



ELF EUROPEAN
LOCATION
FRAMEWORK

Code lists in the ELF project

Presentation to: DM workshop

By: Heidi Vanparys

Date: 29th of January 2015

5 September, 2015



the Competitiveness and Innovation framework Programme (CIP)
ICT Policy Support Programme (PSP) Call 6 Grant 325140

EUROPEAN LOCATION FRAMEWORK

ELF in short

- Project & infrastructure/platform
- Co-funded by the European Commission
- March 2013 – February 2016
- Consortium of
 - data providers: National Mapping & Cadastral Authorities
 - developers
 - commercial software providers
 - ...
- “One reference geoinformation source for Europe”

Code lists in GML

Code lists in GML 3.2

XSD:

```
<element name="nationalLevel" type="gml:CodeType">
```

XML:

```
<nationalLevel codeSpace="urn:x-  
inspire:def:codeList:INSPIRE:AdministrativeHierarch  
yLevel">2ndOrder</nationalLevel>
```

Code lists in GML 3.3

XSD:

```
<element name="nationalLevel"  
type="gml:ReferenceType">
```

XML:

```
<nationalLevel  
xlink:href="http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/2ndOrder" />
```

Code lists in GML 3.3

Reason for the change:

«Since the GML Dictionary schema was developed, standards on this topic within the **semantic web** community have emerged and matured. In particular best-practice is to generally use **URIs** for referring to items in vocabularies, and **RDF (OWL, SKOS)** for encoding their descriptions.»

A very short introduction...

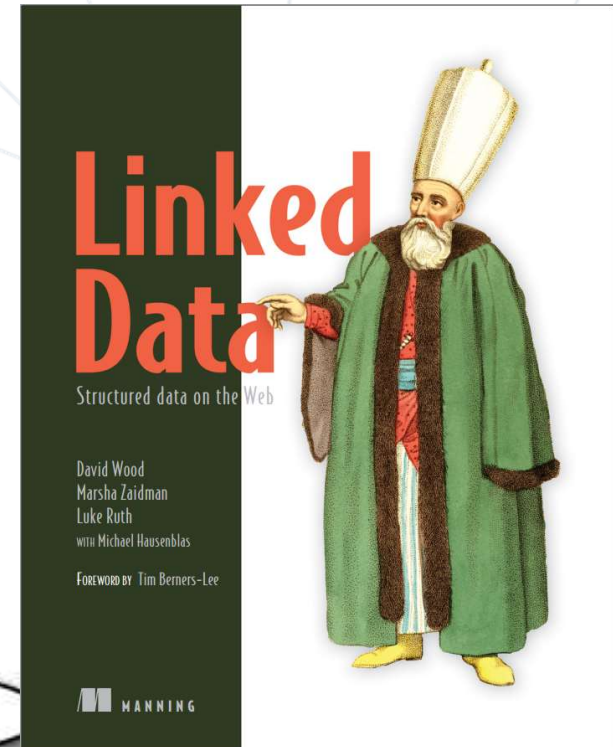
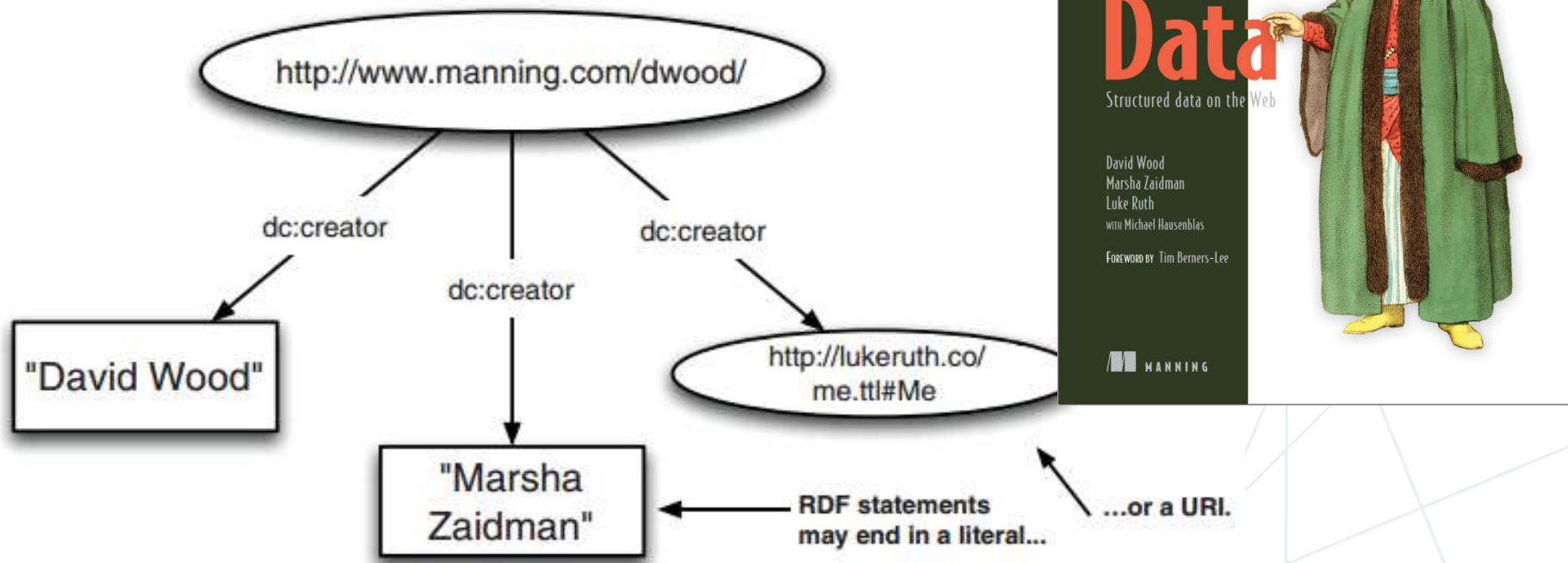


