INTERNATIONAL ORGANISATION FOR STANDARDISATION ORGANISATION INTERNATIONALE NORMALISATION ISO/IEC JTC 1/SC 29/WG 11 CODING OF MOVING PICTURES AND AUDIO

ISO/IEC JTC 1/SC 29/WG 11 N4645 Jeju, Korea March 2002

Source:	MDS
Title:	MPEG-21 Rights Data Dictionary WD 2.0
Status:	Approved
Editors:	Chris Barlas (Rightscom), Godfrey Rust

ISO/IEC JTC 1/SC 29 N

Date: 2001-12-10

ISO/IEC WD 21000-6

ISO/IEC JTC 1/SC 29/WG 11

Secretariat:

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

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

Warning

This document is not an ISO International Standard. It is distributed for review and comment. It is subject to change without notice and may not be referred to as an International Standard.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Document type: International Standard Document subtype: Document stage: (20) Preparatory Document language: E

C:\W4645.doc STD Version 2.0

Copyright notice

This ISO document is a working draft or committee draft and is copyright-protected by ISO. While the reproduction of working drafts or committee drafts in any form for use by participants in the ISO standards development process is permitted without prior permission from ISO, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from ISO.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to ISO's member body in the country of the requester:

[Indicate the full address, telephone number, fax number, telex number, and electronic mail address, as appropriate, of the Copyright Manger of the ISO member body responsible for the secretariat of the TC or SC within the framework of which the working document has been prepared.]

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement.

Violators may be prosecuted.

