

Global Digital Format Registry (GDFR)

Data Model

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The Global Digital Format Registry (GDFR) will provide sustainable services to store, discover, and deliver important representation information about digital formats. A format is a set of syntactic and semantic rules for serializing an abstract information model, an expression of exchangeable knowledge. The format of a digital object must be known in order to interpret the information content of that object properly. Without knowledge of its format, a digital object is merely a collection of undifferentiated bits. Thus, format typing is fundamental to the effective use, interchange, and preservation of all digitally-encoded content.

The wide diversity and rapid pace of adoption and abandonment of digital formats present an ongoing problem for long-term preservation efforts. The purpose of the GDFR is to address this concern by providing a sustainable resource for managing format-critical representation information necessary to the preservation function. The GDFR is a distributed network of independent, but cooperating registries using a common data model and communications protocol to synchronize their holdings of format representation information. Widespread redundancy is an important component of sustainable services.

DataModel

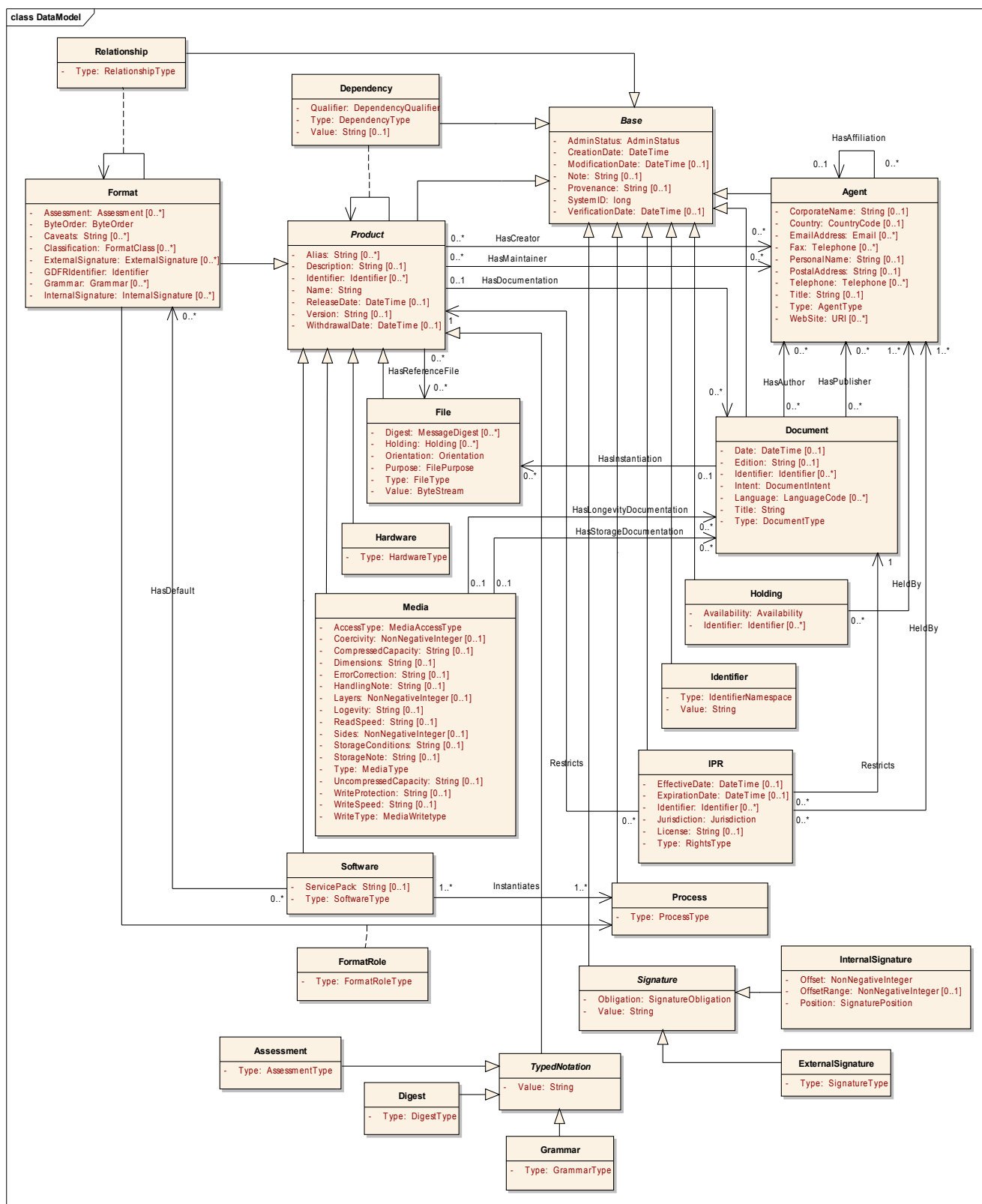


Figure 3 : DataModel

DataModel

Type: **Package**
Status: Proposed. Version 10. Phase 5.0.
Package: GDFR
Details: Created on 11/21/2006 5:03:23 PM. Modified on 9/7/2007 3:33:33 PM.

Core abstract and concrete classes in the GDFR data model.

Agent

Type: **Class**
 Extends: *Base*.
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 11/22/2006 10:12:22 AM. Modified on 7/30/2007 10:52:43 AM.

Concrete class defining the attributes for describing human and corporate agents.

Custom Properties

Agent Connections

Connector	Source	Target	Notes
<u>Association</u> HasPublisher source > target	<u>Document</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Document and an Agent who publishes it.
<u>Association</u> HasCreator source > target	<u>Product</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Product and an Agent who authors or creates it.
<u>Association</u> HasAuthor source > target	<u>Document</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Document and an Agent who authors it.
<u>Association</u> HeldBy source > target	<u>Holding</u> 0..*, unordered, none	<u>Agent</u> 1..*, unordered, none	Optional association between a Holding for a File and the Agent who holds it.
<u>Association</u> HeldBy source > target	<u>IPR</u> 0..*, unordered, none	<u>Agent</u> 1..*, unordered, none	Optional association between an IPR claim and an Agent who holds the IPR.
<u>Association</u> HasMaintainer source > target	<u>Product</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Product and an Agent who supports or maintains it.
<u>Association</u> HasAffiliation source > target	<u>Agent</u> 0..*, unordered, none	<u>Agent</u> 0..1, unordered, none	Optional association between a personal Agent and his/her corporate affiliation.

<u>Generalization</u> source > target	<u>Agent</u> Child	<u>Base</u> Parent	
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Agent Attributes

Attribute	Type	Notes
CorporateName	private Range:0 to 1: <i>String</i>	Optional legal name of corporate agent, or corporate affiliation of human agent, including any relevant divisional name components.
Country	private Range:0 to 1: <i>CountryCode</i>	Optional enumerated country code.
EmailAddress	private Range:0 to *: <i>Email</i>	Optional Internet SMTP email address(es) associated with the agent, expressed in terms of RFC 2821.
Fax	private Range:0 to *: <i>Telephone</i>	Optional facsimile telephone number(s) associated with the agent, expressed in terms of the ITU-T E.164 data model.
PersonalName	private Range:0 to 1: <i>String</i>	Optional personal name of human agent, formatted as: surname, given name(s), generation identifier. A surname is an inherited family name. A given name is a forename, given name, baptismal name, or initials thereof. A generational identifier provides generational information such as "Jr." or "III".
PostalAddress	private Range:0 to 1: <i>String</i>	Optional postal address of the agent, expressed in terms of the UPU S42 data model.
Telephone	private Range:0 to *: <i>Telephone</i>	Optional voice telephone number(s) associated with the agent, expressed in terms of the ITU-T E.164 data model.
Title	private Range:0 to 1: <i>String</i>	Optional title of human agent. Note that this should be a job-related title (e.g. "Director of Product Support"), not a personal or honorary title (e.g. "Ms." or "Dr."). Title must only be provided if a PersonalName is also defined.
Type	private : <i>AgentType</i>	Enumerated type of agent. In general, a personal agent will be assigned the "Individual" type.
WebSite	private Range:0 to *: <i>URI</i>	Optional WWW web site(s) associated with the agent, expressed as RFC 3986 URI.

Assessment

Type: **Class**
 Extends: *TypedNotation*.
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 2/6/2007 10:50:41 AM. Modified on 7/31/2007 10:51:34 AM.

Concrete class defining an assessment of a format expressed in a formal typed notation.

Custom Properties***Assessment Connections***

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Assessment</u> Child	<u>TypedNotation</u> Parent	

Assessment Attributes

Attribute	Type	Notes
Type	private : <i>AssessmentType</i>	Enumerated assessment type

Base*Type:* **Class***Status:* Proposed. Version 7. Phase 5.0.*Package:* DataModel*Details:* Created on 11/21/2006 5:06:30 PM. Modified on 7/30/2007 10:52:58 AM.

Abstract class defining baseline attributes inherited by all other GDFR classes.

Custom Properties***Base Connections***

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Agent</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>IPR</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Dependency</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Relationship</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Identifier</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Product</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Signature</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Document</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Holding</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Process</u> Child	<u>Base</u> Parent	

Base Attributes

Attribute	Type	Notes
AdminStatus	private : <i>AdminStatus</i>	Enumerated administrative status of the instantiated entity.
CreationDate	private : <i>DateTime</i>	Date (and possibly, time) at which the entity was created, expressed in terms of the ISO 8601 data model (i.e. year, month, day, hour, minute, second, time zone or equivalent offset from UTC).
ModificationDate	private Range:0 to 1: <i>DateTime</i>	Optional date (and possibly, time) at which the entity was most recently modified, expressed in terms of the ISO 8601 data model (i.e. year, month, day, hour, minute, second, time zone or equivalent offset from UTC).
Note	private	Optional informative note.

