

PREMIS 3 OWL ontology - list of classes and properties

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The following lists classes and properties in the draft PREMIS OWL ontology for expressing semantic units in the *PREMIS Data Dictionary for Preservation Metadata*, version 3.0. Classes and properties that are defined in the PREMIS namespace are listed first, arranged by the PREMIS entity with which they're used. Following that are generic properties used with any PREMIS entity and properties that come from other ontologies. It should be assumed that when no prefix is given that it is defined in the PREMIS namespace. The "id.loc.gov vocabulary" column indicates for which class or property there is a corresponding controlled vocabulary at id.loc.gov to further specify the meaning of the given class/property. For a class, it is also indicated whether members of the vocabulary are declared subclasses or individuals (instances) of said class. In some cases the class/property is declared as part of the PREMIS ontology even there is a vocabulary in id.loc.gov, in which case the id.loc.gov vocabulary is not explicitly referenced.

Links to related documents

PREMIS OWL ontology:

<https://github.com/PREMIS-OWL-Revision-Team/revise-premis-owl/blob/master/premis3.owl>

Guidelines for Using the PREMIS Version 3 OWL Ontology:

<http://www.loc.gov/standards/premis/ontology/pdf/premis3-owl-guidelines-20180924.pdf>

Full PREMIS Examples:

<https://github.com/PREMIS-OWL-Revision-Team/revise-premis-owl/tree/master/examples>

Mapping PREMIS 3 Data Dictionary to RDF:

<http://www.loc.gov/standards/premis/ontology/pdf/mapping-premissdd-to-rdf-20180924.pdf>

Changes to id.loc.gov Preservation Vocabularies:

["http://www.loc.gov/standards/premis/ontology/pdf/changes-preservation-vocab-20180924.pdf"](http://www.loc.gov/standards/premis/ontology/pdf/changes-preservation-vocab-20180924.pdf)

Class list for PREMIS Object

Class	Subclass of	Id.loc.gov vocabulary	Definition	Used with
Bitstream	Object		Contiguous or non-contiguous data within a file that has meaningful properties for preservation purposes.	
Dependency			Relationship where one Object requires another Object to support its function, delivery, or the coherence of its content.	dependency
EnvironmentCharacteristic		Instances declared at http://id.loc.gov/vocabulary/preservation/environmentCharacteristic	An assessment of the extent to which the described environment supports its	characteristic

		eristic	purpose.	
File	Object		Named and ordered sequence of bytes that is known to an operating system.	
Fixity		Subclasses declared at http://id.loc.gov/vocabulary/preservation/cryptographicHashFunctions	Information used to verify whether an object has been altered in an undocumented or unauthorized way.	fixity
Inhibitor		Subclasses declared at http://id.loc.gov/vocabulary/preservation/inhibitorType	Feature of a Digital Object intended to inhibit access, copying, dissemination, or migration. Common Inhibitors are encryption and password protection.	inhibitedBy
IntellectualEntity	Object	For Intellectual Entities that describe an Environment, subclasses are declared at http://id.loc.gov/vocabulary/preservation/environmentFunctionType	A set of content that is considered a single intellectual unit for purposes of management and description: for example, a particular book, map, photograph, database, or piece of hardware or software. An Intellectual Entity can include other Intellectual Entities; for example, a web site can include a web page; a web page can include an image. An Intellectual Entity may have one or more digital representations. An Intellectual Entity may also describe an environment, defined as technology supporting a digital object in some way (e.g. by rendering or executing it). Environments can consist of software, hardware,	

			or a combination of both.	
Object	prov:Entity		Discrete unit of information subject to digital preservation. Subclasses of Object are Intellectual Entity, Representation, File and Bitstream	
PreservationPolicy	dct:Policy	Subclasses declared at (not yet available): http://id.loc.gov/vocabulary/preservation/presLevType .	Information indicating the decision or policy on the set of preservation functions to be applied to an object and the context in which the decision or policy was made. Note that in addition to subclasses declared at presLevType, SignificantProperties is also a subclass of PreservationPolicy. Implementers may also wish to create locally-defined subclasses.	policy
Representation	Object		Digital or physical Object instantiating or embodying an Intellectual Entity. A digital representation is the set of stored digital files and structural metadata needed to provide a complete and reasonable rendition of the Intellectual Entity. A physical representation is an item such as a manuscript, video cassette, or printed document.	
Signature		Subclasses declared at http://id.loc.gov/vocabulary/preservation/signatureMethod	Mathematical technique used to validate the authenticity and integrity of a message, software	signature

			or digital document.	
SignatureEncoding		Instances declared at http://id.loc.gov/vocabulary/preservation/signatureEncoding	The type of encoding used in a digital signature.	
SignificantProperties	PreservationPolicy		Characteristics of a particular object subjectively determined to be important to maintain through preservation actions.	dct:policy (Object); outcome (Event)
StorageMedium		Instances declared at: http://id.loc.gov/vocabulary/preservation/storageMedium	The physical medium on which the object is stored (e.g., magnetic tape, hard disk, CD-ROM, DVD).	medium
StorageLocation		Subclasses declared at http://id.loc.gov/vocabulary/preservation/contentLocationType	Information needed to retrieve a physical item from its physical storage location or a file from the storage system, or to access a bitstream within a file.	storedAt