Contents

Introduction x 1 Scope 1 1.1 Organisation of the Document 1 1.2 Relationship between RDD and other parts in the MPEG-21 Framework 1 2 Normative references 1 3 Terms and definitions 2 4 Structure of the Rights Data Dictionary 4 4.1 Terms 4 4.2 Attributes of Terms 4 4.2.1 Rddidentifier 4 4.2.2 Attributes of Terms 4 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.9 OtherTermIdentifier 6 4.2.1 Comments 6 4.2.9 OtherTermIdentifier 6 4.2.1 Comments 6 4.2.1 Comments 6 <t< th=""></t<>
1 Scope 1 1.1 Organisation of the Document. 1 1.2 Relationship between RDD and other parts in the MPEG-21 Framework. 1 2 Normative references 1 3 Terms and definitions 2 4 Structure of the Rights Data Dictionary 2 4.1 Terms 4 4.2.2 Attributes of Terms 4 4.2.2 Attributes of Terms 4 4.2.2 TermStatus Error! Bookmark not defined 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 Termstes 6 4.2.14 Comments
12 Relationship between RDD and other parts in the MPEG-21 Framework 1 2 Normative references 1 3 Terms and definitions 2 4 Structure of the Rights Data Dictionary 4 4.1 Terms 4 4.2 Attributes of Terms 4 4.2.2 Authority Error! Bookmark not defined. 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.9 OtherTermIdentifier 5 4.2.10 Comments 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermStets 6
2 Normative references 1 3 Terms and definitions 2 4 Structure of the Rights Data Dictionary 4 4.1 Terms 4 4.2 Attributes of Terms 4 4.2.1 Rddldentifier 4 4.2.2 Authority Error! Bookmark not defined. 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 Comments 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.3 TermSets 6 4.3.4 TermSets 6 4.3.1 Default Language 6 4.3.2
3 Terms and definitions 2 4 Structure of the Rights Data Dictionary 4 4.1 Terms 4 4.2 Attributes of Terms 4 4.2.1 RddIdentifier 4 4.2.2 Authority Error! Bookmark not defined. 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.11 Comments 6 4.2.2 Examples 6 4.2.11 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.3 TermSets 6 4.3.4 Tauguage 6 4.3.5 Translated Elements 6 4.3.6 A
4 Structure of the Rights Data Dictionary 4 4.1 Terms 4 4.2 Attributes of Terms 4 4.2.1 Rddldentifier 4 4.2.2 Authority Error! Bookmark not defined. 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.9 OtherTermIdentifier 5 4.2.9 OtherTermIdentifier 6 4.2.9 OtherTermIdentifier 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.11 Comments 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 5.3
4.2 Attributes of Terms 4 4.2.1 Rddldentifier 4 4.2.2 Authority Error! Bookmark not defined. 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.2
4.2.1 Rddldentifier 4 4.2.2 Authority Error! Bookmark not defined. 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.3 Translated Elements 6 5.4 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined. 5.1.1 Introducing Semantic material Error! Bookmark not defined. 5.1.2
4.2.2 Authority Error! Bookmark not defined. 4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.2.14 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.3 Translated Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.3 FirstTerm Error! Bookmark not defined
4.2.3 TermStatus 5 4.2.4 Headword 6 4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 6 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.2 Types of Meaning Error! Bookmark not defined
4.2.4 Headword. 6 4.2.5 Synonym. 6 4.2.6 Definition 6 4.2.7 Relationship 6 4.2.8 Genealogy. 6 4.2.9 OtherTermIdentifier. 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined. 5.1.1 Introducing Semantic material Error! Bookmark not defined. 5.1.2 Types of Meaning Error! Bookmark not defined. 5.1.3 FirstTerm Error! Bookmark not defined.
4.2.5 Synonym 6 4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined. 5.1.1 Introducing Semantic material Error! Bookmark not defined. 5.1.2 Types of Meaning Error! Bookmark not defined.
4.2.6 Definition 6 4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.2.13 TermSets 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined. 5.1.1 Introducing Semantic material Error! Bookmark not defined. 5.1.2 Types of Meaning Error! Bookmark not defined. 5.1.3 FirstTerm Error! Bookmark not defined.
4.2.7 Relationship 5 4.2.8 Genealogy 6 4.2.9 OtherTermIdentifier 5 4.2.10 ActionFamily 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.3 Language 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.2 Types of Meaning Error! Bookmark not defined 5.1.3 FirstTerm Error! Bookmark not defined
4.2.8 Genealogy
4.2.9 Other Fermidentifier
4.2.10 Action ramity 6 4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.3 Language 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.3.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms 6 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.2 Types of Meaning Error! Bookmark not defined 5.1.3 FirstTerm Error! Bookmark not defined
4.2.11 Comments 6 4.2.12 Examples 6 4.2.13 TermSets 6 4.3 Language 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms 6 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.2 Types of Meaning Error! Bookmark not defined 5.1.3 FirstTerm Error! Bookmark not defined
4.2.12 Lxamples 6 4.2.13 TermSets 6 4.3 Language 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.2 Types of Meaning Error! Bookmark not defined 5.1.3 FirstTerm Error! Bookmark not defined
4.3 Language 6 4.3 Default Language 6 4.3.1 Default Language 6 4.3.2 Translated Elements 6 4.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms Error! Bookmark not defined 5.1.1 Introducing Semantic material Error! Bookmark not defined 5.1.2 Types of Meaning Error! Bookmark not defined 5.1.3 FirstTerm Error! Bookmark not defined
4.3.1 Default Language
4.3.2 Translated Elements 6 4.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms 8 5.1.1 Introducing Semantic material 8 5.1.2 Types of Meaning 8 5.1.3 FirstTerm 8
4.4 Audit Elements 6 5 Semantic Framework: how Terms are defined 7 5.1 Standardized Model & Terms 8 5.1.1 Introducing Semantic material 8 5.1.2 Types of Meaning 8 5.1.3 FirstTerm 8
5 Semantic Framework: how Terms are defined
5.1 Standardized Model & Terms Error! Bookmark not defined. 5.1.1 Introducing Semantic material Error! Bookmark not defined. 5.1.2 Types of Meaning Error! Bookmark not defined. 5.1.3 FirstTerm Error! Bookmark not defined.
5.1.1 Introducing Semantic material Error! Bookmark not defined. 5.1.2 Types of Meaning Error! Bookmark not defined. 5.1.3 FirstTerm Error! Bookmark not defined.
5.1.2 Types of Meaning Error! Bookmark not defined. 5.1.3 FirstTerm Error! Bookmark not defined.
5.1.3 FirstTerm Error! Bookmark not defined
5.1.4 ContextModel Terms Error! Bookmark not defined.
5.1.4.1 ContextModel basic Terms Error! Bookmark not defined.
5.1.4.2 ContextModel TermTypes Error! Bookmark not defined.
5.1.4.3 ContextModel RelatingTypes Error! Bookmark not defined.
5.1.5 ActionFamily Error! Bookmark not defined.
5.1.5.1 ActionFamily Relationships Error! Bookmark not defined.
5.15.2 ActionFamilyResourceView
5.1.7 The Context Model Error! Bookmark not defined.
5.1.8 Ascriptive lermset
5.2 Adding new Terms to RDD
5.2.1 Criteria for TermStatue
5.2.2 Onlette for removatus
52.3.1 Adding NativeTerms by Specialization of ActTypes Error Bookmark not defined
52.3.2 Adding NativeTerms by Contextualization of ActTypes Frrort Bookmark not defined
5.2.3.3 Adding NativeTerms by Aggregation of ActTypes Error! Bookmark not defined
5.2.3.4 Adding NativeTerms by Begetting from ActTypes Error! Bookmark not defined.