	Range:0 to 1: <i>String</i>	
Provenance	private Range:0 to 1: <i>String</i>	Optional note describing the provenance of the information contained within the entity.
SystemID	private : <i>long</i>	Unique persistent identifier for this entity.
VerificationDate	private Range:0 to 1: <i>DateTime</i>	Optional date (and possibly, time) at which the information in this entity was last verified, expressed in terms of the ISO 8601 data model (i.e. year, month, day, hour, minute, second, time zone or equivalent offset from UTC).

Dependency

Type: **Association Class**

Extends: *Base*.

Status: Proposed. Version 9. Phase 5.0.

Package: DataModel

Details: Created on 7/27/2007 3:50:12 PM. Modified on 7/27/2007 3:56:04 PM. Author: sabrams

Optional dependency relationship between Products.

Custom Properties

Dependency Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Dependency</u> Child	<u>Base</u> Parent	

Dependency Attributes

Attribute	Type	Notes
Qualifier	private : <i>DependencyQualifier</i>	Enumerated dependency qualifier.
Type	private : <i>DependencyType</i>	Enumerated dependency type.
Value	private Range:0 to 1: <i>String</i>	Optional dependency value.

Digest

Type: **Class**

Extends: *TypedNotation*.

Status: Proposed. Version 7. Phase 5.0.

Package: DataModel

Details: Created on 2/6/2007 11:14:19 AM. Modified on 7/31/2007 2:43:05 PM.

Concrete class defining a typed message digest.

Custom Properties

Digest Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Digest</u> Child	<u>TypedNotation</u> Parent	

Digest Attributes

Attribute	Type	Notes
Type	private : <i>DigestType</i>	Message digest type.

Document

Type: **Class**
 Extends: *Base*.
Status: Proposed. Version 10. Phase 5.0.
Package: DataModel
Details: Created on 11/22/2006 11:29:56 AM. Modified on 10/23/2007 2:41:54 PM.

Concrete class representing a document independent of any instantiation by a File. "Document" is intended to encompass a wide gamut of recorded communications (monograph, serial, email, etc.), as indicated by the enumerated type property.

An abstract Document may be instantiated by one or more tangible Files.

Custom Properties***Document Connections***

Connector	Source	Target	Notes
<u>Association</u> HasPublisher source > target	<u>Document</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Document and an Agent who publishes it.
<u>Association</u> HasInstantiation source > target	<u>Document</u> 0..1, unordered, none	<u>File</u> 0..*, unordered, none	Optional association between an abstract Document and a tangible File that instantiates it.
<u>Association</u> HasStorageDocumentation source > target	<u>Media</u> 0..1, unordered, none	<u>Document</u> 0..*, unordered, none	Optional association between a Media Product and Documentation providing storage support and handling recommendations.
<u>Association</u> HasAuthor source > target	<u>Document</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Document and an Agent who authors it.
<u>Association</u> HasDocumentation source > target	<u>Product</u> 0..1, unordered, none	<u>Document</u> 0..*, unordered, none	Optional association between a Product and a Document that documents it.
<u>Association</u> HasLongevityDocumentation source > target	<u>Media</u> 0..1, unordered, none	<u>Document</u> 0..*, unordered, none	Optional association between a Media Product and Documentation providing information on its longevity..

<u>Association</u> Restricts source > target	<u>IPR</u> 0..*, unordered, none	<u>Document</u> 1, unordered, none	
<u>Generalization</u> source > target	<u>Document</u> Child	<u>Base</u> Parent	

Document Attributes

Attribute	Type	Notes
Date	private Range:0 to 1: <i>DateTime</i>	Publication date.
Edition	private Range:0 to 1: <i>String</i>	Optional document edition.
Identifier	private Range:0 to *: <i>Identifier</i>	Optional document identifier(s).
Intent	private : <i>DocumentIntent</i>	Optional document intention.
Language	private Range:0 to *: <i>LanguageCode</i>	Optional language(s) represented in the document.
Title	private : <i>String</i>	Document title.
Type	private : <i>DocumentType</i>	Enumerated document type.

ExternalSignature

Type: **Class**
Extends: *Signature*.

Status: Proposed. Version 7. Phase 5.0.

Package: DataModel

Details: Created on 2/6/2007 11:40:17 AM. Modified on 7/31/2007 2:42:31 PM.

Concrete class defining a typed external signature for a format.

Custom Properties**ExternalSignature Connections**

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>ExternalSignature</u> Child	<u>Signature</u> Parent	

ExternalSignature Attributes

Attribute	Type	Notes
Type	private : <i>SignatureType</i>	Enumerated signature type.

File

Type: **Class**

Extends: *Product*.

Status: Proposed. Version 7. Phase 5.0.

Package: DataModel

Details: Created on 11/22/2006 11:46:54 AM. Modified on 7/31/2007 2:47:26 PM.

Concrete class representing an instantiated file. A File can be either managed (and distributed) directly within the GDFR network or available as a local Holding that may be registered with the network.

Custom Properties

File Connections

Connector	Source	Target	Notes
<u>Association</u> HasInstantiation source > target	<u>Document</u> 0..1, unordered, none	<u>File</u> 0..*, unordered, none	Optional association between an abstract Document and a tangible File that instantiates it.
<u>Association</u> HasReferenceFile source > target	<u>Product</u> 0..*, unordered, none	<u>File</u> 0..*, unordered, none	Optional association between a Product and a File that is a reference file for it.
<u>Generalization</u> source > target	<u>File</u> Child	<u>Product</u> Parent	

File Attributes

Attribute	Type	Notes
Digest	private Range:0 to *: <i>MessageDigest</i>	Optional message digest for the File.
Holding	private Range:0 to *: <i>Holding</i>	Optional Holding for the File. Holdings are used in cases where a File is not or cannot be managed (and distributed) directly in the GDFR network, presumably due to IPR restrictions.
Orientation	private : <i>Orientation</i>	Enumerated file orientation type.
Purpose	private : <i>FilePurpose</i>	Enumerated file purpose.
Type	private : <i>FileType</i>	Enumerated file type.
Value	private : <i>ByteStream</i>	Optional byte stream value of the instantiated file. This value should be defined only if the file is explicitly intended to be managed (and distributed) within the GDFR network with all necessary rights clearances.

Format

Type: **Class**

Extends: *Product*.

Status: Proposed. Version 9. Phase 5.0.

Package: DataModel

Details: Created on 11/22/2006 2:51:11 PM. Modified on 7/27/2007 1:51:07 PM.

Concrete class representing a format. "Format" is defined expansively, and is intended to apply to format families (general classes of related file formats), file formats (formats most usefully considered as being instantiatable in independent files),

encodings (formats most usefully considered as being instantiatable as bit stream components of an encompassing file), or serialization algorithms. The distinction between these various conceptual variants is indicated by the Classification property.

Custom Properties

Format Connections

Connector	Source	Target	Notes
<u>Association</u> source > target	<u>Format</u> unordered, none	<u>Process</u> unordered, none	
<u>Association</u> HasDefault source > target	<u>Software</u> 0..*, unordered, none	<u>Format</u> 0..*, unordered, none	Optional association between a Software Product and a Format that it uses as a default.
<u>Association</u> source > target	<u>Format</u> unordered, none	<u>Format</u> unordered, none	
<u>Generalization</u> source > target	<u>Format</u> Child	<u>Product</u> Parent	

Format Attributes

Attribute	Type	Notes
Assessment	private Range:0 to *: <i>Assessment</i>	Optional format assessment expressed in a typed formal notation.
ByteOrder	private : <i>ByteOrder</i>	Enumerated byte order type.
Caveats	private Range:0 to *: <i>String</i>	Optional known caveat(s) associated, but not clearly formerly documented, with the format.
Classification	private Range:0 to *: <i>FormatClass</i>	Optional format classification.
ExternalSignature	private Range:0 to *: <i>ExternalSignature</i>	Optional external signature(s) associated with the format.
GDFRIdentifier	private : <i>Identifier</i>	Canonical GDFR identifier.
Grammar	private Range:0 to *: <i>Grammar</i>	Optional format grammar expressed in a typed formal notation.
InternalSignature	private Range:0 to *: <i>InternalSignature</i>	Optional internal signature(s) associated with the format.

FormatRole

Type:

Association Class

Status:

Proposed. Version 9. Phase 5.0.

Package:

DataModel

Details:

Created on 7/27/2007 4:29:42 PM. Modified on 7/31/2007 2:45:58 PM. Author: sabrams

Association between Formats and the Processes for which they satisfy a specific typed role.

*Custom Properties**FormatRole Attributes*

Attribute	Type	Notes
Type	private : <i>FormatRoleType</i>	Enumerated format role.

Grammar

Type: **Class**
 Extends: *TypedNotation*.
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 2/6/2007 11:02:37 AM. Modified on 7/30/2007 10:54:15 AM.

Concrete class defining a format grammar expressed in a typed notation.

*Custom Properties**Grammar Connections*

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Grammar</u> Child	<u>TypedNotation</u> Parent	

Grammar Attributes

Attribute	Type	Notes
Type	private : <i>GrammarType</i>	Grammar type.

Hardware

Type: **Class**
 Extends: *Product*.
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 11/22/2006 2:51:18 PM. Modified on 7/31/2007 2:46:32 PM.

