

STANDARDS AND INFORMATION DOCUMENTS



AES standard for audio metadata— Core audio metadata

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This list is current as of 2017/7/25

AES standard for audio metadata - Core audio metadata

Published by
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Abstract

This specification addresses the creation, management and preservation of material that can be re-used as originally produced, or may provide input material for new production projects. Material is expected to be exchanged between various organisations or between production facilities in a distributed environment.

The core set of metadata presented in this specification is a co-publication of EBU Tech3293-2008 EBU Core, itself an extension to and a refinement of the Dublin Core. EBUCore is a minimum list of attributes characterizing video and / or audio media resources. An XML representation is also provided in case this metadata would be implemented, for example in archive exchange projects using the Open Archive Initiative's Protocol for Metadata Harvesting (OAI-PMH).

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2011-09-22 printing

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Foreword

This foreword is not part of the AES60-2011 *AES standard for audio metadata - Core audio metadata*.

This document has its roots in the AES project X098A where the concept of providing a core administrative metadata set for audio exchange explored. This metadata set was based on Dublin Core and expanded to meet the basic requirements of the audio industry. It was well ahead of its time and as a result did not attract sufficient industry traction to complete until comparatively recently where similar work covering both audio and video was carried out within the EBU. The decision was eventually taken to base the AES core descriptive metadata on the EBU core and co-publish this under the auspices of EBU and AES, which is expected to have a greater impact on the industry as a whole.

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Note on normative language

In AES standards documents, sentences containing the word “shall” are requirements for compliance with the document. Sentences containing the verb “should” are strong suggestions (recommendations). Sentences giving permission use the verb “may”. Sentences expressing a possibility use the verb “can”.



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AES standard for audio metadata - Core audio metadata

Introduction

The “AES Core” set of metadata defined in this specification has been identified as being the minimum information needed to describe audio media resources.

Modern IT-based production environments need metadata to identify and retrieve content correctly and efficiently. Metadata provides an important link between various production operations and the following core set of information is a minimum requirement for practical operations. Content archives provide a common basis to describe content in a way that supports other processes in the production chain.

The decision to issue AES Core as a co-publication with the EBU Core is seen as an important factor in maintaining interoperability between the audio and video industries. For this reason, this specification includes elements that may seldom be used in a purely audio context. However, much audio material is destined to coexist with video and other media at some point during its life, so these additional elements may not be superfluous. It is not expected that the AES will actively develop the non-audio aspects of this standard but rather rely on active cooperation with EBU to co-maintain the AES and EBU cores.

This “AES Core” metadata set is primarily a minimum list of elements and attributes for which an XML representation is also proposed. Being based on the EBU Core, it follows that it is also an extension to the Dublin Core metadata set. The Dublin Core is being used as a core metadata set by librarians and in cultural heritage projects. The AES Core and EBUCore, used for radio and television archives, offer a bridge between cultural-heritage databases, broadcasting production systems and broadcasting archive repositories.

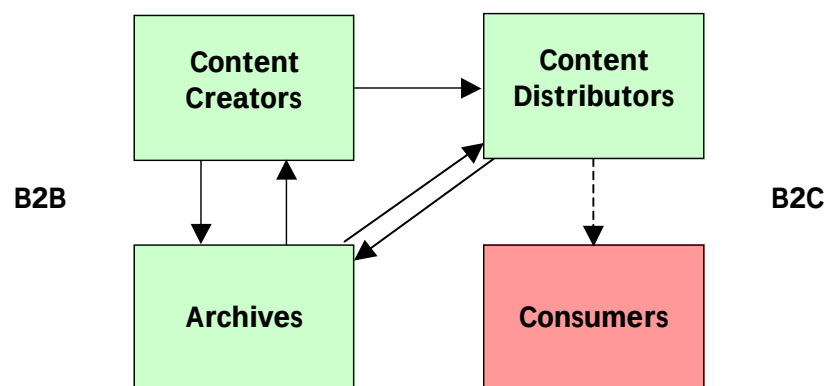


Figure 1: Archiving - a core process to define metadata



0 Preamble

0.1 Documentation conventions

A mono-spaced typeface is used to identify computer code expressions to distinguish them from regular text. Examples are shown using XML structural conventions.

1 Scope

This specification addresses the creation, management and preservation of material that can be re-used as originally produced, or may provide input material for new production projects. Material is expected to be exchanged between various organisations or between production facilities in a distributed environment.

The core set of metadata presented in this specification is based on the EBUCore, itself an extension to the Dublin Core. It is a minimum list of attributes characterizing audio and / or video media resources. An XML representation is also proposed in case this metadata would be implemented, for example in archive exchange projects using the Open Archive Initiative's Protocol for Metadata Harvesting (OAI-PMH).

2 Normative references

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

ISO 15836, *Dublin Core Metadata Element Set*, International Standards Organisation, Geneva, Switzerland.

