Definition of the Europeana Data Model v5.2.8

06/10/2017

Co-funded by the European Union

Document Scope

This is the **EDM Definition**. It is part of the family of documents about the EDM. The first three below can be found at http://pro.europeana.eu/edm-documentation, the object templates at https://github.com/europeana/corelib/wiki/EDMObjectTemplatesProviders and the XML schema at http://www.europeana.eu/schemas/edm/.

The EDM Definition – the formal specification of the Europeana Data Model and lists the classes and properties that could be used in Europeana. Not all of these are currently implemented. Please refer to the Mapping Guidelines for the current subset of classes and properties in use.

The EDM Primer – the "story" of EDM and explains how the classes and properties may be used together to model data and support Europeana functionality.

The EDM Mapping Guidelines – give guidance for providers wanting to map their data to EDM. They show which property relates to which class and contains definitions of the properties, the data types that can be used as values and the obligation level of each property. It also has an example of original data, the same data converted to EDM and diagrams showing the distribution of the properties amongst the classes. The full set of EDM classes and properties are being implemented incrementally and the Mapping Guidelines is the reference document showing which are currently available.

The EDM object templates – a working document that is a simple wiki listing showing which properties apply to which class and stating the data types and obligation of the values. These templates should be regarded as a work in progress however and may be out of step with the Guidelines. Please refer to the Mapping guidelines for the current set of classes and properties in use.

The XML schema - this is the XML schema for the current implementation of EDM.

The EDM ontology expressed in OWL is accessible through content negotiation at http://www.europeana.eu/schemas/edm/ and a pointer to the files is available at http://pro.europeana.eu/edm-documentation

Any changes to this document will be limited and happen only in a controlled fashion. Every effort will be made to ensure backward compatibility but this cannot be guaranteed.

For further information, please contact info@europeana.eu (using "EDM" as subject).

Credits

The Europeana Data Model is the result of the work of many people, who interact in the context of a complex organization. This organization can be described as a series of concentric circles.

- The inmost circle includes the members of the Europeana v1.0 project, in particular the leaders of WP3 and the Europeana Office. Special thanks go to Carlo Meghini (the main editor of these specifications), Makx Dekkers, and Stefan Gradmann who led the development of EDM; as well as special thanks for Antoine Isaac from the Europeana Office, who very actively contributed to the model, also by authoring the companion document to these specifications, the Primer.
- The next circle includes the members of the twin project EuropeanaConnect, and in particular Guus Schreiber's Web & Media group at the Free University of Amsterdam.
- The next circle includes the Europeana v1.0 core experts. Amongst the core experts, we would like to mention Martin Doerr from the museums, Michael Fingerhut from the audio-visual archives, Daniel Pitti from the archives, Emmanuelle Bermès from the libraries and Herbert van de Sompel from the Open Archives Initiative.
- The next circle includes the Europeana v1.0 WP3 participants
- Finally, the other projects in the Europeana group.
- More recently the development has been taken forward by EuropeanaTech[1] and its Task Forces, such as the Hierarchical Objects Task Force[2].

To all the contributors, our warmest thanks.

[1] https://pro.europeana.eu/europeanatech
[2] https://pro.europeana.eu/project/hierarchical-objects

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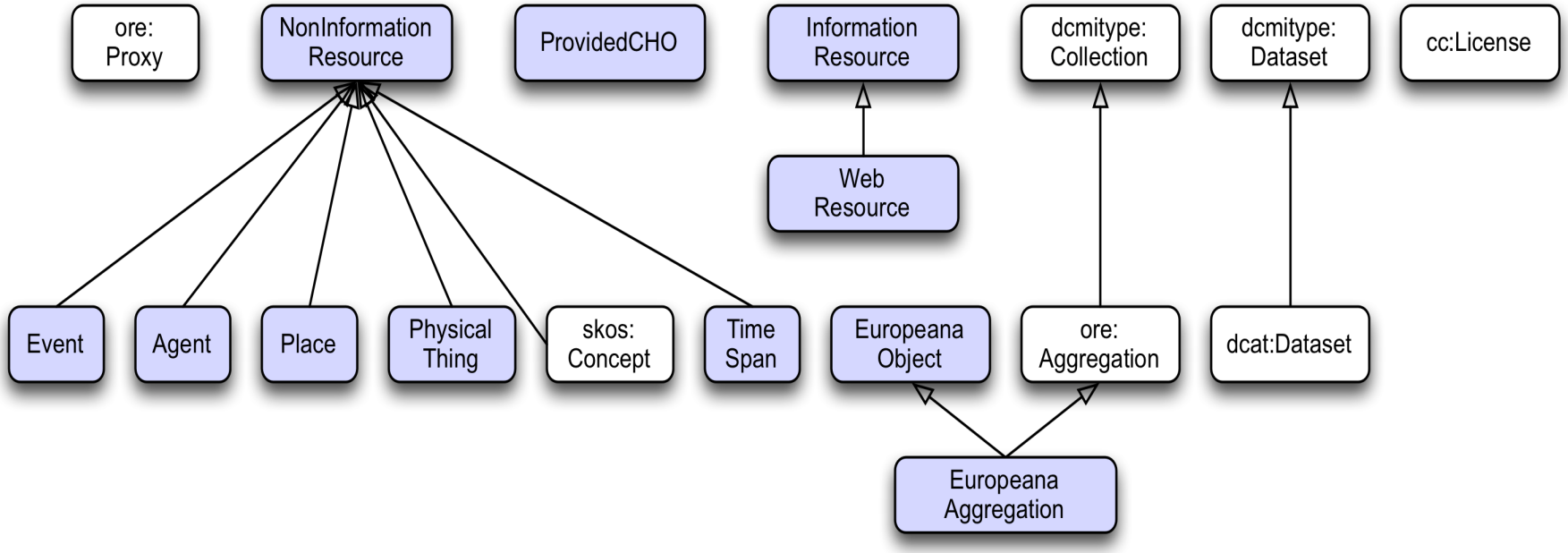

Figure 1. The EDM class hierarchy. The classes introduced by EDM are shown in light blue rectangles. The classes in the white rectangles are re-used from other schemas; the schema is indicated before the colon.

1. Introduction

The Europeana Data Model (hereafter EDM for short) is aimed at being an integration medium for collecting, connecting and enriching the descriptions provided by Europeana's content providers. As such, it may be said to include any element (i.e. class or property) found in a content provider's description. Giving an account of all these elements is clearly an impossible task, since they form an open set, i.e. a set that can be extended as new providers join the Europeana information space.

There is however a well-identified set of elements that EDM uses in order to carry out its task. These elements can be divided into two main categories:

1. The elements re-used from other namespaces, and
2. The elements introduced by EDM.

EDM re-uses from the following namespaces:

- The Resource Description Framework (RDF) and the RDF Schema (RDFS) namespaces http://www.w3.org/2000/01/rdf-schema#/
- The OAI Object Reuse and Exchange (ORE) namespace (http://www.openarchives.org/ore/terms/)
- The Simple Knowledge Organization System (SKOS) namespace (http://www.w3.org/2004/02/skos/core)
- The Dublin Core namespaces for properties from the elements, terms and types namespaces. (http://purl.org/dc/elements/1.1, http://purl.org/dc/terms, http://purl.org/dc/dcmitype/)
- The W3C Data Catalog Vocabulary (DCAT) namespace (http://www.w3.org/tr/vocab-dcat/)
- The Creative Commons (CC) namespace http://creativecommons.org/ns
- The SIOC Services Ontology Module namespace http://rdfs.org/sioc/services#[3]

In the sequel, the elements of EDM are presented in a formal way. Classes are introduced first, properties subsequently, both in alphabetical order, giving priority to re-used elements.

[3] We use the namespace svcs to declare the Services module defined as part of http://rdfs.org/sioc/spec/ as no specific namespace has been defined for it. This practice is aligned with IIIF.

2. Classes

The EDM class hierarchy is given in Figure 1.

2.1. Relevant classes from other namespaces

2.1.1. CC License

Class name: cc:License	
URI	http://creativecommons.org/ns#License
Label	License
Definition	A set of requests/permissions to users of a Work, e.g. a copyright license, the public domain, information for distributors
Comment	The creation of instances of the License class in the data will allow the addition of properties related to those particular licenses, such as the date any copyright restrictions may expire.

2.1.2. DCAT Dataset

Class name: dcat:Dataset	
URI	http://www.w3.org/TR/vocab-dcat/#class-dataset
Label	Dataset
Definition	A collection of data, published or curated by a single agent, and available for access or download in one or more formats.
Subclass of	dcmitype:Dataset
Comment	A dataset for Europeana is an Information Package or a collection of data. A Europeana dataset can be about a certain topic, originate from a certain source or process and is aggregated by a certain custodian. In some cases, a Europeana dataset can be the representation of one existing collection held by an institution. In other cases the correspondence between datasets and collections won't be one-to-one.

2.1.3. ORE Aggregation

Class name: ore:Aggregation	
URI	http://www.openarchives.org/ore/terms/Aggregation
Label	Aggregation

Definition	A set of related resources (Aggregated Resources), grouped together such that the set can be treated as a single resource. This is the entity described within the ORE interoperability framework by a Resource Map.
Subclass of	dcmitype:Collection
Comment	This class plays a central role in EDM, as it serves to group together all important elements of cultural heritage objects contributed by the content providers. Aggregations are used in Europeana to represent the complex constructs that are provided by contributors. An aggregation is associated to the object that it is about, by the property edm:aggregatedCHO

2.1.4. ORE Proxy

Class name: ore:Proxy	
URI	http://www.openarchives.org/ore/terms/Proxy
Label	Proxy
Definition	A proxy is a resource that stands for an aggregated resource A in the context of a specific aggregation. The URI of a proxy then can be used in assertions specific to the aggregated resource A in the context of that aggregation (http://www.openarchives.org/ore/1.0/primer.html).
Comment	This class is used to create aliases of cultural heritage objects to which descriptions are attached. Europeana uses proxies as placeholders for cultural heritage objects within aggregations (whether Europeana aggregations or not) in order to make assertions about the corresponding cultural heritage objects while distinguishing the provenance of these assertions.

2.1.5. RDFS Resource

Class name: rdfs:Resource	
URI	http://www.w3.org/2000/01/rdf-schema#Resource
Label	Resource
Definition	This is the class of all resources
Example	Anything in the Europeana information space is an rdfs:Resource
Comment	This class ties the class taxonomy up and is the domain or the range of many EDM properties

2.1.6. SKOS Concept

Class name: skos:Concept	
URI	http://www.w3.org/2004/02/skos/core#Concept
Label	Concept
Definition	A SKOS concept can be viewed as an idea or notion; a unit of thought. However, what constitutes a unit of thought is subjective, and this definition is meant to be suggestive, rather than restrictive. The notion of a SKOS concept is used to refer to specific ideas or meanings established within a knowledge organization system and describe their conceptual structure.
Subclass of	edm:NonInformationResource
Example	See the SKOS primer (http://www.w3.org/TR/skos-primer/) for examples of identifying and describing SKOS concepts.
Comment	Concepts are used for the contextualization of resources

2.1.7. SVCS Service

Class name: svcs:Service	
URI	http://rdfs.org/sioc/services#Service
Label	Service
Definition	A Service is web service associated with a Site or part of it. The Service class is used to flag a service requiring a specific protocol and profile to be consumed.