© ISO/IEC 2001 — All rights reserved

v

5.2.3.5	Adding NativeTerms as Types	Error! Bookmark not defined.	
5.2.3.6	Adding NativeTerms through Specializing Context	Error! Bookmark not defined.	
5.2.4	Adding AdoptedTerms	Error! Bookmark not defined.	
5.2.5	Adding MappedTerms	Error! Bookmark not defined.	
5.2.5.1 5.2.5.2 5.2.5.3	Contextualized Mappings Multiple Mappings for one Term	Error! Bookmark not defined. Error! Bookmark not defined. Error! Bookmark not defined.	
5.2.5.4	Authorization of Mappings	Error! Bookmark not defined.	
5.2.6	IsolatedTerms	Error! Bookmark not defined.	
5.2.7	Merging Terms	Error! Bookmark not defined.	
5.2.8	Defining TermSets	Error! Bookmark not defined.	
5.3 6	Form of Definitions and natural language Genealogies	Error! Bookmark not defined. Error! Bookmark not defined.	
7	Governance	Error! Bookmark not defined.	
Annex	A (Normative) StandardizedTerms	17	
Annex	B (Informative) Action-based Ontology: rationale		
Annex	C (Informative) ContextModel development	17	
Annex	D (Informative) Implementation Guidelines		
Bibliog	Bibliography22		

Figures

Figure 1 – Standardized Attributes of a term Figure 2 – RDD TermStatus Figure 3 – Context Model

Error! No table of figures entries found.

Page

Error! Bookmark not defined. Error! Bookmark not defined. Error! Bookmark not defined.

© ISO/IEC 2001 — All rights reserved

vii

Tables

Table 1 – Audit elements

- Table 2 Types of semantic material
- Table 3 Types of meaning
- Table 4 FirstTerm
- Table 5 ContextModel basic Terms
- Table 6 ContextModel TermTypes Table 7 – ContextModel RelatingTerms
- Table 8 ActionFamily Relationships

 Table 9 ActionFamilyResourceView principal RelatingTerms
- Table 10 Ascriptive TermSet
- Table 11 Criteria for TermStatus
- Table 12 Element Cardinality by TermStatus

 Table 13 Element Governance by TermStatus
- Table 14 TermSet of RelatingTerms for Mapping

Page

Error! Bookmark not defined. Error! Bookmark not defined.

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.

© ISO/IEC 2001 - All rights reserved

ix

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

The Rights Data Dictionary comprises a set of clear, consistent, structured, integrated and uniquely identified Terms to support the MPEG-21 Rights Expression Language. This Standard establishes the core of this Dictionary, and specifies how further Terms may be defined.

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

The RDD is a *prescriptive* dictionary, in that it determines a single meaning for the name ("Headword") of a Term; but it is *inclusive* in that it recognizes alternative Headwords and definitions from other namespaces and incorporates them through mappings.

RDD recognises legal definitions as and only as Terms mapped from other Authorities. Therefore Terms which are directly authorized by RDD neither define nor prescribe intellectual property rights or other legal entities.

1.1 Organisation of the Document

This specification contains XX sections and XX Annexes.

Editors' Note: To be elaborated.

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

Editors' Note: Currently the only formal relationship between RDD and other elements of MPEG21 is the relationship between RDD and REL expressed in Section 6 of this Draft.

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.

© ISO/IEC 2001 — All rights reserved

3 Terms and definitions

Editors' Note: Further Terms and definitions will be added as and when required during the drafting process. These Terms and Definitions will be listed in an order to be agreed (either alphabetically or in appropriate groups).

Should all of the Terms and Definitions in this section also be RDD StandardizedTerms? If so, Annexe A may replace this section.

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 semantic element with a defined Meaning and a unique Rddldentifier.

Meaning

An abstract element of significance represented in RDD by a Headword and described by a Definition, Genealogy, Comments and Examples.

Authority

The governance of the definitions of one or more Terms and/or TermSets.

TermStatus

A categorization of a Term within RDD according to its attributes at any point in time. There are five exclusive values: StandardizedTerm, NativeTerm, AdoptedTerm, MappedTerm and IsolatedTerm.

StandardizedTerm

A Term explicitly defined by the RDD Standard.

NativeTerm

A Term other than a StandardizedTerm which has an RddAuthorized Definition.

AdoptedTerm

A Term with definition under an Authority other than RDD, upon which RDD has chosen to rely for its Headword and Definition.

MappedTerm

A Term under an Authority other than RDD, incorporated into the RDD by means of an Rddldentifier, with at least one Relationship and a Genealogy.

IsolatedTerm

A Term under an Authority other than RDD, incorporated into the RDD by means of an RddIdentifier, but with no described Relationship, direct or indirect, with an RddAuthorizedTerm.

