Publications Office

CELLAR

CELLAR Interface

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1 ADMINISTRATION

1.1 IDENTIFICATION

This document is part of deliverable DLV0006 of the contract.

1.2 ABSTRACT

The document details the dissemination interface services and protocols. As these services are important for setting up indexing and search functionalities, the body of the document explains a lot of the logic behind these services.

In addition, some administrative functions are detailed, giving necessary context also to open ended decoding and indexing issues.

1.3 AUDIENCE

Publications Office's CELLAR project team

Portal development team

Index and Search layer development team

Cellar development team

Cellar deployment installation and documentation

1.4 DEFINITIONS

Term	Description
CCR manifestation metadata	Technical metadata of a manifestation, stored in the CCR.
Cellar-ID	Cellar Identifier
Cellar-URI	Cellar URI
CMR Branch-Notice	a [content] language specific xml document including work metadata, one expression metadata and for that expression all available manifestation metadata. All metadata is decoded in the decoding language. It is a subset of the Tree Notice.
CMR Index-Notice	a [content] language specific xml document with indexed metadata for a specific resource. All metadata is decoded in the language of the resource. It is a subset of the Tree Notice because only selected properties are used for indexing and it only covers one expression.

Term	Description
CMR Object-Notice	a [content] language specific xml document with the metadata for a specific resource. All metadata is decoded in the decoding language. It is a subset of the Tree Notice because only one object is in scope, not hierarchically dependent objects (e.g. an expression but not its manifestations)
CMR Tree-Notice	an xml document including work metadata, all available expression metadata and for each expression all available manifestation metadata. All metadata is decoded in the decoding language. The Tree notice also applies to the dossier/event hierarchy, next to the above handled work/expression/manifestation.
CMR RDF-Notice	The RDF/XML notice format for a specific resource
Content Language	HTTP defined (see [14]). The language of a resource requested and delivered over http protocol.
Decoding	Decoding is the action of adding the translation of a classification with an NAL code into a language specific language. This translation includes a fallback procedure in case the NAL does not provide the requested language specific label.
Decoding Language	The language used for notices to decode NAL and EUROVOC concepts into the specific natural language. The decoding language has configured fallback languages.
Inverse section	The set of all properties of a current (subject) resource that where inferred based on owl:inverseOf from properties of other resources having the current resource as an object.
PS-ID	Production System Identifier
PS-URI	Production System URI
Resource base URI	The lead-in string of a URI as determined by the URI naming convention for CELLAR and for production systems delivering to CELLAR.
SKOS version difference list	the list of removed codes and of codes and languages for modified preferred and alternate labels.
structMap	A METS element. The PO variant of a METS message defines each structMap to be the defining scope of a load transaction.

1.5 ACRONYMS

Only project specific acronyms are listed below (excluding W3C, IETF, ISO, SKOS, URI, IRI, XML, FRBR, METS and like generally well known standard acronyms)

Acronym	Full name
CCL	Cellar Common Reception Layer

Acronym	Full name
CCR	Common Content Repository
CMR	Common Metadata Repository
CURIE	Compact URI
NAL	Named Authority List
PO	Publications Office
PS	Production System (see **CMR production systems**)

1.6 REFERENCES

Input for this document is refers to:

Ref	short name	location
[1]	Cellar naming convention	https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Technical%20documents/From%20OP/cellar_naming_convention/CELLAR_NamingConvention.doc
[2]	CELLAR mets specification	https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Technical%20documents/From%20OP/METS%201.0/Cellar%20METS%201.0.1.doc Updated in https://webgate.ec.europa.eu/publications/svn/MetaConv/trunk/Cellar-Mets/Documentation/Cellar METS.doc
[3]	CELLAR functional analysis	https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Deliverables/DLV0003%20-%20Functional%20Requirements/CELLAR-Functional%20Analysis_v7.0.docx
[4]	CELLAR technical architecture	https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Deliverables/DLV0004%20-%20Technical%20Architecture/ARCHITECTURE%20OPOCE-CELLAR-technical.docx https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Deliverables/DLV0004%20-%20Technical%20Architecture/CELLAR%20-%20Fedora%20-%20Content%20Model%20-%20Annex%20to%20Architecture.docx (version 0.9) https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Deliverables/DLV0004%20-%20Technical%20Architecture/CELLAR-CMR-Architecture.docx
[5]	Discussion document CELLAR-IDOL/EurLex interface telephone conference	
[6]	Eur-Lex Oracle table - interface specification	https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Technical%20documents/From%20OP/CELLAR%20-%20IDOL%20interface/Interface%20CELLAR%20and%20IDOL.docx
[7]	IDOL Admin guide specification	
[8]	IDOL Thesaurus System	
[9]	CMR Ontology	http://cellar.jira.com/wiki/display/frompo/The+Common+Data+Model+%28CDM%29+of+the+Publications+Office
[10]	W3C note on Cool URI	http://www.w3.org/TR/cooluris/
[11]	W3C note on best practices for content negotiation	http://www.w3.org/TR/swbp-vocab-pub/
[12]	IETF IRI and URI RFC	http://www.ietf.org/rfc/rfc3987.txt and http://www.ietf.org/rfc/rfc3987.txt
[13]	ISO language code	http://www.loc.gov/standards/iso639-2/ and http://www.sil.org/iso639-3/download.asp
[14]	HTTP protocol	http://www.w3.org/Protocols/rfc2616/rfc2616.html
15	ELX-CL-FAD-Functional Analysis and Design	ELX-CL-FAD-Functional Analysis and Design-v0.02 document
[16]	SKOS Reference	http://www.w3.org/TR/skos-reference/
[17]	SPARQL protocol	http://www.w3.org/TR/rdf-sparql-protocol/

Ref	short name	location
[18]	METS 1.0.2 specification of the METS package.	https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Technical%20documents/From%20OP/METS%201.0/Cellar%20METS%201.02.doc
[19]	Joseki protocol specification	http://www.joseki.org/protocol.html#http
[20]	Acceptance remarks 2010-12-06	https://workspace.irislink.com/sites/io/cellar/Shared%20Documents/Deliverables/DLV0006%20-%20System%20Interfaces%20API%20Specification/CELLAR-acceptance%20sheet-DLV0006-v0.3.1.pdf
[21]	TDM Ontology	https://webgate.ec.europa.eu/publications/svn/MetaConv/trunk/tdm/tdm.rdf
[22]	Updated mime type requirements	mail Willem Van Gemert - "RE: EUR-Lex/CELLAR manifestation-types", 2011-01-21T09:48 and 2011-01-25T23:23

2 LIST OF SERVICES

2.1 DEFINED SERVICES

2.1.1 RESOURCE ACCESS SERVICES

- Content negotiation and URI resolution provides access to CELLAR content and metadata resources. Two notices that content-wise are nearly equivalent but for which different formats are provided:
  - Get object notice for a given resource in a specified language (with fallback) (see 5.5).
  - Get the RDF/XML formatted metadata for a given resource (see 5.8).
- Get the identifier (mapping) notice for a given list of resources (see 5.4).
- Get Tree notice for a work or dossier in a given language (or a requested fallback) (see 5.6).
- Get Branch notice for an expression in a given language (or a requested fallback) (see 5.7)

2.1.2 INDEX PROVISIONING SERVICES

- Trigger Indexing: signal new and updated resources via the IDOL interface (see [7]). Resources may or may not have content. Resources always have metadata.
  - Re-index all resources targeted by any invertible property of the ingested resource. (e.g. on ingestion of work A, A work_cites_work B is invertible to B work_cited_by_work A. All such B need to be re-indexed on ingestion of A)
  - Index an ingested resource targeted by inverse properties of any loaded resource. (e.g. on ingestion of A, all works B with B work_cites_work A are invertible to A work_cited_by_work B. A must include all these inverse properties in its Indexing Notice,)
- Remove from indexer: Signal removed resources via the IDOL interface.

2.1.3 CONCEPT SCHEME ACCESS SERVICES

2.1.3.1 Language independent services

1. Check if a concept scheme has been updated
2. Get the supported languages of a concept scheme
3. Get the Concept Scheme details

2.1.3.2 Language specific services

1. Get the top concepts of a concept scheme
2. Get the language description of a concept
3. Translate a concept

4. Get the contents related to a given concept (narrower, broader, related)

2.1.4CONCEPT SCHEME LOADING AND DECODING SERVICES

- Load NAL (excluding EUROVOC) and decode it in a specific language, including language fallback decoding for the preferred label. (see 4.1.2.2 and 4.4)
- Load and decode EUROVOC in a specific language, including domain, micro-thesaurus, top-term and including language fallback procedures for decoding. (see 4.1.2.2)
- Calculate the SKOS version difference list for a new ingested NAL (or for EUROVOC) compared to its previous version.
- Get the list of documents that need re-indexing based on the SKOS version difference list.
- Prepare the re-indexing of a list of specified resources, including re-decoding and submission to IDOL.
- Concept decoding includes alternate labels

3 RESOURCE IDENTIFICATION

3.1 PRODUCTION SYSTEM IDENTIFIERS

Based on naming conventions (see [1]), CELLAR uses at present the following production system identifiers:

Table 1: Production System (PS)

CMR production systems	Class	Procat identifier	Comment	Base URI of the Alias
celex	WEM	ID_CELEX		http://publications.europa.eu/resource/celex/
oj	WEM	ID_JO		http://publications.europa.eu/resource/oj/
com	WEM	ID_COM		http://publications.europa.eu/resource/com/
genpub	WEM	ID_PUB		http://publications.europa.eu/resource/genpub/
ep	WEM	ID_PE		http://publications.europa.eu/resource/ep/
jurisprudence	WEM	ID_RECUEIL		http://publications.europa.eu/resource/jurisprudence/
dd	WEM	ID_DD	Secondary legislation	http://publications.europa.eu/resource/dd/
mtf	WEM	ID_MTF	Merger Task Force	http://publications.europa.eu/resource/mtf/
consolidation	WEM	ID_CONSLEG		http://publications.europa.eu/resource/consolidation/
eurostat	WEM	ID_EUROSTAT		http://publications.europa.eu/resource/eurostat/
eesc	WEM	ID_CES	European Economic and Social Committee	http://publications.europa.eu/resource/eesc/
cor	WEM	ID_CDR	Committee of the Regions	http://publications.europa.eu/resource/cor/
nim	WEM		National Implementing Measure	http://publications.europa.eu/resource/nim/
pegase	Temporal entity		Used to identify dossiers and events	http://publications.europa.eu/resource/pegase/
transjai	Temporal entity			http://publications.europa.eu/resource/transjai/
agent	Agent			http://publications.europa.eu/resource/agent/

Note: product system names must be single words. 'cellar' cannot be used as that is reserved for the CELLAR system.

3.1.1THE URI RESOURCE NAMING CONVENTION

3.1.1.1 The PS-URI and the Resource Base URI

The following naming convention is established by this table:

1) each production system identifies its resources using a resource *URI prefix*. The prefix is:
   a. In development: http://cellar-dev.publications.europa.eu/
   b. In test: http://cellar-test.publications.europa.eu/
   c. In production: http://publications.europa.eu/
   (used in the remainder of this document)
2) Four types of resources are foreseen. Each of these adds a different segment to the system specific URI prefix to establish the *resource type URI*
   a. content and metadata resources resource/
   b. schema ontology/
   c. NAL resource/authority/[1]
   d. Web API services webapi/
3) the resource type URI gets appended with the production system name (e.g. "celex", "oj", ...) and with a forward slash '/'
   The CELLAR system adheres to this convention using "cellar" as the system name (see 3.2).
   The obtained result is the *resource base URI*.
4) the URI suffix is the system specific identifier of the resource (PS-id)
5) The PS-id has a structure with the following convention.

[1] EUROVOC is an exception as it has an established URI convention: for any concept. The URI prefix = resource-type-URI = resource base URI ='http://eurovoc.europa.eu/'

Table 2: Production System Identifiers (PS-id)

resource class	PS-id pattern	remark
work, dossier, agent	[0-9,a-z,A-Z]+	
expression	[0-9,a-z,A-Z]+\.[a-z]{3}	[a-z]{3} is an ISO 3 char language code
manifestation	[0-9,a-z,A-Z]+\.[a-z]{3}\.[0-9,a-z,A-Z]+	[a-z]{3} is an ISO 3 char language code; The part after the last point if a type specific extension
event	[0-9,a-z,A-Z]+\.[0-9]+	

PS URI have the following format:

```
http://publications.europa.eu/resource/{PS}/{PS-id}

http://publications.europa.eu/resource/oj/JOL_2006_088_R_0063_01
http://publications.europa.eu/resource/celex/32006D0241.dan
http://publications.europa.eu/resource/celex/32006D0241.fra.PDF
http://publications.europa.eu/resource/pegase/11260
http://publications.europa.eu/resource/pegase/11260.12796
```

3.1.1.2 CURIE format of a URI

For practical reasons, URIs are abbreviated onto a CURIE format. This is done by making the system name the alias of the system base URI. Example:

```
xmlns:celex="http://publications.europa.eu/resource/celex/"
```

This allows us to abbreviate "`http://publications.europa.eu/resource/celex/1234R5678`" to "`celex:1234R5678`".

3.2 CELLAR GENERATED IDENTIFIERS

CELLAR identifiers will also follow the CCR convention (defined by [4]). The trailing segment has a maximum length of 64 characters.

The CELLAR-URI can be calculated by expanding the CELLAR-CURIE using the following namespace:

```
xmlns:cellar="http://publications.europa.eu/resource/cellar/"
```

Table 3: CELLAR Identifier Formats (id, CURIE, URI)

Type	Persistent CCR-id	CELLAR CURIE	Example
Work, Dossier, Event, Agent	**{UUID}**	cellar:{UUID}	cellar:550e8400-e29b-41d4-a716-446655440000
Expression	{work-id}.**{expr-id}**	cellar:{work-id}.{expr-id}	cellar:550e8400-e29b-41d4-a716-446655440000.0001
Manifestation	{work-id}.{expr-id}.**{man-id}**	cellar:{work-id}.{expr-id}.{man-id}	cellar:550e8400-e29b-41d4-a716-446655440000.0001.03
Manifestation data stream	{work-id}.{expr-id}.{man-id}/**{ds-id}**	cellar:{work-id}.{expr-id}.{man-id}/{ds-id}	cellar:550e8400-e29b-41d4-a716-446655440000.0001.03/Doc_1

Note:

`{UUID}` *for a unique universal identifier.*

`{work-id}` *is a* `{UUID}` *for a resource of class work.*

`{expression-id}` *or* `{expr-id}` *identifies an expression relative to its work identifier* `{work-id}.` (4 chars)

`{manifestation-id}` *or* `{man-id}` *identifies a manifestation relative to its expression identified by* `{work-id}.{expression-id}.` (2 chars)

`{ds-id}` *identifies a data stream relative to its manifestation identified by* `{work-id}.{expression-id}.{manifestation-id}.`

4 SERVICE SPECIFICATION

4.1 CONTENT NEGOTIATION

Use PO URI naming scheme to extract a data stream or metadata using a PS-URI or a Cellar-URI (see 3 Resource Identification). These services are described in reference [1].

4.1.1API

HTTP GET REST services to extract data streams or metadata from CELLAR, depending HTTP headers (accept mime type, language) and depending the specified parameters (decoding language) and type.

The HTTP host is configurable and allows deployment on different systems (test, staging, production).

4.1.1.1 Object Data Stream URI

To retrieve a data stream the typical request uses a CELLAR/CCR URI:

```
Host: publications.europa.eu
GET: /resource/cellar/{work-id}.{expression-id}.{manifestation-id}/{data-stream-id}
```

The CELLAR object data stream URI typically is found with the element `<object_ccr_data-stream>` in the object notice of a manifestation (see 5.5 Object notice format), in the Branch-notice (see 5.7 Branch notice format) or in the Tree notice of a work (see 5.6 Tree notice format).

Alternatively Cool URI and content negotiation services allow using PS-URI.

If the object or data stream resource does not exist a 404 error is returned.

4.1.1.2 Cool URI

W3C cool URI (see [10]) configuration may be used. Two URI formats are possible:

4.1.1.2.1 PS-URI

The PO production system URI will respond to with a forwarded CELLAR-URI (see 4.1.2.1). PS URI are defined in 3.1 Production system identifiers. (The format of {PS-id} is free except for following URI standard).

```
Host: publications.europa.eu
GET: /resource/{PS}/{PS-id}
```

4.1.1.2.2 Cellar URI

The CELLAR URI in which the `{cellar-id}` has one of the following formats (see 3.2 CELLAR Generated Identifiers - as defined there, dossier, work, agent and event are all UUID):

`{UUID}`

`{work-id}.{expression-id}`

`{work-id}.{expression-id}.{manifestation-id}`

`{work-id}.{expression-id}.{manifestation-id}/{ds-id}`

```
GET: /resource/cellar/{cellar-id}
Host: publications.europa.eu
```

4.1.1.3 General HTTP Parameters

The description of the parameters refers to [14].

Image 1: HTTP Request parameters

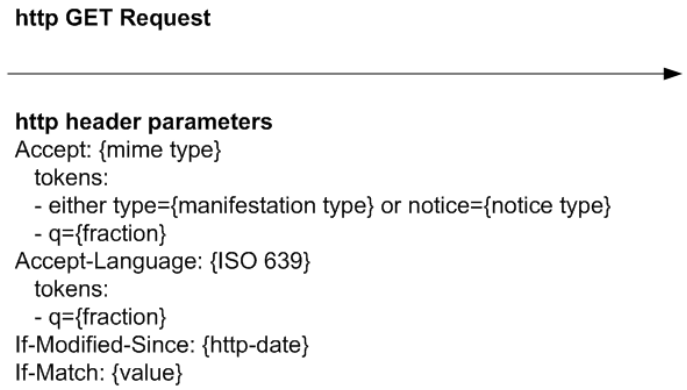
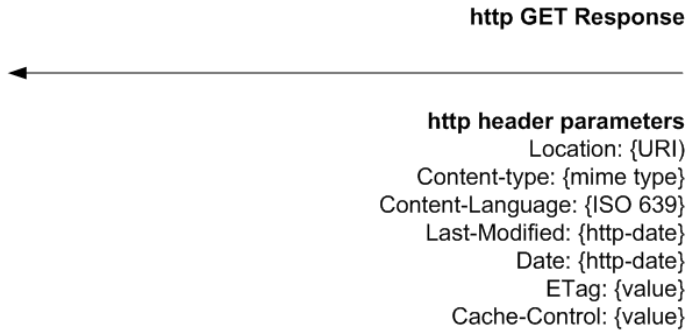


Image 2: HTTP Response parameters



4.1.1.3.1 Accept:

Used in GET request

Purpose: Serves the content negotiation by giving the preferred content media encoding(s).

Multiple media types can be specified, each with a weight. The value */* indicates any type is ok.

If the GET URI is already type specific (e.g. /resource/celex/1234R5678.eng.pdf) and if the resource there conflicts with the Accept MIME-type, then a 400 error will be returned.

4.1.1.3.1.1 "type" Token

The possible values for the parameter type (`{manifest.-type}`) are listed in **Manifestation type value**.

Used in conjunction with HTTP Accept (see 4.1.1.3.1 Accept:) to establish the required manifestation or data stream.

The type parameter and the HTTP Accept parameter must be consistent (on the same row in Table 6: Manifestation Types and MIME types)

4.1.1.3.1.2 "notice" Token

The notice token can only be used with the application/xml MIME type. It can only be combined with the http protocol defined "q" token.

The notice token values determine the return format:

Table 4: Notice Token and Notice format

value	notice format
tree	5.6 Tree notice format
branch	5.7 Branch notice format
object	5.5 Object notice format
identifier	5.4 Identifier notice format

Examples:

```
Accept: text/html
Accept: application/xml;notice=tree
Accept: application/xml;notice=branch
Accept: application/xml;notice=object
Accept: application/xml;notice=identifier
Accept: application/xml;type=fmx4, application/xml;type=fmx3;q=0.9, application/xml;type=fmx2;q=0.8
Accept: application/pdf;type=pdf1x, application/pdf;type=pdfa1a;q=0.9, application/pdf;type=pdfa1b;q=0.8
```

4.1.1.3.2 Accept-Language:

format of a language: ll [+ '-' + cc]
ll is ISO 639 2-char code
cc is ISO 3166 2-char Country Code
the value * indicates any language is ok.

Used in: GET request

Purpose: serves content language negotiation. By default it also is the decoding language (if a decoding language is applicable).

If the GET URI is already language specific (e.g. /resource/celex/1234R5678.eng) and if it conflicts with the Accept-Language, then a 400 error will be returned.

Multiple languages can be specified, each with a weight.

Example:

```
Accept-Language: da, en;q=0.8, fr;q=0.7
```

4.1.1.3.3 If-Modified-Since:

Format: http-date

Used in: GET request

Purpose: can be used to suppress needless network traffic. The response may be a 304 code indicating the requested resource did not change since the specified date.

Example:

```
If-Modified-Since: Sun, 06 Nov 1994 08:49:37 GMT
```

For possible optimizations see Annex B: Cache Optimization.

4.1.1.3.4 Last-Modified:

Format: http-date

Used in: GET response

Purpose: Indicates the last modification date of the resource.

Example:

```
Last-Modified: Sun, 06 Nov 1994 08:49:37 GMT
```

4.1.1.3.5 Content-Language:

format of a language: ll [+ '-' + cc]
ll is ISO 639 2-char code
cc is ISO 3166 2-char Country Code

Used in: GET response

Purpose: indicates the language of the requested resource content in the response. I.e. the requested notice or the requested [pdf, xhtml,...] content. Content-Language never refers to the language of the decoding.

Example:

```
Content-Language: da
```

4.1.1.3.6 Location:

format: absolute URI

Used in: GET response; in case of URI resolution as specified in 4.1.2.1. or on a 303 redirection for external resources (see 4.1.2.4)

Purpose: indicates the absolute URI of the found fallback resource.

Example:

```
Location: http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-
446655440000.0001.01/Doc1
```

4.1.1.3.7 Date:

Format: http-date

Used in: GET response

Purpose: Indicates the date of the response (from the origin server).

Example:

```
Date: Sun, 06 Nov 1994 08:49:37 GMT
```

4.1.1.3.8 Content-type:

Format: mime type an occasional tokens (see 4.1.1.3.1 Accept:)

Used in: GET response

Purpose: Indicates type of the content resource in the body of the response.

Example:

```
Content-type: application/xml;type=fmx4
```

4.1.1.3.9 Cache-Control:

Format: uses either of the following values: no-store, private, must-revalidate

Used in: GET response

Purpose: how cache servers should operate.

Usage:

identifier notice	Cache-Control: no-store
rdf notice	Cache-Control: must-revalidate
object notice	Cache-Control: must-revalidate
branch notice	Cache-Control: must-revalidate (if decoding lang = content lang) else private
tree notice	Cache-Control: must-revalidate

Example:

```
Cache-Control: must-revalidate
```

4.1.1.4 Service List

The following GET services use a PS-URI or a Cellar-URI.

For these services, the values */* (for Accept) and * (for Accept-language) can be specified. These cannot be used to resolve a URI during content negotiation. If these values are used, the provided URI must be specific enough to determine language (*) or type (*/*).

Table 5: Content Negotiation and Resource Availability

HTTP Accept:	GET URI Parameter	GET Response	Remark
application/xml; ***notice***=tree	***language***={iso-639-3}	Returns the object-tree notice decoded in the specified language. (see 5.6 Tree notice format)	URI is **expression**, **event** or **manifestation**: error 400 URI is not know: error 404 ***language*** not specified: error 400
application/xml; ***notice***=branch	***language***={iso-639-3}	Returns the object-branch notice decoded in the specified language. (see 5.7 Branch notice format)	URI is not an **expression**: error 400 URI is not know: error 404
application/xml; ***notice***=object	***language***={iso-639-3}	Returns the object notice decoded in the specified language. (see 5.5 Object notice format) with PS-URI fallback calculation.	applicable on all classes URI is not know: error 404
{mime-type}; ***type***={manifest.-type} {mime-type} is a known MIME-type (see **Mime type** table)		Uses HTTP Accept-language and HTTP Accept: token 'type' to resolve a work-URI or expression-URI to a manifestation URI Returns data stream. /resource/cellar/{uuid}.{expr-id}.{man-id}/{ds-id} with PS-URI fallback calculation.	**work** (typically), **expression** and **manifestation** class only else error 400 If Accept-Language or Accept MIME-type conflicts with the GET URI: error 400 if redirection resolves to: a) multiple data streams: error 300 with a list of URI b) no data stream: error 404 c) an external data stream error 303 (See other) Location holding the redirect URI)
		PS-URI or Cellar-URI of a content stream	An unknown content stream URI: error 404 If the resource is external error 303 (See other) Location holding the redirect URI)
application/rdf+xml (optional - application/rdf+xml) is default for all PS-URI/Cellar URI of any digital object - excluding content streams)		No fallback calculation on the PS-URI or Cellar-URI. Returns RDF/XML (see 5.8 RDF/XML notice format) /resource/cellar/{uuid}/DMD + Inverse or /resource/cellar/{uuid}.{expr-id}/DMD + Inverse or /resource/cellar/{uuid}.{expr-id}.{man-id}/ DMD + Inverse	applicable on all classes If the resource is not known: error 404
application/rdf+xml		Uses HTTP Accept-language: to resolve a work-URI to an expression. Returns RDF/XML (see 5.8 RDF/XML notice format) /resource/cellar/{uuid}.{expr-id}/DMD + Inverse	only **work** class, else error 400 If the expression is not available for the provided language: error 404
application/rdf+xml; ***type***={manifest.-type}		Uses HTTP Accept-language and HTTP Accept: token 'type' to resolve a work-URI to a manifestation URI Returns RDF/XML (see 5.8 RDF/XML notice format) /resource/cellar/{uuid}.{expr-id}.{man-id}/ DMD + Inverse	only **work** class, else error 400 If the manifestation is not available for the provided language and manifestation type: error 404
other mime type	any	Error 400	applicable on all classes

HTTP Accept:	POST URI	POST Request body	POST Response
application/xml; ***notice***=identifier	/webapi/getIdentifierList	A list of whitespace separated PS-URI or Cellar-URI	Returns the identifier notice. (see 5.4 Identifier notice format)

4.1.1.4.1 Language Parameter

The possible values for the parameter language ({iso-639-3}) are the codes provided by ISO-639-3 (see [13]). The relevant codes correspond to one of the configured languages (see 6 Configuration).

The language parameter controls the decoding function (see 4.1.2.2 Notice Decoding).

The HTTP Accept-language serves as a default for the decoding language in case a decoding language is needed and the language parameter is not set.

4.1.1.5 Error Handling

Except for the codes indicated, general error handling includes

1) 400 (Bad Request): in case the parameter values are wrong or wrong parameters have been provided.
2) 500 (Internal Server Error) in case an exception is raised.

4.1.1.6 Example

The following is an example to get a branch notice in Danish. As no language parameter is provided, the decoding is also in Danish except where a fallback is used. In case of decoding fallback, the fallback language is part of the notice encoding.

```
# GET Request
GET /resource/celex/1234R5678   HTTP/1.1
Host: http://publications.europa.eu
Accept: application/xml;notice=branch
Accept-Language: da, en;q=0.8, fr;q=0.7

# GET Response
HTTP/1.1 200 OK
Location: http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01
Content-Language: da
Last-Modified: Sun, 09 Aug 2009 01:44:14 GMT
....
```

The same request can be made explicitly asking the decoding in English using as request:

```
# GET Request
GET /resource/celex/1234R5678?language=eng   HTTP/1.1
Host: http://publications.europa.eu
Accept: application/xml;notice=branch
Accept-Language: da, en;q=0.8, fr;q=0.7
```

Note: in pre-cellar systems such a notice typically would have had the URI
CELEX:1234R5678:DA:XML:NOT

4.1.2DETAILS

Parameters are appended to a URI according the *URI query* and *IRI iquery* (see [12]) segment encoding. The parameters are '&' separated key=value pairs between the '?' and '#' delimiters of the URI.

URI resolution must comply with HTTP Accept parameters. Typically using the mime-type (and language?) client preferences.

4.1.2.1 URI resolution

The provisioned production system URI is translated to the corresponding CELLAR/CCR URI.

PS-URI GET requests for an `object` notice or for a data-stream (i.e. the specified GET HTTP Accept: is not `application/rdf+xml`) may require a decoding language fallback calculation. Decode language fallback calculation is controlled by the language URI query parameter, (occasionally defaulted by the HTTP-Accept-Language parameter) and configurable using the language configuration (see 6 Configuration).

At the level of URI resolution, the language fallback is based on the Accept-Language HTTP header parameter (see 4.1.1.3.2 Accept-Language:), it resolves as follows:

- Content language negotiation is only relevant to determine the relevant expression.
- If an expression of the specified language is not available, subsequent languages are used according priority until an expression URI is found or until all fallback languages have been exhausted.

In case of a data-stream request, if for a resolved expression (as explained above), there is no matching manifestation of the specified type (see 4.1.1.3.1 Accept: and 4.1.1.3.1.1 "type"), the language fallback is further exhausted until a manifestation of the specified type is found. If no manifestation of the specified type can be found for any of the (language fallback) expressions a 404 error is returned.

In case a data-stream request resolves to more than 1 data stream, the response is a 300 redirect and the body element contains an XHTML listing the available links. (see 4.1.2.3 Case: "Accept: application/rdf+xml)

4.1.2.2 Notice Decoding[2]

The `language` parameter specifies the required decoding for notice types `tree`, `branch` and `object`. If not specified the content language is the decoding language (expression and manifestation only).

For these notices, all decoding (of any skos:Concept) will be attempted in the decoding language for skos:prefLabel and skos:altLabel.

If a skos:prefLabel is not available in the specified language, the first, second and occasional one of the following languages fallback is looked for (in that order) until an skos:prefLabel is found or until all fallback languages have been exhausted.

For hierarchical decoding and for faceted decoding, the selection of the decoding label occurs independently at each level. (This may lead to level_1@bul/level_2@bul/level_3@bul/level_4@eng)

[2] The description is not a technical specification but a functional one. Implementation intends to prepare a considerable part of decoding work at NAL ingestion.

4.1.2.3 Case: "Accept: application/rdf+xml"

No language specific or other business logic is provided to have a fallback.

No decoding is done on any skos:Concept. Details should be obtained via the occasional NAL related services.

`HEAD` requests will be handled identically as the `GET Accept: application/rdf+xml`

4.1.2.4 Multiple Data Streams (300) or Redirection (303)

Data streams of manifestations with more than one data stream can only be obtained via the CELLAR data stream URI. These URIs are obtained via the manifest metadata (property object_ccr_data_stream) or from a 300 return code with the XHTML list of links.

```
<?xml version="1.0" encoding="UTF-8"?>
<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>Code 300 GET http://publications.europa.eu/resource/pegase/14318?language=eng&amp;type=pdf1x</title>
  </head>
  <body>
    <div/><!-- code message -->
      HTTP redirect Code 300 for GET http://publications.europa.eu/resource/pegase/14318?language=eng&amp;type=pdf1x<br
      <ol><!-- ordered list of alternatives, taken from the technical metadata of the data streams -->
        <li><a href="http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01/Doc1"
            ><span class="stream_page_physical_first">1</span> - <span class="stream_page_physical_last">20</span></a></li>
        <li><a href="http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01/Doc2"
            ><span class="stream_page_physical_first">21</span> - <span class="stream_page_physical_last">34</span></a></li>
      </ol>
    </div>
  </body>
</html>
```

The span elements and their @class attribute are set based on the technical metadata (tdm) on the stream using:

```
tdm:stream_page_physical_first
tdm:stream_page_physical_last.
```

The same format is used for a 303 coding when the request URI identifies an external resource. Note in this case, only 1 list item occurs. Further, the redirection URI is also available as the value of the HTTP Location parameter.

4.1.2.5 Parameter:manifestation-type

The following is a list of manifestation types and the occasional corresponding MIME type

Table 6: Manifestation Types and MIME types

Manifestation type value	Description/Definition	Mime type
amz	Amazon Kindle eBook format	application/vnd.amazon.ebook
doc	Microsoft Word document	application/msword
docx	Office Open XML	application/vnd.openxmlformats-officedocument.wordprocessingml.document.main+xml
epub	Electronic Publication (open e-book standard)	application/epub+zip
fmx2	Formex V2	application/xml;type=fmx2, text/sgml;type=fmx2
fmx3	Formex V3	application/xml;type=fmx3, text/sgml;type=fmx3
fmx4	Formex V4	application/xml;type=fmx4
html	HyperText Mark-up Language	text/html
jpeg	JPEG	image/jpeg
mobi	Mobipocket eBook format	application/x-mobipocket-ebook
pdf1x	Portable Document Format (ISO 32000-1:2008)	application/pdf, application/pdf;type=pdf1x
pdfa1a	*PDF archiving format (ISO 19005-1:2005), Level A conformance*	application/pdf;type=pdfa1a
pdfa1b	*PDF archiving format (ISO 19005-1:2005), Level B conformance*	application/pdf;type=pdfa1b
pdfx	*PDF printing format (ISO 15930)*	application/pdf;type=pdfx
ppsx	Microsoft PowerPoint 2007 Slideshow	application/vnd.openxmlformats-officedocument.presentationml.slideshow
ppt	Microsoft PowerPoint Presentation	application/vnd.ms-powerpoint
pptx	Office Open XML Presentation	application/vnd.openxmlformats-officedocument.presentationml.presentation
rdf	Resource Description Framework	application/rdf+xml
rtf	Rich Text Format	text/rtf
sgml	Standard Generalised Markup Language	text/sgml
sparqlq	SPARXL Query	application/sparql-query
sparqlqr	SPARQL Query Results	application/sparql-results+xml
tiff	Tagged Image File Format	image/tiff, image/tiff-fx
txt	Text file	text/plain
xhtml	eXtensible HyperText Markup Language	application/xhtml+xml
xls	Microsoft Excel Workbook	application/vnd.ms-excel
xlsx	Office Open XML Workbook	application/vnd.openxmlformats-officedocument.spreadsheetml.sheet
xslt	Extensible Stylesheet Language Transformations	application/xslt+xml
xml	Extensible Markup Language	application/xml
zip	zip	application/zip

4.1.3DIAGRAM

Image 3: PS-URI to Cellar-URI

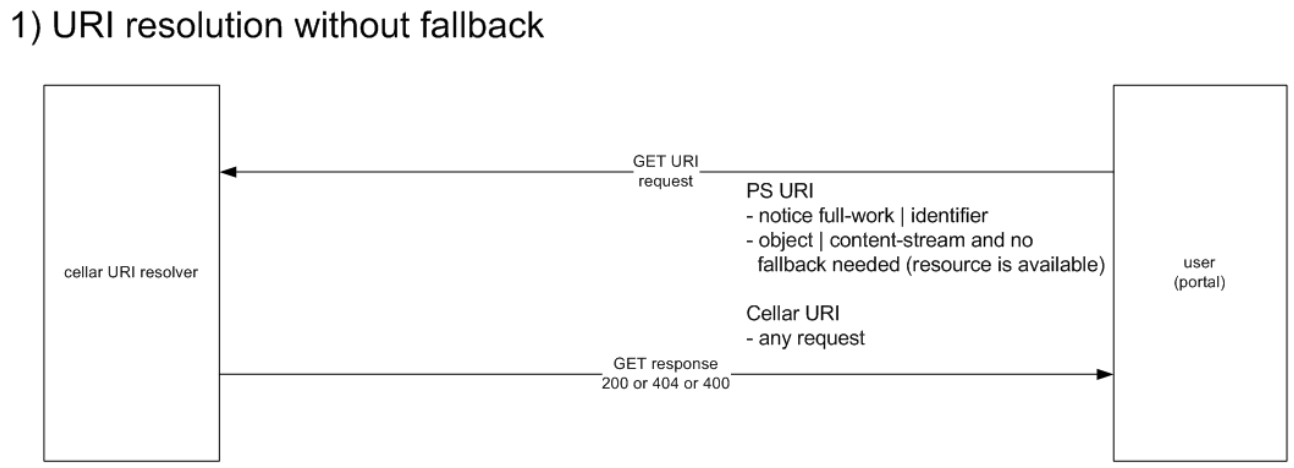
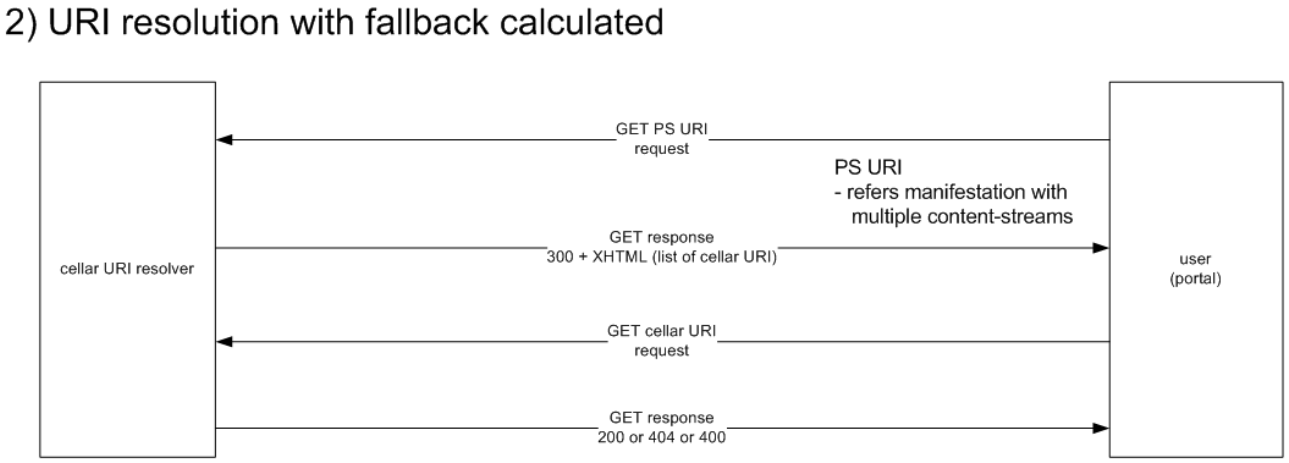


Image 4: PS-URI to Multiple Cellar-URI



4.2 TRIGGER INDEXING

Indexing is prepared and compiled in CELLAR by dedicated services (see 4.2.3 and ref [4]). Once a complete notice is compiled it is provided for indexing to IDOL/Autonomy using the Oracle connector.

User of the Interface: IDOL system

4.2.1API

The system is data driven and does not have an API.

The interface table is detailed in: 5.1 IDOL Interface Table

4.2.2DETAILS

Index calculation involves four steps that must be calculated after inferring the provided metadata. The three initial steps conclude the indexing preparation for the currently ingested resource. The last step triggers the re-indexing of other resources. (A trigger per object would cause repeated incomplete re-indexing calculations - see Image 5: Sequence for General Indexing Flow.)

- Collect properties that are required for indexing.
- Apply decoding of property targets that end in a skos:Concept
- Add inverse relations provided with previously loaded resources to the current indexed resource
- Add inverse relations provided with the current resource to previously loaded resources

Each of these steps saves its result in a data stream of its digital object.

4.2.2.1 Basic Indexing

In the Cellar CMR OWL ontology, properties requiring indexation have been annotated using the annotation property setting:

```
<annotation:to_be_indexed>true</annotation:to_be_indexed>
```

After retrieving all these properties on the subject resource being ingested, encoding of these properties is calculated as specified in (5.2 XML Notice encoding formats).

All the found indexed properties are sorted in the digital object data stream: B_INDEX.

4.2.2.2 Decoding

Decoding is prepared on NAL and EUROVOC load (see 4.7 Load NAL/EUROVOC Concept Scheme). This preparation occasionally includes the calculation of a language specific fallback:prefLabel value for a missing skos:prefLabel.

All the required decoding values in all languages are provided for each resource. All decoded values are grouped per language.

All decoded values for the resource are stored in the digital object stream D_INDEX

4.2.2.3 Add Inverse Relations from Other Cellar Objects

The ingested resource is ready to be indexed and signals this to the index record compilation service.

Upon calculation a virtual data stream INV_REL queries the CMR RDF store to find all relations:

- having the current object as a target
- having an inverse property

All these inverse properties are stored with the `<INVERSE>` element of the **indexing** notice. Inverse references always use the CELLAR URI.

This stream is also accessed when calculating **object**, **branch** and **tree** notices.

4.2.2.4 Add Inverse Relations to Other Cellar Objects

The previous version of the object is queried to find all relations to other objects.

The current (ingested) version of the object is queried to find all relations to other objects

For each target object in both lists, the CELLAR ID is used via the CCL. Relations to resources not having a CELLAR ID are removed from both lists.

Relations appearing in both lists are removed.

For each of the remaining target objects in both lists, a re-indexing is requested to the index record compilation service.

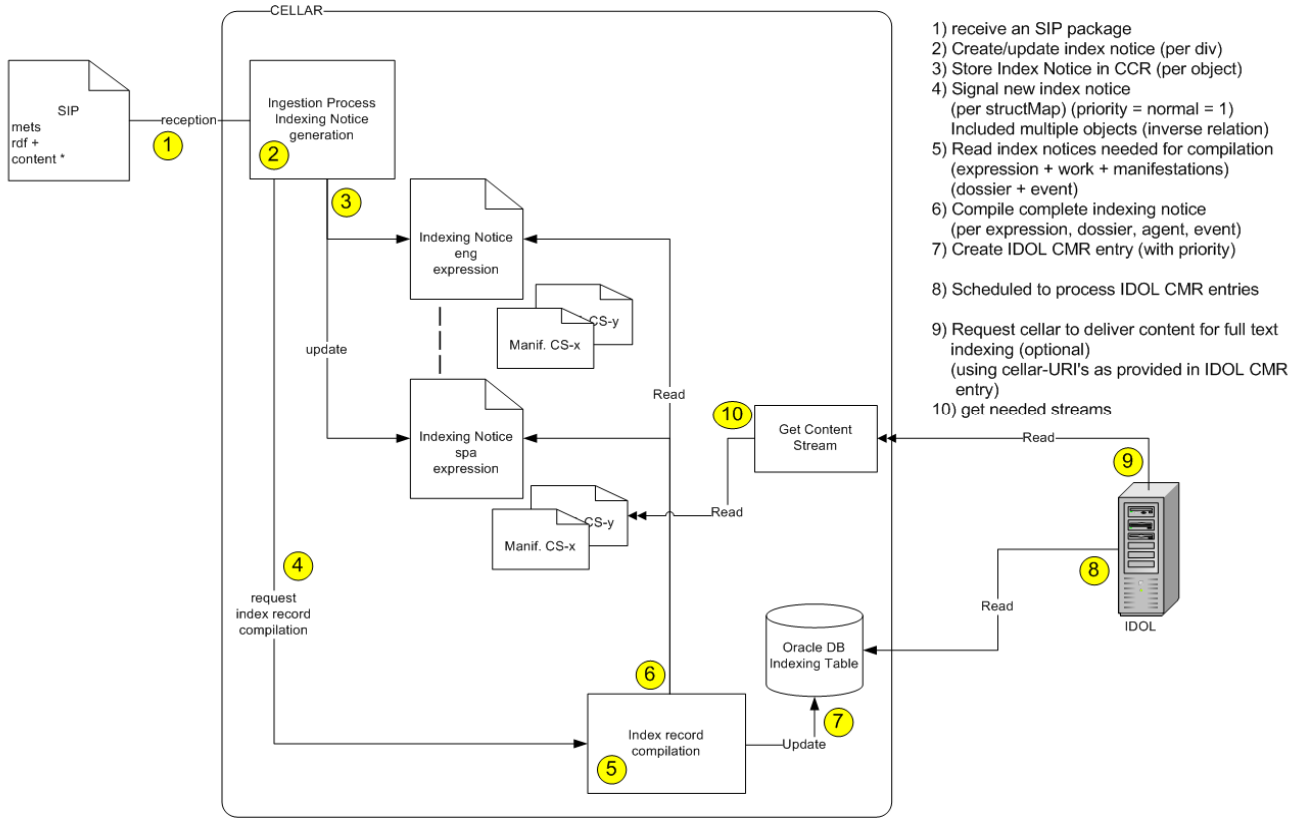
4.2.3DIAGRAM

When the ingestion process finishes and the indexing has been prepared as detailed in 4.2.2, all objects that are modified are requested to be indexed (action 4 in the diagram below).

The complete indexing notice is compiled, and the complete re-indexing record (include always metadata and content LOB) is created in Oracle

4.2.3.1 General Ingest Indexing Flow

Image 5: Sequence for General Indexing Flow

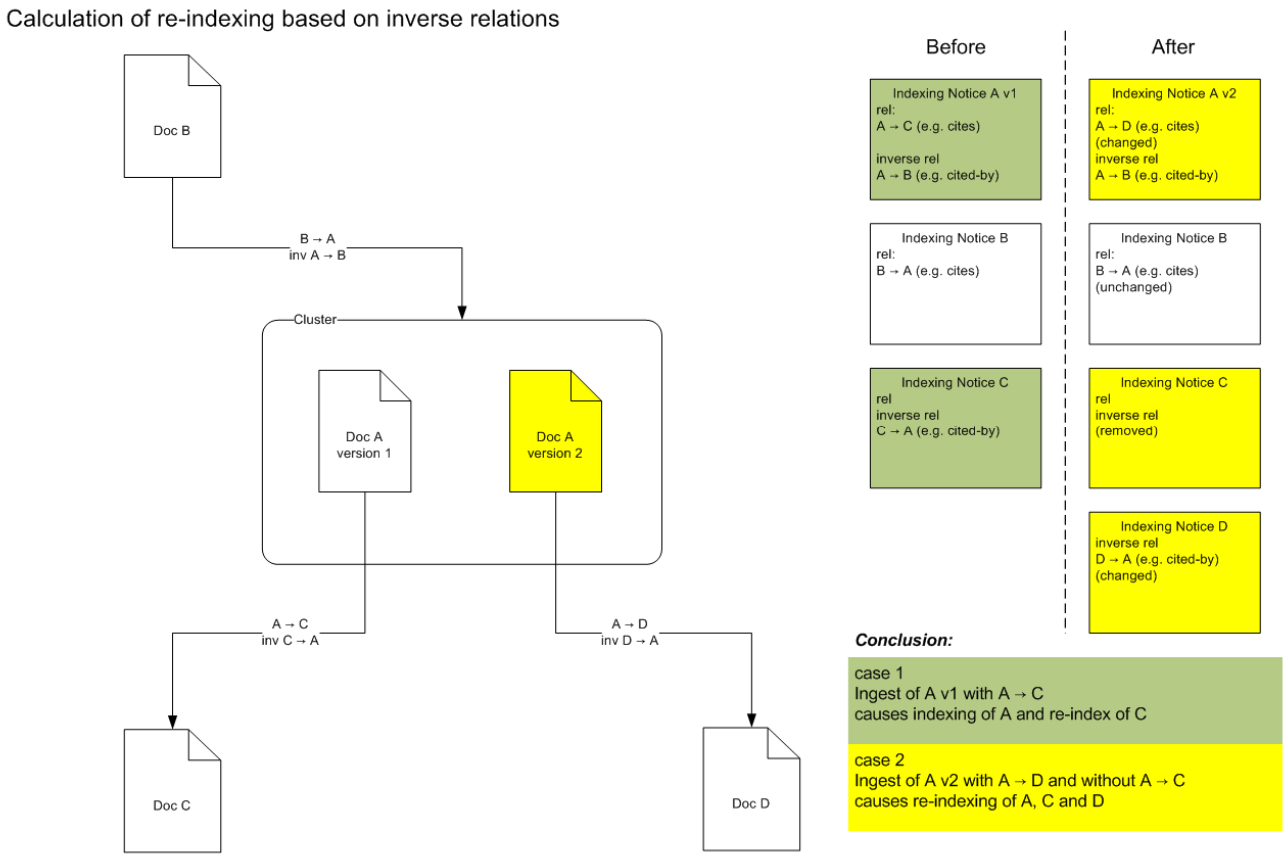


Step 4 typically initiates one indexing and multiple re-indexing requests due to the inverse relations.