2.2. EDM Classes

2.2.1. Agent

Class name: edm:Agent	
URI	http://www.europeana.eu/schemas/edm/Agent
Label	Agent
Definition	This class comprises people, either individually or in groups, who have the potential to perform intentional actions for which they can be held responsible.
Subclass of	edm:NonInformationResource
Equivalent class	E39_Actor (CIDOC CRM)

Example	Leonardo da Vinci, the British Museum, W3C
Comment	This class is a domain of edm:wasPresentAt

2.2.2. Europeana Aggregation

Class name: edm:EuropeanaAggregation	
URI	http://www.europeana.eu/schemas/edm/EuropeanaAggregation
Label	Europeana Aggregation
Definition	The set of resources related to a single cultural heritage object that collectively represents that object in Europeana. Such set consists of: all descriptions about the object that Europeana collects from (possibly different) content providers, including thumbnails and other forms of abstractions, as well as of the description of the object Europeana builds.
Subclass of	ore:Aggregation, edm:EuropeanaObject
Obligation & Occurrence	The relation between the cultural heritage objects represented in Europeana and the instances of the class edm:EuropeanaAggregation is one-to-one, in the data maintained by Europeana: every cultural heritage object is represented by an instance of edm:EuropeanaAggregation, and every instance of edm:EuropeanaAggregation represents a cultural heritage object.
Example	Examples of the use of EuropeanaAggregation can be found in the Europeana Primer at http://pro.europeana.eu/edm-documentation
Comment	This class is used in Europeana to gather in a single conceptual unit all the information about a cultural heritage object, necessary for all operations on these objects. An instance of EuropeanaAggregation is created at ingestion time for each different cultural heritage object recognized by Europeana. Such instance is associated to the cultural heritage object that it is about, by the property edm:aggregatedCHO

2.2.3. Europeana Object

Class name: edm:EuropeanaObject	
URI	http://www.europeana.eu/schemas/edm/EuropeanaObject
Label	Europeana Object
Definition	Any object that is the result of Europeana's activities
Example	• Any instance of the class EuropeanaAggregation • An annotation created by a user through the Europeana portal • Any content created by the users through the service made available by

	Europeana for that purpose
Comment	This class is used to tag objects that are the result of activity of Europeana, and, as such, objects on which Europeana holds rights

2.2.4. Event

Class name: edm:Event	
URI	http://www.europeana.eu/schemas/edm/Event
Label	Event
Definition	An event is a change “of states in cultural, social or physical systems, regardless of scale, brought about by a series or group of coherent physical, cultural, technological or legal phenomena” (E5 Event in CIDOC CRM) or a “set of coherent phenomena or cultural manifestations bounded in time and space” (E4 Period in CIDOC CRM)
Subclass of	edm:NonInformationResource
Equivalent class	E4_Period (CIDOC CRM), Event (FRBR), Temporality (ABC Harmony)
Example	The act of painting Mona Lisa; the 2nd World War; the change of custody of Mona Lisa
Comment	Events are identified either by the content provider or by Europeana enrichment. This class is a domain of edm:happenedAt and the domain of edm:occurredAt

2.2.5. Information Resource

Class name: edm:InformationResource	
URI	http://www.europeana.eu/schemas/edm/InformationResource
Label	Information Resource
Definition	An information resource is a resource whose essential characteristics can be conveyed in a single message. It can be associated with a URI, it can have a representation, for example: a text is an InformationResource.
Equivalent class	the union of IFLA FRBR Work, Expression and Manifestation, E89_Propositional_Object (CIDOC CRM)
Example	The text of a book; a digital object; a musical score.
Comment	This class is the domain of edm:wasPresentAt, edm:isRepresentationOf, and the range of edm:realizes

2.2.6. Non-Information Resource

Class name: edm:NonInformationResource	
URI	http://www.europeana.eu/schemas/edm/NonInformationResource
Label	Non-Information Resource
Definition	All resources that are not information resources.
Example	People, places, physical things are all non-information resources
Comment	This class serves as an extension point for contextualization classes, which are all sub-classes of edm:NonInformationResource.

2.2.7. Physical Thing

Class name: edm:PhysicalThing	
URI	http://www.europeana.eu/schemas/edm/PhysicalThing
Label	Physical Thing
Definition	A persistent physical item such as a painting, a building, a book or a stone. Persons are not items. This class represents cultural heritage objects known to Europeana to be physical things (such as Mona Lisa) as well as all physical things Europeana refers to in the descriptions of cultural heritage objects (such as the Rosetta Stone).
Subclass of	edm:NonInformationResource
Equivalent class	E18_Physical_Thing (CIDOC CRM)
Example	the Venus by Praxiteles; any non-digital cultural heritage object; the House of Parliament
Comment	Physical things are identified by the content provider or by Europeana at enrichment time. This class is the domain of edm:realizes.

2.2.8. Place

Class name: edm:Place	
URI	http://www.europeana.eu/schemas/edm/Place
Label	Place
Definition	An “extent in space, in particular on the surface of the earth, in the pure sense of physics: independent from temporal phenomena and matter” (CIDOC CRM)

Subclass of	edm:NonInformationResource
Equivalent class	Place (FRBR, ABC Harmony), Space Region (DOLCE), E53_Place (CIDOC CRM)
Example	the region of space occupied by Rome today; the region of space occupied by the United Kingdom today; the region of space occupied by the Republic of Crimea in 1945
Comment	Places are identified by the content provider and named according to some vocabulary or local convention, and possibly normalized by Europeana at enrichment or at ingestion time. This class is the range of edm:happenedAt

2.2.9. Provided Cultural Heritage Object

Class name: edm:ProvidedCHO	
URI	http://www.europeana.eu/schemas/edm/ProvidedCHO
Label	Provided CHO
Definition	This class includes the Cultural Heritage objects that Europeana collects descriptions about.
Example	Mona Lisa, Winged Victory of Samothrace
Comment	This class is the range of edm:aggregatedCHO. This class has been mostly motivated by the need to assign a type to the “central node” in the EDM pattern, related to the XML expression of EDM. It is intended as a functional type, that can be applied even in cases where edm:PhysicalThing cannot be used as the type of the resource standing for the real-world object “contributed” to Europeana (independently of any specific data contributor perspective). A resource of type ProvidedCHO can be the subject of statements using edm:isRelatedTo or any more specific property

2.2.10. Time Span

Class name: edm:TimeSpan	
URI	http://www.europeana.eu/schemas/edm/TimeSpan
Label	Time Span
Definition	The class of “abstract temporal extents, in the sense of Galilean physics, having a beginning, an end and a duration” (CIDOC CRM)
Subclass of	edm:NonInformationResource, dcterms:PeriodOfTime
Equivalent class	Time (ABC Harmony), E52 Time-Span (CIDOC CRM), Time Interval (DOLCE)

Example	• 2001-12-31 • 01.01.01 – 02.02.02 • 1503 – 1506 (the time span of the creation of Mona Lisa)
Comment	This class is the range of edm:occurredAt. Time spans are identified by the content provider or by Europeana at enrichment time.

2.2.11. Web Resource

Class name: edm:WebResource	
URI	http://www.europeana.eu/schemas/edm/WebResource
Label	Web Resource
Definition	Information Resources that have at least one Web Representation and at least a URI.
Subclass of	edm:InformationResource
Example	A Web Resource containing a description of Mona Lisa
Comment	This class is for the digital representations that are aggregated to the cultural heritage object. As such, it is the range of edm:hasView

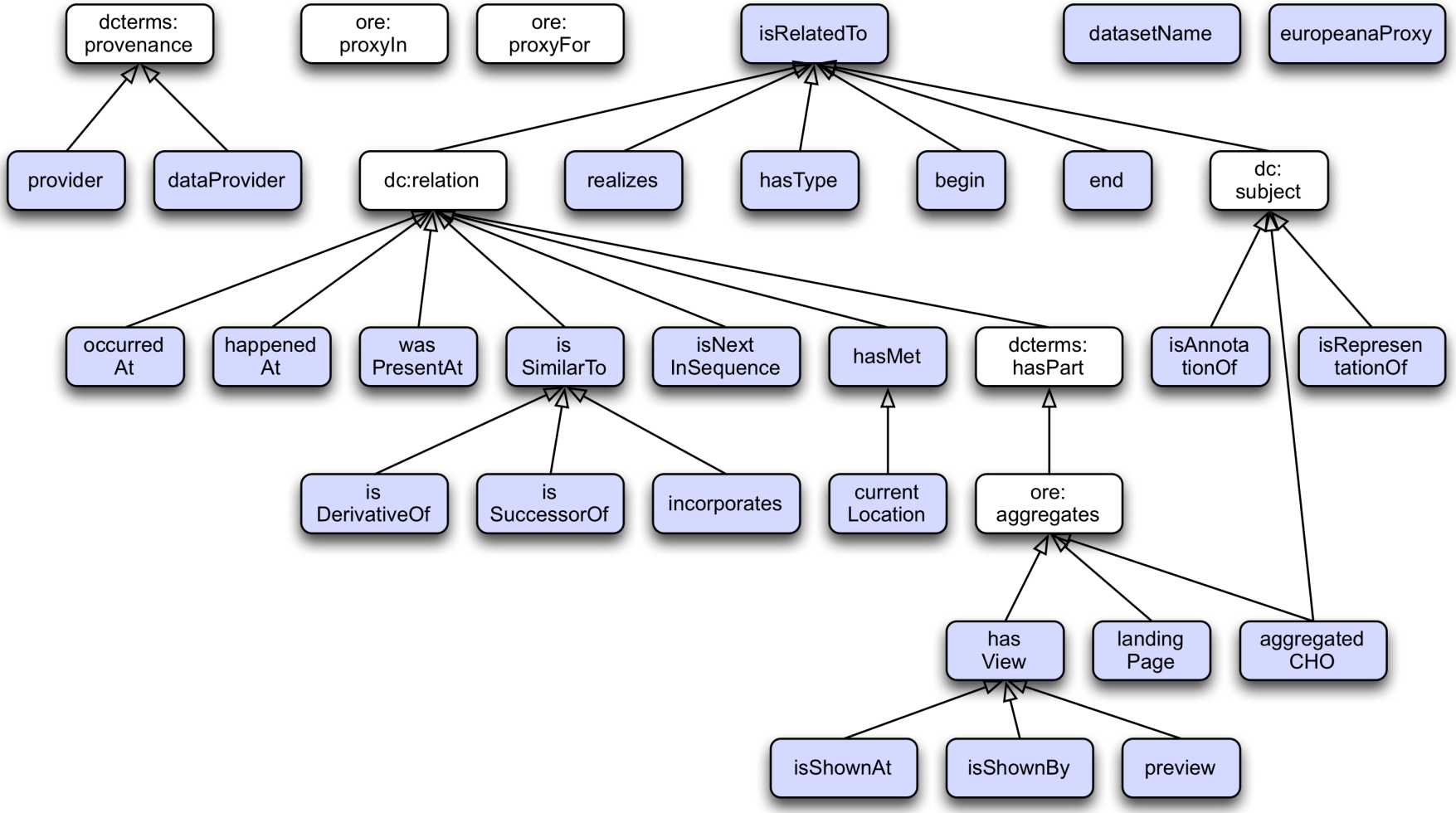

Figure 2. The EDM property hierarchy without most of the properties included in ESE (for readability). The properties introduced by EDM are shown in light blue rectangles. The properties in the white rectangles are re-used from other schemas.