XML schema, World Wide Web Consortium, www.w3.org

Namespaces in XML, World Wide Web Consortium, www.w3.org

RFC 2045 *Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies*, The Internet Society, www.isoc.org

RFC 3339 *Date and Time on the Internet: Timestamps*, The Internet Society, www.isoc.org

3 Definitions and abbreviations

3.1

Unique Resource Identifier

URI

<http://tools.ietf.org/html/rfc3986>

3.2

Unique Resource Namespace

URN

<http://tools.ietf.org/html/rfc3986>

3.3

Unique Resource Locator

URL

<http://tools.ietf.org/html/rfc3986>



4 Core Metadata Set

4.1 General

4.1.1 Precedence

The AES Core is based on the EBUCore metadata specification. It is a collection of basic metadata elements to be used to describe content in metadata environments based on the Dublin Core Metadata Element Set.

In case of conflict between any detail of this standard and the current version of the associated published schema, the schema shall take precedence.

4.1.2 Element conventions

The characterization and semantics of each element shall correspond to the information as outlined below:

n.1.1.1 This is the name of the element

Cardinality	this specifies the number of times an elements can be used when describing a piece of content
Requirement	this states whether is element is required or optional
Definition	this provides a short description of the element and its scope of use
Format	defines the type or format of the element. For example: text or URI
Schema	give a syntactic view of the element representation in the AES-Core schema
Example	this gives an informative illustration of the element
Refinement	this is an informative list of elements and attributes that may be used to further define the element in a structured way

NOTE 1 In this document the name is preceded by a sub-clause number to aid human readability. Subclause numbering is not part of the metadata set and may change in later versions of this document.

NOTE 2 Mapping may exist between this standard and equivalent elements in other standards.

4.1.3 The XML instance of EBU Core and AES Core

The standard defines an XLM-schema, and so the data instances of the standard will be XML-documents. The structure is defined in the schema but will typical be something like:

```
<?xml version="1.0" encoding="UTF-8"?>
<ebuCoreMain xmlns="urn:ebu:metadata-schema:ebuCore_2010"
xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="urn:ebu:metadata-schema:ebuCore_2010
http://www.aes.org/standards/schemas/aes60-2011.xsd">
  <coreMetadata>
    <title>
      <dc:title>Some title</dc:title>
    </title>
  </coreMetadata>
</ebuCoreMain>
```

The element name **ebuCoreMain** is common for EBU Core and AES60 to ensure that different XML instances are compatible.



4.1.4 Implementation guidelines

4.1.4.1 General remarks

Several aspects of the specification are left to the implementer (for example, regarding the mapping to pre-existing in-house metadata schemas).

Reference data identified in 4.2 is proposed by default but can be extended or replaced. In order to maximise interoperability in case of exchange, for example, it is recommended that extensions or alternative reference data be duly documented, maintained and made available to other users - as open resources on the Internet, for example.

The schema proposed in Annex F is built as an extension to the Simple Dublin Core and further developed by the EBU to facilitate transformation to the Simple Dublin Core representation as required by certain applications such as the European Digital Library. For the same reason, it is recommended that predefined 'relations' be used when available.

4.1.4.2 Use of the attribute groups

4.1.4.2.1 typeGroup, formatGroup, statusGroup

Each of these groups consists of the same three attributes: a 'label', a 'definition' and a 'link'.

label	gives the actual name given to the <i>type</i> , <i>format</i> or <i>status</i> . For example, 'episode' will be used to specify that the type of Title provided is the title of an episode.
definition	can be used to provide either a definition of the <i>type</i> , <i>format</i> or <i>status</i> , or the name of the reference data set where this <i>type</i> , <i>format</i> or <i>status</i> is defined.
link	is used to provide a URI to a Classification Scheme (in complement to the 'label') or to a Classification Scheme term (in this case the use of the label is optional).

4.1.4.2.2 dateGroup

This group is associated with only a title or alternative title. It consists of three attributes: 'startDate', 'endDate', and 'period'.

Precise date and/or time periods shall be defined using the 'startDate' and 'endDate'.

The 'period' attribute is used to define a period by its name, for example 'April 2000'.

4.1.4.3 External reference data

Lists of controlled terms are handled by external Classification Schemes structured to allow access to terms from a predefined hierarchical vocabulary list (thesaurus). Each list is uniquely identified by its namespace (URI in the form of a URN or URL) and 'Alias'. A Classification Term is defined by a unique key (**termID**) or a name as follows:

EXAMPLE:

```
<ClassificationScheme uri="urn:ebu:metadata-cs:ContentGenreCS:2008">
  <Alias>GenreCS</Alias>
  <Term termID="3.1">
    <Name xml:lang="en">NON-FICTION / INFORMATION</mpeg7:Name>
    <Term key="3.1.1">
      <Name xml:lang="en">News</mpeg7:Name>
    </Term>
    <!--etc.-->
  </ClassificationScheme>
```



It is an important implementation requirement to ensure that these resources are accessible by the metadata recipient. Classification schemes shall preferably be available as resources on the open Internet via maintained URLs. In this case URIs shall respect the following syntax:

URL#termID

EXAMPLE: http://www.ebu.ch/metadata/cs/ebu_ContentGenreCS.xml#3.1

A conforming parser uses that URI to resolve the **termID** reference to a resource, whether physical or logical. Once the **termID** has been resolved, the term name can be accessed (for example: 'News' in the above example). This resolution method is left to the discretion of each recipient.

