and modification of existing Description Schemes;

- System tools, to support binary coded representation for efficient storage and transmission, transmission mechanisms (both for textual and binary formats), multiplexing of descriptions, synchronization of descriptions with content, management and protection of intellectual property in MPEG-7 descriptions, etc.

The MPEG-7 Standard consists of the following parts:

- MPEG-7 Systems - the binary format for encoding MPEG-7 descriptions and the terminal architecture.
- MPEG-7 Description Definition Language - the language for defining the syntax of the MPEG-7 Description Tools and for defining new Description Schemes.
- MPEG-7 Visual – the Description Tools dealing with (only) Visual descriptions.
- MPEG-7 Audio – the Description Tools dealing with (only) Audio descriptions.
- MPEG-7 Multimedia Description Schemes - the Description Tools dealing with generic features and multimedia descriptions.
- MPEG-7 Reference Software - a software implementation of relevant parts of the MPEG-7 Standard with normative status.
- MPEG-7 Conformance Testing - guidelines and procedures for testing conformance of MPEG-7 implementations

MPEG-7 Extraction and use of descriptions – informative material (in the form of a Technical Report) about the extraction and use of some of the Description Tools (under development).

Status Current

Availability MPEG standards can be purchased directly from ISO (sales@iso.ch) or from a National Standards Body.

Governance	The **ITTF** is responsible for the day-to-day planning and coordination of the technical work of JTC 1 relative to IEC and ISO, and supervises the application of the ISO and IEC Statutes and rules of Procedure.

News ML

Acronym	News ML
Organisation	International Press Telecommunications Council (IPTC)
Reference Code	NewsML version 1.1
Scope	News ML is XML-based standard to represent and manage news throughout its lifecycle such as production, interchange, and consumer use. NewsML is being developed by the International Press Telecommunications Council (IPTC), a consortium of news providers. Since it deals only with packaging and metadata, NewsML is a complementary metadata format to news content formats such as NITF and to syndication protocols such as ICE. Several news providers, including Reuters and Agence France Presse, either use or have plans to use NewsML for their news feeds.
Media Type	Multimedia
Description	The standard has been designed to provide several sectors relating to online news content and is organized as shown below: **Envelope Data** Uses of a document envelope such as: Envelope Date/Time=20010201T120000

Identification
Uses URNs for identifying news items, according to the structure below:
NewsIdentifier=
urn:newsml:iptc.org:20010201:WebHome:3

News Management

- WebContent(Examples of ContentItem types.)
- FirstCreated=20010201T120000
- ThisRevisionCreated=20010203T140000

Usable (The NewsItem and its content may be published without restriction.)

News Lines
The NewsLines are organized as:
HeadLine, SubHeadLine, ByLine, DateLine, CreditLine, CopyrightLine, RightsLine, SeriesLine, SlugLine NewsML, KeywordLine.

Several types of Metadata are associated with content:

Administrative Metadata
Contains administrative information such as:
FileName, SystemIdentifier, Provider, Creator, Source, Contributor, Country (Using ISO Country Codes)

Rights Metadata
Contains Rights related Metadata:
Copyright, UsageRights, UsageType, Geography, RightsHolder, Limitations, StartDate, EndDate

Descriptive Metadata
Language, Feature, SubjectCode, Subject, SubjectMatter, SubjectDetail, General

Publishing Metadata
PeriodicalName, MediaFormat, MediaFormat

Status Current

Availability Available via NewsML

Governance	IPTC Royal Albert House Sheet Street Windsor SL4 1BE Berkshire, United Kingdom Tel: +44 1753 705051 Fax: +44 1753 831541 Contact David Allen, Managing Director Email: m_director_iptc@iptc.org

NITF

Acronym	News Industry Text Format (NITF)
Organisation	The specification is maintained by the International Press Telecommunications Council (IPTC)
Reference Code	NITF 3.1
Scope	NITF is a structural framework for representating news items. NITF is the successor of the ANPA 1312 and IPTC 7901 standards. These two formats were standardized in 1979 and aimed to provide a common platform for news services and newspapers to share content. NITF is considered to be the most commonly used XML vocabulary by news publishers worldwide.
Media Type	Text