Concrete class representing a hardware Product

*Custom Properties**Hardware Connections*

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Hardware</u> Child	<u>Product</u> Parent	

Hardware Attributes

Attribute	Type	Notes
Type	private : <i>HardwareType</i>	Enumerated hardware type.

Holding

Type: Class
 Extends: *Base*.
Status: Proposed. Version 10. Phase 5.0.
Package: DataModel
Details: Created on 11/22/2006 11:55:27 AM. Modified on 9/7/2007 3:38:44 PM.

Concrete class representing a local holding of a file. Holdings are useful in cases where File Documents cannot be managed (and distributed) directly in the GDFR network. A Holding provides a mechanism for individual or institutional Agents to register the fact of their local possession of a Document and the terms under which it may be accessed.

Custom Properties

Holding Connections

Connector	Source	Target	Notes
<u>Association</u> HeldBy source > target	<u>Holding</u> 0..*, unordered, none	<u>Agent</u> 1..*, unordered, none	Optional association between a Holding for a File and the Agent who holds it.
<u>Generalization</u> source > target	<u>Holding</u> Child	<u>Base</u> Parent	

Holding Attributes

Attribute	Type	Notes
Availability	private : <i>Availability</i>	Enumerated availability type.
Identifier	private Range:0 to *: <i>Identifier</i>	Optional identifier associated with the holding.

Identifier

Type: Class
 Extends: *Base*.
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 11/22/2006 10:36:00 AM. Modified on 7/30/2007 10:54:32 AM.

Concrete class representing an identifier.

Custom Properties

Identifier Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Identifier</u> Child	<u>Base</u> Parent	

Identifier Attributes

Attribute	Type	Notes
Type	private : <i>IdentifierNamespace</i>	The enumerated identifier namespace.

	<i>e</i>	
Value	private : <i>String</i>	The Unicode character string value of the identifier.

InternalSignature

Type: **Class**

Extends: *Signature*.

Status: Proposed. Version 7. Phase 5.0.

Package: DataModel

Details: Created on 2/6/2007 11:42:02 AM. Modified on 7/30/2007 10:54:39 AM.

Concrete class defining an internal signature for a format.

Custom Properties

InternalSignature Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>InternalSignature</u> Child	<u>Signature</u> Parent	

InternalSignature Attributes

Attribute	Type	Notes
Offset	private : <i>NonNegativeInteger</i>	Fixed offset of the signature, or, if OffsetRange is defined, the lower bound of the range of offsets in which the signature is found.
OffsetRange	private Range:0 to 1: <i>NonNegativeInteger</i>	Optional upper bound on the range of the offsets at which the signature is found. Note that OffsetRange must be strictly larger than Offset.
Position	private : <i>SignaturePosition</i>	Enumerated signature position type.

IPR

Type: **Class**

Extends: *Base*.

Status: Proposed. Version 7. Phase 5.0.

Package: DataModel

Details: Created on 11/22/2006 10:21:43 AM. Modified on 7/30/2007 10:54:28 AM.

Concrete class defining intellectual property rights claims.

Custom Properties

IPR Connections

Connector	Source	Target	Notes
<u>Association</u> Restricts source > target	<u>IPR</u> 0..*, unordered, none	<u>Product</u> 1, unordered, none	
<u>Association</u> HeldBy source > target	<u>IPR</u> 0..*, unordered, none	<u>Agent</u> 1..*, unordered, none	Optional association between an IPR claim and an Agent who holds the IPR.

<u>Association</u> Restricts source > target	<u>IPR</u> 0..*, unordered, none	<u>Document</u> 1, unordered, none	
<u>Generalization</u> source > target	<u>IPR</u> Child	<u>Base</u> Parent	

IPR Attributes

Attribute	Type	Notes
EffectiveDate	private Range:0 to 1: <i>DateTime</i>	Optional date at which the rights claim became effective.
ExpirationDate	private Range:0 to 1: <i>DateTime</i>	Optional date at which the rights claim expires,
Identifier	private Range:0 to *: <i>Identifier</i>	Optional identifier associated with the rights claim.
Jurisdiction	private : <i>Jurisdiction</i>	The enumerated legal jurisdiction for the rights claim.
License	private Range:0 to 1: <i>String</i>	Optional license details.
Type	private : <i>RightsType</i>	Enumerated rights type.

Media*Type:***Class**Extends: *Product*.*Status:*

Proposed. Version 7. Phase 5.0.

Package:

DataModel

Details:

Created on 11/22/2006 2:51:26 PM. Modified on 7/31/2007 2:46:24 PM.

Concrete class representing a media Product.

Custom Properties**Media Connections**

Connector	Source	Target	Notes
<u>Association</u> HasStorageDocumentation source > target	<u>Media</u> 0..1, unordered, none	<u>Document</u> 0..*, unordered, none	Optional association between a Media Product and Documentation providing storage support and handling recommendations.
<u>Association</u> HasLongevityDocumentatio n source > target	<u>Media</u> 0..1, unordered, none	<u>Document</u> 0..*, unordered, none	Optional association between a Media Product and Documentation providing information on its longevity..
<u>Generalization</u> source > target	<u>Media</u> Child	<u>Product</u> Parent	

Media Attributes

Attribute	Type	Notes
AccessType	private : <i>MediaAccessType</i>	
Coercivity	private Range:0 to 1: <i>NonNegativeInteger</i>	Optional coercivity, expressed in units of Oersteds (Oe)
CompressedCapacity	private Range:0 to 1: <i>String</i>	Compressed storage capacity, epxressed as numerical value and unit of measurement.
Dimensions	private Range:0 to 1: <i>String</i>	Optional media dimensions, epxressed as width x height x depth and unit of measurement.
ErrorCorrection	private Range:0 to 1: <i>String</i>	Optional error correction description.
HandlingNote	private Range:0 to 1: <i>String</i>	Optional descirption of special handling requirements.
Layers	private Range:0 to 1: <i>NonNegativeInteger</i>	Optional number of layers.
Logevity	private Range:0 to 1: <i>String</i>	Optional estimated longevity.
ReadSpeed	private Range:0 to 1: <i>String</i>	Optional read speed, expressed as unit of size per unit of time.
Sides	private Range:0 to 1: <i>NonNegativeInteger</i>	Optional number of sides.
StorageConditions	private Range:0 to 1: <i>String</i>	Optional recommended environmental storage conditions.
StorageNote	private Range:0 to 1: <i>String</i>	Optional description of special storage requirements.
Type	private : <i>MediaType</i>	
UncompressedCapacity	private Range:0 to 1: <i>String</i>	Optional uncompressed storage capacity, expressed as numerical value and unit of measurement.
WriteProtection	private Range:0 to 1: <i>String</i>	Optional write protection description.
WriteSpeed	private Range:0 to 1: <i>String</i>	Optional write speed, expressed as unit of size per unit of time.
WriteType	private : <i>MediaWritetype</i>	

Process*Type:***Class**

Extends: *Base*.
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 2/7/2007 9:14:40 AM. Modified on 7/30/2007 10:54:49 AM.

Concrete class representing a software process or service.

Custom Properties

Process Connections

Connector	Source	Target	Notes
<u>Association</u> source > target	<u>Format</u> unordered, none	<u>Process</u> unordered, none	
<u>Association</u> Instantiates source > target	<u>Software</u> 1..*, unordered, none	<u>Process</u> 1..*, unordered, none	Optional association between tangible software Products and the abstract Processes they instantiate.
<u>Generalization</u> source > target	<u>Process</u> Child	<u>Base</u> Parent	

Process Attributes

Attribute	Type	Notes
Type	private : <i>ProcessType</i>	Enumerated process type.

Product

Type: **Class**
 Extends: *Base*.
Status: Proposed. Version 10. Phase 5.0.
Package: DataModel
Details: Created on 11/22/2006 8:55:21 AM. Modified on 10/23/2007 2:41:46 PM.

Abstract class defining product-related attributes that may be inherited by other GDFR classes.

Custom Properties

Product Connections

Connector	Source	Target	Notes
<u>Association</u> Restricts source > target	<u>IPR</u> 0..*, unordered, none	<u>Product</u> 1, unordered, none	
<u>Association</u> HasCreator source > target	<u>Product</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Product and an Agent who authors or creates it.
<u>Association</u> HasDocumentation source > target	<u>Product</u> 0..1, unordered, none	<u>Document</u> 0..*, unordered, none	Optional association between a Product and a Document that documents it.
<u>Association</u> HasReferenceFile source > target	<u>Product</u> 0..*, unordered, none	<u>File</u> 0..*, unordered, none	Optional association between a Product and a File that is a reference file for it.

<u>Association</u> HasMaintainer source > target	<u>Product</u> 0..*, unordered, none	<u>Agent</u> 0..*, unordered, none	Optional association between a Product and an Agent who supports or maintains it.
<u>Association</u> source > target	<u>Product</u> unordered, none	<u>Product</u> unordered, none	
<u>Generalization</u> source > target	<u>Format</u> Child	<u>Product</u> Parent	
<u>Generalization</u> source > target	<u>TypedNotation</u> Child	<u>Product</u> Parent	
<u>Generalization</u> source > target	<u>Software</u> Child	<u>Product</u> Parent	
<u>Generalization</u> source > target	<u>File</u> Child	<u>Product</u> Parent	
<u>Generalization</u> source > target	<u>Product</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>Hardware</u> Child	<u>Product</u> Parent	
<u>Generalization</u> source > target	<u>Media</u> Child	<u>Product</u> Parent	

Product Attributes

Attribute	Type	Notes
Alias	private Range:0 to *: <i>String</i>	Optional alternative product name(s).
Description	private Range:0 to 1: <i>String</i>	Optional product description.
Identifier	private Range:0 to *: <i>Identifier</i>	Optional product identifier.
Name	private : <i>String</i>	Product name.
ReleaseDate	private Range:0 to 1: <i>DateTime</i>	Optional product release date, expressed in terms of the ISO 8601 data model (i.e. year, month, day, hour, minute, second, time zone).
Version	private Range:0 to 1: <i>String</i>	Optional product version identifier.
WithdrawalDate	private Range:0 to 1: <i>DateTime</i>	Optional date at which the product was withdrawn, expressed in terms of the ISO 8601 data model (i.e. year, month, day, hour, minute, second, time zone).