URIs (URLs) can be replaced by aliases to provide a more concise, application-specific way of referring to classification terms as long as a look-up table is provided describing the relationship between aliases and URIs.

If '**GenreCS**' is the alias for "http://www.ebu.ch/metadata/cs/ebu_ContentGenreCS.xml", in the above example 'News' will be accessed through "**GenreCS#3.1**".

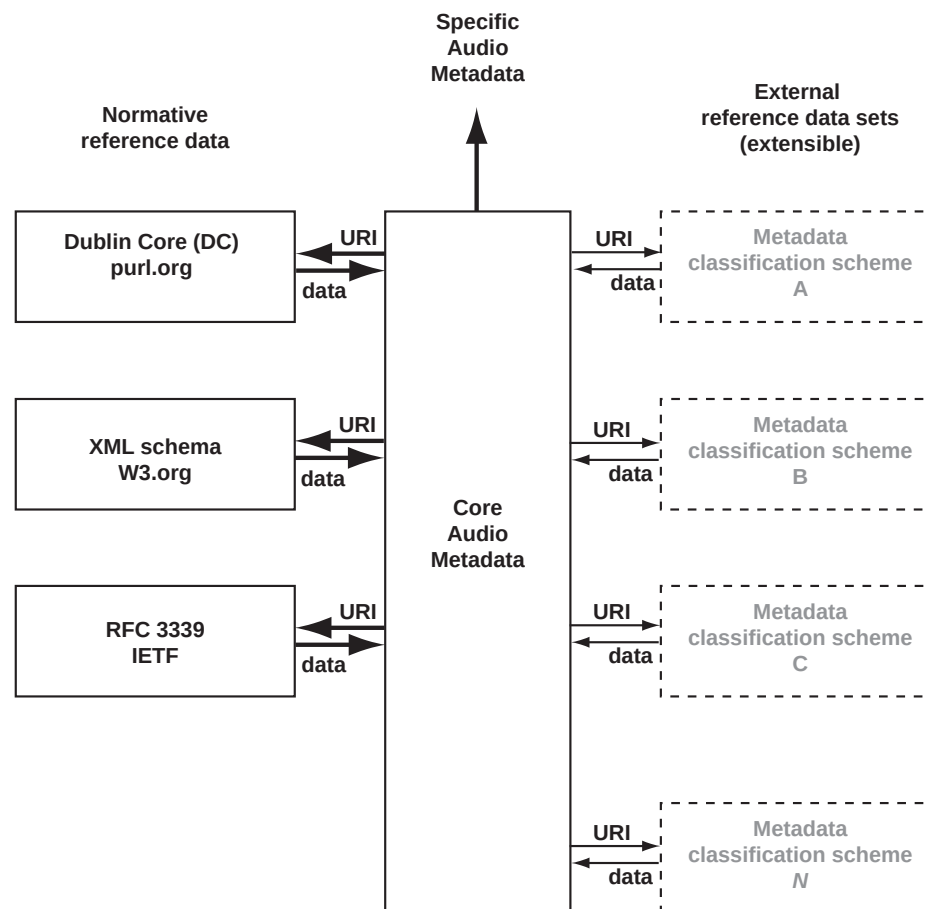


Figure 2 - Relationship between core metadata and external metadata sets

4.2 Core metadata-set elements and semantics

4.2.1 Title

4.2.1.1 Title

Cardinality	Multiple occurrences of the same Title are possible in different languages
Requirement	Mandatory
Definition	A Title is the ‘main’ name given to a resource, for example a media item, a media object, or a sequence as specified by the associated title type. It corresponds for a series to the series title, for a programme to the programme title, for an item to the item title, etc. Titles are recorded as they appear. The Title is the name by which a resource is formally known and that everyone should use to refer to or search for that particular resource. The Title may be provided in several languages, described by the attribute xml:lang It is sometimes common practice to put dates into the Title. If present, the startDate (indicating when the Title was attributed) in the date attribute should be consistent.
Format	Free text
Schema	/coreMetadataType/title/dc:title
Example	<pre><coreMetadata> <title> <dc:title>Twilight zone</dc:title> </title> <title> <dc:title xml:lang="fr">La quatrième dimension</dc:title> </title> </coreMetadata></pre>
Refinement	Title Date, Title Note (optional additional contextual information)