Description	NITF has been designed to support the identification and description of news characteristics. The standard includes features such as: who owns the copyright of an item, who may republish it, and who it's about. It also includes information on what subjects, organizations, and events it covers, when it was reported, issued, and revised. It may also include information such as why is an item newsworthy, based on the editor's analysis of the metadata. NITF is also using a W3C standard mechanism known as XSLT transformer to convert XML data into standard HTML output. An example is provided here: http://www.nitf.org/site/nitf-documentation/examples/index.html
Status	Current
Availability	The specification 3.1 is available for download on: http://www.nitf.org/site/nitf-documentation.zip
Governance	IPTC Royal Albert House Sheet Street Windsor SL4 1BE Berkshire, United Kingdom Tel: +44 1753 705051 Fax: +44 1753 831541 Contact David Allen, Managing Director Email: m_director_iptc@iptc.org

ODRL

Acronym	Open Digital Rights Language (ODRL)
Organisation	IPR Systems Pty Ltd
Reference Code	ODRL Version 1.1
Scope	The Open Digital Rights Language (ODRL) is a proposed language Digital Rights Management (DRM) language. The ODRL has been developed by IPR Systems as a language describing rights over digital content and is being standardised via a number of interested bodies. The ODRL aims to provide flexible and interoperable mechanisms to support the use of digital resources in the publication, distribution and consumption of digital contant such as electronic publications, digital images, audio and movies, learning objects, computer software and other creations in digital form. ODRL is available as an open source license.
Media Type	Multimedia
Description	ODRL is a DRM language and vocabulary for expressing the various terms and conditions of digital assets. ODRL covers a core set of semantics such as the rights holders and the expression of permissible usages for asset manifestations. Rights can be specified for a specific asset manifestation (format) or could be applied to a range of manifestations of the asset.

ODRL is based on an extensible model for rights expressions, which involves a number of core entities and their relationships.

The ODRL contains three core entities:

- Assets
  Include any physical or digital content
- Rights
  Include Permissions which can contain Constraints, Requirements, and Conditions
- Parties
  Defines parties such as end users and Rights Holders

Status

In Progress

Availability

A schema of the ODRL rights expression language can be found on ODRL.net here:
http://www.odrl.net/1.1/ODRL-DD-11-DOC/index.html

The ODRL data dictionary schema can be found here:
http://www.odrl.net/1.1/ODRL-DD-11-DOC/index.html

Governance

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Open eBook Forum Publication Structure

Acronym	OeBPS
Organisation	Open eBook Forum (Consortial Standards organisation, largely US based)
Reference Code	OeBPS 1.2
Scope	The OeB Publication Structure specification provides an XML based intermediate file format for digital publications, from which other proprietary file formats, such at Microsoft Reader and Mobipocket, can be derived. The goal of the specification is to define a standard means of content description for use by purveyors of electronic books (publishers, agents, authors et al.) allowing such content to be provided to multiple Reading Systems.
Media Type	Digital publications
Description	In order for electronic-book technology to achieve widespread success in the marketplace, reading systems must have convenient access to a large number and variety of titles. The Open eBook Publication Structure (OEBPS) is a specification for representing the content of electronic books. Specifically: The specification is intended to give content providers (e.g. publishers, authors, and others who have content to be displayed) and tool providers minimal and common guidelines which ensure fidelity, accuracy, accessibility, and adequate presentation of electronic content over various electronic book platforms.

The goal of the specification is to define a standard means of content description for use by purveyors of electronic books (publishers, agents, authors et al.) allowing such content to be provided to multiple Reading Systems.

OEBPS is based on XML because of its generality and simplicity, and because XML documents are likely to adapt well to future technologies and uses. XML also provides well-defined rules for the syntax of documents, which decreases the cost to implementers and reduces incompatibility across systems. Further, XML is extensible: it is not tied to any particular set of element types, it supports internationalization, and it encourages document markup that can represent a document's internal parts more directly, making them amenable to automated formatting and other types of computer processing.

The Basic OEBPS Document vocabulary is based on XHTML 1.1. This approach allows content providers to exploit current XHTML content, tools, and expertise.

Status

Current

Availability

OeBPS 1.2 is available from the OeBF web site. There is no charge.