Note step 5 which does the actual compilation of the indexing notices and provides these for indexing by IDOL may decide to keep a notice involving an embargoed object to be blocked until the embargo date expires. The embargo date is set via technical metadata in the ingestion package METS (see [18]).

4.2.3.2 Inverse relations and re-indexing

Image 6: Impact of inverse relation indexing

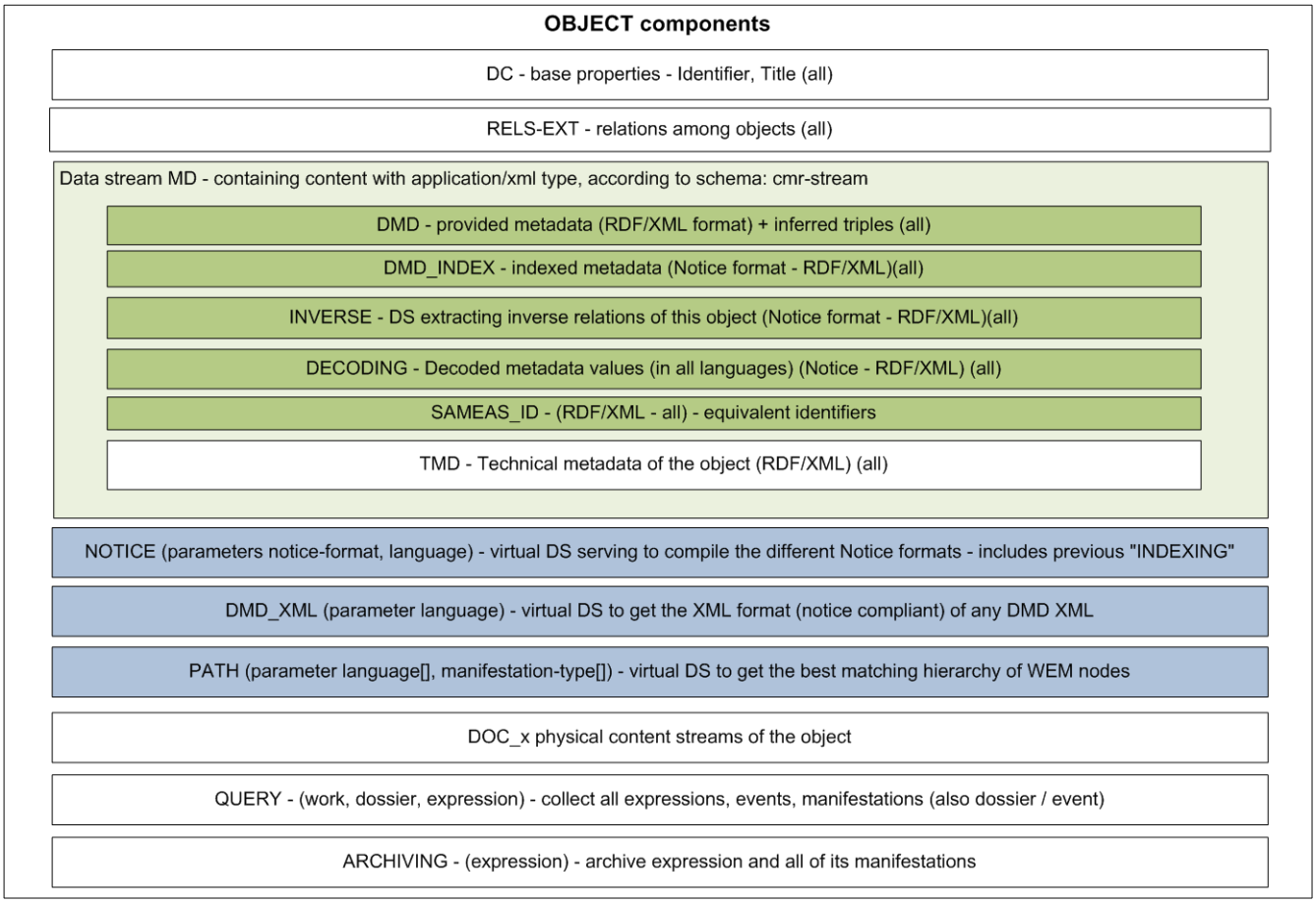


A rational for calculating inverse relations is given in 10.4.2 Part 2 - Add Inverses of Incoming Relations To each Document.

4.2.3.3 CCR Object Model

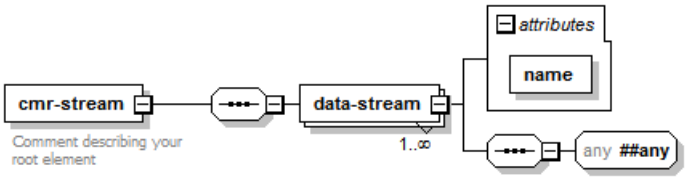
The services detailed in this section imply the need for additional data streams and impact the virtual data streams. The following image colours new impacted data streams.

Image 7: Fedora Object Data Streams



The MD stream has the following format (values of @name are as listed above (DMD, INVERSE, ...).

Image 8: The CMR XML metadata container



4.3 REMOVE FROM INDEXER

4.3.1API

A DEL Cellar URI can be used to remove either of: a manifestation and all its data streams, an expression and all its manifestations, a work and all its expressions.

Example:

```
DEL /resource/cellar/{cellar-id}
Host: publications.europa.eu
```

The user must be authorized. Typically a user on the CELLAR administrator console. The delete operation specifies a priority (0 low, 1 normal or 2 urgent).

For each deleted expression, a delete entry is made in the IDOL interface table (see 5.1 IDOL Interface Table)

4.3.2DETAILS

The last remaining expression of a work cannot be deleted. Instead, the work must be deleted.

Deletion of a work implies re-indexing of:
- all expressions of that work (deletion)
- all expressions of all related works (because the inverse relations of such works change)

Scenario:

The user selects a work, expression or manifestation on the admin console (1). The user gets the metadata visualized via the work or branch notice (2).

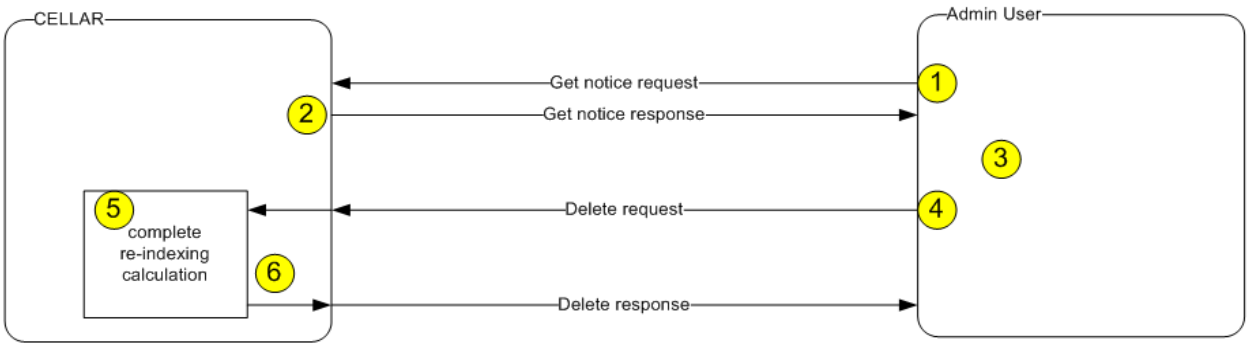
The user selects the delete option and sets the action priority (3). The action must be confirmed (4).

On the server, the different re-indexing records are calculated (5)

The user gets feedback on the scheduled re-indexing tasks of the remove action (6). The feedback is a list of removed expression URI.

4.3.3DIAGRAM

Image 9: Remove Object From Indexer - Admin Scenario



4.4 NAL AND EUROVOC XML DUMPS

NAL and EUROVOC Dumps will get a specific CCR object, one for all NAL and one for EUROVOC.

For each NAL there will be two data streams in the NAL object.

- one data stream for the SKOS format (for archiving purpose only).
- one data stream with a zip package containing all XML files for the NAL.

The EUROVOC object is configured likewise:

- one data stream with the EUOVOC SKOS (archiving only)
- one data stream for the zip package containing the XML files for EUROVOC.

4.4.1API

The API for obtaining the zip packages with the XML files is extending the webapi dissemination service (see 4.5 NAL and EUROVOC RESTful webServices).

The URI for these packages will be a CELLAR URI.

```
http://publications.europa.eu/webapi/authority-table?object={object-id}&DS={DS}
```

Parameter details

parameter	***value***	***description***
{object-id}	EUROVOC	case Eurovoc
	Last segment of concept scheme URI.	case other NAL concept-scheme uri suffix after: "http://publications.europa.eu/resource/authority/" typical: "fd_010"
{DS}	SKOS	The complete skos rdf stream. return type will be application/rdf+xml
	XML	The zipped xml content stream return type will be application/zip

Error handling:

- If an object-Id is not known or is a DS is not known: error code = 400
- If the object-id is known and not available: error code = 404
- If the object-id is known and available and the DS is not available: error code = 404

4.5 NAL AND EUROVOC RESTFUL WEBSERVICES

4.5.1INTRODUCTION

Essentially the API is based on SKOS but made multi-language aware. It's a SKOS web service API with specific extensions.

The purpose is to browse the Named Authority List (NAL) resources for clients without any RDF and SPARQL knowledge. Typical use of the API is by web application clients that search for and/or retrieve NAL resources like preferred labels, identifiers, hierarchical and associative relations to show them in lists, widgets and/or other web components.

4.5.2USING THE API AS A RESTFUL SERVICE:

The web service API is implemented using a RESTful architecture.

To use the RESTful API a base URL is defined where that API is implemented. In order to handle EUROVOC different from the other NAL, 2 base URIs are provided:

```
http://publications.europa.eu/webapi/nal/
http://publications.europa.eu/webapi/eurovoc/
```

To encode the parameters in a GET operation, use the URI query syntax:

```
http://publications.europa.eu/webapi/nal/getTopConcepts?language=en
```

The result is returned in JSON-format[3]:

- An object of the appropriate return type (as defined by the API) is sent back in JSON-format (see http://www.json.org/).
- If the request URI does not match any method defined by the API, an http response with error code 404 is returned.
- If the request cannot be handled by the server due to missing parameters (malformed and/or missing parameter names) and/or invalid parameter values, an http response with error code 400 and an appropriate error message is sent.
- If the server encounters an unexpected condition which prevents it from fulfilling the request a http response with error code 500 and an appropriate error message is sent

Note: when constructing a GET request all URI values specified as query parameter must be URI-encoded (using %-escape). Example: delimiters like the "#" character. (See [12])

Note: the terminology refers to SKOS (see [16]) artifacts like:

- ConceptScheme (an abstraction for controlled vocabulary, named authority list, thesaurus, ...)
- Concept
- preferred, alternative and hidden label
- notation
- broader, narrower, related

[3] To obtain XML, use the full XML dump service - see 4.4 NAL and EUROVOC XML Dumps.

4.5.3API

Table 7: NAL RESTful services

GET Request	GET Response	Description
/getSupportedLanguages? concept_scheme={ConceptSchemeURI}	Language[]	Returns all the languages in which the concept scheme is currently available. concept_scheme is optional. The result list is defaulted to the required languages (see 6.1 Language configuration) - when the concept schema URI is not provided or - when the concept schema does not supply itself the list of supported languages.
/getConceptScheme? concept_scheme={ConceptSchemeURI}	ConceptScheme	Returns the conceptScheme concept_scheme is mandatory. It is used to ask for a specific skos:ConceptScheme
/getConceptSchemes? if_modified_since={ISO-date-time}	ConceptScheme[]	Returns all conceptScheme if_modified_since is optional: Filters concept scheme that where modified in CELLAR after the specified date-time. See ConceptScheme field lastModified. Note: For EUROVOC this service returns the EUROVOC concept scheme and all MicroThesaurus Concept scheme
/getTopConcepts? concept_scheme={ConceptSchemeURI}& language={ISO-639-3}	Concept[]	Get the top concepts of the conceptScheme The ConceptSchemeURI and the language argument is mandatory
/getConceptRelatives? concept_uri={ConceptURI}& relation_uri={RelationURI}& language={ISO-639-3}	Concept[]	Returns a list of concepts having a specific semantic relation with the given concept. The ConceptURI, RelationURI and language arguments are mandatory. Typical values for RelationURI are - http://www.w3.org/2004/02/skos/core#broader - http://www.w3.org/2004/02/skos/core#narrower - http://www.w3.org/2004/02/skos/core#related
/getConcept? concept_uri={ConceptURI}& language={ISO-639-3}	Concept[]	Get the translation of a given concept into a specified language. The ConceptURI and language arguments are mandatory.
/getDomains	Domain[]	Get The Domains facets of the EUROVOC thesaurus

Note: with URI %escaping (See 11.3 IRI in URI Query Parameter Values.)

- the RelationURI for http://www.w3.org/2004/02/skos/core#broader becomes http://www.w3.org/2004/02/skos/core%23broader
- the ConceptURI for http://publications.europa.eu/resource/authority/fd_010/04%2F001 becomes
  http://publications.europa.eu/resource/authority/fd_010/04%252F001.

4.5.4DETAILS

The following object classes are used by the interface

URI

String uri	instances that are valid URIs

LanguageString

String language	3-char ISO code
String string	Text phrase in the specified language

JSON-Format Example:

```
{
        "language":"eng",
        "string":"english_text_phrase"
}
```

Language

String code	The 3-char ISO language code

JSON-Format Example:

```
{  "code":"eng"  }
```

ConceptScheme

URI uri	Uri of the conceptScheme. Mandatory
String version (OPTIONAL)	The export version
String date (OPTIONAL)	The export date of the of the concept scheme in ISO date format
String lastModified	Date-Time of the last modification to the concept scheme in Cellar. The date is set by cellar during NAL/EUROVOC load.
LanguageString[] labels	The label in each available language

JSON-Format Example:

```
{
        "uri":{"uri":"http://eurovoc.europa.eu/thesaurus"},
        "version":"5.0",
        "date":"2010-01-01",
        "lastModified":"2010-12-17T09:14:35Z",
        "labels":[
                        {"language":"","string":"EUROVOC"},
                        {"language":"eng","string":"EUROVOC"},
                        ...
        ]
}
```

Concept

URI uri	Uri of the concept. Mandatory
String identifier	identifier (optional, 0 or 1)
String[] notations	notations defined for this Concept (optional, 0 or more)
String language	The language the client requested
LanguageString prefLabel	Preferred label of the concept (optional, 0 or 1)
String[] altLabels	Alternate labels of the concept (optional, 0 or more)
String[] hiddenLabels	Hidden labels of the concept (optional, 0 or more)

JSON-Format Example:

```
{
        "uri":{"uri":"http://..."},
        "identifier":null,
        "notations":[],
        "language":"eng",
        "prefLabel":{"language":"eng","string":"account"},
        "altLabels":[ "bank account","deposit account",...],
        "hiddenLabels":[]
}
```

Note: prefLabel may be in a different language than the requested language in case language fallback is needed. This is because the prefLabel follows the decoding logic (with language fallback) as detailed in 4.1.2.2 Notice Decoding.

Domain

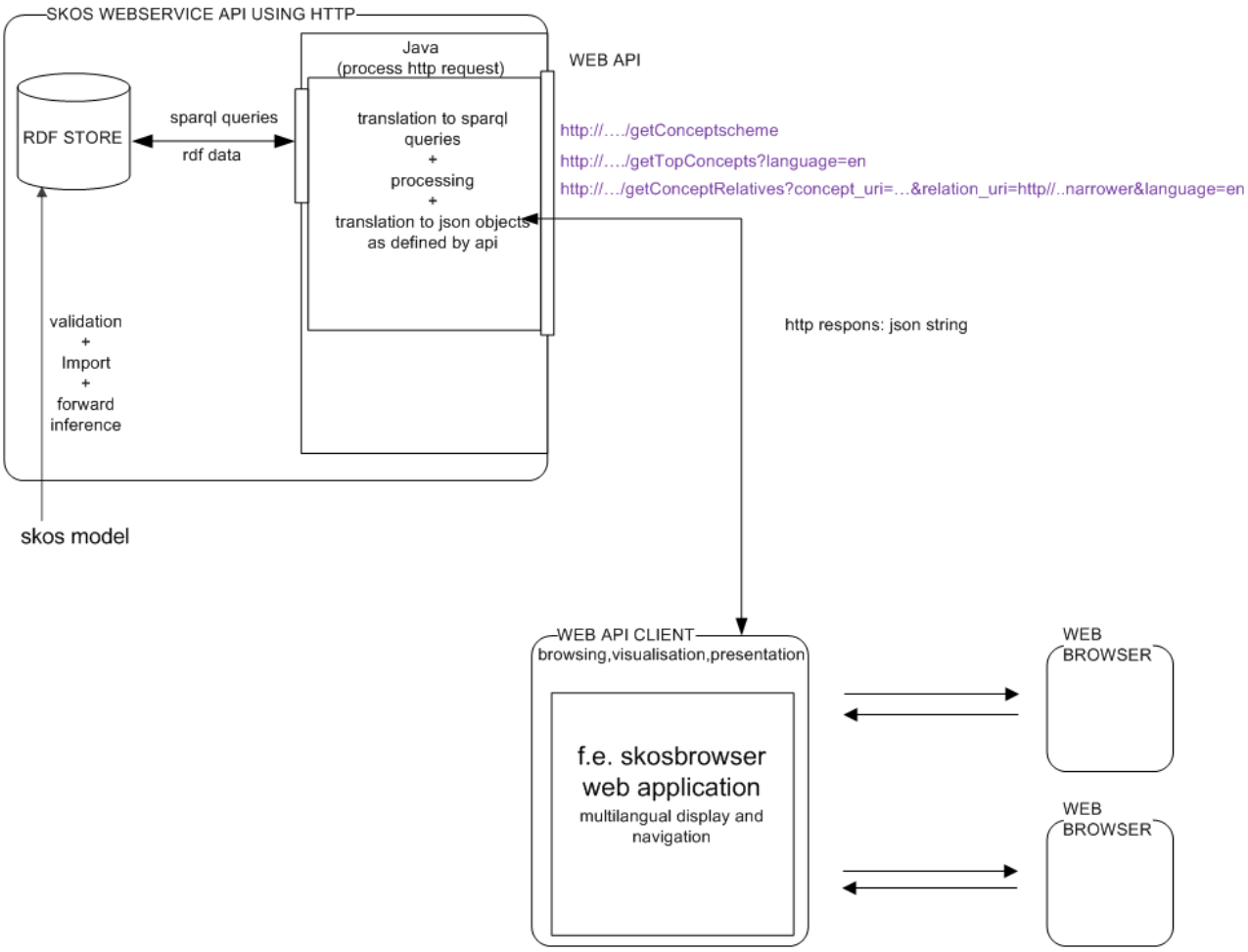
URI uri	Uri of the concept. Mandatory
String identifier	identifier (optional, 0 or 1)
LanguageString[] labels	The label in each available language
URI[] conceptSchemes	URI of micro-thesauri for this Domain (optional, 0 or more)

JSON-Format Example:

```
{
        "uri":{"uri":"http://..."},
        "identifier":null,
        "labels":[
                {"language":"","string":"EUROVOC"},
                {"language":"eng","string":"EUROVOC"},
                ...
        ],
        "conceptScheme":[ {"uri":"..."},{"uri":"..."},...]
}
```

4.5.5DIAGRAM

Image 10: NAL RESTful Service



4.6 CHANGE LANGUAGE DECODING CONFIGURATION

The languages are configured using the XML instance provided 6.1 Language configuration. It defines

- required languages for decoding
- decoding fallback languages

4.6.1API

Though languages can be added, this is seen as an exceptional administrator interface.

When the new file is installed, no re-indexing is calculated. To trigger re-indexing, the admin must force a re-indexing based on document selections. (all documents need to be re-indexed though).

4.7 LOAD NAL/EUROVOC CONCEPT SCHEME

Loading a concept scheme is done using services available to the admin user. Three services are provided:

- Load a new NAL version

- Get List of Documents requiring Re-Indexing due to NAL update

- Request re-indexing

To use the RESTful API a base URL is defined where that API is implemented. In order to handle EUROVOC different from the other NAL, 2 base URI are provided:

```
http://publications.europa.eu/webapi/nal/
http://publications.europa.eu/webapi/eurovoc/
```

4.7.1API

Function	RESTful request details	Response and Remarks
Load a new NAL version	POST /webapi/LoadNal? concept_scheme={concept scheme URI} version={version-id} Content-Type: application/zip Content-Length: nnn All parameters are mandatory The body of the request contains the zip package according the 4.7.2.1 Provisioning Format.	In case of success, the successful response includes a reference to the version difference report. Note the POST response is given before the NAL version difference report is final.
Get list of documents with induced re-indexing	GET /webapi/documentsNeedingReindexing? concept_scheme={concept scheme URI} language={iso-639-3} Accept: application/xml All parameters are optional	The response is an xml file.
Request re-indexing	POST /webapi/ReindexDocuments priority=n Content-Type: text/plain priority is mandatory and has the value 0, 1 or 2 The body of the request contains a list of document white-space separated identifiers	The POST response contains a plain text body listing all document identifiers and indicating for each identifier is it will be submitted for re-indexing or if it was not found.

4.7.2DETAILS

4.7.2.1 Provisioning Format

A NAL package describes one NAL delivery.

4.7.2.1.1 Package Structure

The package is a zip file with the following content:

```
./{nal-id}.mets.xml
./{nal-id}.skos.rdf
./{any-number of-nal-id-dump-file}.xml
```

4.7.2.1.2 The METS message

The mets message has the following content

```
<?xml version="1.0" encoding="UTF-8"?>
<mets TYPE="update.req" PROFILE="SIP_NAL"
  xsi:schemaLocation="http://www.loc.gov/METS/ cellar-nal-mets.xsd" xmlns="http://www.loc.gov/METS/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xlink="http://www.w3.org/1999/xlink">
        <metsHdr CREATEDATE="2001-12-17T09:30:47Z">
                <metsDocumentID>TABLE 100</metsDocumentID>
        </metsHdr>
        <fileSec>
                <fileGrp VERSDATE="2001-12-17T09:30:47Z">
                        <file MIMETYPE="application/rdf+xml" ID="skos" USE="cmr-store">
                                <FLocat LOCTYPE="URL" xlink:href="f100.skos.rdf"/>
                        </file>
                        <file MIMETYPE="application/xml" ID="atto" USE="xml-dump">
                                <FLocat LOCTYPE="URL" xlink:href="f100.xml"/>
                        </file>
                </fileGrp>
        </fileSec>
        <structMap ID="ID_1" TYPE="nal-node">
                <div TYPE="nal" CONTENTIDS="http://publications.europa.eu/metadata/authorities/FD_100"
                        LABEL="case-law procedure type - v5.1">
                        <fptr FILEID="skos"/>
                        <fptr FILEID="atto"/>
                </div>
        </structMap>
</mets>
```

4.7.2.2 /LoadNal

The NAL must be available as a skos file and as XML files.

SKOS file is validated and checked for consistency. Validation checks that all provided skos Concepts have the unique required skos:inScheme. XML files are validated. There is no check between the XML and the SKOS file content. The XML files are stored in a dedicated data stream of the CCR NAL object and the CCR EUROVOC object[4] (1 data stream per NAL).

For all required languages, the fallback:preflabel is calculated where needed.

The decoding XML snippets are calculated for each code (all languages). For hierarchical NAL and for EUROVOC the ancestor or facet decoding are included in the decoding XML snippets (per code).

The contents of the skos file are stored in the CMR.

The new NAL version is saved (skos and occasional XML dump formats) in a dedicated CCR object. The content streams are versioned.

[4] This implies a change in ref [4] to accommodate for these two new digital object container.

A workflow with two subtasks is started in a separate thread:

- Calculate NAL Version Difference
- Build List of Documents Needing Re-Indexing

The function returns, providing a POST return status and the URI to the work-flow report.

4.7.2.2.1 Calculate NAL Version Difference

The function calculates the differences per code and per language based on the decoding XML snippets. The difference is calculated per code and indicates the languages for which there is a difference.

The difference report is persisted.

4.7.2.2.2 Build List of Documents Needing Re-Indexing

Based on the codes in the difference report, the CMR is searched to find all objects classified with code having a changed decoding XML snippet.

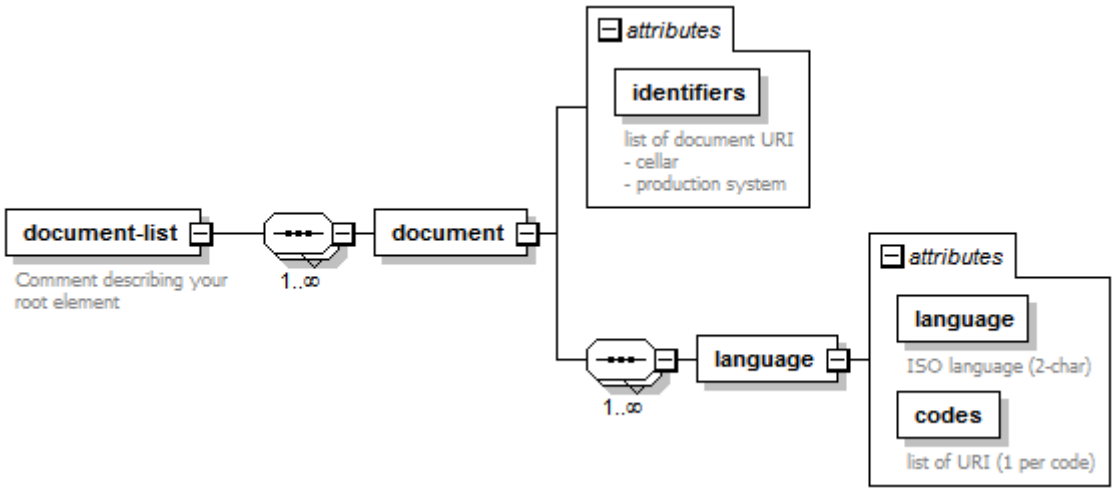
The result is consolidated. Each entry list which documents need to be re-indexed. For each document the DB lists the NAL version difference report that is the cause of the re-indexing request, the code and the language for which the re-indexing is needed.

The consolidated list can be inspected by the admin user.

4.7.2.3 Check Re-Indexing

The result list is provided according to the following Schema:

Image 11: Document-List with NAL induced re-indexing candidates



4.7.2.4 Manage NAL Re-Indexing

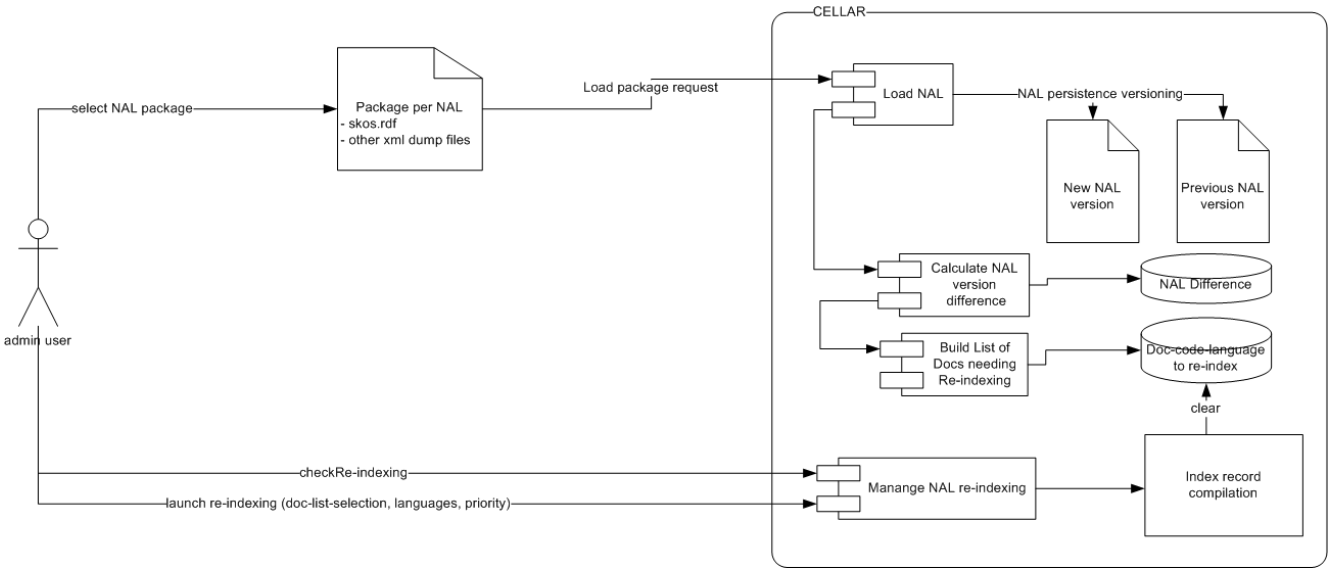
The re-indexing is prepared in batch.

When the indexing notice has been updated, the IDOL interface table is updated.

The consolidated list of documents requesting re-indexing is updated by removing the handled re-indexing requirements.

4.7.3DIAGRAM

Image 12: NAL Induced Re-Indexing Scenario



4.8 SPARQL END-POINT SERVICE

4.8.1API

The SPARQL end-point is implemented using the Oracle - Joseki components.

The protocol references for Joseki are provided in [19] and http query bindings (see [17] #query-bindings-http).

Access to the SPARQL endpoint will be provided through the service end-point:

```
http://publications.europa.eu/webapi/sparql/
```

The service is implemented as a POST service. The body of the POST request is the SPARQL query that must be executed. The Query must include any prefix and graph declarations that are needed.

4.8.2DETAILS

The options provided by the interface will allow to:

- Send any SPARQL query to the SPARQL end point.

- The request can specify a stylesheet to be used on the SPARQL result. The stylesheet name is specified using the stylesheet parameter on the query uri

- A SPARQL to XHTML stylesheet is provided for SPARQL SELECT and ASK queries. The HTML stylesheet is specified as the query URL parameter stylesheet=sparql2html.

4.9 INGESTION INTERFACE (METS)

Ingestion is done in two modes:

1. initial load - loading packages from the lower priority folder.

2. regular operational mode – loading packages from the higher priority folder.

The formats used for ingestion are specified in the METS specification [18]. Further details are found in [4] and [3].

4.9.1API

4.9.1.1 HTTP services

The HTTP services are given relative to a specified host system base URI.

The services provide READ, CREATE and UPDATE access. All services are initiated with POST requests. As per [18], the request and the response body contains a METS package. See disclaimer 7.6 METS Ingestion.

To create objects based on a METS Package.

```
# POST Request to create CELLAR objects
POST /webapi/metsCreate
Host: ...

# POST Response
HTTP/1.1 200 OK
....
```

To update objects based on a METS package

```
# POST Request to update CELLAR objects
POST /webapi/metsUpdate
Host: ...

# POST Response
HTTP/1.1 200 OK
....
```

To read objects based a METS package

```
# POST Request to read CELLAR objects
POST /webapi/metsRead
Host: ...

# POST Response
HTTP/1.1 200 OK
....
```

4.9.1.2 Folder services

Initial load folder is a configured folder location.

Packages (1 zip file per METS package) can be dropped in the folder by ftp or by copy command.

Effective start of handling of a package is based on the file name. The ftp or file copy therefore must follow the following procedure:

- ftp/copy the package as {METS-docment-ID}.zip.dump

- On completion of transfer/copy, a rename instruction must change the name into {METS-document-ID}.zip
- CELLAR reception must ignore all *.dump and only consider *.zip files

In initial load mode, all packages are handles as "create" operations.

Package files are handled as soon as they are available without any sorting algorithm.

The operation in the METS package header must comply with the used API.

4.9.2DETAILS

For all modes, the METS package has the format of a zip file.

The used naming convention is:

```
{METS-Document-ID}.zip
```

Each zip package has in its root folder exactly one file following the naming convention:

```
{METS-Document-ID}.mets.xml
```

This file is the METS document of the METS package

For consistency reasons, the METS package contains all its referenced files. Files are referenced using a relative path. The relative path starts from the zip root (i.e. the location where the METS document is found). Typically all files can be at the same level of the METS document (a nested folder structure is accepted though).

4.10 ARCHIVING-SYSTEM INTERFACE

CELLAR generates the packages for archiving in the `archive-folder/in` subfolder under the root application folder where it is available for the archiving system. When the latest has processed the package it must copy it in the `archive-folder/out` subfolder also under the root application folder. This directory is periodically polled by CELLAR to record in the audit trail that the package has been processed. The `out` directory is regularly cleaned.

The archiving package format complies with the EUDOR specifications:

Title: EUDOR – Manuel de référence de la DTD de Dissémination (version de la DTD: 2.7).
Reference: MR_DTD_0067/3.0.

4.10.1 API

N/A

4.11 LOG-SYSTEM INTERFACE

Log entries for a specified object identifier are available from the REST interface.

All log entries for an ingest are put in the response located at `response-folder/success` or `response-folder/error` depending on the ingest status.

An administration interface is also available for displaying and filtering the log entries:

```
http://publications.europa.eu/admin/audit
```

4.11.1 API

Access to log entries for a specified object identifier:

```
http://publications.europa.eu/webapi/getlogentry/{uuid}/{iso}
```

With `{uuid}` the object identifier and `{iso}` the language iso code (`fr` or `en`).

5 DATA EXCHANGE FORMATS

5.1 IDOL INTERFACE TABLE

The following interface table has been specified by the EurLex team and was provided in ref [6]. The database must use character encoding AL32UTF8.

```
create table TB_CELLAR_MODIFICATION  (
    "CRM_ID"                    NUMBER(8)                   NOT NULL,
    "CRM_OPERATION_CD"          VARCHAR2(1 CHAR)            NOT NULL,
    "CRM_CELLAR_URI_NM"         VARCHAR2(240 CHAR)          NOT NULL,
    "CRM_METADATA_LOB"          CLOB,
    "CRM_CONTENT_URLS_LOB"      CLOB,
    "CRM_CREATED_ON"            DATE                        NOT NULL,
    "CRM_PRIORITY_NO"           NUMBER(1)                   NOT NULL,
    "CRM_LANGUAGE_ISO_CODE_NM"  VARCHAR2(2 CHAR)            NOT NULL,
    CONSTRAINT "PK_TB_CELLAR_MODIFICATION" primary key ("CRM_ID")
)
lob ("CRM_METADATA_LOB") store as (tablespace CELLAR_SEARCH_LAYER_IF_LOB_TBS)
lob ("CRM_CONTENT_URLS_LOB") store as (tablespace CELLAR_SEARCH_LAYER_IF_LOB_TBS)
```

Where :

1. CRM_ID sequence auto-managed with CYCLE option;
2. CRM_OPERATION_CD contains the character 'I' (to index) or 'D' (to delete from the index);
3. CRM_CREATED_ON shall include date + time (up to the seconds);
4. CRM_METADATA_LOB contains the metadata to index in XML. The XML format used is detailed in 5.3 Index-notice format, the used detailed encodings are specified in 5.2 XML Notice encoding formats, the property names are the local names of the ontology properties (see ref [9]);
5. CRM_CONTENT_URLS_LOB contains a list of tags:
   <CONTENT_URL>absolute URL to documents content part to index</CONTENT_URL>. This confirms that multi-part documents (several HTMLs, PDFs…) can be indexed as one document in IDOL;
   If there is no data stream, the field must have the value NULL.
6. CRM_CELLAR_URI_NM contains the CELLAR URI in CURIE format[5]. It is used by IDOL to internally uniquely identify the document (dependent of the language, but not the document's mime type)
7. CRM_PRIORITY_NO the indexing priority:

   0: full indexing - occasionally set by the admin user when indexing is induced to an NAL or EUROVOC update.

   1: normal indexing - default priority set on any ingestion based indexing

   2: urgent indexing - set as selected on the administrator interface; typical for a remove from index.
8. CRM_LANGUAGE_ISO_CODE_NM: the language iso2 code of the resource to index

An example record follows:

[5] This format extends the cellar CURIE by prefixing 'cellar:' with a language specific 4 character prefix.

5.1.1EXAMPLE

Table 8: IDOL Indexing Data Record

Column	Value
CRM_ID	12345678
CRM_OPERATION_CD	I
CRM_CELLAR_URI_NM	**eng_cellar:550e8400-e29b-41d4-a716-446655440000**
CRM_METADATA_LOB	XML formatted object confirming to 5.2 XML Notice encoding formats.
CRM_CONTENT_URLS_LOB	<CONTENT_URL>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01/DOC_1<CONTENT_URL> <CONTENT_URL>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01/DOC_2<CONTENT_URL>
CRM_CREATED_ON	2010-09-28T09:27:53.123
CRM_PRIORITY_NO	0
CRM_LANGUAGE_ISO_CODE_NM	en

5.2 XML NOTICE ENCODING FORMATS

The XML snippets in a Cellar PO notices all are derived from the CELLAR ontology. With the exception of the RDF/XML notice (see 5.8) all notices encode XML snippets using the same algorithm. The encoding format is detailed in 13 Annex F - Notice Serialization Schema Template.

The purpose of this encoding is to establish a common PO/CELLAR XML metadata representation as an alternative for the standard RDF/XML and for any user specific selection of metadata captured in the standard SPARQL/XML or SPARQL/JSON.

The encoding algorithm is applied to a ***subject resource*** that is identified by a ***subject URI***. The CELLAR logic cannot rely on a Unique Name Assumption (UNA). For any given URI the CCL has a service to list all ***equivalent URI***. At most one of these URI can be the ***CELLAR reference URI***. This recognition of a URI naming authority (cellar, celex, official journal, ...) is established by URI naming conventions (see **Base URI of the Alias**).

The metadata of this ***subject resource*** may be retrieved from 2 sources:

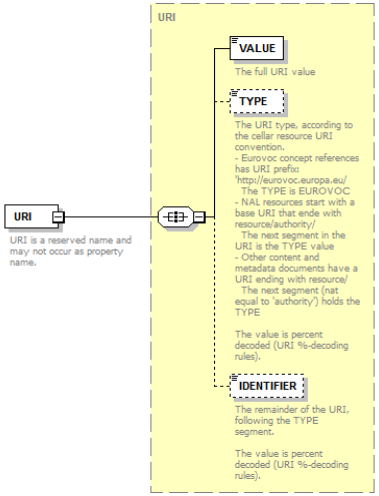
- in the CMR RDF store, based on the subject URI or on all equivalent URI:
    - retrieve all triples having as a subject, either the subject URI or any equivalent URI (use owl:sameAs). This includes inferred inverse relations.
    - retrieve all annotations on the already retrieved triples.
- in the CCR store, convert the CELLAR reference URI to the CELLAR ID
    - Retrieve the equivalent identifiers of the CELLAR ID (via a CCL or DC)
    - retrieve the indexing data stream of the CCR object (INDEXING, DMD_INDEX, INVERSE) and its depending objects.