4.2.1.2 Alternative Title

Cardinality	Multiple
Requirement	Optional
Definition	An Alternative Title is the name other than the ‘main’ Title given to a resource, for example: a media item, a media object, or a sequence. Alternative Titles are recorded as they appear. An Alternative Title may be attributed to a resource for several reasons described using the status attributes.
Format	Free text
Schema	/coreMetadataType/alternativeTitle/dc:title
Example	<pre><alternativeTitle> <dc:title>The time machine lost in space</dc:title> </alternativeTitle></pre>
Refinement	Title Status, Title Date, Title Note (optional additional contextual information)



4.2.1.2.1 Alternative Title Status

Cardinality	Unique per Alternative Title
Requirement	Optional
Definition	The Title Status descriptor indicates the sort of Title or Alternative Title being defined. The status 'main' is reserved for the Title and should not be used for Alternative Titles.
Format	Classification scheme link (reference data file URL plus an optional classification scheme term code) or free text (label) and an optional definition
Schema	statusGroup of attributes: /coreMetadataType/alternativeTitle/@statusLabel /coreMetadataType/alternativeTitle/@statusLink and (optional) /coreMetadataType/alternativeTitle/@statusDefinition
Reference data	ebu_TitleStatusCodeCS
Example	<pre><alternativeTitle statusLabel="working" statusLink="http://www.ebu.ch/metadata/cs/ebu_TitleStatusCodeCS.xml#6" statusDefinition="a temporary title, which is different from the formal title under which the content has been published"> <dc:title>The time machine lost in space</dc:title> </alternativeTitle></pre>

4.2.1.2.2 Title Date / Alternative Title Date

Cardinality	Unique per Title or Title Alternative
Requirement	Optional
Definition	Defines the date of creation/attribution, or the associated period for the Title or Alternative Title
Format	Date Group (see 4.2.7.6)
Schema	dateGroup of attributes: /coreMetadataType/title/@startDate and /coreMetadataType/title/@endDate or /coreMetadataType/title/@period
Example	<pre><alternativeTitle startDate="2010-10-10" startTime="09:00:00+01:00" endDate="2010-11-11" endTime="19:00:00+01:00"> <dc:title>The time machine lost in space</dc:title> </alternativeTitle></pre>



4.2.2 Creator

Cardinality	Multiple
Requirement	Optional
Definition	The descriptor creator identifies an ‘entity’ (a person, group of persons or organisation) primarily responsible for creating the content of the resource - <u>behind the camera</u> . Different roles may be considered as representing a creator, for example: a producer, an author, etc.
Format	Entity Type (see 4.2.19)
Schema	/coreMetadataType/creator
Reference data	ebu_RoleCodeCS
Example	<pre> <creator> <contactDetails> <name> <givenName>Wolfgang Amadeus</givenName> <familyName>Mozart</familyName> </name> <address> <addressLine>Irgentwogasse 133</addressLine> <addressTownCity>Wien</addressTownCity> <country>Österreich</country> </address> <contactOccupation>Entertainer</contactOccupation> </contactDetails> <role typeLabel="Composer" typeLink="http://www.ebu.ch/metadata/cs/ebu_RoleCodeCS.xml#17.1.7"/> </creator> </pre>

4.2.3 Subject

Cardinality	Multiple
Requirement	Optional
Definition	The generalised topic that represents the intellectual content of the resource. Typically, a subject is expressed by keywords, key phrases. Controlled vocabularies, authorities, or formal classification schemes (codes) may be employed when selecting descriptive subject terms. Persons as subjects are also placed here. Genre of the content is placed under element “Type”.
Format	Classification Scheme (code) or free text
Schema	/coreMetadataType/subject/dc:subject and/or /coreMetadataType/subject/subjectCode and (optional) /coreMetadataType/subject/subjectDefinition
Reference data	Library of Congress Subject Heading (LCSH) Library of Congress Classification (LCC) Medical Subject Headings (MeSH) Dewey Decimal Classification (DDC) Dansk decimalklassedeling 5.utgave (DK5) Klassifikasjonssystem för svenska bibliotek (SAB)



Universal Decimal Classification (UDC)
 Norske emneord
 ebu_IPTCSubjectCodeCS
 etc.