Property list for PREMIS Object

Property	Sub-property of	Id.loc.gov vocabulary	Domain	Range
characteristic			Dependency	EnvironmentCharacteristic
compositionLevel			File, Bitstream	xsd:nonNegativeInteger
dependency			Object	Dependency
encoding			Signature	SignatureEncoding

fixity			File, Bitstream	Fixity
inhibitedBy			File, Bitstream	Inhibitor
inhibits			Inhibitor	Action
key			Inhibitor, Signature	rdfs:Literal
medium			StorageLocation	StorageMedium
originalName			IE, Representation, File	rdfs:Literal
policy		Subproperties declared at http://id.loc.gov/vocabulary/preservation/preservationLevelRole	Object	PreservationPolicy
purpose			Dependency	Action
rightsStatus			Object	RightsStatus
signature			File, Bitstream	Signature
size			File, Bitstream	rdfs:Literal
storedAt			Representation, File, Bitstream	StorageLocation
validationRules	note		Signature	rdfs:Literal

Class list for PREMIS Event

Class	Subclass of	Id.loc.gov vocabulary	Definition	Used with
Event	prov:Activity	Subclasses declared at http://id.loc.gov/vocabulary/pr	Preservation action that involves at least one digital	prov:wasUsedBy, prov:wasGeneratedBy (Object),

		ervation/eventType	object and/or Agent	prov:wasAssociateFor (Agent)
OutcomeStatus		Instances declared at http://id.loc.gov/vocabulary/pra/ervation/eventOutcome (not yet available.).	Overall result of the Event in terms of success, partial success, or failure.	outcome

Property list for PREMIS Event

Property	Sub-property of	Domain	Range
outcome		Event	OutcomeStatus
outcomeNote	note	Event	rdfs:Literal

Class list for PREMIS Rights

Class	Subclass of	Id.loc.gov vocabulary	Definition	Used with
Copyright	RightsBasis			basis, dct:rights
InstitutionalPolicy	RightsBasis			basis, dct:rights
License	RightsBasis			basis, dct:rights
RightsBasis		Subclasses declared at http://id.loc.gov/vocabulary/pra/ervation/rightsBasis	Designation of the basis for the right or permission governing the Object.	

RightsStatus		Instances at http://id.loc.gov/vocabulary/preservation/copyrightStatus can be used when the RightsBasis is copyright. Other terms may be locally defined.	Information about how a RightsBasis applies to a particular object.	rightsStatus
Rule			Statement about the Actions an Agent is permitted to undertake or prohibited from undertaking with respect to an Object.	allows, prohibits
Statute	RightsBasis			basis, dct:rights

Property list for PREMIS Rights

Property	Sub-property of	Domain	Range
act		Rule	Action
allows		RightsBasis	Rule
basis		RightsStatus	RightsBasis
citation		RightsBasis	rdfs:Literal
determinationDate	dct:date	RightsStatus	rdfs:Literal
endDate	dct:date	RightsStatus, Rule	rdfs:Literal
governs		RightsBasis	Object
jurisdiction		RightsBasis	rdf:Resource

restriction		Rule	rdfs:Literal
terms		RightsBasis	rdfs:Literal
prohibits		RightsBasis	Rule
startDate	dct:date	RightsStatus, Rule	rdfs:Literal

Class list for PREMIS Agent

Class	Subclass of	Id.loc.gov vocabulary	Definition	Used with
Agent	foaf:Agent, prov:Agent	Subclasses declared at http://id.loc.gov/vocabulary/preservation/agentType	Actor (human, machine, or software) associated with one or more Event and/or Rights statement associated with a digital object.	
HardwareAgent	Agent			
Organization	Agent, prov:Organization, foaf:Organization			prov:wasAssociatedWith (Event); prov:wasInfluencedBy (Rights)
Person	Agent, prov:Person, foaf:Person			prov:wasAssociatedWith (Event); prov:wasInfluencedBy (Rights)
SoftwareAgent	Agent, prov:SoftwareAgent			dct:creator

Generic classes

Class	Subclass of	Id.loc.gov vocabulary	Definition	Used with
Action		Instances declared at http://id.loc.gov/vocabulary/preservation/eventType		act, inhibits, purpose
Identifier		Subclasses declared at: http://id.loc.gov/vocabulary/identifiers	An unambiguous reference to the PREMIS entity within the preservation repository.	identifier

