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Information Technology — Multimedia Framework — Part 6: Rights Data Dictionary

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO/IEC 21000 may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 21000-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, , Subcommittee SC 29, .

ISO/IEC 21000 consists of the following parts, under the general title *Information Technology — Multimedia Framework*:

— *Part 1: Vision, Technologies and Strategy;*

— *Part 2: Digital Item Declaration;*

— *Part 3: Digital Item Identification and Description;*

— *Part 4: Intellectual Property Management Tool Representation and Communication System;*

— *Part 5: Rights Expression Language;*

— *Part 6: Rights Data Dictionary.*

Note: Other parts may be added when needed.

Introduction

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, with both the content creator and content consumer as focal points. This open framework 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.

The vision for MPEG-21 is to define a multimedia framework to enable transparent and augmented use of multimedia resources across a wide range of networks and devices used by different communities.

This sixth part of MPEG-21 (ISO/IEC 21000-6) specifies a Rights Data Dictionary for use within the MPEG-21 Framework. This Rights Data Dictionary forms the basis of all expressions of rights and permissions as defined by the MPEG-21 Rights Expression Language (specified in ISO/IEC 21000-5).

Information Technology — Multimedia Framework — Part 6: Rights Data Dictionary

1   Scope

RDD specifies how to define a set of clear, consistent, structured, integrated and uniquely identified Terms for use in the MPEG-21 Rights Expression Language.

- Definitions of Terms within RDD are expressed in natural language and also formally represented in Genealogies.

- Any Term defined within RDD is controlled according to a Namespace and belongs to one of four RDD types: Primitive, Native and Adopted Terms belong to the RDD Namespace; Mapped Terms belong to externally controlled Namespaces.

- Definitions of RDD Primitive Terms are implicit in its primary Data Model (the Context Model, figure XX).

- Definitions of RDD Native Terms are developed through the medium of the Context Model, supported by two secondary models (the Resource Model, figure XX and the Ascriptive Model, figure XX).

- RDD Adopted or Mapped Terms may be developed or drawn from any metadata system or scheme, related to Digital Items, physical objects or abstract entities.

The RDD structure is intended to support the transformation of metadata from one Namespace to another in an automated or partially-automated way with the minimum ambiguity or loss of semantic integrity.

Editor's Note : The extent of the Terms to be included in a normative or informative section of the document has yet to be determined.

Editor's Note: It will be necessary to have a statement in the Scope to the effect that the RDD is not intended to have legal force.

E.g. "Primitive, Native and Adopted Terms within RDD do not define intellectual property rights or other legal entities. RDD Primitive, Native and Adopted terminology implies no assumptions about the nature or extent of specific legal rights, the commerce (or other) models through which rights may be exploited or protected, or the legal frameworks within which they operate."

1.1   Organisation of the Document

This specification contains XX sections and XX Annexes.

Editor's Note : To be elaborated later

1.2 Relationship between RDD and other parts in the MPEG-21 Framework

Editor's Note : There will be a section explaining the relationship between RDD and other parts of the MPEG-21 standard apart from REL.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 21000. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO/IEC 21000 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO ab-c:199x, *General title of series of parts — Part c: Title of part.*

ISO xyz (all parts), *General title of the series of parts.*

3 Terms and definitions

Editor's Note : Further Terms and definitions will be added as and when required during the drafting process.

For the purposes of this part of ISO/IEC 21000, the following terms and definitions apply.

RDD
MPEG-21 Rights Data Dictionary

REL
MPEG-21 Rights Expression Language

Term
A representation of a particular semantic element.

RDD TermType
The primary categorisation of a Term within RDD. There are four exclusive values: Primitive Term, Native Term, Adopted Term and Mapped Term.

Primitive Term
A Term representing an entity within the RDD Context Model.

Native Term
A Term originally defined within the RDD Namespace.

Adopted Term
A Term originally defined outside the RDD Namespace but adopted as a substitute for a Native Term in RDD.

Mapped Term
A Term belonging to a Namespace other than RDD, and incorporated into the RDD by means of an RDD Identifier, at least one Relationship and an RDD Genealogy,

Namespace
The governance of a group of Terms.

RDD Namespace
The governance of RDD Primitive, Native and Adopted Terms.

Headword
The primary name of a Term.

RDD Headword
A Headword for a Term in the RDD Namespace

Synonym
A word deemed to have identical meaning to its related Headword and to all other related Synonyms, and therefore interchangeable with its related Headword within RDD.

