Common Metadata 'md' namespace

Showing changes from 2.0

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REVISION HISTORY

See *Common Metadata Revision History, TR-META-REV,* for detailed revision information.

Version	Date	Description
1.0	January 5, 2010	Original Version
1.1	January 6, 2011	Incorporates corrections.
1.2	November 1, 2011	Incorporates corrections and enhancements, primarily to support derived specifications.
1.2a-1.2e	May 29, 2012, September 24, 2012, October 11, 2012	Minor schema alignment (no schema changes), EIDR IDs, additions to controlled vocabularies, Ratings improvements, and minor corrections and additions.
1.2f	December 16, 2012	Moved Section 8 Content Ratings Encoding to a separate document: TR-META-CR, Common Metadata Content Ratings, www.movielabs.com/ratings
2.0	January 3, 2013	Major revision
2.0a	January 7, 2013	Minor corrections to 2.0.AF
2.1 draft	April 22, 2013	<TBS>

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1 INTRODUCTION

The B2B transfer of media requires metadata to describe that media. Several activities underway at the time of this document's authoring have metadata needs that overlap. This document in conjunction with associated XML schemas defines the content and one possible encoding of such data.

This is designed as a resource. Those using this specification may extend the definition with additional data element specific for their needs. They may replace elements with others perhaps more suitable to their needs; however, for interoperability all are highly encouraged to use the data elements exactly as defined.

1.1 Overview of Common Metadata

Common Metadata includes elements that cover typical definitions of media, particularly movies and television. Common Metadata has two parts: Basic Metadata and Digital Asset Metadata. Basic Metadata includes descriptions such as title and artists. It describes information about the work independent of encoding. Digital Asset metadata describes information about individual encoded audio, video and subtitle streams, and other media included. Package and File Metadata describes one possible packaging scenario and ties in other metadata types. Ratings and Parental Control information is described.

Common Metadata is designed to provide definitions to be inserted into other metadata systems. A given metadata scheme, for example, the Entertainment Merchant's Association (EMA) may select element of the Common Metadata to be used within its definitions. EMA would then define additional metadata to cover areas not included in Common Metadata.

1.2 Document Organization

This document is organized as follows:

1. Introduction—Provides background, scope and conventions
2. Identifiers—Specification of identifiers used to reference metadata.
3. General Types Encoding—Specific of encoding methods (e.g., language, region).
4. Basic Metadata—Content descriptive metadata definition
5. Digital Asset Metadata—Encoded media metadata definition
6. Container Metadata – Metadata describing media containers
7. Content Rating—Methods for encoding content ratings
8. Content Rating Encoding—Content Ratings can now be found in *Common Metadata Content Ratings* at www.movielabs.com/ratings.
9. Examples
10. Redefine Support – Information on using schema features to tightly control vocabulary

1.3 Document Notation and Conventions

As a general guideline, the key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119]. That is:

- “MUST”, “REQUIRED” or “SHALL”, mean that the definition is an absolute requirement of the specification.
- “MUST NOT” or “SHALL NOT” means that the definition is an absolute prohibition of the specification.
- “SHOULD” or “RECOMMENDED” mean that there may be valid reasons to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
- “SHOULD NOT” or “NOT RECOMMENDED” mean that there may be valid reasons when the particular behavior is acceptable, but the full implications should be understood and the case carefully weighed before implementing any behavior described with this label.
- “MAY” or “OPTIONAL” mean the item is truly optional, however a preferred implementation may be specified for OPTIONAL features to improve interoperability.

Terms defined to have a specific meaning within this specification will be capitalized, e.g. “Track”, and should be interpreted with their general meaning if not capitalized.

Normative key words are written in all caps, e.g. “SHALL”.

Normative requirements need not use the formal language above.

1.3.1 XML Conventions

XML is used extensively in this document to describe data. It does not necessarily imply that actual data exchanged will be in XML. For example, JSON may be used equivalently.

This document uses tables to define XML structure. These tables may combine multiple elements and attributes in a single table. Although this does not align with schema structure, it is much more readable and hence easier to review and to implement.

Although the tables are less exact than XSD, the tables should not conflict with the schema. Such contradictions should be noted as errors and corrected.

1.3.1.1 Naming Conventions

This section describes naming conventions for Common Metadata XML attributes, element and other named entities. The conventions are as follows:

- Names use initial caps, as in InitialCaps.
- Elements begin with a capital letter, as in InitialCapitalElement.

- Attributes begin with a lowercase letter, as in initiaLowercaseAttribute.
- XML structures are formatted as Courier New, such as `md:id-type`
- Names of both simple and complex types are followed with "-type"

1.3.1.2 Structure of Element Table

Each section begins with an information introduction. For example, "The Bin Element describes the unique case information assigned to the notice."

This is followed by a table with the following structure.

The headings are

- Element—the name of the element.
- Attribute—the name of the attribute
- Definition—a descriptive definition. The definition may define conditions of usage or other constraints.
- Value—the format of the attribute or element. Value may be an XML type (e.g., "string") or a reference to another element description (e.g., "See Bar Element"). Annotations for limits or enumerations may be included (e.g.," int [0..100]" to indicate an XML xs:int type with an accepted range from 1 to 100 inclusively)
- Card—cardinality of the element. If blank, then it is 1. Other typical values are 0..1 (optional), 1..n and 0..n.

The first row of the table after the header is the element being defined. This is immediately followed by attributes of this element, if any. Subsequent rows are child elements and their attributes. All child elements (i.e., those that are direct descendants) are included in the table. Simple child elements may be fully defined here (e.g., "Title", " ", "Title of work", "xs:string"), or described fully elsewhere ("POC", " ", "Person to contact in case there is a problem", "md:ContactInfo-type"). In this example, if POC was to be defined by a complex type defined as md:ContactInfo-type. Attributes immediately follow the containing element.

Accompanying the table is as much normative explanation as appropriate to fully define the element, and potentially examples for clarity. Examples and other informative descriptive text may follow. XML examples are included toward the end of the document and the referenced web sites.

1.3.2 General Notes

All required elements and attributes must be included.

When enumerations are provided in the form 'enumeration', the quotation marks ('') should not be included.

UTF-8 [RFC3629] encoding shall be used when ISO/IEC 10646 (Universal Character Set) encoding is required.

1.4 Normative References

[TR-META-CR] *Common Metadata Content Ratings*, TR-META-CR, www.movielabs.com/ratings. Note that a specific version is not referenced as it is intened that the latest version will be used. Referencing specifications may selection a specific version of the referenced document.

[EIDR-TO] *EIDR Technical Overview*, November 2010. http://eidr.org/technology/#docs

[RFC2141] R. Moats, *RFC 2141, URN Syntax*, May 1997, http://www.ietf.org/rfc/rfc2141.txt

[RFC3629] Yergeau, F., et al, *RFC 3629, UTF-8, a transformation format of ISO 10646*, November, 2003. http://www.ietf.org/rfc/rfc3629.txt

[RFC3986] Berners-Lee, T., et al, RFC 3986, Uniform Resource Identifier (URI): Generic Syntax, January 2005, http://www.ietf.org/rfc/rfc3986.txt

[RFC5646] Philips, A, et al, *RFC 5646, Tags for Identifying Languages*, IETF, September, 2009. http://www.ietf.org/rfc/rfc5646.txt

[IANA-LANG] IANA Language Subtag Registry. http://www.iana.org/assignments/language-subtag-registry

[ISO3166-1] Codes for the representation of names of countries and their subdivisions -- Part 1: Country codes, 2007.

[ISO3166-2] ISO 3166-2:2007Codes for the representation of names of countries and their subdivisions -- Part 2: Country subdivision code

[ISO4217] Currency shall be encoded using ISO 4217 Alphabetic Code. http://www.iso.org/iso/currency_codes_list-1

[ISO8601] ISO 8601:2000 Second Edition, *Representation of dates and times, second edition*, 2000-12-15.

[ISO13818-2] ISO/IEC 13818-2:2000, *Information technology -- Generic coding of moving pictures and associated audio information: Video*, 1999-10-31.

[ISO14496-10] ISO/IEC 14496-10: 2012, *Information technology — Coding of audio-visual objects — Part 10: Advanced Video Coding*, Seventh Edition, 2012-05-01.

[ISO26324] ISO26324:2012, *Information and documentation -- Digital object identifier system*.

[47CFR9.103(c)(9)] "Closed caption decoder requirements for all apparatus.", Title 47, part 71.103(c)(9) 2012, 47 CFR 79.103(c)(9), http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=53ad878c54cd79758c7fa602e4bc8975&rgn=div8&view=text&node=47:4.0.1.1.6.0.3.8&idno=47. See also, Federal Register 77:62 (30 March 2012) p. 19480. http://www.gpo.gov/fdsys/pkg/FR-2012-03-30/pdf/2012-7247.pdf

[SMPTE-428-3] SMPTE-428-3-2006, "D-Cinema Distribution Master Audio Channel Mapping and Channel Labeling", 2006.

[XML] "XML Schema Part 1: Structures", Henry S. Thompson, David Beech, Murray Maloney, Noah Mendelsohn, W3C Recommendation 28 October 2004,

http://www.w3.org/TR/xmlschema-1/ and "XML Schema Part 2: Datatypes", Paul Biron and Ashok Malhotra, W3C Recommendation 28 October 2004, http://www.w3.org/TR/xmlschema-2/

1.5 Informative References

[RFC4647] Philips, A., et al, *RFC 4647, Matching of Language Tags*, September 2006. http://www.ietf.org/rfc/rfc4647.txt

[RFC6381] Singer, D; et al, The 'Codecs' and 'Profiles' Parameters for "Bucket" Media Types, August 2011, http://tools.ietf.org/html/rfc6381.

[ISO23009-1] ISO/IEC 23009-1: 2012, *Information technology — Dynamic adaptive streaming over HTTP (DASH) —Part 1:Media presentation description andsegment formats*, First Edition, 2012-04-01.

[MEC] Media Entertainment Core, TR-META-MEC, v2.0, January 3, 2013, http://www.movielabs.com/md/mec/

[EIDR] Entertainment Identifier Registry (EIDR), http://eidr.org/resources/

European Broadcast Union, Tech 3295 – P_META Metadata Library, http://www.ebu.ch/en/technical/metadata/specifications/notes_on_tech3295.php

The following metadata standards activities have numerous associated specifications. Rather than listing each specification, sites where specifications can be found are listed.

- AMPAS – Academy of Motion Picture Arts and Sciences http://www.oscars.org/science-technology/council/projects/index.html
- SMPTE Metadata Dictionary: http://www.smpte-ra.org/mdd/
- MPEG – Motion Pictures Experts Group http://mpeg.chiariglione.org/
- MHP – DVB Multimedia Home Platform http://www.mhp.org
- CableLabs VOD Metadata 2.0 http://www.cablelabs.com/specifications/md20.html
- Dublin Core Metadata Initiative: http://dublincore.org/.
- TV Anytime (ETSI) http://www.etsi.eu/WebSite/Technologies/TVAnytime.aspx
- PBCore: www.pbcore.org
- Vocabulary Mapping Framework: http://cdlr.strath.ac.uk/VMF/index.htm

1.6 Best Practices for Maximum Compatibility

Metadata typically evolves with the addition of new elements, attributes and vocabularies. Existing applications should be capable of accepting metadata, even though there might be more data than expected. Strict XML validation precludes an orderly evolution and can be counterproductive to the flexibility needed in real implementations.

Metadata specifications and schema updates are designed to support backwards compatibility. For example, element and attributes can be added, but required elements are not

removed; or more generally ordinality of elements and attributes can be widened but not narrowed. Values are not changed in either syntax or semantics. Therefore, we strongly encourage implementations to either be diligent in tracking to the latest version, or follow the backwards compatibility rules provided here.

An XML document is considered compatible if its structure does not preclude the extraction of data from the document. For example, a document with additional elements and attributes do not preclude schema parsing and data extraction.

- Do not reject compatible XML documents, unless they fail schema validation against the definition for an exact version/namespace match.
- Extract data from compatible XML documents whenever possible
- It it allowable to ignore elements and attributes whose presence is not allowed in the specification and schema versions against which the implementation was built. For example, if the original schema allows one instance and three instances are found, the 2nd and 3rd instance may be ignored.

We will try to update metadata definitions such that following these rules work consistently over time. Sometimes, changes must be made that are not always backwards compatible, so we will do our best to note these.

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2 IDENTIFIERS

Identifiers and metadata are closely linked. In essence, all identifiers have corresponding metadata that describes the object being identified. Just as it is useful to distinguish between different kinds of objects with different kinds of identifiers, it is useful to distinguish the metadata in terms of those same objects.

The primary objects being identified and described in metadata are:

- Content – Content ID (ContentID)
- Encoded Stream – Physical Asset (Asset Physical ID; APID)

2.1 Identifier Structure

The primary requirement for identifiers is globally uniqueness. Individual systems using Common Metadata are free to use own identifiers as long as there is no identifier collision.

The following represents a structure for identifiers that should be used if specific usage does not specify otherwise. This structure is designed around the following principles

- Global uniqueness
- Coexistence of identifier schemes (ID Federation)
- Ability to use identifiers within a URL

Common Metadata identifiers use the general structure of the "urn:" URI scheme as discussed in RFC 3986 (URN) and RFC 3305 with a "md" namespace identifier (NID). However, for Common Metadata, rather than the fully articulated "urn:md" we abbreviate to "md:". The basic structure for a Common Metadata ID is

<MDID> ::= "md:"<type> ":"<scheme>":"<SSID>

- <type> is the type of identifier. These are defined in sections throughout the document defining specific identifiers.
- <scheme> is either a Common Metadata recognized naming scheme (e.g., "ISAN") or "org" non-standard naming. These are specific to ID type and are therefore discussed in sections addressing IDs of each type.
- <SSID> (scheme specific ID) is a string that corresponds with IDs in scheme <scheme>. For example, if the scheme is "ISAN" then the <SSID> would be an ISAN number.

There is a special case where <scheme> is "org". This means that the ID is assigned by a recognized organization within their own naming conventions. If <scheme> is "org" then

<SSID> ::= <organization><UID>

- <organization> is a unique name assigned to an organization, with the following rules:
  - Organization is defined as domain name. For example, movielabs.com becomes `md:org:movielabs.com`:… and bbc.co.uk becomes `md:org:bbc.co.uk`:…
  - Other naming schemes may be used in contexts where names can be assigned within the scope of ID usage.

- <UID> is a unique identifier assigned by the organization identified in <organization>. Organizations may use any naming convention as long as it complies with RFC 3986 syntax.