3. Properties

The hierarchy of the EDM properties is given in Figure 2. For readability, the properties integrated from ESE are not included in the Figure (neither the few Europeana properties nor the DC ones).

The present version of EDM integrates the Europeana Semantic Elements by re-contextualizing each element in the more structured context of EDM. Apart from maintaining backward compatibility, the rationale for the integration is to enrich EDM with a set of properties that have proven to be most useful in modelling cultural heritage objects. Moreover, the DC properties from ESE offer additional mapping possibilities from other data models, increasing the interoperability potential of EDM. As an example, all DCterms elements that are not explicitly mentioned in this specification, can be integrated in EDM as sub-properties of their corresponding DC elements, all of which are part of this specification.

3.1. Relevant properties from ORE

3.1.1. ORE Aggregates

Property name: ore:aggregates	
URI	http://www.openarchives.org/ore/terms/aggregates
Label	Aggregates
Definition	Aggregations, by definition, aggregate resources. The ore:aggregates relationship expresses that the object resource is a member of the set of aggregated resources of the subject (the Aggregation). This relationship between the Aggregation and its Aggregated Resources is thus more specific than a simple part/whole relationship, as expressed by dcterms:hasPart for example
Subproperty of	dcterms:hasPart
Domain	ore:Aggregation
Range	ore:AggregatedResource
Obligation & Occurrence	An aggregation may aggregate 1 to many resources, and a resource may be aggregated by 0 to many aggregations
Example	The Europeana Aggregation about Mona Lisa ore:aggregates a thumbnail of Mona Lisa created by Europeana
Rationale	This property is fundamental for constructing Europeana Aggregations.

3.1.2. ORE Proxy For

Property name: ore:proxyFor	
URI	http://www.openarchives.org/ore/terms/proxyFor
Label	Proxy For
Definition	Proxy objects are used to represent a resource as it is aggregated in a particular aggregation. The ore:proxyFor relationship is used to link the proxy to the aggregated resource it is a proxy for. The subject of the relationship is a proxy object, and the object of the relationship is the aggregated resource.
Domain	ore:Proxy
Range	ore:AggregatedResource
Obligation & Occurrence	A proxy may be for 1 aggregated resource, and an aggregated resource may have 0 to many proxies for it
Example	The proxy of Mona Lisa representing the Louvre museum's perspective on Mona Lisa has its own specific metadata attached to it. The proxy of Mona Lisa representing Europeana's perspective has its own added enrichments as metadata. These are both ore:proxyFor the edm:ProvidedCHO that represents the "real-world" painting which is independent of any perspective.
Rationale	This property (as a part of the ORE proxy mechanism) is required to keep track of the provenance of descriptions.

3.1.3. ORE Proxy In

Property name: ore:proxyIn	
URI	http://www.openarchives.org/ore/terms/proxyIn
Label	Proxy In
Definition	Proxy objects must also link to the aggregation in which the resource being proxied is aggregated. The ore:proxyIn relationship is used for this purpose. The subject of the relationship is a proxy object, and the object of the relationship is the aggregation.
Domain	ore:Proxy
Range	ore:Aggregation
Obligation & Occurrence	A proxy may be in 1 to many aggregations, and an aggregation may have 0 to many proxies in it

Example	The proxy of Mona Lisa representing the Louvre Museum's perspective is ore:proxyIn the aggregation for Mona Lisa provided by the Louvre. The proxy representing Europeana's perspective is ore:proxyIn the EuropeanaAggregation for the painting.
Rationale	This property (as a part of the ORE proxy mechanism) is required to keep track of the provenance of descriptions

3.2. EDM Properties

This is a full listing of properties that exist in the EDM namespace. Most have been created in this namespace but some of them were previously used in ESE so also exist in that namespace. Where this is the case it has been noted in the Definition row of the property.

3.2.1. Aggregated Cultural Heritage Object

Property name: edm:aggregatedCHO	
URI	http://www.europeana.eu/schemas/edm/aggregatedCHO
Label	Aggregated Cultural Heritage Object
Definition	This property associates an ORE aggregation with the cultural heritage object(s) (CHO for short) it is about.
Subproperty of	ore:aggregates, dc:subject, P129_is_about (CIDOC CRM)
Domain	ore:Aggregation
Range	edm:ProvidedCHO
Obligation & Occurrence	In Europeana, an aggregation aggregates exactly one CHO, while a CHO may be aggregated by several aggregations. Typically, in the data maintained by Europeana, a CHO would be aggregated by one EuropeanaAggregation, and at least one provider Aggregation.
Example	The aggregation of Mona Lisa edm:aggregatedCHO Mona Lisa
Comment	This property indicates the ProvidedCHO an aggregation is about. It supports several operations regarding the discovery and management of CHOs.

3.2.2. Begin

Property name: edm:begin	
URI	http://www.europeana.eu/schemas/edm/begin
Label	Begin
Definition	This property denotes the start date of a period of time.

Super-property of	P79F.beginning_is_qualified_by (CIDOC CRM)
Subproperty of	edm:isRelatedTo
Domain	edm:Agent, edm:TimeSpan
Obligation & Occurrence	An edm:Agent or an edm:TimeSpan may have 0 or 1 edm:begin dates and each edm:begin date may be the starting date of many edm:Agent or edm:TimeSpan entities.
Example	The year 1881 is the edm:begin of the edm:Agent Pablo Picasso
Comment	If the specializations of, for example, date of birth, cannot be used then this property provides a generic start date.

3.2.3. Collection Name

This property is deprecated and edm:datasetName should be used instead.

Property name: edm:collectionName	
URI	http://www.europeana.eu/schemas/edm/collectionName
Label	Collection Name
Definition	This property holds the collection identifier given to the dataset in Europeana.
Domain	ore:Aggregation
Obligation & Occurrence	Min 1, Max 1
Example	08901_Ag_DE_DISMARC
Comment	**This property is deprecated and edm:datasetName should be used instead.** To associate all objects belonging to one dataset. In the context of Europeana, the value of this property is provided by Europeana as part of the ingestion process.

3.2.4. Country

Property name: edm:country	
URI	http://www.europeana.eu/schemas/edm/country
Label	Country

Definition	This is the name of the country in which the Provider is based or “Europe” in the case of Europe-wide projects. Note: This property also exists in the ESE namespace
Subproperty of	P12_occurred_in_the_presence_of (CIDOC CRM)
Range	http://www.iso.org/iso/english_country_names_and_code_elements
Obligation & Occurrence	Mandatory for Europeana to add (Minimum: 1, Maximum: 1)
Example	Greece is represented by the two letter code gr
Comment	To support discovery by country this property provides a standardised name for the country of the Provider. In the Europeana context it is entered by the Ingestion Team as part of the ingest process. To do this accurately Providers (aggregators) must supply datasets by country

3.2.5. Current Location

Property name: edm:currentLocation	
URI	http://www.europeana.eu/schemas/edm/currentLocation
Label	Current Location
Definition	The geographic location and/or name of the repository, building, site, or other entity whose boundaries presently include the resource.
Subproperty of	dcterms:spatial
Domain	The set of cultural heritage objects that Europeana collects descriptions about, represented in the EDM by ProvidedCHOs and ORE proxies for these CHOs.
Range	edm:Place
Equivalent property	http://www.w3.org/2003/01/geo/wgs84_pos#location (geo:location), P55_has_current_location (CIDOC CRM)
Obligation & Occurrence	A resource may have 0 to 1 current location, and a place may be the location of 0 to many resources
Comment	Current locations are used for the contextualization of resources and for answering “where” queries

3.2.6. Dataset Name

Property name: edm:datasetName

URI	http://www.europeana.eu/schemas/edm/datasetName
Label	Dataset Name
Definition	This property holds the identifier given to the dataset in Europeana.
Domain	dcat:Dataset
Obligation & Occurrence	Min 1, Max 1
Example	08901_Ag_DE_DISMARC
Comment	To associate all objects belonging to one dataset. In the context of Europeana, the value of this property is provided by Europeana as part of the ingestion process. This property replaces edm:collectionName which is now deprecated.

3.2.7. Data Provider

Property name: edm:dataProvider	
URI	http://www.europeana.eu/schemas/edm/dataProvider
Label	Data Provider
Definition	The name or identifier of the organization who contributes data indirectly to an aggregation service (e.g. Europeana). Note: This property also exists in the ESE namespace
Subproperty of	dcterms:provenance
Domain	ore:Aggregation
Range	edm:Agent
Obligation & Occurrence	Mandatory for Europeana (Minimum: 1, Maximum: 1)
Example	The Arts and Theatre Institute in Prague is an edm:dataProvider via the Linked Heritage project

Comment	Together with edm:intermediateProvider and edm:provider this property allows the names of organizations at different points in a data supply chain to be differentiated and recorded for search and display purposes. In the Europeana context this will be the name of an organization who supplies data to Europeana indirectly via an aggregator or project. The name of the associated aggregator or project can be recorded in edm:provider. If an organization provides data directly to Europeana (i.e. not via an aggregator) the values in edm:dataProvider and edm:provider will be the same. If an organization aggregates data from a DataProvider before providing it to an aggregator, its name can be recorded in edm:intermediateProvider. Although the range of this property is given as edm:Agent, organization names should be provided as an ordinary text string until a Europeana authority file for organizations has been established. At that point providers will be able to send an identifier from the file instead of a text string. The name provided should be the preferred form of the name in the language the provider chooses as the default language for display in the portal. Countries with multiple languages may prefer to concatenate the name in more than one language Note: The Data Provider is not necessarily the institution where the physical object is located.

3.2.8. End

Property name: edm:end	
URI	http://www.europeana.eu/schemas/edm/end
Label	End
Definition	This property denotes the end date of a period of time.
Super-property of	P80F.end_is_qualified_by (CIDOC CRM)
Subproperty of	edm:isRelatedTo
Domain	edm:Agent, edm:TimeSpan
Obligation & Occurrence	An edm:Agent or an edm:TimeSpan may have 0 or 1 edm:end dates and each edm:end date may be the end date of many edm:Agent or edm:TimeSpan entities.
Example	The year 1973 is the edm:end of the edm:Agent Pablo Picasso
Comment	If the specializations of begin and end dates cannot be used, for example, date of death, this property provides a generic end date.