Generic properties

Property	Sub-property of	Id.loc.gov vocabularies	Domain	Range
documentation				rdf:Resource
identifier	dct:identifier			Identifier
note	dct:description			rdfs:Literal
rationale	note			rdfs:Literal
relationship		Subproperties declared at http://id.loc.gov/vocabulary/preservation/relationshipSubType and http://id.loc.gov/vocabulary/preservation/link	Object, Agent	Object

		ngEnvironmentRole.htm		
version			dct:FileFormat, softwareAgent, hardwareAgent, IntellectualEntity	rdfs:Literal

Properties borrowed from other ontologies

Property	Use
dct:creator	Use to specify a prov:SoftwareAgent which created a premis:Object, a premis:Fixity or a premis:Signature. Use dce:creator if the value is a literal instead of a prov:SoftwareAgent.
dct:date	Use if eventDateTime value cannot be determined as the beginning or the end of an Event; otherwise use prov:startedAtTime and prov:endedAtTime.
dct:identifier	Use for Identifier semantic unit unless additional information is required (such as identifier status or administrative history), in which case use the premis:identifier property to point to instances of classes from existing vocabularies, e.g. http://id.loc.gov/ontologies/bibframe#c_ISBN or locally defined subclasses of premis:Identifier.
dct:rights	The dct:rights property should be used to point from an instance of premis:Object to an instance of premis:RightsBasis.
dct:format	A Bitstream or File format is expressed through a dct:format property pointing to an instance of the dct:FileFormat class.
ebucore:hasMimetype	Use to specify MIME type in in addition to or in replacement of dct:format.
edm:isNextInSequence	Use for the PREMIS semantic unit relatedObjectSequence. (For aggregation-specific ordering, use edm:Proxy).
foaf:name	Use for agentName semantic unit if the Agent is a person or organization. For software Agent use rdfs:label.

odrl:constraint	Boolean/logical expressions that can be used to refine the semantics of an Action. The odrl:constraint property points to an instance of odrl:Constraint.
prov:wasAssociatedWith	The prov:wasAssociatedWith property should be used to point from an instance of premis:Event to an instance of premis:Agent. If the role played by the Agent in the Event is further specified by means of a linkingAgentRole semantic unit, subproperties of prov:wasAssociatedWith either declared at http://id.loc.gov/vocabulary/preservation/eventRelatedAgentRole or locally defined should be used.
prov:generated prov:wasGeneratedBy	Use to link Objects and Events if an Object was created as a result of the Event. Subproperties declared at http://id.loc.gov/vocabulary/preservation/eventRelatedObjectRole.html .
prov:generatedAtTime	The dateCreatedByApplication semantic unit may be expressed through a prov:generatedAtTime property attached to the Object.
prov:influenced, prov:wasInfluencedBy	If users need to specify the Agent affected by the permission or prohibition expressed in the Rights Entity, a prov:influenced property may be used from an instance of premis:Rule to an instance of premis:Agent. If the role played in the definition of the rights basis by an Agent is further specified by means of a linkingAgentRole semantic unit, subproperties of prov:wasInfluencedBy either declared at http://id.loc.gov/vocabulary/preservation/rightsRelatedAgentRole or locally defined should be used.
prov:startedAtTime	The eventDateTime semantic unit should be expressed by prov:startedAtTime or prov:endedAtTime properties or both, if a date and time range has to be specified. In the case where legacy data must be transformed into RDF and if the eventDateTime value cannot be determined as the beginning or the end of an Event, a dct:date property may be used to express eventDateTime instead of PROV properties.
prov:endedAtTime	The eventDateTime semantic unit should be expressed by prov:startedAtTime or prov:endedAtTime properties or both, if a date and time range has to be specified. In the case where legacy data must be transformed into RDF and if the eventDateTime value cannot be determined as the beginning or the end of an Event, a dct:date property may be used to express eventDateTime instead of PROV properties.
prov:used, prov:wasUsedBy	PROV properties should be used to link premis:Object and premis:Event. The prov:used and prov:wasUsedBy properties should be used if the Object pre-existed the Event. The role played by the object is further specified by means of a linkingObjectRole, subproperties of prov:used either declared at http://id.loc.gov/vocabulary/preservation/eventRelatedObjectRole or locally defined should be used.
skos:closeMatch, skos:exactMatch	Use skos:closeMatch or skos:exactMatch to identify corresponding resources in external registries (for example formatRegistry and environmentRegistry). Sub-properties are declared at http://id.loc.gov/vocabulary/preservation/environmentRegistryRole and http://id.loc.gov/vocabulary/preservation/formatRegistryRole , or can be defined locally.

rdf:value	Used to add values to instances of Fixity, Identifier, SignificantProperties, Signature and StorageLocation.
rdfs:comment	Use to refine rdfs:property, which is used for locally-defined significant properties (the significantProperties semantic unit).
rdfs:label	Used for labels for hardware and software names and for format name.
rdfs:property	Use for locally-defined significant properties (the significantProperties semantic unit).