Some sample identifiers are

- ContentID: `md:cid:EIDR:10.5240%2fF592-58D1-A4D9-E968-5435-L`
- Content ID: `md:cid:ISAN: 0000-3BAB-9352-0000-G-0000-0000-Q`
- Content ID: `md:cid:org:MYSTUDIO:12345ABCDEF`

2.1.1 ID Simple Types

The simple type md:id-type is the basic type for all IDs. It is XML type xs:anyURI.

All identifiers are case insensitive and should be registered in canonical format and case sensitive identifiers should not be used.

The simple types ContentID-type AssetLogicalID-type and AssetPhysicalID-type are defined as md:id-type and can be used when a more specific designation is required.

2.2 Asset Identifiers

Content Identifiers are assigned by the content owner or its designee. The following scheme provides flexibility in naming while maintaining uniqueness.

Common Metadata defines two types of asset identifiers:

- A Content Identifier (ContentID) denotes an abstract representation of a content item.
- Asset Physical Identifier (APID) refers to a physical entity (i.e., a file) that is associated with content.

2.2.1 ContentID

Syntax: “`md:cid:`”<scheme>“`:`”<SSID>

A ContentID points to Basic metadata. ContentIDs may refer to abstract items such as shows or seasons, even if there is no separate asset for that entity. A ContentID must be globally unique.

The following restrictions apply to the <scheme> and <SSID> part of a ContentID:

- A ContentID scheme may not contain the colon character.
- Where display formats exists (i.e., human readable versus computer-readable) use display format.
- ContentID < scheme> and ContentID <SSID> shall be in accordance with Table 2-1. Additional schemes may be added in the future.

Table 2-1: Content Identifier Scheme and Value

Scheme	Expected value for <SSID>
ISAN	An <ISAN> element, as specified in ISO15706-2 Annex D.
TVG	TV Guide
AMG	AMG
IMDB	IMDB
MUZE	Muze
TRIB	Tribune
Baseline	Baseline Research ID, www.baselineresearch.com
UUID	A UUID in the form 8-4-4-4-12
URI	A URI; this allows compatibility with TVAnytime and MPEG-21
GRid	A Global Release identifier for a music video; exactly 18 alphanumeric characters
EIDR	Entertainment ID Registry. http://www.eidr.org. In accordance with [ISO26324] and [EIDR-TO]
EIDR-S	Entertainment ID Registry. http://www.eidr.org .EIDR-S is a shortened EIDR that does not include the "10.5240/" prefix.
EIDR-X	Entertainment ID Registry. http://www.eidr.org .EIDR-X is an extended form of EIDR-S. EIDR-X is an EIDR-S form identifier followed by a colon (":") and an alphanumeric string.
ISRC	Master recordings, ISO 3901, http://www.ifpi.org/content/section_resources/isrc.html
ISWC	Musical Works, http://www.cisac.org
DOI	Digital Object Identifier http://www.doi.org
SMPTE-UMID	SMPTE-UMID as per SMPTE ST 330-2004
Ad-ID	Ad-ID as per format defined at http://www.ad-id.org/help/structure.cfm
GTIN	Global Trade Item Number. http://www.gtin.info/
UPC	Universal Product Code (UPC). UPC-E should be converted to UPC-A form.

CRid	CRid (Content Reference Identifier) as per RFC 4078 http://tools.ietf.org/html/rfc4078
cIDf	Content ID Forum. cIDf Specification 2.0, Rev 1.1., 4/1/2007.
file	Indicates that the identifier that follows is a local file name.
org	<SSID> begins with the Organization ID of the assigning organization and follows with a string of characters that provides a unique identifier. The <ssid> must conform to RFC 3986 with respect to valid characters. In the absence of agreements between parties using IDs of this form, we recommend the use of an organization DNS domain (e.g., movielabs.com).

Identifiers that contain URI shall use Percent-Encoding as per [RFC3986] for characters not allows in URNs as per [RFC2141]. For example, space (SP) is replaced by '%20' and slash ('/') is replaced by '%2f'. For example,

EIDR: `10.5240/F592-58D1-A4D9-E968-5435-L`

ContentID: `md:cid:EIDR:10.5240%2fF592-58D1-A4D9-E968-5435-L`

2.2.2 APID

Syntax: "`md:apid:`< scheme>"`:`"<SSID>["`:`"<extension>]

An APID is constrained as follows:

- Each APID is globally unique

The following restrictions apply to the <scheme>, <SSID> and <extension> part of an APID:

- An APID scheme may not contain the colon character
- Where display formats exists (i.e., human readable versus computer-readable) use display format.
- APID < scheme> and APID <SSID> shall be structured the same as ContentID
- Optional <extension> is additional characters appended to the APID and may not contain colons

For example

- APID: `md:apid:EIDR-S:58D1-A4D9-E968-F592-5435-M`
- APID: `md:apid:ISAN:0000-3BAB-9352-0000-G-0000-0000-Q:p1`

Note that APIDs may be constructed from ContentIDs. For example:

- ContentID: `md:cid:org:MyCompany:ABCDEFG`
  APID: `md:apid:org:MyCompany:ABCDEFG:100`

- ContentID: `md:cid:ISAN:0000-3BAB-9352-0000-G-0000-0000-Q`
  APID: `md:apid:ISAN:0000-3BAB-9352-0000-G-0000-0000-Q:A203`

2.3 Organization ID

Common Metadata assumes one additional type be provided. That is an Organization ID (OrgID). md:orgID-type is a simple type of type md:id-type.

Currently, there is not an adequate global identification scheme, so this element should be used only if both the sending and receiving parties have an a priori agreement regarding the contents of this ID.

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3 GENERAL TYPES ENCODING

3.1 Language Encoding

Language shall be encoded in accordance with RFC 5646, *Tags for Identifying Languages* [RFC5646]. The subtags that are available for use with RFC 5646 are available from the Internet Assigned Numbers Authority (IANA) at [IANA-LANG] http://www.iana.org/assignments/language-subtag-registry.

Matching, if applicable, should be in accordance with RFC 4647, *Matching Language Tags*, [RFC4647].

The xs:language type shall be used for languages. Language should be as specific as possible; for example, 'ja-kata' is preferable to 'ja'.

3.2 Region encoding

Region coding shall use the ISO 3166-1 two-letter alpha-2 codes [ISO3166-1]. Informally described here: http://en.wikipedia.org/wiki/ISO_3166-1_alpha-2.

When subdivisions are required, ISO3166-2 shall be used [ISO3166-2]. Informally described here: http://en.wikipedia.org/wiki/ISO_3166-2.

Common Metadata shall use the following type for region:

Element	Attribute	Definition	Value	Card.
Region-type				
country		ISO 3166-1 Alpha 2 code	xs:string Pattern: "[A-Z][A-Z]"	(choice)
countryRegion		ISO 3166-2 Code	xs:string Pattern: "[A-Z][A-Z]-[0-9A-Z]+"	(choice)

The MadeforRegion-type simple type is a restriction of xs:string that allows country code, 'Domestic" or "International". For example, it could be "US", "Domestic" or "International".

3.3 Date and Time encoding

Date and time encoding shall use the XML rules. That is, where ISO 8601 [ISO8601] deviates from XML encoding, XML encoding shall apply.

3.3.1 Duration

Durations are represented using xs:duration. xs:time should not be used for duration.

3.3.2 Time

xs:time is used for a recurring time.

3.3.3 Dates and times

XML is fairly rigid in its date and time encoding rules. Specifically, it is difficult to have a single element where resolution may range from 'year' to 'date' to 'time'. In some instances such as air dates/time, resolution might be year (movie released in 1939), date (movie released on December 25, 2009), or date and time (episode aired November 6, 2001, or November 6, 2001, 10:00 PM EST).

- Year encoding uses xs:gYear (Gregorian year)
- Date encoding (year, month and day) uses xs:date
- Date encoding that includes both date and time shall uses xs:dateTime

Time zone should be included with xs:dateTime elements to avoid ambiguity. If representing a single point in time with no relevant time zone, Coordinated Universal Time (UTC) should be used.

In some cases, there are options for including year, date and date-time. Optional elements should be included if known and relevant.

As of version 1.2 of this specification, a new type has been define to support elements that require year, date (year and day), or time (including date) without a priori knowledge of the resolution. This simple type is YearDateOrTime-type.

Element	Attribute	Definition	Value	Card.
YearDateOrTime-type		A simple type that syntactically allows the inclusion of a year, a date or a date-time.	xs:union with memberTypes of xs:gYear, xs:date, xs:dateTime	

3.3.4 Date and time ranges

Date Ranges may be encoded using the DateTimeRange-type:

Element	Attribute	Definition	Value	Card.
DateTimeRange				
Start		Start of time period	xs:dateTime	
End		End of time period	xs:dateTime	

3.4 String encoding

String lengths are specified in characters (rather than bytes) unless otherwise stated. A string using double-byte Unicode characters can result in string elements whose actual size in bytes is larger than the stated length.

3.5 Organization Naming and Credits

Organization names shall include both a user-friendly display name and a sortable name. If the display name and the sort name are the same, the SortName element may be excluded.

All names are optional in the schema although DisplayName is generally required. It is necessary to supply either DisplayName or the combination of organizationID and idType.

Element	Attribute	Definition	Value	Card.
OrgName-type				
	organizationID	Organization's unique ID	md:orgID-type	0..1
	idType	ID scheme used for organizationID	xs:string	0..1
DisplayName		General display format. Safest to use as it accommodates various permutation on the name.	xs:string	0..1
SortName		Sortable version of name. This will often be last name first. This may be displayed.	xs:string	0..1
AlternateName		Other names for this organization	xs:string	0..n

3.5.1 CompanyDisplayCredit-type

This type describes the intended audience for metadata:

Element	Attribute	Definition	Value	Card.
MetadataCompanyCredits-type				
DisplayString		String to be displayed.	md:OrgName-type	0..n
	language	Language of DisplayString. If blank, then all languages	xs:language	0..1
Region		Region(s) for which credits apply.	md:Region-type	0..n
DisplaySequence		Order of display. Lower-numbered entries are displayed before higher-numbered entries. Entries without this element should be displayed after numbered entries.	xs:integer	0..1

3.5.2 AssociatedOrg-type

This is an organization with a Role:

Element	Attribute	Definition	Value	Card.
MetadataCompanyCredits-type			md:OrgName-type (by extension)	
	role	Role of the associated organization	xs:string	0..1

The AssociatedOrg element provides information about organizational entities involved in the production, distribution, broadcast or other function relating to the asset. Often organizations provide different functions, so multiple organizations can be listed. The role attribute to AssociatedOrg may have one of the following values:

- 'producer' – involved in the production of the asset
- 'broadcaster' – network associated with asset's broadcast
- 'distributor' – entity involved with distribution
- 'editor' - editor
- 'encoding' – entity that encodes media
- 'post-production' – entity that performs post-production functions, not in another category

- 'other' – any organization that does not fall into the previous categories.

3.6 People Naming and Identification

This section describes the internationalized naming approach used for encoding metadata. This section also defines person identification for the purposes of metadata.

3.6.1 PersonName-type

Element	Attribute	Definition	Value	Card.
PersonName-type				
DisplayName		Person's name for display purposes.	xs:string	1..n
	language	Language of DisplayName. There may be multiple instances of DisplayName, but only with unique language attributes.	xs:language	0..1
SortName		Name used to sort. May be excluded if identical to DisplayName.	xs:string	0..n
	language	Language of SortName. There may be multiple instances of SortName, but only with unique language attributes.	xs:language	0..1
FirstGivenName		First name	xs:string	0..1
SecondGivenName		Second name	xs:string	0..1
FamilyName		Family name	xs:string	0..1
Suffix		Suffix	xs:string	0..1
Moniker		Alternative name, usually of the form <FirstGivenName> "<Monikor>" <FamilyName> (e.g., *Scatman* in *Benjamin Sherman "Scatman" Crothers*). Note, Moniker is misspelled but retained for backwards compatibility.	xs:string	0..1

3.6.2 PersonIdentifier-type

Assuming there is an identifier associated with the person, this structure holds information about that identifier.

Element	Attribute	Definition	Value	Card.
PersonIdentifier-type				
Identifier		Identifier associated with this individual within the Namespace	xs:string	
Namespace		Namespace for identifier.	xs:string	
ReferenceLocation		Location associated for the identifier within the namespace. This is expected to be an online reference to information about the individual.	xs:anyURI	

3.7 Money-type and Currency

Currency shall be encoded using ISO 4217 Alphabetic Code [ISO4217].

http://www.iso.org/iso/currency_codes_list-1

Element	Attribute	Definition	Value	Card.
Money-type				
	currency	Currency as expressed in ISO 4217 Currency Alphabetic Code. For example, "USD" for US Dollars.	xs:string	
Value		Value	xs:decimal	

[ISO4217] typically allows two or three digits after the decimal. However, Value in this element may have as many decimal places as necessary.

3.8 Role Encoding, Role-type

Roles shall be encoded in accordance with 'Term' column of EBU Role codes found here: http://www.ebu.ch/metadata/cs/web/ebu_RoleCodeCS_p.xml.htm, plus "Other Group" and "Other" (referring to an unclassified individual).

Roles are defined in the simple type md:Role-type.

The JobFunction element allows for alternate schemes, however the scheme attribute is not supported at this time. At a future release, alternate schemes may be defined.

3.9 Keywords Encoding

Keywords are often culturally specific, so different keywords may exist for different regions. At this time, no keywords are defined.

3.9.1 Name/Value Pairs, NVPair-type, NVPairMoney-type

Use of Name/Value pairs provides considerable flexibility for growth. The NVPair-type complex type allows for any additional business data to be included in tuple format.

Element	Attribute	Definition	Value	Card.
NVPair-type				
Name		Identification of the parameter being specified	xs:string	
Value		Value specified for Name.	xs:string	

NVPairMoney-type is like NVPair-type except the Value is currency-based.

Element	Attribute	Definition	Value	Card.
NVPairMoney-type				
Name		Identification of the parameter being specified	xs:string	
Value		Value specified for Name.	avail:Money-type	

3.10 Personal/Corporate Contact Information, ContactInfo-type

Element	Attribute	Definition	Value	Card.
ContactInfo-type				
Name		Person or point of contact	xs:string	
PrimaryEmail		Primary email address for user.	xs:string	
AlternateEmail		Alternate email addresses, if any	xs:string	0..n
Address		Mail address	xs:string	0..n
Phone		Phone number. Use international (i.e., +1 …)	xs:string	0..n

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		format.		

3.11 Crypotgraphic Hash

The Hash-type definition describes a cryptographic hash such as SHA-1 and MD5.

Element	Attribute	Definition	Value	Card.
ContactInfo-type		Value of the cryptographic hash	xs:string	
	Method	The hash generation method.	xs:string	0..n

Values for method include:

- 'MD2', 'MD4' ,'MD5' – Message Digest algorithms.
- 'SHA-0', 'SHA-1', 'SHA-2', 'SHA-3'. SHA (Secure Hash Algorithm) family of algorithms. Distinction between hashes of different length is implicit in the hash and should not be mentioned specifically. For example, use 'SHA-2', not 'SHA-224'.