Governance

OeBPS 1.2 is balloted and mandated by the members of the OeBF. Development of the standard is the responsibility of the OeBF Publication Structure Working Group.

Contact

Nick Bogaty
Executive Director
Open eBook Forum
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www.openebook.org

ONIX

Acronym	Online Information Exchange (ONIX)
Organisation	EDItEUR
Reference Code	ONIX Release v2.0
Scope	ONIX is the international standard for representing and communicating book industry rich product information in electronic form between business partners in the supply chain. It now includes applications for serials and video as well as books.
Media Type	Text
Description	ONIX was developed initially by the book and serials industries in the USA and UK and is now being implemented by other countries as an international standard for exchanging information about products based upon published material. The application of ONIX is typified by, but by no means restricted to, the supply of information on new, revised and re-issued publications by publishers to their supply chain partners. ONIX consists of a content specification, including data elements, tags and code lists, and an XML DTD. It was influenced by the work of the EU <indecs> project and the IFLA Functional Requirements for Bibliographic Records. The development and application of ONIX is controlled by EDItEUR, an international organisation consisting of publishers, booksellers, bibliographic agents, wholesalers, libraries and other partners in the publishing supply chain.

Release 2.0 of ONIX was issued in July 2001 and is currently defined by an XML DTD and associated guidance documentation, all of which are available from the EDItEUR website.

Status

Current. Widely implemented by major publishers in US and UK. Implementation in France and Germany in 2003.

Availability

The complete package of material for ONIX Release v2.0 is available for download from the EDItEUR web site http://www.editeur.org/

Governance

ONIX standards are maintained by EDItEUR under the direction of the ONIX international Steering Committee.

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US implementation and input to the international steering group are co-ordinated through a committee of the Book Industry Study Group (BISG). UK implementation and input to the international steering group are co-ordinated through the BIC Product Metadata Committee.

Open URL

Acronym	Open URL
Organisation	National Information Standards Organization (NISO), Committee AX
Reference Code	OpenURL
Scope	OpenURL is a proposed standard, which aims to create interoperability between an information resource and a service component that offers localised services in an open linking environment.
Media Type	Text
Description	The NISO Standards Committee AX has been appointed to develop the syntax and started standardisation efforts in March of 2001. It is using the The Committee proposes that the standard should include: - A syntax for packaging metadata and identifiers describing information objects - A syntax for pointing to a user-specific resolver that can accept this packaged data. This should be combined with user information, and be resolved into actual links. The syntax of an OpenURL message is described as follow: OpenURL ::= BASE-URL '?' QUERY QUERY ::= DESCRIPTION ('&&' DESCRIPTION) - BASE-URL describes the URL of a service-component that can take an OpenURL as input. - DESCRIPTION describes the origin of the transported metadata-object and metadata-object itself.

Status	In Development
Availability	Working documents available on: http://library.caltech.edu/openurl/Working_Documents.htm
Governance	National Information Standards Organization 4733 Bethesda Avenue, Suite 300 Bethesda, MD 20814 Phone: +1 (301) 654-2512 Fax: +1 (301) 654-1721 Eric F. Van de Velde, Ph.D. Chair NISO Committee AX Director of Library Information Technology California Institute of Technology evdv@library.caltech.edu

P/META

Acronym	P/META
Organisation	European Broadcasting Union (EBU)
Reference Code	Metadata Exchange Standard, V1.0
Scope	P/META is a metadata standard beign developed for professional media organisations. It is aiming to build a datamodel for the exchange of programme material between various European broadcasters; and also plans to design a standard approach to structuring information related to media items or objects and to their exchange between process stages and business entities.

Media Type Audiovisual

Description

P/META focuses on the development of metadata information standards with an associated architecture as well as unique identifiers in broadcast use.

P/META is able to support defined metadata for identification, description, discovery and use of content in B2B transactions. It also focuses on the exchange of metadata. P/META can be implemented on any appropriate platform, using XML or KLV. It is expected that P/META will be implemented using both XML and KLV.

P/META is enlarging its scope of activities to include data required by the consumer domain from the professional domain.