3.2.9. Intermediate Provider

Property name: edm:intermediateProvider	
URI	http://www.europeana.eu/schemas/edm/intermediateProvider
Label	Intermediate Provider
Definition	The name or identifier of the intermediate organization that selects, collates, or curates data from a Data Provider that is then aggregated by a Provider from which Europeana harvests. The Intermediate Provider must be distinct from both the Data Provider and the Provider in the data supply chain.
Subproperty of	dcterms:provenance
Domain	ore:Aggregation
Range	edm:Agent
Obligation & Occurrence	An aggregation may have 0 to many intermediate providers.
Example	Erfgoedplus.be is an intermediate provider between a data provider and the aggregator it submits data to.
Comment	Together with edm:provider and edm:dataProvider this property allows the names of organizations at different points in a data supply chain to be differentiated and recorded for search and display purposes. In the Europeana context this will be the name of an organization who collectes data from a Data Provider and then supplies data to Europeana indirectly via an aggregator or project. The name of the direct data provider can be recorded in edm:dataProvider while the name of the associated aggregator or project can be recorded in edm:provider. Although the range of this property is given as edm:Agent, organization names should be provided as an ordinary text string until a Europeana authority file for organizations has been established. At that point providers will be able to send an identifier from the file instead of a text string. The name provided should be the preferred form of the name in the language the provider chooses as the default language for display in the portal. Countries with multiple languages may prefer to concatenate the name in more than one language Note: The Data Provider is not necessarily the institution where the physical object is located.

3.2.10. Europeana Proxy

Property name: edm:europeanaProxy

URI	http://www.europeana.eu/schemas/edm/europeanaProxy
Label	Europeana Proxy
Definition	This property serves only as a flag to indicate that a proxy is a Europeana proxy (as opposed to a provider proxy). It is for internal use only.
Domain	ore:proxy
Range	“true”
Obligation & Occurrence	An ore:Proxy may have 0 or 1 edm:europeanaProxy properties.
Comment	An ore:Proxy may be a provider proxy or a europeana proxy. This flag is needed to apply typing to the proxies and simplify implementation. By default, any proxy without this flag can be interpreted as having the value ‘false’ and is a provider proxy.

3.2.11. Happened At

Property name: edm:happenedAt	
URI	http://www.europeana.eu/schemas/edm/happenedAt
Label	Happened At
Definition	This property associates an event with the place at which the event happened.
Subproperty of	dc:relation
Equivalent property	P7_took_place_at (CIDOC CRM)
Domain	edm:Event
Range	edm:Place
Obligation & Occurrence	An event may have happened at 0 to 1 place, and a place may have 0 to many events that happened at it.
Example	The creation of Mona Lisa edm:happenedAt Florence. The excavation of the Egyptian Amphora L2409 edm:happenedAt Heraklion, Crete.
Comment	This property is useful for supporting discoveries concerning places (where query) since it relates a place to the events that happened at that place. In addition, it can be used to browse specific events.

3.2.12. Has Met

Property name: edm:hasMet	
URI	http://www.europeana.eu/schemas/edm/hasMet
Label	Has Met
Definition	edm:hasMet relates a resource with the objects or phenomena that have happened to or have happened together with the resource under consideration. We can abstractly think of history and the present as a series of “meetings” between people and other things in space-time. Therefore we name this relationship as the things the object “has met” in the course of its existence. These meetings are events in the proper sense, in which other people and things participate in any role.
Subproperty of	dc:relation
Obligation & Occurrence	A resource may have met 0 to many resources. Conversely, a resource may be met by 0 to many resources.
Example	The location of an object may be due to a transport, move to a place, or because it has been created at that spot.
Comment	edm:hasMet allows for querying historical relationships without specifying simultaneous correlations to other things, such as the specific constellations of people and things at a particular event. It allows for “who, when, where, what” queries, without specifying if the “who” matches the “when”, such as a (fictitious) object made by Praxiteles and found in 1865. In addition, it supports the integration of all properties used within the descriptions contributed by content providers to Europeana that capture the notion of meeting in the sense outlined above, such as dc:creator, dc:publisher, dc:contributor, dc:date. To this end, any such properties should be declared to be a (direct or indirect) sub-property of edm:hasMet.

3.2.13. Has Type

Property name: edm:hasType	
URI	http://www.europeana.eu/schemas/edm/hasType
Label	Has Type
Definition	This property relates a resource with the concepts it belongs to in a suitable type system such as MIME or any thesaurus that captures categories of objects in a given field (e.g., the “Objects” facet in Getty’s Art and Architecture Thesaurus). It does not capture aboutness.
Subproperty of	edm:isRelatedTo

Equivalent property	P2_has_type (CIDOC CRM)
Domain	The set of cultural heritage objects that Europeana collects descriptions about, represented in the EDM by ProvidedCHOs and ORE proxies for these CHOs.
Range	edm:NonInformationResource, based on the need of using both SKOS concepts and strings as values of this property
Obligation & Occurrence	A resource may have 0 to many types. Conversely, a non-information resource may be the type of 0 to many resources.
Example	The edm:hasType of Mona Lisa is (AAT) Painting. The type of a digital image of Mona Lisa may be JPEG.
Comment	This property allows specific typing of resources through the use of a controlled vocabulary, terminological hierarchy, or thesaurus. It supports “what” queries. In addition, it supports the integration of all properties used within the descriptions contributed by content providers to Europeana that capture the notion of typing in the sense outlined above, such as dc:type, dc:format, dc:language.

3.2.14. Has View

Property name: edm:hasView	
URI	http://www.europeana.eu/schemas/edm/hasView
Label	Has View
Definition	This property relates a ORE aggregation about a CHO with a web resource providing a view of that CHO. Examples of view are: a thumbnail, a textual abstract and a table of contents. The ORE aggregation may be a Europeana aggregation, in which case the view is an object owned by Europeana (i.e., an instance of edm:EuropeanaObject) or an aggregation contributed by a content provider. In order to capture both these cases, the domain of edm:hasView is ore:Aggregation and its range is edm:WebResource
Subproperty of	ore:aggregates
Domain	ore:Aggregation
Range	edm:WebResource
Obligation & Occurrence	An aggregation may have 1 to many resources as views for its corresponding CHO (edm:isShownAt,or edm:isShownBy should be present). Conversely, a resource may appear as view in 0 to many aggregations.

Example	An ore:Aggregation of Mona Lisa contributed by Louvre may have as view a low resolution digital image of Mona Lisa. The issue number 56 of “Le Temps” contributed by BNF may have as view a text of some parts of the issue
Comment	This property enables associating an aggregation about a CHO with the possibly many and heterogeneous views of that CHO. This is required since Europeana may collect several such views in order to support browsing of its resources. In addition, it allows the integration of all properties used in content providers’ descriptions that capture the notion of view in the sense outlined above. To this end, any such properties should be declared to be a (direct or indirect) sub-property of edm:hasView.

3.2.15. Incorporates

Property name: edm:incorporates	
URI	http://www.europeana.eu/schemas/edm/incorporates
Label	Incorporates
Definition	This property captures the use of some resource to add value to another resource. Such resources may be nested, such as performing a theater play text, and then recording the performance, or creating an artful edition of a collection of poems or just aggregating various poems in an anthology. There may be no single part that contains ultimately the incorporated object, which may be dispersed in the presentation. Therefore, incorporated resources do in general not form proper parts. Incorporated resources are not part of the same resource, but are taken from other resources, and have an independent history. Therefore edm:incorporates is not a sub-property of dcterms:hasPart.
Subproperty of	edm:isSimilarTo
Obligation & Occurrence	A resource may incorporate 0 to many resources. Conversely, a resource may be incorporated by 0 to many resources.
Example	The movie “A Clockwork Orange” incorporates Rossini’s symphony from “La Gazza Ladra” in its original soundtrack. “E.A.Poe, The Raven (poem)” is incorporated in “Emerson Lake & Palmers Tales of Mystery (music)” which is incorporated in “Concert Recording 1973 (vinyl)”.

Comment	This property enables associating resources that are one the incorporation of the other. This is required since Europeana may collect descriptions about resources and their incorporation. It also supports browsing of resources by incorporation. Finally, it allows the integration of all properties used in content providers' descriptions that capture the notion of incorporation in the sense outlined above. To this end, any such properties should be declared to be a (direct or indirect) sub-property of edm:incorporates.

3.2.16. Is Annotation Of

This property is deprecated and replaced by an implementation of the Web Annotation Data Model[4] to support annotations in Europeana. More details on the data modelling activities in the "Modelling Annotations for Application Scenarios" document.

Property name: edm:isAnnotationOf	
URI	http://www.europeana.eu/schemas/edm/isAnnotationOf
Label	Is Annotation Of
Definition	This property relates an annotation (a Europeana object) with the resource that it annotates.
Subproperty of	dc:subject, P67_refers_to (CIDOC CRM)
Domain	edm:EuropeanaObject
Range	The set of cultural heritage objects that Europeana collects descriptions about, represented in the EDM by ProvidedCHOs and ORE proxies for these CHOs.
Obligation & Occurrence	A Europeana Object may annotate 0 to many resources. Conversely, a resource may have 0 to many annotations.
Comment	It allows proper attachment of annotations to contributed objects within Europeana.

3.2.17. Is Derivative Of

Property name: edm:isDerivativeOf	
URI	http://www.europeana.eu/schemas/edm/isDerivativeOf
Label	Is Derivative Of

[4] https://www.w3.org/TR/annotation-model/

Definition	This property captures a narrower notion of derivation than edm:isSimilarTo, in the sense that it relates a resource to another one, obtained by reworking, reducing, expanding, parts or the whole contents of the former, and possibly adding some minor parts. Versions have an even narrower meaning, in that it requires common identity between the related resources. Translations, summaries, abstractions etc. do not qualify as versions, but do qualify as derivatives.
Subproperty of	edm:isSimilarTo
Obligation & Occurrence	A resource may be a derivative of to 0 to many resources. Conversely, a resource may have 0 to many resources that are derivative of its.
Example	The Italian translation of Moby Dick is a derivation of the original work.
Comment	This property enables associating resources that are one the derivation of the other. This is required since Europeana may collect descriptions about resources and their derivations. It also supports browsing of resources by derivation. Finally, it allows the integration of all properties used in content providers' descriptions that capture the notion of derivation in the sense outlined above, such as those capturing versioning, translations and abstractions. To this end, any such properties should be declared to be a (direct or indirect) sub-property of edm:isDerivativeOf.

3.2.18. Is Next in Sequence To

Property name: edm:isNextInSequence	
URI	http://www.europeana.eu/schemas/edm/isNextInSequence
Label	Is Next In Sequence To
Definition	edm:isNextInSequence relates two resources S and R that are ordered parts of the same resource A, and such that S comes immediately after R in the order created by their being parts of A.
Subproperty of	dc:relation
Obligation & Occurrence	A resource may be next in sequence to 0 to many resources. A monograph in a series could also be an issue of a journal, and would therefore need more than one isNextInSequence property.
Example	Page 34 of the Gutenberg Bible is next in sequence to page 33 of the same title.
Comment	isNextInSequence supports browsing through the parts of resources, by establishing the correct order. It also supports proper displaying of the information, when order matters, such as in hierarchically structured objects.