3.12 GroupingEntity-type

Grouping Entity type allows logical grouping of assets. This is typically around studio or network, but it can be any logical content grouping.

Element	Attribute	Definition	Value	Card.
GroupingEntity-type				
Type		The type of the group.	xs:string	
GroupingIdenity		A string that uniquely identifies the group.	xs:string	
DisplayName		A string that will be displayed when referring to this group.	xs:string	1..n
	language	The language associated with the DisplayName. If language is absent, DisplayName applies to all langauges.	xs:language	0..1
Region		Region where group applies. If Region is absent, the group applies	md:Region-type	0..1

		internationally.		

Type defines the type of grouping. Currently, the only defined value is “publisher”, although other values are not prohibited.

“publisher” indicates the grouping is around the organization publishing the content. Note that the actual publisher may differ from the publisher visible to the consumer. In that case, the GroupIdentity would reflect the actual publisher and the DisplayName would reflect the publisher familiar to the consumer.

3.13 Private Data

The following is defined to allow schemas using Common Metadata to extend elements with data specific to that use. Interoperability will be very limited, elements of this type should be used with extreme caution.

Element	Attribute	Definition	Value	Card.
PrivateData-type		Value of the cryptographic hash	xs:string	
(any)		Any data outside of ‘md’ namespace.	xs:any ##other	1..n

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4 BASIC METADATA

Basic Metadata is a set of data that are essentially ubiquitous in content systems. They may be used throughout.

4.1 BasicMetadata-type

Element	Attribute	Definition	Value	Card.
BasicMetadata-type				
	ContentID	Content ID in Section 2.	md:ContentID-type	
UpdateNum		Version. Initial release should be 1. This is a value assigned by the metadata creator that should only be incremented if a new version of metadata is released. If absent, 1 is to be assumed. This is assigned by the metadata originator.	xs:int	0..1
LocalizedInfo		Instances of localized metadata.	md:BasicMetadataInfo-type	1..n
RunLength		Approximate Runlength of the referenced work (not the original product). Resolution SHALL be at least minutes. Resolution should be seconds or better. For a season or series, this should either be zero or the typical length of an episode. For broadcast, this should be the content length (e.g., an hour show with commercials might have a 44 minute RunLength).	xs:duration	
ReleaseYear		The year of original release. This applies to the version that is being released.	xs:gYear	
ReleaseDate		Year, Date or Date and Time of release or original air date. Adds month and day information to ReleaseYear. The year part of ReleaseDate must match ReleaseYear.	md:YearDateOrTime	0..1
ReleaseHistory		Information about releases	md:ReleaseHistory-type	0..n

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Element	Attribute	Definition	Value	Card.
WorkType		Type of the work. See Work Type Enumeration.	xs:string	
WorkTypeDetail		More specific definition of Work Type to allow a more detailed description	xs:string	0..1
PictureColorType		Color type of asset. This SHALL not be included for audio-only assets.	md:ColorType-type	0..1
PictureFormat		A textual description of the aspect ratio format type, as defined below. This field does not contain the actual aspect ratio.	xs:string	0..1
ThreeD		Indicates whether work is in 3D. 'true' means 3D, 'false' or absent means not 3D.	xs:boolean	0..1
AspectRatio		Aspect ratio of active pixels, the form m:n (e.g., 4:3,16:9, 2:35:1)	xs:string	0..1
AltIdentifier		Other identifiers for the same content.	md:ContentIdentifier-type	0..n
RatingSet		All ratings associated with this content	md:ContentRating-type	0..1
People		People involved in production, with the exception of alternate language-specific roles (e.g., voice talent for language dubbing)	md:BasicMetadataPeople-type	0.. n
CountryOfOrigin		The country from where the title originates, ISO3166-1 e.g., "US" for United States. A derived would should refer to the country of the original work.	md:Region-type	0..1
PrimarySpokenLanguage		Primary spoken language of original production. As guidance this can be considered, "The language lips move to."	xs:language	0..n
OriginalLanguage		The original language of the production.	xs:language	0..n
VersionLanguage		The language, if any, associated with this particular version.	xs:language	0..n

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Element	Attribute	Definition	Value	Card.
AssociatedOrg		Organization associated with the asset in terms of production, distribution, broadcast or in another capacity (see below for roles).	md:~~OrgName~~AssociatedOrg-type	0..n
	role	Role of the associated organization.	xs:string	0..1
SequenceInfo		Indicates how asset fits into sequence	md:ContentSequenceInfo-type	0..1
Parent		Metadata for parent items. Note that this is recursive.	Md:BasicMetadataParent-type	0..n

4.1.1.1 WorkType and WorkTypeDetail Enumerations

WorkType shall be enumerated to one of the following (categories are to support the definition, but are not included in the enumeration). WorkTypeDetail is stated where applicable.

Music related:

- 'Album' – A collection of songs
- 'Song'
- 'Music Video' – Music Video, not 'Performance'
- 'Ring Tone'
- 'Other Music'

Film related:

- 'Movie' – A full length movie regardless of distribution (e.g., theatrical, TV, direct to disc, etc.) and content (e.g., includes documentaries).
- 'Short' – a film of length shorter than would be considered a feature film.

TV, web and mobile related:

- 'Series' – a show that might span one or more seasons or might be a miniseries.
- 'Season' – a season of a Series. It will contain one more episodes.
- 'Episode' – an episodes of a season or miniseries. A pilot is also an episode. If episode is a 'webisode', 'mobisode' or other specialized sequence, it should be noted in Keywords.
- 'Non-episodic Show' – TV or other show that is non-episodic; for example, sports and news.
    - Acceptable WorkTypeDetail includes 'Sports' and 'News'.

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- ‘Promotion’ – promotional material associated with media. This includes teasers, trailers, electronic press kits and other materials. Promotion is a special case of ‘Ad’.
    - Acceptable WorkTypeDetail includes ‘Trailer’, ‘Teaser’ and ‘EPK’.
- ‘Ad’ – any form of advertisement including TV commercials, informercials, public service announcements and promotions not covered by ‘Promotion’. This does not include movie trailers and teasers even though they might be aired as a TV commercial.

Other:

- ‘Excerpt’ – An asset that consists primarily of portion or portions of another work or works; for example, something having the ‘isclipof’ or ‘iscompositeof’ relationship.
- ‘Supplemental’ – Material designed to supplement another work. For example, and extra associated with a Movie for a DVD.
- ‘Collection’ – A collection of assets not falling into another category. For example, a collection of movies.
- ‘Franchise’ – A collection or combination of other types, for example, a franchise might include multiple TV shows, or TV shows and movies.

Although there is some overlap with Genre, Work Type is not language or culturally specific. Although terms may overlap, the usage does not. For example, the Work Type of ‘Sport’ refers to the capture of a sporting event, where a documentary on sport would have the ‘Non-episodic Show” work type.

4.1.1.2 ColorType-type

md:ColorType-type enumerates the picture color types. The enumerations are as follows:

- ‘color’ for color. If the work contains color, but is not clearly classified into one of the other categories, is should use the ‘color’ type.
- ‘bandw’ for black and white
- ‘colorized’ for colorized video (i.e., different from the original that is typically black and white).
- ‘composite’ for color composite (e.g., “Sin City”).
- ‘unknown’ for assets based on legacy metadata where color type is not specified.

4.1.1.3 Picture Format Encoding

PictureFormat may be one of the following:

- ‘Letterbox’ – horizontal bars or other background appear above and/or below the picture’s active pixels.

- 'Pillarbox' – vertical bars or other background appear to the left and/or right of the picture's active pixels.
- 'Full' – The active pixels fit the full area of the picture (within a few pixels). The entire original image is substantially included. This should not be confused with *fullscreen*, a term that may also refer to Pan and Scan.
- 'Stretch' – The active pixels fit the full area of the picture (within a few pixels). The entire original image is substantially included. The image has been visibly stretched in one dimension to fit (e.g., a 4:3 image stretched to 16:9 frame).
- 'Pan and Scan' – The active pixels the fit full area of the picture (within a few pixels). Part of the original image is not included. This includes fixed cropping, pan-and-scan and other cropping methods.
- 'Other' – A picture format encoding other than the above applies. For example, 'Smilebox'.

4.1.1.4 UpdateNum

UpdateNum is an integer rather than a string (e.g., "2.3.1") to simplify ordering. The Content Provider SHALL issue updates with increasing numbers.

4.1.1.5 OriginalLanguage, PrimarySpokenLanguage, and VersionLanguage

OriginalLanguage is the language associated with the original production of the work. OriginalLangauge usually corresponds with PrimarySpokenLanguage, although not necessarily. A silent movie with title cards would have OriginalLanguage associated with those title cards. Anime from Japan would be considered 'jp', even though other language audio tracks might be available. There may be multiple OriginalLanguge elements if more than one language is associated with work. For example, the movie *Babel h*as multiple OriginalLanguage elements. The movie *Hunt for Red October* would have one OriginalLanguage (i.e., English), even though there is spoken Russian. Mel Brooks *Silent Movie* would have an OriginalLanguage of English.

PrimarySpokenLanguage is a Primary spoken language spoken in the original production. That is, the language spoken by the actors, or more specifically, the language in which their lips are moving. It should include usage for meaningful dialog, but not an occasional word. For example, the movie *Babel* has multiple PrimarySpokenLanguage elements. The movie *Hunt for Red October*, would have two: English and Russian. The movie *Silent Movie*, even with one word spoken, would have no PrimarySpokenLanguage elements.

VersionLanguage refers to the particular version of the work. This should only exist if the title was edited for a particular language release.

4.1.1.6 AssociatedOrg

See Section 3.5.2. ~~The AssociatedOrg element provides information about organizational entities involved in the production, distribution, broadcast or other function relating to the asset. Often organizations provide different functions, so multiple organizations can be listed. The role attribute to AssociatedOrg may have one of the following values:~~

- ~~'producer' – involved in the production of the asset~~
- ~~'broadcaster' – network associated with asset's broadcast~~
- ~~'distributor' – entity involved with distribution~~
- ~~'editor' - editor~~
- ~~'encoding' – entity that encodes media~~
- ~~'post-production' – entity that performs post-production functions, not in another category~~
- ~~'other' – any organization that does not fall into the previous categories.~~

4.1.1.7 Release Information Encoding, ReleaseHistory-type

ReleaseType may include the following values:

- 'original' – first worldwide
- 'Broadcast'
- 'DVD'
- 'Blu-ray'
- 'Hospitality'
- 'PayTV' – Premium TV
- 'InternetBuy' – Offered for purchase on the Internet.
- 'InternetRent' – Offered for rent on the Internet.
- 'Theatrical'
- 'VOD' – Home VOD.

This list may be expanded.

Element	Attribute	Definition	Value	Card.
ReleaseHistory-type				
ReleaseType		Release type as described above	xs:string	
	wide	Whether this release is a wide release, particularly for theatrical	xs:boolean	0..1
DistrTerritory		Where it was released to	md:Region-type	0..1

Date		When title was released. This may be a year, a date or a date and time. Generally, date is preferred over year. Date-time is preferred for broadcast air dates.	md:YearDateOrTime-type	
	scheduled	Date is assumed to be an actual date unless scheduled is included and holds the value 'true'	xs:boolean	0..1
Description		Description of the release,	xs:string	0..1
ReleaseOrg		Organization involved with this release.	md:OrgName-type	0..n

4.1.2 BasicMetadataInfo-type

This contains language-specific descriptive information.

In accordance of RFC5646, language may be inclusive of both language and character set. If submission uses more than one language or more than one character set, then multiple instances of this element may need to be supplied.

Element	Attribute	Definition	Value	Card.
BasicMetadataInfo-type				
	language	Language for this set of metadata as defined in Section 3.1. language should be as specific as possible (e.g., 'ja-kata' instead of 'ja').	xs:language	
	default	Indicates whether this is a language to use if no other available language is meaningful within the usage context (e.g., the native langue for the user). 'true' indicates yes. 'false' or absence indicates no.	xs:boolean	0..1
TitleDisplay19		A brief version of the feature title (for display) that is up to a maximum length of 19 chars. All UIs SHOULD be able to support display of this field.	xs:string	0..1
TitleDisplay60		An alternate display version from TitleBrief for those UIs that can support longer fields than 19 Characters. This title may be up to 60 characters.	xs:string	0..1
TitleDisplayUnlimited		A display title with no length limit. It is recommended this be limited to no more than 256 characters.	xs:string	0..1

TitleSort		A sortable version of the feature title, e.g., "Incredibles, The" separated by commas.	xs:string	
ArtReference		Reference to art image	xs:anyURI	0..n
	resolution	String in the form *colxrow* (e.g., 800x600 would mean an image 800 pixels wide and 600 pixels tall).	xs:string	
Summary190		The title description – sentence. (max 190 char)	xs:string	
	cast	Flag to indicate if cast is or is not included in summary description. Missing assumes 'false'.	xs:boolean	0..1
Summary400		The title description -one paragraph, could be used as description in EPG. (max 400 char)	xs:string	0..1
	cast	Flag to indicate if cast is or is not included in summary description. Missing assumes 'false'.	xs:boolean	0..1
Summary4000		The title description – multi-paragraph. (max 4000 char)	xs:string	0..1
	cast	Flag to indicate if cast is or is not included in summary description. Missing assumes 'false'.	xs:boolean	0..1
Display Indicators		Indicators that MAY affect UI display. See Display Indictor Encoding below.	xs:string	0..n
Genre		Subject-matter classification of the show. See Genre Encoding below.	xs:string	0..n
	source	Naming system from which genre is derived.	xs:anyURI	0..1
	id	Identifier for genre used within source	xs:string	0..1
	level	Indicates precedence of genre, with a lower number being high precedence.	xs:integer	0..1
Keyword		Keyword	xs:string	0..n
VersionNotes		A descriptive statement about the reason why this cut was created or what its content represents with reference to other versions of this work. Do not include information about the language of the title in this field. If the cut is for a censor in a particular linguistic region, the region associated with the censor or censor name should be used, i.e., German censor version. VersionNotes may include edits for content, such as "Airplane Version".	xs:string	0..1

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Region		The ISO 3166-1 code used to represent the name of the region(s) where the work is intended to be broadcast or shown. The code should be interpreted in a case insensitive manner. Note: Do not use the code "ww" to represent a worldwide region.	md:Region-type	0..1
OriginalTitle		Original title (no size limits).	xs:string	0..1
CopyrightLine		Displayable copyright line.	xs:string	0..1
PeopleLocal		People involved in the localized production, typically local voice actors.	md:BasicMetadataPeople-type	0..n
TitleAlternate		Alternate titles	xs:string	0..n
	type	Type of alternate title	xs:string	0..1
	language	The language of TitleAlternate if different from language attribute for BasicMetadataInfo-type.	xs:language	0..1

4.1.2.1 Display Indicator Encoding

The values used for Display Indicator are at the discretion of the Publisher and the Retailer. Examples of values conceived for this element include, “CC”, “DVS”, “P” (season premiere) and “F” (finale).