Definition
A statement of the meaning of a Term.

RDD Definition
A Definition of a Term in the RDD Namespace.

Relationship
A formal association of two Terms.

Action Family
A group of Terms expressing the inherent contextual Relationships for a particular Action.

Resource Family
A group of Terms expressing the impact of an Action as one-to-one Relationships between affected entities.

RDD Genealogy
An account of the defining structural relationships within RDD between a Term and other Terms as determined by the RDD data models.

Identifier
A name designed to be unique within its Namespace.

RDD Identifier
An Identifier of a Term in the RDD Namespace.

Context Model
A logical data model for describing the relationships between primitive entities that provide the context for an Action.

Resource Model
A logical data model for describing the relationships between entities that result from an Action, without reference to the Action as an independent entity.

Ascriptive Model
A logical data model derived from the Context Model and Resource Model providing core terminology for ascribing metadata to Terms.

Profile
(to be defined)

4 Structure of the Rights Data Dictionary

4.1 Mandatory Attributes of Terms

4.1.1 RDD Identifier

Each Term shall have a single unique RDD Identifier.

Editor's Note : Necessary to define identifier type in accordance with DII&D

4.1.2 Namespace

A Term in RDD shall be assigned to at least one Namespace representing its source of governance. The Namespace for Primitive, Native and Adopted Terms is RDD.

Editor's Note: The relationship between the RDD Namespace and its formal representation (e.g. as an XSD) requires elaboration.

4.1.3 Headword

Each Term in RDD shall have a Headword. Each Term shall have one Headword from each Namespace of which it is a member. The combination of Headword and Namespace shall be unique in RDD. Headwords shall be strings comprising any number or combination of characters. Headwords in the RDD Namespace shall have initial capital lette rs (eg "Agreement") and multiple words compressed into a string with initial capitals for each word (eg "RightsTransfer").

Editor's Note: Should characters be UniCode?

4.1.4 Definition

Each Term in RDD shall have a single Definition. Where Definitions in the RDD Namespace are hierarchically dependent on other RDD-defined Terms, the parent or source Term is shown with an initial capital letter in the definition. Definitions shall not contain Comments or Examples.

Editor's Note: The structure of Definitions will be elaborated in section 5.

4.1.5 Relationships

Each Term shall have at least one defined Relationship with another Term within the RDD. Each Relationship type shall also be a Term within the RDD.

4.1.6 RDD Genealogy

Each Term shall have a single Genealogy. Genealogies of Terms with Family Membership (see x.x) shall be unique. Each Genealogy shall be expressed both in natural language and in a formal computer-readable representation.

Editor's Note: The structure of Genealogies will be elaborated in sections 5 and 7.

4.1.7 RDD TermType

Each Term shall have a single RDD TermType.

4.2 Optional Attributes of Terms

4.2.1 External Namespace Identifier

Any Identifier(s) of a Mapped Term in an external Namespace shall be recorded in RDD.

4.2.2 Synonym

Each Term may have any number of Synonyms in ea ch Namespace.

4.2.3 Families

Each Term may be a member of one or more Action Families and/or Resource Families.

4.2.4 Comments

Each Term may have comments for the purpose of further explanation or clarification of its meaning.

4.2.5 Examples

Each Term may have examples for the purpose of further explanation or clarification of its meaning.

4.3 Language

The language of each Headword, Synonym, Definition, Genealogy, Comment and Example shall be specified. Alternative language versions or translations of the Headword are Synonyms. Definitions, Genealogies, Comments and Examples shall be expressed in the default language(s), and may also be expressed in other languages.

Editor's Note : The issue of the default languages remains to be determined.

Editor's Note : The form of ISO Language code to be used remains to be determined.

4.4 Audit

Each addition, modification or deletion of a Term shall be accompanied by a record of its date, agent and rationale, with provision for supporting comments.

5 Semantic Framework

5.1 Outline

This section will describe the three data models and the processes whereby Terms are to be introduced, defined, maintained and used.

5.2 RDD Data Models

The RDD specifies three logical data models which are used to express the relationships between its terms.

— The Context Model is the dominant model, based on the Actions which occur.

— The Resource Model provides a non -Action-centric view of metadata which enables RDD to support descriptions in "resource-based" and bibliographic formats such as MARC (Information Interchange Format ANSI Z39.2).

— The Ascriptive Model identifies a group of Terms drawn from both preceding Models which provide the semantics for describing the internal relationships within RDD itself.

