



EDM profile for technical metadata

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To provide additional useful facets and filtering of Europeana resources the addition of technical metadata at the level of the WebResource, which was currently absent from EDM, is needed.

This specification applies to five media types which Europeana currently supports, namely: Sound, Video, Text, Image and 3D objects. This profile lists the properties that will apply to the WebResource class and an additional class that were defined to support such functionality.

The working document that contains background information and that forms the basis of this listing can be found at:

<https://docs.google.com/spreadsheets/d/17LjVpdUHsqpLhvQ0kvDd7ja6eAPhSB9dN3NQ0kEbko/edit#gid=0>.

Most of the added properties come from the EBUCore set of properties, available at: <http://www.ebu.ch/metadata/ontologies/ebucore/index.html>

1. Approach

A minimal approach has been adopted to the addition of properties to EDM. Not all functions require the addition of a specific property. Consider for example the filtering of Europeana objects based on the presence of a usable thumbnail. This can be detected by checking for the presence of a URL in the “edm:preview” property (and the resource flagged accordingly in a search system) without the need for a specific EDM property to hold that flag in Europeana’s reference data.



Some values can be used to generate further values and, depending on the stage in the processing of data where this happens, a property may be needed to record the output. For example, the orientation of an image will be generated by processing numeric values given in the height and width properties, giving the result as “Portrait” or “Landscape”.

A few properties have been created in the EDM namespace even though similar properties already exist elsewhere (e.g. Exif¹ and EBUCore²). This is because the allowable values did not match our requirements at this time (e.g. EDM needs literal values in some cases). These properties are: “edm:hasColorSpace”, “edm:componentColor”, “edm:spatialResolution” and “edm:codecName”.

2. Properties

All the properties defined below should be applied to **WebResource**.

Property name: edm:codecName	
URI	http://www.europeana.eu/schemas/edm/codecName
Label	Codec
Definition	The name of a device or computer program capable of encoding or decoding a digital data stream or signal (i.e. coder-decoder)
Domain	edm:WebResource
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	mp4v
Comment	Used for video

Property name: ebucore:hasMimeType	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#hasMimeType
Label	MIME Type
Definition	The main MIME types as defined by IANA: e.g. audio, video, text, application, or a container MIME type.
Subproperty of	ebucore:hasFormat
Domain	edm:WebResource

¹ <http://www.w3.org/2003/12/exif/>

² <http://www.ebu.ch/metadata/ontologies/ebucore/index.html>



Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	video/mp4
Comment	The controlled values are defined by IANA list ³ of internet media types. Used for Video, Image, Sound, Text, 3D.

Property name: ebucore:fileByteSize	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#fileByteSize
Label	File size
Definition	The size of a Media Resource expressed in bytes.
Domain	edm:WebResource
Range	xsd:long (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	39508
Comment	To indicate the storage requirements or file size of a digital resource. The file size is expressed in bytes. Used for Video, Image, Sound, Text, 3D.

Property name: ebucore:duration	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#duration
Label	Duration
Definition	The duration of a track or a signal expressed in ms.
Subproperty of	ebucore:duration
Domain	edm:WebResource
Range	
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	270000
Comment	An implementation decision was made to use this property instead of a more normative property such as "ebucore:durationNormalPlayTime" so that a duration could be expressed as a number. Used for Video and Sound.

³ See <http://www.iana.org/assignments/media-types/>



Property name: ebucore:width	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#width
Label	Width
Definition	The width of e.g. a video frame typically expressed as a number of pixels.
Domain	edm:WebResource
Range	xsd:integer
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	1024
Comment	To define different widths of a video image e.g. display, active etc. Used for Video and Image.

Property name: ebucore:height	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#height
Label	Height
Definition	The height of e.g. a video frame typically expressed as a number of pixels.
Domain	edm:WebResource
Range	xsd:integer (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	768
Comment	To define different heights of a video image e.g. display, active etc. Used for Video and Image.

Property name: edm:spatialResolution	
URI	http://www.europeana.eu/schemas/edm/spatialResolution
Label	Spatial resolution
Definition	The spatial resolution of a media resource expressed in DPIs.
Domain	edm:WebResource
Range	xsd:nonNegativeInteger (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	300
Comment	Used for Text (e.g. PDFs).