4.1.2.2 Genre Encoding

Genre is culturally and contextually specific, so different genre classifications may exist for different regions. This section presents a few alternatives for genre enumeration. Others will apply. Any genre list may be used.

The source attribute should be used for defined genre sets. It should be a URL that uniquely and unambiguously identifies a genre classification system. Ad hoc genre naming systems should use a URI whose namespace is under the control of the author.

The ‘id’ attribute may be used when a genre has an ID associated with the text string. In this case, the text string goes in the element, and the ID goes in the attribute. For example, using the EBU metadata, when the genre is “Surfing” the ID is “3.2.6.10”.

The level attribute indicates which genres are primary genre, main genre, subgenre, etc. A lower number indicates a higher precedence. Primary should be encoded as ‘0’. Only one instance of a primary should be included for a source.

Following are some genre encoding that may be used. Others may be used as well.

Alternatively, the following genres apply:

Region (Language)	Source	'source' attribute value
United States, Canada (English)	Common Metadata	http://www.movielabs.com/md/md/common_genre.html
United States, Canada (English)	Library of Congress, Motion Picture and Television Reading Room	http://www.loc.gov/rr/mopic/miggen.html
Europe	European Broadcast Union (EBU) Tech 3295 – P_META Metadata Library, v 2.0, EBUContentGenre	http://www.ebu.ch/metadata/cs/web/ebu_ContentGenreCS_p.xml.htm
United States, Canada (English), TV	Cable Television Laboratories (CableLabs)	http://www.cablelabs.com/projects/metadata/downloads/genre_classification_list.pdf
Worldwide	Media Entertainment Core (MEC) from Entertainment Merchant's Association (EMA) and Digital Entertainment Group (DEG)	http://www.movielabs.com/md/mec/mec_primary_genre.html

4.1.2.3 TitleAlternate/type Encoding

The following types should be used for the type attribute describing an AlternateTitle element:

- 'alternative' – legitimate alternative titles used to refer to the work. Shortened titles and common variations are included in this category. Most alternate titles are in the category.
- 'misspelling' – the title with a common misspelling. This should be included rarely, and a comprehensive list of possible misspellings should *not* be included.
- 'StartsWith' – search-centric title using convention typically used in Japan

For the movie "Terminator 2: Judgment Day", 'alternate' titles could include "T2", "Terminator 2", "Terminator Two", and "Judgment Day". A 'misspelling' title could include 'Terminator 2: Judgement Day".

Alternate titles may include a language attribute to indicate a language different from the language attribute in the parent element. For example, if the LocalizedInfo is in Hiragana and there is a Katakana TitleAlternate with a type of "StartsWith", the language should be 'ja-kata'.

4.1.3 ContentIdentifier-type

This is designed to provide a cross reference to all other identifiers associated with this content. ContentIdentifier-type is a simple type based on md:id-type.

Namespace will be any namespace as listed in Table 2-1.

Element	Attribute	Definition	Value	Card.
ContentIdentifier-type				
Namespace		Namespace of identifier from Content ID table in the Identifiers section.	xs:string	
Identifier		Value of identifier.	xs:string	
Location		Reference location for item in the referenced namespace.	xs:anyURI	0..1

4.1.4 BasicMetadataPeople-type

Element	Attribute	Definition	Value	Card.
BasicMetadataPeople-type				
Job		Description of job function and, if applicable, character(s)	md:BasicMetadataJob-type	1..n
Name		Person or entity's name	md:PersonName-type	
Identifier		Formal identifier for this individual.	md:PersonIdentifier-type	0..n
Gender		Female, Male, Neutral, plural (name for group)	xs:string: "male", "female", "neutral" "plural"	0..1

4.1.4.1 BasicMetadataJob-type

Element	Attribute	Definition	Value	Card.
BasicMetadataJob-type				
JobFunction		Role in production of media. Role is encoded in accordance with "Role Encoding" above. This version is displayable, but JobDisplay is preferred if present.	md:Role-type	

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	scheme	The Role Scheme if alternate role systems are used.	xs:string	0..1
JobDisplay		Displayable version of Role. This allows metadata encoder to be more specific. For example, while JobFunction allows encoding of "Assistant Cameraman", JobDisplay could be "1st Assistant Cameraman".	xs:string	0..n
	language	Language of JobDisplay. There may be multiple instances of JobDisplay, but only with unique language attributes.	xs:language	0..1
BillingBlockOrder		Order of listing, starting with 1. If missing, implies infinity and may be listed in any order. This need not be contiguous.	xs:int, [1..maxint]	0..1
Character		For actors, what role(s) they are playing. May be more than one.	xs:string	0..n
Guest		Whether this is a guest role (e.g., guest actor). If 'true', Job is as a guest. 'false' or absent is not guest.	xs:boolean	0..1

4.1.4.2 BasicMetadataParent-type

This allows parent metadata to be included either by inclusion or reference. Usage rules will define if and when ParentContentID may be used in lieu of Parent. This is an optimization to avoid repeating full metadata sets when multiple objects have the same parent.

Element	Attribute	Definition	Value	Card.
BasicMetadataParent-type				
	relationshipType	The relationship between this asset and its parent as defined below.	xs:string	0..1
Parent		The parent metadata object.	md:BasicMetadata-type	(choice)
ParentContentID		Same as Parent, although included by reference instead of inclusion.	md:ContentID-type	(choice)

The relationshipType attribute may have the following enumerations:

- ' isclipof' – The asset is a subset of the larger body that is a contiguous subset of the parent. It may include unique small amounts of pre- and post-material such as new titles and credits. A typical example is a clip extracted from a larger video.
- 'isepisodeof' – The asset is an instance of an ordered sequence (i.e., an episode)

- "isseasonof' – The asset is a season and the parent is a show
- 'ispartof' – The asset is one complete segment of a larger body not covered by other definitions here. This may include a movie that is part of a series of movies. A song will be part of an album.
- 'isderivedfrom'—The asset is a modification of the parent work. Some examples include a colorized version derived from a B&W version, and an edit such as a "Director's Cut" or "Unrated Edition".
- 'iscompositeof' – Asset includes a subset of the parent, such as may be found in a mashup. This contrasts a clip which is a proper subset otherwise unmodified.
- 'issupplementto' – is supplemental material. For example, outtakes and makings-of would be supplements.
- 'ispromotionfor' – is promotional material, such as a trailer. This is used when the child object has a work type of 'Promotion' and it is a promotion for the parent object.

Note that the parent object supplements information in the work—there is no structural or implied inheritance. When parents exist, they should be included either directly or by reference in each BasicMetadata-type element instance.

4.1.4.3 ContentSequenceInfo-type

Describes Sequence, if part of sequence (episode, season, etc.). The actual sequence type is defined by the WorkType element.

Either Number or HouseSequence must be included. An element with HouseSequence but no number indicates the asset is non-sequenced and the HouseSequence is included for reference. This might be the case for a documentary whose airing sequence is irrelevant but the HouseSequence is still usable for management of the asset.

If neither Number nor HouseSequence is included, the ContentSequenceInfo-type based element should not be included.

Element	Attribute	Definition	Value	Card.
ContentSequenceInfo-type				
Number		Where it fits in sequence (e.g., episode 1 is "1"). Start with 1. If it is the only one in the sequence, it is numbered 1. Generally, sorting is done by Number. This is a strict ordering that may not necessarily correspond with the actual release number. For example, if a show issues with episodes represented in DistributionNumber as'1', '2', '3a', '3b' and 4, the corresponding Number will be '1', '2', '3', '4' and '5'.	xs:int	

DistributionNumber		A flexible, but mainly numeric, representation of the sequence of release within a set or season as used in distribution. Note that ContentNumber-type allows non-numeric values such as '3a' and '1.2'.	~~md:ContentNumber-type~~xs:string	0..1
	domain	The namespace domain for the element		
HouseSequence		Identifier used internally for the asset. This might not be ordered the same as Number and is general in format allowing the inclusion of season or other information, e.g. 'S03E15' or 'GT0315' This is sometimes called Production ID.	xs:string	0..1
	domain	The namespace domain for the element		
AlternateNumber		Another identifier by which this item is known, e.g. a number used by a distributor, such as a network, that does not fall into the above definitions. It also is general in format and may include season or other information.	~~md:ContentNumber-type~~xs:string	0..n
	domain	The namespace domain for the element		

~~4.1.4.4 ContentNumber-type~~

~~Element~~	~~Attribute~~	~~Definition~~	~~Value~~	~~Card.~~
~~ContentNumber-type~~		~~Content number contained as a string. Although this will typically be a number, it can also take other forms such as '3a' or '1.2'. This field should be suitable for display, but is assumed not to be sortable.~~	~~xs:string~~	
	~~domain~~	~~The namespace domain for the element.~~	~~xs:string~~	~~0..1~~

4.2 Compilation Object

A Compilation Object is a grouping outside of the structure of Basic Metadata (i.e., Parent definitions). Compilation Objects may include metadata, either by inclusion or reference. The md:CompObj-type is designed as a simple list of entries. It is intended for inclusion within other structures. The md:CompObjData-type is a more standalone structure that has an ID and a

DisplayName field at the top level, and then the entries. Lists of entries are ordered. For example, if the entries are season premieres of a given show, they can be ordered in season order; and that ordering should be preserved.

4.2.1 CompObj-type

The following defines a compilation:

Element	Attribute	Definition	Value	Card.
CompObj-type				
Entry		An individual entry in the compound object. The list is ordered.	md:CompObjEntry-type	1..n
CompilationClass		A description of the compilation	xs:string	0..1
	hasOtherInclusions	Indicates whether Entry elements include entries beyond the scope of the ComplicationClass. Only applies if 'true'.	xs:boolean	0..1

4.2.2 CompObjID-type

This is a simple type of type md:id-type that can be used to assign a unique identifier.

4.2.3 CompObjData-type

Element	Attribute	Definition	Value	Card.
CompObjData-type			md:CompObj-type	(extension)
	CompObjID	Identifier for this compound object	md:CompObjID-type	0..1
DisplayName		A description of the Compound Object. There may be one entry per language.		0..n
	language	Language of the DisplayName in accordance with encoding described in Section 3.1.	xs:language	0..1

4.2.4 Comp-ObjEntry-type

Element	Attribute	Definition	Value	Card.
CompObjEntry-type				
DisplayName		A description of the Compilation Object. There may be one entry per language.		0..n
	language	Language of the DisplayName in accordance with encoding described in Section 3.1.	xs:language	0..1
EntryNumber		Represents the sequence of this entry relative to other entries. When specified, EntryNumber reflects order. This shall be numeric unless the system using this element specifically allows other formats (e.g., EIDR allows forms such as '1a').	xs:string	0..1
EntryClass		Describes the relationship of this Entry to the elements of the compilation.	xs:string	0..1
Entry		An individual entry in the compound object. The list is ordered.	md:CompObjEntry-type	0..n
ContentID		Content ID for item in the Compilation Object. It is assumed the metadata associated with this ContentID is available, and this field is used as an optimization to avoid repeating metadata.	md:ContentID-type	(choice)
BasicMetadata		Basic Metadata for the entry.	md:BasicMetadata-type	(choice)
(any)		Provisions for external references or other metadata (reserved).	(any##other)	(choice)

Metadata is included either by inclusion (use of BasicMetadata element) or by reference (use of ContentID element). Use of ContentID is an optimization for situations where the metadata for that ContentID is already provided. External systems, such as EIDR, can have external references. Therefore, additional elements can be used in lieu of ContentID or BasicMetadata. Within Common Metadata usage, only ContentID and BasicMetadata is used.

4.2.4.1 EntryClass Encoding

EntryClass defines how an element relates to the compilation. If the entity does not fit one of the following, this element should be omitted. Vocabulary is:

- 'Episode' – the item is an episode, or treated as an episode in the context of this compilation
- 'Installment' – the item is part of a sequential but non-episodic set of items
- 'Part' – the item is a piece of a large work, e.g. Part 1 and Part 2 of a film
- 'Season' – the item is a season of a series, or treated as a season in the context of this compilation

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5 DIGITAL ASSET METADATA

Digital Asset Metadata describes includes relating to the Physical Asset that is distinct from the Logical Asset.

5.1 Digital Asset Metadata Description

A Digital Asset has certain properties that are not general to the Logical Asset and are therefore distinct from Basic Metadata. Digital Asset Metadata describes these properties. These data are distinct from Basic Metadata. The set of Digital Asset Metadata does not attempt to include all possible data about the Asset, only a subset of those most useful.