Relation

Type:

Status:

Package:

Details:

Class

Proposed. Version 7. Phase 5.0.

DataModel

Created on 2/6/2007 4:21:54 PM. Modified on 7/30/2007 10:54:58 AM.

Abstract class defining relationship properties.

Custom Properties

Relation Attributes

Attribute	Type	Notes
Relative	private : <i>Product</i>	Instantiated target of the relationship.

Relationship

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 2/6/2007 4:40:04 PM. Modified on 7/30/2007 10:55:03 AM.

Concrete class defining ontological relationships between formats.

Custom Properties

Relationship Attributes

Attribute	Type	Notes
Type	private : <i>RelationshipType</i>	Enumerated relationship type.

Relationship

Type: **Association Class**
 Extends: *Base*.
Status: Proposed. Version 9. Phase 5.0.
Package: DataModel
Details: Created on 7/27/2007 3:49:23 PM. Modified on 7/27/2007 3:49:59 PM. Author: sabrams

Format relationship.

Custom Properties

Relationship Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Relationship</u> Child	<u>Base</u> Parent	

Relationship Attributes

Attribute	Type	Notes
Type	private : <i>RelationshipType</i>	Enumerated format relationship type.

Signature

Type: **Class**

Extends: *Base*.
Status: Proposed. Version 9. Phase 5.0.
Package: DataModel
Details: Created on 7/27/2007 3:37:46 PM. Modified on 7/27/2007 3:38:23 PM. Author: sabrams

Abstract class defining format signature properties.

Custom Properties

Signature Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>ExternalSignature</u> Child	<u>Signature</u> Parent	
<u>Generalization</u> source > target	<u>Signature</u> Child	<u>Base</u> Parent	
<u>Generalization</u> source > target	<u>InternalSignature</u> Child	<u>Signature</u> Parent	

Signature Attributes

Attribute	Type	Notes
Obligation	private : <i>SignatureObligation</i>	Enumerated signature obligation.
Value	private : <i>String</i>	Signature value.

Software

Type: **Class**
 Extends: *Product*.
Status: Proposed. Version 7. Phase 5.0.
Package: DataModel
Details: Created on 11/22/2006 2:51:33 PM. Modified on 7/31/2007 2:46:16 PM.

Concrete class for representing a software Product.

Custom Properties

Software Connections

Connector	Source	Target	Notes
<u>Association</u> HasDefault source > target	<u>Software</u> 0..*, unordered, none	<u>Format</u> 0..*, unordered, none	Optional association between a Software Product and a Format that it uses as a default.
<u>Association</u> Instantiates source > target	<u>Software</u> 1..*, unordered, none	<u>Process</u> 1..*, unordered, none	Optional association between tangible software Products and the abstract Processes they instantiate.
<u>Generalization</u> source > target	<u>Software</u> Child	<u>Product</u> Parent	

Software Attributes

Attribute	Type	Notes
ServicePack	private Range:0 to 1:	Optional service pack or patch level.

	<i>String</i>	
Type	private : <i>SoftwareType</i>	Enumerated software type.

TypedNotation

Type: **Class**

Extends: *Product*.

Status: Proposed. Version 7. Phase 5.0.

Package: DataModel

Details: Created on 2/6/2007 10:58:07 AM. Modified on 7/30/2007 10:55:21 AM.

Abstract class defining properties for typed notations.

Custom Properties

TypedNotation Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>TypedNotation</u> Child	<u>Product</u> Parent	
<u>Generalization</u> source > target	<u>Assessment</u> Child	<u>TypedNotation</u> Parent	
<u>Generalization</u> source > target	<u>Grammar</u> Child	<u>TypedNotation</u> Parent	
<u>Generalization</u> source > target	<u>Digest</u> Child	<u>TypedNotation</u> Parent	

TypedNotation Attributes

Attribute	Type	Notes
Value	private : <i>String</i>	Notated value.

Enumerations

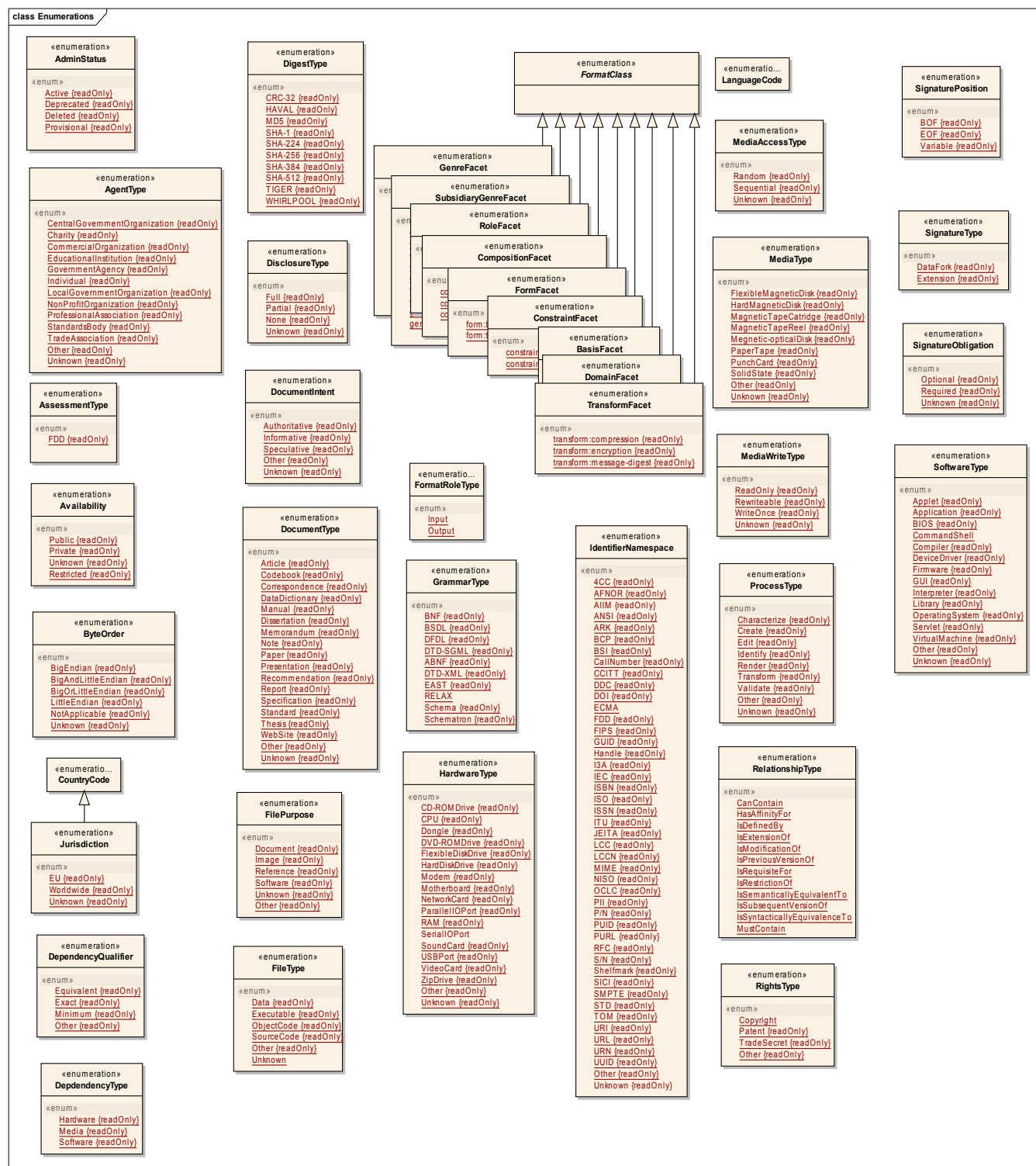


Figure 3 : Enumerations

Enumerations

Type: **Package**
Status: Proposed. Version 7. Phase 5.0.
Package: GDFR
Details: Created on 11/21/2006 5:18:26 PM. Modified on 7/30/2007 10:56:38 AM.

Authority control for enumerated data types.

Enumerations::AdminStatus

Type: **Class**
Status: Proposed. Version 7. Phase 5.
Package: Enumerations
Details: Created on 11/21/2006 5:03:46 PM. Modified on 7/30/2007 10:23:33 AM.

Authority control for enumerated administrative statuses.

Custom Properties

Enumerations::AdminStatus Attributes

Attribute	Type	Notes
Active «enum»	public const static :	
Deprecated «enum»	public const static :	Submitted for review for deletion
Deleted «enum»	public const static :	
Provisional «enum»	public const static :	Submitted for review for addition

Enumerations::AgentType

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 11/22/2006 9:02:32 AM. Modified on 7/30/2007 10:23:39 AM.

Authority control for enumerated agent types.