The following sub-sections explain the:

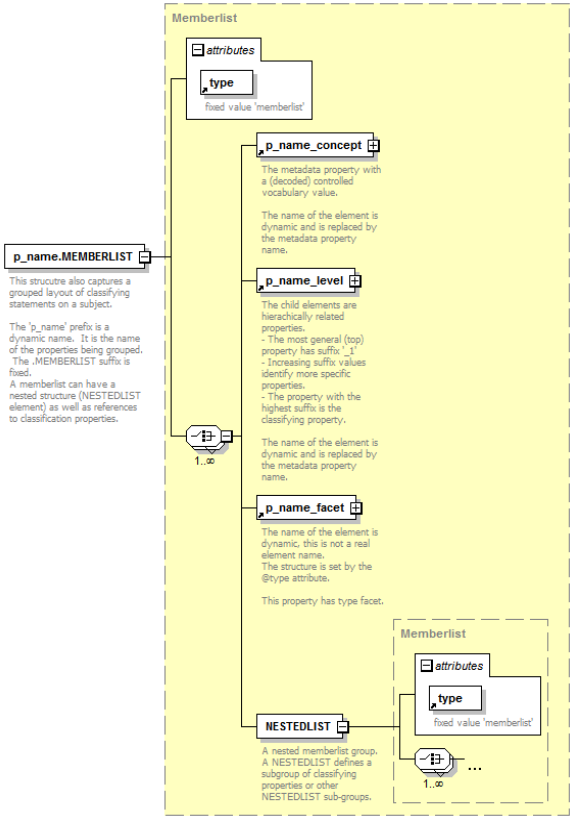
- the detailed encoding for the used PO properties
- the aggregation of metadata in depending objects (work-expression-manifestation; dossier-expression)

5.2.1RDF/XML TO PO NOTICE XML ENCODING ALGORITHM

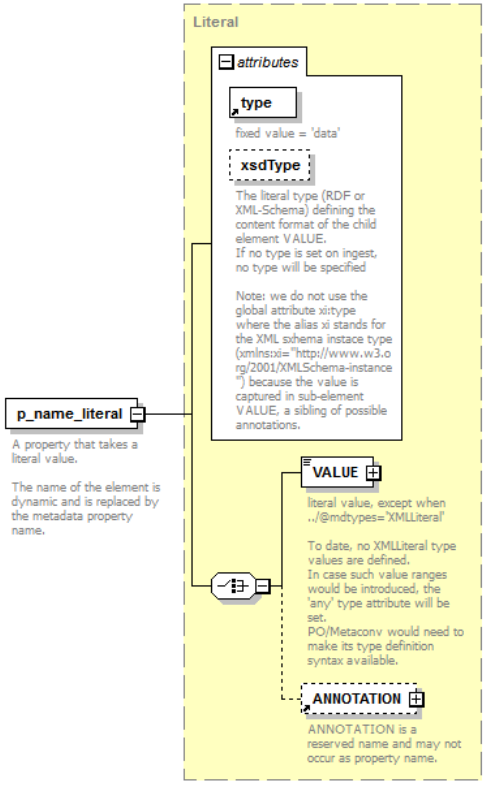
Table 9: RDF/XML to PO-Notice XML transformation algorithm

Property condition	Encoding
URI encoding: URI have a specific encoding indicated below in the "Encoding" column using <URI>fn:uri(the-uri-value)</URI> This must be encoded based on the URI naming conventions for CELLAR (see 3 Resource Identification). We distinguish 4 classes of URI: - resource URI:= URI-prefix + '/resource/' + {PS} + '/' + {PS-id} - NAL-URI:= URI-prefix + '/resource/authorithy/' + {NAL.cs-id} + '/' + { NAL.c-id} - eurovoc-URI = 'http://eurovoc.europa.eu/' + {eurovoc-id} - other URI The resulting XML snippet is shown to the right.  	<URI> <VALUE>{the-uri-value}</VALUE> <TYPE>functionTypeOf(URI)</TYPE> <IDENTIFIER>functionIdentifierOf(URI)</IDENTIFIER> </URI> resource URI: [e.g. http://publications.europa.eu/resource/celex/31997L0078] - functionTypeOf(URI) gives {PS} [e.g. <TYPE>celex</TYPE> - functionIdentifierOf(URI) gives {PS-id} [e.g. IDENTIFIER>31997L0078</IDENTIFIER>] NAL URI: [e.g. http://publications.europa.eu/resource/authority/fd_050/15EM] - functionTypeOf(URI) gives {NAL.cs-id} [e.g. <TYPE>fd_050</TYPE> - functionIdentifierOf(URI) gives {NAL.c-id} [e.g. IDENTIFIER>15EM</IDENTIFIER>] EUROVOC URI: [e.g. http://eurovoc.europa.eu/3730] - functionTypeOf(URI) gives EUROVOC [e.g. <TYPE>EUROVOC</TYPE> - functionIdentifierOf(URI) gives {eurovoc-id} [e.g. IDENTIFIER>3730</IDENTIFIER>] other URI: <TYPE> and <IDENTIFIER> are not included functionIdentifierOf(URI) will do a 1-time %-decoding of the PS-id, NAL.c-id and eurovoc-id. - "a%2fabcd%252f" becomes a/abcd%2f

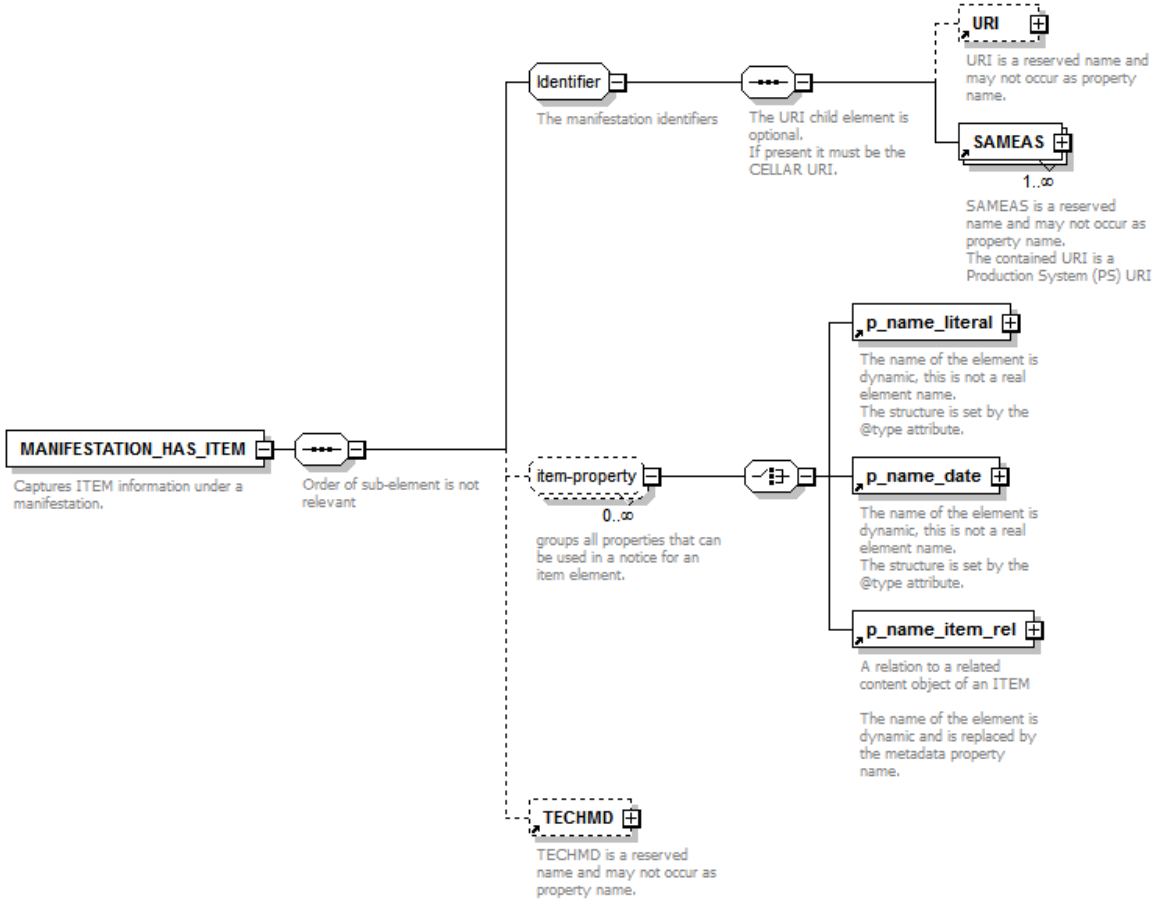
Property condition	**Encoding**

The property cdm:memberList, is decoded as detailed in 12 Annex E - Sequenced Property Values.
with range rdf:List instance <_l>,
and <_l> cdm:listedProperty <property-name>
 
 	
	`<property-name.memberList type="memberlist">`
	`  fn:iteratorRdfList(object <_l>)`
	`</property-name.memberList>`
	
	`fn:iteratorRdfList(object <_l>)`
	`  <!-- iterate over rdf:List <_list> = <_l>`
	`    - until <_list> == rdf:nil`
	`    - recurse for next.<_list> = ?rest where current.<_list> rdf:rest ?rest -->`
	`    if (<_list> cdm:nestedList  <_nestedList>)`
	`      <NESTEDLIST>`
	`        fn:iteratorRdfList(object <_list>)`
	`      </NESTEDLIST>`
	`   else`
	`    { decode(<_list>  <property-name>  object-of(rdf:first) . ) }`
	`  <!-- end of iteration -->`

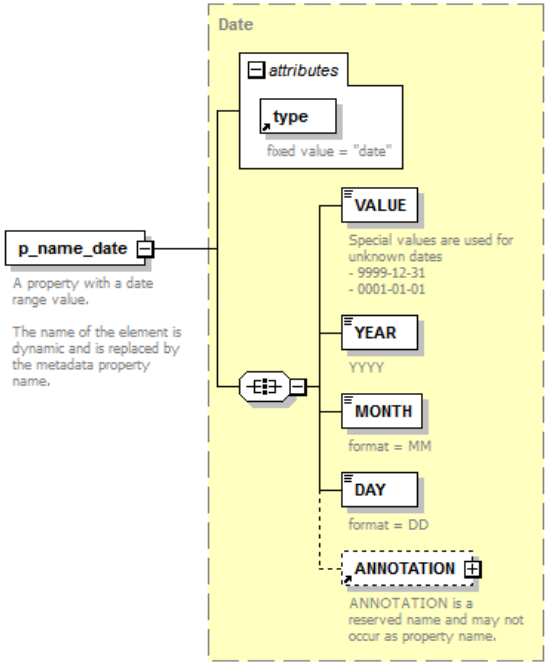
Property condition	**Encoding**

data property, range is not dt:date
 
	`<property-name type="data">`
	`  <VALUE>string({value})</VALUE>`
	`</property-name>`

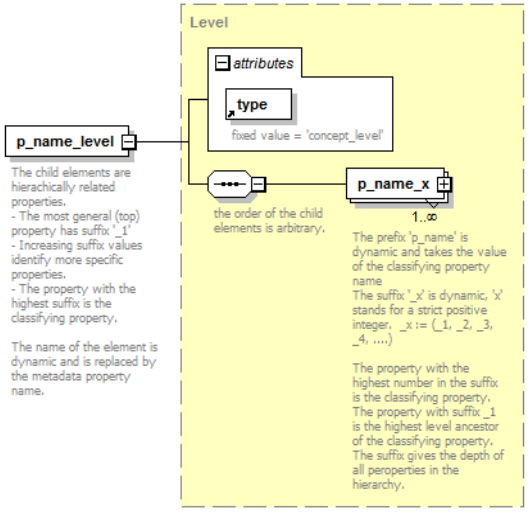
Property condition	Encoding
object property manifestation_has_item	<MANIFESTATION_HAS_ITEM> <URI>...</URI> <SAMEAS>...</SAMEAS> {other item properties} {techMD of the 'item' type object data stream} </MANIFESTATION HAS ITEM>



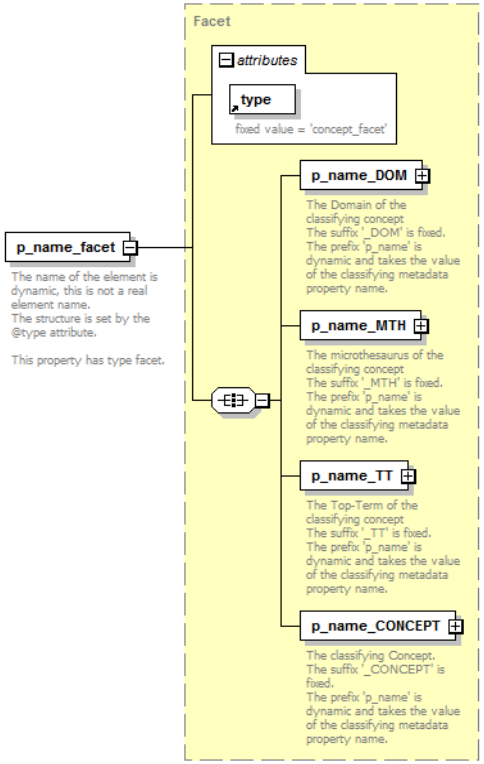
Property condition	**Encoding**

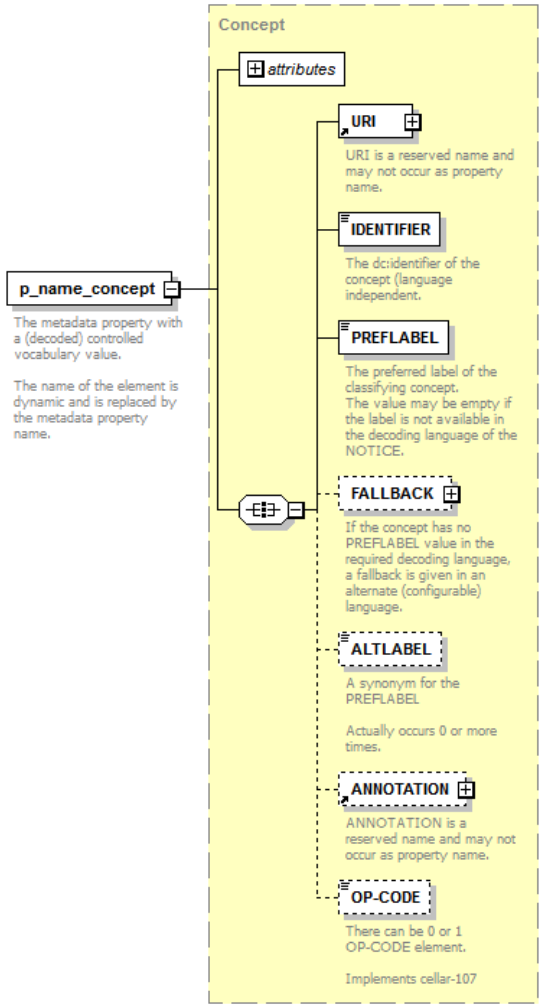
data property, range is dt:date or value is of type xsd:date
 
	Either (a known date):
	`<property-name type="date">`
	`  <VALUE>{value}</VALUE>`
	`  <YEAR>fn:yearOf({value})</YEAR>`
	`  <MONTH>fn:monthOf({value})</MONTH>`
	`  <DAY>fn:dayOf({value})</DAY>`
	`</property-name>`
	
	either "unknown-past":
	`<property-name type="date">`
	`  <VALUE>0001-01-01</VALUE>`
	`  <YEAR>0001</YEAR>`
	`  <MONTH>01</MONTH>`
	`  <DAY>01</DAY>`
	`</property-name>`
	
	or "unknown-future":
	`<property-name type="date">`
	`  <VALUE>9999-12-31</VALUE>`
	`  <YEAR>9999</YEAR>`
	`  <MONTH>12</MONTH>`
	`  <DAY>31</DAY>`
	`</property-name>`

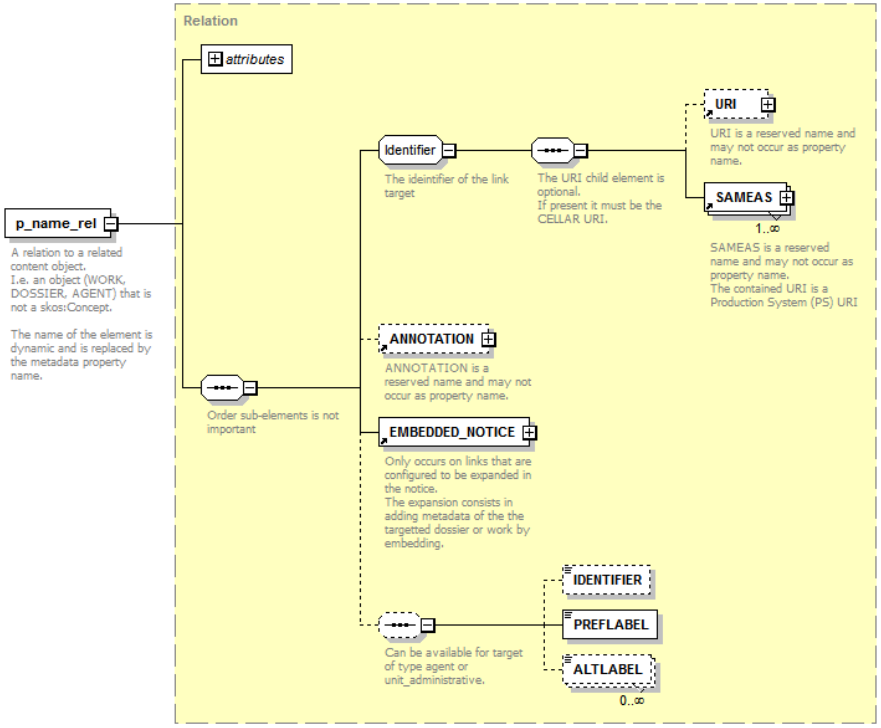
Property condition	**Encoding**

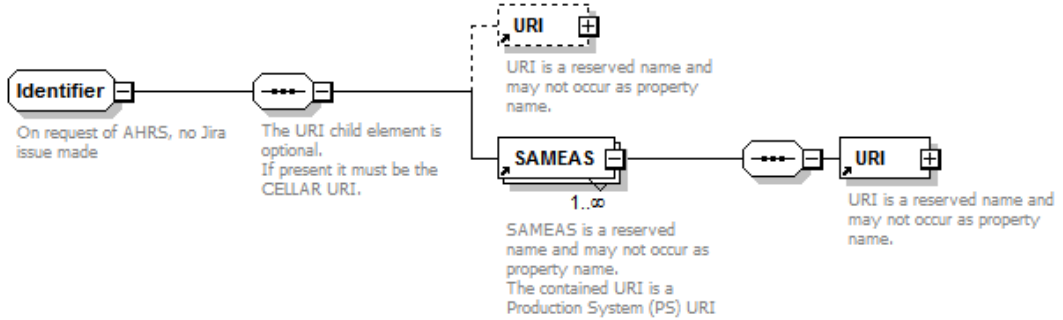
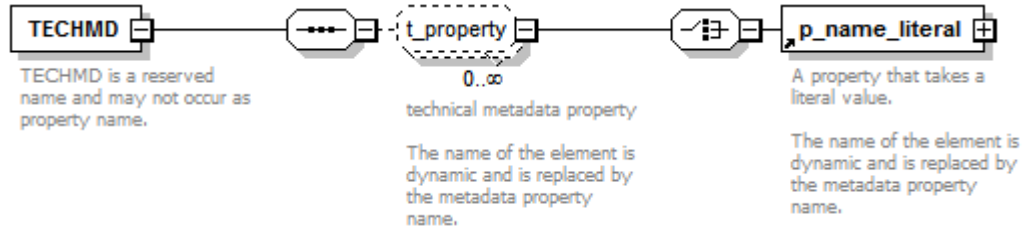
Object property
range is rdf:subClassOf skos:Concept
range is class constrained with a skos:inScheme,
property has annotation:
- `annotation:all numbered levels`
 
	`<property-name type="concept_level">`
	`<!--Grouping For all level in the {value} path:-->`
	`<property-name_{level} type="concept">`
	`<URI>fn:uri({value.level})</URI>`
	`<IDENTIFIER>fn:idOf({value.level})</IDENTIFIER>`
	`<PREFLABEL>fn:labelOf({value.level})</PREFLABEL>`
	`<ALTLABEL>fn:altLabelOf({value.level})</ALTLABEL> <!-- 0 or more -->`
	`<OP-CODE>...</OP-CODE> <!-- 0 or more -->`
	`</property-name_{level}>`
	`<property-name>`

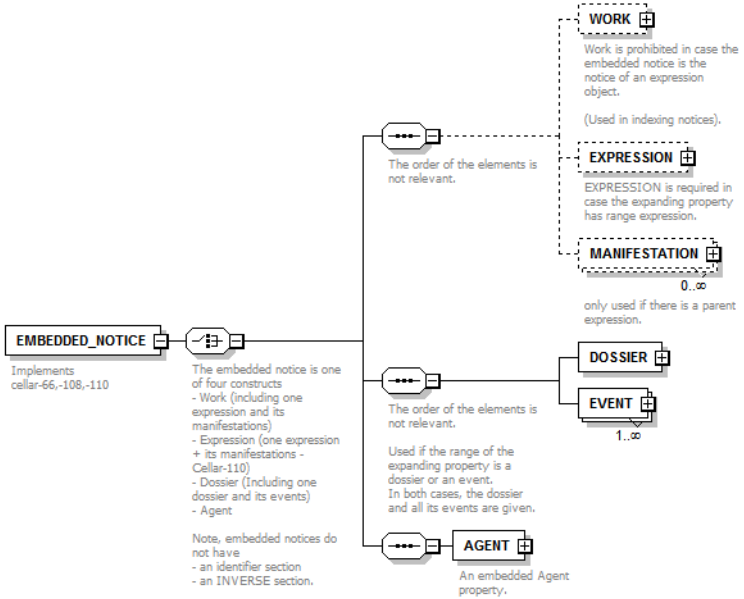
Property condition	**Encoding**

Object property
range is rdf:subClassOf skos:Concept
range is class constrained with
skos:inScheme = "http://eurovoc.europa.eu/100141",
property has annotation: `annotation:is_facet`
property does **NOT** have annotation:
- `annotation:all_numbered_levels`
 	
For EUROVOC, `{facet.acronym}` = "DOM" | "MTH" | "TT"
 
 	
	`<property-name type="concept_facet">`
	`  <!-- For each facet of the classifier: -->`
	`  <property-name_{facet.acronym} type="concept">`
	`  <URI>`fn:uri`({value.facet})</URI>`
	`  <IDENTIFIER>fn:idOf({value.facet})</IDENTIFIER>`
	`  <PREFLABEL>fn:labelOf({value.facet})</PREFLABEL>`
	`  <ALTLABEL>fn:altLabelOf({value.level})</ALTLABEL> <!-- 0 or more -->`
	`  <OP-CODE>...</OP-CODE> <!-- 0 or more -->`
	`  </property-name_{facet.acronym}>`
	
	`  <!-- For the classifying concept: -->`
	`  <property-name_CONCEPT type="concept">`
	`  <URI>`fn:uri`({value})</URI>`
	`  <IDENTIFIER>fn:idOf({value})</IDENTIFIER>`
	`  <PREFLABEL>fn:labelOf({value})</PREFLABEL>`
	`  <ALTLABEL>fn:altLabelOf({value.level})</ALTLABEL> <!-- 0 or more -->`
	`  <OP-CODE>...</OP-CODE> <!-- 0 or more -->`
	`  </property-name_CONCEPT>`
	
	`</property-name>`

Property condition	Encoding
Object property range is rdf:subClassOf skos:Concept range is class constrained with a skos:inScheme, property does **NOT** have any annotations: - annotation:is_facet - annotation:all numbered levels  	<property-name type="concept"> <URI>fn:uri({value})</URI> <IDENTIFIER>fn:idOf({value})</IDENTIFIER> <PREFLABEL>fn:labelOf({value})</PREFLABEL> <ALTLABEL>fn:altLabelOf({value.level})</ALTLABEL> <!-- 0 or more --> <OP-CODE>...</OP-CODE> <!-- 0 or more --> </property-name>

Property condition	Encoding
Object property, range is of class work, expression, manifestation, entity_temporal Note: SAMEAS will only be used to wrap PS-URI. URI not wrapped in a SAMEAS will always be cellar URI. The ontology may tag such a property using: <annotation:expand_on_indexing >true</annotation:expand_on_indexing> If this is the case, an EMBEDDED_NOTICE will be included (see embedded notice)	<property-name type="link"> <URI>fn:uri({value})</URI> <SAMEAS><URI>fn:uri({alternative URI})</URI></SAMEAS> </property-name> 
Object Property range is not rdf:subClassOf skos:Concept range is of class agent ***Note**: properties dc:identifer, skos:altLabel and skos:prefLabel must be provided in the RDF data*	<property-name type="link"> <URI>fn:uri({value})</URI> <IDENTIFIER>{value/dc:identifier}</IDENTIFIER> <PREFLABEL>{value/skos:prefLabel}</PREFLABEL> <ALTLABEL>{value/skos:altLabel}</ALTLABEL> </property-name>
Object Property range is not rdf:subClassOf skos:Concept range is of class unit_administrative ***Note**: properties dc:identifer, skos:altLabel and skos:prefLabel must be provided in the RDF data*	<property-name type="link"> <URI>fn:uri({value})</URI> <IDENTIFIER>{value/dc:identifier}</IDENTIFIER> <PREFLABEL>{value/skos:prefLabel}</PREFLABEL> <ALTLABEL>{value/skos:altLabel}</ALTLABEL> </property-name>

Property condition	Encoding
fallback encoding in case a PREFLABEL is not available in the decoding language. Note: assume , fallback-lang is the fallback language that can provide a result.	If a skos:prefLabel is not available in the specified language, the following fallback label will be specified as follows (replacing PREFLABEL): <PREFLABEL/> <FALLBACK> <LANG>{ISO-639-2(fallback-lang)}</LANG> <PREFLABEL>{value/skos:prefLabel[xml:lang="{fallback-lang}"}</PREFLABEL> </FALLBACK> If no fallback is applicable, the provided snippet is just: <PREFLABEL/>
Subject identifier of the resource Note: SAMEAS will only be used to wrap PS-URI. URI not wrapped in a SAMEAS will always be cellar URI.	<URI>fn:uri({rdf:about})</URI> <SAMEAS><URI>fn:uri({alternative URI})</URI></SAMEAS> <!-- 0 or more - see Annex C: Query scenario for a rationale --> 
Technical metadata of a manifestation subject	<TECHMD> <MANIFESTATION-TYPE>{value}</MANIFESTATION-TYPE> <MIME-TYPE>{value}</MIME-TYPE> </TECHMD> 

Property condition	**Encoding**
Object property annotation (on any object property) <owl:Axiom> <x:ann-prop1>val-1</x:ann-prop1> <x:ann-prop1>val-2</x:ann-prop1> <y:ann-prop2>val-3</y:ann-prop2> <owl:annotatedSource rdf:resource="{subject-URI}"/> <owl:annotatedProperty rdf:resource="{property-name}"/> <owl:annotatedTarget rdf:resource="{value}"/> </owl:Axiom>	<property-name ... > <ANNOTATION> <ANN-PROP1>{(string(val-1)}</ANN-PROP1> <ANN-PROP1>{(string(val-2)}</ANN-PROP1> <ANN-PROP2>{(string(val-3)}</ANN-PROP2> </ANNOTATION> <URI>fn:uri({value})</URI> ... </property-name>
Data property annotation (on any data property) <owl:Axiom> <x:ann-prop1>val-1</x:ann-prop1> <x:ann-prop1>val-2</x:ann-prop1> <y:ann-prop2>val-3</y:ann-prop2> <owl:annotatedSource rdf:resource="{subject-URI}"/> <owl:annotatedProperty rdf:resource="{property-name}"/> <owl:annotatedTarget>value</owl:annotatedTarget> </owl:Axiom>	<property-name ... > <ANNOTATION> <ANN-PROP1>{(string(val-1)}</ANN-PROP1> <ANN-PROP1>{(string(val-2)}</ANN-PROP1> <ANN-PROP2>{(string(val-3)}</ANN-PROP2> </ANNOTATION> <VALUE>{data property value encoding}</VALUE> ... </property-name>
embedded notice addressed by an Object property The embedded notice is decoded in the same language as the expanded notice. Depending the target of an embedded notice, the following aggregations are done: a) target = **work**, then aggregation = - the work, - the expression with content language derived from expanded notice same content language if available on expanded notice else the decoding language of the expanded notice - the manifestations of the expression b) target = **expression** (indexing notice only !) then aggregation = - the expression of the specified decoding language - the manifestations of the expression c) target = **dossier**, then aggregation = - the dossier, - the events of the dossier d) target = **event**, then aggregation = - the dossier of the targeted event, - the events of the dossier e) target = **agent**, then aggregation = agent f) no other targets are considered.	

Encoding also includes inverse relation encoding as explained in: 4.2.2.3 and 4.2.2.4.

5.2.2AGGREGATION OF NOTICES INFORMATION

The ***indexing***, ***branch*** and ***tree*** notices are aggregated. Each uses a different aggregation algorithm.

The aggregation is defined by:

- the dependencies defined in the METS structMap by which they are ingested. This dependency is captured in the CCR object model.
- the annotations on the cdm ontology. Object properties may get the annotation "annotation:expand_on_indexing" set to "true". The embedded notice of the related object is then included in the notice that has the expanded property.

Currently the METS specification will trigger the following dependencies:

- a work aggregates its expressions and the manifestations contained in those expressions
- a dossier aggregates its contained events

Aggregation is done by creating the wrapper notice root and then collecting and appending the information of the aggregated objects. Each of the aggregated nodes provides a link to its containing or contained nodes. No nesting of nodes is done in the notice.

5.2.2.1 Tree Aggregation

Aggregates starting from a work or a dossier and includes

- either all expressions of the work or all events of the dossier
- all manifestations of each aggregated expression

The collected information includes for each aggregated object:

- descriptive metadata
- technical
- inverse metadata

5.2.2.2 Indexing aggregation

Aggregates starting from a work and a decoding languageincludes:

- the work, the work expands every cdm:work_has_expression: this then includes:
  - each available expression as an embedded notice
  - for each of these expressions, the manifestation and there embedded properties
- the expression having the decoding language (if available) or expression of a fallback language.
- all manifestations of the selected expression (if available)

Aggregates starting from a dossier (and a decoding language) includes:

- the dossier
- all the depending events of that dossier.

5.2.2.3 Branch Aggregation

Aggregates starting from an expression

- the work of the expression, the work expands every cdm:work_has_expression: this then includes:
  - each available expression as an embedded notice
  - for each of these expressions, the manifestation and there embedded properties
- all manifestations of the expression

The collected information includes for each aggregated object:

- descriptive metadata
- technical
- inverse metadata

5.2.3TECHNICAL METADATA

The technical metadata specification is currently in draft (see [21]).

Technical metadata is provided for

Table 10 Technical metadata

any object: last modification date	is set in response, not in the notice itself
manifestation: manifestation-type, mime-type	<TECHMD> <MANIFESTATION-TYPE>pdf1x</MANIFESTATION-TYPE> <MIME-TYPE>application/pdf</MIME-TYPE> </TECHMD>
data stream: caption, order, as sub-element of object property manifestation_has_item <MANIFESTATION_HAS_ITEM> ... </MANIFESTATION_HAS_ITEM>	<TECHMD> <CAPTION>pages 21 to 34</CAPTION> <ORDER>2</ORDER> </TECHMD>

5.3 INDEX-NOTICE FORMAT

The xml structure providing metadata as can be digested by IDOL. It is a subset of the Tree Notice (see 5.6 Tree notice format) and of Branch Notice (see 5.7 Branch notice format) because it is limited to the indexed properties.

The notice is prepared and pushed to IDOL each time there is a structMap ingestion. Such an ingestion may trigger more than one index notice as explained in 4.2 Trigger indexing.

The notice may also be prepared and pushed to IDOL due to:

NAL/EUROVOC induced re-indexing (see 4.7 Load NAL/EUROVOC Concept Scheme)

- re-indexing induced by the inference of inverse properties as explained in 4.2 Trigger indexing.

The XML format defines a wrapper element <notice>.

The format is then generated as specified in 5.2 XML Notice encoding formats, by excluding any property that is not annotated with

```
<annotation:to_be_indexed>true</annotation:to_be_indexed>
```

The following index notice types are made by cellar:
- Work := NOTICE [WORK, INVERSE(of WORK), EXPRESSION(using decoding language or its decoding fallback language) ?

, MANIFESTATION_{type}*]

- Event := NOTICE [DOSSIER, EVENT, INVERSE(of EVENT)]
- Agent := NOTICE [AGENT, INVERSE]
- dossier := NOTICE [DOSSIER, INVERSE(of DOSSIER), EVENT*]

```
<NOTICE decoding="eng" type="indexing">
 <WORK>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318</IDENTIFIER>
   </URI>
  </SAMEAS>
 ....
 </WORK>
 <INVERSE>
  <WORK_PART_OF_DOSSIER>
   <URI>
    <VALUE>http://publications.europa.eu/resource/cellar/asdfghjhjkl</VALUE>
    <TYPE>cellar</TYPE>
    <IDENTIFIER>asdfghjhjkl</IDENTIFIER>
   </URI>
  </WORK_PART_OF_DOSSIER>
   ...
 </INVERSE>
```

```
<EXPRESSION>
 <URI>
  <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001</VALUE>
  <TYPE>cellar</TYPE>
  <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0001</IDENTIFIER>
 </URI>
 <SAMEAS>
  <URI>
   <VALUE>http://publications.europa.eu/resource/pegase/14318.eng</VALUE>
   <TYPE>pegase</TYPE>
   <IDENTIFIER>14318.eng</IDENTIFIER>
  </URI>
 </SAMEAS>
 <EXPRESSION_BELONGS_TO_WORK>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318</IDENTIFIER>
   </URI>
  </SAMEAS>
 </EXPRESSION_BELONGS_TO_WORK>
 <EXPRESSION_USES_LANGUAGE>
  <URI>
   <VALUE>http://publications.europa.eu/resource/authority/language/ENG/LNG0001</VALUE>
   <TYPE>language</TYPE>
   <IDENTIFIER>ENG/LNG0001</IDENTIFIER>
  </URI>
  <IDENTIFIER>LNG0001</IDENTIFIER>
  <PREFLABEL>English</PREFLABEL>
 </EXPRESSION_USES_LANGUAGE>
 <EXPRESSION_MANIFESTED_BY_MANIFESTATION>
 <SAMEAS>
  <URI>
   <VALUE>http://publications.europa.eu/resource/pegase/14318.eng.pdf</VALUE>
   <TYPE>pegase</TYPE>
   <IDENTIFIER>14318.eng.pdf</IDENTIFIER>
  </URI>
  </SAMEAS>
 </EXPRESSION_MANIFESTED_BY_MANIFESTATION>
 <EXPRESSION_MANIFESTED_BY_MANIFESTATION>
 <SAMEAS>
  <URI>
   <VALUE>http://publications.europa.eu/resource/pegase/14318.eng.html</VALUE>
   <TYPE>pegase</TYPE>
   <IDENTIFIER>14318.eng.html</IDENTIFIER>
  </URI>
  </SAMEAS>
```

```
  </EXPRESSION_MANIFESTED_BY_MANIFESTATION>
 ...
 </EXPRESSION>
 <MANIFESTATION_PDF1X>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0001.01</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318.eng.pdf</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318.eng.pdf</IDENTIFIER>
   </URI>
  </SAMEAS>
 ...
 </MANIFESTATION_PDF1X>
 <MANIFESTATION_HTML>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.02</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0001.02</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318.eng.html</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318.eng.html</IDENTIFIER>
   </URI>
  </SAMEAS>
  ....
 </MANIFESTATION_HTML>
</NOTICE>
```

5.4 IDENTIFIER NOTICE FORMAT

An XML structure listing equivalent identifiers of a resource:

```
<NOTICE type="identifier">
 <OBJECT in="http://publications.europa.eu/resource/pegase/14318" embargo-date="2010-12-15T00:00:00Z">
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000</IDENTIFIER>
  </URI>
  <URI>
   <VALUE>http://publications.europa.eu/resource/pegase/14318</VALUE>
   <TYPE>pegase</TYPE>
   <IDENTIFIER>14318</IDENTIFIER>
  </URI>
 </OBJECT>
 <OBJECT in="http://publications.europa.eu/resource/pegase/00000">
  <URI>
   <VALUE>http://publications.europa.eu/resource/pegase/00000</VALUE>
   <TYPE>pegase</TYPE>
   <IDENTIFIER>00000</IDENTIFIER>
  </URI>
 </OBJECT>
 <OBJECT in="http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002.09"/>
 <OBJECT in="http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002.01">
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002.01</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0002.01</IDENTIFIER>
  </URI>
  <URI>
   <VALUE>http://publications.europa.eu/resource/pegase/14318.fra.pdf</VALUE>
   <TYPE>pegase</TYPE>
   <IDENTIFIER>14318.fra.pdf</IDENTIFIER>
  </URI>
 </OBJECT>
```

```
 <OBJECT in="http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002.01">
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002.01</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0002.01</IDENTIFIER>
  </URI>
  <URI>
   <VALUE>http://publications.europa.eu/resource/pegase/14318.fra.pdf</VALUE>
   <TYPE>pegase</TYPE>
   <IDENTIFIER>14318.fra.pdf</IDENTIFIER>
  </URI>
 </OBJECT>
</NOTICE>
```

Important to note is that if there is no URI element containing a CELLAR URI, then the resource is not available on CELLAR (2nd and 3rd object in the list example above).

For additional motivation, see Annex C: Query scenario.

5.5 OBJECT NOTICE FORMAT

An XML structure providing the full set of metadata of a single Persisted Object decoded in one specified language.

It is a subset of the Object-Tree notice because it is always limited to one object only.

The format is PO specific and is pulled by a portal application to obtain all metadata details on one object.

Example on work:

```
<NOTICE decoding="eng" type="object">
 <WORK>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318</IDENTIFIER>
   </URI>
  </SAMEAS>
  <WORK_HAS_EXPRESSION>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318.eng</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318.eng</IDENTIFIER>
   </URI>
  </SAMEAS>
  </WORK_HAS_EXPRESSION>
 ....
 </WORK>
 <INVERSE>
  <WORK_PART_OF_DOSSIER>
   <URI>
    <VALUE>http://publications.europa.eu/resource/cellar/asdfghjhjkl</VALUE>
    <TYPE>cellar</TYPE>
    <IDENTIFIER>asdfghjhjkl</IDENTIFIER>
   </URI>
  </WORK_PART_OF_DOSSIER>
   ...
 </INVERSE>
</NOTICE>
```

Example on expression:

```
<NOTICE decoding="eng" type="object">
 <EXPRESSION>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0001</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318.eng</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318.eng</IDENTIFIER>
   </URI>
  </SAMEAS>
  <EXPRESSION_USES_LANGUAGE>
   <URI>
    <VALUE>http://publications.europa.eu/resource/authority/language/ENG/LNG0001</VALUE>
    <TYPE>language</TYPE>
    <IDENTIFIER>ENG/LNG0001</IDENTIFIER>
   </URI>
   <IDENTIFIER>LNG0001</IDENTIFIER>
   <PREFLABEL>English</PREFLABEL>
  </EXPRESSION_USES_LANGUAGE>
 ...
 </EXPRESSION>
</NOTICE>
```

Example on manifestation:

```
<NOTICE decoding="eng" type="object">
 <MANIFESTATION  manifestation-type="pdf1x">
  <TECHMD>
   <MANIFESTATION-TYPE>pdf1x</MANIFESTATION-TYPE>
   <MIME-TYPE>application/pdf</MIME-TYPE>
  </TECHMD>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002.01</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0002.01</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318.fra.pdf</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318.fra.pdf</IDENTIFIER>
   </URI>
  </SAMEAS>
  <MANIFESTATION_MANIFESTS_EXPRESSION>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318.eng</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318.eng</IDENTIFIER>
  </SAMEAS>
   </URI>
  </MANIFESTATION_MANIFESTS_EXPRESSION>
  <MANIFESTATION_HAS_ITEM>
    <URI>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.02/Doc1</URI>
    <ITEM_IDENTIFIER>Doc1</ITEM_IDENTIFIER>
   <TECHMD>
    <CAPTION>pages 21 to 34</CAPTION>
    <ORDER>2</ORDER>
   </TECHMD>
  </MANIFESTATION_HAS_ITEM>
 ...
 </MANIFESTATION>
</NOTICE>
```

5.6 TREE NOTICE FORMAT

The xml structure providing the full hierarchical structure of a work decoded in one specified language. It includes all expressions, all metadata and all relations. This means the provided metadata and the inferred one.

The format is PO specific and is pulled by a portal application to obtain all metadata details on a work.

```
<NOTICE decoding="eng" type="tree">
 <WORK>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318</IDENTIFIER>
   </URI>
  </SAMEAS>
 ....
 </WORK>
 <INVERSE>
  <WORK_PART_OF_DOSSIER>
    <URI>
     <VALUE>http://publications.europa.eu/resource/cellar/asdfghjhjkl</VALUE>
     <TYPE>cellar</TYPE>
     <IDENTIFIER>asdfghjhjkl</IDENTIFIER>
    </URI>
  </WORK_PART_OF_DOSSIER>
   ...
 </INVERSE>
 <EXPRESSION>
  <URI>
   <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001</VALUE>
   <TYPE>cellar</TYPE>
   <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0001</IDENTIFIER>
  </URI>
  <SAMEAS>
   <URI>
    <VALUE>http://publications.europa.eu/resource/pegase/14318.eng</VALUE>
    <TYPE>pegase</TYPE>
    <IDENTIFIER>14318.eng</IDENTIFIER>
   </URI>
```

```
  </SAMEAS>
  <EXPRESSION_USES_LANGUAGE>
    <URI>
      <VALUE>http://publications.europa.eu/resource/authority/language/ENG/LNG0001</VALUE>
      <TYPE>language</TYPE>
      <IDENTIFIER>ENG/LNG0001</IDENTIFIER>
    </URI>
    <IDENTIFIER>LNG0001</IDENTIFIER>
    <PREFLABEL>English</PREFLABEL>
  </EXPRESSION_USES_LANGUAGE>
...
</EXPRESSION>
<EXPRESSION>
  <URI>
    <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002</VALUE>
    <TYPE>cellar</TYPE>
    <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0002</IDENTIFIER>
  </URI>
  <SAMEAS>
    <URI>
      <VALUE>http://publications.europa.eu/resource/pegase/14318.fra</VALUE>
      <TYPE>pegase</TYPE>
      <IDENTIFIER>14318.fra</IDENTIFIER>
    </URI>
  </SAMEAS>
  <EXPRESSION_USES_LANGUAGE>
    <URI>
      <VALUE>http://publications.europa.eu/resource/authority/language/FRA/LNG1915</VALUE>
      <TYPE>language</TYPE>
      <IDENTIFIER>FRA/LNG1915</IDENTIFIER>
    </URI>
    <IDENTIFIER>LNG1915</IDENTIFIER>
    <PREFLABEL>French</PREFLABEL>
  </EXPRESSION_USES_LANGUAGE>
...
</EXPRESSION>
<MANIFESTATION  manifestation-type="pdf1x">
  <TECHMD>
    <MANIFESTATION-TYPE>pdf1x</MANIFESTATION-TYPE>
    <MIME-TYPE>application/pdf</MIME-TYPE>
  </TECHMD>
  <URI>
    <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01</VALUE>
    <TYPE>cellar</TYPE>
    <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0001.01</IDENTIFIER>
  </URI>
  <SAMEAS>
    <URI>
```

```
      <VALUE>http://publications.europa.eu/resource/pegase/14318.eng.pdf</VALUE>
      <TYPE>pegase</TYPE>
      <IDENTIFIER>14318.eng.pdf</IDENTIFIER>
    </URI>
  </SAMEAS>
...
</MANIFESTATION>
<MANIFESTATION manifestation-type="html">
  <TECHMD>
    <MANIFESTATION-TYPE>pdf1x</MANIFESTATION-TYPE>
    <MIME-TYPE>application/pdf</MIME-TYPE>
  </TECHMD>
  <URI>
    <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.02</VALUE>
    <TYPE>cellar</TYPE>
    <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0001.02</IDENTIFIER>
  </URI>
  <SAMEAS>
    <URI>
      <VALUE>http://publications.europa.eu/resource/pegase/14318.eng.html</VALUE>
      <TYPE>pegase</TYPE>
      <IDENTIFIER>14318.eng.html</IDENTIFIER>
    </URI>
  </SAMEAS>
  ....
</MANIFESTATION>
<MANIFESTATION manifestation-type="pdf1x">
  <TECHMD>
    <MANIFESTATION-TYPE>pdf1x</MANIFESTATION-TYPE>
    <MIME-TYPE>application/pdf</MIME-TYPE>
  </TECHMD>
  <URI>
    <VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0002.01</VALUE>
    <TYPE>cellar</TYPE>
    <IDENTIFIER>550e8400-e29b-41d4-a716-446655440000.0002.01</IDENTIFIER>
  </URI>
  <SAMEAS>
    <URI>
      <VALUE>http://publications.europa.eu/resource/pegase/14318.fra.pdf</VALUE>
      <TYPE>pegase</TYPE>
      <IDENTIFIER>14318.fra.pdf</IDENTIFIER>
    </URI>
  </SAMEAS>
...
</MANIFESTATION>
```

```
</NOTICE>
```

5.7 BRANCH NOTICE FORMAT

The xml structure providing the full hierarchical structure of an expression, its work and all its manifestations, decoded in one specified language. It includes all metadata and all relations. This means the provided metadata and the inferred one.

The format is PO specific and is pulled by a portal application to obtain all metadata details on an expression.

```
<?xml version="1.0" encoding="UTF-8"?>
<NOTICE type="treebranch" decoding="eng">
        <WORK>
                <URI><VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000</VALUE>...</URI>
                <SAMEAS>
                        <URI><VALUE>http://publications.europa.eu/resource/pegase/14318</VALUE>...</URI>
                </SAMEAS>
 ....
        </WORK>
        <INVERSE>
                  <WORK_PART_OF_DOSSIER>
                    <URI>
                      <VALUE>http://publications.europa.eu/resource/cellar/asdfghjhjkl</VALUE>
                      <TYPE>cellar</TYPE>
                      <IDENTIFIER>asdfghjhjkl</IDENTIFIER>
                    </URI>
                  </WORK_PART_OF_DOSSIER>
                   ...
        </INVERSE>
        <EXPRESSION>
                <URI><VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001</VALUE>...</URI>
                <SAMEAS>
                        <URI>><VALUE>http://publications.europa.eu/resource/pegase/14318.eng</VALUE>...</URI>
                </SAMEAS>
                <EXPRESSION_USES_LANGUAGE>
                        <URI><VALUE>http://publications.europa.eu/resource/authority/language/ENG/LNG0001</VALUE>...</URI>
                        <IDENTIFIER>LNG0001</IDENTIFIER>
                        <PREFLABEL>English</PREFLABEL>
                </EXPRESSION_USES_LANGUAGE>
...
        </EXPRESSION>
        <MANIFESTATION  manifestation-type="pdf1x">
```

```
                <TECHMD>
                        <MANIFESTATION-TYPE>pdf1x</MANIFESTATION-TYPE>
                        <MIME-TYPE>application/pdf</MIME-TYPE>
                </TECHMD>
                <URI><VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.01</VALUE>...</URI>
                <SAMEAS>
                        <URI><VALUE>http://publications.europa.eu/resource/pegase/14318.eng.pdf</VALUE>...</URI>
                </SAMEAS>
  ...
        </MANIFESTATION>
        <MANIFESTATION manifestation-type="html">
                <TECHMD>
                        <MANIFESTATION-TYPE>pdf1x</MANIFESTATION-TYPE>
                        <MIME-TYPE>application/pdf</MIME-TYPE>
                </TECHMD>
                <URI><VALUE>http://publications.europa.eu/resource/cellar/550e8400-e29b-41d4-a716-446655440000.0001.02</VALUE>...</URI>
                <SAMEAS>
                        <URI><VALUE>http://publications.europa.eu/resource/pegase/14318.eng.html</VALUE>...</URI>
                </SAMEAS>
    ....
        </MANIFESTATION>
</NOTICE>
```

5.8 RDF/XML NOTICE FORMAT

The RDF/XML stream of the metadata for a specific resource.

The format is pulled from CELLAR when needed. There currently is no EurLex requirement for this format.

This includes:

- All RDF statements having that particular resource as a subject are provided, including inferred inverse and super properties.
- All objects are expanded (1 level) except those of class skos:Concept, entity_temporal, work, expression, manifestation.
- All annotation properties on the above statements

6 CONFIGURATION

6.1 LANGUAGE CONFIGURATION

The list of required languages (for indexing) and the language fallback calculation is based on a configuration file. In this file, @code values are PO language URI.

```
<?xml version="1.0" encoding="UTF-8"?>
<required.languages>
	<language code="http://publications.europa.eu/resource/authority/language/BUL">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/CES">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/DAN">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/DEU">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/ELL">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/ENG">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/EST">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/FIN">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/FRA">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/GLE">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/HUN">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/ITA">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
		<alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
	</language>
	<language code="http://publications.europa.eu/resource/authority/language/LAV">
		<alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
		<alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
```

```
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/LIT">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/MLT">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/NLD">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/POL">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/POR">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/RON">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/SLK">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/SLV">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/SPA">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
        <language code="http://publications.europa.eu/resource/authority/language/SWE">
            <alternative order="1" code="http://publications.europa.eu/resource/authority/language/ENG"/>
            <alternative order="2" code="http://publications.europa.eu/resource/authority/language/FRA"/>
            <alternative order="3" code="http://publications.europa.eu/resource/authority/language/DEU"/>
        </language>
</required.languages>
```

Note: Assumption - The PO language Concept URI must have a 1-1 relation with the ISO 639-3 language codes (see [13]).

7 DISCLAIMER NOTES

7.1 GENERIC INTERFACE

Care has been taken to make the interface as generic as possible and complying to standards. However, the EurLex party (second to the PO) was the only end-user around the table by the PO.

7.2 INDEX AND SEARCH FUNCTIONALITY.

Due to unavailability of relevant thesaurus, synonym and phrase support in the Index and Search Layer, specific services were designed to optionally be supported by CELLAR.

Likewise optional services where specified for the support of related documents.

Future optimizations could significantly reduce the additional optional processing during ingestion, decoding and notice compilation.

7.3 DEPENDENCY ON ONTOLOGY SPECIFICS

The IDOL and Notice interface is tailored to IDOL capabilities as IDOL is the motor for the EurLex portal. Limitations of IDOL in XML processing (e.g. tag names, attribute usage) have as a consequence that a dedicated decoding and RDF-2-Notice serialization needed to be specified as an addition. This dedicated approach impacts generic functionality and evolution.

Generic algorithms are the main objective. However, the ontology and RDF capabilities reach far beyond any generic solution. The state of the art in RDF-2-XML also does not provide such a solution today. (Except for the SPARQL/XML or JSON interfaces provided by SPARQL protocol - a solution which is not supported by the end user.).

7.4 SYSTEMS ORGANIZATION

Some business taylored decoding and indexing interfaces presented in this specification require heavy calculation. Specifically

- Notice compilation
  The example (see 4.2.3.2 Inverse relations and re-indexing) on inverse relations showed that 1 relation update in 1 work may result easily in the re-indexing of all expressions of 3 (or more) works. This causes 70 re-indexing requests. Being the re-compilation of 70 indexing notices plus 70 index request generations to IDOL. To improve performance and use scaling these services could be separated if needed so that the CELLAR notice compilation would impact the ingestion process less.
- NAL/EUROVOC access may get heavy if multiple portals start using the NAL web services (internal and external) as is probable in the future. In order to have a good service, it is safe to set-up a dedicated server for this task. (Be it within the CELLAR cluster).

7.5 TECHNICAL METADATA

Since there is no specification to date, the details for providing and coding technical metadata are incomplete and only available by example in a METS ingestion package. It is clear from the specification above (e.g. manifestation information in notices) that a more formal approach must be given to finalize robust interfaces.

7.6 METS INGESTION

METS ingestion is detailed in [18], [4] and 4.9 Ingestion Interface (METS).

There is an issue because the references are not aligned. The response on create and update is not a METS package but a log file detailing the success or failure for each object.