Example	<pre> <subject> <dc:subject>Tennis</dc:subject> <subjectCode>15065000</subjectCode> <subjectDefinition>the subject is about tennis (sport, game)</subjectDefinition> </subject> </pre>
Refinement	Subject Type, Note (additional contextual information)

4.2.3.1 Subject Type

Cardinality	Unique per Subject
Requirement	Optional
Definition	To define the subject reference in use such as the reference data source
Format	Classification scheme link (reference data file URL and an optional classification scheme term code) or free text (label) and an optional definition
Schema	typeGroup of attributes: /coreMetadataType/subject/@typeLabel and/or /coreMetadataType/subject/@typeLink and (optional) /coreMetadataType/subject/@typeDefinition
Reference data	Library of Congress Subject Heading (LCSH) Library of Congress Classification (LCC) Medical Subject Headings (MeSH) Dewey Decimal Classification (DDC) Dansk decimalklassedeling 5.utgave (DK5) Klassifikasjonssystem för svenska bibliotek (SAB) Universal Decimal Classification (UDC) Norske emneord
Example	<pre> <subject typeDefinition="http://www.ebu.ch/metadata/cs/ebu_IPTCSubjectCodeCS.xml" typeLabel="http://www.ebu.ch/metadata/cs/ebu_IPTCSubjectCodeCS.xml" typeLink="http://www.ebu.ch/metadata/cs/ebu_IPTCSubjectCodeCS.xml"> <dc:subject>Tennis</dc:subject> <subjectCode>http://www.ebu.ch/metadata/cs/ebu_IPTCSubjectCodeCS.xml#1 5065000</subjectCode> <subjectDefinition>the subject is about tennis (sport, game)</subjectDefinition> </subject> </pre>



4.2.4 Description

Cardinality	Multiple
Requirement	Optional
Definition	Free-form text or a narrative to report general notes, abstracts, or summaries about the intellectual content of a resource. The information may be in the form of a paragraph giving an individual program description, anecdotal interpretations, or brief content reviews. The description may also consist of outlines, lists, bullet points, edit decision lists, indexes, or tables of content, a reference to a graphical representation of content or even a pointer (URI, URL) to an external resource. A running order can also be provided as a description. For a Radio or television programme a running order can be used as description. A description can be provided in different languages.
Format	Free text
Schema	<code>/coreMetadataType/description/dc:description</code>
Example	<pre><description typeLabel="Abstract"> <dc:description>A news report about an important international event focusing on the following list of important highlights.</dc:description> </description></pre>
Refinement	Description Type, Description Note (optional additional contextual information)

4.2.4.1 Description Type

Cardinality	Unique per Description
Requirement	Optional
Definition	To define the form of presentation for the information.
Format	Classification scheme link (reference data file URL and an optional classification scheme term code) or free text (label) and an optional definition
Schema	typeGroup of attributes: <pre>/coreMetadataType/description/@typeLabel and/or /coreMetadataType/description/@typeLink and (optional) /coreMetadataType/description/@typeDefinition</pre>
Reference data	ebu_DescriptionTypeCodeCS
Example	<pre><description typeLabel="Promotional Information" typeLink="http://www.ebu.ch/metadata/cs/ebu_DescriptionTypeCodeCS.xml#5" "> <dc:description>A news report ... highlights.</dc:description> </description></pre>



4.2.5 Publisher

Cardinality	Multiple
Requirement	Optional
Definition	A publisher is a person, an organization, or a service. Typically, the name of a Publisher should be used to indicate the entity primarily responsible for distributing or making a resource available to others; for example by broadcasting, selling, leasing, renting and other modes of distribution.
Format	Entity Type (see 4.2.19)
Schema	<code>/coreMetadataType/publisher</code>
Example	<pre> <publisher> <contactDetails> <name> <name>BBC</name> </name> </contactDetails> <role typeLabel="Distributor" typeLink="http://www.ebu.ch/metadata/cs/ebu_RoleCodeCS.xml#10.2"/> </publisher> </pre>

4.2.6 Contributor

Cardinality	Multiple
Requirement	Optional
Definition	The descriptor contributor identifies a person or organization that has made substantial creative contributions to the content of a resource. Refers particularly (but not only) to participation <u>in front of the camera</u>. If in doubt whether an entity is a creator or contributor use the element contributor.
Format	Entity Type (see 4.2.19)
Schema	<code>/coreMetadataType/contributor</code>
Example	<pre> <contributor> <contactDetails> <name> <givenName>Andy</givenName> <familyName>Williams</familyName> </name> </contactDetails> <role typeLabel="Presenter" typeLink="http://www.ebu.ch/metadata/cs/ebu_RoleCodeCS.xml#25.10"/> </contributor> </pre>

4.2.7 Date

Cardinality	Multiple
Requirement	Optional
Definition	Dates associated with events occurring during the life of the resource. Typically, Date will be associated with the creation, modification or availability of the resource.
Format	Any string describing a date, for a more strict date use the refinement elements
Schema	<code>/coreMetadataType/date/dc:date</code>
Refinement	Date Issued, Date Created, Date Modified, Date Digitised, Date Alternative
Example	<code><!--All dates can have the same start and end attributes, alternative</code>



```

date also a type-->
<date>
  <created startYear="1789" endYear="1791"/>
  <issued startDate="1967-04-05"/>
  <modified startDate="1968-04-21" startTime="09:35:00+01:00"/>
  <digitised startDate="2001-09-10" startTime="21:34:57"/>
  <alternative typeLabel="Date Ingested " typeDefinition="date at which
content was fed into the production system" startDate="2010-03-27"
startTime="10:34:47"/>
  <alternative typeLabel="Date published" typeDefinition="timespan for
publishing of the content on the web" startDate="2010-01-01"
startTime="00:00:00Z" endDate="2010-06-30" endTime="24:00:00"/>
</date>

```

4.2.7.1 Date Issued

Cardinality Unique

Requirement Optional

Definition Date of formal issuance (for example, publication) of the resource.