Custom Properties

Enumerations::AgentType Attributes

Attribute	Type	Notes
CentralGovernmentOrganization «enum»	public const static :	
Charity «enum»	public const static :	
CommercialOrganization «enum»	public const static :	

EducationalInstitution «enum»	public const static :	
GovernmentAgency «enum»	public const static :	
Individual «enum»	public const static :	
LocalGovernmentOrganizatio n «enum»	public const static :	
NonProfitOrganization «enum»	public const static :	
ProfessionalAssociation «enum»	public const static :	
StandardsBody «enum»	public const static :	
TradeAssociation «enum»	public const static :	
Other «enum»	public const static :	Other agent type
Unknown «enum»	public const static :	Aegnt type not known

Enumerations::AssessmentType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/6/2007 10:43:25 AM. Modified on 7/30/2007 10:23:47 AM.

Authority control for assessment types.

Custom Properties

Enumerations::AssessmentType Attributes

Attribute	Type	Notes
FDD «enum»	public const static :	Library of Congress Format Description Document

Enumerations::Availability

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 11:38:43 AM. Modified on 7/30/2007 10:23:54 AM.

Authority control for enumerated availability types.

Custom Properties

Enumerations::Availability Attributes

Attribute	Type	Notes
Public	public const static :	

«enum»		
Private «enum»	public const static :	No public document availability
Unknown «enum»	public const static :	Unknown document availability
Restricted «enum»	public const static :	Restricted public document availability

Enumerations::BasisFacet

Type: **Class**
 Extends: *FormatClass*.
Status: Proposed. Version 9. Phase 5.0.
Package: Enumerations
Details: Created on 8/2/2007 1:58:41 PM. Modified on 8/2/2007 1:59:07 PM. Author: sabrams

Authority control for the basis facet of the GDFR classification system.

Custom Properties

Enumerations::BasisFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>BasisFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::BasisFacet Attributes

Attribute	Type	Notes
basis:sampled «enum»	public const static :	Format that primarily represents its content as sample values. For example, PNG.
basis:symbolic «enum»	public const static :	Format that primarily represents its content as notational values. For example, PostScript.

Enumerations::ByteOrder

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 11/22/2006 2:53:23 PM. Modified on 7/30/2007 10:24:00 AM.

Authority control for enumerated for byte order types.

Custom Properties

Enumerations::ByteOrder Attributes

Attribute	Type	Notes
BigEndian «enum»	public const static :	
BigAndLittleEndian «enum»	public const static :	An instantiated byte stream can be both big-endian and litle-endian
BigOrLittleEndian «enum»	public const static :	An instantiated byte stream is either big-endian or little-endian
LittleEndian	public const static :	

«enum»		
NotApplicable «enum»	public const static :	The format is byte orientated, rather than word oriented
Unknown «enum»	public const static :	Unknown byte order

Enumerations::CompositionFacet

Type: **Class**
 Extends: *FormatClass*.
Status: Proposed. Version 9. Phase 5.0.
Package: Enumerations
Details: Created on 2/7/2007 10:56:49 AM. Modified on 8/2/2007 1:53:32 PM.

Authority control for the composition facet in the GDFR classification system.

Custom Properties

Enumerations::CompositionFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>CompositionFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::CompositionFacet Attributes

Attribute	Type	Notes
composition:unitary «enum»	public const static :	Format most usefully considered as a single atomistic entity. For example, US-ASCII.
composition:container-bundle «enum»	public const static :	Format most usefully considered as an aggregation of multiple independently-formatted bit streams without significant metadata defining the descriptive, technical, and structural characteristics of the constituent bit streams or the relationships between them. Bundle formats are typically used for convenient packaging for distribution or storage. For example, Tar.
composition:container-wrapper «enum»	public const static :	Format most usefully considered as an aggregation of multiple independently-formatted bit streams and significant metadata defining the descriptive, technical, and structural characteristics of the constituent bit streams and the relationships between them. For example, QuickTime.

Enumerations::ConstraintFacet

Type: **Class**
 Extends: *FormatClass*.
Status: Proposed. Version 9. Phase 5.0.
Package: Enumerations
Details: Created on 8/2/2007 1:56:47 PM. Modified on 8/2/2007 1:57:17 PM. Author: sabrams

Authority control for the constraint facet in the GDFR classification system.

Custom Properties

Enumerations::ConstraintFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>ConstraintFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::ConstraintFacet Attributes

Attribute	Type	Notes
constraint:structured «enum»	public const static :	Format most usefully considered as requiring a highly constrained organizational structure. For example, SGML.
constraint:unstructured «enum»	public const static :	Format most usefully considered as allowing a loosely constrained organizational structure. For example, ISO 8859-1.

Enumerations::CountryCode

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 9:16:37 AM. Modified on 7/30/2007 10:25:12 AM.

Authority control for country codes using ISO 3166-1 alpha-2 country codes.

Custom Properties

Enumerations::CountryCode Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Jurisdiction</u> Child	<u>CountryCode</u> Parent	

Enumerations::DependencyType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/6/2007 4:47:09 PM. Modified on 7/30/2007 10:25:06 AM.

Authority control for enumerated dependency types.

Custom Properties

Enumerations::DependencyType Attributes

Attribute	Type	Notes
Hardware «enum»	public const static :	
Media «enum»	public const static :	
Software «enum»	public const static :	

Enumerations::DependencyQualifier

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/6/2007 4:49:43 PM. Modified on 7/30/2007 10:25:02 AM.

Authority control for enumerated dependency requirement qualifiers.

Custom Properties

Enumerations::DependencyQualifier Attributes

Attribute	Type	Notes
Equivalent «enum»	public const static :	Equivalent product is acceptable (rather than requiring the exact product).
Exact «enum»	public const static :	Only this exact product is acceptable.
Minimum «enum»	public const static :	Minimally required product; newer or more comprehensive products are acceptable.
Other «enum»	public const static :	Other qualifier type.

Enumerations::DigestType

Type: Class

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/6/2007 10:46:05 AM. Modified on 7/30/2007 10:24:58 AM.

Authority control for message digest types.

Custom Properties

Enumerations::DigestType Attributes

Attribute	Type	Notes
CRC-32 «enum»	public const static :	
HAVAL «enum»	public const static :	
MD5 «enum»	public const static :	
SHA-1 «enum»	public const static :	
SHA-224 «enum»	public const static :	
SHA-256 «enum»	public const static :	
SHA-384 «enum»	public const static :	
SHA-512 «enum»	public const static :	
TIGER «enum»	public const static :	
WHIRLPOOL «enum»	public const static :	

Enumerations::DisclosureType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 2:48:14 PM. Modified on 7/30/2007 10:24:54 AM.

Authority control for enumerated disclosure types.

Custom Properties

Enumerations::DisclosureType Attributes

Attribute	Type	Notes
Full «enum»	public const static :	
Partial «enum»	public const static :	
None «enum»	public const static :	
Unknown «enum»	public const static :	Unknown disclosure

Enumerations::DocumentIntent

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 11:41:40 AM. Modified on 7/30/2007 10:24:50 AM.

Authority control for enumerated document intent types.

Custom Properties

Enumerations::DocumentIntent Attributes

Attribute	Type	Notes
Authoritative «enum»	public const static :	
Informative «enum»	public const static :	
Speculative «enum»	public const static :	
Other «enum»	public const static :	Other document intent
Unknown «enum»	public const static :	Unknown document intent

Enumerations::DocumentType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 11:23:58 AM. Modified on 7/30/2007 10:24:46 AM.

Authority control for enumerated document types.

Custom Properties

Enumerations::DocumentType Attributes

Attribute	Type	Notes
Article «enum»	public const static :	
Codebook «enum»	public const static :	
Correspondence «enum»	public const static :	
DataDictionary «enum»	public const static :	
Manual «enum»	public const static :	
Dissertation «enum»	public const static :	
Memorandum «enum»	public const static :	
Note «enum»	public const static :	
Paper «enum»	public const static :	
Presentation «enum»	public const static :	
Recommendation «enum»	public const static :	
Report «enum»	public const static :	
Specification «enum»	public const static :	
Standard «enum»	public const static :	
Thesis «enum»	public const static :	
WebSite «enum»	public const static :	
Other «enum»	public const static :	Other document type
Unknown «enum»	public const static :	Unknown document type

Enumerations::DomainFacet

Type:

Class

Extends: *FormatClass*.

Status:

Proposed. Version 9. Phase 5.0.

Package:

Enumerations

Details:

Created on 8/2/2007 2:00:19 PM. Modified on 8/2/2007 2:00:41 PM. Author: sabrams

Authority control for the domain facet in the GDFR classification system.

Custom Properties

Enumerations::DomainFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>DomainFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::DomainFacet Attributes

Attribute	Type	Notes
domain:astronomy «enum»	public const static :	Format primarily representing content in the astronomy domain. For example, FITS.
domain:cad-cam «enum»	public const static :	Format representing content primarily used in the CAD-CAM domain. For example, DXF.
domain:gis «enum»	public const static :	Format primarily representing content in the GIS domain. For example, GeoTIFF.

Enumerations::FilePurpose

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 2/1/2007 11:31:52 AM. Modified on 7/30/2007 10:25:34 AM.

Authority control for enumeratrd file purpose types.

Custom Properties**Enumerations::FilePurpose Attributes**

Attribute	Type	Notes
Document «enum»	public const static :	Instantiated document
Image «enum»	public const static :	Product image
Reference «enum»	public const static :	Format reference file
Software «enum»	public const static :	Instantiated software.
Unknown «enum»	public const static :	Unknown purpose.
Other «enum»	public const static :	Other purpose.