8 ANNEX A: EXAMPLE NAL ENCODING

1) Table 100 is "procedure type". It is used in the ontology for the range of property

```
po-frbr:case-law_has_type_procedure_concept_type_procedure
```

2) in the ATTO we find

```
<TABLE NAME="FD_Table100" VL="EN">
<LIBELLE CODE="ANNU=AJ">Application for annulment - adjourned</LIBELLE>
```

3) in the provided SKOS/SKOS-XL for upload in CELLAR, we expect

```
<skos:Concept rdf:about="http://publications.europa.eu/resource/authorities/FD_100/ANNU%3DAJ">
        <skos:inScheme rdf:resource="http://publications.europa.eu/resource/authorities/FD_100"/>
        <dc:identifier>ANNU=AJ</dc:identifier>
        <skos:prefLabel xml:lang="en">Action for annulment - adjourned</skos:prefLabel>
        <skos:prefLabel xml:lang="bg">отложено производство за отмяна</skos:prefLabel>
        <skos:prefLabel xml:lang="cs">Žaloba na neplatnost – odročená</skos:prefLabel>
        <skos:prefLabel xml:lang="da">Annullationssøgsmål - udsættelse</skos:prefLabel>
        <skos:prefLabel xml:lang="de">Nichtigkeitsklage - Vertagt</skos:prefLabel>
        <skos:prefLabel xml:lang="el">Προσφυγή ακυρώσεως - ΑΝΑΒΛΗΘΕΙΣΑ</skos:prefLabel>
        <skos:prefLabel xml:lang="es">Recurso de anulación - aplazado</skos:prefLabel>
        <skos:prefLabel xml:lang="et">Tühistamishagi - edasi lükatud</skos:prefLabel>
        <skos:prefLabel xml:lang="fi">Kumoamiskanne - lykätty</skos:prefLabel>
        <skos:prefLabel xml:lang="fr">Recours en annulation ajourné</skos:prefLabel>
        <skos:prefLabel xml:lang="ga">Application for annulment - adjourned</skos:prefLabel>
        <skos:prefLabel xml:lang="hu">Megsemmisítés iránti kereset – elhalasztott</skos:prefLabel>
        <skos:prefLabel xml:lang="it">Ricorso per annullamento - aggiornato</skos:prefLabel>
        <skos:prefLabel xml:lang="lt">Ieškinys dėl panaikinimo – atidėtas</skos:prefLabel>
        <skos:prefLabel xml:lang="lv">Prasība atcelt tiesību aktu – atlikts</skos:prefLabel>
        <skos:prefLabel xml:lang="mt">Rikors għal annullament - aġġornat</skos:prefLabel>
        <skos:prefLabel xml:lang="nl">Beroep tot nietigverklaring - verdaagd</skos:prefLabel>
        <skos:prefLabel xml:lang="pl">Skarga o stwierdzenie nieważności – w trybie wydłużonym</skos:prefLabel>
        <skos:prefLabel xml:lang="pt">Recurso de anulação adiado</skos:prefLabel>
        <skos:prefLabel xml:lang="ro">Acţiune în anulare - amânată</skos:prefLabel>
        <skos:prefLabel xml:lang="sk">Žaloba o neplatnosť - odložená</skos:prefLabel>
        <skos:prefLabel xml:lang="sl">ničnostna tožba – odložena</skos:prefLabel>
        <skos:prefLabel xml:lang="sv">Talan om ogiltigförklaring - uppskjuten</skos:prefLabel>
</skos:Concept>
```

or, using SKOS-XL:

```
<at:Language rdf:about="http://publications.europa.eu/resource/authority/language/BUL"
             at:code-639-3="bul" at:code-639-2b="bul" at:code-639-2t="bul" at:code-639-1="bg" at:op-code="BUL"
            at:start.use="1950-05-09" at:protocol.order="EU-01">
            <dc:identifier>BUL</dc:identifier>
            <at:op-mapped-code>BG</at:op-mapped-code>
            <at:original.name rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-original1-bul"/>
            <at:denotationScope rdf:resource="http://publications.europa.eu/resource/authority/schema#ScopeI"/>
            <at:languageType rdf:resource="http://publications.europa.eu/resource/authority/schema#TypeL"/>
            <rdf:type rdf:resource="http://www.w3.org/2004/02/skos/core#Concept"/>
            <skos:broader rdf:resource="http://publications.europa.eu/resource/authority/language/politicalunion-EU"/>
            <skos:inScheme rdf:resource="http://publications.europa.eu/resource/authority/language"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-spa"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-dan"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-deu"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-ell"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-eng"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-fra"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-ita"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-nld"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-por"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-fin"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-swe"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-gle"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-ces"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-est"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-lav"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-lit"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-hun"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-mlt"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-pol"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-slk"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-slv"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-bul"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-ron"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-tur"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-ice"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-nor"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-rus"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-hrv"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-mkd"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-hbs"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-srp"/>
            <xl:prefLabel rdf:resource="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-ukr"/>
</at:Language>
<at:AuthorityListPreferredTerm rdf:about="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-eng">
            <xl:literalForm xml:lang="en">Bulgarian</xl:literalForm>
</at:AuthorityListPreferredTerm>
...
<at:AuthorityListPreferredTerm rdf:about="http://publications.europa.eu/resource/authority/language/BUL/LNG1014-pref-ukr">
            <at:script rdf:resource="http://publications.europa.eu/resource/authority/schema#ScriptCyrillic"/>
            <xl:literalForm xml:lang="uk">Болгарська мо́ва</xl:literalForm>
</at:AuthorityListPreferredTerm>
```

4) In the notice formats this will give

```
<CASE-LAW_HAS_TYPE_PROCEDURE_CONCEPT_TYPE_PROCEDURE>
   <ID>http://publications.europa.eu/resource/authorities/FD_100/ANNU%3DAJ</ID>
   <IDENTIFIER>ANNU=AJ</IDENTIFIER>
   <PREFLABEL>Application for annulment - adjourned</PREFLABEL>
</CASE-LAW_HAS_TYPE_PROCEDURE_CONCEPT_TYPE_PROCEDURE>
```

5) in the RESTful webservice API, the concept will be (in English)

```
{
        "uri":{"uri":"http://publications.europa.eu/resource/authorities/FD_100/ANNU%3DAJ"},
        "identifier":"ANNU=AJ",
        "language":"eng",
        "prefLabel":{"language":"eng","string":"Application for annulment - adjourned"}}
}
```

9 ANNEX B: CACHE OPTIMIZATION

If there are business requirements, the cache control can be optimized.

9.1 SPECIFIED CONTROLS

Cache is described using Last-Modified: and If-Modified-Since: HTTP headers.

9.2 POSSIBLE OPTIMIZATION

In order to optimize cache control, HTTP (see [14]) suggests using the If-Match and ETag headers.

The value of ETag is provided with a GET response. The value is an arbitrary token.

The If-Match is provided with a GET request. It holds one or more tokens.

9.2.1USAGE

In a GET response, the CCR can provide Last-Modifed and ETag

In a GET request the user specified If-Modified-Since and If-Match (may have multiple ETag values)

If either check fails, the cache must be updated.

9.2.2EXAMPLE

In the GET request, specify the If-Match parameter.

The following are to possible If-Match settings

```
If-Match: "xyzzy", "r2d2xxxx", "c3piozzzz"
If-Match: *
```

In a GET response provide the ETag as:

```
ETag: "xyzzy"
```

10 ANNEX C: QUERY SCENARIO RELATED DOCUMENTS

1. The following is a summary of exchanged mails

10.1 CONTEXT ON IDENTIFIERS

2. A document may have more than 1 identifier.
3. Each identifier is unique all over the system.
4. A document is always offered to IDOL with its cellar identifier
5. A document may get additional PS-identifiers after it was registered.
6. Metadata typically refers a document using a PS-identifier, NOT the CELLAR identifier
7. A [EurLex/Portal] query can specify any one of the identifiers.

10.2 EXAMPLE - CONTENT IN SCOPE

Document A with identifiers: celex:01 ; cellar:02 ; oj:02

```
<WORK>
   <URI>cellar:02</URI>
</WORK>
```

Document B with identifiers : celex:02 ; cellar:01

- has meta data: cites document A

```
<WORK>
   <YRI>cellar:01</URI>
   <CITES>oj:02</CITES>
</WORK>
```

Document C with identifiers : cellar:03 ; oj:01

- has metadata
  - amends Documents A and
  -amends Document D (D is not indexed yet, D is referred to with id “oj:03”)

```
<WORK>
   <URI>cellar:03</URI>
   <AMENDS>cellar:02</AMENDS>
   <AMENDS>oj:03</AMENDS>
</WORK>
```

10.3 QUERIES NEEDING TO BE SUPPORTED

1) Find documents amending document A: select X where X.amends = A.id

Must deliver X in { C }

Must NOT deliver X in { C, D } as D there is no work with id oj:03 is loaded.

2) find documents B cites: Select X where X.id = B.cites

Must deliver X in { A }

10.4 SOLUTION OUTLINE

The solution implementation is detailed in RDF/XML to PO Notice XML Encoding Algorithm

10.4.1 PART 1 - ADD ALL IDENTIFIERS TO THE DOCUMENT.

Add all identifiers of an object are provided in the metadata of that object.

Document A with identifiers: celex:01; cellar:02; oj:02

```
<WORK>
   <URI>cellar:02</URI>
   <SAMEAS>celex:01</SAMEAS>
   <SAMEAS>oj:02</SAMEAS>
</WORK>
```

Document B with identifiers : celex:02 ; cellar:01

```
<WORK>
   <URI>cellar:01</URI>
   <SAMEAS>celex:02</SAMEAS>
   <CITES>oj:02</CITES>
</WORK>
```

Document C with identifiers : cellar:03 ; oj:01

```
<WORK>
   <URI>cellar:03</URI>
   <SAMEAS>oj:01</SAMEAS>
   <AMENDS>cellar:02</AMENDS>
   <AMENDS>oj:03</AMENDS>
</WORK>
```

Query 2) Find documents B cites: Select X where X.id = B.cites or X.func_id = B.cites

Delivers X in { A }

This would be translated into an IDOL query of type

```
…&FieldRestriction= Match{oj:02}:Id +OR+Match{oj:02}:Func_Id
```

10.4.2 PART 2 - ADD INVERSES OF INCOMING RELATIONS TO EACH DOCUMENT

(see Add Inverse Relations from Other Cellar Objects and Add Inverse Relations to Other Cellar Objects)

Document A with identifiers: celex:01; cellar:02; oj:02

```
<WORK>
   <URI>cellar:02</URI>
   <SAMEAS>celex:01</SAMEAS>
   <SAMEAS>oj:02</SAMEAS>
   <INVERSE>
     <CITED_BY>cellar:01</CITED_BY>
     <AMENDED_BY>cellar:03</AMENDED_BY>
   </INVERSE>
</WORK>
```

Document B with identifiers : celex:02 ; cellar:01

```
<WORK>
   <URI>cellar:01</URI>
   <SAMEAS>celex:02</SAMEAS>
   <CITES>oj:02</CITES>
</WORK>
```

Document C with identifiers : cellar:03 ; oj:01

```
<WORK>
   <URI>cellar:03</URI>
   <SAMEAS>oj:01</SAMEAS>
   <AMENDS>cellar:02</AMENDS>
   <AMENDS>oj:03</AMENDS>
</WORK>
```

Query 1) Find documents amending document A: select X where X.id = A.amended_by

Must deliver X in { C }

This would be translated into an IDOL query of type:

```
…&FieldRestriction= Match{celex:01}:amended_by+OR+Match{cellar:02}:amended_by+OR+Match{oj:2}:amended_by
```

11 ANNEX D - IRI PERCENT-ENCODING, -DECODING

In this annex *segment* is as defined in

- URI rules: http://tools.ietf.org/html/rfc3986
- IRI rules: http://tools.ietf.org/html/rfc3987

Some characters are used as a delimiter within an IRI or when used in a protocol carrying that IRI (e.g. as a URL or a URI over HTTP or in an RDF notation like RDF/XML or N3). When those characters are used in an IRI segment, they MUST be percent-encoded.

In addition to the URI, URI and URL syntax, users may have a particular scheme for segment encoding. That scheme may have its own delimiters. In order to distinguish in a segment between schema-delimiters and regular data, the schema delimiters when used as data, should be percent encoded as well.

11.1 IRI GENERATION

URI generation is a producer responsibility. For Cellar, MetaConv is the sole producer of IRI.

11.1.1 SPECIFICATION IRI IETF-RFC 3987

Reserved characters within an IRI segment must be percent-encoded.

Reserved characters are

```
reserved gen-delims | sub-delims
gen-delims ":" | "/" | "?" | "#" | "[" | "]" | "@"
sub-delims "!" | "$" | "&" | "'" | "(" | ")" | "*" | "+" | "," | ";" | "="
encoding escape character "%"
```

or in hex (respectively)

```
x3A,x2F,x3F,x23,x5B,x5D,x40)
x21,x24,x26,x27,x28,x29,x2A,x2B,x2C,x3B,x3D
x25
```

11.1.2 OTHER DELIMITERS

Other characters used as delimiter are defined by the RDF encodings:

N3: http://www.w3.org/DesignIssues/Notation3.html

RDF/XML: http://www.w3.org/TR/rdf-syntax-grammar/

```
"space" | "\" | "<" | ">" | """
x20, x5C, x3C, x3E, x22
```

11.1.3 OTHER CHARACTERS

All other characters not constituting a delimiter are discouraged to be escaped using percent encoding.

11.2 IRI REFERENCE

IRI/URI needs to be properly coded by the producer (MetaConv). IRI/URI/URL will not be encoded or decoded by cellar. When an IRI is provided in a segment (e.g. cellar produced notices decoding a URI), percent-decoding will be applied to the segment.

11.2.1 CELLAR IRI/URI CONVENTIONS

The conventions are detailed in 3.1.1 The URI resource naming convention. A URI is build from 4 components

- a base-URI (e.g. http://publications.europa.eu/)
- a resource type URI = base-URI + segment "resource/"
- a resource base URI = resource-type-URI + PS name (e.g. celex)
- the resource URI = resource base URI + the PS-id segment.

Only the PS-id segment is allowed to have characters that required percent-encoding.

11.2.2 CELLAR NOTICE SERIALIZATION

The notice serialization is detailed in 5.2.1 RDF/XML to PO Notice XML Encoding Algorithm. On URI serialization, the PS-id part is serialized as an <IDENTIFIER> in notices, the full resource URI is provided as a <VALUE>, the PS name is provided as <TYPE>.

- <IDENTIFIER> is Percent-decoded by CELLAR serialization
- <TYPE> and <VALUE> are NOT be percent-decoded by CELLAR.

Note: Cellar does not provide any validation on the URI construction or its occasional correspondence to a (PS) identifier available in the metadata.

11.3 IRI IN URI QUERY PARAMETER VALUES.

In a URI a reference can be made in a parameter value pair (see 4.5.3 API). The delimiters used within a query string are '=' [value assignment] and '&' [parameter delimiter].

The query part is delimited by a '?' and the end of the URI or the '#'. JBOSS typically may suffix a URI with a ';' and the '%' is used to start a 3-char %-encoding.

11.3.1 WEB-SERVICE PARAMETER VALUE GENERATION

Whenever these characters ('=', '&', '?', '#', ';', '%') are used as content and not as a delimiter, they MUST be percent-encoded. See example in 4.5.3 API.

It is allowed to percent-encode any character that is not a delimiter (when in doubt, percent-encode).

11.3.2 WEB SERVICE PARAMETER HANDLING

The web-service will do a onetime percent-decoding.

12 ANNEX E - SEQUENCED PROPERTY VALUES

Property values (not properties) can be ordered in a nested sequences when provisioned to Cellar. Such ordering of values is realized using rdf:List constructs. Only the order of values of 1 property (with multiple occurrence) can be represented. The nested sequencing can be used to provide (local) order in the XML notice.

12.1 EXAMPLE

The example orders values of the cdm:case-law_is_about_concept_case-law. The provided example shows

- multiple use of the same propertyvalue (see 3. and 4.)
- nested sequencing (see 5.)

1.	**B-19.04.02** Communauté économique européenne / Communauté européenne / Contentieux / Renvoi préjudiciel / Compétence de la Cour
2.	**A-01.02.05** L'ordre juridique communautaire / Sources du droit communautaire / Principes généraux du droit / Sécurité juridique
3.	**B-02.04.02.01** Communauté économique européenne / Communauté européenne / Libre circulation des marchandises / Échanges avec les pays tiers / Tarif douanier commun / Interprétation des positions tarifaires et classement des marchandises : principes et procédures
4.	**B-02.04.02.01** Communauté économique européenne / Communauté européenne / Libre circulation des marchandises / Échanges avec les pays tiers / Tarif douanier commun / Interprétation des positions tarifaires et classement des marchandises : principes et procédures
5.	**B-02.04.02.02** Communauté économique européenne / Communauté européenne / Libre circulation des marchandises / Échanges avec les pays tiers / Tarif douanier commun / Les différentes positions tarifaires **B-03.04.01.00** Communauté économique européenne / Communauté européenne / Agriculture / Les différentes organisations communes des marchés agricoles / Céréales / Généralités

12.2 ONTOLOGY CONSTRUCTS

The ontology uses rdf:List, rdf:first, rdf:rest and rdf:nil.

cdm:memberList - An object property indicating on which providing the rdf:List that organizes a set of property values. The range of the property must be rdf:List.

cdm:listedProperty - An object property identifying the property from which object values are listed.. The domain of the property is rdf:List, the range is rdf:Property.

cdm:nestedList - An object property that is a sub-property of rdf:first. It introduces a nested list (as the first resource) at the current position in the rdf:List.

12.3 EXAMPLE DATA PROVISIONING

The RDF statements describing the nested sequences are represented below. The example asumes the following entities being declared:

- rdf "http://www.w3.org/1999/02/22-rdf-syntax-ns#"
- cdm "http://publications.europa.eu/ontology/cdm#"
- fd_577 "http://publications.europa.eu/resource/authority/fd_577/"

```
<cdm:case-law rdf:about="...">
  <cdm:memberList rdf:parseType="Resource">
    <cdm:listedProperty rdf:resource="&cdm;case-law_is_about_concept_case-law"/>
    <rdf:first rdf:resource="&fd_577;B-19.04.02"/>
    <rdf:rest rdf:parseType="Resource">
      <rdf:first rdf:resource="&fd_577;A-01.02.05/>
      <rdf:rest rdf:parseType="Resource">
        <rdf:first rdf:resource="&fd_577;B-02.04.02.01/>
        <rdf:rest rdf:parseType="Resource">
          <rdf:first rdf:resource="&fd_577;B-02.04.02.01/>
          <rdf:rest rdf:parseType="Resource">
            <cdm:nestedList rdf:parseType="Resource">
              <rdf:first rdf:resource="&fd_577;B-02.04.02.02/>
              <rdf:rest rdf:parseType="Resource">
                <rdf:first rdf:resource="&fd_577;B-03.04.01.00/>
                <rdf:rest rdf:resource="&rdf;nil"/>
              </rdf:rest>
            </cdm:nestedList>
            <rdf:rest rdf:resource="&rdf;nil"/>
          </rdf:rest>
        </rdf:rest>
      </rdf:rest>
    </rdf:rest>
  </cdm:memberList>
</cdm:case-law>
```

12.4 EXAMPLE NOTICE SERIALIZATION

The serialisation is discussed in 5.2.1 RDF/XML to PO Notice XML Encoding Algorithm (see The property cdm:memberList and range is rdf:subClassOf skos:Concept, `annotation:is_facet` and `all_numbered_levels`).

Applied on the above example, we would get the list structure:

```
<CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW.MEMBERLIST>
  <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
    <!-- plain Concept URI, level or facet decoding detail of B-19.04.02 -->
  </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
  <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
    <!-- plain Concept URI, level or facet decoding detail of A-01.02.05  -->
  </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
  <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
    <!-- plain Concept URI, level or facet decoding detail of B-02.04.02.01  -->
  </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
  <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
    <!-- plain Concept URI, level or facet decoding detail of B-02.04.02.01  -->
  </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
  <NESTEDLIST>
    <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
      <!-- plain Concept URI, level or facet decoding detail of B-02.04.02.02  -->
    </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
    <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
      <!-- plain Concept URI, level or facet decoding detail of B-03.04.01.00  -->
    </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
  </NESTEDLIST>
</CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW.MEMBERLIST>
```

The following is a worked-out example:

```
<CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW.MEMBERLIST>
   <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
      <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_3>
         <ANNOTATION>
            <COMMENT>JOERI 2.01.04</COMMENT>
         </ANNOTATION>
         <URI>
            <VALUE>http://publications.europa.eu/resource/authority/fd_577/2.01.04</VALUE>
            <TYPE>fd_577</TYPE>
            <IDENTIFIER>2.01.04</IDENTIFIER>
         </URI>
         <IDENTIFIER>2.01.04</IDENTIFIER>
         <PREFLABEL>European Commission</PREFLABEL>
      </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_3>
      <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_1>
         <URI>
            <VALUE>http://publications.europa.eu/resource/authority/fd_577/2</VALUE>
            <TYPE>fd_577</TYPE>
            <IDENTIFIER>2</IDENTIFIER>
         </URI>
         <IDENTIFIER>2</IDENTIFIER>
         <PREFLABEL>Institutional framework of the European Union</PREFLABEL>
      </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_1>
      <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_2>
         <URI>
            <VALUE>http://publications.europa.eu/resource/authority/fd_577/2.01</VALUE>
            <TYPE>fd_577</TYPE>
            <IDENTIFIER>2.01</IDENTIFIER>
         </URI>
         <IDENTIFIER>2.01</IDENTIFIER>
         <PREFLABEL>Institutions</PREFLABEL>
      </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_2>
   </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
   <NESTEDLIST>
      <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
         <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_1>
            <ANNOTATION>
               <COMMENT>JOERI OP_DATPRO</COMMENT>
            </ANNOTATION>
            <URI>
               <VALUE>http://publications.europa.eu/resource/authority/fd_577/OP_DATPRO</VALUE>
               <TYPE>fd_577</TYPE>
               <IDENTIFIER>OP_DATPRO</IDENTIFIER>
            </URI>
            <IDENTIFIER>OP_DATPRO</IDENTIFIER>
            <PREFLABEL>Provisional data</PREFLABEL>
         </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_1>
      </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
   </NESTEDLIST>
   <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
      <CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_1>
         <ANNOTATION>
            <COMMENT>JOERI OP_DATPRO</COMMENT>
         </ANNOTATION>
         <URI>
            <VALUE>http://publications.europa.eu/resource/authority/fd_577/OP_DATPRO</VALUE>
            <TYPE>fd_577</TYPE>
            <IDENTIFIER>OP_DATPRO</IDENTIFIER>
         </URI>
         <IDENTIFIER>OP_DATPRO</IDENTIFIER>
         <PREFLABEL>Provisional data</PREFLABEL>
      </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW_1>
   </CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW>
</CASE-LAW_IS_ABOUT_CONCEPT_CASE-LAW.MEMBERLIST>
```

13 ANNEX F - NOTICE SERIALIZATION SCHEMA TEMPLATE

This is not a typical XML schema. Rather it is an XML-schema template which is filled in depending the properties defined by the CDM and TDM ontology (http://publications.europa.eu/ontology/cdm# and http://publications.europa.eu/ontology/tdm).

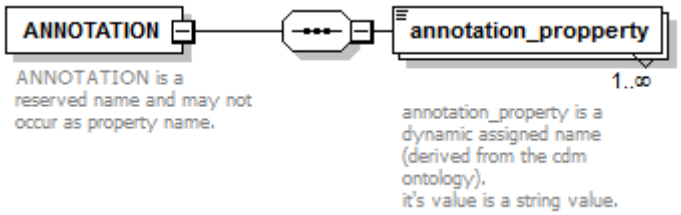
In this specification, element names (or name parts) in UPPER CASE are definite (fixed). The lower case parts are dynamic.

Note: The order of child elements typically is NOT fixed.

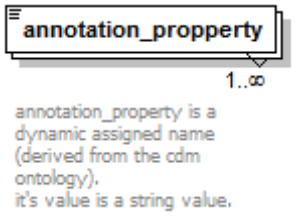
schema location: ..\xsd\notice.xsd
attribute form default: **unqualified**
element form default: **qualified**

Elements	Groups	Complex types	Simple types	Attributes
ANNOTATION	embedded-property	Concept	mdtypes	manifestation-type
EMBEDDED_NOTICE	Identifier	Date	types	type
INVERSE	item-property	EMBEDDED_EXPRESSIONType		
MANIFESTATION_HAS_ITEM	property	EMBEDDED_NOTICEType		
NOTICE	t_property	EmbeddedRelation		
OBJECT		Facet		
p_name.MEMBERLIST		InverseRelation		
p_name_concept		ItemRelation		
p_name_date		Level		
p_name_embedded_rel		Literal		
p_name_facet		MANIFESTATION_typeType		
p_name_inverse_rel		MANIFESTATIONType		
p_name_item_rel		Memberlist		
p_name_level		Relation		
p_name_literal		URI		
p_name_rel		WORK_HAS_EXPRESSIONType		
SAMEAS				
TECHMD				
URI				

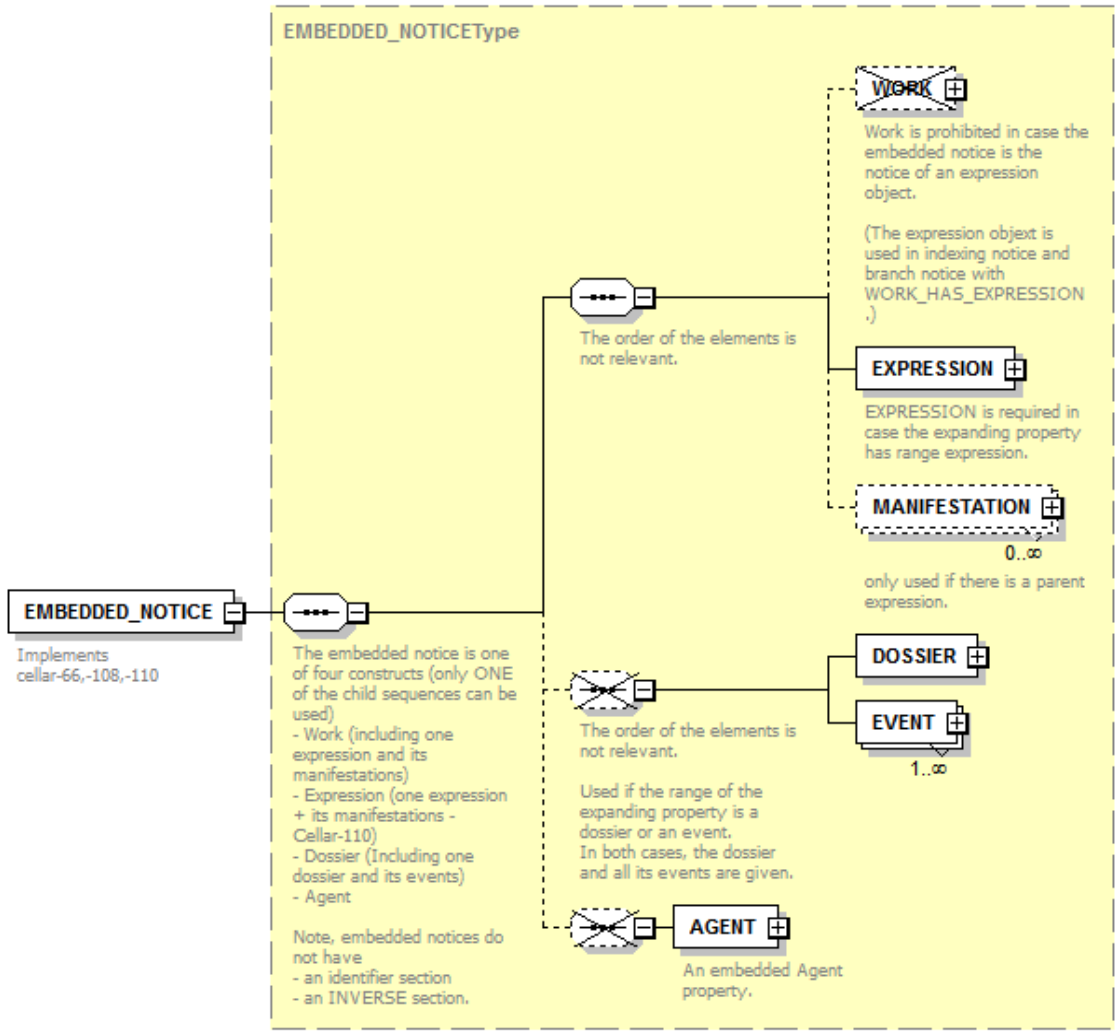
element **ANNOTATION**

diagram	
properties	content complex
children	annotation_propperty
used by	complexTypes Concept Date EmbeddedRelation InverseRelation Literal Relation
annotation	documentation ANNOTATION is a reserved name and may not occur as property name.

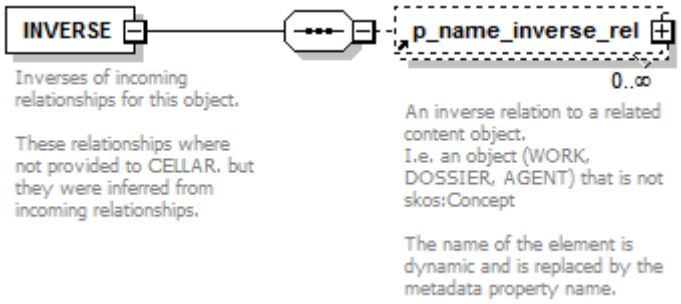
element **ANNOTATION/annotation_propperty**

diagram	
type	**xs:string**
properties	isRef 0 minOcc 1 maxOcc unbounded content simple
annotation	documentation annotation_property is a dynamic assigned name (derived from the cdm ontology). it's value is a string value.

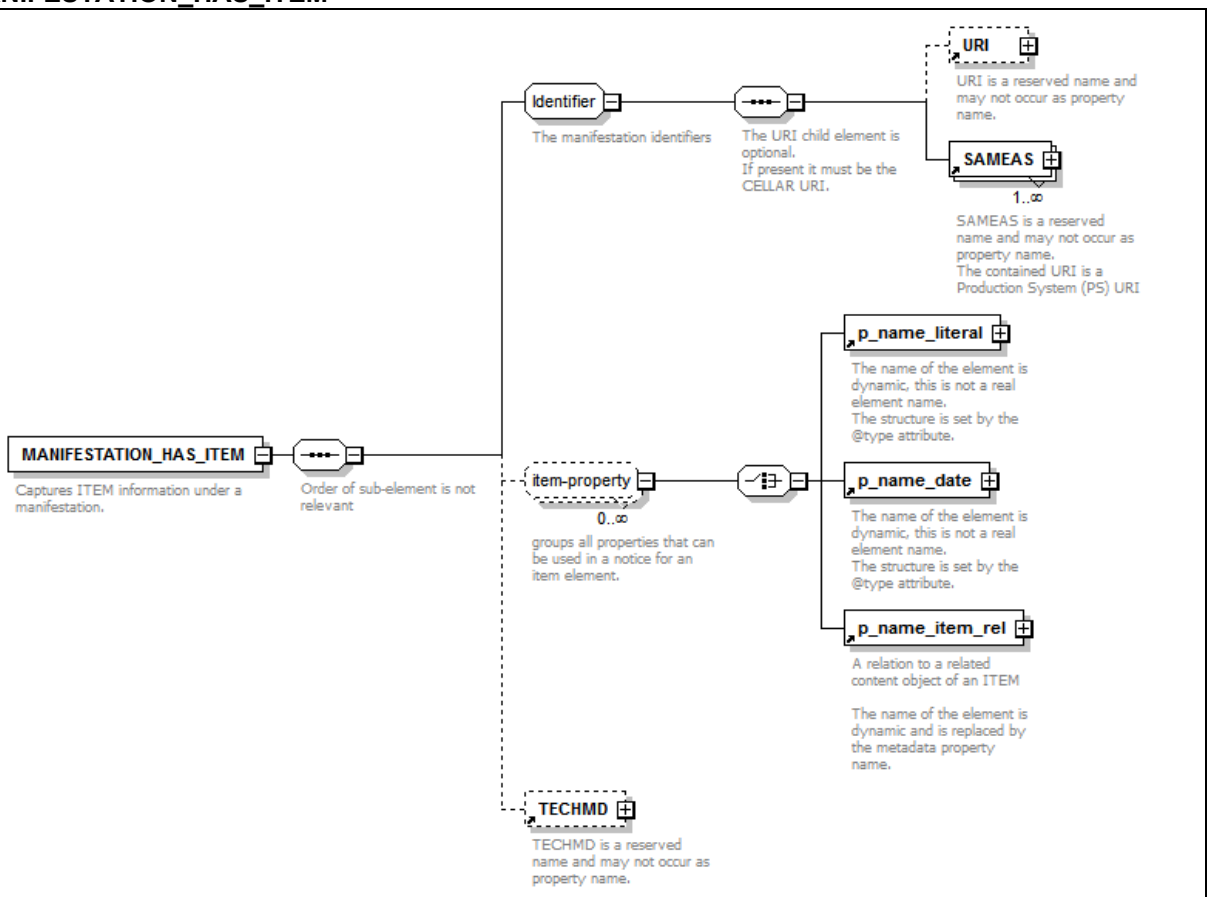
element **EMBEDDED_NOTICE**

diagram	
type	**EMBEDDED_NOTICEType**
properties	content complex
children	**WORK EXPRESSION MANIFESTATION DOSSIER EVENT AGENT**
used by	complexTypes **InverseRelation Relation**
annotation	documentation Implements cellar-66,-108,-110

element **INVERSE**

diagram	
properties	content complex
children	p_name_inverse_rel
used by	elements NOTICE NOTICE NOTICE
annotation	documentation Inverses of incoming relationships for this object. These relationships where not provided to CELLAR. but they were inferred from incoming relationships.

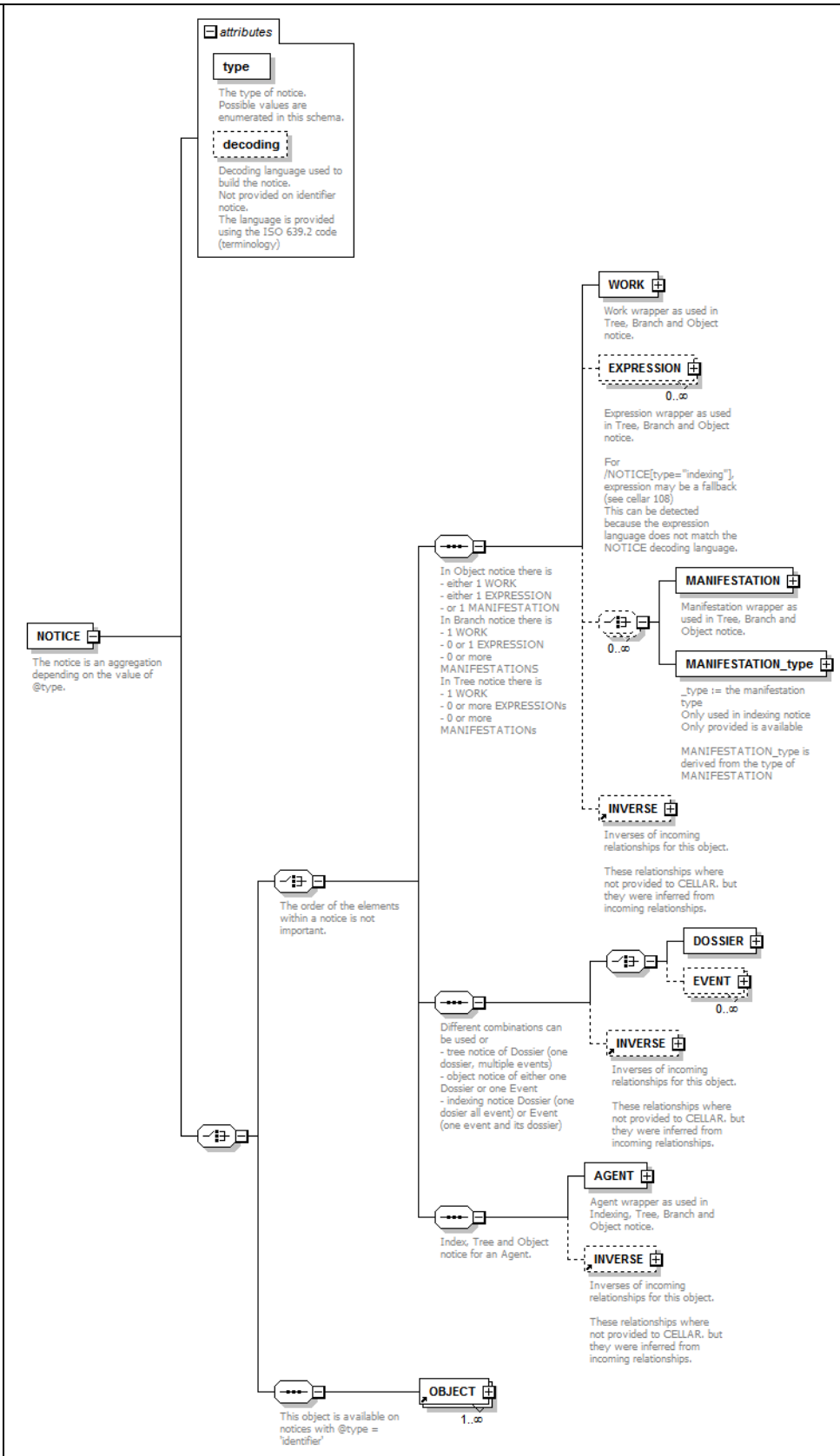
element **MANIFESTATION_HAS_ITEM**

diagram	
properties	content complex

children	**URI SAMEAS p_name_literal p_name_date p_name_item_rel TECHMD**
used by	element **EMBEDDED_NOTICEType/MANIFESTATION** complexType **MANIFESTATIONType**
annotation	documentation Captures ITEM information under a manifestation.

element **NOTICE**

diagram



properties

content complex

children	**WORK EXPRESSION MANIFESTATION MANIFESTATION_type INVERSE DOSSIER EVENT AGENT OBJECT**
attributes	Name Type Use Default Fixed annotation type **derived by: xs:string** required documentation The type of notice. Possible values are enumerated in this schema. decoding documentation Decoding language used to build the notice. Not provided on identifier notice. The language is provided using the ISO 639.2 code (terminology)
annotation	documentation The notice is an aggregation depending on the value of @type.

attribute **NOTICE/@type**

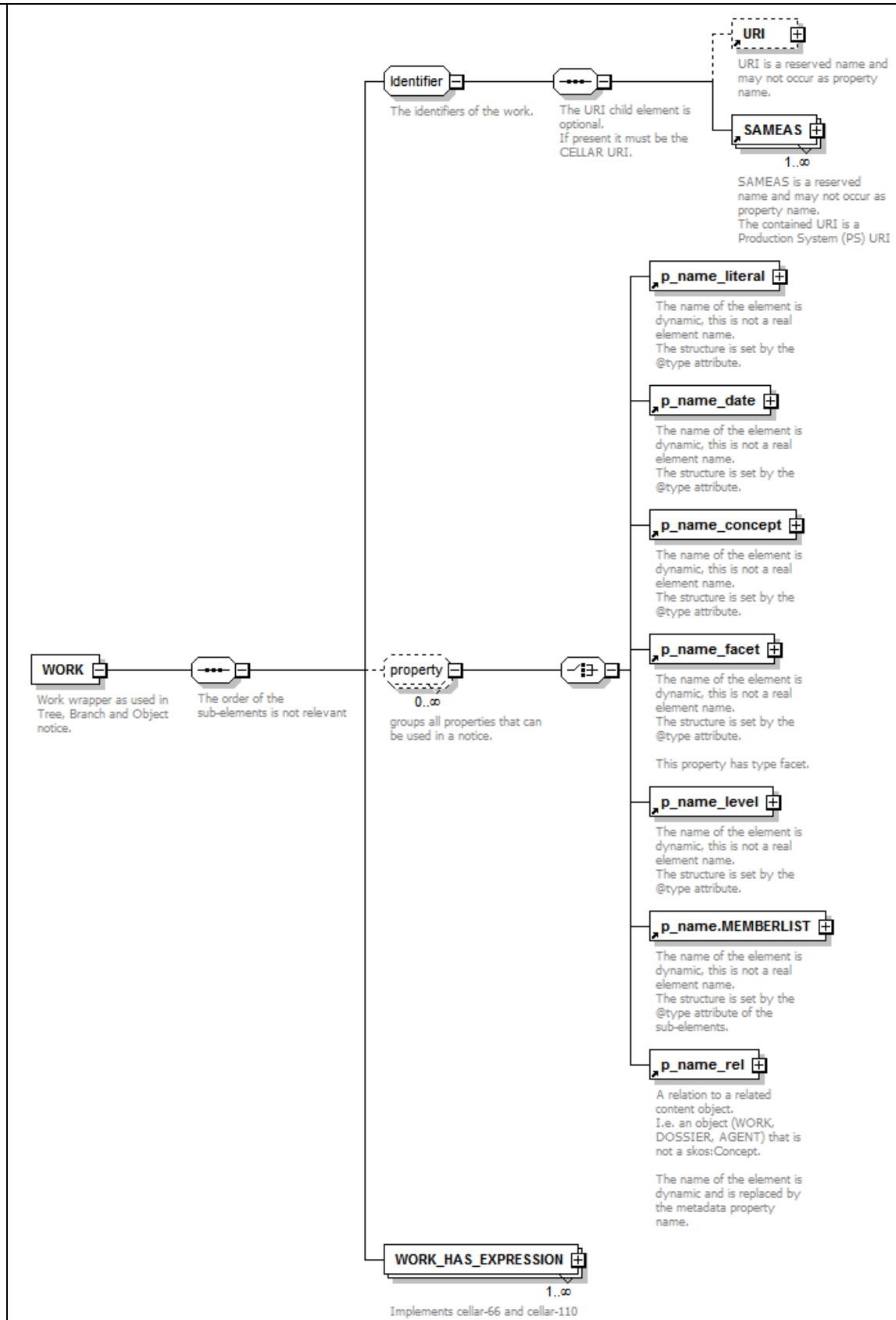
type	restriction of **xs:string**
properties	isRef 0 use required
facets	Kind Value annotation enumeration indexing enumeration identifier enumeration object enumeration tree enumeration branch
annotation	documentation The type of notice. Possible values are enumerated in this schema.

attribute **NOTICE/@decoding**

properties	isRef 0
annotation	documentation Decoding language used to build the notice. Not provided on identifier notice. The language is provided using the ISO 639.2 code (terminology)

element **NOTICE/WORK**

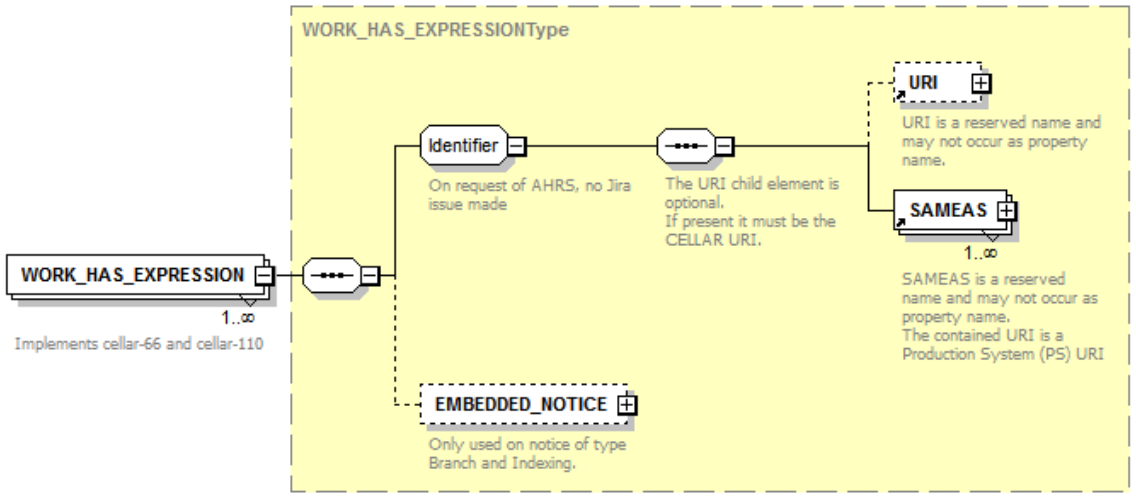
diagram



properties	isRef	0
	content	complex

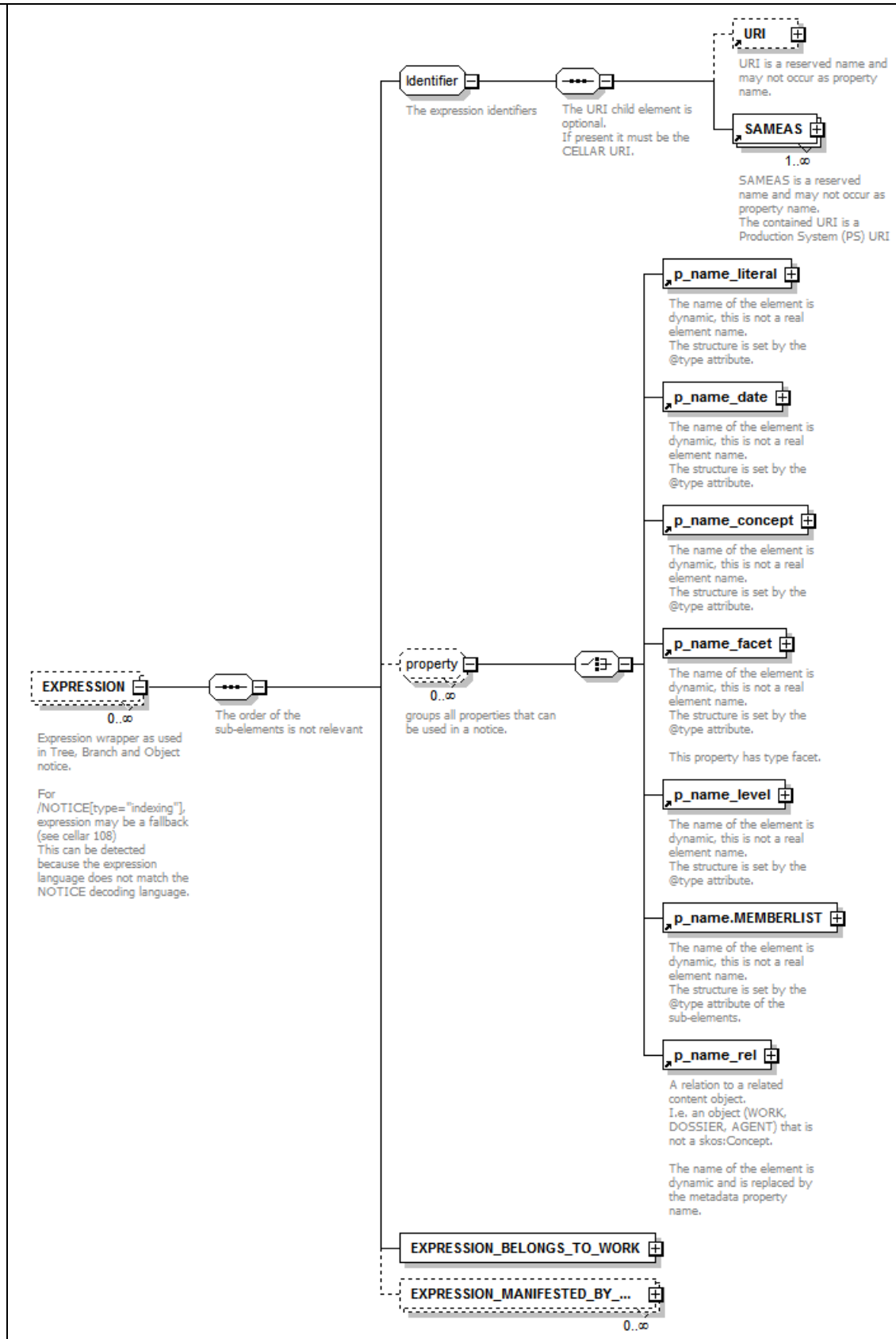
children	URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel WORK_HAS_EXPRESSION
annotation	documentation Work wrapper as used in Tree, Branch and Object notice.