BegottenTerm

A NativeTerm which derives from a type of Act through the defined Relationships of the ContextModel.

PrimitiveTerm

One of the basic entities of the ContextModel (Act, Context, Agent, Resource).

RelatingTerm

A Term which expresses a relationship between two other Terms.

RddAuthority

The governance of RDD StandardizedTerms, NativeTerms and AdoptedTerms.

RddAuthorizedTerm

A Term under RddAuthority (that is, a StandardizedTerm, NativeTerm or AdoptedTerm).

TermSet

Two or more Terms grouped together by an Authority for some purpose.

Headword

The primary name of a Term according to an Authority.

RddHeadword

A Headword for a Term under RddAuthority.

Synonym An alternative name for a Term.

Definition A statement of the meaning of a Term.

RddAuthorized Definition

A Definition of a Term under RddAuthority

Relationship A formal association of two Terms.

RelationshipType

A class of Relationship.

ActionFamily ("AF")

A group of Relationships defined according to the ContextModel showing the BegottenTerms of a type of Act.

ActionFamilyResourceView ("AFRV")

A group of Relationships expressing the impact of an type of Act as one-to-one Relationships between affected entities.

Genealogy

A natural language description of the structural relationships between a Term and other Terms as determined by the RDD data models.

Identifier

A name designed to be unique within its namespace.

Rddldentifier

An Identifier of a Term under RddAuthority.

OtherTermIdentifier

An Identifier of a Term used under an Authority other than RDD.

ContextModel

A logical data model for describing the relationships between Terms that provide the Context for an Act.

AscriptiveTermSet

A group of Terms which provide the RDD with terminology for ascribing metadata to Terms.

TextualElement

An attribute of a Term expressed in natural language. The TextualElements are Headword, Synonym, Definition, Genealogy, Comment.

© ISO/IEC 2001 - All rights reserved

4 Structure of the Rights Data Dictionary

4.1 Terms

A Term is a semantic element with a defined meaning and a unique RddIdentifier. A Term is the basic unit of the RDD structure. A Term may have many names in the form of Headwords and Synonyms. Its Definition may be represented in different forms and languages. Agreement between interested parties that names in different namespaces represent the same Term is a Governance issue (Section 7). Conversely, use of the same name by different Authorities does not necessarily imply that they represent the same Term.

4.2 Attributes of Terms

Figure 1: Standardized attributes of a Term



4.2.1 Rddldentifier

Each Term shall have a single unique Rddldentifier.

Editors' Note: The structure of the RddIdentifier has not yet been defined. It is expected to contain no intelligence.

4.2.2 Authority

A Term shall belong to at least one Authority. RDD must be an Authority for a StandardizedTerm, NativeTerm and AdoptedTerm.

4.2.3 TermStatus

Each Term shall have a single TermStatus, according to the criteria set out in Section 5.2.2.

Figure 2: RDD TermStatus



4.2.4 Headword

Each Term shall have one Headword from each Authority which it is under. The Authority and language of each Headword shall be identified. The combination of Headword and language shall be unique under any one Authority

4.2.5 Synonym

Each Term may have any number of Synonyms under an Authority. Alternative language versions or translations of the Headword are Synonyms. The Authority and language of a Synonym shall be identified. The combination of Headword or Synonym combined with language shall be unique under any one Authority.

© ISO/IEC 2001 — All rights reserved

4.2.6 Definition

Each Term under RDD Authority shall have a single RddAuthorized Definition. Where an RddAuthorized Definition is dependent on other RddAuthorized Definitions, the Headword for the RddAuthorized Term on which it depends shall appear in the Definition. Definitions shall not contain Comments or Examples. Where a Definition exists for a Term under another Authority, that Definition shall be included in the RDD. The Authority and language of each Definition shall be identified.

4.2.7 Relationship

Each Term shall have at least one defined Relationship with another Term within the RDD. A Relationship shall comprise two Terms and a connecting RelatingTerm in the "triple" form Term1+RelatingTerm+Term2. A Relationship shall have at least one Authority.

4.2.8 Genealogy

Each Term shall have a single Genealogy, which may be translated into other natural languages. Genealogies of Terms which belong to an ActionFamily shall be unique. The language of each expression of a Genealogy shall be identified.

4.2.9 OtherTermIdentifier

Where a non-RDD Authority for a Term uses an identifier for that Term, it should be included in the RDD along with its Authority.

4.2.10 ActionFamily

Each Term may be a member of one or more ActionFamily(ies) (See 5.1.5).

4.2.11 Comments

Each Term and Definition may have Comments for the purpose of amplification or clarification of its meaning. The Authority and language of a Comment shall be identified.