Metadata includes:

- Audio/video Encoding information
- Resolution, codec, frame rate, max bitrate

5.2 Definitions

5.2.1 DigitalAssetMetadata-type and DigitalAssetSet-type

Element	Attribute	Definition	Value	Card.
DigitalAssetMetadata-type				
Audio		Metadata for an audio asset	md:DigitalAssetAudioData-type	(choice)
Video		Metadata for a video asset	md:DigitalAssetVideoData-type	(choice)
Subtitle		Metadata for subtitles	md:DigitalAssetSubtitleData-type	(choice)
Image		Metadata for Images	md:DigitalAssetImageData-type	(choice)
Interactive		Metadata for Interactive	md:DigitalAssetInteractiveData-type	(choice)

Element	Attribute	Definition	Value	Card.
DigitalAssetSet-type				
Audio		Metadata for an audio asset	md:DigitalAssetAudioData-type	0..n
Video		Metadata for a video asset	md:DigitalAssetVideoData-type	0..n

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Subtitle		Metadata for subtitles	md:DigitalAssetSubtitleData-type	0..n
Image		Metadata for Images	md:DigitalAssetImageData-type	0..n
Interactive		Metadata for Interactive	md:DigitalAssetInteractiveData-type	0..n

5.2.2 DigitalAssetAudioData-type

Element	Attribute	Definition	Value	Card.
DigitalAssetAudioData-type				
Description		Description of the track. Description should be in the language given by the "Language" element below.	xs:string	0..1
Type		The type of track. See Audio Track Encoding. If not present, track is assumed to be 'primary'.	xs:string	0..1
Language		Language for the audio track as defined in Section 3.1.	xs:language	
	dubbed	If present and true, indicates Language is dubbed audio.	xs:boolean	0..1
Encoding		Audio encoding information. If CODEC is not known, this should not be included.	md:DigitalAssetAudioEncoding-type	0..1
Channels		Number of audio channels, either as an integer (e.g., 2) or of the form x.y where x is full channels, and y is limited channels (e.g. "5.1")	xs:string	0..1
TrackReference		Track cross-reference to be used in conjunction with container-specific metadata.	xs:string	0..1
TrackIdentifier		Identifiers, such as EIDR, for this track. Multiple identifiers may be included.	md:ContentIdentifier-type	0..n
Private		Extensibility mechanism to accommodate data that is private to given usage.	md:PrivateData-type	0..1

5.2.2.1 Type Encoding

If Type is present, it should have one of the following values:

- 'primary' – primary audio track. There may be multiple primary tracks, with one for each language
- 'narration' - The visually impairment associated service is a complete program mix containing music, effects, dialogue, and additionally a narrative description of the picture content. The narration service may be coded using multiple channels. A Descriptive Video Service® (DVS®) track is a narration track.
- 'dialogcentric' - The hearing impaired associated service is a complete program mix containing music, effects, and dialogue with dynamic range compression. The dialog-centric service may be coded using multiple channels.
- 'commentary' – Commentary on the video. May be paired with a PIP.
- 'other' – not one of the above

5.2.3 DigitalAssetAudioEncoding-type

Element	Attribute	Definition	Value	Card.
DigitalAssetAudioEncoding-type				
Codec		Name of supported codec. See Codec encoding below.	xs:string	
CodecType		Formal reference identification of CODEC. See below	xs:string	0..n
BitrateMax		Peak Bitrate (bits/second) averaged over a short period.	xs:integer	0..1
BitrateAverage		Bitrate averaged over the entire track.	xs:integer	0..1
VBR		Variable BitRate information.	xs:string	0..1
SampleRate		Sample Rate (samples/second)	xs:integer	0..1
SampleBitDepth		Number of bits per audio sample	xs:integer	0..1
ChannelMapping		Indication of how channels are mapped to intended speaker locations.	xs:string	0..1

Watermark		Information about watermark(s) embedded in audio.	md:DigitalAssetWatermark-type	0..n
~~(any)~~ActualLength		~~Any additional elements~~The actual encoded length of the video track.	~~any##other~~xs:duration	0..n

5.2.3.1 Audio CODEC Encoding

The following values should be used for elementary stream CODECs listed. "Other" should be used if the CODEC is not on the list. This list may be expanded over time.

- 'AAC' – Advanced audio CODEC
- 'AAC-LC'
- 'AAC-LC+MPS'
- 'AAC-SLS'
- 'AC-3' – Dolby Digital, AC-3
- 'AIFF' – Audio Interchange File Format (when specific CODEC is not known)
- 'ALAC' – Apple Lossless Audio Codec
- 'AMR' – Adaptive MultiRate
- 'DOLBY-TRUEHD'
- 'DSD' – Direct Stream Digital
- 'DST' – Direct Stream Transfer
- 'DTS' – DTS CODEC
- 'DTS-ES' – DTS ES (Extended Surround)
- 'DTS-EXPRESS' – DTS Express Audio
- 'DTS-HRA' – DTS-HD High Resolution Audio
- 'DTS-96/24' – DTS 96/24
- 'DTS-MA' – DTS-HD Master Audio
- 'E-AC-3' – Enhanced AC3, Dolby Digital Plus (DD+)
- 'FLAC' – Free Lossless Audio Codec
- 'HE-AACv2' – High Efficiency AAC v2
- 'LPAC' – Lossless Predictive Audio Compression
- 'LTAC' – Lossless Transform Audio Compression
- 'MP3' – MPEG 1 Layer 3
- 'MPEG1' – MPEG1 Layer 2
- 'MPEG-4-ALS'
- 'MLP' – Meridian Lossless Package

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- 'PCM' – Pulse Code Modulation, or Linear PCM
- 'QCELP' - Qualcomm Code Excited Linear Prediction
- 'RealAudio-Lossless' – Real Networks' lossless format
- 'Vorbis' – Ogg Vorbis
- 'WAV' – used when specific CODEC (e.g., PCM) is unknown or not listed
- 'WMA' – Windows Media Audio
- 'WM9-lossless'

5.2.3.2 CodecType Encoding

CodecType allows a more formal encoding of CODEC type based on formal registries. CodecType takes the form

`<namespace> + ':' + <codec type>`

`<namespace>` is accordance with the following table:

Namespace	Definition	Reference for **`<codec type>`**
mpeg4ra	MPEG 4 Registration Authority	http://www.mp4ra.org/codecs.htm
IANA	Internet Assigned Numbers Authority (IANA) Audio Media Types	http://www.iana.org/assignments/media-types/audio/
rfc4281	CODEC encoded in according with RFC4281	http://www.ietf.org/rfc/rfc4281.txt

Only one entry per namespace is allowable.

5.2.3.3 VBR Encoding

The following values should be used for VBR:

- 'VBR' – Quality-based, 1-pass VBR
- 'Constrained VBR' – Constrained VBR, with maximum bitrate reflected in BitrateMax.
- '2-pass VBR' – 2-pass, unconstrained VBR

5.2.3.4 ChannelMapping Encoding

The following values should be used for ChannelMapping when describing a single track. Their meaning is defined in [SMPTE-428-3]:

- 'Left', 'Center', 'Right', 'LFE screen', 'Left surround', 'Right surround', 'Center surround', 'Left center', 'Right center', 'LFE 2', 'Vertical height front', 'Top

center surround', 'Left wide', 'Right wide', 'Rear surround left', 'Rear surround right', 'Left surround direct', 'Right surround direct'.

Also applicable are applicable when ChannelMapping describes multiple tracks

- 'stereo' – Left and Right
- '5.1 Matrix' – 5.1 channels matrixed in two channels
- 'surround' – Greater than two channels, without a specific channel assignment
- 'L,R,C,LFE,LS,RS'
- 'L,C,R,LS,RS,LFE'

5.2.4 DigitalAssetVideoData-type

Element	Attribute	Definition	Value	Card.
DigitalAssetVideoData-type				
Description		Description of this video track	xs:string	0..1
Type		Type of video track. If Type is missing, 'primary' is assumed. See Video Track Type encoding below.	xs:string	0..1
Encoding		Details on Video Encoding. If CODEC is unknown, this element should not be included.	md:DigitalAssetVideoEncoding-type	0..1
Picture		Picture description	md:DigitalAssetVideoPicture-type	
ColorType		Color type of video. Note that Color Type is also included in BasicMetadata, however, this provides information down to the individual stream.	md:ColorType-type	0..1
PictureFormat		PictureFormat of video. If absent, assumed to be same as in BasicMetadata. Note that PictureFormat is also included in BasicMetadata, however, this provides information down to the individual stream.	xs:string	0..1
SubtitleLanguage		Indicates the presence of subtitles embedded in the video stream, either closed (e.g., EIA-608B) or rendered into the video. This is distinguished from subtitles handled via separate tracks. Subtitles in separate tracks should be included in	xs:language	0..n

		DigitalAssetMetadata-type's Subtitle element. Language encoding is defined in Section 3.1. Silent movies with text displays are considered 'normal' subtitles.		
	closed	Indicates whether captions are closed.	xs:boolean	0..1
	type	Indicates type of subtitle. See Section 5.2.7.1.	xs:string	0..1
SignedLanguage		Indicates the presence of signed language in the video. Language must be a sign language such as 'ase' for American Sign Language or 'fsl' for French Sign Language.	xs:language	0..1
CardsetList		Cardsets, such as distribution logos and anti-piracy notices, embedded in video.	md:DigitalAssetCardsetList-type	0..n
TrackReference		Track cross-reference to be used in conjunction with container-specific metadata.	xs:string	0..1
TrackIdentifier		Identifiers, such as EIDR, for this track. Multiple identifiers may be included.	md:ContentIdentifier-type	0..n
Private		Extensibility mechanism to accommodate data that is private to given usage.	md:PrivateData-type	0..1

5.2.4.1 Video Type Encoding

Type, if present, should have one of the following values:

- 'primary' – primary video track. Whether or not this has burned-in subtitled is determined by the presence of the SubtitleLanguage element
- 'overlay' – PIP or other overlay track, intended for use with a 'primary' track
- 'angle' – alternate angle track
- 'other' - not one of the above

5.2.5 DigitalAssetVideoEncoding-type

Element	Attribute	Definition	Value	Card.
DigitalAssetVideoEncoding-type				
Codec		CODEC used. See Video CODEC	xs:string	

		Encoding below.		
CodecType		Formal reference identification of CODEC. See below	xs:string	0..n
MPEGProfile		MPEG Profile	xs:string	0..1
MPEGLevel		MPEG Level (e.g., “3”, “4”, “1.3”)	xs:string	0..1
BitrateMax		Bitrate (bits/second)	xs:integer	0..1
Watermark		Information about watermark(s) embedded in video.	md:DigitalAssetWatermark-type	0..n
~~(any)~~ActualLength		~~Any additional elements~~The actual encoded length of the video track.	~~any##other~~xs:duration	0..n

5.2.5.1 Video CODEC Encoding

The following values should be used for elementary stream CODECs listed. ‘Other’ should be used if the CODEC is not on the list. This list may be expanded over time.

- ‘AVI Uncompressed’
- ‘CineForm HD’
- ‘DIVX’
- ‘DV’ – DV, including variants such as DVCPRO, DVCAM, etc.
- ‘H.264’ – H.264, MPEG-4 Part 10
- ‘JPEG2000’ – JPEG 2000, ISO/IEC 15444
- ‘MOBICLIP’ – Actimagine’s Mobiclip CODEC
- ‘MPEG1’ – MPEG 1 Part 2
- ‘MPEG2’ – MPEG 2 Part 2
- ‘On2’ – On2 CODEC when not VP6, VP7 or VP8, or exact CODED is unknown.
- ‘PHOTOJPEG’
- ‘PRORES’ – Apple ProRes
- ‘PRORESHQ’ – Apple ProRes HQ
- ‘PRORES422’ – Apple ProRes 422
- ‘QT Uncompressed’ – Apple QuickTime Uncompressed
- ‘REAL’ – RealNetworks’ RealVideo
- ‘Spark’ – Sorenson Spark

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- 'SVQ' – Sorenson Video Quantizer
- 'WMV' – Windows Media Video when not WMV7, WVM8 or WMV9 or exact CODEC is unknown
- 'WMV7' – Windows Media Video 7
- 'WMV8' - Windows Media Video 8
- 'WMV9' – Windows Media Video 9
- 'VC1' – Microsoft VC-1
- 'VP6' – On2 VP6
- 'VP7' – On2 VP7
- 'VP8' – On2 VP8
- 'XVID' – Xvid
- 'OTHER' – not one of the above.

5.2.5.2 CodecType Encoding

CodecType allows a more formal encoding of CODEC type based on formal registries. CodecType takes the form

`<namespace> + ':' + <codec type>`

`<namespace>` is accordance with the following table:

Namespace	Definition	Reference for **<codec type>**
mpeg4ra	MPEG 4 Registration Authority	http://www.mp4ra.org/codecs.htm
IANA	Internet Assigned Numbers Authority (IANA) Audio Media Types	http://www.iana.org/assignments/media-types/audio/

Only one entry per namespace is allowable.

5.2.5.3 Video MPEG Profile and Level Encoding

MPEG Profile and Level encoding depends on the CODEC used (that is, Codec and CodecType).

The following values should be used for MPEGProfile and MPEGLevel:

Codec	MPEGProfile	MPEGLevel
H.264 (preferred)	as defined in [ISO14496-10] • 'BP' – Baseline Profile • 'CBP' – Constrained Baseline Profile • 'MP' – Main Profile • 'XP' – Extended Profile • 'HiP' – High Profile • 'PHiP' – Progressive High Profile • 'Hi10P' – High 10 Profile • 'Hi422P' – High 4:2:2 Profile • 'Hi444P' – High 4:4:4 Profile • 'Hi444PP' – High 4:4:4 Predictive Profile • 'Hi10IP' – High 10 Intra Profile • 'Hi422IP' – High 4:2:2 Intra Profile • 'Hi422IP' – High 4:4:4 Intra Profile • 'C444IP' – CAVLC 4:4:4 Intra Profile • 'SBP' – Scalable Baseline Profile • 'SCBP' – Scalable Constrained Baseline Profile • 'SHP' – Scalable High Profile • 'SHIP' – Scalable High Intra Profile • 'SCHP' – Scalable Constrained High Profile • 'StereoHP' – Stereo High profile • 'MultiviewHP' – Multiview High Profile	as defined in [ISO14496-10] • 1 • 1b • 1.1 • 1.2 • 1.3 • 2 • 2.1 • 3 • 3.1 • 3.2 • 4 • 4.1 • 4.2 • 5 • 5.1 • 5.2
H.264 (alternate)	profile_idc as defined in [ISO14496-10]	level_idc as defined in [ISO14496-10]
MPEG2	As defined in [ISO13818-2] • 'SP' – Simple Profile • 'MP' – Main Profile • 'SNR' Scalable Profile • 'Spatial' – Spatially Scalable Profile • 'HP' – High Profile • '422' – 4:2:2 Profile • 'MVP' – Multi-view profile	As defined in [ISO13818-2] • 'LL' – Low Level • 'ML' – Main Level • 'H-14' – High 1440 • 'HL' – High Level

In consideration for the future is the addition of a new parameter, possibly called CodeSubtype, that corresponds with the [RFC6381] representation of the CODEC. This would be modeled after @codecs in MPEG DASH [ISO23009-1].