element **NOTICE/WORK/WORK_HAS_EXPRESSION**

diagram	
type	WORK_HAS_EXPRESSIONType
properties	isRef 0 minOcc 1 maxOcc unbounded content complex
children	URI SAMEAS EMBEDDED_NOTICE
annotation	documentation Implements cellar-66 and cellar-110

element **NOTICE/EXPRESSION**

diagram

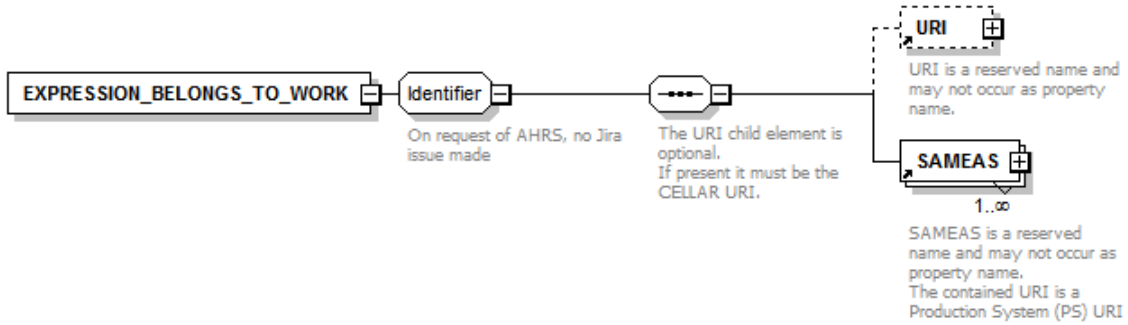


properties

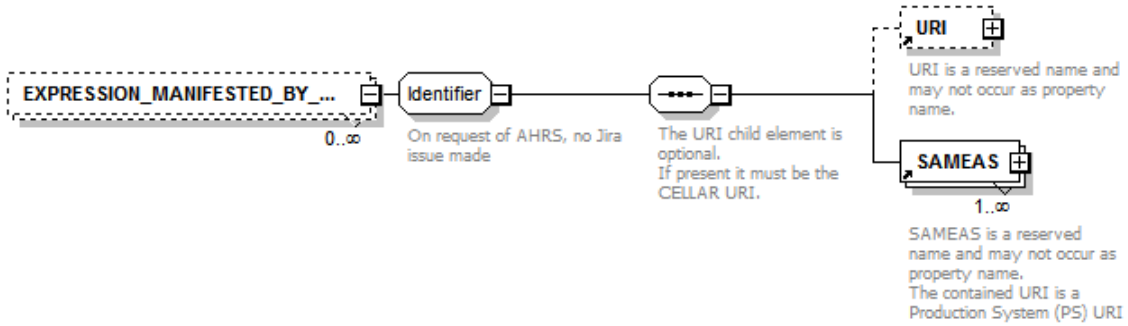
isRef	0
minOcc	0
maxOcc	unbounded

	content complex
children	URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel EXPRESSION_BELONGS_TO_WORK EXPRESSION_MANIFESTED_BY_MANIFESTATION
annotation	documentation Expression wrapper as used in Tree, Branch and Object notice. For /NOTICE[type="indexing"], expression may be a fallback (see cellar 108) This can be detected because the expression language does not match the NOTICE decoding language.

element **NOTICE/EXPRESSION/EXPRESSION_BELONGS_TO_WORK**

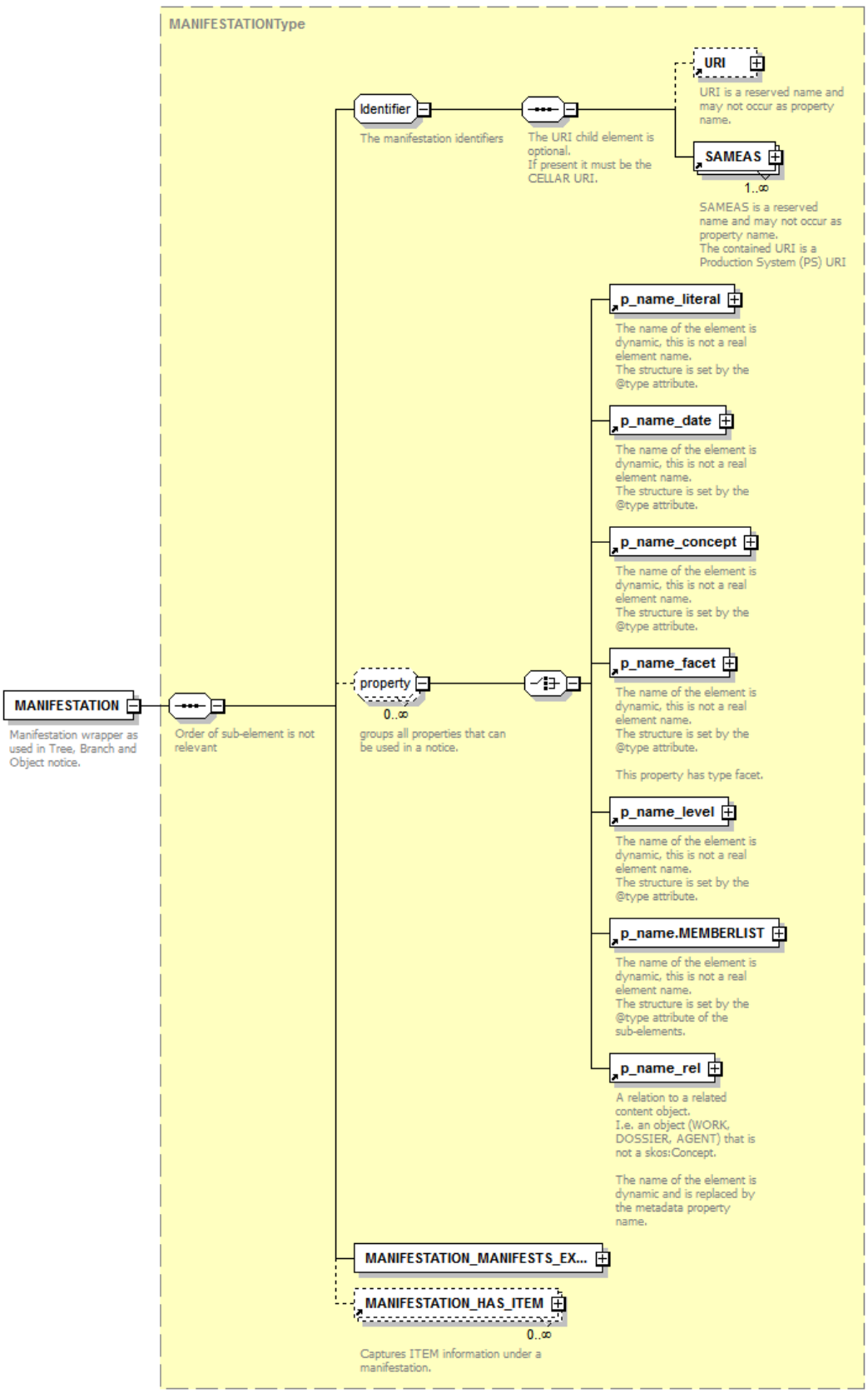
diagram	
properties	isRef 0 content complex
children	URI SAMEAS

element **NOTICE/EXPRESSION/EXPRESSION_MANIFESTED_BY_MANIFESTATION**

diagram	
properties	isRef 0 minOcc 0 maxOcc unbounded content complex
children	URI SAMEAS

element **NOTICE/MANIFESTATION**

diagram

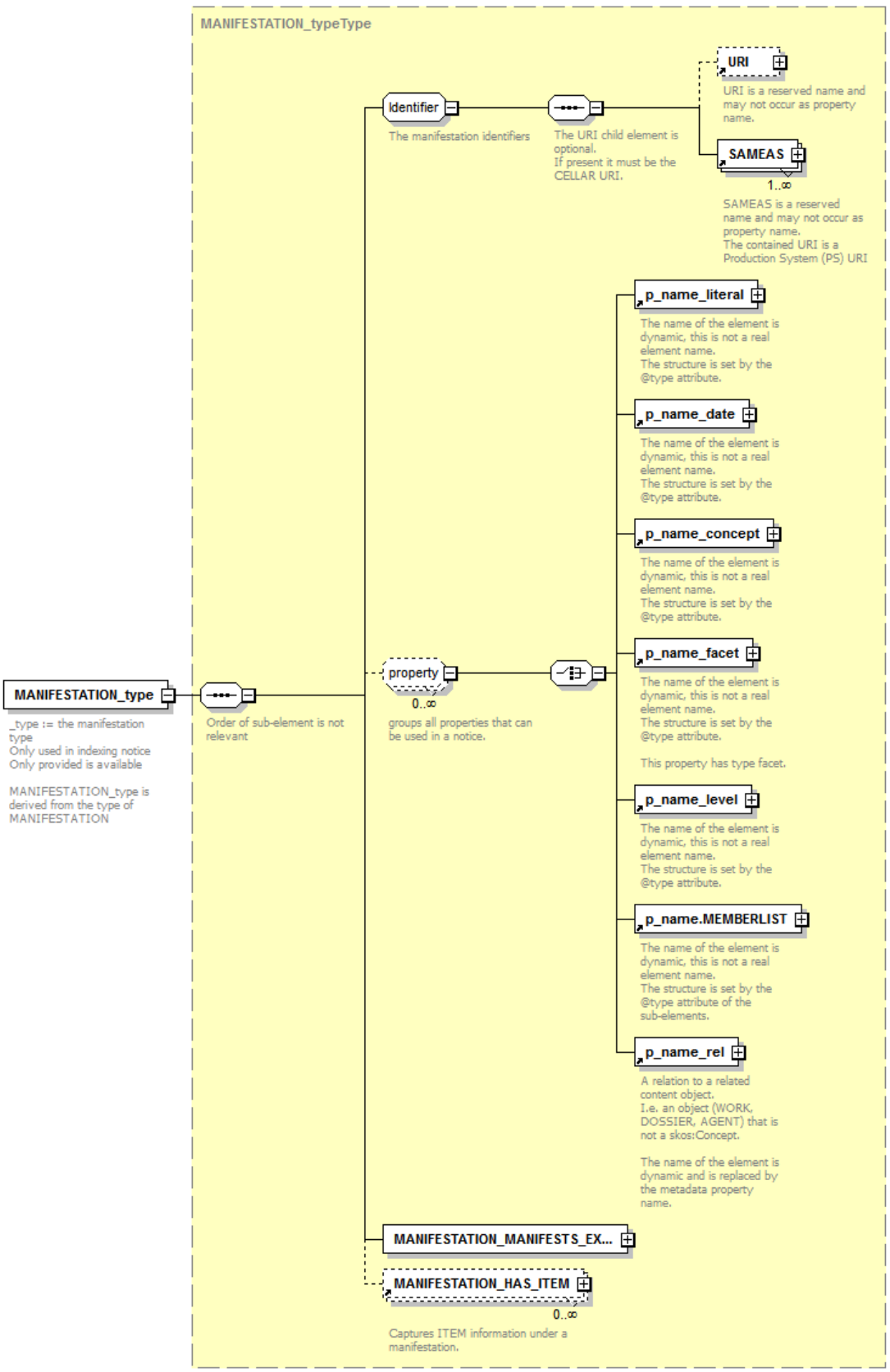


type **MANIFESTATIONType**

properties	isRef 0 content complex
children	**URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel MANIFESTATION_MANIFESTS_EXPRESSION MANIFESTATION_HAS_ITEM**
annotation	documentation Manifestation wrapper as used in Tree, Branch and Object notice.

element **NOTICE/MANIFESTATION_type**

diagram

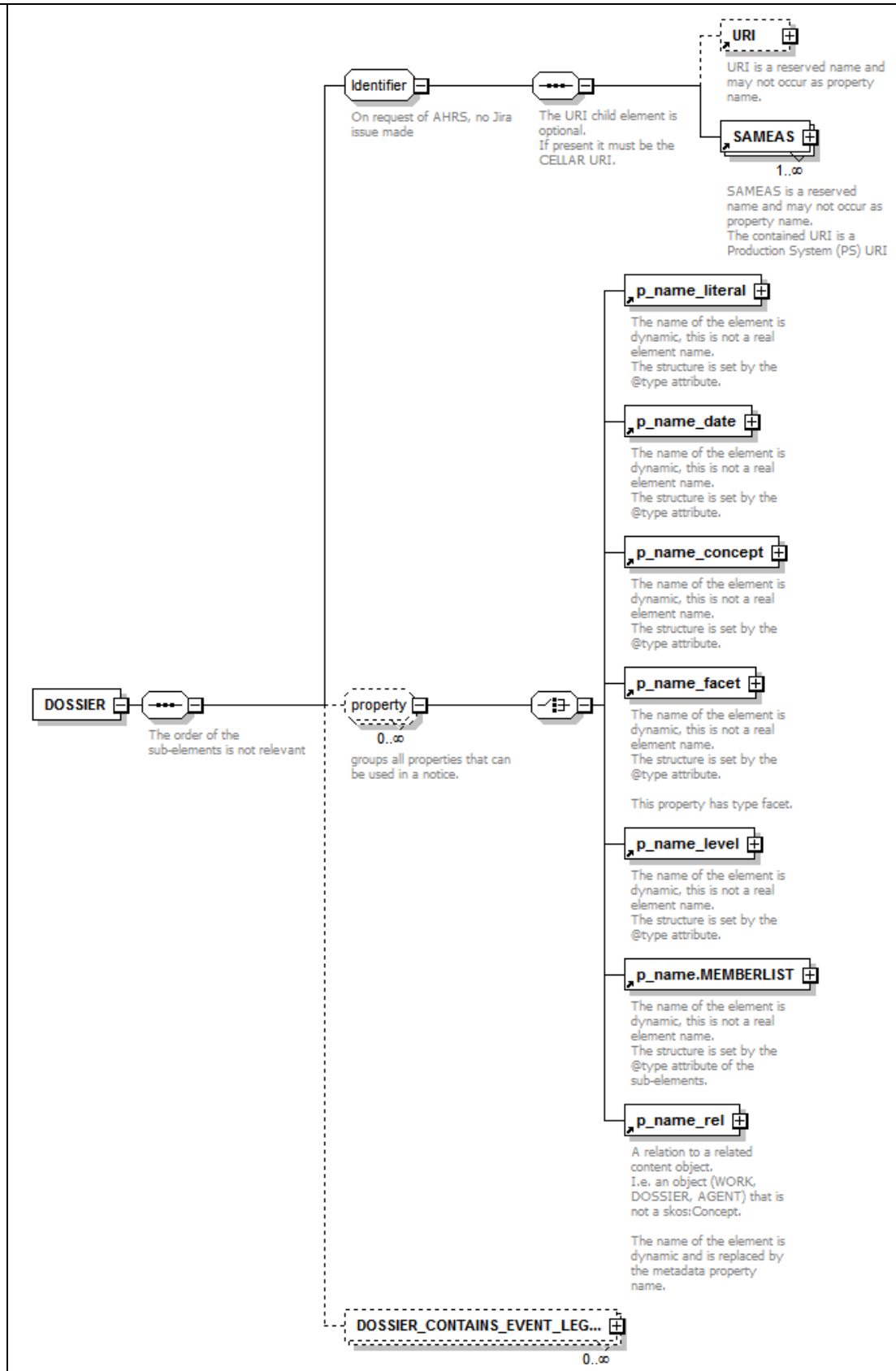


type **MANIFESTATION_typeType**

properties	isRef 0 content complex
children	**URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel MANIFESTATION_MANIFESTS_EXPRESSION MANIFESTATION_HAS_ITEM**
annotation	documentation _type := the manifestation type Only used in indexing notice Only provided is available MANIFESTATION_type is derived from the type of MANIFESTATION

element **NOTICE/DOSSIER**

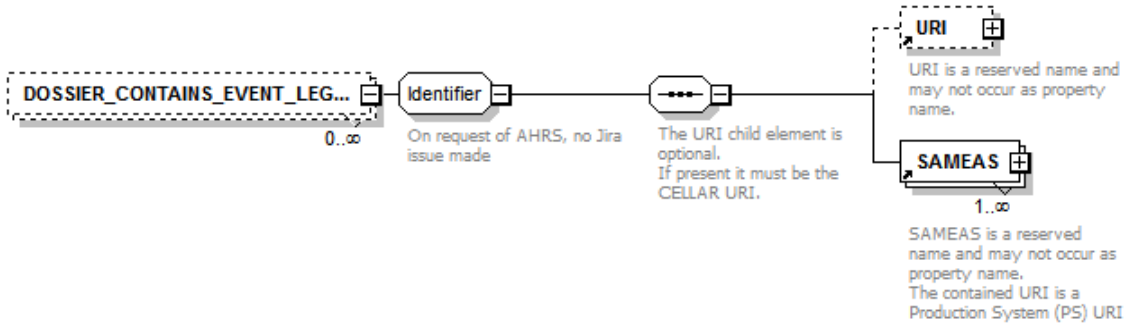
diagram



properties		
	isRef	0
	content	complex

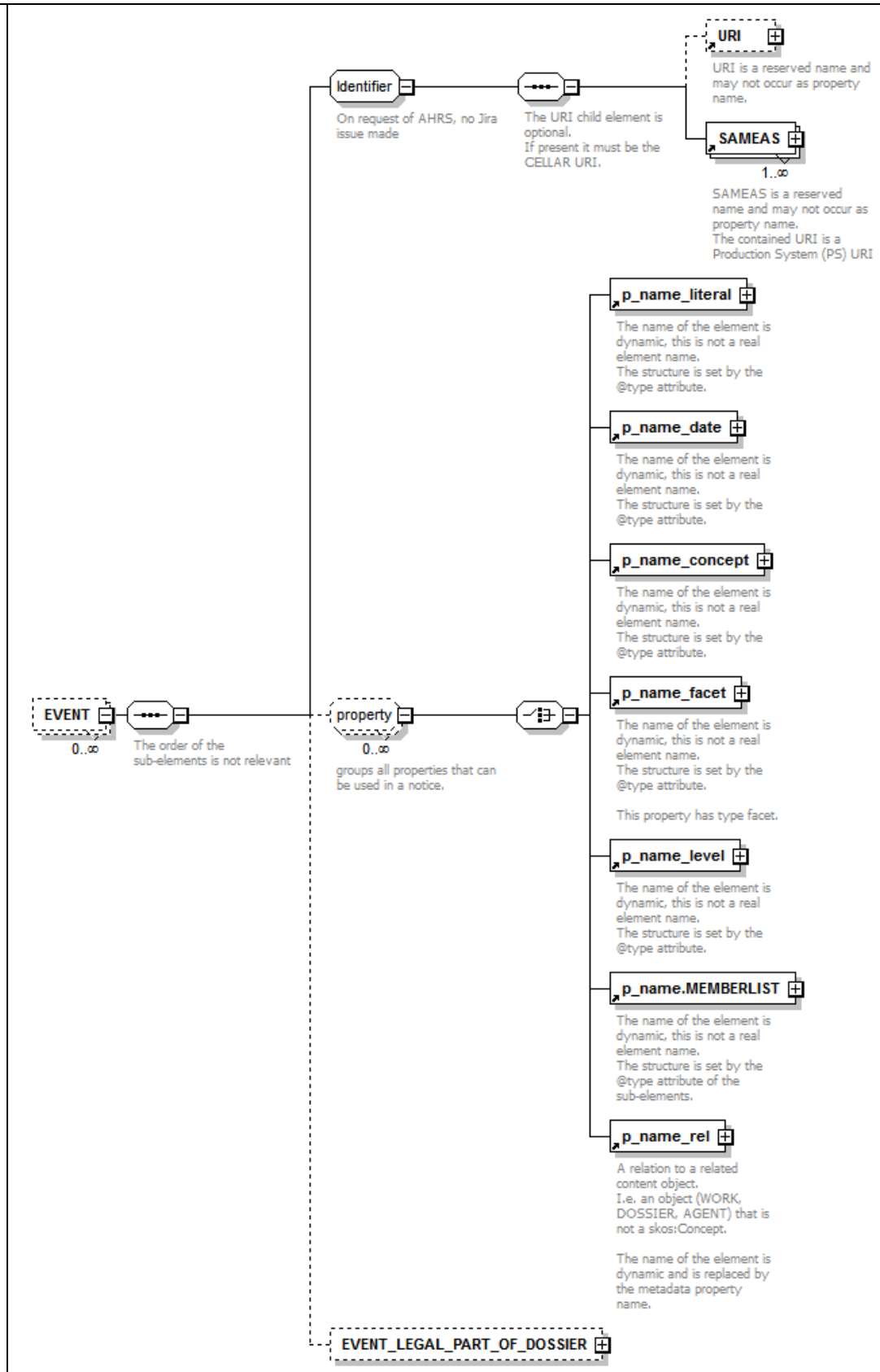
children	URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel DOSSIER_CONTAINS_EVENT_LEGAL

element **NOTICE/DOSSIER/DOSSIER_CONTAINS_EVENT_LEGAL**

diagram	
properties	isRef 0 minOcc 0 maxOcc unbounded content complex
children	URI SAMEAS

element **NOTICE/EVENT**

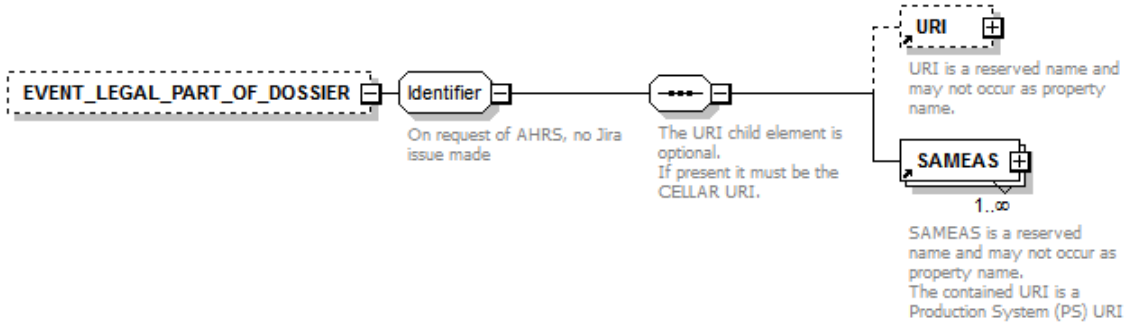
diagram



properties		
	isRef	0
	minOcc	0
	maxOcc	unbounded

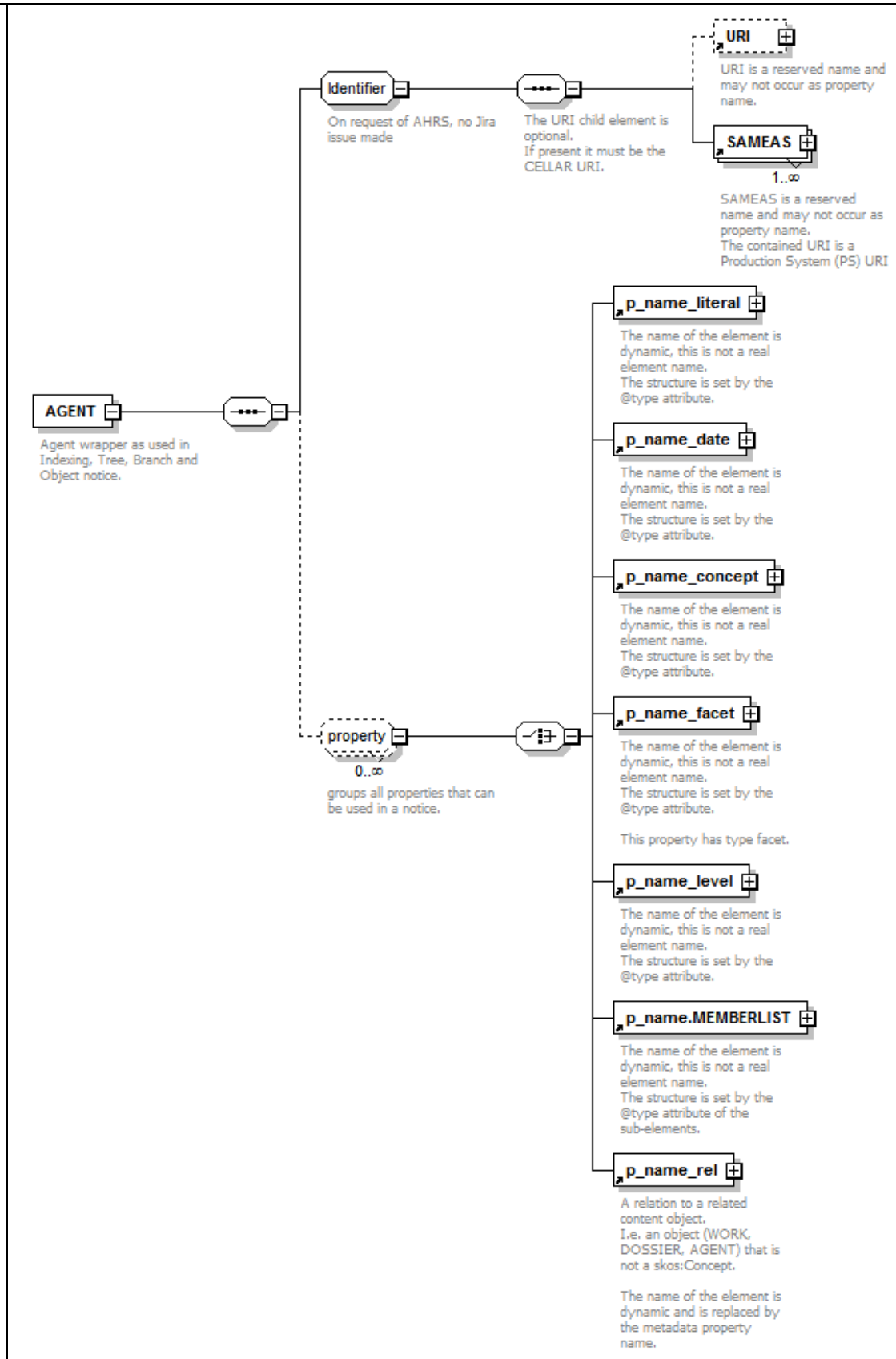
	content complex
children	URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel EVENT_LEGAL_PART_OF_DOSSIER

element **NOTICE/EVENT/EVENT_LEGAL_PART_OF_DOSSIER**

diagram	
properties	isRef 0 minOcc 0 maxOcc 1 content complex
children	URI SAMEAS

element **NOTICE/AGENT**

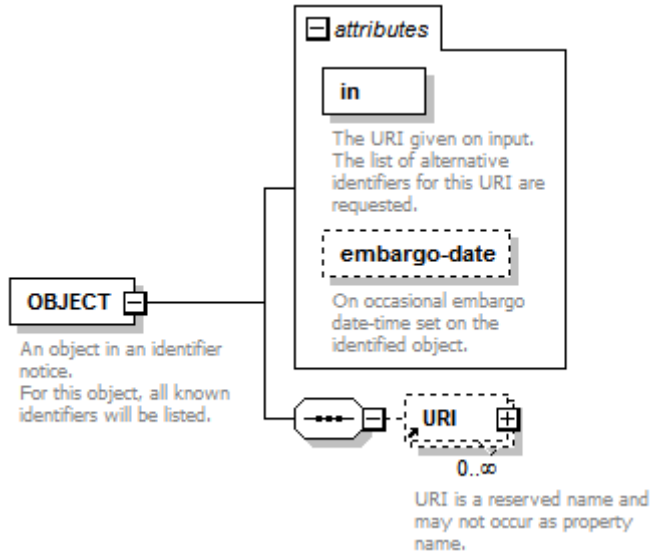
diagram



properties	isRef	0
	content	complex

children	URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel
annotation	documentation Agent wrapper as used in Indexing, Tree, Branch and Object notice.

element **OBJECT**

diagram	
properties	content complex
children	URI
used by	element NOTICE
attributes	Name Type Use Default Fixed annotation in xs:anyURI required documentation The URI given on input. The list of alternative identifiers for this URI are requested. embargo-date xs:dateTime documentation On occasional embargo date-time set on the identified object.
annotation	documentation An object in an identifier notice. For this object, all known identifiers will be listed.

attribute **OBJECT/@in**

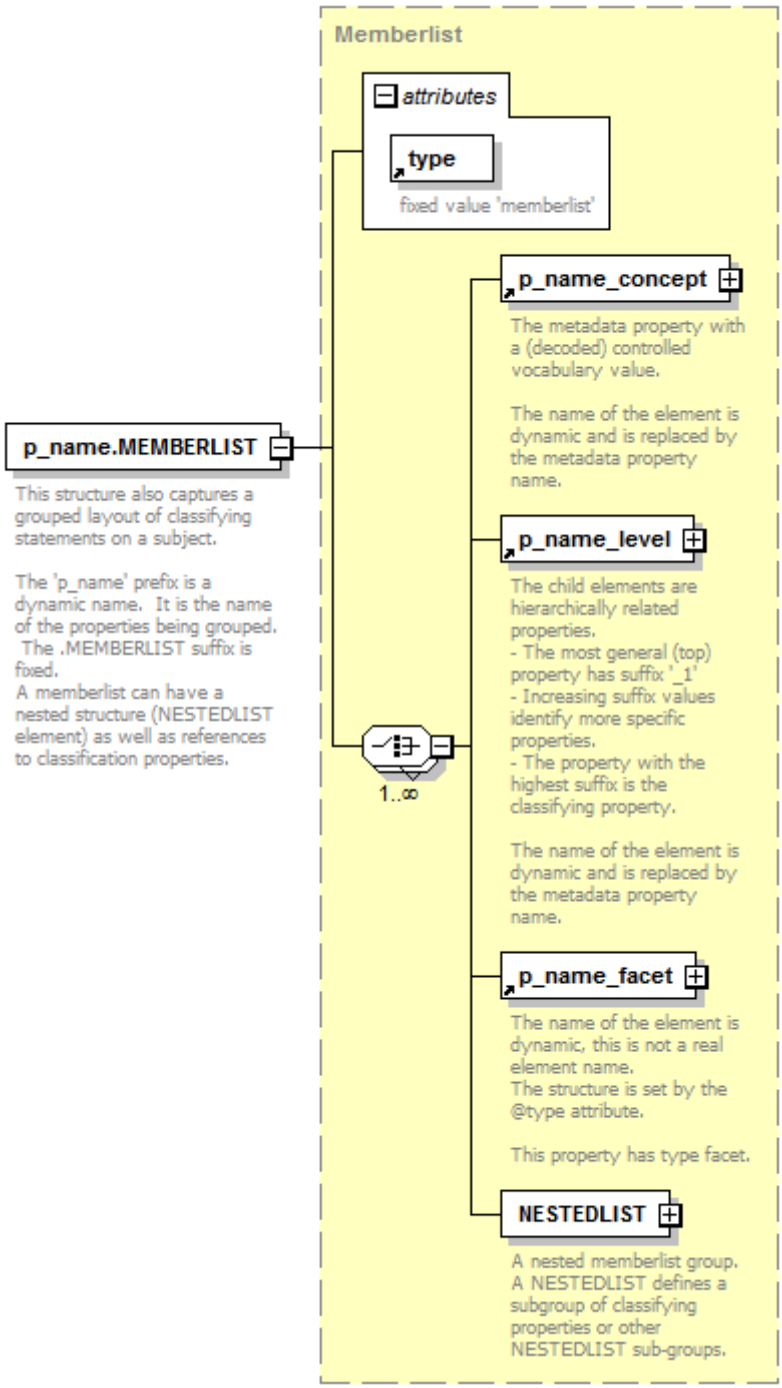
type	**xs:anyURI**
properties	isRef 0 use required
annotation	documentation The URI given on input.

	The list of alternative identifiers for this URI are requested.

attribute **OBJECT/@embargo-date**

type	**xs:dateTime**
properties	isRef 0
annotation	documentation On occasional embargo date-time set on the identified object.

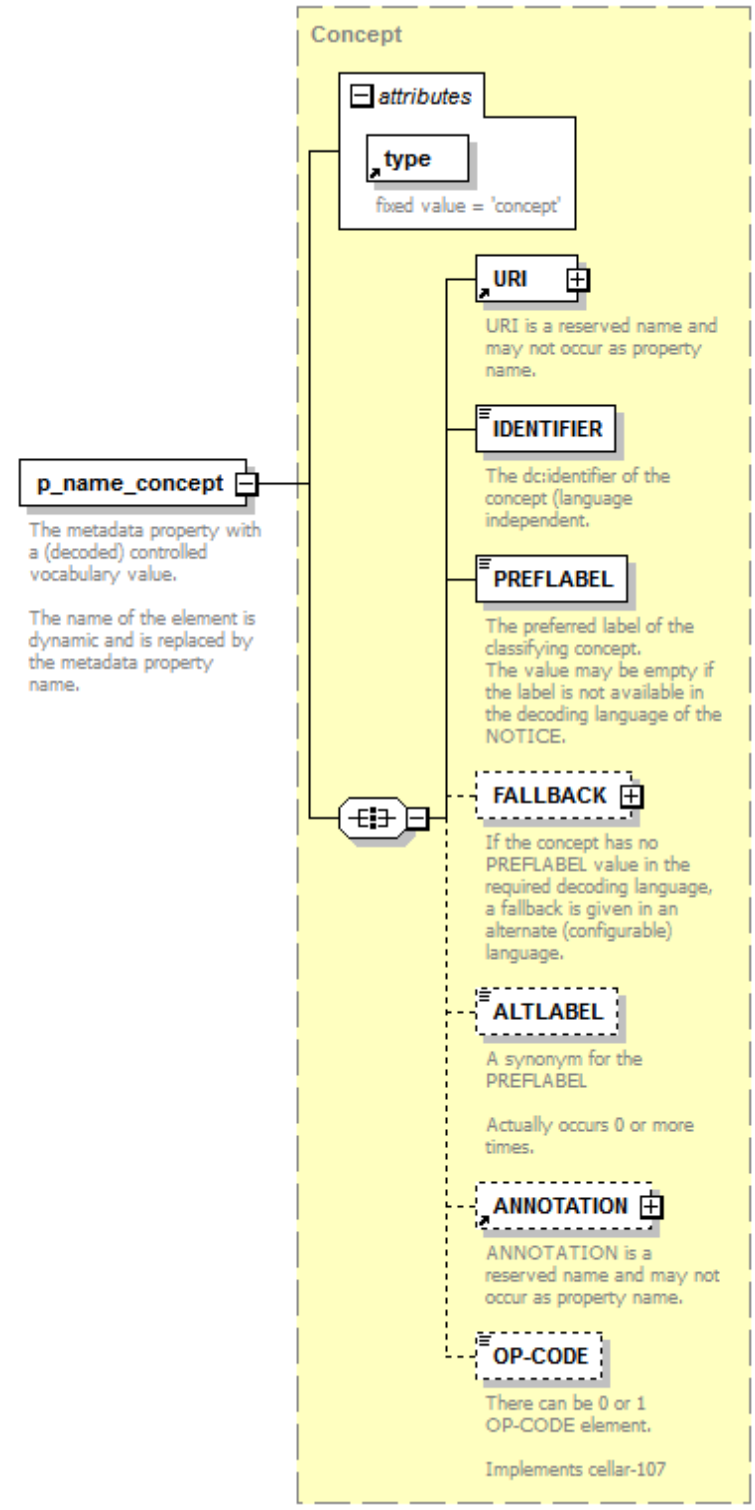
element **p_name.MEMBERLIST**

diagram	
type	**Memberlist**
properties	content complex
children	**p_name_concept** **p_name_level** **p_name_facet** **NESTEDLIST**
used by	group **property**
attributes	Name Type Use Default Fixed annotation type **types** required memberlist fixed value 'memberlist'

annotation	documentation This structure also captures a grouped layout of classifying statements on a subject. The 'p_name' prefix is a dynamic name. It is the name of the properties being grouped. The .MEMBERLIST suffix is fixed. A memberlist can have a nested structure (NESTEDLIST element) as well as references to classification properties.

element **p_name_concept**

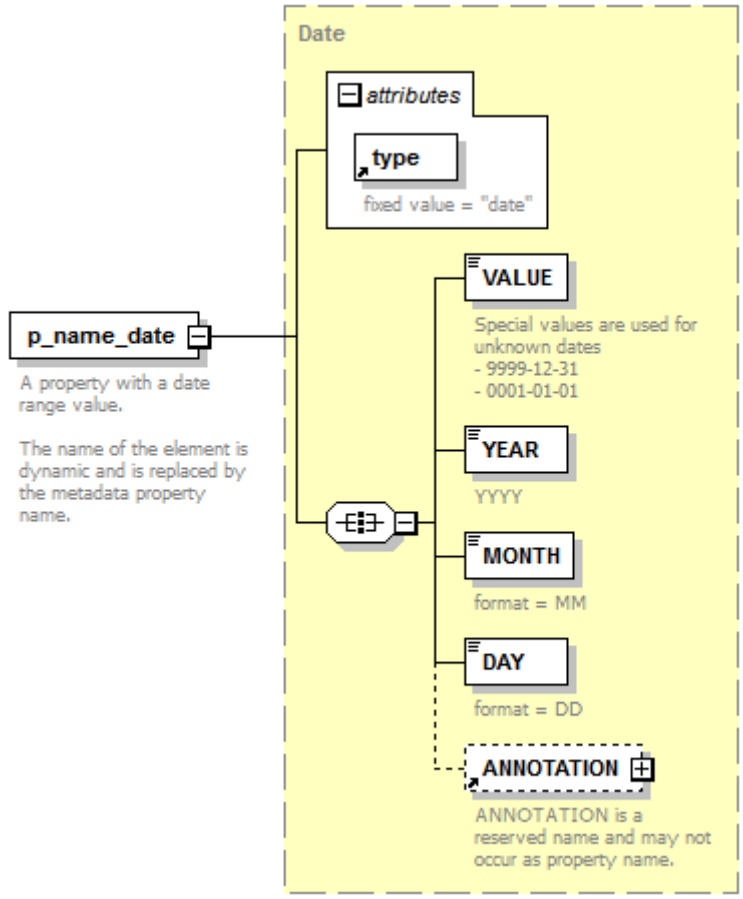
diagram



type	**Concept**
properties	content complex
children	**URI IDENTIFIER PREFLABEL FALLBACK ALTLABEL ANNOTATION OP-CODE**
used by	complexType **Memberlist** groups **embedded-property property**

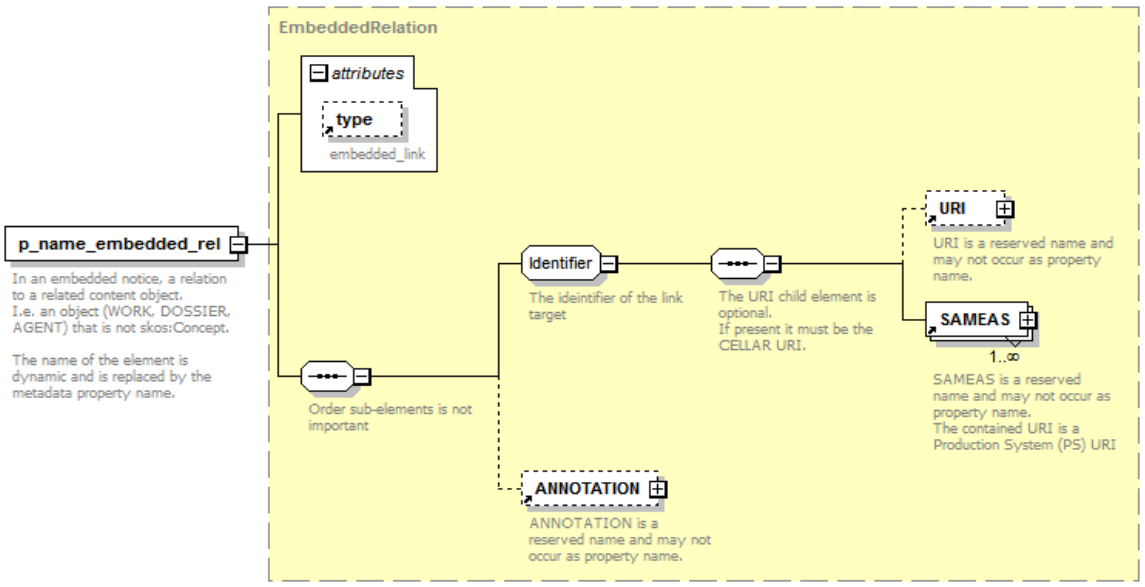
attributes	Name Type Use Default Fixed annotation type **types** required concept documentation fixed value = 'concept'
annotation	documentation The metadata property with a (decoded) controlled vocabulary value. The name of the element is dynamic and is replaced by the metadata property name.

element **p_name_date**

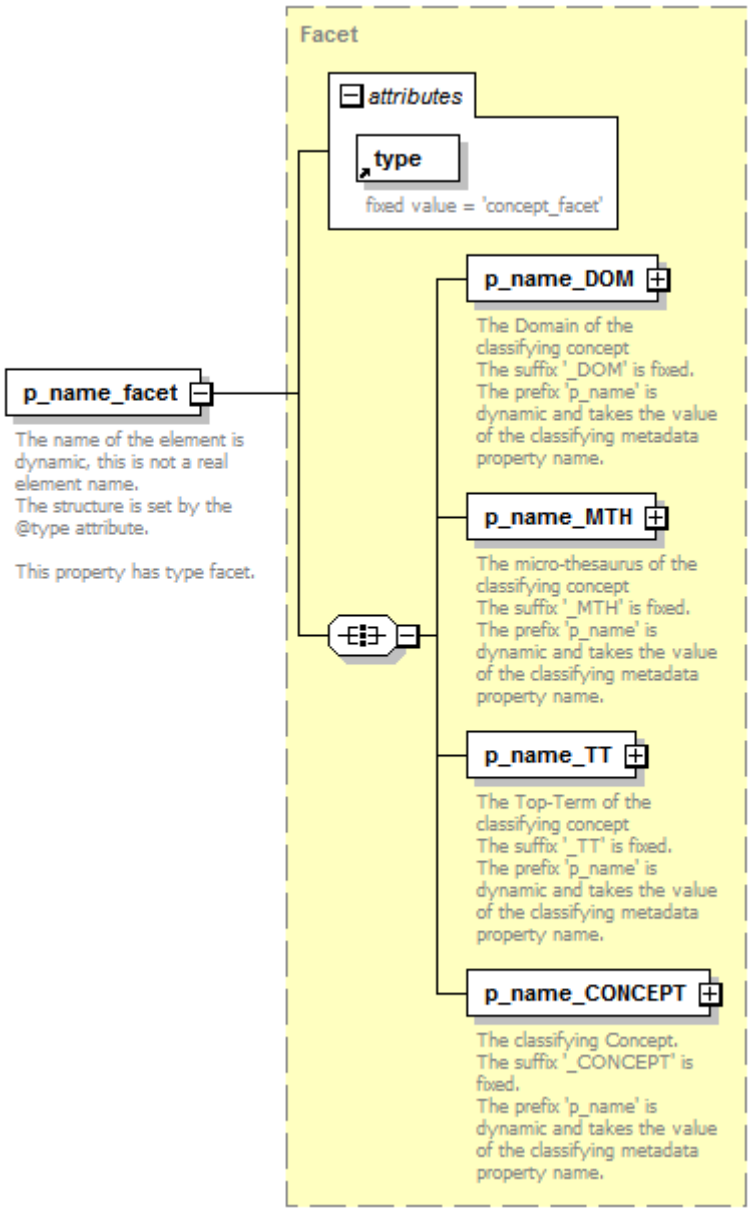
diagram	
type	**Date**
properties	content complex
children	**VALUE YEAR MONTH DAY ANNOTATION**
used by	groups **embedded-property item-property property**
attributes	Name Type Use Default Fixed annotation type **types** required date documentation fixed value = "date"

annotation	documentation A property with a date range value. The name of the element is dynamic and is replaced by the metadata property name.

element **p_name_embedded_rel**

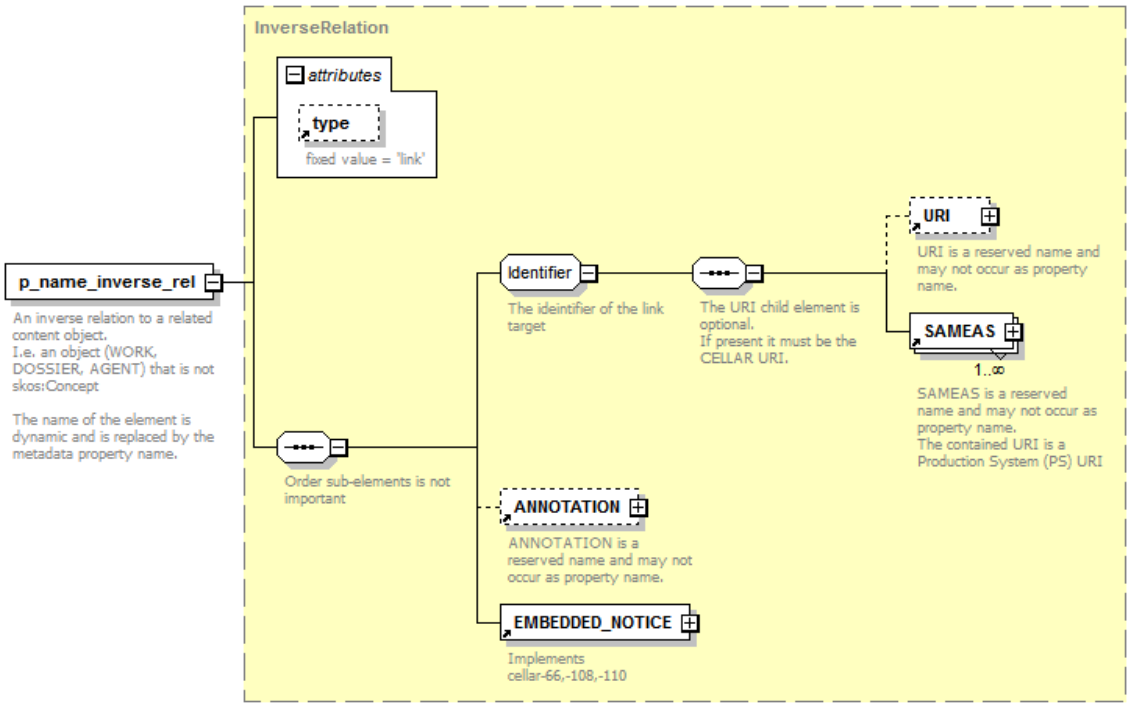
diagram	
type	**EmbeddedRelation**
properties	content complex
children	**URI SAMEAS ANNOTATION**
used by	group **embedded-property**
attributes	Name Type Use Default Fixed annotation type **types** embedded_link documentation
annotation	documentation In an embedded notice, a relation to a related content object. I.e. an object (WORK, DOSSIER, AGENT) that is not skos:Concept. The name of the element is dynamic and is replaced by the metadata property name.

element **p_name_facet**

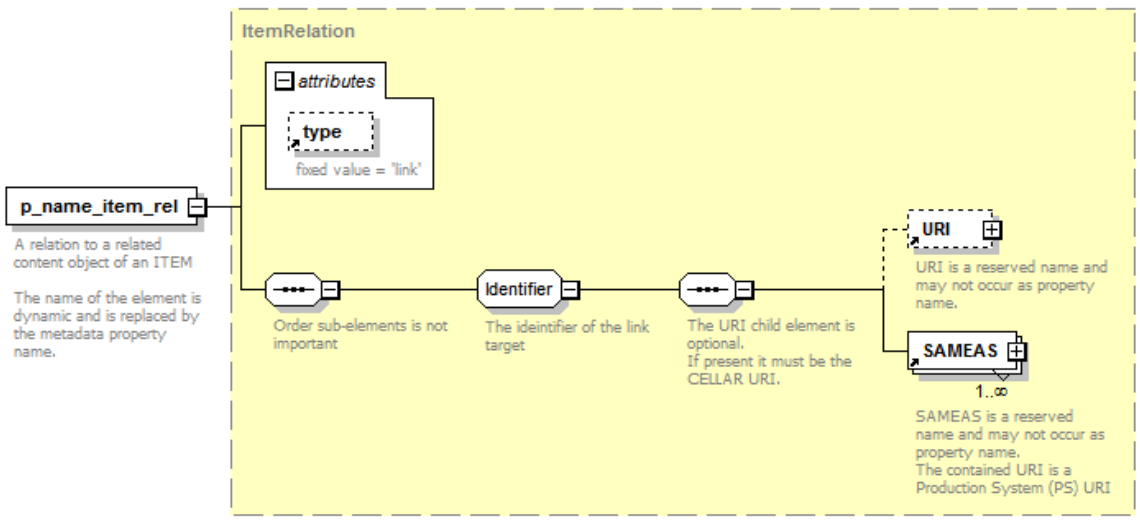
diagram	
type	**Facet**
properties	content complex
children	**p_name_DOM** **p_name_MTH** **p_name_TT** **p_name_CONCEPT**
used by	complexType **Memberlist** groups **embedded-property** **property**
attributes	Name Type Use Default Fixed annotation type **types** required concept_facet documentation fixed value = 'concept_facet'
annotation	documentation The name of the element is dynamic, this is not a real element name. The structure is set by the @type attribute.