4.2.12 Examples

Each Definition may have Examples for the purpose of amplification or clarification of its meaning. The Authority and language of an Example shall be identified.

4.2.13 TermSets

Each Term may belong to any number of TermSets identified by any number of Authorities.

4.3 Language

4.3.1 Default Language

The default language of RDD shall be English. The TextualElements of each RDD-Authorized Term shall at least be expressed in the default language.

4.3.2 Translated Elements

Where a TextualElement is a translation of another TextualElement into another natural language, this shall be idescribed by a Relationship using the RelatingTerm "IsTranslationOf".

4.4 Audit elements

For each Term, each of the elements described in 4.3 shall have an RDD audit record corresponding to its creation, each subsequent amendment (if any) and deletion (if any), comprising these elements:

Element	Attributes
Date	Mandatory
Authority responsible	Mandatory
Reason	Mandatory, from a set of coded values to be established by the Registration Authority.
Comment	Optional: free text comment amplifying the reason for or nature of the action.

5. Semantic Framework: how Terms are defined.

The Standard recognizes two groups of Terms: those which are defined in the Standard itself (StandardizedTerms), and those which may be added to the Dictionary in accordance with the procedures laid down by the Registration Authority (Native, Adopted, Mapped or Isolated Terms).

Editors' Note: The specific Terms and Definitions included in this section have <u>not</u> yet been reviewed in any detail: this will take place in the course of the next round of AdHoc and main MPEG meetings.

5.1 Standardized Model & Terms

This section specifies the Model through which Terms are introduced to the Dictionary, and the principal StandardizedTerms which are required to provide the foundations of the Dictionary. A complete schedule of StandardizedTerms is given in Annex A.

5.1.1 Introducing Semantic material

Meaning is introduced into Terms as one of the following types:

Table 2:	Tvpes	of semantic	material
----------	-------	-------------	----------

Туре	Definition
PrimitiveSemantics	Original semantic material introduced into a Term.
InheritedSemantics	A Meaning of a Term which is passed on through a Relationship to form part of the Meaning of another Term.

5.1.2 Types of Meaning

Each Meaning is introduced into Terms as one of the following types:

Table	3:	Types	of	Meaning
rabic	υ.	rypcs	01	wearing

Туре	Definition
OriginalMeaning	A Meaning entirely comprised of PrimitiveSemantics.
PartlyDerivedMeaning	A Meaning comprised of PrimitiveSemantics combined with InheritedSemantics.
DerivedMeaning	A Meaning comprised of a combination of two or more InheritedSemantics.

5.1.3 FirstTerm

The FirstTerm is the only StandardizedTerm with an OriginalMeaning:

Table 4: FirstTerm



Headword	Definition
Act	Editors' Note: Formal definition to follow.

All subsequent Terms have DerivedMeaning or PartlyDerivedMeaning.

5.1.4 ContextModel Terms

The next group of Terms are established through the ContextModel.

Figure 3: RDD ContextModel



Editors' Note: Further consideration is needed of whether Time and Location should be included at this level or as types of Input: there are inheritance issues.

5.1.4.1 ContextModel basic Terms

The ContextModel introduces five other basic Terms, with PartlyDerivedMeanings inheriting the meaning of "Act":

Table 5:	ContextModel	basic	Terms

Headword	Definition
Context	The circumstances in which an Act occurs.

Deleted: section xx

Agent	Someone or something that Acts.
Resource	Someone or something affected by an Act.
Time	The temporal parameters of a Context (see Editor's note above).
Location	The spatial parameters of a Context (see Editor's note above).

5.1.4.2 ContextModel TermTypes

The ContextModel introduces four Terms which are Types of the basic Terms (see the AscriptiveTermSet below for the derivation of "Type"):

Table 6: ContextModel TermTypes

Headword	Definition
ActType	A Class of Act.
ContextType	A Class of Context.
AgentType	A Class of Agent.
ResourceType	A Class of Resource.

5.1.4.3 ContextModel RelatingTerms

Seven RelatingTerms are introduced by the ContextModel:

Table 7: ContextModel RelatingTerms

HasAgent	A RelatingTerm that links an Act to its Agent.				
HasContext	A RelatingTerm that links an Act to the Context within which it happens.				
HasType ¹	A RelatingTerm that links a Term to a specialization of it.				
HasInput ²	A RelatingTerm that links a Context to a Resource with which it interacts.				
HasOutput ³	A RelatingTerm that links a Context to a Resource which comes into being as a result of the ActType(s) in the Context.				
HasTime	A RelatingTerm that links a Context to a Time in relation to which it happens.				
HasLocation	A RelatingTerm that links a Context to a Location in relation to which it happens.				

5.1.5 ActionFamily

An ActionFamily ("AF") is a group of Relationships between an ActType and the ContextModel TermTypes which it Begets.