The group's activities includes three "work packages" (WP):

- WP 1 - Metadata information standards for media exchange between business parties
- WP 2 - Unique identifiers in broadcast use
- WP 3 - Metadata and essence technical exchange formats and protocols between systems, including demonstrators

According to the P/META model, the information structure can be either associated with the media in a separate data repository or wrapped with it as electronic metadata.

The project is being built on the initial work carried out by SMPTE to define a Metadata Dictionary and a Unique Material Identifiers and on work performed by members of the P/META group such as the BBC's Standard Media Exchange Framework (SMEF).

	P/META focuses on developing media exchange interfaces between the following parties: • Producer-to-Broadcaster • Broadcaster-to-Broadcaster • Broadcaster-to-Archives • Archives-to-Archives • Broadcaster-to-Distributor
Status	In Development
Availability	More information is available through the EBU
Governance	European Broadcasting Union (EBU) Case postale 45 Ancienne Route 17A CH-1218 Grand-Saconnex Geneva Switzerland techreview@ebu.ch

PRISM

Acronym	PRISM
Organisation	A working group of the IDEAlliance (International Digital Enterprise Alliance)
Reference Code	PRISM v 1.2 (e) Specification
Scope	Publishing Requirements for Industry Standard Metadata (PRISM) is an extensible XML metadata standard for syndicating, aggregating, post-processing and multi-purposing content from magazines, news, catalogues, books and mainstream journals.

PRISM aims to develop a standard XML metadata vocabulary, which is broadly adoptable and is well supported by various publishing software tools.

Media Type

Text, Images, Video

Description

PRISM uses the XML format for its descriptions. PRISM documents use the XML Namespace mechanism This allows elements and attributes from different namespaces to be combined. PRISM descriptions are also compliant with the RDF constraints on the XML syntax. Therefore, the expressions begin with the rdf:RDF element.

One of PRISM's requirements is that a resource must have a unique identifier, which is represented by the dc:identifier element. To describe content, PRISM uses the rdf:Description element.

Other PRISM elements are:

- dc:title The name by which the resource is known.
- dc:creator The primary creator(s) of the intellectual content of the resource.
- dc:contributor Additional contributors to the creation or publication of the resource.
- dc:language The principal language of the resource.
- dc:format The file format of the resource. Values from the Internet Media Types are recommended.
- dc:type The style of presentation of the resource's content, such as image vs. sidebar.
- prism:category The genre of the resource, such as election results vs. biographies.

PRISM extensively uses controlled vocabularies.

Status

In Development

Availability

The PRISM v 1.2 Specification can be downloaded on the PRISM website:
http://www.prismstandard.org/techdev/PRISM%20Spec-1.2e%2009.04.2002.pdf

Governance	IDEAlliance 100 Daingerfield Road Alexandria VA 22314 Tel: 703.837.1078 prism@idealliance.org

RDF

Acronym	RDF
Organisation	Word Wide Web Consortium (W3C)
Reference Code	Ressource Description Framework
Scope	The Resource Description Framework (RDF) regroups a wide range of applications from library catalogues and worldwide directories to syndication and aggregation of news, software, and content to personal collections of music, photos, and events and uses the XML language as an interchange syntax. RDF is part of the W3C's Semantic Web activity and has been designed to support the Semantic Web "in much the same way that HTML is the language that helped initiate the original Web."
Media Type	Multimedia
Description	RDF intendeds to represent information in the World Wide Web. More specifically, RDF represents metadata about Web resources.

	Examples are: the title, author, and modification date of a Web page, the copyright and syndication information about a Web page. The specification depends on URI and XML technologies.
Status	Current
Availability	The RDF Model and Syntax specification can be downloaded on the W3C website: http://www.w3.org/TR/1999/REC-rdf-syntax-19990222/
Governance	W3C UK and Ireland Office Michael Wilson/Brian Matthews CLRC (Rutherford Appleton Laboratory) Chilton Didcot OXON OX11 0QX Tel: +44 (0) 1235 44 6619 Email: w3c-ral@rl.ac.uk Dan Brickley RDF Interest Group Chair and RDF Core Working Group co-chair Email: danbri@w3.org

SCORM

Acronym	SCORM
Organisation	Advanced Distributed Learning (ADL)
Reference Code	Sharable Content Object Reference Model (SCORM) Version 1.2