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5.2.6 DigitalAssetVideoPicture-type

Element	Attribute	Definition	Value	Card.
DigitalAssetVideoPicture-type				
AspectRatio		Aspect ratio of picture after decode (i.e., frame size). Note that this is not necessarily the original aspect ratio. These will be of the form n:m, for example, “16:9”. The following should be used for the respective standard encoding: “16:9” “4:3”, “1.85:1”. “2.35:1”, “1:1”, etc.	xs:string	0..1
PixelAspect		Class of pixel aspect ratios	xs:string “square” “NTSC”: “PAL” “other”	0..1
WidthPixels		Number of columns of pixels encoded (e.g., 1920)	xs:int	0..1
HeightPixels		Number of rows of pixels encoded (e.g., 1080)	xs:int	0..1
ActiveWidthPixels		Number of active pixels. Must be less than or equal to HeightPixels.	xs:int	0..1
ActiveHeightPixels		Number of active pixels. Must be less than or equal to WidthPixels.	xs:int	0..1
FrameRate		Frames/second. If interlaced, use the frame rate (e.g., NTSC is 30).	xs:int	0..1
	multiplier	This attribute indicates whether the 1000/1001 multiple should be applied. There is only one legal value for this attribute which is “1000/1001”. If present, then apply 1000/1001 multiplier to FrameRate. For example, a FrameRate of 30 with multiplier=‘1000/1001’ defines an actual frame rate of 29.97. If the frame rate is integral, this attribute shall not be present	xs:string “1000/1001”	0..1
	timecode	Indication of how drop frames are handled in timecode. See below.	xs:string	0..1
Progressive		Whether image is progressive. “true”=progressive, “false”=interlaced	xs:boolean	0..1
	scanOrder	Indicates the scan order.	xs:string	0..1

ColorSubsampling		Color subsampling model, if applicable.	xs:string	0..1
Colorimetry		Picture colorimetry.	xs:string	0..1
Type3D		Type of 3D picture. Encoding currently undefined.	xs:string	0..1
(any)		Any additional elements.	any##other	0..n

5.2.6.1 FrameRate/timecode Encoding

The timecode element of FrameRate is encoded with the following values

- 'Drop' – Drop frame SMPTE timecode is used.
- EBU – AES/EBU embedded timecome
- Other – Other timecode

5.2.6.2 scanOrder Encoding

For interlaced (i.e., Progressive='false'), valid values are

- 'TFF' for Top Field First
- 'BFF' for Bottom Field First

For Progressive (i.e., Progressive='true'), it is recommend the optional attribute not be included. If included, the only valid is

- 'PPF" Picture Per Field

5.2.6.3 ColorSubsampling Encoding

Valid values for ColorSubsampling are:

- '4:1:1'
- '4:2:0'
- '4:2:2'
- '4:4:4'

5.2.6.4 Colorimetry Encoding

Values for Colorimetry include:

- '601' – ITU Recommendation BT.601, *Studio encoding parameters of digital television for standard 4:3 and wide screen 16:9 aspect ratios* http://www.itu.int/rec/R-REC-BT.601/en
- '709' – ITU Recommendation BT.709, *Parameter values for the HDTV standards for production and international programme exchange*. http://www.itu.int/rec/R-REC-BT.709/en

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- '2020' – ITU Recommendation BT.2020, *Parameter values for ultra-high definition television systems for production and international programme exchange*. http://www.itu.int/rec/R-REC-BT.2020/en
- 'P3' – SMPTE PR 431-2:2011 D-Cinema Quality – Reference Projector and Environment. This is also referred to as DCI-P3 or P3.

5.2.7 DigitalAssetSubtitleData-type

Element	Attribute	Definition	Value	Card.
DigitalAssetSubtitleData-type				
Format		Format of subtitle. See Subtitle Format Encoding below.	xs:string	0..1
	SDImage	Are subtitle images targeted towards SD included? 'true' means yes, 'false' or absent means no. This only applies if Format is 'Image' or 'Combined'	xs:boolean	0..1
	HDImage	Are subtitle images targeted towards HD included? 'true' means yes, 'false' or absent means no. This only applies if Format is 'Image' or 'Combined'	xs:boolean	0..1
Description		Description of this subtitle track. Description is in the language of the Language element.	xs:string	0..1
Type		Intended purpose or purposes of subtitle	xs:string	1..n
FormatType		Identification of subtitle format. See below	xs:string	0..1
Langauge		Language. See Language Encoding in Section 3.1.	xs:language	
Encoding		Encoding information (to be defined).	xs:anyType	0..1
CardsetList		Cards, such as distribution logos and anti-piracy notices, included in subtitle.	md:DigitalAssetCardsetList-type	0..n
TrackReference		Track cross-reference to be used in conjunction with container-specific metadata.	xs:string	0..1
TrackIdentifier		Identifiers, such as EIDR, for this track. Multiple identifiers may be included.	md:ContentIdentifier-type	0..n
Private		Extensibility mechanism to accommodate data that is private to given usage.	md:PrivateData-type	0..1

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5.2.7.1 Subtitle Type Encoding

Type describes the intended use or uses of the subtitle. If the track has more than one intended use, then multiple instances of Type must be included. For example, a single track might be used for both 'normal' and 'SDH' uses.

The following values may be used:

- 'normal' – subtitle used for languages
- 'SDH' – Subtitles for deaf and hard-of-hearing.
- 'large' – subtitles for visually impaired
- 'forced' – used to indicate subtitles is required regardless of whether the user has enabled subtitles. The correct language subtitle track must be chosen. Often referred to as 'forced captions.' A Type of 'forced' must only be used in conjunction with other Type instances, when the track contains a mix of forced and non-forced subtitles. Generally, when 'forced' is used it is the only instance of Type.
- 'commentary' – commentary, such as associated with a commentary audio track.
- 'easyreader' – 'easy reader' subtitle complying with US Federal requirements [47CFR9.103(c)(9)] . The 'easy reader' and 'SDH' Types are independent. That is, if a track is both 'easy reader' and 'SDH' it should be tagged with both Types.
- 'other' – subtitles for commentary, or other purposes.

5.2.7.2 Subtitle Format Encoding

It is anticipated that IANA or others will provide a registry for subtitle encoding schemes. At that time, this section will be revised to reflect a more standard means of describing the subtitle. In the meantime, the following values may be used for Subtitle /Format:

- 'Text' – text subtitle
- 'Image' – image/picture data
- 'Combined' – Subtitle encoding that includes both text and image

5.2.7.3 FormatType Encoding

FormatType may be one of the following:

- '3GPP' – 3GPP Timed Text, MPEG 4 Part 17 Timed Text, ISO/IEC 14496-17.
- 'Blu-Ray'
- 'DCI' – DCI Subtitle, SMPTE 428-7-2007 D-Cinema Distribution Master - Subtitle

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- 'DVB' – DVB Subtitling, *ETSI 300 743 'Digital Video Broadcasting (DVB); Subtitling systems (2006-11)*
- 'DVD'
- 'SMPTE 21052-1 Timed Text" – Timed Text Format (SMPTE-TT), SMPTE ST 2052-1:2010
- 'SRT' – SRT Subtitles
- 'TTML' – W3C Timed Text Markup Language (TTML) 1.0, W3C Recommendation 18 November 2010. http://www.w3.org/TR/ttaf1-dfxp/
- 'WebVTT' – WebVTT (Web Video Text Tracks)

5.2.8 DigitalAssetImageData-type

Element	Attribute	Definition	Value	Card.
DigitalAssetImageData-type				
Width		Number of columns of pixels (e.g., 1920)	xs:int	
Height		Number of rows of pixels (e.g., 1080)	xs:int	
Encoding		MIME type indicating encoding method	xs:string	
Language		Language(s) for this image, if any.	xs:language	0..n
TrackReference		Track cross-reference to be used in conjunction with container-specific metadata.	xs:string	0..1
TrackIdentifier		Identifiers, such as EIDR, for this track. Multiple identifiers may be included.	md:ContentIdentifier-type	0..n
Private		Extensibility mechanism to accommodate data that is private to given usage.	md:PrivateData-type	0..1

5.2.9 DigitalAssetInteractiveData-type

Note that this area is somewhat experimental and will likely change in the future. Please communicate any use cases that are not accommodated by the following.

Element	Attribute	Definition	Value	Card.
DigitalAssetInteractive Data-type				
Type		Type of interactive track ~~(TBD).~~	xs:string	
FormatType		The form the encoding takes: text, executable or metadata.	xs:string	0..1
Langauge		Language. See Language Encoding in Section 3.1.	xs:language	0..1
Encoding		Encoding information.	md:DigitalAssetInterati veEncoding-type	0..n
TrackReference		Track cross-reference to be used in conjunction with container-specific metadata.	xs:string	0..1
TrackIdentifier		Identifiers, such as EIDR, for this track. Multiple identifiers may be included.	md:ContentIdentifier-type	0..n
Private		Extensibility mechanism to accommodate data that is private to given usage.	md:PrivateData-type	0..1

For schema redefine support, the first three elements are defined in md:DigitalAssetInteractiveBaseData-type which is in turn defined as md:DigitalAssetInterativeBaseData-group. This has no XML impact.

5.2.9.1 Interactive Type Encoding

Type allows the following values:

- 'Menu' – Menu system for navigating settings, value added material and other options.
- 'Standalone Game' – Playable game that runs independently of audio or video material
- 'Overlay Game' – Game synchronized to audio or video material
- 'Skins' – Information that customizes appearance
- 'Interactivity' – Ability to choose settings, value added material and other options outside of menus. For example, pop-ups.
- 'Other'

5.2.9.2 Interactive FormatType Encoding

FormatType allows the following values:

- 'Text' – Instructive text.
- 'Executable' – Software that is executable through a runtime environment. See Interactive RuntimeEnvironment.
- 'Metadata' – Declarative data that describes behavior to a runtime environment

5.2.9.3 Interactive Encoding Type

Element	Attribute	Definition	Value	Card.
DigitalAssetInteractiveEncoding-type				
RuntimeEnvironment		The execution runtime environment for the interactive content.		
FirstVersion		Earliest version of RuntimeEnvironment in which this encoding will play. If it plays in all versions, or all versions less than or equal to LastVersion, this element may be omitted.	xs:string	0..1
LastVersion		Last version of RuntimeEnvironment in which this encoding will play. If it plays in all versions, or all versions after FirstVersion, this element may be omitted	xs:string	0..1
(any)		Any other addition element(s)	xs:any##other	0..n

RuntimeEnvironment must use the following values when the associated runtime environments are used for 'Executable' and 'Metadata' FormatType values.

The following are runtime environments for Executable and Metadata Format Types.

- 'CMX' – Connected Media Experience
- 'Flash' – Adobe Flash
- 'BD-J' – Blu-ray Java
- 'MHEG' – MHEG-5, or more formally ISO/IEC 13522-5.
- 'HTML5' – W3C HTML5
- 'Other' – may be used when there is not a type convention.

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5.2.10 DigitalAssetWatermark-type

Identification watermarks contain information that identifies content. This complex type describes which watermark is used and also includes information used for recognition.

Element	Attribute	Definition	Value	Card.
IDWatermark-type				
	guaranteedAbsent	The watermark specified is guaranteed not present in the media.		0..1
Vendor		Organization associated with watermark.	xs:string	
ProductAndVersionID		Identification of specific watermark version of the technology. It must be sufficiently precise to differentiate between incompatible watermarks from the same Vendor.	xs:string	
Data		Data is a string that either contains the information encoded by the watermark or is a reference to that data. Its content is outside the scope of this document. This may be vendor-private data.	xs:string	0..1

The combination of Vendor and ProductAndVersionID unambiguously identifies a watermark technology.

Vendor is a representation of a watermark vendor or relevant technology. This is not a strict enumeration to allow new vendors to be added. However, it is important that vendor names are used consistently. As general guidance, use initial caps (except for acronyms) and no spaces or punctuation. Following are a few examples:

- 'Philips'
- 'Civolution'
- 'Verance'
- 'Nielsen'
- 'AACS'

ProductAndVersionID identifies the precise version of the technology. In particular, it is used to differentiate between incompatible watermarks from the same Vendor.

5.2.11 Cards

Cardsets are collections geographic-region-specific static text or graphics visually displayed. Typical cardsets are anti-piracy warnings. Cardsets may be embedded in video (i.e., burned in) or overlaid on video via a subtitle. Video-embedded cards are described as part of Video metadata. Subtitle cards are described as part of Subtitle metadata.

DigitalAssetCardsetList-type is used to describe a collection of cardsets used together. DigitalAssetCard-type are related by purpose.

Note that we use the term cardsets to refer to one or more cards. For example, a US anti-piracy cardset might consist of more than one warning card including an FBI card, a Department of Homeland Security card and others. Note also that a single video or subtitle track may contain multiple cardsets.

Note that this area is somewhat experimental and will likely change in the future. Please communicate any use cases that are not accommodated by the following.

5.2.11.1 DigitalAssetCardsetList-type

Element	Attribute	Definition	Value	Card.
Cardset-type				
Type		The intended general usage of the cardset list.	xs:string	0..n
Region		Location for which cardset is intended. For example, US anti-piracy cardset would be for country='us'. CardsetLists may apply to more than one region. If absent, cards are assumed to be worldwide.	md:MadeFor Region-type	0..n
CardSet		Description of the cardset.	md:DigitalAs setCardset-type	1..n

Type is encoded as follows:

- 'Theatrical' – Theatrical
- 'Broadcast' – Broadcast, not including Internet
- 'Hospitality' – Hospitality, such as airline and hotel
- 'Rental' – Rental (Internet)
- 'EST' – Electronic Sell Through (Internet)

5.2.11.2 DigitalAssetCardset-type

A cardset is a collection of cards for one purpose and displayed together. The reason it is a cardset may contain multiple individual cards. For example, a US anti-piracy cardset may contain an FBI card, a Department of Homeland Security card, and others.

Element	Attribute	Definition	Value	Card.
Cardset-type				
Type		Type of cardset. See below.	xs:string	1..n
Description		Description of cardset (human readable)	Xs:string	1..n
Sequence		Order of display for this cardset. A higher number represents later display. Cardsets with the same sequence must not overlap Region.	xs:positiveInteger	0..1

Type is encoded as follows:

- 'AntiPiracy' – Anti-piracy notices
- 'DistributionLogo' – Logos associated with distribution entity or entities.
- 'Rating' – Content Rating
- 'DubbingCredit' – Credits for dubbing (e.g., French talent dubbing in French)
- 'Intermission' – Information displayed during an intermission.
- 'EditNotice' – Information displayed regarding the edit (e.g., "This movie has been modified from the original version. It has been formatted to fit your screen.")
- Other

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6 CONTAINER METADATA

The Container Metadata describes the container that includes the various media pieces and the glue that holds them together.

6.1 Container Metadata Description

Logically speaking, the container holds a collection of tracks as described using md:DigitalAssetMetadata-type. The container packages these data in accordance with the rules for that container type, defined with the md:ContainerType element.

Often, the container type definition alone is not enough information to access the media in the container. md:ContainerSpecificMetadata may be included to provide any additional necessary information. Container-specific metadata definitions are not included in this version of the specification, so the xs:any type is used.

If ContainerSpecificInformation is provided, the md:TrackRef elements in the Digital Asset Metadata types may be used to cross reference. For example, container-specific metadata may map an MPEG-2 transport stream PID to a given Track.

6.2 Definitions

6.2.1 ContainerMetadata-type

This type describes a container that in turn contains one or more audio, video, subtitle or image tracks.