5.1.5.1 ActionFamily Relationships

Every ActType is the "head" of an ActionFamily of Terms. The following Relationships apply for ActType "a":

Table 8: ActionFamily Relationships

Term 1	RelatingTerm	Term 2	Cardinality
[ActType] "a"	BegetsAgentType	[AgentType] "b"	0-1

¹ This Term is Begotten from the Act "Typify" in the Ascriptive TermSet (see <u>section 5.1.8</u>).

² This Term is Begotten from the Act "InteractWith" (see Annex A).

³ This Term is Begotten from the Act "Make" (see Annex A).



[ActType] "a"	BegetsContextType	[ContextType] "c"	1
[ActType] "a"	BegetsOutput	[ResourceType] "d"	1, if ActType="Make" or one of its Children
[ActType] "a"	BegetsInput	[ResourceType] "e"	0-n
[ActType] "a"	InheritsInput	[ResourceType] "f"	0-n

and their reciprocals also apply:

RelatingTerm	Term 2	Cardinality
IsBegottenByActType	[ActType] "a"	1
IsBegottenByActType	[ActType] "a"	1
IsOutputBegottenByAct Type	[ActType] "a"	1, if ActType="Make" or one of its Children
IsInputBegottenByActType	[ActType] "a"	1
IsInheritedByActType	[ActType] "a"	0-n
	RelatingTerm IsBegottenByActType IsBegottenByActType IsOutputBegottenByAct Type IsInputBegottenByActType IsInheritedByActType	RelatingTermTerm 2IsBegottenByActType[ActType] "a"IsBegottenByActType[ActType] "a"IsOutputBegottenByAct Type[ActType] "a"IsInputBegottenByActType[ActType] "a"IsInheritedByActType[ActType] "a"

Editors' Note: An example AF is needed.

5.1.5.2 ActionFamilyResourceView

An ActionFamilyResourceView (AFRV) is a group of Relationships linking Resources, Agents, Times and Locations of an ActionFamily without of explicit recognition of the ActType itself.

Each AFRV Begets a group of RelatingTerms, of which these are the principal parents:

Table 9: ActionFamilyResourceView principal RelatingTerms					
Term 1	RelatingTerm	Term 2			
AgentType	HasTimeOfActing	Time			
AgentType	HasLocationOfActing	Location			
ResurceType	IsActedUponBy	AgentType			
ResourceType	HasTimeOfBeingActedUpon	Time			
ResourceType	HasLocationOfBeingActedUpon	Location			
ResourceType	HasAssociatedActedUponResource	ResourceType			

and their reciprocals also apply:

Term 1	RelatingTerm	Term 2			
Time	IsTimeOfActingOf	AgentType			
Location	IsLocationOfActingOf	AgentType			
AgentType	ActsUpon	ResourceType			
Time	IsTimeOfBeingActedUponOf	ResourceType			
Location	IsLocationOfBeingActedUponOf	ResourceType			
ResourceType	HasAssociatedActedUponResource	ResourceType			
Editors' Note: An example AEBV is needed					

5.1.7 DependentTerms

The Terms (b, c, d, e, f) Begotten by the ActionFamily Relationships, combined with the RelatingTerms Begotten in the AFRV form, the DependentTerms of the ActType (a).

5.1.8 AscriptiveTermSet

The Ascriptive TermSet is the group of ActionFamilies which produce the Terms used to describe the internal structure of the RDD. It comprises these ActTypes:

Table 10: AscriptiveTermSet

ActType	Definition				
Ascribe	To say that something has a data value.				
. Relate	To place something in relation to something else.				
. Classify	To place something into a group of things with common attribute(s).				
. Typify	To Ascribe a specialized value of something to something else.				
. Nominate	To make something referable.				
Identify	To Nominate something uniquely.				
. Quantify	To measure something numerically.				
. Annotate	To give a description to something.				

5.2. Adding new Terms to RDD

5.2.1 Criteria for adding Terms

New Terms are added to the Terms already defined in this Standard when:

- (a) a requirement for a Term is identified for the MPEG REL Standard;
- (b) a requirement is identified for new Term to support the mapping of another scheme;
- (c) requirement is identified through the analysis of another scheme relevant to Digital Rights Management.

The identification of the need for a new Term may result in the creation of two or more Terms to support the new Term's Genealogy.

Editors' Note: The identification of relevant schemes under (b) and (c) is a matter for the Registration Authority.