Scope	The Shareable Content Object Reference Model Initiative (SCORM) is a set od XML based specifications which has been developed to support learning technologies. SCORM aims to provide provide an integrated suite of e-learning capabilities, which allow the interoperability, accessibility and reusability of Web-based learning content.
Media Type	Multimedia (Restricted to the education sector)
Description	SCORM consists of three main elements: - an Extensible Markup Language (XML)-based specification to represent course structures - a set of specifications relating to the run-time environment, including an API and content to Learning Management System (LMS) data model - a content launch specification and a specification for the creation of meta-data records for courses, content, and raw media elements
Status	Current
Availability	SCORM Version 1.2 can be downloaded on the ADL website: http://www.adlnet.org/index.cfm?fuseaction=scormdown&cfid=329006&cftoken=69446278#1
Governance	

Serial Item and Contribution Identifier

Acronym	SICI
Organisation	NISO
Reference Code	NISO Z39/56
Scope	An identifier devised for the identification of individual serial items (issues) and contributions (articles), based on the ISSN.
Media Type	Text
Description	Conceived as an "intelligent identifier" that would allow anyone in the supply chain to create an identifier that would be recognisable by anyone else in the supply chain. Its original purpose has been somewhat overtaken by events.
Status	In use primarily to identify *issues* of printed journals; has been largely superseded by the DOI as a contribution identifier, particularly for digital use.
Availability	Available from NISO at: http://www.niso.org/standards/standard_detail.cfm?std_id=530
Governance	NISO

SMPTE UMID

Acronym	UMID
Organisation	SMPTE
Reference Code	SMPTE Standard 330M-2000 for Television
Scope	The unique material identifier (UMID) has been developed by the Society of Motion Picture Television Engineers (SMPTE). It has recently become a standard for the identification of audiovisual material.
Media Type	Audiovisual
Description	The main function of UMID is to provide the audiovisual industry with a method of distinguishing all copies in a unique way. UMID acts as a link between the content, such as video, audio, graphics and stills and the metadata. It is also able to generate a timecode and date for the synchronization of data. Additionally, UMID can also be utilized to track copyright information. UMID identifiers are created automatically by a system. There are 2 sorts of UMID: - Basic UMID: contains the minimal components necessary for the unique identification (the essential metadata) - Extended UMID: provides information on the creation time and date, recording location and the name of the organization and the maker (the signature metadata). The basic and extended UMID have a defined length of 64 bytes combines.

Status	Current
Availability	Information on the UMID standard can be obtained through SMPTE
Governance	Society of Motion Picture and Television Engineers (SMPTE) 595 West Hartsdale Avenue White Plains, New York 10607 USA Tel: (914) 761-1100 Fax: (914) 761-3115 STANDARDS COMMITTEE (ST13) Peter D. Symes, Grass Valley Group Tel.: 530-478-3437 Fax: 530-478-3014 peter.d.symes@grassvalleygroup.com

SMPTE Metadata Dictionary

Acronym	SMPTE Metadata Dictionary
Organisation	Society of Moving Pictures and Television Engineers (SMPTE)
Reference Code	SMPTE Metadata Dictionary
Scope	The SMPTE Metadata Dictionary acts as dictionary of so-called 'audiovisual descriptors' for the production environment. The Dictionary covers that covers the whole audiovisual production process: pre-production, post production, acquisition, distribution, broadcasting, storage and archiving of digital audiovisual material.
Media Type	Audiovisual

Description

SMPTE Metadata Dictionary is based on the work of the EBU-SMPTE Taskforce for Harmonized Standards for the Exchange of Programme Material as Bitstreams.

The Dictionary has been designed to allow flexibility in capturing metadata and exchanging it between several applications using a standardized hierachy of Universal Labels, which are grouped in classes.

Metadata Classes are defined as a collection of metadata elements with common characteristics or attributes.

The dictionary also includes Additional Classes for user-defined metadata. Additionally, The Dictionary contains information on the required format of metadata values and the allowable range of values.

The Dictionary consists of two elements: Structure (SMPTE XXXX) and Content (RPXXXX) which must be used together.