3.2.19. Is Related To

Property name: edm:isRelatedTo	
URI	http://www.europeana.eu/schemas/edm/isRelatedTo
Label	Is Related To
Definition	edm:isRelatedTo is the most general contextual property in EDM. Contextual properties have typically to do either with the things that have happened to or together with the object under consideration, or what the object refers to by its shape, form or features in a figural or encoded form. For sake of simplicity, we include in the contextual relationships also the scholarly classification, which may have either to do with the role and cultural connections of the object in the past, or its kind of structure, substance or contents as it can be verified at present.
Obligation & Occurrence	A resource may be related to 0 to many resources. Conversely, a resource may relate to 0 to many resources.
Example	Moby Dick is related to XIX century literature. Mona Lisa is related to Renaissance Art.
Comment	Querying edm:isRelatedTo corresponds to a typical retrieval by keyword, as supported by web search engines; but it also allows more, as the objects of edm:isRelatedTo statements can be fully-fledged resource such as concepts, documents, etc.

3.2.20. Is Representation Of

Property name: edm:isRepresentationOf	
URI	http://www.europeana.eu/schemas/edm/isRepresentationOf
Label	Is Representation Of
Definition	This property associates a resource to another resource that it represents.
Subproperty of	dc:subject, P138_represents (CIDOC CRM)
Obligation & Occurrence	A resource that is the representation of another may only be the representation of one other resource. Conversely, a resource that is represented may be the source of 0 to many representations.
Example	A picture of the Mona Lisa created in the 19th century is a representation of that painting. A high resolution image created by the Multimedia Louvre Lab by digitizing Mona Lisa is also a representation of Mona Lisa. Note that in EDM these two resources would already be linked via the ore:Aggregation.

Comment	This property may allow better representation of representation-related information inside Europeana.

3.2.21. Is Shown At

Property name: edm:isShownAt	
URI	http://www.europeana.eu/schemas/edm/isShownAt
Label	Is Shown At
Definition	An unambiguous URL reference to the digital object on the provider's web site in its full information context. See also edm:isShownBy Note: This property also exists in the ESE namespace
Subproperty of	edm:hasView
Range	edm:WebResource
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1) But either isShownAt OR isShownBy is Mandatory
Example	An image of Henry Miller with other data is edm:isShownAt http://www.photo.rmn.fr/cf/htm/CPICZ.aspx?E=2C6NU0VFLVNY
Comment	This property will contain a URL that will be active in the Europeana interface. It will lead users to the digital object displayed on the provider's web site in its full information context. Use edm:isShownAt if you display the digital object with extra information (such as header, banner etc). Also use it for digital objects embedded in HTML pages (even where the page is extremely simple).

3.2.22. Is Shown By

Property name: edm:isShownBy	
URI	http://www.europeana.eu/schemas/edm/isShownBy
Label	Is Shown By
Definition	An unambiguous URL reference to the digital object on the provider's web site in the best available resolution/quality. See also edm:isShownAt. Note: This property also exists in the ESE namespace
Subproperty of	edm:hasView
Range	edm:WebResource

Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1) But either isShownBy OR isShownAt is Mandatory
Example	A direct link to an image edm:isShownBy http://manuscripts.kb.nl/zoom/BYVANCKB:mimi_74g9:003v
Comment	This property will contain a URL that will be active in the Europeana interface. It will lead users to the digital object on the provider's website where they can view or play it. The digital object needs to be directly accessible by the URL and reasonably independent at that location. If the URL includes short copyright information or minimal navigation tools it can be entered in edm:isShownBy. Note: Use edm:isShownAt for digital objects embedded in HTML pages (even where the page is extremely simple).

3.2.23. Is Similar To

Property name: edm:isSimilarTo	
URI	http://www.europeana.eu/schemas/edm/isSimilarTo
Label	Is Similar To
Definition	The most generic derivation property, covering also the case of questionable derivation. Is Similar To asserts that parts of the contents of one resource exhibit common features with respect to ideas, shapes, structures, colors, words, plots, topics with the contents of the related resource. Those common features may be attributed to a common origin or influence (in particular for derivation), but also to more generic cultural or psychological factors.
Subproperty of	dc:relation
Equivalent property	P130_shows_features_of (CIDOC CRM)
Obligation & Occurrence	A resource may be similar to 0 to many resources. Conversely, a resource may have 0 to many resources that are similar to it.
Example	The coin http://www.europeana.eu/portal/record/2022304/3F8A3D09364C171D94D3D3A649CBBDE6632AA70E.html is similar to the coin http://www.europeana.eu/portal/record/2022304/EA5068BE64AD99D0D12957E9FBF732BD0196A616.html

Comment	This property allows querying Europeana by similarity in the most generic sense. It also allows the integration of all properties used in content providers' descriptions that capture the notion of relatedness in the sense outlined above. To this end, any such properties should be declared to be a (direct or indirect) sub-property of edm:isSimilarTo.

3.2.24. Is Successor Of

Property name: edm:isSuccessorOf	
URI	http://www.europeana.eu/schemas/edm/isSuccessorOf
Label	Is Successor Of
Definition	This property captures the relation between the continuation of a resource and that resource. This applies to a story, a serial etc. No content of the successor resource is identical or has a similar form with that of the precursor. The similarity is only in the context, subjects and figures of a plot. Successors typically form part of a common whole – such as a trilogy, a journal, etc.
Subproperty of	edm:isSimilarTo
Obligation & Occurrence	A resource may be the successor of 0 to many resources, and may have 0 to many resources as successors.
Example	"The Two Towers" is a successor of "Fellowship of the Ring".
Comment	This property is required since Europeana may collect descriptions about resources and their successors, and representing this relation allows for a richer querying and browsing. Indeed, the query for successors has very practical importance: people want to directly access continuations as such. It also allows the integration of all properties used in content providers' descriptions that capture the notion of successor in the sense outlined above. To this end, any such properties should be declared to be a (direct or indirect) sub-property of edm:isSuccessorOf.

3.2.25. Landing Page

Property name: edm:landingPage	
URI	http://www.europeana.eu/schemas/edm/landingPage
Label	Landing Page
Definition	This property captures the relation between a Europeana aggregation representing a cultural heritage object and a (reference) Web resource giving access to that object. Europeana provides the value for this property.

Subproperty of	edm:isShownAt
Range	edm:WebResource
Obligation & Occurrence	A (cultural heritage object represented by a) Europeana aggregation may have at most one Web resource as landing page, and a web resource may be the landing page of at most 1 (cultural heritage object represented by) a Europeana aggregation.
Example	Mona Lisa, represented by the Europeana aggregation europeana:ea-monalisa, has landing page http://www.europeana.eu/portal/record/03919/FCD38BDE7A03579F24BEDA5D157943B75BB36F11.html
Comment	This property allows accessing cultural heritage objects represented in Europeana.

3.2.26. Language

Property name: edm:language	
URI	http://wwww.europeana.eu/schemas/edm/language
Label	Europeana Language
Definition	A language assigned to the resource with reference to the Provider. Note: This property also exists in the ESE namespace
Obligation & Occurrence	Mandatory (Minimum: 1, Maximum: 1)
Example	The ISO 639 three-letter language tag “eng” represents “English”
Comment	To support discovery by language a standardised ISO language code is entered in this element by the Data Ingestion Team as part of the ingestion process. It is based on the language of the data provider.

3.2.27. Object

Property name: edm:object	
URI	http://www.europeana.eu/schemas/edm/object
Label	Object
Definition	The URL of a suitable source image in the best resolution available on the web site of the data provider from which small images could be generated for use in a portal. This will often be the same URL as given in edm:isShownBy.

	Note: This property also exists in the ESE namespace
Subproperty of	edm:hasView
Range	edm:WebResource
Obligation & Occurrence	Optional (Minimum: 0, Maximum: 1) But mandatory if applicable (See above)
Example	An online image to be used for thumbnail creation is the edm:object http://ogimages.bl.uk/images/011/011ADD000035166U00035000[SVC1].jpg
Comment	The specifications for suitable source images and details of their use and processing in Europeana can be found in the Europeana Portal Image Policy. Please consult that document before entering a URL in this metadata element. Note that there is no requirement to provide an image in any other format than those readily available on the providers' website. A default icon corresponding to the Europeana type of object will be displayed if no other can be created.

3.2.28. Occurred At

Property name: edm:occurredAt	
URI	http://www.europeana.eu/schemas/edm/occurredAt
Label	Occurred At
Definition	This property associates an event to the smallest known time span that overlaps with the occurrence of that event
Subproperty of	dc:relation
Equivalent property	P4_has_time_span (CIDOC CRM)
Domain	edm:Event
Range	edm:TimeSpan
Obligation & Occurrence	The occurrence in time of an event may overlap with 0 to many disjoint time spans, and a time span may have 0 to many events whose occurrences overlap with it.
Example	The creation of Mona Lisa occurred at 1503 - 1506
Comment	This property is useful for discoveries concerning time (when query, time-line browsing) since it relates a time span to the events that occurred at that time. In addition, it can be used to browse specific events.

3.2.29. Preview

Property name: edm:preview	
URI	http://www.europeana.eu/schemas/edm/preview
Label	Preview
Definition	The URL of a thumbnail representing the digital object, generated by Europeana
Subproperty of	edm:hasView
Domain	ore:aggregation
Range	edm:WebResource
Obligation & Occurrence	There are no constraints on the occurrence of this property
Comment	Europeana outputs the URL of the thumbnail that has been created and cached internally. This property allows us to identify that specific preview.

3.2.30. Provider

Property name: edm:provider	
URI	http://www.europeana.eu/schemas/edm/provider
Label	Provider
Definition	The name or identifier of the organization who delivers data directly to an aggregation service (e.g. Europeana) Note: This property also exists in the ESE namespace
Subproperty of	dcterms:provenance
Range	edm:Agent (but see note below)
Obligation & Occurrence	Mandatory for Europeana (Minimum: 1, Maximum: 1)
Example	The Linked Heritage project is an edm:provider for digital objects from the The Arts and Theatre Institute in Prague

Comment	Together with edm:dataProvider and edm:intermediateProvider this property allows the names of organizations at different points in a data supply chain to be differentiated and recorded for search and display purposes. In the Europeana context this will be the name of the organization that sends the data to Europeana, and this is not necessarily the institution that holds or owns the original or digitized object. Where data is being supplied by an aggregator or project edm:provider is the name of aggregator or project. The name of the content holder can be recorded in edm:dataProvider. If the content holder supplies data directly to Europeana then the name should also appear in this Property. If an organization aggregates data from a DataProvider before providing it to an aggregator, its name can be recorded in edm:intermediateProvider. Although the range of this property is given as edm:Agent, organization names should be provided as an ordinary text string until a Europeana authority file for organizations has been established. At that point providers will be able to send an identifier from the file instead of a text string. The name should be in the original language(s).