Property name: ebucore:sampleSize	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#sampleSize
Label	Sample size
Definition	The size of an audio sample in bits. Also called bit depth.
Domain	edm:WebResource
Range	xsd:integer (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	16
Comment	Used for Sound.

Property name: ebucore:sampleRate	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#sampleRate
Label	Sample rate
Definition	The frequency at which an audio is sampled per second. Also called sampling rate.
Domain	edm:WebResource
Range	xsd:integer (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	44100
Comment	Used for Sound.

Property name: ebucore:bitRate	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#bitRate
Label	Bitrate
Definition	To provide the bitrate at which the Media Resource can be played in bits per second.
Domain	edm:WebResource
Range	xsd:nonNegativeInteger (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	128000
Comment	Used for Video and Sound.



Property name: ebucore:frameRate	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#frameRate
Label	Frame rate
Definition	The frame rate of the video signal in frames per second.
Domain	edm:WebResource
Range	xsd:double (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	300
Comment	Used for Video.

Property name: edm:hasColorSpace	
URI	http://www.europeana.eu/schemas/edm/hasColorSpace
Label	Color Space
Definition	The color space of an image resource i.e. "grayscale" or "sRGB" ⁴ .
Domain	edm:WebResource
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1).
Example	grayscale
Comment	Used for Image.

Property name: edm:componentColor	
URI	http://www.europeana.eu/schemas/edm/componentColor
Label	Component Color
Definition	A significant color present in an image. The colors must be taken from the CSS3 standard color palette ⁵ and are expressed as a hexadecimal binary value.
Domain	edm:WebResource
Range	xsd:hexBinary
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 6)
Example	FF0000

⁴ IEC 61966-2-1:1999 - Default RGB colour space. <http://www.w3.org/Graphics/Color/sRGB>

⁵ <http://www.w3.org/TR/css3-color/>



Comment	Used for Image.
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Property name: ebucore:orientation	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#orientation
Label	Orientation
Definition	The orientation of a document or an image i.e. "landscape" or "portrait".
Domain	edm:WebResource
Range	xsd:string (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	portrait
Comment	The value is generated by comparing the values in "ebucore:height" and "ebucore:width". Used for Image.

Property name: ebucore:audioChannelNumber	
URI	http://www.ebu.ch/metadata/ontologies/ebucore/ebucore#audioChannelNumber
Label	Audio channels
Definition	The total number of audio channels contained in the Media Resource.
Domain	edm:WebResource
Range	xsd:nonNegativeInteger (as defined in EBUCore)
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	2
Comment	Used for Sound.

Property name: rdf:type	
URI	http://www.w3.org/1999/02/22-rdf-syntax-ns#type
Label	Type
Definition	To indicate the type of a resource.
Range	rdfs:Resource
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1)
Example	<rdf:type rdf:resource="http://www.europeana.eu/schemas/edm/FullTextResource"/>



Comment	This is used to indicate that a web resource contains searchable, machine readable text. In the context of this EDM extension, “rdf:type” has been introduced to be used in relation with classes relevant for this extension, especially “edm:FullTextResource”.
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3. Classes

Class Name edm:FullTextResource	
URI	http://www.europeana.eu/schemas/edm/FullTextResource
Label	Full-text Resource
Definition	A resource that has machine readable full text content.
Subclass of	edm:InformationResource
Example	Typically this could be the result of a newspaper that has been digitised as an image or PDF file and then OCR'd to produce a separate file with the full text.
Comment	When full-text is available for a digital object it must be represented in a specific class. This is because in some cases the WebResource that provides the view of the object to end-users does not contain the full-text in machine readable form. This is taken from the Europeana Libraries report http://www.europeana-libraries.eu/documents/868553/c52bacb5-f810-49d3-8e8a-a87e00da9a29

Document History

Version	Editor	Date	Comments
V0.1	Robina Clayphan, Hugo Manguinhas	20/01/2015	Final version after review
v1.0	Hugo Manguinhas, Antoine Isaac	17/02/2015	Additional comments incorporated