	This property has type facet.

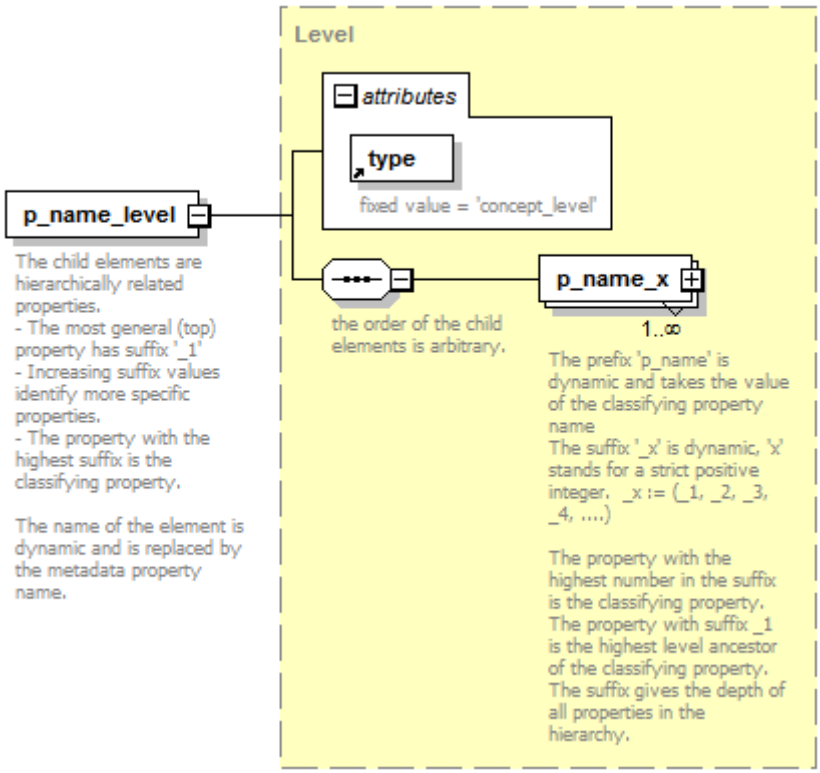
element **p_name_inverse_rel**

diagram	
type	**InverseRelation**
properties	content complex
children	**URI SAMEAS ANNOTATION EMBEDDED_NOTICE**
used by	element **INVERSE**
attributes	Name Type Use Default Fixed annotation type **types** link documentation fixed value = 'link'
annotation	documentation An inverse relation to a related content object. I.e. an object (WORK, DOSSIER, AGENT) that is not skos:Concept The name of the element is dynamic and is replaced by the metadata property name.

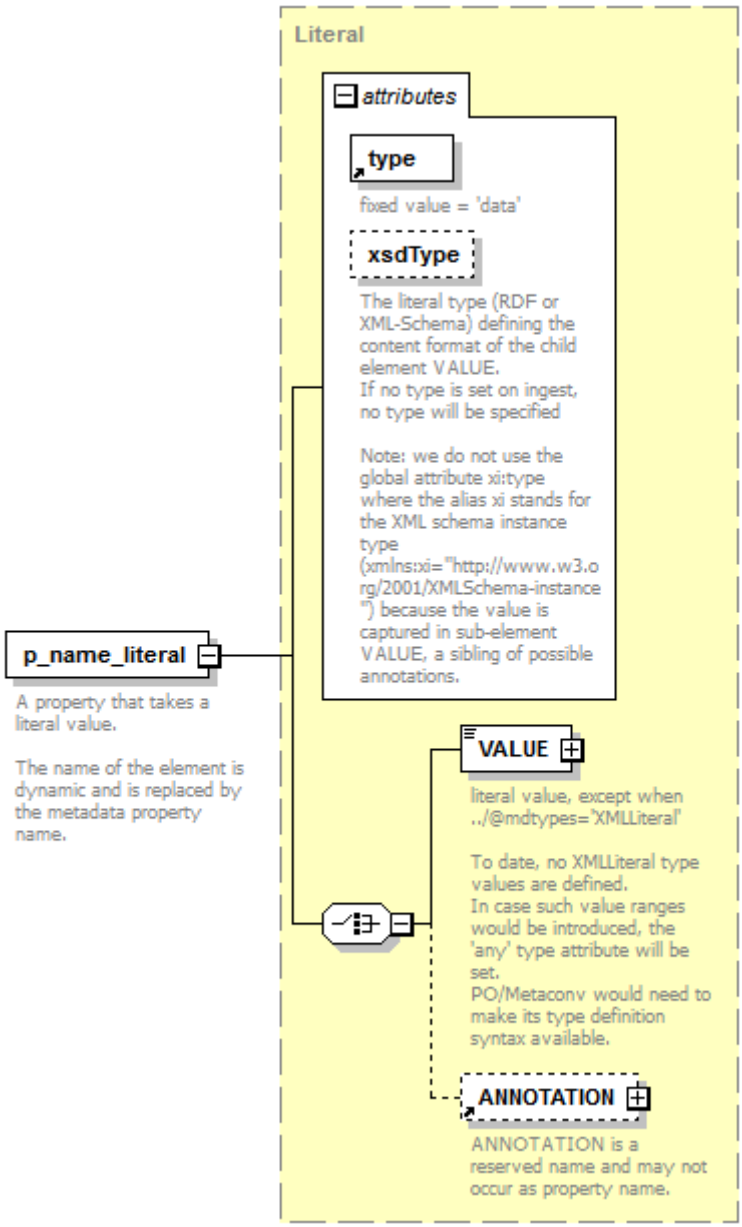
element **p_name_item_rel**

diagram	
type	**ItemRelation**
properties	content complex
children	**URI** **SAMEAS**
used by	group **item-property**
attributes	Name Type Use Default Fixed annotation type **types** link documentation fixed value = 'link'
annotation	documentation A relation to a related content object of an ITEM The name of the element is dynamic and is replaced by the metadata property name.

element **p_name_level**

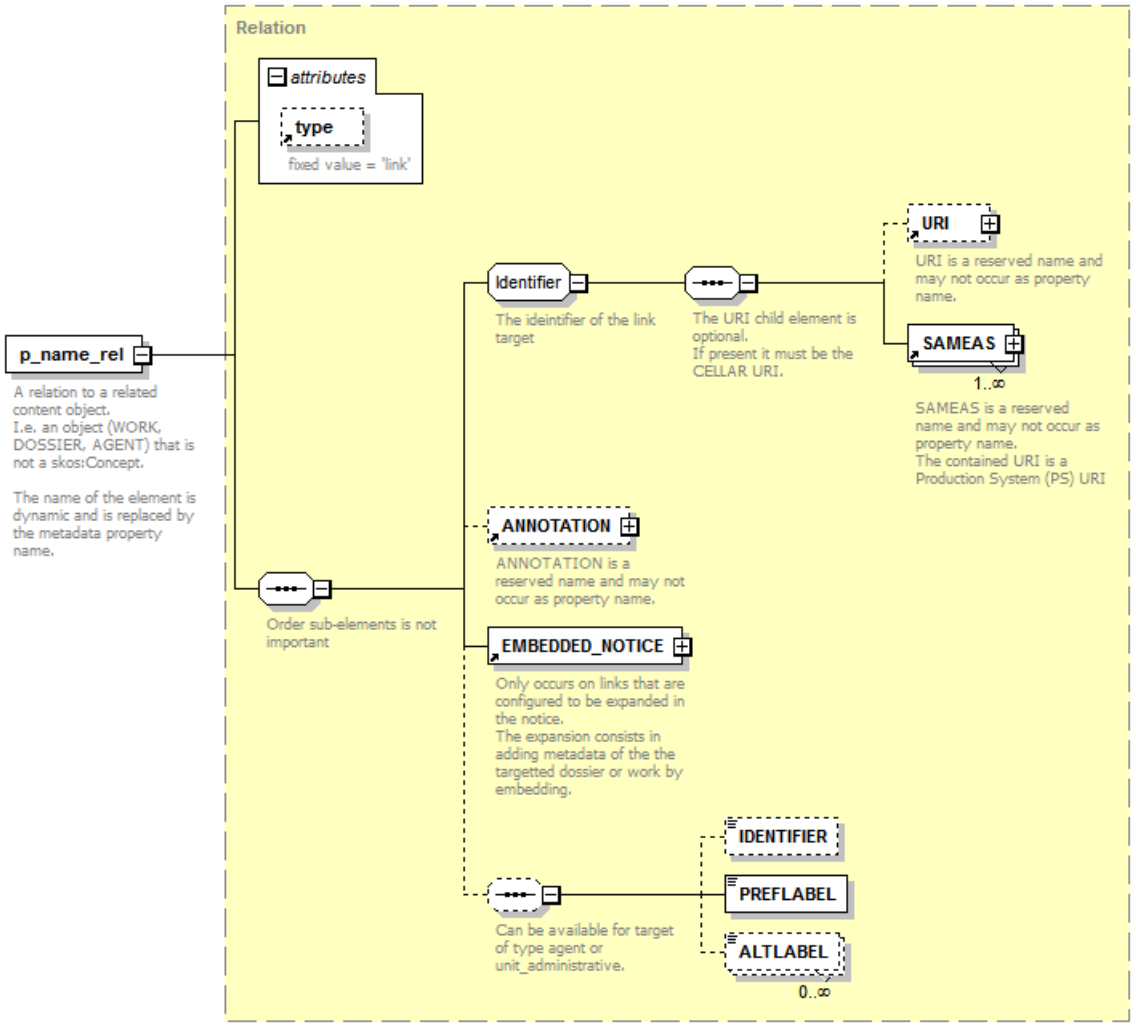
diagram	
type	**Level**
properties	content complex
children	**p_name_x**
used by	complexType **Memberlist** groups **embedded-property** **property**
attributes	Name Type Use Default Fixed annotation type **types** required concept_level documentation fixed value = 'concept_level'
annotation	documentation The child elements are hierarchically related properties. - The most general (top) property has suffix '_1' - Increasing suffix values identify more specific properties. - The property with the highest suffix is the classifying property. The name of the element is dynamic and is replaced by the metadata property name.

element **p_name_literal**

diagram	
type	**Literal**
properties	content complex
children	**VALUE** **ANNOTATION**
used by	groups **embedded-property** **item-property** **property** **t_property**
attributes	Name Type Use Default Fixed annotation type **types** required data documentation fixed value = 'data' xsdType**mdtypes** documentation The literal type (RDF or XML-Schema) defining the content format of the child element VALUE. If no type is set on ingest, no type will be specified Note: we do not use the global attribute xi:type where the alias xi stands for the XML schema instance type (xmlns:xi="http://www.w3.org/2001/XMLSchema-instance")

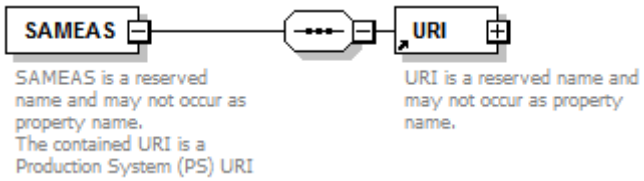
	because the value is captured in sub-element VALUE, a sibling of possible annotations.
annotation	documentation A property that takes a literal value. The name of the element is dynamic and is replaced by the metadata property name.

element **p_name_rel**

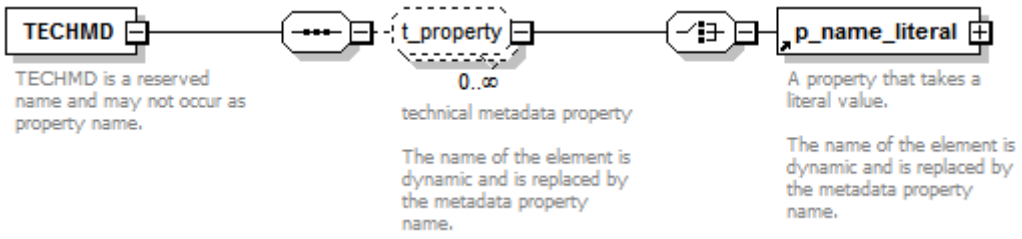
diagram	
type	**Relation**
properties	content complex
children	**URI SAMEAS ANNOTATION EMBEDDED_NOTICE IDENTIFIER PREFLABEL ALTLABEL**
used by	group **property**
attributes	Name Type Use Default Fixed annotation type **types** link documentation fixed value = 'link'

annotation	documentation A relation to a related content object. I.e. an object (WORK, DOSSIER, AGENT) that is not a skos:Concept. The name of the element is dynamic and is replaced by the metadata property name.

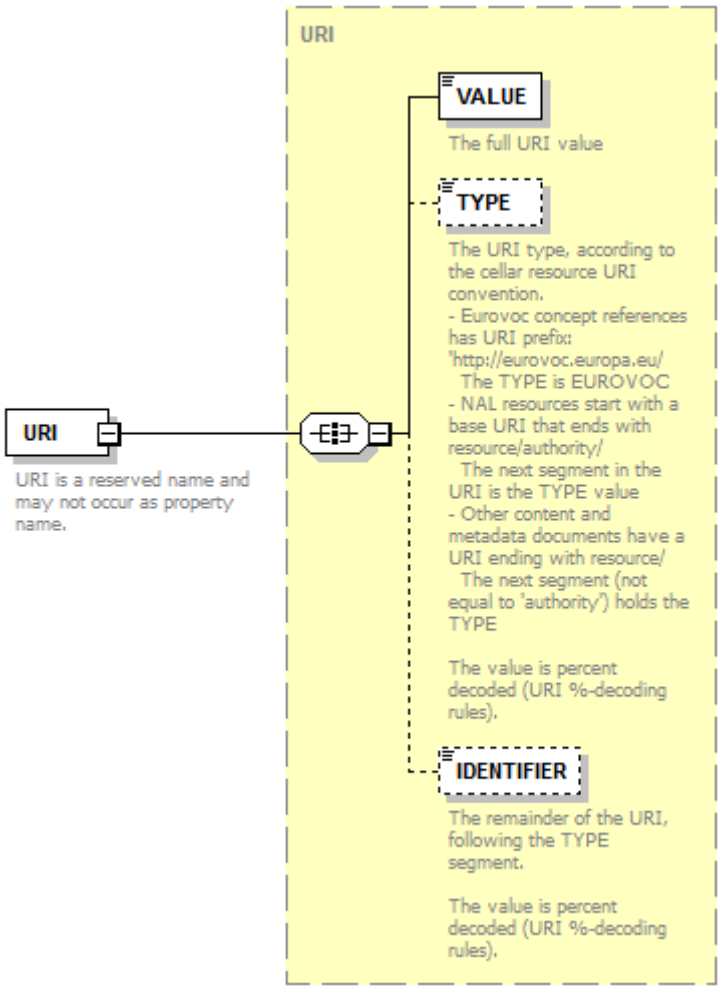
element **SAMEAS**

diagram	
properties	content complex
children	URI
used by	group Identifier
annotation	documentation SAMEAS is a reserved name and may not occur as property name. The contained URI is a Production System (PS) URI

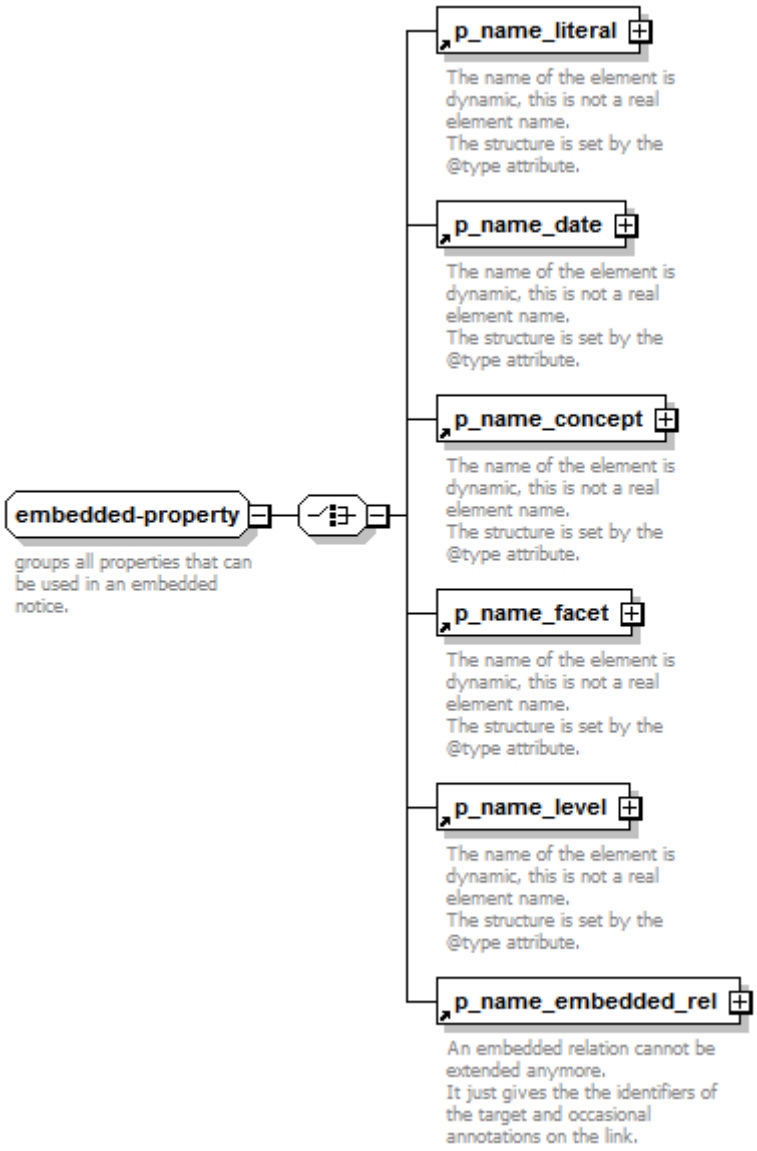
element **TECHMD**

diagram	
properties	content complex
children	p_name_literal
used by	element MANIFESTATION_HAS_ITEM
annotation	documentation TECHMD is a reserved name and may not occur as property name.

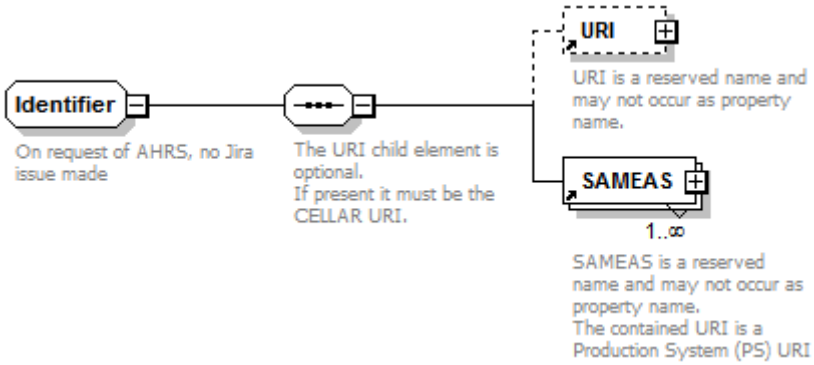
element **URI**

diagram	
type	**URI**
properties	content complex
children	**VALUE TYPE IDENTIFIER**
used by	elements **OBJECT SAMEAS** complexType **Concept** group **Identifier**
annotation	documentation URI is a reserved name and may not occur as property name.

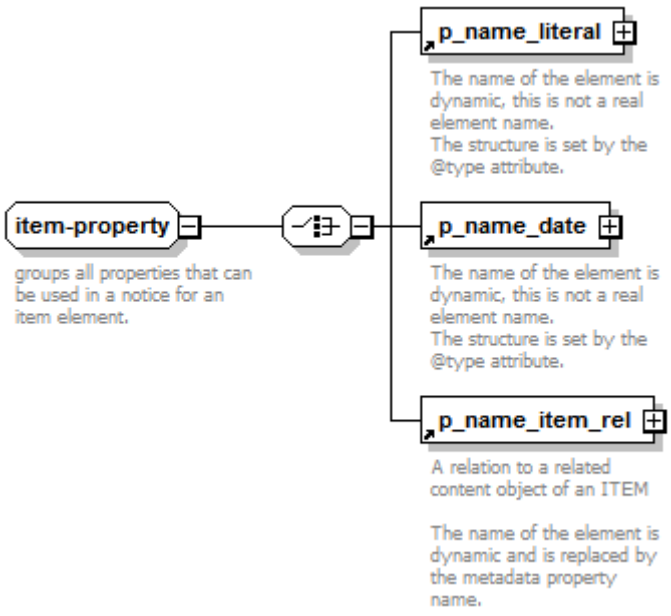
group **embedded-property**

diagram	
children	p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name_embedded_rel
used by	elements EMBEDDED_NOTICEType/AGENT EMBEDDED_NOTICEType/DOSSIER EMBEDDED_NOTICEType/EVENT EMBEDDED_NOTICEType/EXPRESSION EMBEDDED_NOTICEType/MANIFESTATION EMBEDDED_NOTICEType/WORK
annotation	documentation groups all properties that can be used in an embedded notice.

group **Identifier**

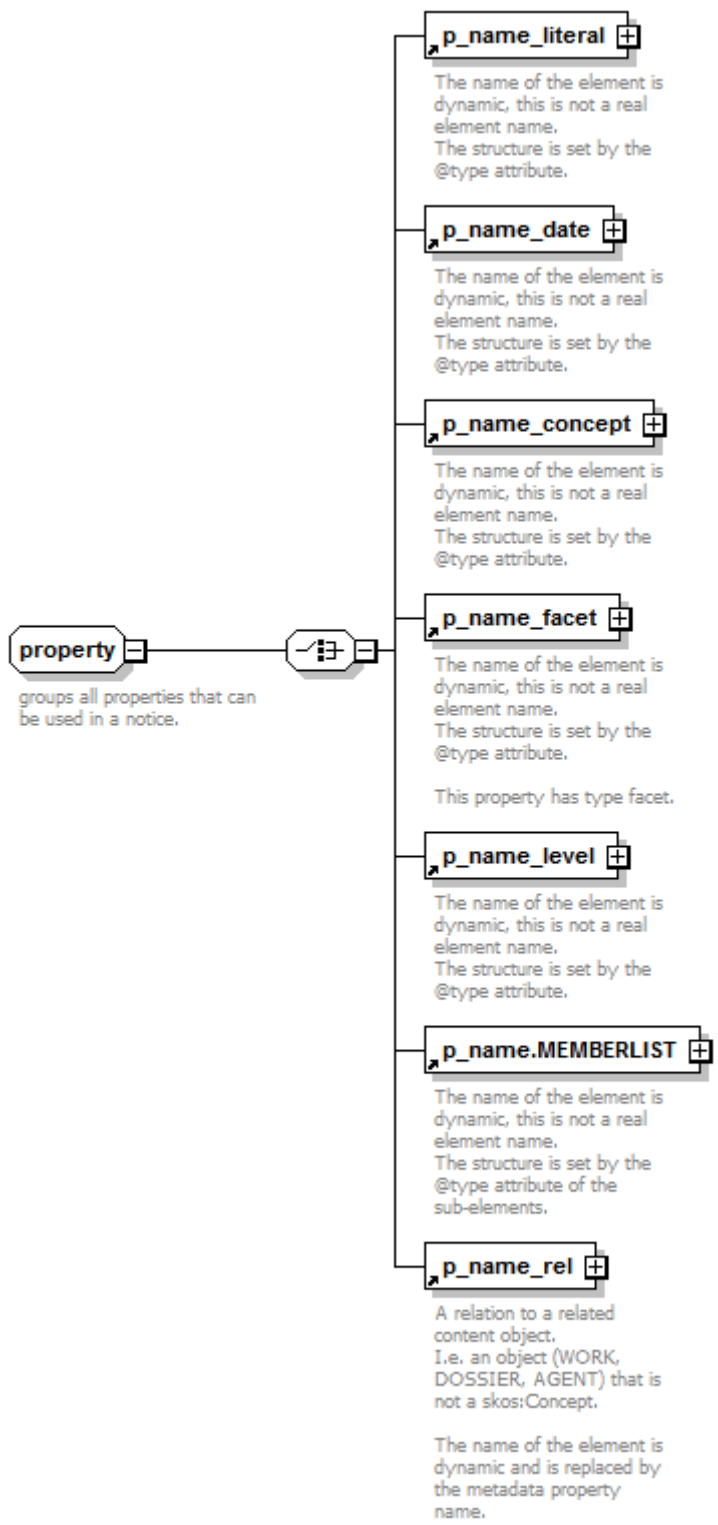
diagram	
children	URI SAMEAS
used by	elements NOTICE/AGENT NOTICE/DOSSIER NOTICE/DOSSIER/DOSSIER_CONTAINS_EVENT_LEGAL NOTICE/EVENT NOTICE/EVENT/EVENT_LEGAL_PART_OF_DOSSIER NOTICE/EXPRESSION NOTICE/EXPRESSION/EXPRESSION_BELONGS_TO_WORK NOTICE/EXPRESSION/EXPRESSION_MANIFESTED_BY_MANIFESTATION MANIFESTATION_HAS_ITEM MANIFESTATIONType/MANIFESTATION_MANIFESTS_EXPRESSION NOTICE/WORK complexTypes EmbeddedRelation InverseRelation ItemRelation MANIFESTATIONType Relation WORK_HAS_EXPRESSIONType
annotation	documentation On request of AHRS, no Jira issue made

group **item-property**

diagram	
children	p_name_literal p_name_date p_name_item_rel
used by	element MANIFESTATION_HAS_ITEM
annotation	documentation groups all properties that can be used in a notice for an item element.

group **property**

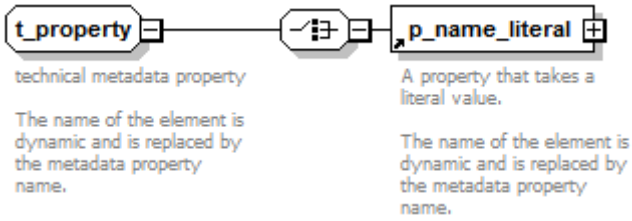
diagram



children	p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel
used by	elements: NOTICE/AGENT NOTICE/DOSSIER NOTICE/EVENT NOTICE/EXPRESSION NOTICE/WORK complexType: MANIFESTATIONType

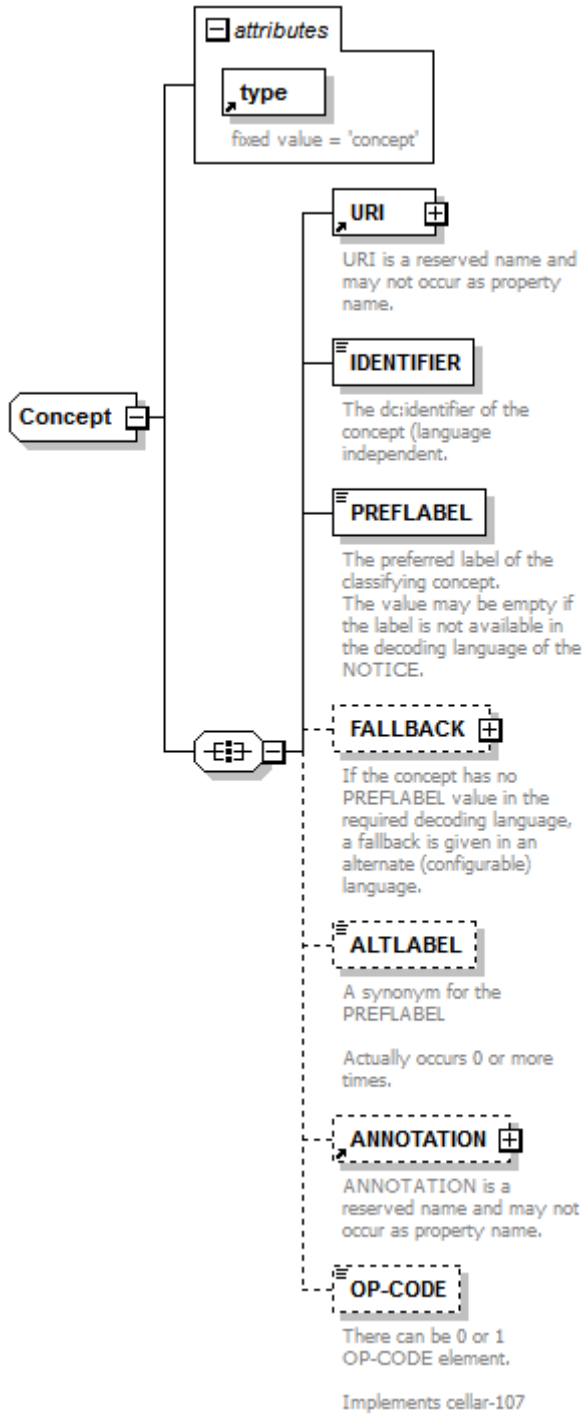
annotation	documentation groups all properties that can be used in a notice.

group **t_property**

diagram	
children	p_name_literal
used by	element TECHMD
annotation	documentation technical metadata property The name of the element is dynamic and is replaced by the metadata property name.

complexType **Concept**

diagram

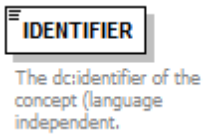


children	URI IDENTIFIER PREFLABEL FALLBACK ALTLABEL ANNOTATION OP-CODE
used by	elements p_name_concept Facet/p_name_CONCEPT Facet/p_name_DOM Facet/p_name_MTH Facet/p_name_TT Level/p_name_x

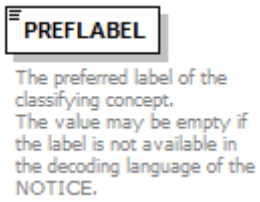
attributes

Name	Type	Use	Default	Fixed	annotation
type	types	required		concept	documentation
fixed value = 'concept'					

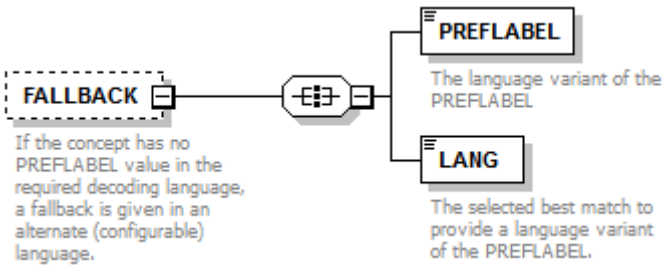
element **Concept/IDENTIFIER**

diagram	
properties	isRef 0
annotation	documentation The dc:identifier of the concept (language independent.

element **Concept/PREFLABEL**

diagram	
properties	isRef 0
annotation	documentation The preferred label of the classifying concept. The value may be empty if the label is not available in the decoding language of the NOTICE.

element **Concept/FALLBACK**

diagram	
properties	isRef 0 minOcc 0 maxOcc 1 content complex
children	PREFLABEL LANG
annotation	documentation If the concept has no PREFLABEL value in the required decoding language, a fallback is given in an alternate (configurable) language.

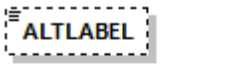
element **Concept/FALLBACK/PREFLABEL**

diagram	
properties	isRef 0
annotation	documentation The language variant of the PREFLABEL

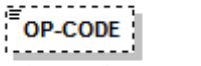
element **Concept/FALLBACK/LANG**

diagram	
properties	isRef 0
annotation	documentation The selected best match to provide a language variant of the PREFLABEL.

element **Concept/ALTLABEL**

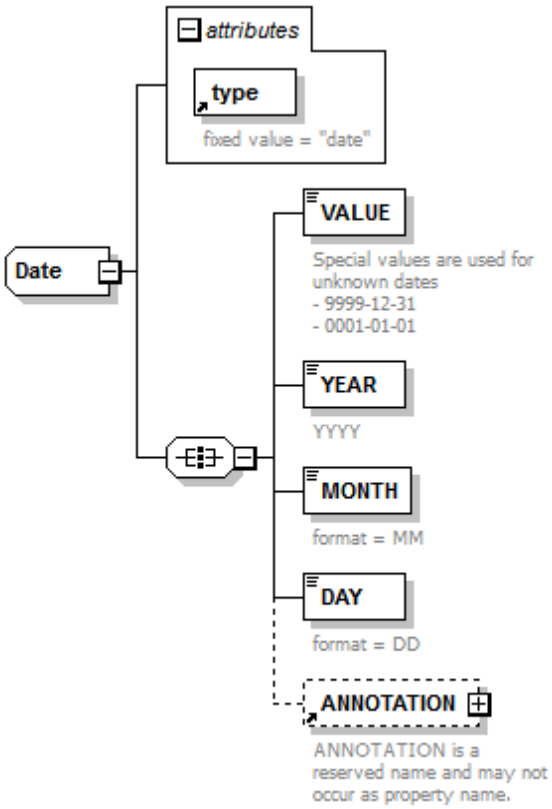
diagram	
properties	isRef 0 minOcc 0 maxOcc 1
annotation	documentation A synonym for the PREFLABEL Actually occurs 0 or more times.

element **Concept/OP-CODE**

diagram	
type	**xs:string**
properties	isRef 0 minOcc 0 maxOcc 1

	content simple
annotation	documentation There can be 0 or 1 OP-CODE element. Implements cellar-107

complexType **Date**

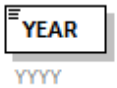
diagram	
children	VALUE YEAR MONTH DAY ANNOTATION
used by	element p_name_date
attributes	Name Type Use Default Fixed annotation type types required date documentation fixed value = "date"

element **Date/VALUE**

diagram	
type	**xs:date**

properties	isRef 0 content simple
annotation	documentation Special values are used for unknown dates - 9999-12-31 - 0001-01-01

element **Date/YEAR**

diagram	
type	**xs:gYear**
properties	isRef 0 content simple
annotation	documentation YYYY

element **Date/MONTH**

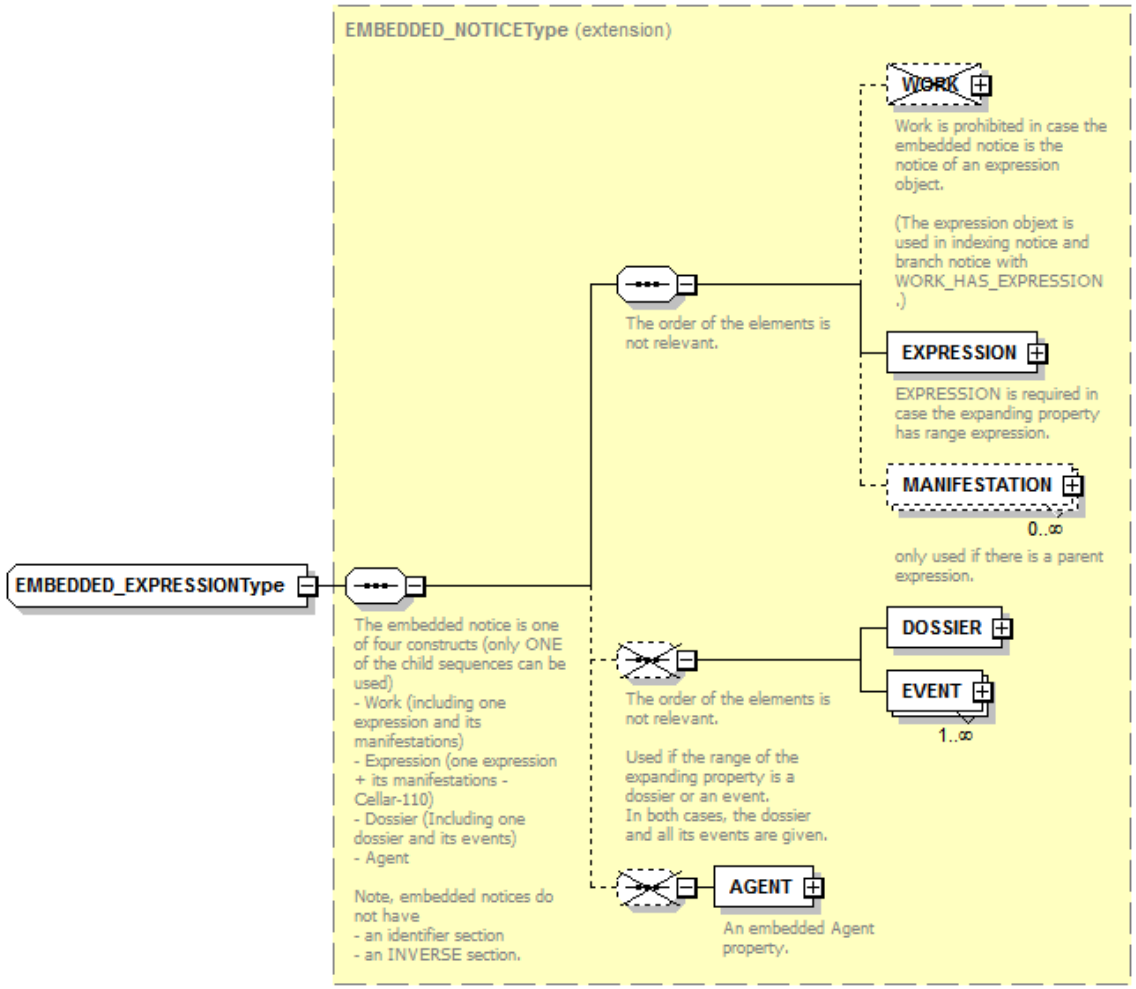
diagram	
type	restriction of **xs:positiveInteger**
properties	isRef 0 content simple
facets	Kind Value annotation minInclusive 1 maxInclusive 12 totalDigits 2
annotation	documentation format = MM

element **Date/DAY**

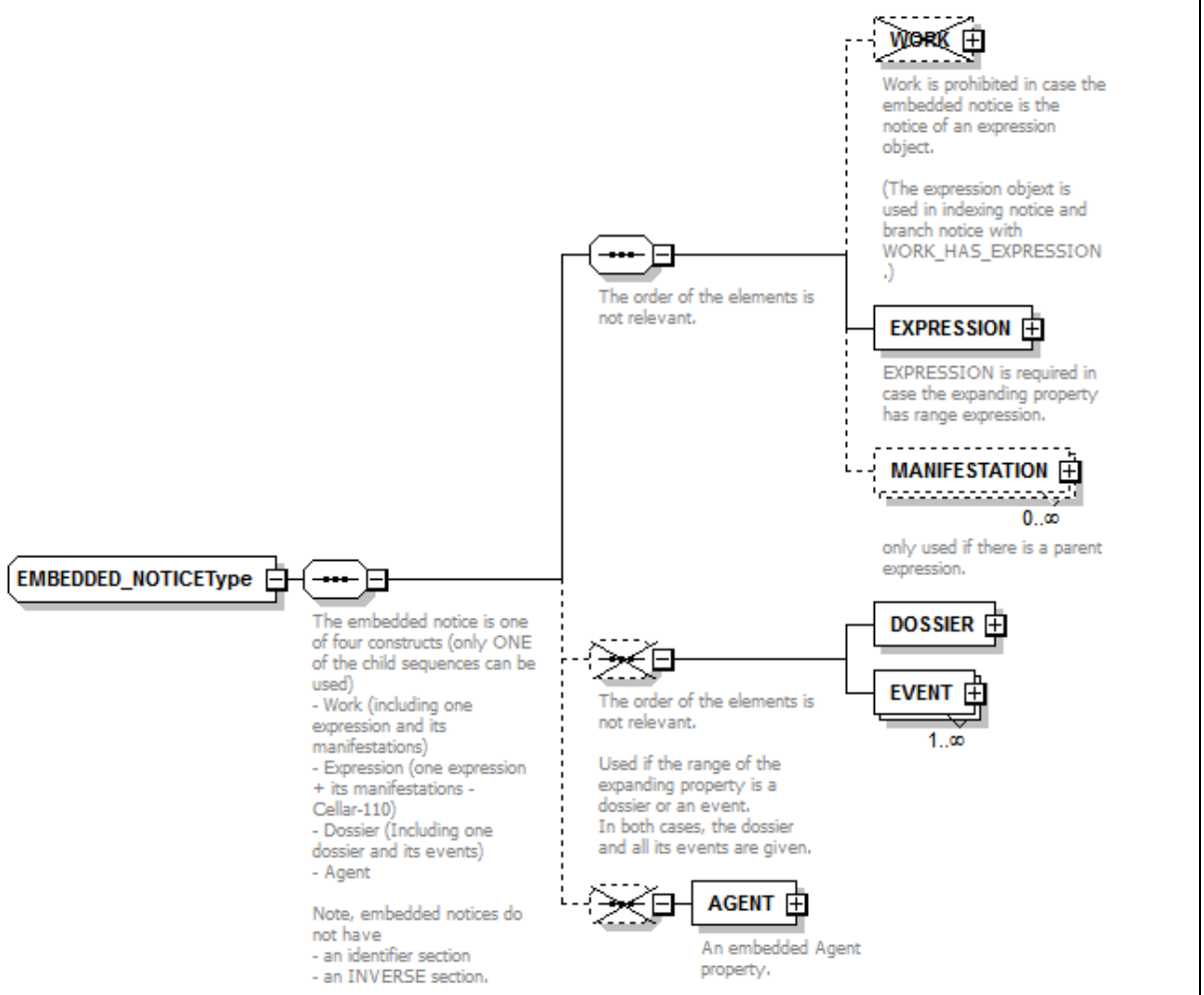
diagram	
type	restriction of **xs:positiveInteger**
properties	isRef 0 content simple
facets	Kind Value annotation minInclusive 1 maxInclusive 31 totalDigits 2

annotation	documentation format = DD

complexType **EMBEDDED_EXPRESSIONType**

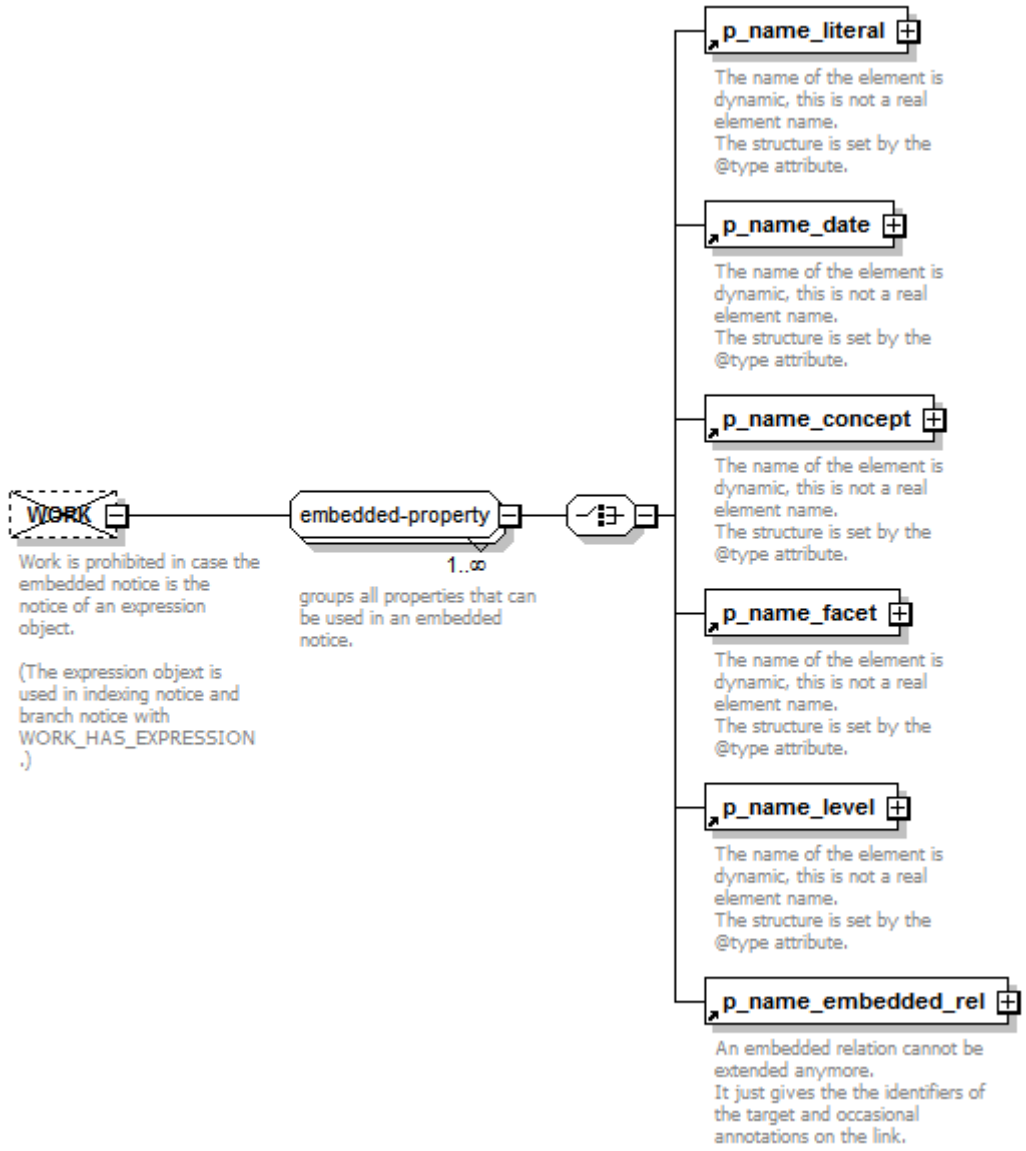
diagram	
type	extension of **EMBEDDED_NOTICEType**
properties	base EMBEDDED_NOTICEType
children	**WORK** **EXPRESSION** **MANIFESTATION** **DOSSIER** **EVENT** **AGENT**
used by	element **WORK_HAS_EXPRESSIONType/EMBEDDED_NOTICE**

complexType **EMBEDDED_NOTICEType**

diagram	
children	WORK EXPRESSION MANIFESTATION DOSSIER EVENT AGENT
used by	element EMBEDDED_NOTICE complexType EMBEDDED_EXPRESSIONType

element **EMBEDDED_NOTICEType/WORK**

diagram



properties

isRef	0
minOcc	0
maxOcc	0
content	complex

children **p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name_embedded_rel**

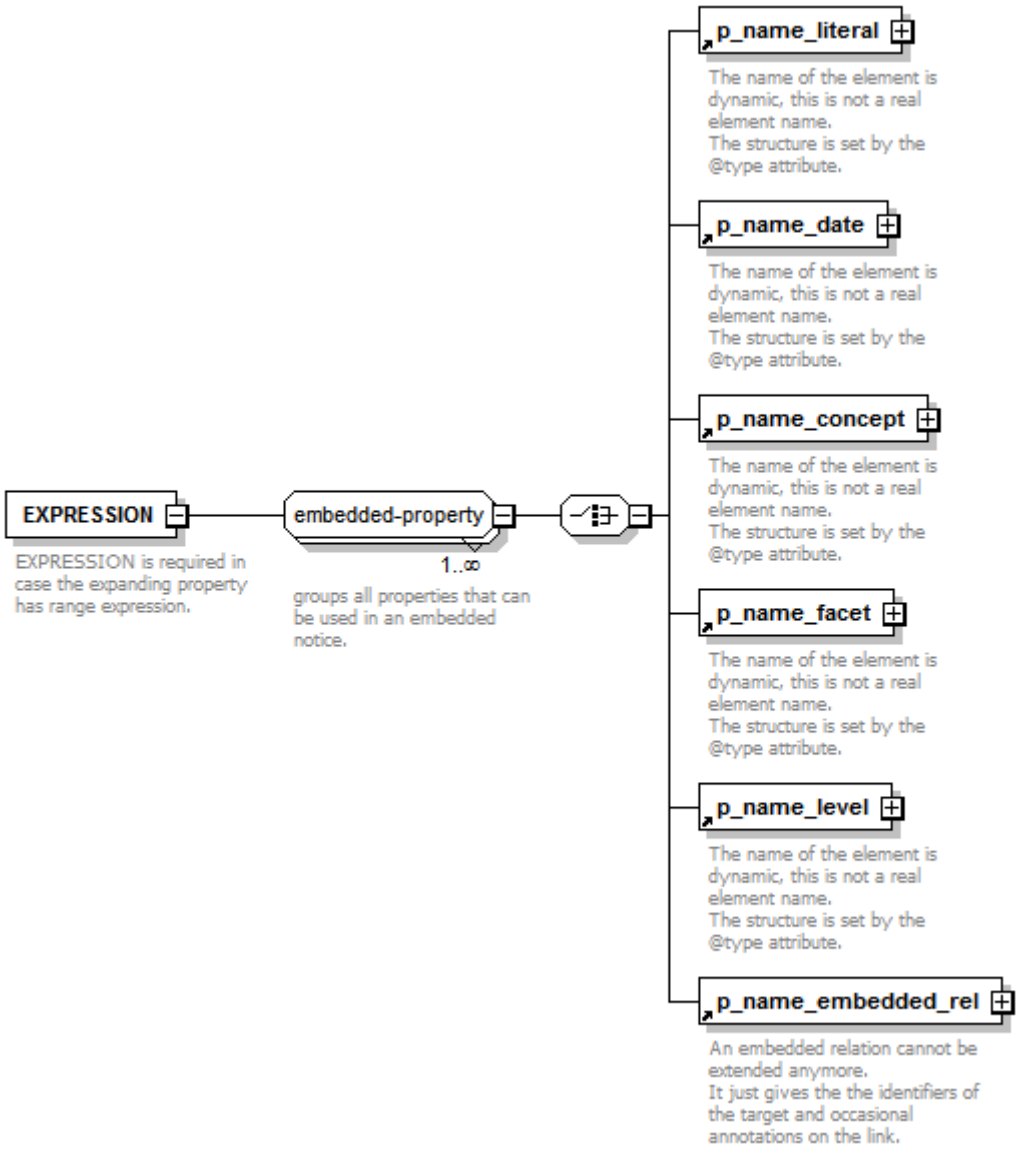
annotation

documentation

Work is prohibited in case the embedded notice is the notice of an expression object.