Enumerations::FileType

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 11/22/2006 11:48:28 AM. Modified on 7/30/2007 10:25:40 AM.

Authority control for enumerated file types.

Custom Properties

Enumerations::FileType Attributes

Attribute	Type	Notes
Data «enum»	public const static :	
Executable «enum»	public const static :	
ObjectCode «enum»	public const static :	
SourceCode «enum»	public const static :	
Other «enum»	public const static :	Other file type
Unknown «enum»	public static :	Unknown file type

Enumerations::FormatClass*Type:* **Class***Status:* Proposed. Version 9. Phase 5.0.*Package:* Enumerations*Details:* Created on 2/7/2007 10:56:49 AM. Modified on 8/2/2007 1:56:12 PM.

Authority control for enumerated format classification types. The actual class values are defined in terms of the independent facets of the GDFR classification system.

Custom Properties**Enumerations::FormatClass Connections**

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>DomainFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>RoleFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>GenreFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>ConstraintFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>TransformFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>BasisFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>FormFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>SubsidiaryGenreFacet</u> Child	<u>FormatClass</u> Parent	
<u>Generalization</u> source > target	<u>CompositionFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::FormatRoleType*Type:* **Class***Status:* Proposed. Version 9. Phase 5.0.

Package: Enumerations

Details: Created on 8/1/2007 9:27:30 AM. Modified on 8/1/2007 9:28:46 AM. Author: sabrams

Authority control for enumerated Format role types with respect to Processes.

Custom Properties

Enumerations::FormatRoleType Attributes

Attribute	Type	Notes
Input «enum»	public static :	Input format for a Process
Output «enum»	public static :	Output format for a Process.

Enumerations::FormFacet

Type: **Class**

Extends: *FormatClass*.

Status: Proposed. Version 9. Phase 5.0.

Package: Enumerations

Details: Created on 2/7/2007 10:56:49 AM. Modified on 8/2/2007 1:54:51 PM.

Authority control for the form facet in the GDFR classification system.

Custom Properties

Enumerations::FormFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>FormFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::FormFacet Attributes

Attribute	Type	Notes
form:binary «enum»	public const static :	Format that primarily encodes its content in binary form, dependent upon a format-specific rendering application for human consumption. For example, JPEG 2000.
form:text «enum»	public const static :	Format that primarily encodes its content in textual form, susceptible to human consumption using a non-format-specific text rendering application. For example, LaTeX.

Enumerations::GenreFacet

Type: **Class**

Extends: *FormatClass*.

Status: Proposed. Version 9. Phase 5.0.

Package: Enumerations

Details: Created on 2/7/2007 10:56:49 AM. Modified on 8/2/2007 1:50:49 PM.

Authority control for the genre facet in the GDFR classification system.

Custom Properties

Enumerations::GenreFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>GenreFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::GenreFacet Attributes

Attribute	Type	Notes
genre:aggregate «enum»	public const static :	Format that permits aggregation of content drawn from multiple genres. For example, Tar or ZIP.
genre:any «enum»	public const static :	Format whose content can be drawn from any one genre. For example, Gzip.
genre:database «enum»	public const static :	Format representing DBMS (hierarchical, object-oriented, relational, post-relational, etc.) content. For example, DBF.
genre:dataset «enum»	public const static :	Format whose content is non-DBMS data. For example, NetCDF, SAS XPORT, FITS, or CSV.
genre:document «enum»	public const static :	Format representing formatted page-orientation content. For example, PDF or Word.
genre:executable «enum»	public const static :	Format representing interpreted or compiled executable content. For example, ELF-32, Java byte code, or Perl.
genre:model «enum»	public const static :	Format representing two- or three-dimensional geometric models. For example, IGES
genre:moving-image «enum»	public const static :	Format representing dynamic (i.e. time-based) visual content. For example, AVI or MPEG-4.
genre:other «enum»	public const static :	Format whose content is not properly categorized by any other pre-defined genre.

Enumerations::GrammarType*Type:* **Class***Status:* Proposed. Version 7. Phase 5.0.*Package:* Enumerations*Details:* Created on 2/6/2007 11:03:52 AM. Modified on 7/30/2007 10:25:52 AM.

Authority control for enumerated grammar types.

Custom Properties**Enumerations::GrammarType Attributes**

Attribute	Type	Notes
BNF «enum»	public const static :	Backus-Naur Form.
BSDL «enum»	public const static :	Bitstream Syntax Description Language.
DFDL «enum»	public const static :	Data Format Description Language
DTD-SGML «enum»	public const static :	SGML Data Type Description.
ABNF «enum»	public const static :	Augmented Backus-Naur Form (RFC 2234).
DTD-XML «enum»	public const static :	XML Data Type Description.
EAST «enum»	public const static :	EAST Data Description Language.
RELAX	public static :	RELAX-NG XML schema.

«enum»		
Schema «enum»	public const static :	W3C XML Schema
Schematron «enum»	public const static :	ISO 19757-3 XML schema

Enumerations::HardwareType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 3:05:15 PM. Modified on 7/30/2007 10:25:57 AM.

Authority control for enumerated for hardware types.

Custom Properties

Enumerations::HardwareType Attributes

Attribute	Type	Notes
CD-ROMDrive «enum»	public const static :	
CPU «enum»	public const static :	
Dongle «enum»	public const static :	
DVD-ROMDrive «enum»	public const static :	
FlexibleDiskDrive «enum»	public const static :	
HardDiskDrive «enum»	public const static :	
Modem «enum»	public const static :	
Motherboard «enum»	public const static :	
NetworkCard «enum»	public const static :	
ParallelIOPort «enum»	public const static :	
RAM «enum»	public const static :	
SerialIOPort «enum»	public :	
SoundCard «enum»	public const static :	
USBPort «enum»	public const static :	
VideoCard «enum»	public const static :	
ZipDrive «enum»	public const static :	
Other «enum»	public const static :	Other hardware type
Unknown	public const static :	Unknown hardware type

«enum»		
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Enumerations::IdentifierNamespace

Type: **Class**

Status: Proposed, Version 10, Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 10:36:57 AM. Modified on 9/7/2007 3:33:20 PM.

Authority control for enumerated identifier namespaces.

Custom Properties

Enumerations::IdentifierNamespace Attributes

Attribute	Type	Notes
4CC «enum»	public const static :	4 Character Code
AFNOR «enum»	public const static :	AFNOR standard
AIIM «enum»	public const :	AIIM standard
ANSI «enum»	public const static :	ANSI (American National Standards Institute) standard
ARK «enum»	public const static :	Archival Resource Key
BCP «enum»	public const static :	IETF Best Current Practice
BSI «enum»	public const static :	BSI standard
CallNumber «enum»	public const static :	
CCITT «enum»	public const static :	CCITT (International Telephone and Telegraph Consultative Committee) standard
DDC «enum»	public const static :	Dewey Decimal Classification
DOI «enum»	public const static :	Digital Object Identifier
ECMA «enum»	public static :	ECMA (European Computer Manufacturers Association) standard
FDD «enum»	public const static :	Format Description Document identifier
FIPS «enum»	public const static :	Federal Information Processing Standard
GUID «enum»	public const static :	Globally Unique Identifier
Handle «enum»	public const static :	CNRI handle
I3A «enum»	public const static :	I3A (International Imaging Industry Association) standard
IEC «enum»	public const static :	IEC (International Electrotechnical Commission) standard
ISBN «enum»	public const static :	International Standard Book Number
ISO	public const static :	ISO (International Organization for Standardization) standard

«enum»		
ISSN «enum»	public const static :	International Standard Serial Number
ITU «enum»	public const static :	ITU (International Telecommunication Union) recommendation
JEITA «enum»	public const static :	JEITA (Japan Electronics and Information Technology Industries Association) standard
LCC «enum»	public const static :	Library of Congress Classification
LCCN «enum»	public const static :	Library of Congress Control Number
MIME «enum»	public const static :	MIME media type
NISO «enum»	public const static :	NISO (National Information Standards Organization) standard
OCLC «enum»	public const static :	OCLC number
PII «enum»	public const static :	Publisher Item Identifier
P/N «enum»	public const static :	Product number
PUID «enum»	public const static :	PRONOM Unique Identifier
PURL «enum»	public const :	Persistent URL
RFC «enum»	public const static :	IETF Request for Comment
S/N «enum»	public const static :	Serial number
Shelfmark «enum»	public const static :	
SICI «enum»	public const static :	Serial Item and Contribution Identifier
SMPTE «enum»	public const static :	SMPTE (Society of Motion Picture and Television Engineers) standard
STD «enum»	public const static :	IETF standard
TOM «enum»	public const static :	TOM identifier
URI «enum»	public const static :	Uniform Resource Identifier
URL «enum»	public const static :	Uniform Resource Locator
URN «enum»	public const static :	Uniform Resource Name
UUID «enum»	public const static :	Univerally Unique Identifier
Other «enum»	public const static :	Other namespace
Unknown «enum»	public const :	Unknown namespace

Enumerations::Jurisdiction

Type: **Class**
 Extends: *CountryCode*.
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 11/22/2006 10:26:07 AM. Modified on 7/30/2007 10:26:07 AM.

Authority control for enumerated for legal jurisdiction types.

Custom Properties

Enumerations::Jurisdiction Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Jurisdiction</u> Child	<u>CountryCode</u> Parent	

Enumerations::Jurisdiction Attributes

Attribute	Type	Notes
EU «enum»	public const static :	European Union
Worldwide «enum»	public const static :	
Unknown «enum»	public const static :	Jurisdiction not known

Enumerations::LanguageCode

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 11/22/2006 11:33:50 AM. Modified on 7/30/2007 10:26:11 AM.