Status

Implemented within the Audiovisual community

Availability

The SMPTE Metadata dictionary is available via SMTPE

Governance

Society of Motion Picture and Television Engineers (SMPTE)
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White Plains, New York 10607 USA
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STANDARDS COMMITTEE (ST13)
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peter.d.symes@grassvalleygroup.com

TMDSI Data Dictionary

Acronym	TMDSI
Organisation	The Dictionary has been developed by the National Information Standards Organization (NISO) and AIIM International
Reference Code	NISO Z39.87-2002/ AIIM 20-2002
Scope	The TMDSI data dictionary aims to define a standard set of metadata elements for digital images, which will allow users to develop, exchange, and interpret digital image files. One of the priorities in the development of this dictionary was to facilitate interoperability between systems, services, and software. The TMDSI data dictionary provides a comprehensive list of technical data elements related to the management of digital still images.
Media Type	Still Images
Description	The TMDSI data dictionary is based on NISO DIG35 metadata standard. It follows the idea that metadata must be: Interchangeable, Extensible and scalable, Image file format independent, Consistent and Network-ready. A Definition in the TMDSI dictionary is structured as follow: *Field Reference Guide* - *Documentation* - *Data Type* *Image Parameters* - *Format*

- *PhotometricInterpretation*
- *Segments*
- *File*

Image creation

- *SourceType*
- *SourceID*
- *ImageProducer*
- *HostComputer*
- *DeviceSource*
- *ScanningSystemCapture*
- *DigitalCameraCapture*
- *Sensor*
- *Methodology*

Imaging performance assessment

- *Spatial metrics*
- *Energetics*
- *TargetData*

Change history

- *Image processing*

Status

Released as a Draft Standard for Trial Use in June 2002

Availability

The Draft Standard is available on the NISO website:
http://www.niso.org/standards/resources/Z39_87_trial_use.pdf

Governance

NISO
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Universal Product Code

Acronym	EAN/UPC
Organisation	Universal Code Council Inc
Reference Code	EAN/UPC
Scope	These numbering schemes are used extensively to identify trade items (defined as any item (product or service) upon which there is a need to retrieve predefined information and that may be priced, ordered or invoiced for trade between participants at any point in any supply chain). They are represented as a bar code symbol on almost every retail product sold to consumers. This data carrier allows the identification number to be machine read thus enabling automatic data capture and data processing. The numeric value of the code in human readable figures in printed beneath the symbol.
Media Type	Multimedia
Description	The system originated in the USA and was established by the Uniform Product Code Council, which is now known as the Uniform Code Council in 1973. The UCC adopted a 12-digit number, and the first bar codes in open trade were being scanned in 1974. Following the success of the UPC system, the European Article Numbering Association, which is now known as EAN International, was established in 1977 to develop a compatible system for use outside North America. The EAN system was designed as a superset of the UCC system, and principally uses 13 digit numbers. As a consequence of using certain bar codes and numbering structures that represent 14 digits, the system also has

14 digit numbers. Today full global compatibility is achieved by considering all UCC trade item identification numbers as comprising 14-digits in data base files, right justified and zero filled where necessary.

Although UPC and EAN numbers are of different lengths (12 and 13 characters respectively), they are structured similarly. The difference in length between the two schemes do present compatibility problems; EAN based systems can process UPC numbers but the UPC based system (US) cannot process EANs because they can only deal with 12 characters. This situation is planned to be resolved in 2005 when the current US system is expanded to support up to 14 character codes.

There is no central database for EAN/UCC numbers although there are some local initiatives. Many agencies (including the UK) only offer a service to identify who issued the number not actually what the number identifies.

There are no mandatory metadata requirements for associating description information with an EAN/UCC. However, some users have adopted informal practices.

There is a Global Data Dictionary in existence and a project called Global Data Alignment Service (GDAS) has been initiated by EAN to establish common information sets and rules. This work is ongoing.

Status

Current

Availability

In order to print UPC bar code symbols a company will need to become a member of the Uniform Code Council, Inc. (UCC). On becoming a member, a company will be assigned an identification number licensed for its use (UCC Company Prefix) to create 12-digit UPC's.