Element	Attribute	Definition	Value	Card.
ContainerMetadata-type				
ContainerType		Identification of container type	md:DigitalAssetContainerType-type	0..1
Track		Track metadata	md:ContainerTrackMetadata-type	1..n
Hash		Hash of container. Multiple instances may be included if multiple methods are used.	md:Hash-type	0..n
Size		Size of container in bytes (octets).	xs:positiveInteger	0..1
ContainerReference		Reference to Container within another object. For example, if the Container is a file within a ZIP file, ContainerReference would be the Container's filename within the ZIP.	xs:string	0..1

ContainerIdentifier		Identifier for the Container. For example, if Container were a UltraViolet Common File Format file, this could contain the APID.	md:ContentIdentifier-type	0..1
ContainerSpecificMetadata		Additional information about the content and structure of the container. In the future, container-specific information will be provided.	md:ContainerSpecific-type	0..1
(any)		Any additional definitions	xs:any##other	0..n

6.2.1.1 Container Type encoding, ContainerType-type

Container type is of simple type ContainerType-type that is xs:string. It may contain one of the following values:

- '3GP' – Third Generation Partnership Project (3GPP) file format
- '3GP2' – 3GPP2 file format
- 'AC3' – Dolby Digital file
- 'AIFF' – Audio Interchange File Format
- 'ASF' – Microsoft Advanced Streaming Format
- 'AVI' – Microsoft Audio Video Interleave, also includes AVI 2.0
- 'CFF' – Common File Format (UltraViolet)
- 'DIVX' – DivX movie file
- 'DTS' – DTS encoded file
- 'FLV' – Flash Video File
- 'HCT' – Hectavision File
- 'ISO' – ISO Container ISO/IEC 14496-12, when not specified in a more specific fashion (e..g, MP4)
- 'JPEG' – JPEG image file
- 'M4V' – Apple M4V
- 'MJ2' – JPEG 2000 file format; 'ISO' containing JPEG 2000
- 'MP4' – MPEG-4 Part 14, ISO/IEC 14496-14:2003
- 'MKV' – Matroska multimedia container
- 'MPEG-2 (TS)' – MPEG-2 Transport stream
- 'MPEG-2 (PS)' – MPEG-2 Program Stream
- 'MXF' – SMPTE MXF file
- 'Ogg' – Xiph.Org file format for Vorbis and Theora
- 'Quicktime (MOV)' – Apple QuickTime movie file

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- 'PNG' – Portable Network Graphics (PNG) file
- 'RIFF – Resource Interchange File Format
- 'RM' – RealNetwork's RealMedia file format
- 'SWF' – Adobe Shockwave Flash
- 'TIFF' – tagged image file format
- 'WMV' – Microsoft WMV file
- 'VOB' – DVD Video OBject file
- 'XMF' – XMF music file (MIDI)
- 'ZIP' – ZIP file
- 'other'

If the format is not in this list, it is acceptable to include the Windows file extension. When using this form, precede with 'EXT:'. For example, 'EXT:DXR' for Macromedia Director Movie File (.dxr file extension).

Standard encoding is preferred and will be investigated.

6.2.1.2 ContainerSpecific-type

ContainerSpecific-type is a sequence of 0..n any##other. This allows any container metadata to be used here.

6.2.1.3 ContainerTrackMetadata-type

Element	Attribute	Definition	Value	Card.
ContainerTrackMetadata-type				
Audio		Metadata for an audio asset	md:DigitalAssetAudioData-type	(choice)
Video		Metadata for a video asset	md:DigitalAssetVideoData-type	(choice)
Subtitle		Metadata for subtitles	md:DigitalAssetSubtitleData-type	(choice)
Image		Metadata for Images	md:DigitalAssetImageData-type	(choice)
Interactive		Metadata for Interactive	md:DigitalAssetInteractiveData-type	(choice)
Container		Container encapsulated within the container (recursive).	md:ContainerMetadatata-type	(choice)

ExternalTrackReference		Reference to a track that is external. It may be a standalone track or part of another container. If part of a container, the trackReference attribute should point to the track in the other container.	md:DigitalAssetExternalTrackReference-type	(choice)
InternalTrackReference		Reference to a track that is internal to the Container. This is used when it is preferred to refer to track by IDs rather than metadata.	xs:string	(choice)

6.2.2 ContainerProfile-type

`ContainerProfile-type` is defined as `xs:string`. It may be used to specify a profile for a given container. There are no enumerations currently defined.

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7 CONTENT RATINGS

Common Metadata supports content advisory based on formal ratings systems along with an "Adult only" flag for non-rated adult material and to allow limited cross-system blocking of content.

7.1 Description

Ratings are of the form: Region/System/Rating/Reason. There is also type (e.g., Film, TV and Music) but this is generally subsumed by the System and implicit in the content (exceptions are handled).

7.2 Rules

There is no implied cross-mapping between advisory systems.

7.2.1 "Unrated"

A system of "Unrated" can be created in any region, although it is not tied to any particular rating system. Within the system "Unrated" there are four ratings: "Unrated", "higher", "neutral" and "lower". A rating of "Unrated" is a simple statement that the title is unrated in that region. The ratings "higher", "neutral" and "lower" correspond with the condition encoding definitions below.

'Unrated' literally means that this particular media instance has not been rated. This frequently means that a work has never been self-rated or submitted to a ratings body, for example, because of the nature of the work (e.g., a sporting event) or for budgetary reasons.

'Unrated' is also used as a marketing term to reflect a work that contains additional material, generally implied as material that would change the rating, often represented something like, *"The Unrated Edition"*.

As a best practice, if the unrated work is derived from a rated work, the parent work should be included in the Parent element of the BasicMetadata-type with a relationshipType attribute of 'isderivedfrom'. Although the content is still unrated, the recipient will have additional information on how they may wish to classify the work.

7.3 Definition

This section specifies the structure that can include a complete content rating set for a title.

7.3.1 ContentRating-type

This element describes content-specific parental control information as provided by the content owner or rating agency.

NotRated and RatingsMatrix are an XSD 'choice'. If NotRated is chosen, it must be 'true'. NotRated is used if there are no other ratings.

The absence of a rating in a particular system does not necessarily imply the content is unrated. However, in most cases it can assumed that it is unrated. Specifications based on Common Metadata should include a requirement that all relevant ratings be included if available.

Element	Attribute	Definition	Value	Card.
ContentRating-type				
NotRated		Has the content never been rated? 'true'=not rated. Must be 'true' if included.	xs:boolean	(choice)
	condition	An indication of the nature of the unrated status.	xs:string	0..1
Rating		Rating information	md:ContentRatingDetail-type	(choice) 1..n
AdultContent		Should content be blocked for all non-adult viewers? 'true'= yes. 'false' or absent means no. There is no formal definition of 'adult' content, and this represents the judgment of the originator.	xs:boolean	0..1

NotRated is distinguished from "unrated". As mentioned above, the term "unrated" is often used as a marketing term. "unrated" may be used as a keyword to indicate this type of version.

7.3.1.1 Condition encoding

Condition is an indication of why the work is unrated. If condition is absent, no conclusions can be drawn regarding why work is unrated.

If the BasicMetadata-type element has a parent element and condition is included, the values shall be one of the following:

- 'higher' – The intent is for the work to have a rating higher than or equal to the parent's rating. This is typically used for the "Unrated Edition" edits.
- 'neutral' –The work was not explicitly rated, but is intended to have the same rating as its parent object.
- 'lower' – The work is derived in such a way as to lower the rating. The intent is for the work to have a rating lower than or equal to the parent's rating. This would be typical of TV or airplane edit. This would also apply to edits for particular cultural or religious sensitivities.
- 'exempt' – The work is exempt from ratings.

If the BasicMetadata-type element does not have a parent element and condition should not be included. This can be interpreted as "never rated."

7.3.2 ContentRatingDetail-type

This element describes content-specific parental control information as provided by the content owner or rating agency.

Values come from Section 8, "Content Rating Encoding". Values should be exactly as entered in the table in Section 8.

Element	Attribute	Definition	Value	Card.
ContentRatingDetail-type				
Region		Country/Region. Uses region encoding	md:Region-type	
System		Rating System	xs:string	
Value		Rating Value	xs:string	
Reason		Rating Reason. Only one Reason per element (i.e., either "L" or "V", but not "LV".)	xs:string	0...n
LinkToLogo		If there is an image associated with this rating, the link may be provided	xs:anyURI	0..1
Description		A string associated with the rating, such as, "Rated PG For mild thematic elements and brief smoking"	xs:string	0..1

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8 CONTENT RATING ENCODING

Encoding for content ratings has been moved to its own document, TR-META-CR found at http://www.movielabs.com/md/ratings. We recommend using the latest version of this document.

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9 SELECTED EXAMPLES

Following are selected examples. These and other examples will appear on the web site.

9.1 People Name Examples

The following example was based on this test schema

```
<xs:element name="Person-name" type="md:PersonName-type"/>
<xs:element name="People">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="Person" type="md:BasicMetadataPeople-type" maxOccurs="unbounded"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

The following example covers the following people: Gorillaz, Kid n' Play, Cher, 50 Cent, MC Hammer, Dita von Teese, Marilyn Manson, Teenage Mutant Ninja Turtles, James van der Beek, Max von Sydow, Kat von D, Benjamin “Scatman” Crothers, and Peter Sellers. Note that Teenage Mutant Ninja Turtles is not a real entity and therefore will not be encoded, but it was included to test completeness.

```
<mdtest:People xsi:schemaLocation="http://www.movielabs.com/md/mdtest mdtest.xsd"
xmlns:md="http://www.movielabs.com/md" xmlns:mdtest="http://www.movielabs.com/md/mdtest"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <mdtest:Person>
        <md:Job>
            <md:JobFunction>Music Group</md:JobFunction>
            <md:JobDisplay>Band</md:JobDisplay>
        </md:Job>
        <md:Name>
            <md:DisplayName>Gorillaz</md:DisplayName>
            <md:SortName>Gorillaz</md:SortName>
        </md:Name>
        <md:Gender>neutral</md:Gender>
    </mdtest:Person>
    <mdtest:Person>
        <md:Job>
            <md:JobFunction>Other Group</md:JobFunction>
            <md:JobDisplay>Comedy Duo</md:JobDisplay>
        </md:Job>
        <md:Name>
            <md:DisplayName>Kid 'n Play</md:DisplayName>
            <md:SortName>Kid 'n Play</md:SortName>
        </md:Name>
        <md:Gender>male</md:Gender>
    </mdtest:Person>
```

```
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Singer</md:JobFunction>
        <md:JobDisplay>Singer</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>Cher</md:DisplayName>
        <md:SortName>Cher</md:SortName>
    </md:Name>
    <md:Gender>female</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Singer</md:JobFunction>
        <md:JobDisplay>Rapper</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>50 Cent</md:DisplayName>
        <md:SortName>50 Cent</md:SortName>
        <md:FirstGivenName>Curtis</md:FirstGivenName>
        <md:SecondGivenName>James</md:SecondGivenName>
        <md:FamilyName>Jackson</md:FamilyName>
        <md:Suffix>III</md:Suffix>
    </md:Name>
    <md:Gender>male</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Singer</md:JobFunction>
        <md:JobDisplay>Rapper</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>MC Hammer</md:DisplayName>
        <md:SortName>MC Hammer</md:SortName>
    </md:Name>
    <md:Gender>male</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Dancer</md:JobFunction>
        <md:JobDisplay>Burlesque Dancer</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>Dita von Teese</md:DisplayName>
        <md:SortName>Von Teese, Dita</md:SortName>
        <md:FirstGivenName>Dita</md:FirstGivenName>
        <md:FamilyName>Von Teese</md:FamilyName>
    </md:Name>
    <md:Gender>female</md:Gender>
</mdtest:Person>
```

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```
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Singer</md:JobFunction>
        <md:JobDisplay>Singer</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>Marilyn Manson</md:DisplayName>
        <md:SortName>Manson, Marilyn</md:SortName>
        <md:FirstGivenName>Marilyn</md:FirstGivenName>
        <md:FamilyName>Manson</md:FamilyName>
    </md:Name>
    <md:Gender>male</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Other Group</md:JobFunction>
        <md:JobDisplay>Superhero Turtles</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>Teenage Mutant Ninja Turtles</md:DisplayName>
        <md:SortName>Teenage Mutant Ninja Turtles</md:SortName>
    </md:Name>
    <md:Gender>neutral</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Actor</md:JobFunction>
        <md:JobDisplay>Actor</md:JobDisplay>
        <md:BillingBlockOrder>1</md:BillingBlockOrder>
        <md:Character>Dawson Leery</md:Character>
    </md:Job>
    <md:Name>
        <md:DisplayName>James Van Der Beek</md:DisplayName>
        <md:SortName>Van Der Beek</md:SortName>
        <md:FirstGivenName>James</md:FirstGivenName>
        <md:SecondGivenName>William</md:SecondGivenName>
        <md:FamilyName>Van Der Beek</md:FamilyName>
        <md:Suffix>Jr.</md:Suffix>
    </md:Name>
    <md:Gender>male</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Actor</md:JobFunction>
        <md:JobDisplay>Actor</md:JobDisplay>
        <md:Character>Otto Frank</md:Character>
    </md:Job>
    <md:Name>
        <md:DisplayName>Max von Sydow</md:DisplayName>
        <md:SortName>von Sydow</md:SortName>
```

```
        <md:FirstGivenName>Max</md:FirstGivenName>
        <md:FamilyName>von Sydow</md:FamilyName>
    </md:Name>
    <md:Gender>male</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Artist/Performer</md:JobFunction>
        <md:JobDisplay>Tatoo Artist</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>Kat von D</md:DisplayName>
        <md:SortName>String</md:SortName>
        <md:FirstGivenName>Kat</md:FirstGivenName>
        <md:FamilyName>von D</md:FamilyName>
    </md:Name>
    <md:Gender>female</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Singer</md:JobFunction>
        <md:JobDisplay>Scat Singer</md:JobDisplay>
    </md:Job>
    <md:Name>
        <md:DisplayName>Scatman Crothers</md:DisplayName>
        <md:SortName>Scatman Crothers</md:SortName>
        <md:FirstGivenName>Benjamin</md:FirstGivenName>
        <md:SecondGivenName>Sherman</md:SecondGivenName>
        <md:FamilyName>Crothers</md:FamilyName>
        <md:Moniker>Scatman</md:Moniker>
    </md:Name>
    <md:Gender>male</md:Gender>
</mdtest:Person>
<mdtest:Person>
    <md:Job>
        <md:JobFunction>Actor</md:JobFunction>
        <md:JobDisplay>Actor</md:JobDisplay>
        <md:BillingBlockOrder>1</md:BillingBlockOrder>
        <md:Character>Group Captain Lionel Mandrake</md:Character>
        <md:Character>President Merkin Muffley</md:Character>
        <md:Character>Dr. Strangelove</md:Character>
    </md:Job>
    <md:Name>
        <md:DisplayName>Peter Sellers</md:DisplayName>
        <md:SortName>Selers</md:SortName>
        <md:FirstGivenName>Peter</md:FirstGivenName>
        <md:FamilyName>Selers</md:FamilyName>
    </md:Name>
    <md:Gender>male</md:Gender>
</mdtest:Person>
```

```
</mdtest:People>
```