Authority control for enumerated using ISO 639-2 alpha-3 language codes.

Custom Properties

Enumerations::MediaAccessType

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 11/22/2006 3:14:08 PM. Modified on 7/30/2007 10:26:15 AM.

Authority control for enumerated media access types.

Custom Properties

Enumerations::MediaAccessType Attributes

Attribute	Type	Notes
Random «enum»	public const static :	
Sequential «enum»	public const static :	Sequential

Unknown «enum»	public const static :	Unknown media access type
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Enumerations::MediaType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 3:11:49 PM. Modified on 7/30/2007 10:26:20 AM.

Authority control for enumerated media types.

Custom Properties

Enumerations::MediaType Attributes

Attribute	Type	Notes
FlexibleMagneticDisk «enum»	public const static :	
HardMagneticDisk «enum»	public const static :	
MagneticTapeCatridge «enum»	public const static :	
MagneticTapeReel «enum»	public const static :	
Megnetic-opticalDisk «enum»	public const static :	
PaperTape «enum»	public const static :	
PunchCard «enum»	public const static :	
SolidState «enum»	public const static :	
Other «enum»	public const static :	Other media type
Unknown «enum»	public const static :	Unknown media type

Enumerations::MediaWriteType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/7/2007 10:07:41 AM. Modified on 7/30/2007 10:26:24 AM.

Authority control for enumerate media write types.

Custom Properties

Enumerations::MediaWriteType Attributes

Attribute	Type	Notes
ReadOnly «enum»	public const static :	

Rewriteable «enum»	public const static :	
WriteOnce «enum»	public const static :	
Unknown «enum»	public const static :	Write type not known.

Enumerations::ProcessType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/7/2007 10:10:44 AM. Modified on 7/30/2007 10:26:29 AM.

Authority control for process types.

Custom Properties

Enumerations::ProcessType Attributes

Attribute	Type	Notes
Characterize «enum»	public const static :	
Create «enum»	public const static :	
Edit «enum»	public const static :	An operation that results in a changed instance of the same format, as opposed to a transform operation.
Identify «enum»	public const static :	
Render «enum»	public const static :	
Transform «enum»	public const static :	An operation that results in a new instance of a new format, as opposed to an edit operation.
Validate «enum»	public const static :	An operation that determines conformance to authoritative specifications.
Other «enum»	public const static :	Other process type.
Unknown «enum»	public const static :	Unknown process type.

Enumerations::RelationshipType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/6/2007 5:00:50 PM. Modified on 7/30/2007 10:26:35 AM.

Authority control for enumerated relationship types.

Custom Properties

Enumerations::RelationshipType Attributes

Attribute	Type	Notes
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CanContain «enum»	public static :	Can-contain relationship used to indicate an optional encapsulation. For example, ZIP can-contain any format.
HasAffinityFor «enum»	public static :	Has-affinity-for relationship used to indicate that two formats have a significant technical resemblance to each other but that do not meet the formal requirements of any of the other relationship types. For example, SPIFF has-affinity-to JPEG
IsDefinedBy «enum»	public static :	Is-defined-by relationship used to indicate the means by which a modification (or its more specific variants, restriction or extension) relationship is expressed. For example, ODF (Open Document Format) is-restriction-of XML, and ODF is-defined-by Relax NG. In other words, the rules that distinguish ODF from general XML are expressed in terms of Relax NG.
IsExtensionOf «enum»	public static :	<p>Is-extension-of relationship. For example, UTF-8 is-extension-of ASCII since all valid ASCII byte streams can be used in the context of any UTF-8-aware process without any loss of ASCII-enabled semantic function. Using a valid UTF-8 byte stream in the content of an ASCII-only-aware process may result in some loss of UTF-8-enabled semantic function.</p> <p>The fact that format A is an extension of format B necessarily implies that format B is a restriction of format A, and vice versa. Thus, the choice of which relationships to use to define the association is arbitrary. As a best practice, the one that is consistent with the temporal relationship of the associated formats should be used. Since PDF 1.4 was defined prior to PDF/A if makes better sense to say that PDF/A is a restriction of PDF 1.4. In other words, the selected relationship should use the temporally antecedent format as its source and the subsequent format as its target.</p>
IsModificationOf «enum»	public static :	Is-modification-of relationship, which has two more specific subsets: is-extension-of and is-restriction-of. For example, BWF (Broadcast Wave Format) is-modification-of WAVE since BWF both extends and restricts the baseline WAVE format, defining an additional Broadcast Audio Extension (“bext”) chunk and only allowing LPCM (linear pulse code modulation) audio. Neither extension nor restriction strictly applies since there are cases where a BWF cannot be used in a WAVE context without loss of function, e.g. dependencies on the “bext” chunk, and there are cases where a WAVE cannot be used in a BWF context, e.g. non-LPCM sampling.
IsPreviousVersionOf «enum»	public static :	<p>Is-previous-version-of relationship. For example, HTML 4.0 is-previous-version of HTML 4.01.</p> <p>The fact that format A is-previous-version-of format B, necessarily implies that format B is-subsequent-version-of format A. An older version may be, but is not necessarily, a restriction of the newer.</p>
IsRequisiteFor «enum»	public static :	<p>Is-requisite-for relationship usef to indiacte that an understanding of the otherwise unrelated target format is significant to an understanding of the source format. For example, ODF (Open Document Format) is-restriction-of XML and ODF is-defined-by Relax NG, so XML is-requisite-for Relax NG.</p> <p>The fact that format A is-modification-of format B and A is-defined-by C implies that B is-requisite-for C.</p>
IsRestrictionOf «enum»	public static :	Is-restriction-of relationship, a subset of is-modification-of. For example, PDF/A-1 is-restriction-of PDF 1.4 since the features of

		<p>PDF/A are a subset of those of PDF 1.4.</p> <p>The fact that format A is an extension of format B necessarily implies that format B is a restriction of format A, and vice versa. Thus, the choice of which relationships to use to define the association is arbitrary. As a best practice, the one that is consistent with the temporal relationship of the associated formats should be used. Since PDF 1.4 was defined prior to PDF/A if makes better sense to say that PDF/A is a restriction of PDF 1.4. In other words, the selected relationship should use the temporally antecedent format as its source and the subsequent format as its target.</p>
IsSemanticallyEquivalentTo «enum»	public static :	Is-semantically-equivalence-to relationship used to indicate the distinction between formats that differ in terms of data units used to express their data models. For example, DXF (ASCII) is- semantically-equivalent-to DXF (binary).
IsSubsequentVersionOf «enum»	public static :	Is-subsequent-version-of relationship. For example, Word 6.0 is-subsequent-version-of Word 97.
		The fact that format B is-subsequent-version-of format A, necessarily implies that format A is-previous-version-of format B. A newer version may be, but is not necessarily, an extension of the older.
IsSyntacticallyEquivalenceTo «enum»	public static :	Is-syntactically-equivalent-to relationship used to indicate the distinction between formats that differ only in terms of their serialization. For example, TIFF (big-endian) is-syntactically-equivalent-to TIFF (little-endian).
MustContain «enum»	public static :	Must-contain relationship used to indicate an obligatory encapsulation. For example, PDF/A must-contain XMP metadata.

Enumerations::RightsType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 11/22/2006 10:30:28 AM. Modified on 7/30/2007 10:26:39 AM.

Authority control for enumerated IP right types.

Custom Properties

Enumerations::RightsType Attributes

Attribute	Type	Notes
Copyright «enum»	public static :	
Patent «enum»	public const static :	
TradeSecret «enum»	public const static :	
Other «enum»	public const static :	

Enumerations::RoleFacet

Type: Class
 Extends: *FormatClass*.
Status: Proposed. Version 9. Phase 5.0.
Package: Enumerations
Details: Created on 2/7/2007 10:56:49 AM. Modified on 8/2/2007 1:52:16 PM.

Authority control for the role facet in the GDFR classification system.

Custom Properties

Enumerations::RoleFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>RoleFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::RoleFacet Attributes

Attribute	Type	Notes
role:family «enum»	public const static :	Classification for general classes of formats with common familial features. For example, GIF (as distinguished from the specific GIF 87a or GIF89a file formats).
role:file-format «enum»	public const static :	Classification for a specific format most usefully considered as an independent file. For example, GIF 87a (as opposed to the GIF format family).
role:encoding «enum»	public const static :	Classification for formats most usefully considered as bit stream components of encompassing files. For example, LZW or other transformative algorithms.
role:serialization «enum»	public const static :	Classification for serialization algorithms. For example, UTF-8.

Enumerations::SignatureObligation

Type: Class
 Extends: *FormatClass*.
Status: Proposed. Version 7. Phase 5.0.
Package: Enumerations
Details: Created on 2/6/2007 11:50:12 AM. Modified on 7/30/2007 10:26:43 AM.

Authority control for enuemrated signature obligations.

Custom Properties

Enumerations::SignatureObligation Attributes

Attribute	Type	Notes
Optional «enum»	public const static :	Optional signature.
Required «enum»	public const static :	Required signature.
Unknown «enum»	public const static :	Unknown obligation.

Enumerations::SignaturePosition

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/6/2007 11:37:55 AM. Modified on 7/30/2007 10:26:48 AM.

Authority control for enumerated internal signature position types.