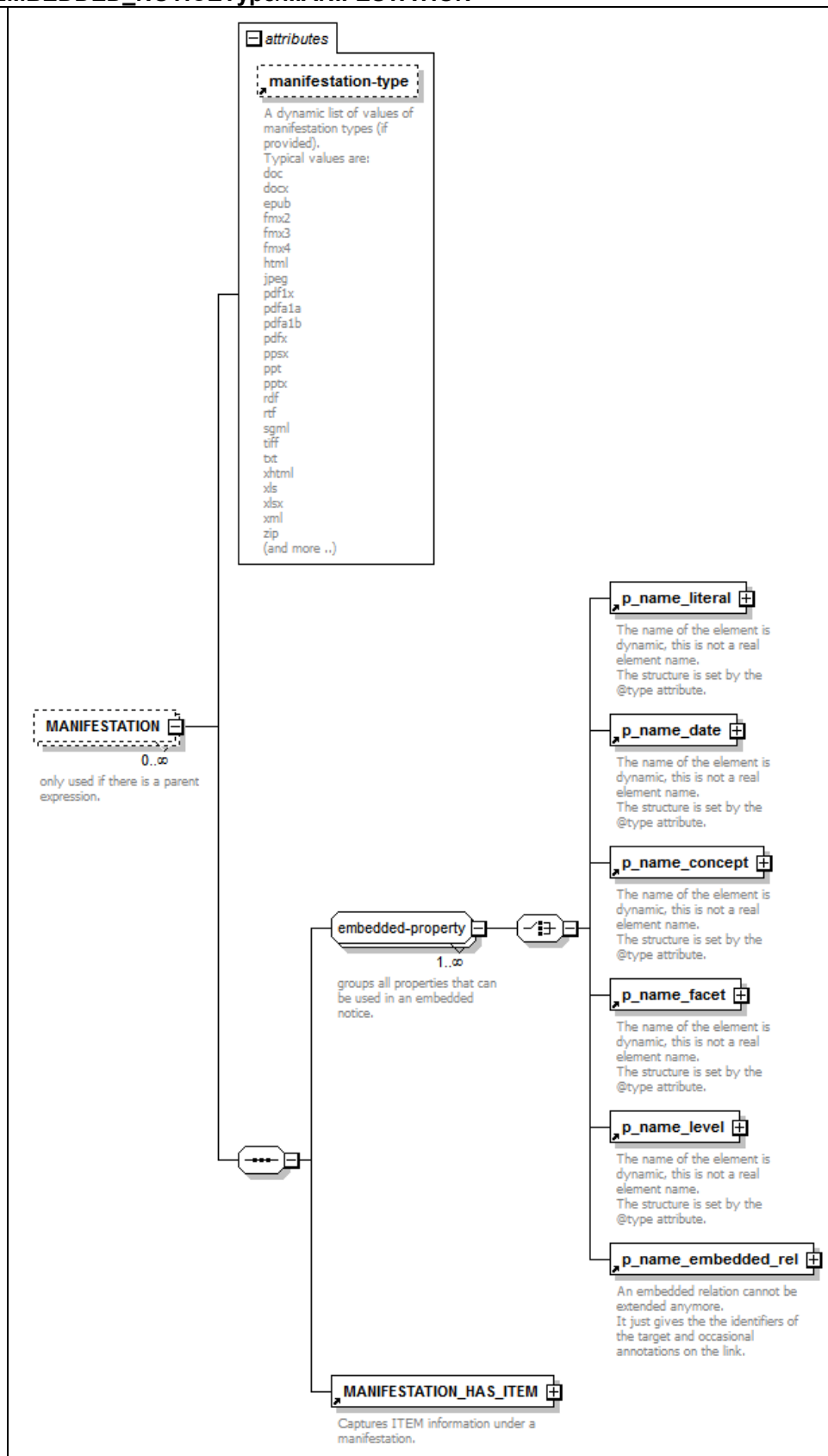
(The expression objext is used in indexing notice and branch notice with WORK_HAS_EXPRESSION.)

element **EMBEDDED_NOTICEType/EXPRESSION**

diagram	
properties	isRef 0 content complex
children	p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name_embedded_rel
annotation	documentation EXPRESSION is required in case the expanding property has range expression.

element **EMBEDDED_NOTICEType/MANIFESTATION**

diagram

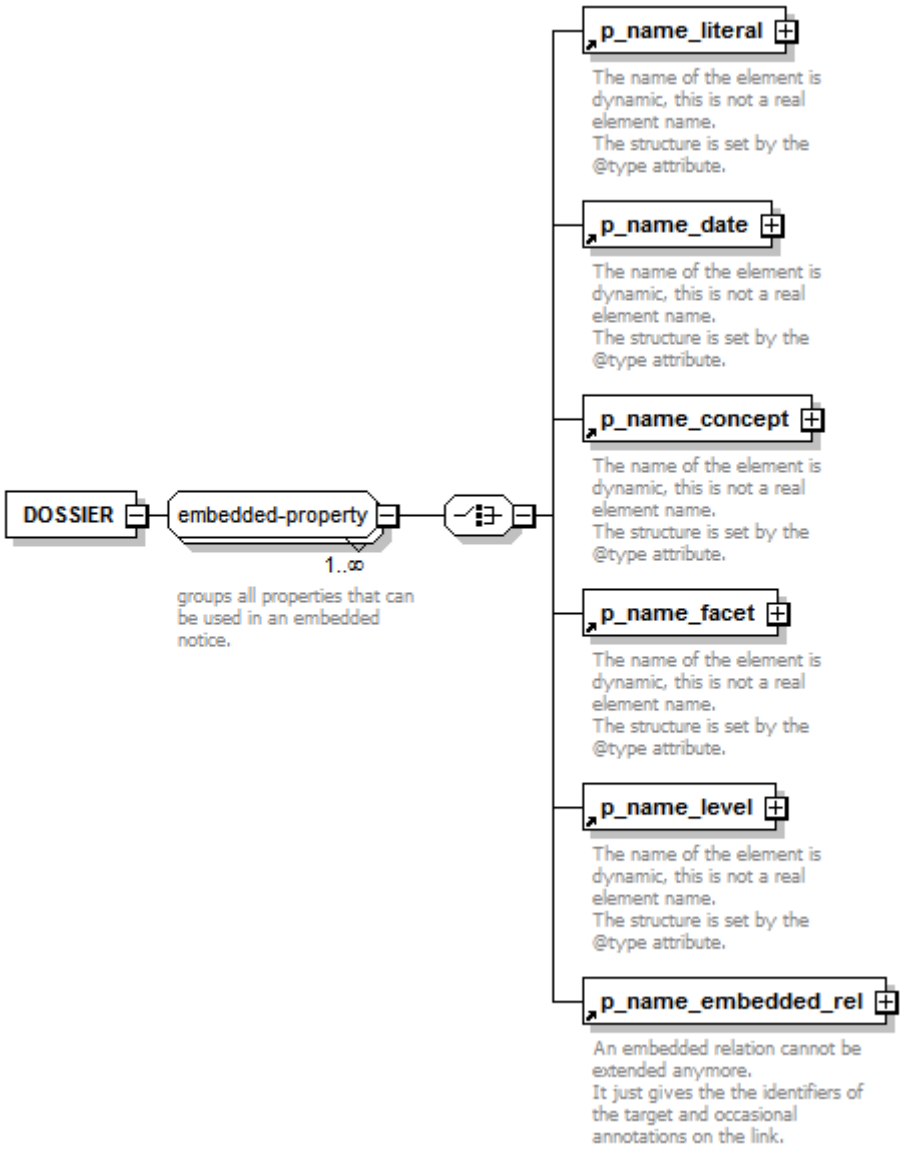


properties		
	isRef	0
	minOcc	0
	maxOcc	unbounded

	content complex
children	**p_name_literal** **p_name_date** **p_name_concept** **p_name_facet** **p_name_level** **p_name_embedded_rel** **MANIFESTATION_HAS_ITEM**
attributes	Name Type Use Default Fixed annotation manifestation-type documentation A dynamic list of values of manifestation types (if provided). Typical values are: doc docx epub fmx2 fmx3 fmx4 html jpeg pdf1x pdfa1a pdfa1b pdfx ppsx ppt pptx rdf rtf sgml tiff txt xhtml xls xlsx xml zip (and more ..)
annotation	documentation only used if there is a parent expression.

element **EMBEDDED_NOTICEType/DOSSIER**

diagram



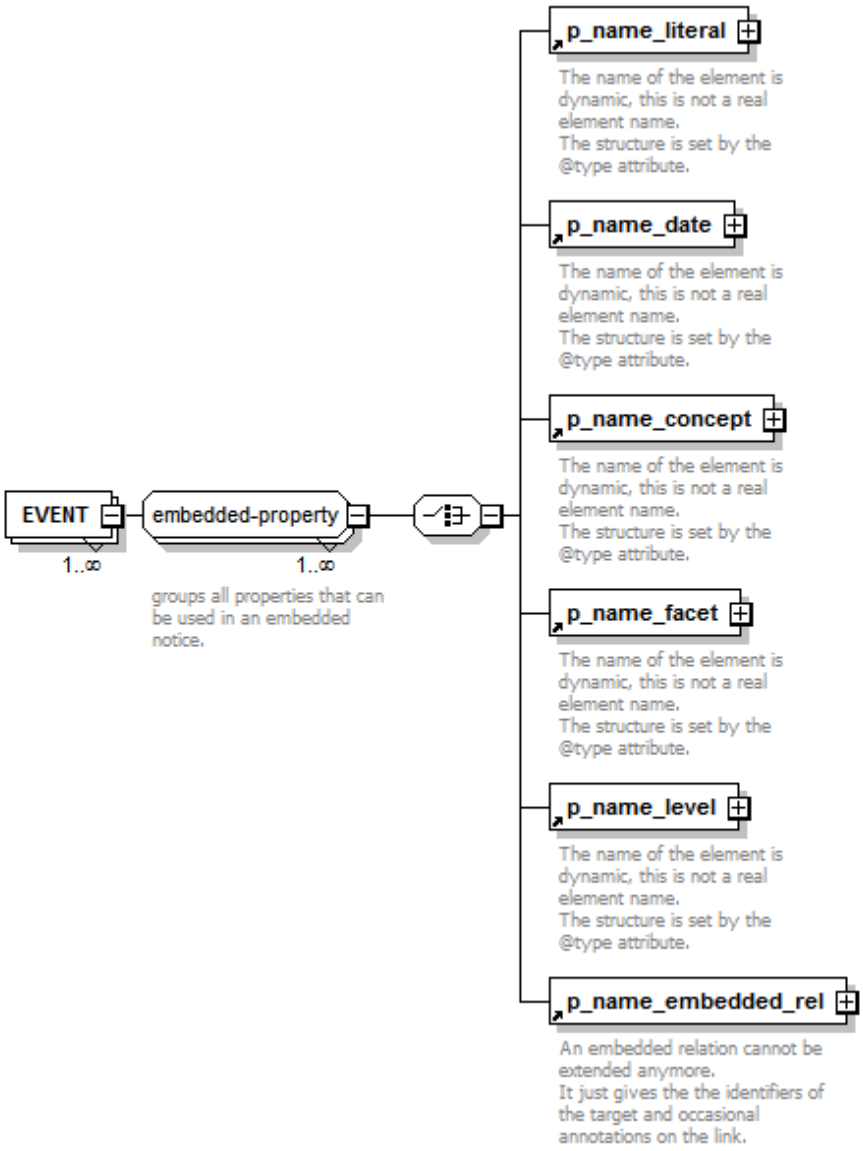
properties

isRef	0
content	complex

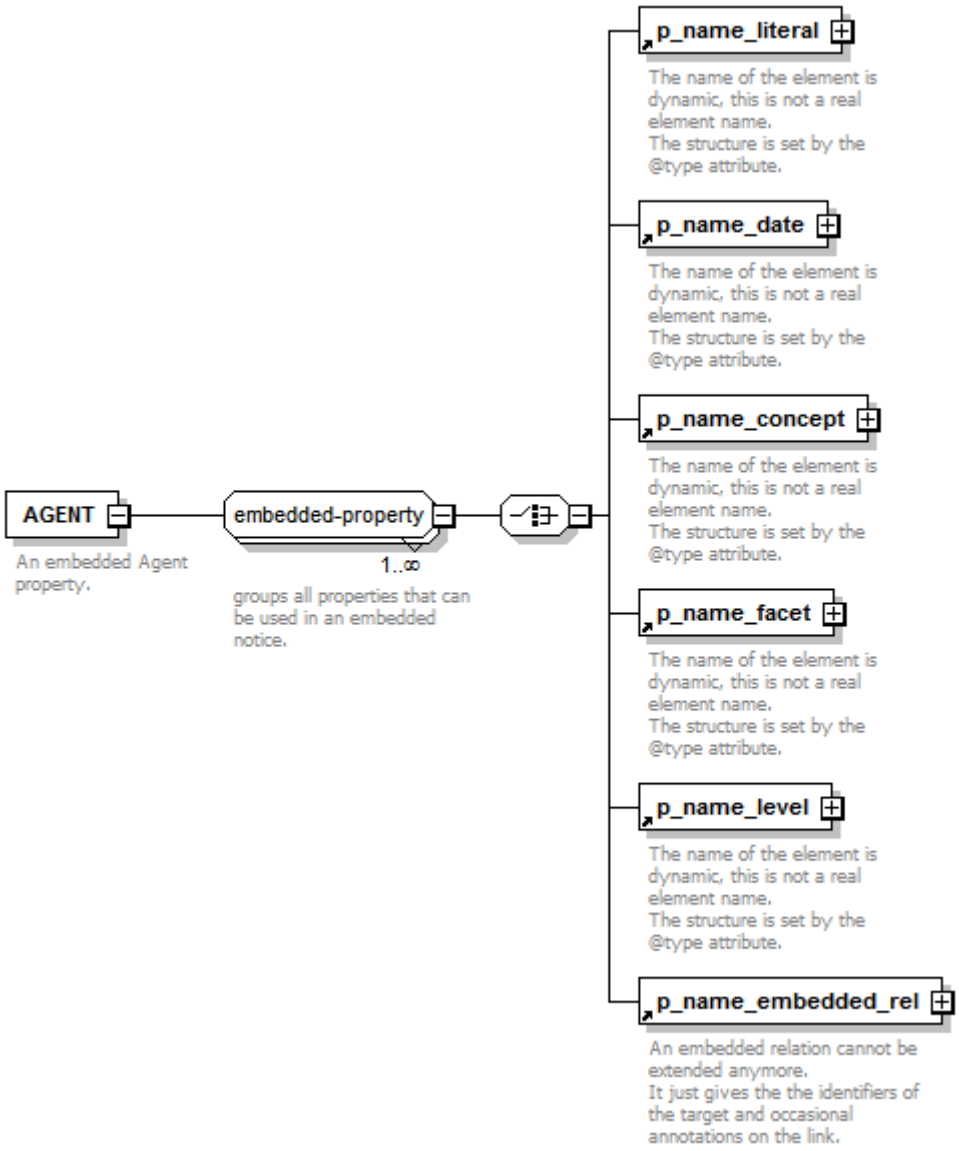
children

p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name_embedded_rel

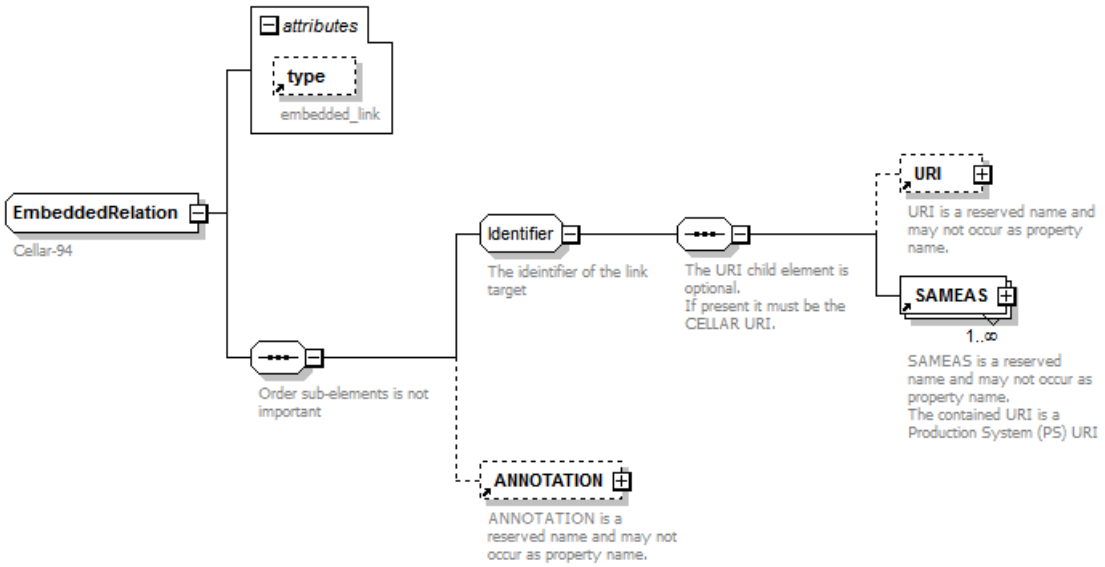
element **EMBEDDED_NOTICEType/EVENT**

diagram	
properties	isRef 0 minOcc 1 maxOcc unbounded content complex
children	p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name_embedded_rel

element **EMBEDDED_NOTICEType/AGENT**

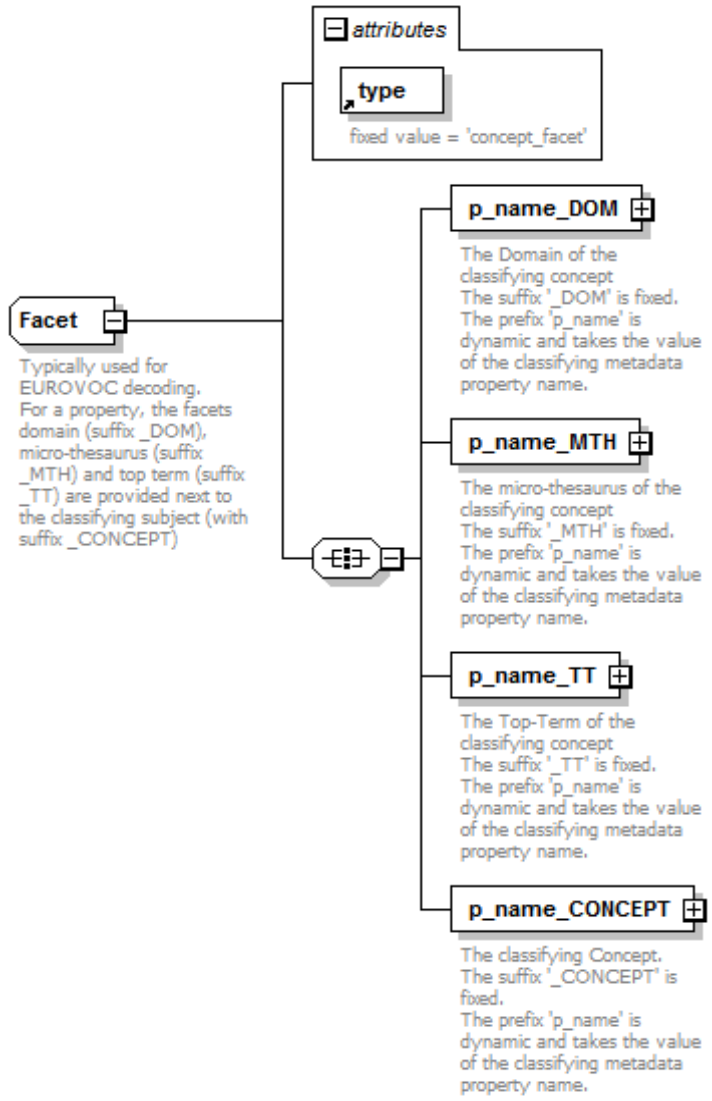
diagram	
properties	isRef 0 content complex
children	p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name_embedded_rel
annotation	documentation An embedded Agent property.

complexType **EmbeddedRelation**

diagram	
children	**URI** **SAMEAS** **ANNOTATION**
used by	element **p_name_embedded_rel**
attributes	Name Type Use Default Fixed annotation type **types** embedded_link documentation embedded_link
annotation	documentation Cellar-94

complexType **Facet**

diagram



children **p_name_DOM** **p_name_MTH** **p_name_TT** **p_name_CONCEPT**

used by

element **p_name_facet**

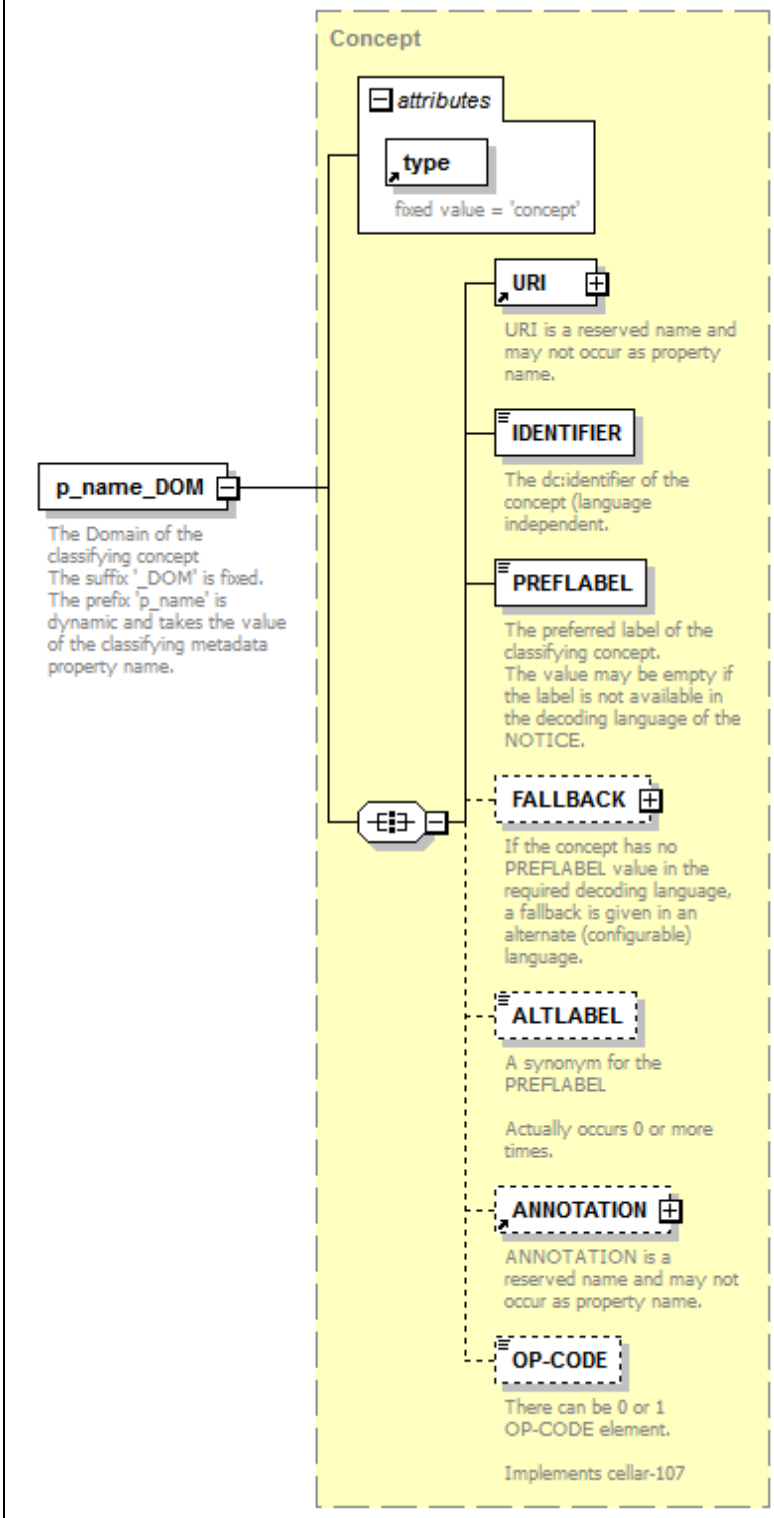
attributes

Name	Type	Use	Default	Fixed	annotation
type	**types**	required		concept_facet	documentation fixed value = 'concept_facet'

annotation

documentation
Typically used for EUROVOC decoding.
For a property, the facets domain (suffix _DOM), micro-thesaurus (suffix _MTH) and top term (suffix _TT) are provided next to the classifying subject (with suffix _CONCEPT)

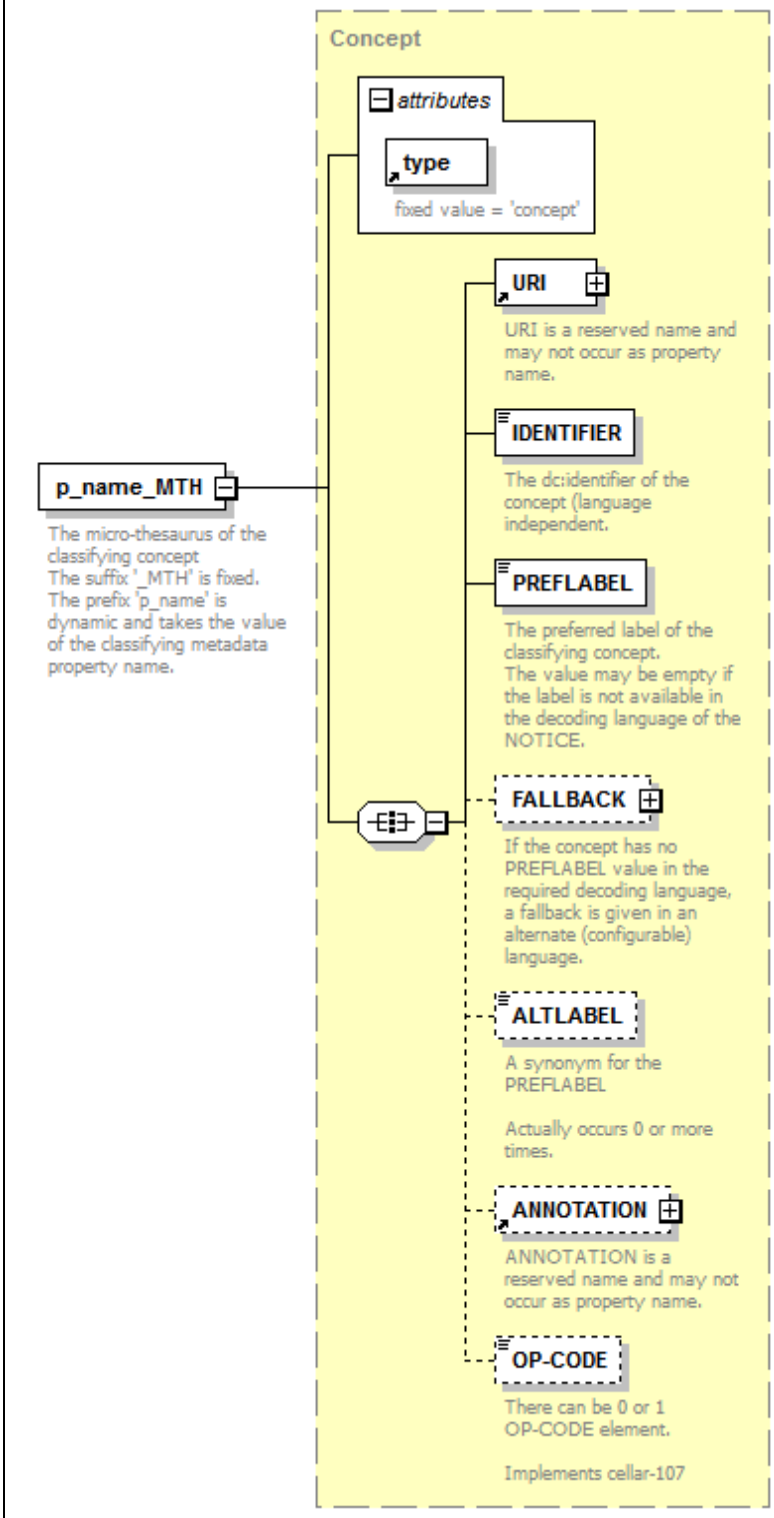
element **Facet/p_name_DOM**

diagram	
type	**Concept**
properties	isRef 0 content complex
children	**URI IDENTIFIER PREFLABEL FALLBACK ALTLABEL ANNOTATION OP-CODE**

attributes	Name Type Use Default Fixed annotation type **types** required concept documentation fixed value = 'concept'
annotation	documentation The Domain of the classifying concept The suffix '_DOM' is fixed. The prefix 'p_name' is dynamic and takes the value of the classifying metadata property name.

element **Facet/p_name_MTH**

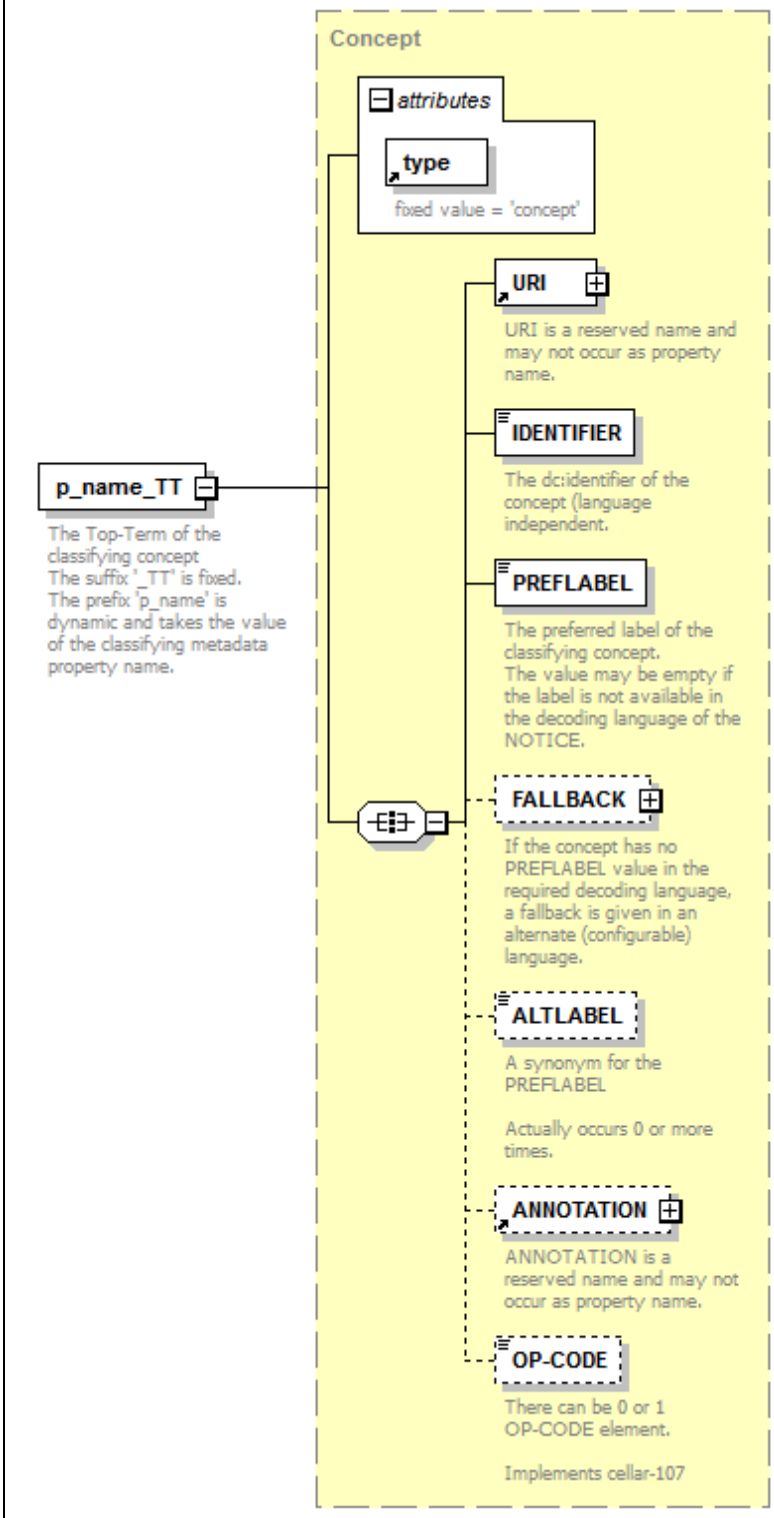
diagram



type	**Concept**
properties	isRef 0 content complex
children	**URI IDENTIFIER PREFLABEL FALLBACK ALTLABEL ANNOTATION OP-CODE**

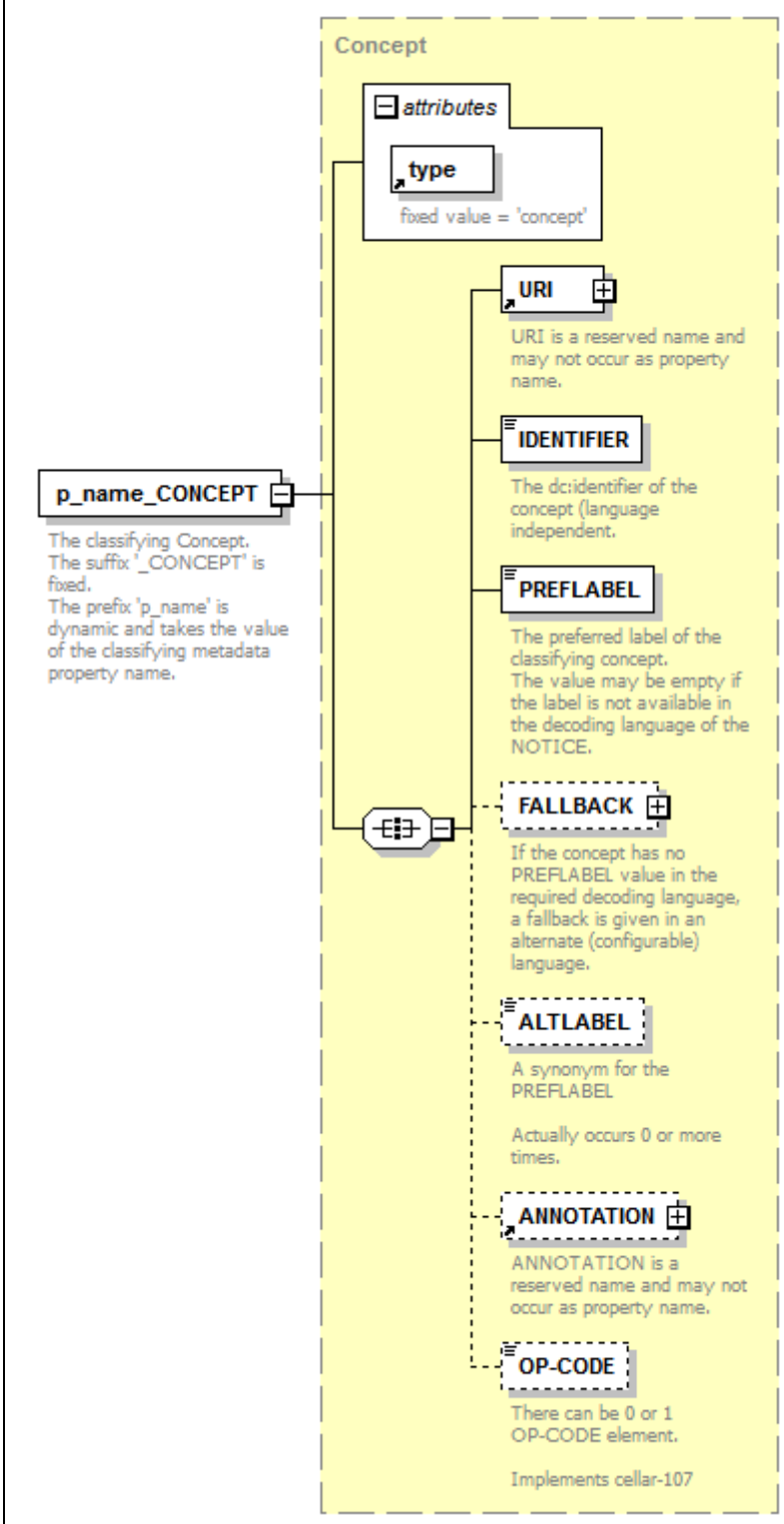
attributes	Name Type Use Default Fixed annotation type **types** required concept documentation fixed value = 'concept'
annotation	documentation The micro-thesaurus of the classifying concept The suffix '_MTH' is fixed. The prefix 'p_name' is dynamic and takes the value of the classifying metadata property name.

element **Facet/p_name_TT**

diagram	
type	**Concept**
properties	isRef 0 content complex
children	**URI IDENTIFIER PREFLABEL FALLBACK ALTLABEL ANNOTATION OP-CODE**

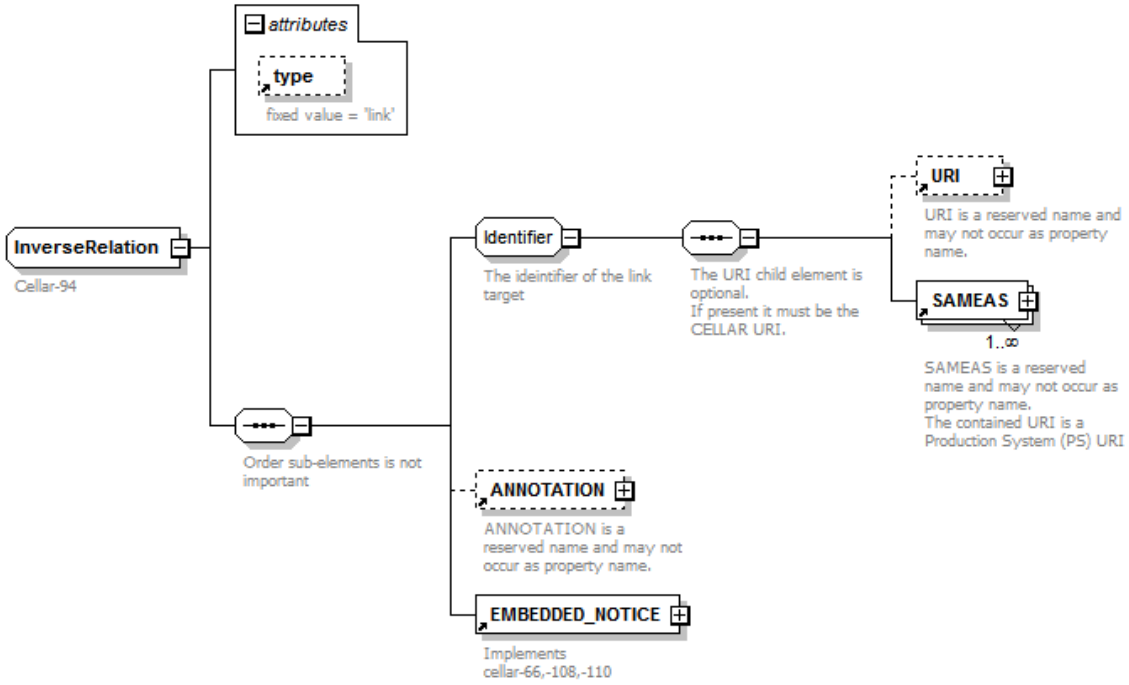
attributes	Name Type Use Default Fixed annotation type **types** required concept documentation fixed value = 'concept'
annotation	documentation The Top-Term of the classifying concept The suffix '_TT' is fixed. The prefix 'p_name' is dynamic and takes the value of the classifying metadata property name.

element **Facet/p_name_CONCEPT**

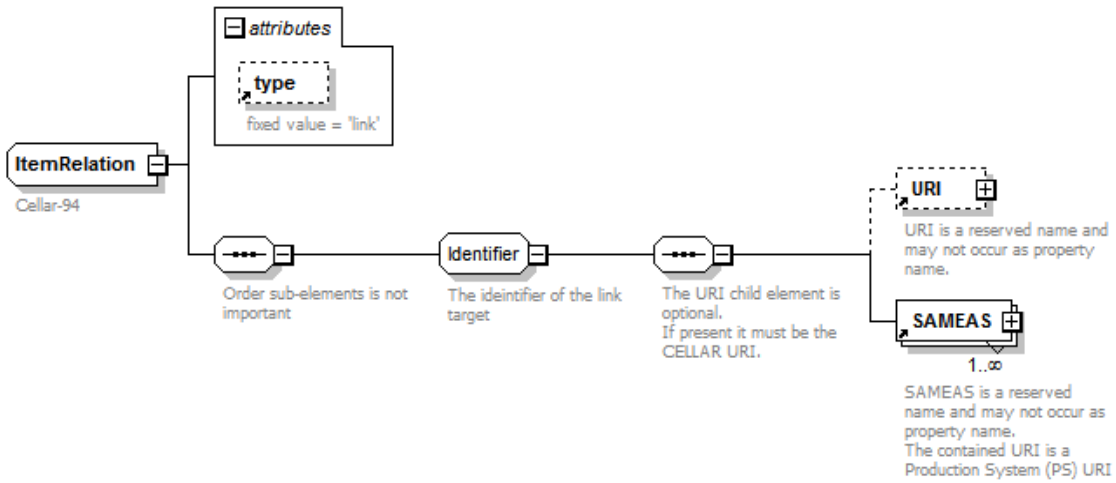
diagram	
type	**Concept**
properties	isRef 0 content complex
children	**URI IDENTIFIER PREFLABEL FALLBACK ALTLABEL ANNOTATION OP-CODE**

attributes	Name Type Use Default Fixed annotation type **types** required concept documentation fixed value = 'concept'
annotation	documentation The classifying Concept. The suffix '_CONCEPT' is fixed. The prefix 'p_name' is dynamic and takes the value of the classifying metadata property name.