5.2.2 Criteria for TermStatus

Table 11: Criteria for TermStatus					
TermStatus	When Status is required				
StandardizedTerm	When an amendment or addition is required to the Standardized RDD Terms to correct or complete the Semantic Framework as result of further analysis, a balloted change to the Standard and/or Normative Annex is required to create a new StandardizedTerm.				
NativeTerm	A Term is given an RDD Native Definition and Headword when				
[Editors' Note: further criteria	• it is begotten from another RDD NativeTerm; or				
should emerge from Use Cases]	• it is specialized directly from another RDD NativeTerm without reliance upon non-RDD qualifications; or				
	it has equivalents in two or more Mapped Authorities				
AdoptedTerm	RDD may cede the governance of the Definition and Headword of a Term and its children to another Authority when:				

© ISO/IEC 2001 — All rights reserved

	• the Authority is recognized as having established international authority for a specific TermSet of interest under the criteria for adding Terms, and
	 the Term(s) can be mapped consistently to RDD NativeTerms.
MappedTerm	A Term is Mapped when it has a Genealogy but does not meet any of the criteria for Adopted, Native or Standardized Terms.
IsolatedTerm	A Term is Isolated when mapping is not, or not yet, possible, or is not required by the analysis of the scheme to which it belongs.

A Term may be promoted from one status to a higher status whenever its circumstances change in relation to the Criteria for TermStatus. Editors' Note: Can this be reversed?

This table shows the cardinality of Elements under RddAuthority according to each TermStatus:

Table 12: Element Cardinality by TermStatus

TermStatus>	Standardized	Native	Adopted	Mapped	Isolated
Elements under RddAuthority					
Rddldentifier	1	1	1	1	1
OtherTermIdentifier	0-n	0-n	0-n	0-n	0
TermStatus	1	1	1	1	0
Genealogy*	1	1	1	1	0
Headword*	1	1	1	0	0
Synonym*	0-n	0-n	0-n	0	0
Definition*	1	1	1	0	0
Comment*	0-n	0-n	0-n	0	0
Example*	0-n	0-n	0-n	0	0
Relationship	1-n	1-n	1-n	1-n	0
ActionFamily	1-n	1-n	1-n	0	0
TermSet	0-n	0-n	0-n	0-n	0-n

*All TextualElements may have multiple occurrences in the form of translations into other natural languages from the original.

All Terms may have Headwords, Synonyms, Definitions, Comments, Examples and OtherTermIdentifiers under other Authorities

This table shows how different Terms are subjected to RDD Governance mechanisms:

Table 13: Element Governance by TermStatus

TermStatus>	Standardized	Native	Adopted	Mapped	Isolated
RDD Governance mechanism					
Registration Authority Governance	Yes	Yes	Yes*	No	No
MPEG Direct Governance	Yes	No	No	No	No

*Nominally under RddAuthority, but RDD has ceded Governance to another Authority.

5.2.3 Adding NativeTerms

Native Terms are added either as:

- (a) a member of an ActionFamily or its related ActionFamilyResourceView; or
- (b) as a Type of an existing RDD Native Term.

Editors' Note: possibly others - should emerge from Use Cases.

© ISO/IEC 2001 - All rights reserved

Where the required Term is a member of an ActionFamily, all related ActionFamily Terms are also added as NativeTerms.

Editors' Note: needs criteria for distinguishing when should be ActionFamily and when just a Resource Type – this should come from Use Cases.

5.2.3.1 Adding NativeTerms by Specialization of ActType

A new ActType can be added to the RDD by combining PrimitiveSemantics with the Meaning of an existing ActType (eg To Extract might mean "To Derive by taking something out"). Such Specialization should proceed through the addition of a single element of PrimitiveSemantics at a time.

5.2.3.2 Adding NativeTerms by Contextualization of ActType

A new ActType can be added to the RDD by the qualification of one or more of its parent's BegottenTerms through a contextual constraint (eg to Execute might mean "To Activate where the ActivatedResource has a ResourceType=ExecutableFile"). Such Contextualization should proceed through the addition of a single attribute at a time, where this is consistent with the Meaning of the Terms involved.

5.2.3.3 Adding NativeTerms by Aggregation of ActTypes

A new ActType can be added to the RDD by combining the Meanings of two or more existing Acts (eg Use + Make = Derive). This Term will inherit all the attributes of its component Acts.

5.2.3.4 Adding NativeTerms by Begetting from ActTypes

When a new ActType is created, it shall Beget all its corresponding DependentTerms. The Terms Begotten by an ActType must be subtypes of the Terms Begotten by the immediate Parent of its ActType.

Editors' Note: this last point protects ObjectOriented integrity: Needs example.

5.2.3.5 Adding NativeTerms as Types

Editors' Note: this section required. Includes the addition of Adjectival/Participle Terms Begotten from ActTypes ..