Custom Properties

Enumerations::SignaturePosition Attributes

Attribute	Type	Notes
BOF «enum»	public const static :	Fixed offset from beginning-of-file.
EOF «enum»	public const static :	Fixed offset from end-of-file.
Variable «enum»	public const static :	Variable position.

Enumerations::SignatureType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/6/2007 11:33:53 AM. Modified on 7/30/2007 10:26:53 AM.

Authority control for enumerated external signature types.

Custom Properties

Enumerations::SignatureType Attributes

Attribute	Type	Notes
DataFork «enum»	public const static :	Mac OS data fork type.
Extension «enum»	public const static :	File extension.

Enumerations::SoftwareType

Type: **Class**

Status: Proposed. Version 7. Phase 5.0.

Package: Enumerations

Details: Created on 2/1/2007 11:45:47 AM. Modified on 7/30/2007 10:26:58 AM.

Authority control for enumerated software types.

Custom Properties

Enumerations::SoftwareType Attributes

Attribute	Type	Notes
Applet «enum»	public const static :	

Application «enum»	public const static :	
BIOS «enum»	public const static :	
CommandShell «enum»	public static :	
Compiler «enum»	public const static :	
DeviceDriver «enum»	public const static :	
Firmware «enum»	public const static :	
GUI «enum»	public const static :	
Interpreter «enum»	public const static :	
Library «enum»	public const static :	
OperatingSystem «enum»	public const static :	
Servlet «enum»	public const static :	
VirtualMachine «enum»	public const static :	
Other «enum»	public const static :	Other software type.
Unknown «enum»	public const static :	Unknown software type.

Enumerations::SubsidiaryGenreFacet

Type: **Class**
 Extends: *FormatClass*.
Status: Proposed. Version 9. Phase 5.0.
Package: Enumerations
Details: Created on 2/7/2007 10:56:49 AM. Modified on 8/2/2007 2:27:34 PM.

Authority control for the subsidiary-genre facet in the GDFR classification system.

Custom Properties

Enumerations::SubsidiaryGenreFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>SubsidiaryGenreFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::SubsidiaryGenreFacet Attributes

Attribute	Type	Notes
genre:aggregate «enum»	public const static :	Format that permits aggregation of content drawn from multiple genres. For example, Tar or ZIP.
genre:any «enum»	public const static :	Format whose content can be drawn from any one genre. For example, Gzip.
genre:database «enum»	public const static :	Format representing DBMS (hierarchical, object-oriented, relational, post-relational, etc.) content. For example, DBF.

genre:dataset «enum»	public const static :	Format whose content is non-DBMS data. For example, NetCDF, SAS XPORT, FITS, or CSV.
genre:document «enum»	public const static :	Format representing formatted page-orientation content. For example, PDF or Word.
genre:executable «enum»	public const static :	Format representing interpreted or compiled executable content. For example, ELF-32, Java byte code, or Perl.
genre:model «enum»	public const static :	Format representing two- or three-dimensional geometric models. For example, IGES
genre:moving-image «enum»	public const static :	Format representing dynamic (i.e. time-based) visual content. For example, AVI or MPEG-4.
genre:other «enum»	public const static :	Format whose content is not properly categorized by any other pre-defined genre.

Enumerations::TransformFacet

Type:

Class

Extends: *FormatClass*.

Status:

Proposed. Version 9. Phase 5.0.

Package:

Enumerations

Details:

Created on 8/2/2007 2:03:18 PM. Modified on 8/2/2007 2:03:43 PM. Author: sabrams

Authority control for the transform facet in the GDFR classification system.

Custom Properties

Enumerations::TransformFacet Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>TransformFacet</u> Child	<u>FormatClass</u> Parent	

Enumerations::TransformFacet Attributes

Attribute	Type	Notes
transform:compression «enum»	public const static :	Format representnig the implementation of a compression algorithm. For example, Gzip.
transform:encryption «enum»	public const static :	Format representing an iimplementiin of an encryption algorithm. For example, PDF.
transform:message-digest «enum»	public const static :	Format representing the implementation of a message digest algorithm. For example, MD5.

DerivedTypes

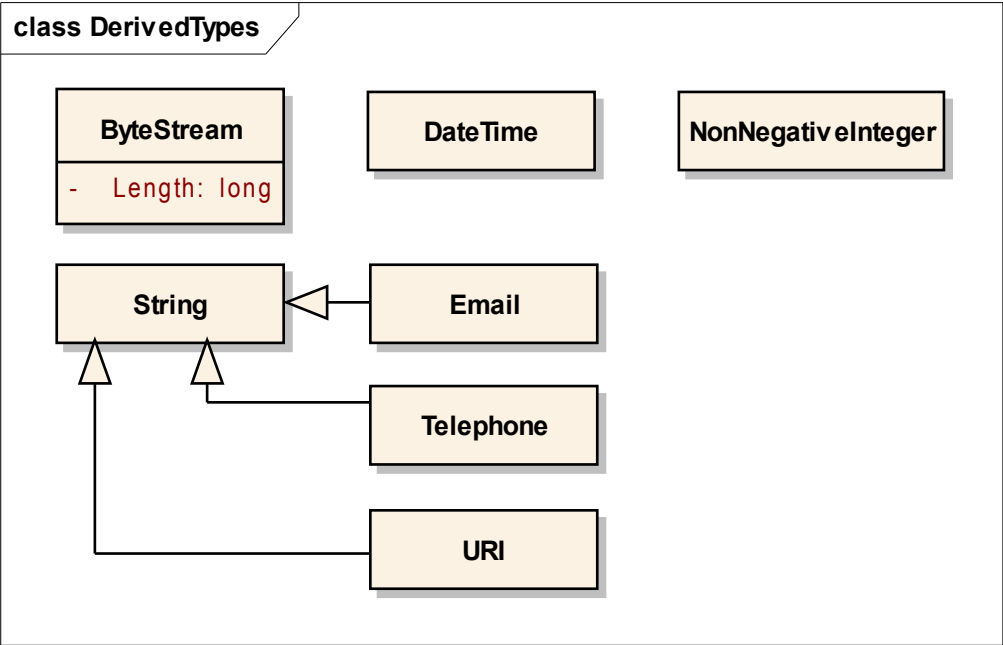


Figure 3 : DerivedTypes

DerivedTypes

Type: **Package**
Status: Proposed. Version 9. Phase 5.0.
Package: GDFR
Details: Created on 11/21/2006 5:16:15 PM. Modified on 8/1/2007 9:16:22 AM.

Complex data types not supported natively in UML.

DerivedTypes::ByteStream

Type: **Class**
Status: Proposed. Version 9. Phase 5.0.
Package: DerivedTypes
Details: Created on 11/22/2006 11:53:14 AM. Modified on 7/30/2007 10:16:16 AM.

Arbitrary byte stream.

Custom Properties

DerivedTypes::ByteStream Attributes

Attribute	Type	Notes
Length	private : long	Length of the byte stream.

DerivedTypes::DateTime

Type: **Class**
Status: Proposed. Version 9. Phase 5.0.
Package: DerivedTypes
Details: Created on 11/22/2006 9:48:13 AM. Modified on 7/30/2007 10:21:57 AM.

Date and (optional) time stamp, expressed in terms of the ISO 8601 format. At its full granularity, this type is capable of expressing year, month of year, day of month, hour of day, minute of hour, second of minute, and time zone (reflecting daylight savings status), or equivalently the offset from UTC.

Custom Properties

DerivedTypes::Email

Type: **Class**
 Extends: *String*.
Status: Proposed. Version 7. Phase 5.0.
Package: DerivedTypes
Details: Created on 11/22/2006 9:48:42 AM. Modified on 7/30/2007 10:22:07 AM.

RFC 2821-formated Simple Mail Transfer Protocol (SMTP) Internet email address.

Custom Properties

DerivedTypes::Email Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Email</u> Child	<u>String</u> Parent	

DerivedTypes::NonNegativeInteger

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: DerivedTypes
Details: Created on 2/6/2007 11:44:50 AM. Modified on 7/30/2007 10:22:21 AM.

Non-negative integer, i.e. 0, 1, 2, 3, ...

Custom Properties

DerivedTypes::String

Type: **Class**
Status: Proposed. Version 7. Phase 5.0.
Package: DerivedTypes
Details: Created on 11/22/2006 9:47:47 AM. Modified on 7/30/2007 10:22:29 AM.

Unicode character string.

Custom Properties

DerivedTypes::String Connections

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Email</u> Child	<u>String</u> Parent	
<u>Generalization</u> source > target	<u>URI</u> Child	<u>String</u> Parent	
<u>Generalization</u> source > target	<u>Telephone</u> Child	<u>String</u> Parent	

DerivedTypes::Telephone

Type: **Class**
 Extends: *String*.
Status: Proposed. Version 7. Phase 5.
Package: DerivedTypes
Details: Created on 11/22/2006 9:50:16 AM. Modified on 7/30/2007 10:22:36 AM.

ITU-T E.164-formatted telephone number.

Custom Properties***DerivedTypes::Telephone Connections***

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>Telephone</u> Child	<u>String</u> Parent	

DerivedTypes::URI

Type: **Class**
 Extends: *String*.
Status: Proposed. Version 7. Phase 5.0.
Package: DerivedTypes
Details: Created on 11/22/2006 9:50:50 AM. Modified on 7/30/2007 10:22:43 AM.

RFC 3986-formatted Uniform Resource Identifier (URI).

Custom Properties***DerivedTypes::URI Connections***

Connector	Source	Target	Notes
<u>Generalization</u> source > target	<u>URI</u> Child	<u>String</u> Parent	