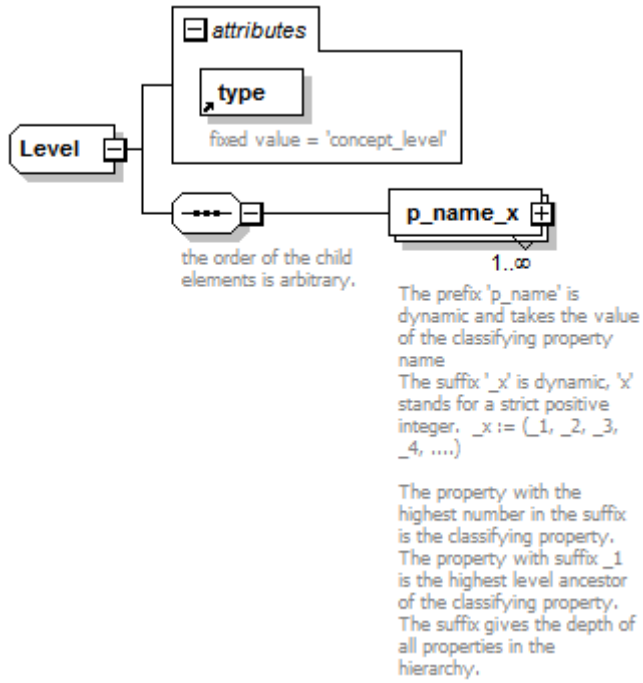
complexType **InverseRelation**

diagram	
children	**URI** **SAMEAS** **ANNOTATION** **EMBEDDED_NOTICE**
used by	element **p_name_inverse_rel**
attributes	Name Type Use Default Fixed annotation type **types** link documentation fixed value = 'link'
annotation	documentation Cellar-94

complexType **ItemRelation**

diagram	
children	URI SAMEAS
used by	element p_name_item_rel
attributes	Name Type Use Default Fixed annotation type types link documentation fixed value = 'link'
annotation	documentation Cellar-94

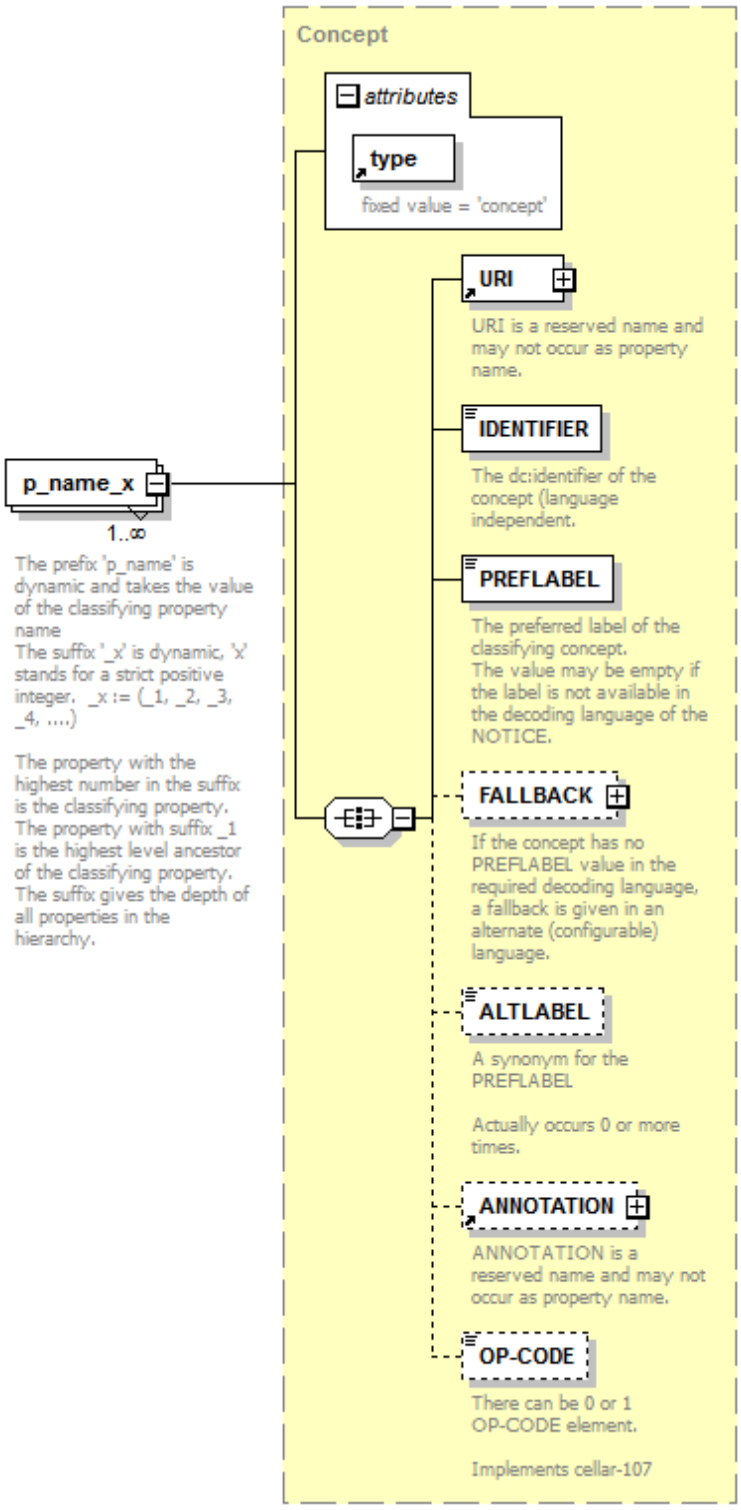
complexType **Level**

diagram	
children	p_name_x

used by	element **p_name_level**
attributes	Name Type Use Default Fixed annotation type **types** required concept_level documentation fixed value = 'concept_level'

element **Level/p_name_x**

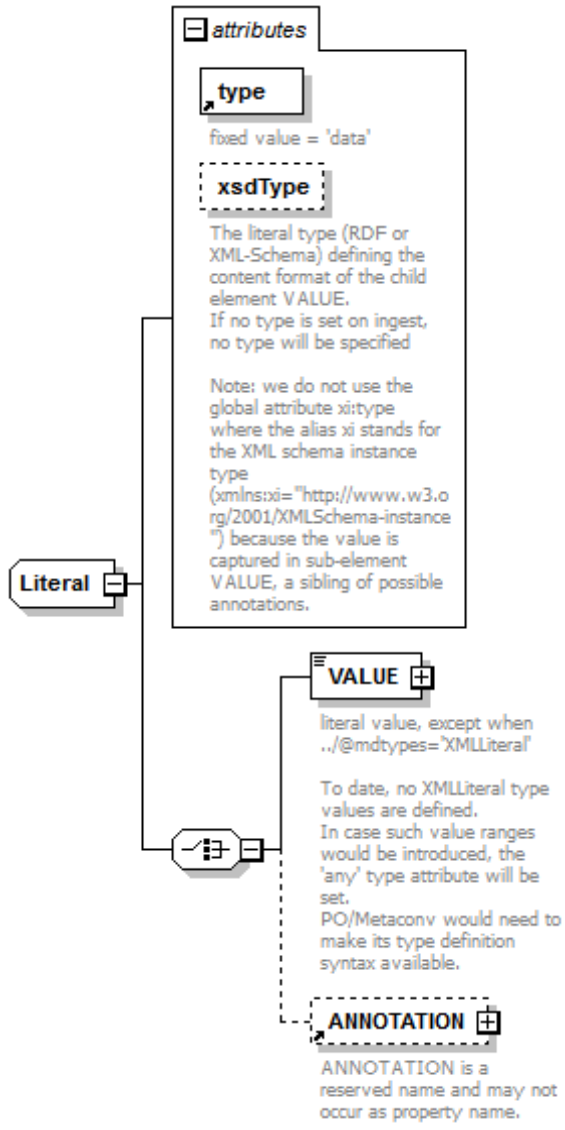
diagram



type	**Concept**
properties	isRef 0 minOcc 1 maxOcc unbounded content complex

children	URI IDENTIFIER PREFLABEL FALLBACK ALTLABEL ANNOTATION OP-CODE
attributes	Name Type Use Default Fixed annotation type types required concept documentation fixed value = 'concept'
annotation	documentation The prefix 'p_name' is dynamic and takes the value of the classifying property name The suffix '_x' is dynamic, 'x' stands for a strict positive integer. _x := (_1, _2, _3, _4, ...) The property with the highest number in the suffix is the classifying property. The property with suffix _1 is the highest level ancestor of the classifying property. The suffix gives the depth of all properties in the hierarchy.

complexType **Literal**

diagram	
children	VALUE ANNOTATION
used by	element p_name_literal

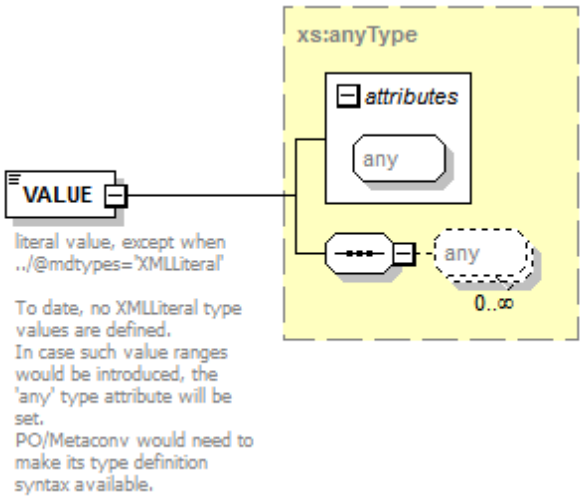
attributes	Name Type Use Default Fixed annotation type **types** required data documentation fixed value = 'data' xsdType**mdtypes** documentation The literal type (RDF or XML-Schema) defining the content format of the child element VALUE. If no type is set on ingest, no type will be specified Note: we do not use the global attribute xi:type where the alias xi stands for the XML schema instance type (xmlns:xi="http://www.w3.org/2001/XMLSchema-instance") because the value is captured in sub-element VALUE, a sibling of possible annotations.

attribute **Literal/@xsdType**

type	**mdtypes**
properties	isRef 0
facets	Kind Value annotation enumeration string enumeration boolean enumeration decimal enumeration float enumeration double enumeration dateTime enumeration time enumeration date enumeration gYearMonth enumeration gYear enumeration gMonthDay enumeration gDay enumeration gMonth enumeration hexBinary enumeration base64Binary enumeration anyURI enumeration normalizedString enumeration token enumeration language enumeration NMTOKEN enumeration Name enumeration NCName enumeration integer enumeration nonPositiveInteger enumeration negativeInteger enumeration long enumeration int enumeration short enumeration byte enumeration nonNegativeInteger enumeration unsignedLong enumeration unsignedInt enumeration unsignedShort enumeration unsignedByte enumeration positiveInteger enumeration PlainLiteral enumeration XMLLiteral enumeration Literal
annotation	documentation The literal type (RDF or XML-Schema) defining the content format of the child element VALUE. If no type is set on ingest, no type will be specified Note: we do not use the global attribute xi:type where the alias xi stands for the XML schema instance type (xmlns:xi="http://www.w3.org/2001/XMLSchema-instance")

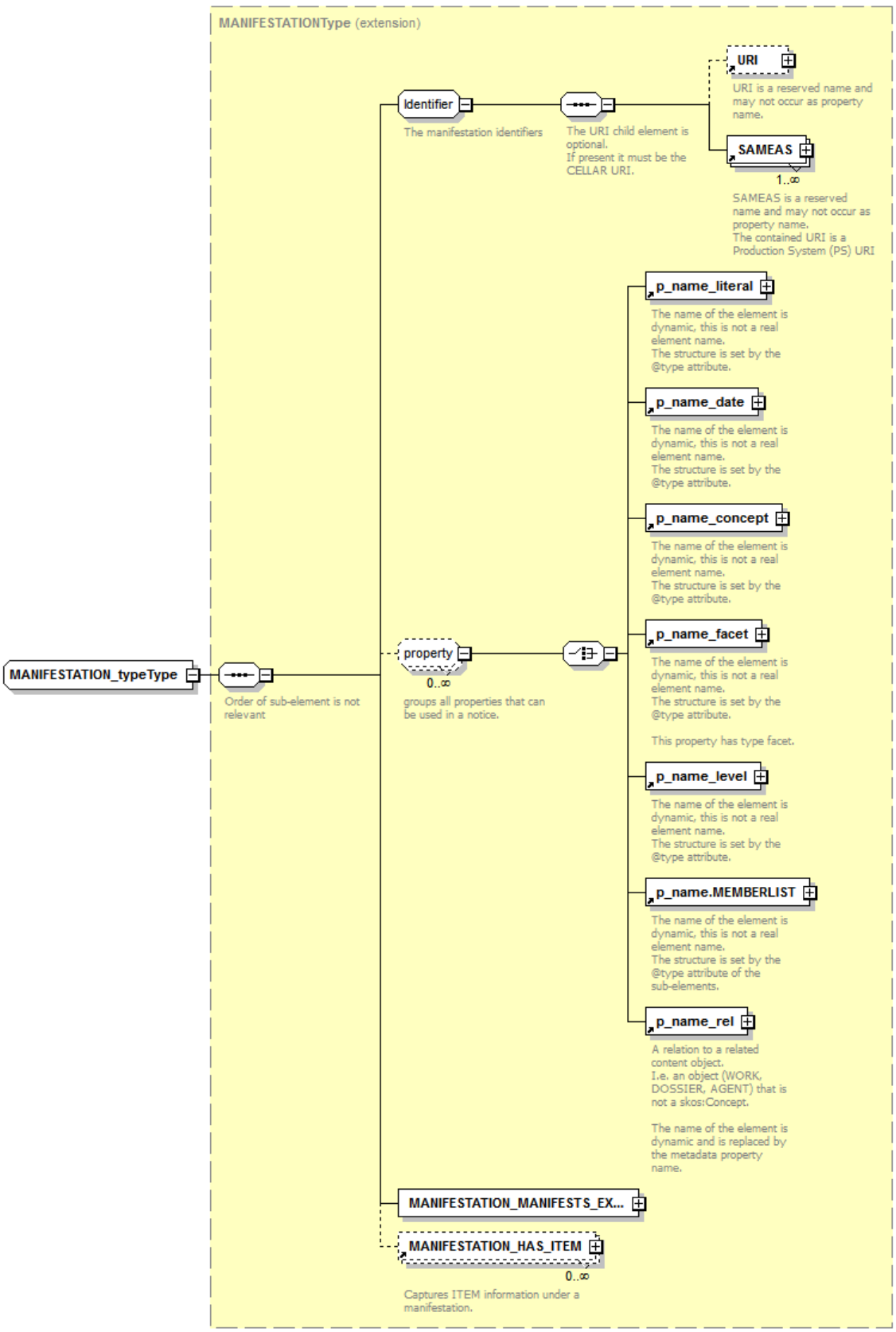
	because the value is captured in sub-element VALUE, a sibling of possible annotations.

element **Literal/VALUE**

diagram	
type	**xs:anyType**
properties	isRef 0 content complex mixed true
attributes	Name Type Use Default Fixed annotation
annotation	documentation literal value, except when ../@mdtypes='XMLLiteral' To date, no XMLLiteral type values are defined. In case such value ranges would be introduced, the 'any' type attribute will be set. PO/Metaconv would need to make its type definition syntax available.

complexType **MANIFESTATION_typeType**

diagram

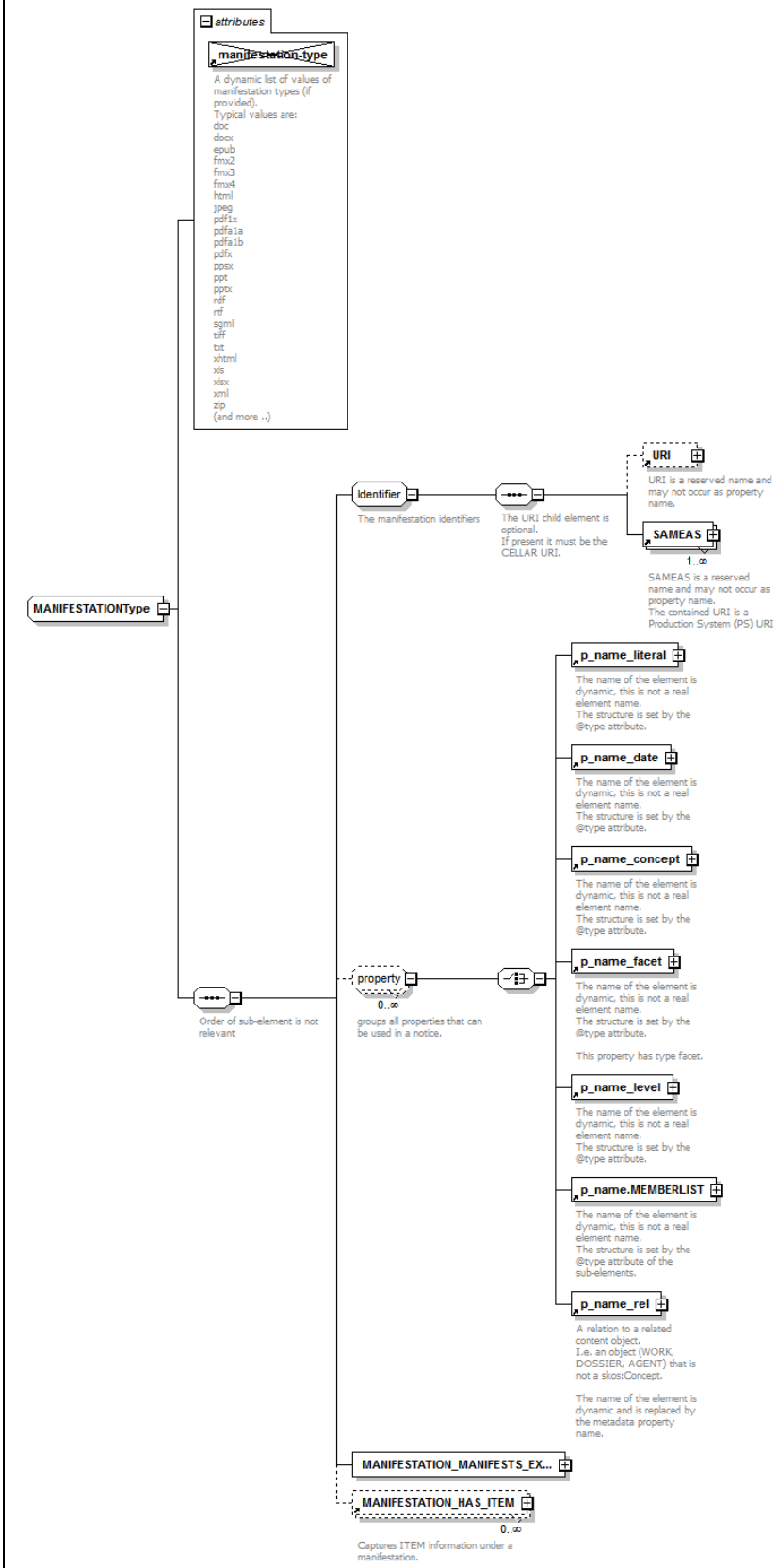


type: extension of **MANIFESTATIONType**

properties	base MANIFESTATIONType
children	URI SAMEAS p_name_literal p_name_date p_name_concept p_name_facet p_name_level p_name.MEMBERLIST p_name_rel MANIFESTATION_MANIFESTS_EXPRESSION MANIFESTATION_HAS_ITEM
used by	element NOTICE/MANIFESTATION_type

complexType **MANIFESTATIONType**

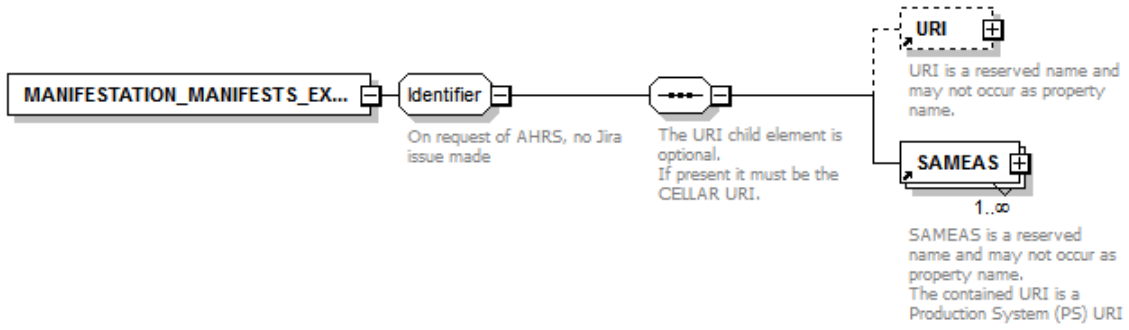
diagram



children **URI** **SAMEAS** **p_name_literal** **p_name_date** **p_name_concept** **p_name_facet** **p_name_level** **p_name.MEMBERLIST** **p_name_rel** **MANIFESTATION_MANIFESTS_EXPRESSION** **MANIFESTATION_HAS_ITEM**

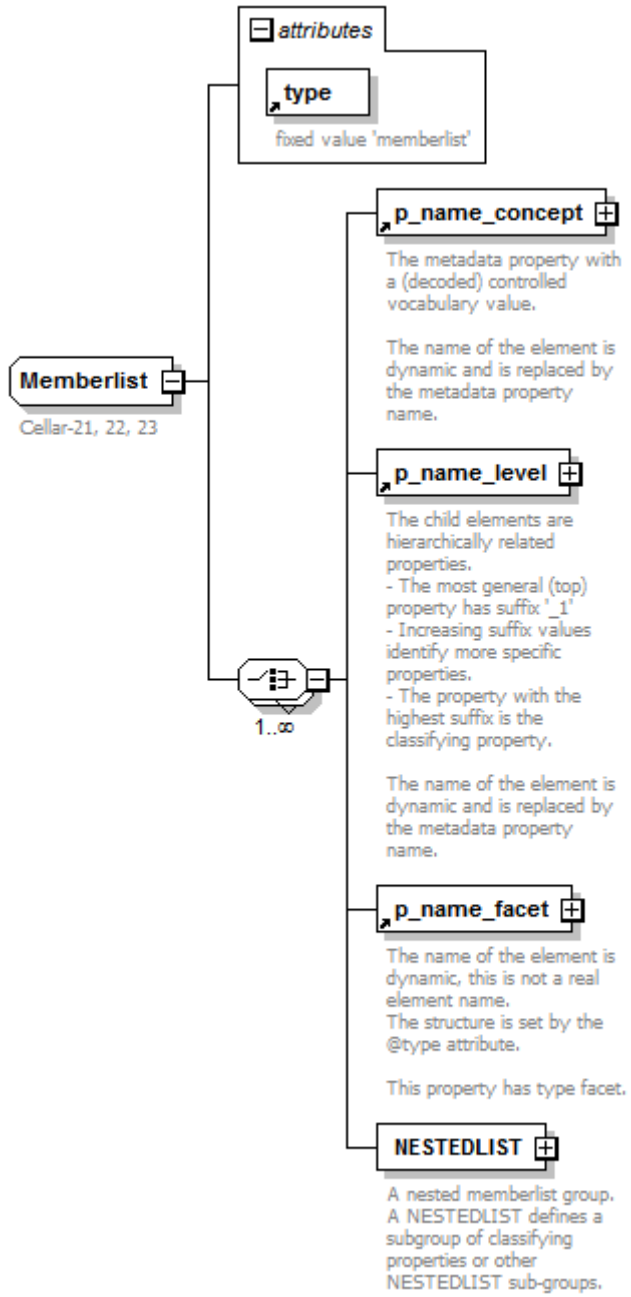
used by	element **NOTICE/MANIFESTATION** complexType **MANIFESTATION_typeType**
attributes	Name Type Use Default Fixed annotation manifestation-type prohibited documentation A dynamic list of values of manifestation types (if provided). Typical values are: doc docx epub fmx2 fmx3 fmx4 html jpeg pdf1x pdfa1a pdfa1b pdfx ppsx ppt pptx rdf rtf sgml tiff txt xhtml xls xlsx xml zip (and more ..)

element **MANIFESTATIONType/MANIFESTATION_MANIFESTS_EXPRESSION**

diagram	
properties	isRef 0 content complex
children	**URI SAMEAS**

complexType **Memberlist**

diagram



children	p_name_concept p_name_level p_name_facet NESTEDLIST
used by	elements Memberlist/NESTEDLIST p_name.MEMBERLIST

attributes

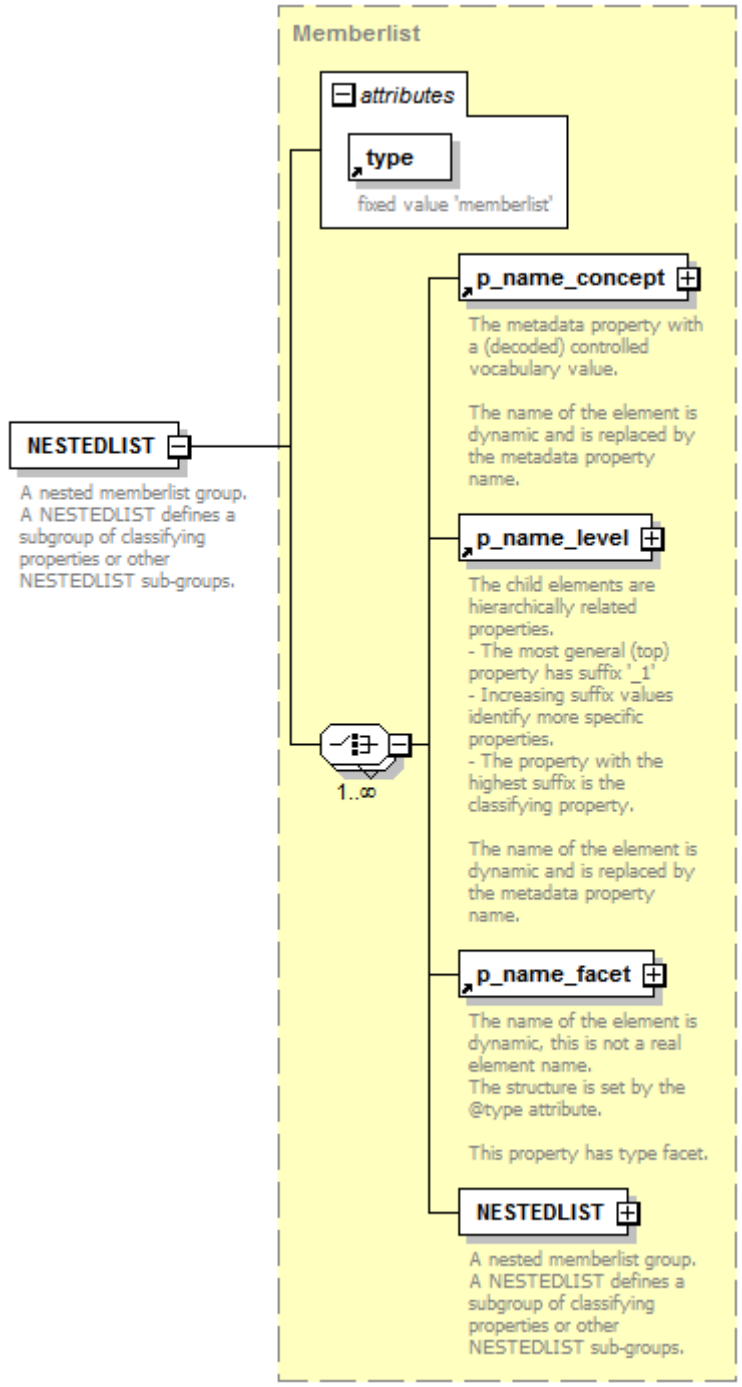
Name	Type	Use	Default	Fixed	annotation
type	types	required	memberlist		documentation fixed value 'memberlist'

annotation

documentation
Cellar-21, 22, 23

element **Memberlist/NESTEDLIST**

diagram



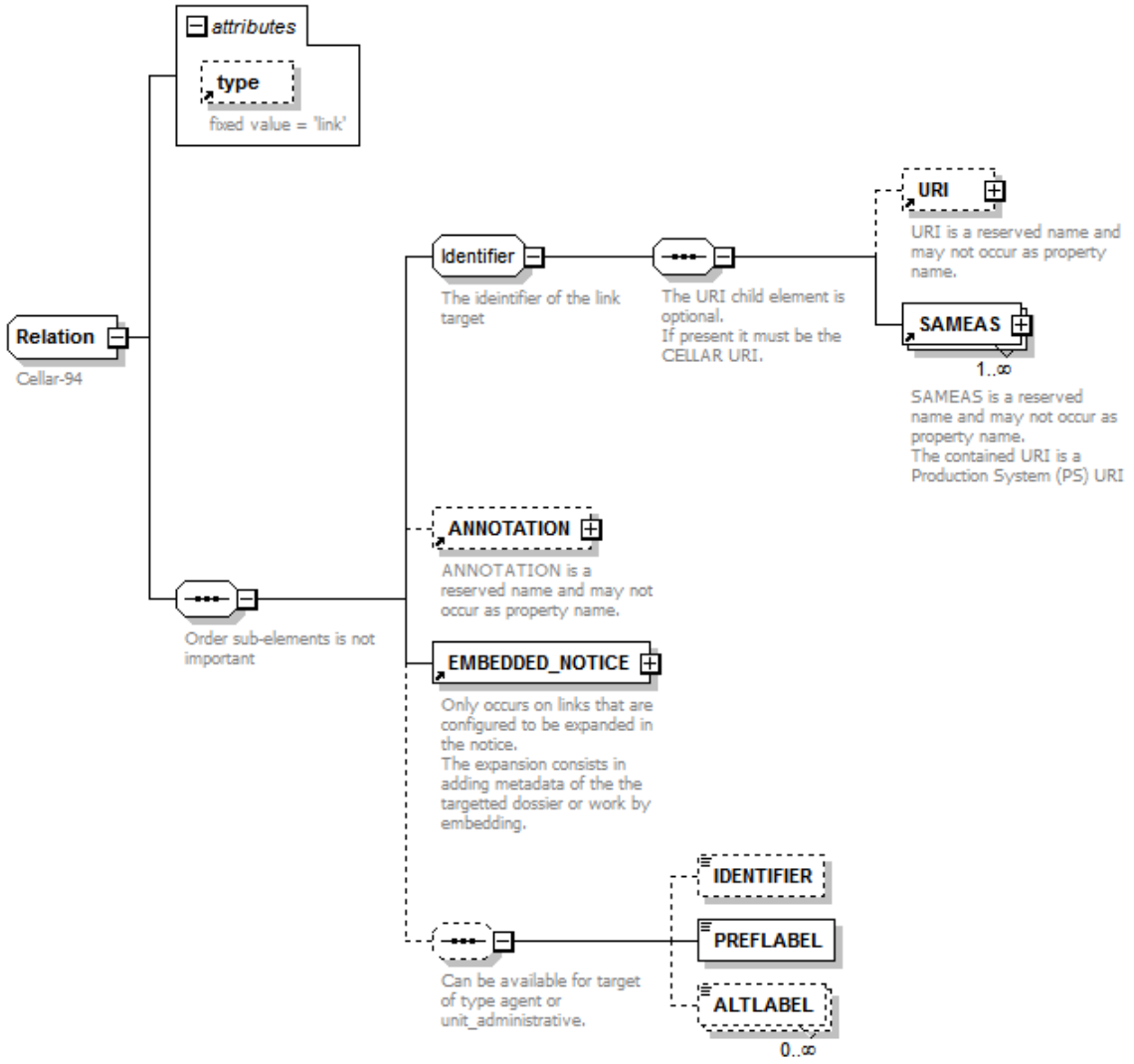
type	**Memberlist**
properties	isRef 0 content complex
children	**p_name_concept** **p_name_level** **p_name_facet** **NESTEDLIST**

attributes

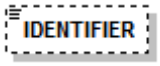
Name	Type	Use	Default	Fixed	annotation
type	**types**	required	memberlist		documentation
fixed value 'memberlist'					

annotation	documentation A nested memberlist group. A NESTEDLIST defines a subgroup of classifying properties or other NESTEDLIST sub-groups.

complexType **Relation**

diagram	
children	URI SAMEAS ANNOTATION EMBEDDED_NOTICE IDENTIFIER PREFLABEL ALTLABEL
used by	element p_name_rel
attributes	Name Type Use Default Fixed annotation type types link documentation fixed value = 'link'
annotation	documentation Cellar-94

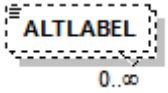
element **Relation/IDENTIFIER**

diagram	
type	**xs:string**
properties	isRef 0 minOcc 0 maxOcc 1 content simple

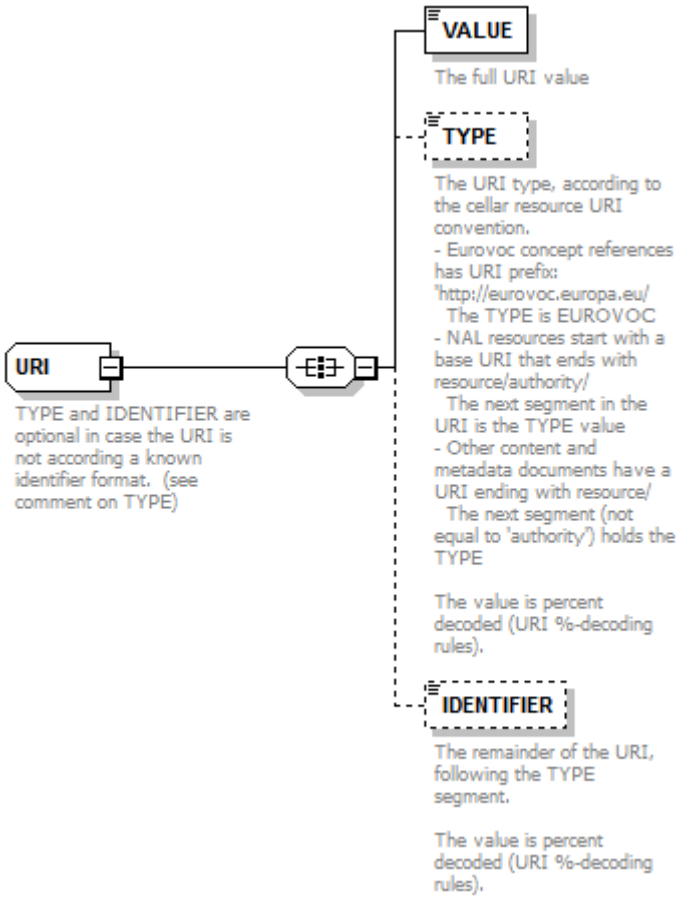
element **Relation/PREFLABEL**

diagram	
properties	isRef 0

element **Relation/ALTLABEL**

diagram	
properties	isRef 0 minOcc 0 maxOcc unbounded

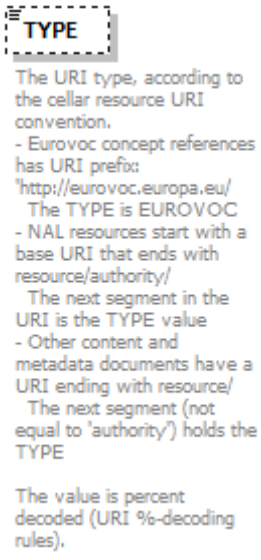
complexType **URI**

diagram	
children	VALUE TYPE IDENTIFIER
used by	element URI
annotation	documentation TYPE and IDENTIFIER are optional in case the URI is not according a known identifier format. (see comment on TYPE)

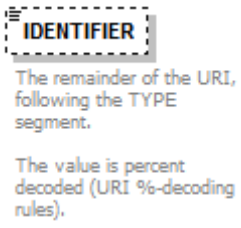
element **URI/VALUE**

diagram	
properties	isRef 0
annotation	documentation The full URI value

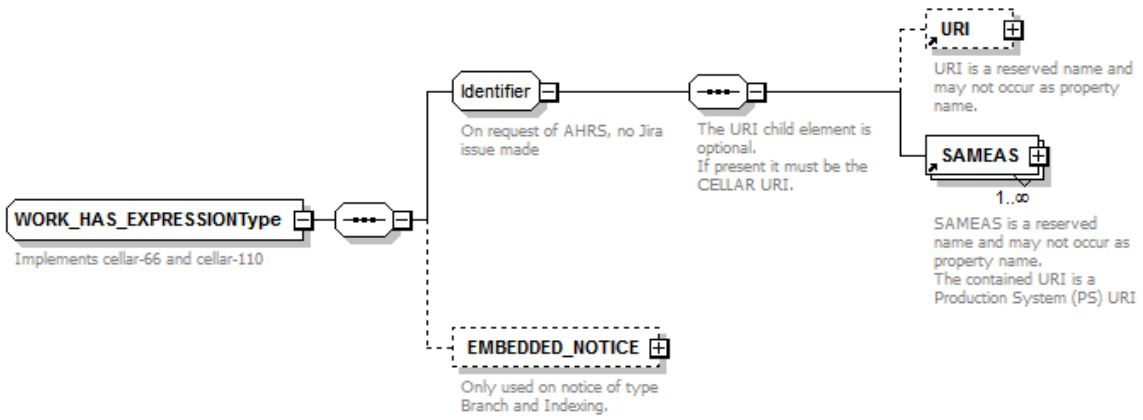
element **URI/TYPE**

diagram	
properties	isRef 0 minOcc 0 maxOcc 1
annotation	documentation The URI type, according to the cellar resource URI convention. - Eurovoc concept references has URI prefix: 'http://eurovoc.europa.eu/ The TYPE is EUROVOC - NAL resources start with a base URI that ends with resource/authority/ The next segment in the URI is the TYPE value - Other content and metadata documents have a URI ending with resource/ The next segment (not equal to 'authority') holds the TYPE The value is percent decoded (URI %-decoding rules).

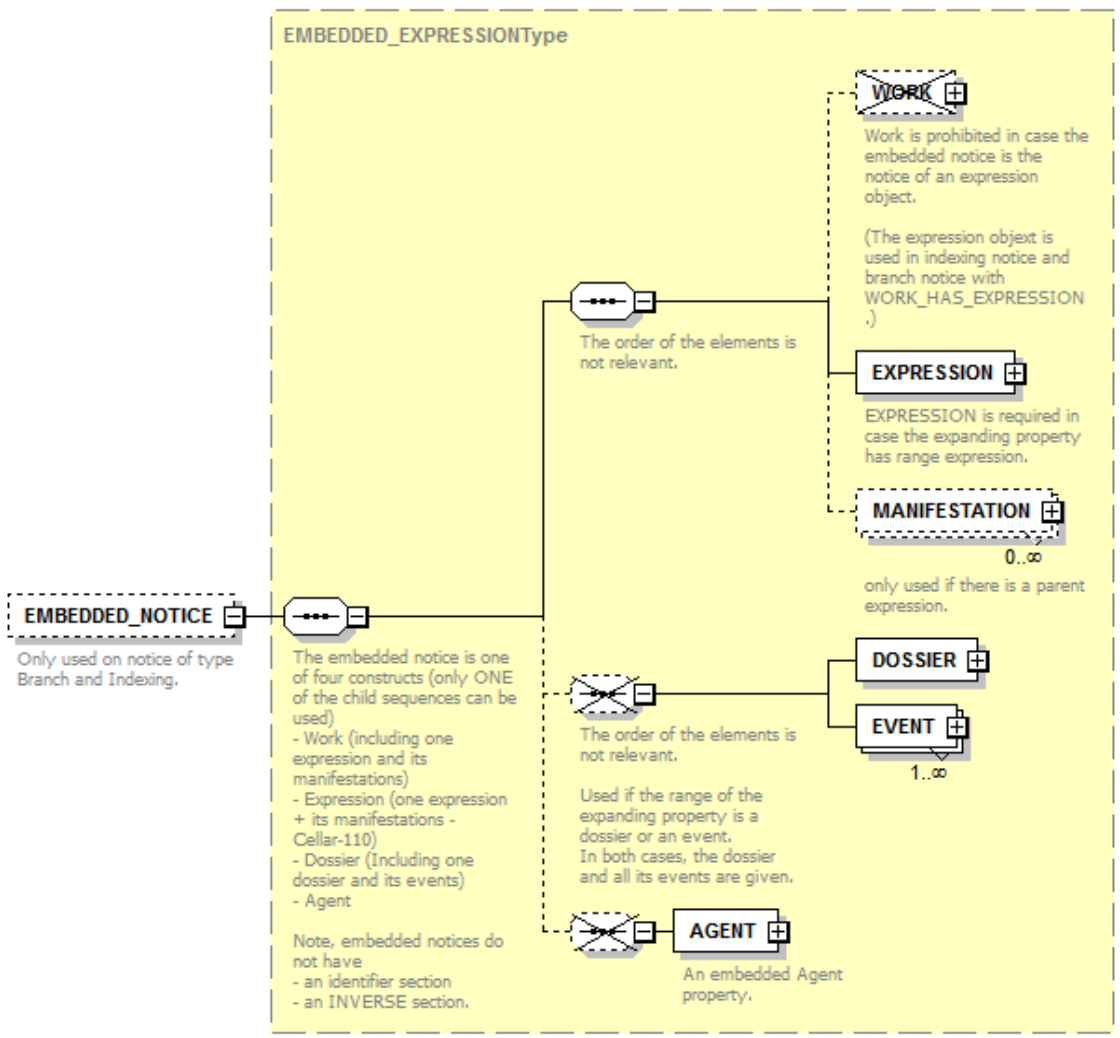
element **URI/IDENTIFIER**

diagram	
properties	isRef 0 minOcc 0 maxOcc 1
annotation	documentation The remainder of the URI, following the TYPE segment. The value is percent decoded (URI %-decoding rules).

complexType **WORK_HAS_EXPRESSIONType**

diagram	
children	URI SAMEAS EMBEDDED_NOTICE
used by	element NOTICE/WORK/WORK_HAS_EXPRESSION
annotation	documentation Implements cellar-66 and cellar-110

element **WORK_HAS_EXPRESSIONType/EMBEDDED_NOTICE**

diagram	
type	**EMBEDDED_EXPRESSIONType**
properties	isRef 0 minOcc 0 maxOcc 1 content complex
children	**WORK** **EXPRESSION** **MANIFESTATION** **DOSSIER** **EVENT** **AGENT**
used by	complexTypes **InverseRelation** **Relation**
annotation	documentation Only used on notice of type Branch and Indexing.

simpleType **mdtypes**

type	restriction of **xs:NMTOKEN**
properties	base xs:NMTOKEN
used by	attribute **Literal/@xsdType**

facets	Kind	Value	annotation
	enumeration	string	
	enumeration	boolean	
	enumeration	decimal	
	enumeration	float	
	enumeration	double	
	enumeration	dateTime	
	enumeration	time	
	enumeration	date	
	enumeration	gYearMonth	
	enumeration	gYear	
	enumeration	gMonthDay	
	enumeration	gDay	
	enumeration	gMonth	
	enumeration	hexBinary	
	enumeration	base64Binary	
	enumeration	anyURI	
	enumeration	normalizedString	
	enumeration	token	
	enumeration	language	
	enumeration	NMTOKEN	
	enumeration	Name	
	enumeration	NCName	
	enumeration	integer	
	enumeration	nonPositiveInteger	
	enumeration	negativeInteger	
	enumeration	long	
	enumeration	int	
	enumeration	short	
	enumeration	byte	
	enumeration	nonNegativeInteger	
	enumeration	unsignedLong	
	enumeration	unsignedInt	
	enumeration	unsignedShort	
	enumeration	unsignedByte	
	enumeration	positiveInteger	
	enumeration	PlainLiteral	
	enumeration	XMLLiteral	
	enumeration	Literal	

simpleType **types**

type	restriction of **xs:string**
properties	base xs:string
used by	attribute **type**

facets	Kind	Value	annotation
	enumeration	date	
	enumeration	data	
	enumeration	concept	
	enumeration	concept_level	
	enumeration	concept_facet	
	enumeration	memberlist	
	enumeration	link	
	enumeration	embedded_link	

annotation	documentation Implements cellar-76

attribute **manifestation-type**

used by	element **EMBEDDED_NOTICEType/MANIFESTATION** complexType **MANIFESTATIONType**
annotation	documentation A dynamic list of values of manifestation types (if provided). Typical values are: doc docx epub fmx2 fmx3 fmx4 html jpeg pdf1x pdfa1a pdfa1b pdfx ppsx ppt pptx rdf rtf sgml tiff txt xhtml xls xlsx xml zip (and more ..)

attribute **type**

type	**types**
used by	complexTypes **Concept** **Date** **EmbeddedRelation** **Facet** **InverseRelation** **ItemRelation** **Level** **Literal** **Memberlist** **Relation**
facets	Kind / Value / annotation enumeration date enumeration data enumeration concept enumeration concept_level enumeration concept_facet enumeration memberlist enumeration link enumeration embedded_link
annotation	documentation Determines the content model (structure) of the element.