3.2.31. Realizes

Property name: edm:realizes	
URI	http://www.europeana.eu/schemas/edm/realizes
Label	Realizes
Definition	This property describes a relation between a physical thing and the information resource that is contained in it, visible at it or otherwise carried by it, if applicable
Subproperty of	edm:isRelatedTo
Equivalent property	P128_carries (CIDOC CRM)
Domain	edm:PhysicalThing
Range	edm:InformationResource
Obligation & Occurrence	A physical thing may realize 0 to many information resources and an information resource be realized by 0 to many physical things
Example	An item of the Gutenberg's edition realizes the Bible
Comment	This property allows Europeana to properly relate physical things that realize information resources and such resources

3.2.32. Rights

Property name: edm:rights	
URI	http://www.europeana.eu/schemas/edm/rights
Label	Standardized Rights Statement
Definition	Information about copyright, usage and access rights of the digital objects in Europeana that represent the source cultural heritage object described in the data. Note: This property also exists in the ESE namespace
Subproperty of	dc:rights
Obligation & Occurrence	Mandatory for the ore:Aggregation, optional for edm:WebResource (Minimum: 0 or 1, Maximum: 1)
Example	Among others, Europeana accepts licenses from the set defined by the Creative Commons initiative. For example, http://creativecommons.org/licenses/by-nd/4.0/
Comment	To support discovery by associated rights and access permissions this property will hold the URI of a rights statement. In the context of Europeana the value must come from the set defined at http://pro.europeana.eu/available-rights-statements.

3.2.33. Type

Property name: edm:type	
URI	http://www.europeana.eu/schemas/edm/type
Label	Europeana Type
Definition	The Europeana material type of the resource Note: This property also exists in the ESE namespace
Subproperty of	dc:type
Range	All digital objects in Europeana must be classified as one of the five Europeana types (in upper case): TEXT, IMAGE, SOUND, VIDEO or 3D
Obligation & Occurrence	Mandatory (Minimum: 1, Maximum: 1)
Example	This will be one of the terms from the Europeana controlled vocabulary.

Comment	To support discovery based on the broad type of an object this property will hold a term from a controlled vocabulary. As well as recording the original type values in dc:type, providers are asked to map from the local type terminology to controlled vocabulary terms used in Europeana. Associated with the 3D value in this property, “3D-PDF” should be used as the value in dc:format if appropriate.

3.2.34. UGC

Property name: edm:ugc	
URI	http://www.europeana.eu/schemas/edm/ugc
Label	UGC
Definition	Used to identify user generated content. It should be applied to all digitized or born digital content contributed by the general public and/or collected through a crowdsourcing initiative or project. Note: This property also exists in the ESE namespace
Domain	ore:Aggregation
Range	“true”
Obligation & Occurrence	Mandatory when applicable (Minimum:0, Maximum: 1)
Comment	In the context of Europeana the only value this property can take is “true”. It should be entered in lower case. If the content is not user generated then the property should not be provided at all. This property should not be used for content donated to a legal institution by a private body and then delivered to Europeana or content generated by users through the portal or other social media services such as tags or comments.

3.2.35. Unstored

This property is integrated only for backward compatibility with ESE and should not be used.

Property name: edm:unstored	
URI	http://www.europeana.eu/schemas/edm/unstored
Label	Unstored
Definition	This is a container property which includes all relevant information that otherwise cannot be mapped to another Property in the ESE.

Europeana note	The edm:unstored property is provided in order to include important information for indexing purposes. All relevant information, which cannot be mapped to another property in the ESE, should be mapped into this property.
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)

3.2.36. URI

This property is integrated in EDM only for backward compatibility with ESE. When an ESE record is transformed into a proper EDM instance, the value of this property should be used as identifier of the object and the property itself would then be redundant.

Property name: edm:uri	
URI	http://www.europeana.eu/schemas/edm/uri
Label	Europeana URI
Definition	An unambiguous URI to the resource within Europeana's context. Note: This property also exists in the ESE namespace
Obligation & Occurrence	Mandatory (Minimum: 1, Maximum: 1)
Comment	This is a record identifier for the object in the Europeana system. It is created by Europeana based on the unique identifiers provided in the source metadata. Should a provider supply multiple records with the same record identifier, only the first record is kept and the later ones discarded.

3.2.37. User tag

This property is deprecated and replaced by an implementation of the Web Annotation Data Model[5] to support annotations in Europeana. More details on the data modelling activities in the "Modelling Annotations for Application Scenarios" document.

Property name: edm:userTag	
URI	http://www.europeana.eu/schemas/edm/userTag
Label	User Tag

[5] https://www.w3.org/TR/annotation-model/

Definition	This is a tag created by a user through the Europeana interface. Note: This property also exists in the ESE namespace
Subproperty of	dc:description
Obligation & Occurrence	Optional (Minimum:0, Maximum: unbounded)
Comment	These are tags created by registered users.

3.2.38. Was Present At

Property name: edm:wasPresentAt	
URI	http://www.europeana.eu/schemas/edm/wasPresentAt
Label	Was Present At
Definition	This property associates the people, things or information resources with an event at which they were present
Subproperty of	dc:relation
Equivalent property	P121_was_present_at (CIDOC CRM)
Domain	edm:Agent union edm:InformationResource union edm:PhysicalThing
Range	edm:Event
Obligation & Occurrence	A resource may be present at 0 to many events, and an event may have 0 to many resources that are present at it
Example	Leonardo da Vinci was present at the event of the creation of Mona Lisa.
Comment	This property is useful for two kinds of discoveries: 1. discoveries concerning persons (“who” query) since it relates a person to the events in which the person has taken part 2. discoveries concerning things or information resources (“what” query) since it relates an artifact to the events in which the artifact has been involved In addition, it can be used to browse specific events.

3.2.39. Year

Property name: edm:year	
URI	http://www.europeana.eu/schemas/edm/year

Label	Europeana Year
Definition	A point of time associated with an event in the life of the original analog or born digital object. Note: This property also exists in the ESE namespace
Subproperty of	dcterms:temporal
Range	This is a 4 digit year in the Gregorian calendar (e.g. 1523)
Obligation & Occurrence	Provided by Europeana
Example	The year 1523 could be the edm:year used in a timeline function
Comment	This property supports discovery based on a standardised representation of a date. The four digit year (YYYY) is created by Europeana during the ingest process from date values in the source metadata.

3.3. DC Properties

The present version of EDM integrates the Dublin Core properties from Europeana Semantic Elements, by re-contextualizing each element in the more structured context of EDM. The rationale for the integration is twofold, it maintains unambiguous backward compatibility with ESE and enriches EDM with a set of properties that have proven to be most useful in modelling cultural heritage objects.

DCMI specifies non-literal values as the range of many properties from the dcterms namespace but EDM still allows the use of them. This is inherited from ESE and will continue for now.

3.3.1. Alternative

Property name: dcterms:alternative	
URI	http://purl.org/dc/terms/alternative
Label	Alternative Title
Definition	An alternative name for the resource. This can be any form of the title that is used as a substitute or an alternative to the formal title of the resource including abbreviations or translations of the title.
Subproperty of	dc:title
Range	In current practice, this term is used primarily with literal values; however, there are important uses with non-literal values as well. As of December 2007, the DCMI Usage Board is leaving this range unspecified pending an investigation of options.

Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	The title “Travels into Several Remote Nations of Example the World, in Four Parts” is a dcterms:alternative to the book entitled “Gulliver’s Travels”.
Comment	Translations of a metadata statement (such as a dc:title statement) is done by creating new statements with the same property and different language tags (xml:lang attributes in RDF/XML). dc:alternative should not be used to represent the translation of a dc:title.

3.3.2. Conforms To

Property name: dcterms:conformsTo	
URI	http://purl.org/dc/terms/conformsTo
Label	Conforms To
Definition	An established standard to which the described resource conforms
Subproperty of	dc:relation
Range	http://purl.org/dc/terms/Standard
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	An HTML web page may conform to the W3C WCAG (web content accessibility guidelines)
Comment	The names of standards that the digital object (digitized or born digital) complies with and which are useful for the use of the object.

3.3.3. Contributor

Property name: dc:contributor	
URI	http://purl.org/dc/elements/1.1/contributor
Label	Contributor
Definition	An entity responsible for making contributions to the resource.
Subproperty of	edm:hasMet
Range	http://purl.org/dc/terms/Agent See note in dc:creator about this.
Obligation &	Optional (Minimum: 0, Maximum: unbounded)

Occurrence	
Example	Maria Callas was a dc:contributor to the recording of Verdi's, *Nabucco*, in Napoli, 20 December 1949
Comment	The name of contributors to the original analog or born digital object. This could be a person, an organization or a service.

3.3.4. Coverage

Property name: dc:coverage	
URI	http://purl.org/dc/elements/1.1/coverage
Label	Coverage
Definition	The spatial or temporal topic of the resource, the spatial applicability of the resource, or the jurisdiction under which the resource is relevant. This may be a named place, a location, a spatial coordinate, a period, date, date range or a named administrative entity.
Subproperty of	edm:hasMet
Range	In the context of rich EDM data we expect this property to be used with instances of edm:Place or edm:TimeSpan, although this is not mandatory
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Comment	Coverage is the unqualified spatial or temporal coverage of the original analog or born digital object. Use of the more specific dcterms:spatial and dcterms:temporal properties is preferred where possible.

3.3.5. Created

Property name: dcterms:created	
URI	http://purl.org/dc/terms/created
Label	Date Created
Definition	Date of creation of the resource
Subproperty of	dc:date
Range	In the Europeana context, we expect this property to be used with instances of edm:TimeSpan, although this is not mandatory

Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	This can be a date (1950-09-26) or a term representing a period of time such as “Iron Age”
Comment	This is the date when the original analog or born digital object was created. The use of ISO 8601 starting with the year and with hyphens (YYYY-MM-DD) is recommended but other representations can be used.

3.3.6. Creator

Property name: dc:creator	
URI	http://purl.org/dc/elements/1.1/creator
Label	Creator
Definition	An entity primarily responsible for making the resource. This may be a person, organization or a service.
Subproperty of	edm:hasMet
Range	In the context of rich EDM data we expect this property to be used with instances of edm:Agent, although this is not mandatory
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	Leonardo da Vinci was the dc:creator of the Mona Lisa
Comment	This is the name of the creator of the resource.

3.3.7. Date

Property name: dc:date	
URI	http://purl.org/dc/elements/1.1/date
Label	Date
Definition	A point or period of time associated with an event in the lifecycle of the resource.
Subproperty of	edm:hasMet
Range	Although no range is defined by DC specification, in the context of Europeana, values for this property should be edm:TimeSpan instances, although this is not mandatory.
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	The Mona Lisa could have a dc:date of 1506
Comment	Use for a significant date in the life of the original analog or born digital object. Use dcterms:temporal or dc:coverage if the date is associated with the topic of the resource. The use of ISO 8601 starting with the year and using hyphens (YYYY-MM-DD) is recommended but other representations can be used.

3.3.8. Description

Property name: dc:description	
URI	http://purl.org/dc/elements/1.1/description
Label	Description
Definition	An account of the resource
Obligation & Occurrence	Mandatory to supply either dc:description or dc:title (Minimum: 0, Maximum: unbounded)
Comment	A description of the original analog or born digital object.

3.3.9. Extent

Property name: dcterms:extent	
URI	http://purl.org/dc/terms/extent
Label	Extent

Definition	The size or duration of the resource.
Subproperty of	dc:format
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Comment	Size or duration of the digital object and the original object may be recorded.