Specifies the formal date for a particular version or rendition of a resource has been made ready or officially released for distribution, publication or consumption, for example the broadcasting date of a radio programme.

A specific time may also be associated with the date.

Format Date Group (see 4.2.7.6)

Schema /coreMetadataType/date/issued

4.2.7.2 Date Created

Cardinality Unique

Requirement Optional

Definition To specify the creation date for a particular version or rendition of a resource across its life cycle. It is the moment in time that the media item was finalized during its production process and is forwarded to other divisions or agencies to make it ready for publication or distribution. A specific time may also be associated with the date.

Format Date Group (see 4.2.7.6)

Schema /coreMetadataType/date/created

4.2.7.3 Date Modified

Cardinality Unique

Requirement Optional

Definition Date on which the resource was last changed

Format Date Group (see 4.2.7.6)

Schema /coreMetadataType/date/modified



4.2.7.4 Date Digitised

Cardinality	Unique
Requirement	Optional
Definition	Date on which the resource was digitised.
Format	Date Group (see 4.2.7.6)
Schema	/coreMetadataType/date/digitised

4.2.7.5 Date Alternative

Cardinality	Multiple
Requirement	Optional
Definition	An alternative particular date for which the type can be defined
Format	Date Group (see 4.2.7.6)
Schema	/coreMetadataType/date/alternative
Refinement	Date AlternativeType

4.2.7.5.1 Date Alternative Type

Cardinality	Unique per Alternative
Requirement	Optional
Definition	To define a type of date other than the pre-defined dates (created, etc.).
Format	Classification scheme link (reference data file URL plus an optional classification scheme term code) or free text (label) and an optional definition
Schema	typeGroup of attributes: /coreMetadataType/date/alternative/@typeLabel or /coreMetadataType/date/alternative/@typeLink and (optional) /coreMetadataType/date/alternative/@typeDefinition

4.2.7.6 Date Group

Cardinality	One per date refinement element
Requirement	Optional
Definition	A set of attributes defining a date
Format	@startYear – qYear - To express a start year @startDate – date - To express a start date @startTime – time – To express a start time @endYear – qYear - To express an end year @endDate – date - To express an end date @endTime – time – To express an end time The format types are the types defined in XML Schema
Schema	Applies to several elements in the schema



4.2.8 Type

Cardinality	Multiple
Requirement	Optional
Definition	The nature or genre of the resource. Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary. To describe the physical or digital manifestation of the resource, use the Format element (see 4.2.9).
Format	Classification scheme link (reference data file URL plus an optional classification scheme term code) or free text (dc:type) and an optional definition
Schema	typeGroup of attributes: /coreMetadataType/type/dc:type and/or /coreMetadataType/type/genre/ and (optional) /coreMetadataType/type/objectType/
Reference data	<i>For genre:</i> ebu_ContentAlertSchemeCodeCS ebu_ContentGenreCS ebu_EditorialFormatCodeCS ebu_IntentionCodeCS tva_ContentCommercialCS tva_ContentAlertCS ebu_IntendedAudienceCodeCS <i>For objectType:</i> ebu_ObjectTypeCS
Example	<pre><type> <objectType typeLabel="programme"/> </type> <type> <genre typeLabel="News" typeDefinition="The material is about information and reporting such as daily news"/> </type></pre>
Refinement	Type @Type Group, Type @Note (optional additional contextual information)

4.2.9 Format

Cardinality	Unique per manifestation of a resource
Requirement	Optional
Definition	The physical or digital manifestation of the resource. Use the descriptor Format to identify the format of a particular resource as it exists in its physical or digital form. ‘Physical form’ means an actual physical form that occupies physical space, for example a tape. ‘Digital form’ means a digital file residing on a server or hard drive. Format may be used to determine the software, hardware or other equipment needed to display



or operate the resource.