Each Definition and Relationship in the RDD is dependent upon one or more of the data models.

The following sections describe in turn each of the models and the process by which each is used to produce Definitions and Genealogies.

5.2.1   The Context Model

The Context Model provides the foundation structure for the development of Terms in the RDD, and for combining them to any level of complexity.
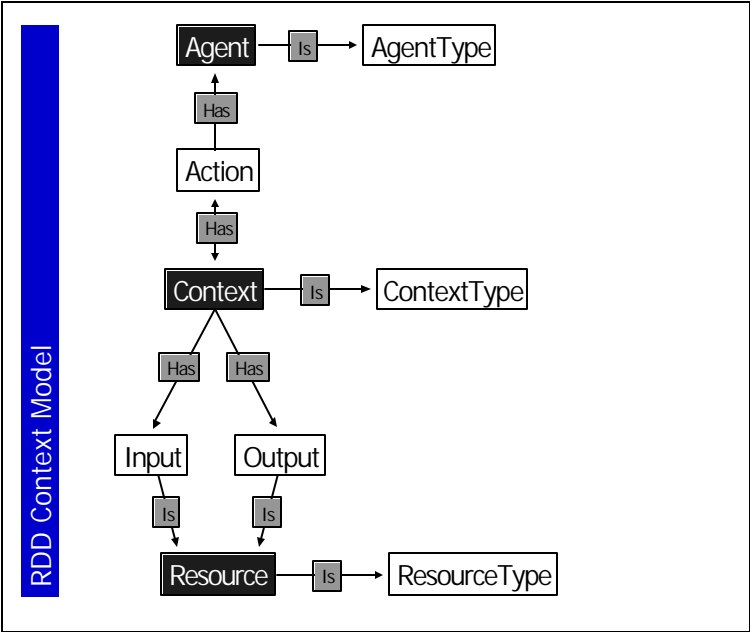

Figure 1 – Context Model

RDD Context model primitives are listed in Table 1.

Table 1 – Context Model Primitives

Term	Definition
Action	Something that happens.
Context	The circumstances surrounding one or more Actions.
ContextType	A Class of Context.
ResourceRole[1]	A part played by a Resource in a Context.

1)   "ResourceRole" is not specifically a primitive Term but is the parent Term for Input and Output and is included to provide context for those Terms.

Input	Something that is Interacted With.
Output	Something brought into existence by an Action.
Agent	Someone or something that acts.
AgentType	A Class of Agent.
Resource	Someone or something that is affected by an Action.
ResourceType	A Class of Resource.

The remainder of his section and the two following sections will be derived principally from sections 5 of the <indecs>2rdd specification.

5.2.2 Resource Model

The remainder of this section will be derived principally from section 7 of the <indecs>2rdd specification.

5.2.3 Ascriptive Model

The remainder of this section will be derived principally from sections 8 of the <indecs>2rdd specification.

5.3 Introduction of Terms

This section describes the way in which the Semantic Framework shall be applied to the introduction of Native, Adopted and Mapped Terms into the RDD. It will be derived principally from sections 5-9 on the <indecs>2rdd specification. The non-exclusive list of topics will include :- development of Definitions, Families and Genealogies; granularity; specialisation and compositing; the integration of externally governed Terms into the RDD ("mapping"); the criteria for establishing Native and Adopted Terms; the derivation of Terms required to support Profiles.

5.4 Maintenance of Terms

This section describes the way the Semantic Framework shall be applied to the modification and substitution of Native, Adopted and mapped Terms. This is not explicitly covered in the <indecs>2rdd Specification.

5.5 Use of Terms

This section describes the way in which the Semantic Framework shall be applied to the use of Terms in the RDD. A non-exclusive list of topics to be covered includes:- Transformation (partly derived from 9.3.1 and 9.3.5 of the <indecs>2rdd specification); specific Profiles (including MPEG, Non-MPEG, Language and Extensions);

6 REL Term Set

— Semantic Dependence on RDD

— Maintenance

— REL Extensions

Editor's Note : The relationship between the REL Term set and the REL Profile needs determination. And what about the IPMP Term set? It was felt that the only special case should be the REL profile as the REL itself is part of the standard.

7 Governance Requirements

— Native Terms

— Adopted Terms

— Mapped Terms

— Amendment of Terms

— Deletion of Terms

— Reliability

— Availability

— Responsibilities of a Registration Authority

Annex A
(informative)
Items from Informative Annex

Bibliography

[1] XXX