3.3.10. Format

Property name: dc:format	
URI	http://purl.org/dc/elements/1.1/format
Label	Format
Definition	The file format, physical medium or dimensions of the resource.
Subproperty of	edm:hasType
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	For a digital image the media type may be jpeg
Comment	This property includes file format, physical medium or dimensions of the original and/or digital object and should be used for the file format of the latter. Preferably, use the more specific elements dcterms:extent and dcterms:medium. Internet Media Types [MIME] are highly recommended (http://www.iana.org/assignments/media-types/). In the Europeana context 3D objects in pdf format the value “3D-PDF” should be provided to enable automatic functionality.

3.3.11. Has Format

Property name: dcterms:hasFormat	
URI	http://purl.org/dc/terms/hasFormat
Label	Has Format
Definition	A related resource that is substantially the same as the pre-existing described resource, but in another format.

Subproperty of	inverse of edm:isDerivativeOf
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	If a born digital jpeg image has been reproduced in png format then the identifier of that file can be given here.
Comment	Use dcterms:hasVersion for differences in version.

3.3.12. Has Part

Property name: dcterms:hasPart	
URI	http://purl.org/dc/terms/hasPart
Label	Has Part
Definition	A related resource that is included either physically or logically in the described resource.
Subproperty of	dc:relation
Obligation & Occurrence	A resource may be part of 0 to many other resources. Conversely, a resource may have 0 to many other resources as parts.
Example	The journal “Le Temps” has a part that is issue number 56.
Comment	This property enables associating resources and their parts inside Europeana. In addition, it supports the integration of all structural properties used within the contributed descriptions. To this end, any such properties should be declared to be a (direct or indirect) sub-property of dcterms:hasPart.

3.3.13. Has Version

Property name: dcterms:hasVersion	
URI	http://purl.org/dc/terms/hasVersion
Label	Has Version
Definition	A related resource that is a version, edition, or adaptation of the described resource. Changes in version imply substantive changes in content rather than differences in format.
Subproperty of	inverse of edm:isDerivativeOf

Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	The Sorcerer's Apprentice by Goethe has a 1955 version that is a translation by Edwin Zeydel.
Comment	Use dcterms:hasFormat for differences in format.

3.3.14. Identifier

Property name: dc:identifier	
URI	http://purl.org/dc/elements/1.1/identifier
Label	Identifier
Definition	An unambiguous reference to the resource within a given context.
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	A URN applied to a resource locally (urn:isbn:9780387097466) or a shelfmark
Comment	An identifier for the original analog or born digital object. Use edm:isShownBy for the URL of the digital object. If the URL is already included in dc:identifier repeat it in edm:isShownBy.

3.3.15. Is Format Of

Property name: dcterms:isFormatOf	
URI	http://purl.org/dc/terms/isFormatOf
Label	Is Format Of
Definition	A related resource that is substantially the same as the described resource, but in another format.
Subproperty of	edm:isDerivativeOf
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	If a png format file is a representation of a born digital jpeg file then the identifier of the jpeg can be given here.

3.3.16. Is Part Of

Property name: dcterms:isPartOf	
URI	http://purl.org/dc/terms/isPartOf
Label	Is Part Of
Definition	A related resource in which the described resource is physically or logically included.
Subproperty of	dc:relation
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	A map may be part of a named collection of maps or an article may be part of an issue of a journal.
Comment	A resource may be part of 0 to many resources. This property can be used for resources that are part of a hierarchy. In such cases a reference will be needed as the value.

3.3.17. Is Referenced By

Property name: dcterms:isReferencedBy	
URI	http://purl.org/dc/terms/isReferencedBy
Label	Is Referenced By
Definition	A related resource that references, cites, or otherwise points to the described resource.
Subproperty of	dc:relation
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	The described Mozart opera may be referenced by a scholarly article about Mozart’s work.

3.3.18. Is Replaced By

Property name: dcterms:isReplacedBy	
URI	http://purl.org/dc/terms/isReplacedBy
Label	Is Replaced By
Definition	A related resource that supplants, displaces, or supersedes the described

	resource.
Subproperty of	inverse of edm:isDerivativeOf
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	An older version of an organization's bylaws may be replaced by a newer version.

3.3.19. Is Required By

Property name: dcterms:isRequiredBy	
URI	http://purl.org/dc/terms/isRequiredBy
Label	Is Required By
Definition	A related resource that requires the described resource to support its function, delivery or coherence.
Subproperty of	dc:relation
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	A particular online slideshow may require the described image.

3.3.20. Issued

Property name: dcterms:issued	
URI	http://purl.org/dc/terms/issued
Label	Date Issued
Definition	Date of formal issuance (e.g., publication) of the resource.
Subproperty of	dc:date
Range	Although the range of this property is defined to be a literal, in the context of Europeana, values for this property should be edm:TimeSpan instances. Although this is not mandatory.
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)

Comment	The date when the original analog or born digital object was issued or published. The use of ISO 8601 starting with the year and using hyphens (YYYY-MM-DD) is recommended but other representations can be used.

3.3.21. Is Version Of

Property name: dcterms:isVersionOf	
URI	http://purl.org/dc/terms/isVersionOf
Label	Is Version Of
Definition	A related resource of which the described resource is a version, edition, or adaptation. Changes in version imply substantive changes in content rather than differences in format
Subproperty of	edm:isDerivativeOf
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	The Sorcerer's Apprentice (translation by Edwin Zeydel, 1955) is a version of the original poem by Goethe.

3.3.22. Language

Property name: dc:language	
URI	http://purl.org/dc/elements/1.1/language
Label	Language
Definition	A language of the resource
Subproperty of	edm:hasType
Range	The recommended best practice is to use a controlled vocabulary such as RFC 4646 (http://www.rfc-archive.org/getrfc.php?rfc=4646) which, in conjunction with ISO 639, defines two- and three-letter primary language tags. Either a coded value or text string can be represented here.
Obligation & Occurrence	Mandatory for Text objects. Strongly recommended for other object types if there is a language aspect. (Minimum: 0, Maximum: unbounded)
Example	Italian is represented by "it" in the ISO two letter code.

Comment	Use this element for the language of textual objects and also where there is a language aspect to other objects e.g. sound recordings, posters, newspapers etc). Repeat for multiple languages. If there is no language aspect to the digital object (e.g. a photograph), please ignore this element. This element is not for the language of the metadata of a resource, which may be described as a language tag (xml:lang attribute in RDF/XML).

3.3.23. Medium

Property name: dcterms:medium	
URI	http://purl.org/dc/terms/medium
Label	Medium
Definition	The material or physical carrier of the resource.
Subproperty of	dc:format
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	A sculpture may be made of wood.
Comment	This is the medium of the original analog or born digital object.

3.3.24. Provenance

Property name: provenance	
URI	http://purl.org/dc/terms/provenance
Label	Provenance
Definition	A statement of any changes in ownership and custody of the resource since its creation that are significant for its authenticity, integrity and interpretation. This may include a description of any changes successive custodians made to the resource.
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	A philanthropist may have donated a work of art to a museum.
Comment	This relates to the ownership and custody of the original analog or born digital object.

3.3.25. Publisher

Property name: dc:publisher	
URI	http://purl.org/dc/elements/1.1/publisher
Label	Publisher
Definition	An entity responsible for making the resource available. Examples of a publisher include a person, an organization and a service.
Subproperty of	edm:hasMet
Range	In the context of rich EDM data we expect this property to be used with instances of edm:Agent, although this is not mandatory
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Comment	The name of the publisher of the original analog or born digital object.

3.3.26. References

Element name: dcterms:references	
URI	http://purl.org/dc/terms/references
Label	References
Definition	A related resource that is referenced, cited, or otherwise pointed to by the described resource
Subproperty of	dc:relation
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	The described scholarly article about Mozart’s work may reference a particular Mozart opera.

3.3.27. Relation

Property name: dc:relation	
URI	http://purl.org/dc/elements/1.1/relation
Label	Relation
Definition	A related resource. The recommended best practice is to identify the resource using a formal identification scheme.

Subproperty of	edm:isRelatedTo
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Comment	Information about resources that are related in the most general sense to the described object where a specialization cannot be used.

3.3.28. Replaces

Property name: dcterms:replaces	
URI	http://purl.org/dc/terms/replaces
Label	Replaces
Definition	A related resource that is supplanted, displaced, or superseded by the described resource.
Subproperty of	edm:isDerivativeOf
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	The described version of the bylaws of an organization replaces the previous version whose identifier is given in this property.

3.3.29. Requires

Property name: dcterms:requires	
URI	http://purl.org/dc/terms/requires
Label	Requires
Definition	A related resource that is required by the described resource to support its function, delivery or coherence.
Subproperty of	dc:relation
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)

3.3.30. Rights

Property name: dc:rights

URI	http://purl.org/dc/elements/1.1/rights
Label	Rights
Definition	Information about rights held in and over the resource.
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	<dc:rights>Kilmarnock House Trust (David Jones)</dc:rights>
Comment	This is a free text property and should be used for information about intellectual property rights or access arrangements that is additional to the controlled value provided in edm:rights. Compare the use of these properties before making a mapping decision. A record may contain both properties but do not duplicate values in them both.

3.3.31. Source

Property name: dc:source	
URI	http://purl.org/dc/elements/1.1/source
Label	Source
Definition	A related resource from which the described resource is derived in whole or in part.
Subproperty of	edm:isDerivativeOf
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)
Example	<dc:source>Security Magazine pp 3-12</dc:source>
Comment	This property can be used for several different types of source but should not be used for the name of the data provider or aggregator. These should be recorded in the edm:dataProvider and/or edm:provider properties.

3.3.32. Spatial

Property name: dcterms:spatial	
URI	http://purl.org/dc/terms/spatial
Label	Spatial Coverage
Definition	Spatial characteristics of the resource
Subproperty	dc:coverage

of	
Range	In the Europeana context, we expect this property to be used with instances of edm:Place, although this is not mandatory
Obligation & Occurrence	Mandatory to supply either dc:subject or dc:type or dc:coverage or dcterms:spatial or dcterms:temporal (Minimum: 0, Maximum: unbounded)
Example	This may be a named place, a location, a spatial coordinate or a named administrative entity.
Comment	Information about the spatial characteristics of the original analog or born digital object, i.e. what the resource represents or depicts in terms of space.

3.3.33. Subject

Property name: dc:subject	
URI	http://purl.org/dc/elements/1.1/subject
Label	Subject
Definition	The topic of the resource
Subproperty of	edm:isRelatedTo
Obligation & Occurrence	Mandatory to supply either dc:subject or dc:type or dcterms:spatial or dcterms:temporal (Minimum: 0, Maximum: unbounded)
Example	A term from a controlled vocabulary could be used.
Comment	This is the subject of the original analog or born digital object. Repeat the property for multiple subject terms.

3.3.34. Table of Contents

Property name: dcterms:tableOfContents	
URI	http://purl.org/dc/terms/tableOfContents
Label	Table Of Contents
Definition	A list of subunits of the resource.
Subproperty of	edm:hasView, dc:description
Obligation & Occurrence	Optional (Minimum: 0, Maximum: unbounded)

Comment	A list of the units within the original analog or born digital resource object.