Format	Free text
Schema	<code>/coreMetadataType/format/dc:format</code>
Example	<pre><format> <dc:format>MPEG video</dc:format> </format></pre>
Refinement	Format Width, Format Height, Format Medium, Format Mime Type, Format Video Format, Format Audio Format, Format File Format, Format Captioning Format, Format Signing Format, Format Start, Format Duration, Format File Size, Format Filename, Format Locator, Format Technical Attribute String, Format Technical Attribute Integer, Format Technical Attribute Flag, Format Technical Attribute Float

4.2.9.1 Format Width

Cardinality	Unique per Format.
Requirement	Optional
Definition	The width of the image or picture. Used as numerator to define the aspect ratio for video content.
Format	Non-negative Integer
Schema	<code>/coreMetadataType/format/width</code>
Example	<pre><format> <width unit="pixel">1920</width> </format></pre>
Refinement	Unit

4.2.9.2 Format Height

Cardinality	Unique per Format.
Requirement	Optional
Definition	The height of the image or picture. Used as denominator to define the aspect ratio for video content.
Format	Non Negative Integer
Schema	<code>/coreMetadataType/format/height</code>
Example	<pre><format> <height>300</height> </format></pre>
Refinement	Unit

4.2.9.3 Format Medium

Cardinality	Multiple
Requirement	Optional
Definition	The material or physical carrier of the resource. If a file, it should be the carrier format.
Format	Classification scheme link (reference data file URL plus an optional classification scheme term code) or free text (label) and an optional definition
Schema	typeGroup of attributes:



	<code>/coreMetadataType/format/medium/@typeLabel</code>
	and/or
	<code>/coreMetadataType/format/medium/@typeLink</code>
	and (optional)
	<code>/coreMetadataType/format/medium/@typeDefinition</code>
Reference data	ebu_StorageMediaTypeCode (extension to IBTN, EBU Tech Doc 3279)
Example	<pre> <format> <medium typeLabel="D5 format HDTV digital television tape" typeLink="http://www.ebu.ch/metadata/cs/ebu_StorageMediaTypeCodeCS.xml# D5H"/> </format> </pre>

4.2.9.4 Format MIME Type

Cardinality	Unique per Format
Requirement	Optional
Definition	The main MIME type of the resource as registered with IANA (see RFC 2045).
Format	Classification scheme link (reference data file URL plus an optional classification scheme term code)
	or
	free text (label) and an optional definition
Schema	typeGroup of attributes: <pre> /coreMetadataType/format/mimeType/@typeLabel or /coreMetadataType/format/mimeType/@typeLink and (optional) /coreMetadataType/format/mimeType/@typeDefinition </pre>
Reference data	MIME Type (http://www.iana.org/assignments/media-types/) ebu_MediaTypeCS

4.2.9.5 Format Video Format

Cardinality	Unique per Encoding
Requirement	Optional
Definition	To provide information on the Video Format in complement to video encoding information on (for example) colour, greyscale or black and white colour schemes, frame rate, sampling rate, scanning format.
Format	Sets of elements describing the video
Refinement	Aspect Ratio, Video Encoding, Video Track, Video Technical Attribute String, Video Technical Attribute Integer, Video Technical Attribute Flag, Video Technical Attribute Float

4.2.9.5.1 Aspect Ratio

Cardinality	Unique per Video Format
Requirement	Optional



Definition	The aspect relation of the video
Format	String with format definition group, additional free text note
Schema	formatGroup of attributes, and note: /coreMetadataType/format/videoFormat/aspectRatio/@formatLabel or /coreMetadataType/format/videoFormat/aspectRatio/@formatLink and (optional) /coreMetadataType/format/videoFormat/aspectRatio/@formatDefinition (optional) /coreMetadataType/format/videoFormat/aspectRatio/@note

4.2.9.5.2 Video Encoding

Cardinality	Unique per Video Format
Requirement	Optional
Definition	The format of the video encoding used
Format	Type group set of attributes
Schema	typeGroup of attributes: /coreMetadataType/format/videoFormat/videoEncoding/@typeLabel or /coreMetadataType/format/videoFormat/videoEncoding/@typeLink and (optional) /coreMetadataType/format/videoFormat/videoEncoding/@typeDefinition

4.2.9.5.3 Video Track

Cardinality	Multiple per Video Format
Requirement	Optional
Definition	The format of the video track or tracks
Format	Type group set of attributes, with additional Video track id and name
Schema	typeGroup of attributes: /coreMetadataType/format/videoFormat/videoTrack/@typeLabel or /coreMetadataType/format/videoFormat/videoTrack/@typeLink and (optional) /coreMetadataType/format/videoFormat/videoTrack/@typeDefinition (optional) /coreMetadataType/format/videoFormat/videoTrack/videoTrackId (optional) /coreMetadataType/format/videoFormat/videoTrack/videoTrackName

4.2.9.5.4 Video Technical Attribute String

Cardinality	Multiple per Video Format
Requirement	Optional
Definition	Additional properties of the video resource



Format String with type and format group set of attributes

Schema *typeGroup of attributes:*
 .../videoFormat/videoTechnicalAttributeString/@typeLabel
 or
 .../videoFormat/videoTechnicalAttributeString/@typeLink
 and (optional)
 .../videoFormat/videoTechnicalAttributeString/@typeDefinition

formatGroup of attributes:
 .../videoFormat/videoTechnicalAttributeString/@formatLabel
 or
 .../videoFormat/videoTechnicalAttributeString/@formatLink
 and (optional)
 .../videoFormat/videoTechnicalAttributeString/@formatDefinition