5.2.3.6 Adding NativeTerms through Specializing Context

New NativeTerms may be Begotten from the definition of a Context whose ActType(s) are already defined, but whose AgentTypes or ResourceTypes have been specialized.

Editors' Note: requires example and further analysis.

5.2.4 Adding AdoptedTerms

When a Term is Adopted, RDD establishes its Authority over it, but indicates through the "AdoptedTerm" TermStatus that it chooses to inherit the Headword and Definition from its original Authority and to be bound by any changes or additions made by that Authority.

Headwords will be Adopted from appropriate ISO Authorities for these groups of Terms:

- Territories (ISO 3166)
- Languages (ISO 639)
- Currencies (ISO 4217)
- Date/Time Formats (ISO 8601)
- Units of Measure

Editors' Note: are there other possible Authorities for this - [UCUM]?

© ISO/IEC 2001 - All rights reserved

and others as appropriate according to the TermStatus criteria for AdoptedTerms.

5.2.5 Adding Mapped Terms

Mapping is achieved when a Term has established at least one Relationship drawn from the TermSet of Mapping RelatingTerms which associates it directly or indirectly with a NativeTerm. Relating two IsolatedTerms does not constitute mapping. A Term may be mapped directly to an RddAuthorized Term, or Mapped to Terms under another Authority, provided the latter is directly or indirectly linked to an RddAuthorized Term.

5.2.5.1 Mapping TermSet

Each Mapping Relationships is of one of three Types, according to the characteristics of the RelatingTerm it contains. Each RelatingTerms used in mapping is a member of the Mapping TermSet.

Editors' Note: The Terms shown here are illustrative and require further analysis

Table 14: TermSet of	f RelatingTerms for Mapping	
Mapping Type	Definition	[examples of possible] RelatingTerms
Definitive	An unambiguous and precise Relationship.	• IsEquivalentTo (results in assigning the Mapped Headword to the existing RDD Identifier)
		IsChildOf
		IsAggregateOf
Tentative	A partial or uncertain	IsSimilarTo
	Relationship.	IsPartlyEquivalentTo
Ambiguous	A Relationship which does not	MayBeEquivalentTo
	always apply.	IsUsuallyEquivalentTo
		IsSometimesEquivalentTo

Editors' Note: Should these should be Standardized Terms?

5.2.5.2 Contextualized Mappings

Tentative and Ambiguous mappings should be Contextualized where necessary (for example, "in this Context, the mapping has Relationship X, and in this Context Relationship Y").

Editors' Note: Requires amplification.

5.2.5.3 Multiple Mappings for one Term

A Term may have both a Definitive and a Tentative or Ambiguous mapping. The Definitive mapping attaches the Term at a more general level (for example, "IsChildOf Derive"), while the Tentative or Ambiguous mapping attaches to a more specific level (for example, "SimilarTo Extract").

5.2.5.4 Authorization of Mappings

The Authority(ies) establishing or approving a mapping shall be included in the RDD as the Authority(ies) for the Relationship.

5.2.6 IsolatedTerms

Editors' N	Note: this section required.			7																																																																						
5.2.7	Merging Terms																																																																									

From time to time two established Terms may need to be merged into one as further analysis reveals that they have the same Meaning. One of the Rddldentifiers shall be maintained, and the other shall become an OtherTermIdentifier of the Term.

5.2.8 Defining TermSets

Editors' Note: this section required.





5.3 Form of Definitions and natural language Genealogies

Editors' Note: this section required: Normative rules and Informative style guide for writing default RDD TextualElements

6. Relationship between REL and RDD.

All terms in the REL shall be RDD Terms.

© ISO/IEC 2001 — All rights reserved

7. Governance

Editor's Note: It was decided that the section on governance should be very constrained, stating little more than that there should be a governance mechanism. The actual requirements for governance would be articulated in a future Call for Requirements to solicit interested parties.

Annex A (Normative) StandardizedTerms

Editor's Note: This Annex to contain a complete table of StandardTerms with Headwords, Definitions, Comments and Examples where appropriate.

© ISO/IEC 2001 — All rights reserved

ISO/IEC WD 21000-6

Annex B (Informative) Action-based Ontology: rationale

Editor's Note: This Annex to contain a brief account of the rationale for the RDD Ontology being Act-centred.

© ISO/IEC 2001 — All rights reserved

Annex C (Informative) ContextModel development

Editor's Note: This Annex will include a series of diagrams and accompanying text on the rationale of the ContextModel.

Annex D (Informative) Implementation Guidelines

Headwords under the RDD Authority shall have initial capital letters (eg "Agreement") and multiple words compressed into a string with initial capitals for each word (eg "RightsTransfer").

Editor's Note: Should characters be UniCode?

© ISO/IEC 2001 — All rights reserved

Bibliography

[1] XXX