9.2 Release History Example

The following example is based on this test schema:

```
<xs:element name="ReleaseHistorySet">
    <xs:complexType>
        <xs:sequence>
            <xs:element name="ReleaseHistory" type="md:ReleaseHistory-type" maxOccurs="unbounded"/>
        </xs:sequence>
    </xs:complexType>
</xs:element>
```

The following history is included:

- US Theatrical: 2008-02-08
- US Fullscreen DVD: 2008-06-17
- US Widescreen DVD: 2008-06-17
- UK Theatrical: 2008-05-30
- UK DVD: 2008-09-22

```
<mdtest:ReleaseHistorySet xsi:schemaLocation="http://www.movielabs.com/md/mdtest mdtest.xsd"
xmlns:md="http://www.movielabs.com/md" xmlns:mdtest="http://www.movielabs.com/md/mdtest"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <mdtest:ReleaseHistory>
        <md:ReleaseType>original</md:ReleaseType>
        <md:DistrTerritory>
            <md:country>US</md:country>
        </md:DistrTerritory>
        <md:Date>2008-02-08</md:Date>
        <md:Description>US Theatrical Release</md:Description>
    </mdtest:ReleaseHistory>
    <mdtest:ReleaseHistory>
        <md:ReleaseType>DVD</md:ReleaseType>
        <md:DistrTerritory>
            <md:country>US</md:country>
        </md:DistrTerritory>
        <md:Date>2008-06-17</md:Date>
        <md:Description>US Fullscreen Edition</md:Description>
    </mdtest:ReleaseHistory>
    <mdtest:ReleaseHistory>
        <md:ReleaseType>DVD</md:ReleaseType>
        <md:DistrTerritory>
            <md:country>US</md:country>
        </md:DistrTerritory>
```

```
        <md:Date>2008-06-17</md:Date>
        <md:Description>US Widescreen Edition</md:Description>
    </mdtest:ReleaseHistory>
    <mdtest:ReleaseHistory>
        <md:ReleaseType>original</md:ReleaseType>
        <md:DistrTerritory>
            <md:country>GB</md:country>
        </md:DistrTerritory>
        <md:Date>2008-05-30</md:Date>
        <md:Description>UK Theatrical Release</md:Description>
    </mdtest:ReleaseHistory>
    <mdtest:ReleaseHistory>
        <md:ReleaseType>DVD</md:ReleaseType>
        <md:DistrTerritory>
            <md:country>GB</md:country>
        </md:DistrTerritory>
        <md:Date>2008-09-22</md:Date>
        <md:Description>UK Release</md:Description>
    </mdtest:ReleaseHistory>
</mdtest:ReleaseHistorySet>
```

9.3 Content Rating Examples

The following example was based on this test schema:

```
    <xs:element name="RatingSet" type="md:ContentRating-type"/>
```

The following ratings are given:

- US, MPAA, PG-13
- UK, BBFC, 12
- US, TV Parental Guidelines, TV14, course or crude language, sexual situations and violence
- Canada/Ontario, OFRB, 14A

```
<mdtest:RatingSet xsi:schemaLocation="http://www.movielabs.com/md/mdtest mdtest.xsd"
xmlns:md="http://www.movielabs.com/md" xmlns:mdtest="http://www.movielabs.com/md/mdtest"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <md:Rating>
      <md:Region>
        <md:country>US</md:country>
      </md:Region>
      <md:System>MPAA</md:System>
      <md:Value>PG-13</md:Value>
      <md:LinkToLogo>http://www.mpaa.org/_images/parental-strongly.gif</md:LinkToLogo>
    </md:Rating>
```

```
    <md:Rating>
      <md:Region>
        <md:country>GB</md:country>
      </md:Region>
      <md:System>BBFC</md:System>
      <md:Value>12</md:Value>
      <md:LinkToLogo>http://www.bbfc.co.uk/images/classification/c-12.gif</md:LinkToLogo>
    </md:Rating>
    <md:Rating>
      <md:Region>
        <md:country>US</md:country>
      </md:Region>
      <md:System>TVPG</md:System>
      <md:Value>TV14</md:Value>
      <md:Reason>L</md:Reason>
      <md:Reason>S</md:Reason>
      <md:Reason>V</md:Reason>
      <md:LinkToLogo>http://www.tvguidelines.org/images/tv14.jpg</md:LinkToLogo>
    </md:Rating>
    <md:Rating>
      <md:Region>
        <md:countryRegion>CA-ON</md:countryRegion>
      </md:Region>
      <md:System>OFRB</md:System>
      <md:Value>14A</md:Value>
      <md:LinkToLogo>http://www.ofrb.gov.on.ca/english/images/14a_high.gif</md:LinkToLogo>
    </md:Rating>
</mdtest:RatingSet>
```

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10 REDEFINE SUPPORT

It is anticipated that schemas that use Common Metadata will wish to control vocabularies or otherwise constrain the schema. This is fully allowed.

Note that unless you intend to do redefines, this section is internal to the schema and has no effect on schema users.

To support controlled vocabularies, Common Metadata provides a set of simple types corresponding with particular elements and attributes. These are of the form

<XML type>-<reference>

Where

- <XML type> refers to the original XML type of the attribute or element. For example, xs:string elements start with 'string'.
- <reference> is a descriptive term relating to the attribute or element in question. For example, BasicMetadata/Genre's reference is 'Genre'.

10.1 General XML Type Redefines

These redefines are used across all uses of the XML type.

XML type	Redefine type
xs:language	Md:language-redefine

10.2 Type-specific Redefines

The following tables list the element or attribute that is subject to redefine and the simple type that redefines that value. For example, for the element //PersonName/Suffix, there is a simple type md:string-Name-Suffix that can be redefined to control the Suffix element's pattern or enumeration.

The Contains enumerations column indicates whether the 'Redefine type' already includes enumerations. In that case, the only constrainting option available, according to XML redefine rules, is to restrict out one or more of those enumerations.

Note that Common Metadata suggests many vocabularies that are not enforced by XML enumerations.

10.2.1 Identifiers

The following applies to identifiers. This is applicable when only specific identifiers are allowed. If only one Namespace is allowed, one might wish to define Identifier as a pattern.

Element or Attribute	Redefine type	Contains enumerations
ContentIdentifier-type/Namespace	md:string-ContentID-Namespace	
ContentIdentifier-type/Identifier	md:sting-ContentID-Identifier	

10.2.2 Basic Metadata

Element or Attribute	Redefine type	Contains enumerations
//BasicMetadataInfo-type /ArtReference/@resolution	md:string-ArtReference-resolution	
//BasicMetadataInfo-type /DisplayIndicators	md:string-DisplayIndicators	yes
//BasicMetadataInfo-type /Genre	md:string-Genre	
//BasicMetadataInfo-type /Genre/@id	md:string-Genre_id	
//BasicMetadataInfo-type /Keyword	md:string-Keyword	
//BasicMetadataInfo-type/TitleAlternate	md:string-TitleAlternate_type	
//BasicMetadataJob-type/JobFunction	md:string-JobFunction	
//BasicMetadataJob-type/JobFunction/@scheme	md:string-JobFunction-scheme	
//BasicMetadataJob-type/JobDisplay	md:string-JobDisplay	
//BasicMetadata/WorkType	md:string-WorkType	
//BasicMetadata/WorkTypeDetail	md:string-WorkTypeDetail	
//BasicMetadata/PictureFormat	md:string-PictureFormat	
//BasicMetadata/AspectRatio	md:string-AspectRatio	
//BasicMetadata/AssociatedOrg/@role	md:string-AssociatedOrg-role	
//BasicMetadata/SequenceInfo/DistributionNumber-type (complex type redefinition necessary to allow redefine)	md:complex-SequenceInfo-DistributionNumber	
//BasicMetadata/SequenceInfo/DistributionNumber-type	md:string-SequenceInfo-DistributionNumber	

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Element or Attribute	Redefine type	Contains enumerations
//BasicMetadata/SequenceInfo/DistributionNumber -type/@domain	md:string-SequenceInfo-DistributionNumber -domain	
//BasicMetadata/SequenceInfo/HouseSequence-type (complex type redefinition necessary to allow redefine)	md:complex- SequenceInfo-HouseSequence	
//BasicMetadata/SequenceInfo/HouseSequence-type	md:string- SequenceInfo-HouseSequence	
//BasicMetadata/SequenceInfo/HouseSequence-type/@domain	md:string- SequenceInfo-HouseSequence-domain	
//BasicMetadata/SequenceInfo/AlternateNumber-type (complex type redefinition necessary to allow redefine)	md:complex- SequenceInfo-AlternateNumber	
//BasicMetadata/SequenceInfo/AlternateNumber-type	md:string- SequenceInfo-AlternateNumber	
//BasicMetadata/SequenceInfo/ AlternateNumber -type/@domain	md:string- SequenceInfo-AlternateNumber -domain	

10.2.3 Digital Asset Metadata

Element or Attribute	Redefine type	Contains enumerations
//DigitalAssetAudio-type/Type	md:string-Audio-Type	
//DigitalAssetAudio-type/Language	md:DigitalAssetAudioLanguage-type	
//DigitalAssetAudio-type/Channels	md:string-Audio-Channels	
//DigitalAssetAudio-type/TrackReference	md:string-TrackReference[1]	
//DigitalAssetAudioEncoding-type/Codec	md:string-Audio-Enc-Codec	
//DigitalAssetAudioEncoding-type/CodecType	md:string-Audio-Enc-CodecType	
//DigitalAssetAudioEncoding-type/ChannelMapping	md:string-Audio-Enc-ChannelMapping	

Element or Attribute	Redefine type	Contains enumerations
//DigitalAssetVideo-type/Type	md:string-Video-Type	
//DigitalAssetVideo-type/PictureFormat	md:string-Video-PictureFormat	
//DigitalAssetVideo-type/SubtitleLanguage	md:DigitalAssetVideoSubtitleLanguage-type	
//DigitalAssetVideo-type/TrackReference	md:string-TrackReference[1]	
//DigitalAssetVideoEncoding-type/Codec	md:string-Video-Enc-Codec	
//DigitalAssetVideoEncoding-type/CodecType	md:string-Video-Enc-CodecType	
//DigitalAssetVideoEncoding-type/MPEGProfile	md:string-Video-Enc-MProfile	
//DigitalAssetVideoEncoding-type/MPEGLevel	md:string-Video-Enc-MLevel	
//DigitalAssetVideoEncoding-type/VBR	md:string-Video-Enc-VBR	
//DigitalAssetVideoPicture-type/AspectRatio	md:string-Video-Pic-AspectRatio	Yes
//DigitalAssetVideoPicture-type/PixelAspect	md:string-Video-Pic-PixelAspect	
//DigitalAssetVideoPicture-type/ColorSampling	md:string-Video-Pic-ColorSampling	
//DigitalAssetVideoPicture-type/Colorimetry	md:string-Video-Pic-Colorimetry	
//DigitalAssetVideoPicture-type/FrameRate	md:DigitalAssetVideoPictureFrameRate-type	
//DigitalAssetVideoPictureFrameRate-type~~/FrameRate~~/@mulitplier	md:string-Video-Pic-FrameRate-mulitplier	Yes
//DigitalAssetVideoPictureFrameRate-type~~/FrameRate~~/@timecode	md:string-Video-Pic-FrameRate-timecode	
//DigitalAssetVideoPicture-type/Progressive	md:DigitalAssetVideoPictureProgressive-type	
//~~DigitalAssetVideoPicture-type/Progressive~~DigitalAssetVideoPictureProgressive/@scanOrder	md:string-Video-Pic-Progressive-scanOrder	Yes
//DigitalAssetVideoPicture-type/Type3D	md:string-Video-Pic-Type3D	

Element or Attribute	Redefine type	Contains enumerations
//DigitalAssetSubtitle-type/Format	md:DigitalAssetSubtitleFormat-type md:string-Subtitle-Format	
//DigitalAssetSubtitle-type/Type	md:string-Subtitle-Type	
//DigitalAssetSubtitle-type/FormatType	md:string-Subtitle-FormatType	
//DigitalAssetImage-type/Encoding	md:string-Image-Encoding	
//DigitalAssetImage-type/TrackReference	md:string-TrackReference[1]	
//DigitalAssetInteractiveData-type/Type	md:string-Interactive-Type	
//DigitalAssetInteractiveData-type/FormatType	md:string-Interactive-FormatType	
//DigitalAssetInteractiveEncoding-type/RuntimeEnvironment	md:string-Interactive-Enc-RuntimeEnvironment	
//DigitalAssetInteractiveEncoding-type/FirstVersion	md:string-Interactive-Enc-Version[1]	
//DigitalAssetInteractiveEncoding-type/FirstVersion	md:string-Interactive-Enc-Version[1]	
//DigitalAssetInteractive-type/TrackReference	md:string-TrackReference[1]	
//DigitalAssetCardsetList-type/Location	md:string-CardsetList-Location	
//DigitalAssetCardset-type/Type	md:string-Cardset-Type	
//DigitalAssetWatermark-type/Vendor	md:string-Watermark_Vendor	

[1] This type is used for more than one element or attribute.

10.2.4 Content Ratings

Element or Attribute	Redefine type	Contains enumerations
//ContentRating-type/NotRated/@condition	md:string-NotRated-condition	
//ContentRatingDetail-type/System	md:string-Rating-System	

10.2.5 Container Metadata

Element or Attribute	Redefine type	Contains enumerations
ContainerMetadata-type/Type	md:string-Container-Type	
ContainerMetadata-type/ContainerReference	md:string-Container-ContainerReference	

10.2.6 Compilation Object

Element or Attribute	Redefine type	Contains enumerations
CompObj-type/EntryNumber	md:string-Compilation-EntryNumber	
CompObj-type/EntryClass	md:string-Compliation-EntryClass	
CompObj-type/CompilationClass	md:CompObjClass-type md:string-CompilationClass	
CompObj-type/CombObjEntry-type/DisplayName	md:StringAndLanguage-type	

10.2.7 Additional Types

Element or Attribute	Redefine type	Contains enumerations
//PersonName-type/DisplayName	md:StringAndLanguage-type	
//PersonName-type/SortName	md:StringAndLanguage-type	
//PersonName-type/Suffix	md:string-Name-Suffix	
//PersonIdentifier-type/Namespace	md:string-Identifier-Namespace	
//ReleaseHistory-type/ReleaseType	md:string-ReleaseType	

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Element or Attribute	Redefine type	Contains enumerations
//ReleaseHistory-type/ReleaseOrg/@idType	md:string-RelaseOrg-idType	
//Money-type/@currency	md:string-Money-currency	
//Hash	md:string-Hash	
//Hash/@method	md:string-Hash-method	

10.2.8 Release History

Element or Attribute	Redefine type	Contains enumerations
//ReleaseHistory-type/ReleaseType	md:string-Release-ReleaseType	

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