4.2.9.5.5 Video Technical Attribute Integer

Cardinality Multiple per Video Format

Requirement Optional

Definition Additional properties of the video resource

Format Integer with type group set of attributes

Schema *typeGroup of attributes:*
 .../videoFormat/videoTechnicalAttributeInteger/@typeLabel
 or
 .../videoFormat/videoTechnicalAttributeInteger/@typeLink
 and (optional)
 .../videoFormat/videoTechnicalAttributeInteger/@typeDefinition

4.2.9.5.6 Video Technical Attribute Flag

Cardinality Multiple per Video Format

Requirement Optional

Definition Additional properties of the video resource

Format Boolean with type group set of attributes

Schema *typeGroup of attributes:*
 .../videoFormat/videoTechnicalAttributeFlag/@typeLabel
 or
 .../videoFormat/videoTechnicalAttributeFlag/@typeLink
 and (optional)
 .../videoFormat/videoTechnicalAttributeFlag/@typeDefinition

4.2.9.5.7 Video Technical Attribute Float

Cardinality Multiple per Video Format

Requirement Optional

Definition Additional properties of the video resource



Format Float with type group set of attributes

Schema typeGroup of attributes:
`.../videoFormat/videoTechnicalAttributeFloat/@typeLabel`
or
`.../videoFormat/videoTechnicalAttributeFloat/@typeLink`
and (optional)
`.../videoFormat/videoTechnicalAttributeFloat/@typeDefinition`

4.2.9.6 Format Audio Format

Cardinality Unique per Encoding

Requirement Optional

Definition To provide information on the Audio

Format Sets of elements describing the audio

Example `<format>`
`<audioFormat>`
`<audioEncoding typeLabel="HE-AAC"/>`
`<audioTrack>`
`<audioTrackId>1</audioTrackId>`
`<audioTrackName>Narrator</audioTrackName>`
`<audioTrackLanguage typeLabel="nb"/>`
`</audioTrack>`
`</audioFormat>`
`</format>`

Refinement Audio Encoding, Audio Track Configuration, Audio Track, Audio Technical Attribute String, Audio Technical Attribute Integer, Audio Technical Attribute Flag, Audio Technical Attribute Float

4.2.9.6.1 Audio Encoding

Cardinality Unique per Audio Format

Requirement Optional

Definition The format of the audio encoding used

Format Type group set of attributes

Schema typeGroup of attributes:
`/coreMetadataType/format/audioFormat/audioEncoding/@typeLabel`
or
`/coreMetadataType/format/audioFormat/audioEncoding/@typeLink`
and (optional)
`/coreMetadataType/format/audioFormat/audioEncoding/@typeDefinition`

4.2.9.6.2 Audio Track Configuration

Cardinality Unique per Audio Format

Requirement Optional

Definition The configuration of the several audio tracks in the resource

Format String with type definition group



Schema typeGroup of attributes
 /coreMetadataType/format/audioFormat/audioTrackConfiguration/@typeLabel
 or
 /coreMetadataType/format/audioFormat/audioTrackConfiguration/@typeLink
 and (optional)
 /coreMetadataType/format/audioFormat/audioTrackConfiguration/@typeDefinition

4.2.9.6.3 Audio Track

Cardinality Multiple per Audio Format

Requirement Optional

Definition The format of the audio track(s)

Format Type group set of attributes, with additional audio track id, name and language

Schema typeGroup of attributes:
 /coreMetadataType/format/audioFormat/audioTrack/@typeLabel
 or
 /coreMetadataType/format/audioFormat/audioTrack/@typeLink
 and (optional)
 /coreMetadataType/format/audioFormat/audioTrack/@typeDefinition
 (optional)
 /coreMetadataType/format/audioFormat/audioTrack/audioTrackId
 (optional)
 /coreMetadataType/format/audioFormat/audioTrack/audioTrackName
 (optional)
 /coreMetadataType/format/audioFormat/audioTrack/audioTrackLanguage

4.2.9.6.4 Audio Technical Attribute String

Cardinality Multiple per Audio Format

Requirement Optional

Definition Additional custom properties of the audio resource referenced through an external table

Format String with type and format group set of attributes

Schema *typeGroup of attributes:*
 .../audioFormat/audioTechnicalAttributeString/@typeLabel
 or
 .../audioFormat/audioTechnicalAttributeString/@typeLink
 and (optional)
 .../audioFormat/audioTechnicalAttributeString/@typeDefinition

formatGroup of attributes:
 .../audioFormat/audioTechnicalAttributeString/@formatLabel
 or
 .../audioFormat/audioTechnicalAttributeString/@formatLink