3.3.35. Temporal

Property name: dcterms:temporal	
URI	http://purl.org/dc/terms/temporal
Label	Temporal Coverage
Definition	Temporal characteristics of the resource
Subproperty of	dc:coverage
Range	In the Europeana context, we expect this property to be used with instances of edm:TimeSpan, although this is not mandatory
Obligation & Occurrence	Mandatory to supply either dc:subject or dc:type or dcterms:spatial or dcterms:temporal (Minimum: 0, Maximum: unbounded)
Comment	The temporal characteristics of the original analog or born digital object i.e. what the resource is about or depicts in terms of time. This may be a period, date or date range

3.3.36. Title

Property name: dc:title	
URI	http://purl.org/dc/elements/1.1/title
Label	Title
Definition	A name given to the resource. Typically, a Title will be a name by which the resource is formally known.
Obligation & Occurrence	Mandatory to supply either dc:description or dc:title (Minimum: 0, Maximum: unbounded)
Example	“Gulliver’s Travels” (with “en” as language tag) and “Les Voyages de Gulliver” (with “fr” as language tag) are two dc:title for a same work by Jonathan Swift.
Comment	The title of the original analog or born digital object. Use language tags (xml:lang attributes in RDF/XML) to represent exact translations handle titles in different languages.

3.3.37. Type

Property name: dc:type

URI	http://purl.org/dc/elements/1.1/type
Label	Type
Definition	The nature or genre of the resource. Type includes terms describing general categories, functions, genres, or aggregation levels for content.
Subproperty of	edm:hasType
Range	The recommended best practice is to select a value from a controlled vocabulary
Obligation & Occurrence	Mandatory to supply either dc:subject or dc:type or dcterms:spatial or dcterms:temporal (Minimum: 0, Maximum: unbounded)
Example	A value from the DC Type vocabulary (available at http://dublincore.org/documents/dcmi-type-vocabulary/) could be used.
Comment	The type of the original analog or born digital object as recorded by the content holder: typically containing values such as photograph, painting, sculpture etc. which, ideally, will have been taken from a controlled vocabulary. Providers are recommended to map the values entered in this property to the five material types used in Europeana: TEXT, IMAGE, SOUND, VIDEO and 3D but to keep the original local values in this property.

Acronyms and Abbreviations

ABC: The ABC Ontology and Model [1]

CIDOC CRM: The CIDOC Conceptual Reference Model [2]

FRBR: Functional Requirements for Bibliographic Records [3]

References

1. Carl Lagoze and Jane Hunter. The ABC Ontology and Model. Journal of Digital Information, 2 (2), 2001.

2. Martin Doerr. The CIDOC Conceptual Reference Module: An Ontological Approach to Semantic Interoperability of Metadata. The AI Magazine, 24 (3), 2003.

3. IFLA Study Group on the Functional Requirements for Bibliographic Records. Functional Requirements for Bibliographic Records. UBCIM Publications – New Series Vol 19. 1998

Annex – on the semantics of aggregations, proxies and provided CHOs

The following is an attempt at formalizing the semantics of the class edm:EuropeanaAggregation, by stating formally the relationship between descriptions received from content providers and instances of edm:EuropeanaAggregation.

Consider we have a description d about a single ProvidedCHO o. In this case, we have:

1. there exists (we generate) a unique ore:Aggregation a representing d, and no other ore:Aggregation a' is generated for d (the relation between a and d is not captured by any triple, it is expressed through the ingestion process). We have
   - (a edm:aggregatedCHO o)
2. there exists (we generate) a proxy p such that:
   - (p ore:proxyIn a)
   - (p ore:proxyFor o)
3. there exist (we generate) an edm:EuropeanaAggregation ea and a "Europeana proxy" ep such that:
   - (ep ore:proxyIn ea)
   - (ep ore:proxyFor o)
   - ea aggregates all non-Europeana aggregations a' aggregating o, i.e. (ea ore:aggregates a') iff (a' edm:aggregatedCHO o)

Proposition: for each o for which Europeana receives a description, there always exists a unique edm:EuropeanaAggregation ea that has o as aggregated CHO. There is no other proxy ep' in an edm:EuropeanaAggregation such as (ep' ore:proxyFor o). In this case, we say that ea represents o.

Observation 1: the ORE semantics state that "a Proxy MUST be unique to both an Aggregation and to a particular Aggregated Resource of that Aggregation". Consequently, p is a proxy only in a and only for o and ep is a proxy only in ea and only for o. In formalized

terms, there is no other aggregation a', such as (p ore:proxyIn a') and no other object o' such as (p ore:proxyFor o'). Neither is there any a' such as (ep ore:proxyIn a'), nor o' such as (ep ore:proxyFor o').

Observation 2: one can distinguish o from other resources (such as Web Resources) aggregated by aggregation a (or EuropeanaAggregation ea) thanks to the use of the specific edm:aggregatedCHO property between a (or ea) and o. So one can immediately identify which proxy is a proxy for the CHO targeted by a (or ea), in case the aggregation would have proxies for other aggregated resources.

Change history

V	Date	Changes from previous version Editors	Editors
5.2.1 and 5.2.2	from 5/7/2010 to 31/05/2011	**Added items:** • edm:data provider and edm:righs to be aligned with ESEv3.3 • edm:aggregatedCHO introduced for modelling the association between an aggregation and the cultural heritage object it refers to. In EDMv5.1 this information was represented by edm:isAbout. • Addition of a reference to the edm:aggregatedCHO property in the Europeana note of both ore:Aggregation and edm:EuropeanaObject • edm:aggregatedCHO defined as a sub-property of dc:subject (in order to capture the fact that an aggregation is about the CHO that it aggregates • Class edm:ProvidedCHO and specified it as the range of edm:aggregatedCHO **Removed items:** • edm:InformationRealization • edm:isAbout since the logical union of dc:subject and edm:aggregatedCHO is equivalent to it, as a consequence of the previous removal, the (indirect) sub-property link between dc:subject and dcterms:references has disappeared; this link has not been replaced (by a direct sub-property link between dc:subject and dcterms:references) because it does not exist in the official RDF expression of DC elements and DC terms. • vra:location and edm:location replaced with edm:currentLocation due to unclear mapping of the former **Changes on domains, ranges or rationale:** • domain of edm:country and edm:language left unspecified for backward compatibility with legacy data. A note has been added signalling that we intend to use edm:Agent as domain of both properties in the future	Carlo Meghini

		• Change range of dc:identifier • edm:year has been made a sub-property of dcterms:temporal • Relaxed the constraint on range of dc:coverage, dc:creator, dc:publisher • edm:TimeSpan made a sub-class of dcterms:PeriodOfTime • Ranges of dcterms:issued and dc:contributor aligned with DC specs • Rationale of the edm:EuropeanaObject class, previously stated in terms of the edm:hasAnnotation property, no longer part of the model • Changes of occurences for edm:rights, edm:dataProvider, dc:language, dc:title, dc:description, dc:subject, dc:type, dc:coverage, dcterms:spatial (Alignment with ESE 3.4) • Revision of note to reflect current practice for edm:country and edm:language revision • Rephrasing: rationale for edm:NonInformationResource rationale for edm:WebResource rationale for edm:hasType domain and rationale of edm:isRelatedTo rationale for edm:NonInformationResource domain for edm:isRelatedTo and edm:hasType definition of edm:realizes for better clarity and the example for correctness **Changes in definitions:** • Example on edm:rights changed as suggested by Paul Keller • Definition of edm:realizes changed as proposed by Makx Dekkers and Martin Doerr • Changed the definition of ore:Proxy • Added edm:NonInformationResource as a super-class of skos:Concept • Corrected the Obligation & Occurrence of edm:isSuccessorOf • Changed the label of edm:currentLocation Alignment with CIDOC CRM based on input from Martin Doerr. The alignment is expressed as Equivalent class or property statements between EDM elements and the corresponding CIDOC CRM elements • Replaced “crm:P128_carries” by “edm:realizes” in the rationale of edm:PhysicalThing • Change scope note of edm:Event to include also E4 Period from CIDOC CRM Re-arrangement of the property taxonomy for alignment with DC. Basic change: edm:isRelatedTo is now the top property, having as direct sub-properties dc:subject,	

		edm:hasType and dc:relation, the latter having as direct syb-properties edm:wasPresentAt, edm:happenedAt, edm:occurredAt, edm:isNextInSequence, edm:isSimilarTo, dcterms:references, dcterms:hasPart, edm:hasMet	
5.2.3	From 04/01/2012 to 12/01/2012	• Added items: property edm:UGC and value of "3D" to edm:type property • Changes to some ranges and domains to accommodate introduction of edm:ProvidedCHO: ore:proxyFor, ore:proxyIn, edm:currentLocation, edm:hasMet, edm:hasType, edm:isAnnotationOf, edm:isRelatedTo, edm:isRepresentationOf • Equivalent classes in CRM changed for edm:Event and edm:InformationResource (proposals by Martin Doerr) • Added property mappings to CRM for edm:aggregatedCHO, edm:isAnnotationOf, edm:isRepresentationOf (proposals by Martin Doerr) • Removed the "inverse of sub-property" axioms for dcterms:isPartOf, dcterms:isReferencedBy and dcterms:isRequiredBy • Added "to" to the label of edm:isNextInSequence	Antoine Isaac, Robina Clayphan
5.2.4	14/07/2013	Changes implemented as part of 5.2.4	
5.2.5	22/05/2014	• Added items: edm:europeanaProxy, edm:begin, edm:end, edm:preview edm:collectionName • Correction of sub-property relationship of edm:isShownAt to edm:hasView. • UGC made lower case. • Removal of domain constraint on edm:hasMet • Amended definition of edm:landingPage and edm:aggregatedCHO • Generalization of Country, DataProvider and Provider • edm:isNextInSequence made repeatable following Hierarchy Task Force recommendations • Amendment of edm:rights text and link, change Europeana note on dcterms:isPartOf and edm:language • Rationalize EDM and ESE documentation. Reorder alphabetically with namespace sections. • Consolidate Europeana Note and Rationale rows into single Comment row. • All examples are textual and all xml is moved to Guidelines. • Edit text to match new layout.	Robina Clayphan, Valentine Charles, Antoine Isaac
5.2.6	12/2014	• dc:creator comment modified to be compatible with use on web resource. • edm:datasetName property added and edm:collectionName deprecated • Class dcat:Dataset added in "Relevant classes…"	Robina Clayphan, Valentine Charles, Antoine

		section and dcat added as a namespace • Change label of edm:rights • Updating of definition and comment of edm:rights • Add cc:License class	Isaac
5.2.7	04/2016	• Class svcs:Service added in “Relevant classes…” • Addition of property edm:intermediateProvider and amendments of the definitions of edm:dataProvider and edm:Provider to reflect the changes. • dcterms:temporal added in the series of mandatory elements: dc:type, dc:subject, dc:coverage and dcterms:spatial. • Properties edm:annotationOf and edm:userTag are deprecated • Editorial changes: unspecified rows in the tables were removed.	Valentine Charles
5.2.8	06/10/2017	• dc:coverage removed from the series of mandatory elements: dc:type, dc:subject, dcterms:spatial and dcterms:temporal. • Change of occurences for edm:currentLocation	Valentine Charles