Governance	The Uniform Code Council's Customer Service Team can be reached via the help desk at info@uc-council.org or by phone Monday-Friday 8 am to 6 pm EST at (937) 435-3870. See also http://www.uc-council.org/

URI; URL; URN

Acronym	URI URL URN
Organisation	World Wide Web Consortium (W3C)
Reference Code	URI ; URL ; URN
Scope	The Uniform Resource Identifiers (URI) as defined by the W3C as the standard web naming/addressing technology for the World Wide Web. URIs include two subsets of identifiers, known as Uniform Resource Locators (URLs) and Uniform Resource Names (URNs).
Media Type	Multimedia
Description	URLs are resource locators, which point to content such as text files, HTML pages, images, video streams and applications. URLs are associated with several URI schemes such as http, ftp and mailto. A typical URL is structured as follow: http://xyz/business/papers/case_study.pdf **http://** is the protocol used.

Xyz is the computer domain's name, which is a translation of an IP address.

papers is the directory or path where the resource is located

case_study.pdf is the file name

URLs are referencing Internet resources according to their network location. Uniform resource names (URNs) are referencing to Internet resources by using a unique name rather than referencing to a network location. URNs are also known as persistent identifiers.

A URN has three defined components: the prefix (urn), a namespace and a unique name.

A example of a URN can be the representation of an ISBN number.

urn: isbn: 1-56592-512-2

urn: → Prefix
isbn: → Namespace
1-56592-512-2 → the 10 digits ISBN number itself.

Status Current

Availability N/A

Governance W3C Contact (in Italy)
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XML

Acronym	XML
Organisation	W3C
Reference Code	Extensible Markup Language (XML) 1.0
Scope	XML is a text format based on the SGML (ISO 8879). XML has been designed to be easy to implement and is interoperable with the SGML and HTML formats.
Media Type	Multimedia
Description	A typical XML document is made of storage units named entities. These entities can contain parsed or unparsed data. Parsed data include characters, some of which form character data, and some of which form markup. Markup has the ability to encode a description of a document's storage layout and logical structure. XML is also able to impose constraints on the storage layout and logical structure. The structure of an XML document is typically contains one or more elements delimited by start-tags and end-tags. Each element has a type, identified by name, sometimes called its "generic identifier" (GI), and may have a set of attribute specifications. Each attribute specification has a name and a value.

Status	Active
Availability	Extensible Markup Language (XML) 1.0 (Second Edition) W3C Recommendation, 6 October 2000 is available online here: http://www.w3.org/TR/REC-xml
Governance	W3C Contact (in Italy) Ufficio Italiano W3C presso il C.N.R. ISTI Area della Ricerca di Pisa-San Cataldo via G. Moruzzi, 1 56124 Pisa Tel: +39 050 315-2995 Fax: +39 050 313-8091 (G3) Fax: +39 050 313-8092 (G4) Email: w3c-italy@w3.org

XrML

Acronym	XrML
Organisation	The XrML is governed by Contentguard
Reference Code	XrML 2.0
Scope	The eXtensible rights Markup Language (XrML) provides a method for specifying and managing rights and conditions associated with all kinds of resources including digital content as well as services.
Media Type	Multimedia

Description	Based research at Xerox Palo Alto Research Center (PARC), the XrML Rights Language is used in several digital rights management (DRM) solutions XrML 2.0 is fully compliant with XML namespaces and uses XML schema technology. XrML 2.0 extensions can be developed for specific industries or/and integration of other elements are possible, such as resource-level metadata standards like ONIX and RDF. Additionally, standards such as XSLT and XPath have been used in XrML. XML Signature and XML Encryption have also been used for authentication and protection of the rights expressions. ContentGuard's XrML architecture has been selected for the development of the MPEG Rights Expression Language (REL), MPEG21-REL. XrML has also been adopted by the OASIS Rights Language Technical Committee as the basis for the development of their rights language standard.
Status	Active
Availability	The XrML Specification and Schema is available for download on the XrML website at: http://www.xrml.org/get_XrML.asp (registration required)
Governance	ContentGuard, Inc. 6500 Rock Spring Dr. Suite 110 Bethesda, MD USA 20817-1105 Tel: 1-240-694-1200 Fax: 1-240-694-1297 info@contentguard.com