Figure 2.1 Objects in RDF statements can be literals or URIs

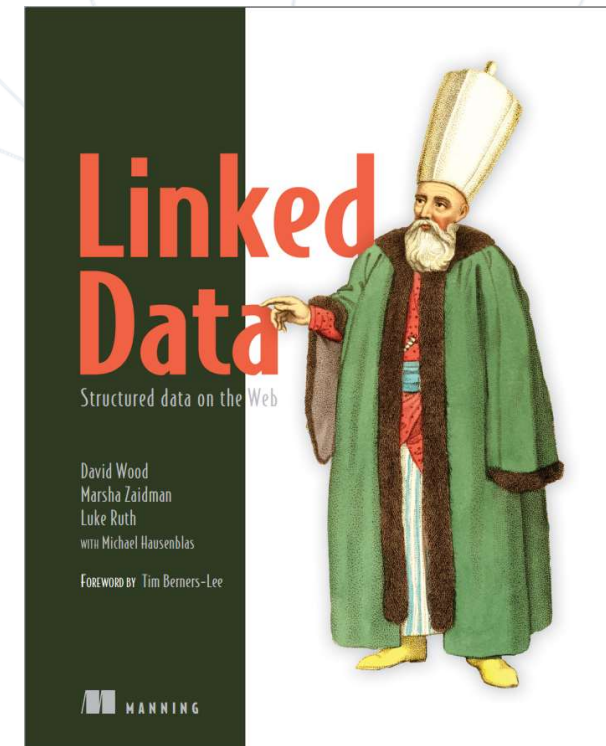
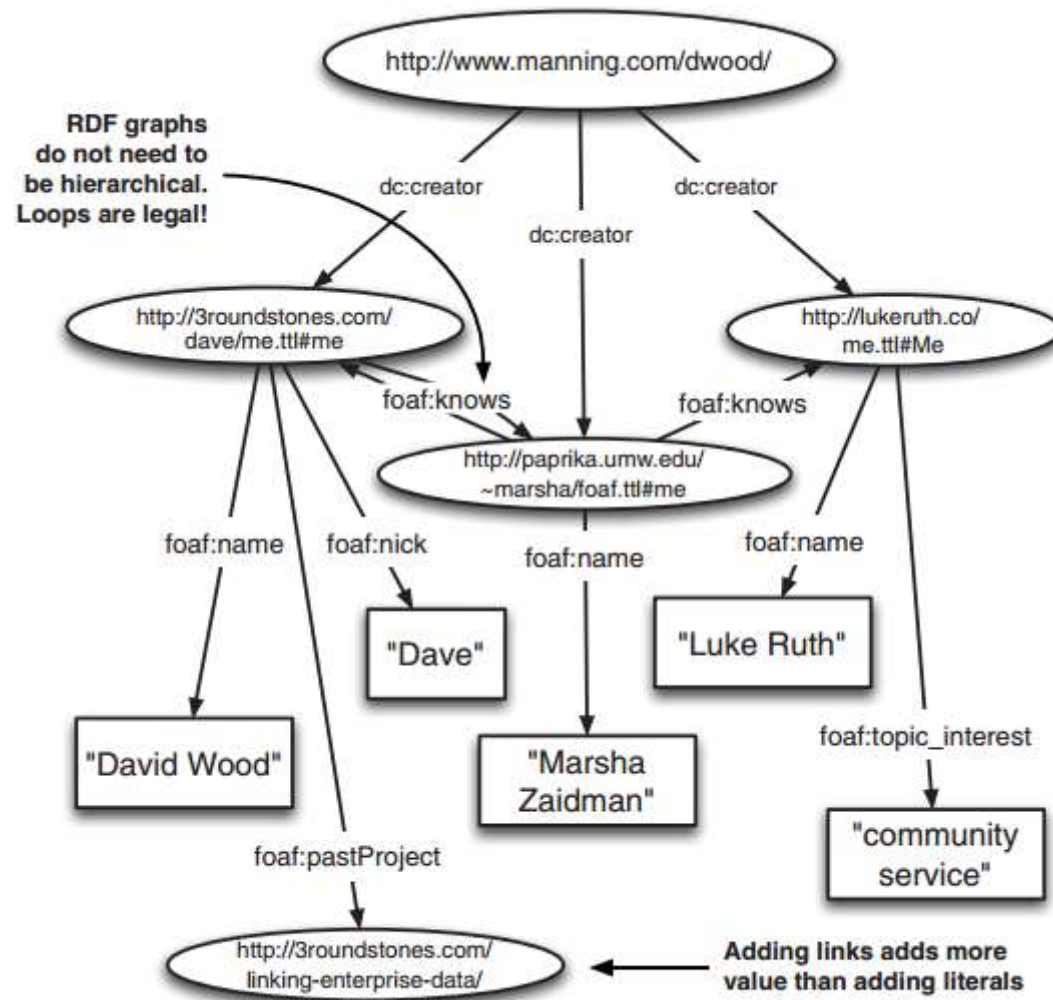


Figure 2.4 More links add value—just like with web pages

A very short introduction...

RDF vocabularies provide a schema for the Web of Data

- like a relation database has a schema
- like an XML document can have a schema (XSD)

OWL = Web Ontology Language → ontologies

SKOS = Simple Knowledge Organization System → thesauri,
taxonomies, classification schemes, subject heading lists, ...

Acceptance

- Well-known thesauri are available as SKOS data:
 - [EuroVoc](#), the EU's multilingual thesaurus
 - [UNESCO thesaurus](#)
 - [AGROVOC](#), is a controlled vocabulary covering all areas of interest of the Food and Agriculture Organization (FAO) of the United Nations
- INSPIRE
- Interest in the geospatial community for Linked Data

Conclusion

The choice in favour of SKOS in the European Location Framework is a natural and future-oriented one.

Implementation...

Tools

protégé
+ SKOSEd plugin

Re³gistry

poolparty

MultiTes

 **TemaTres: controlled vocabulary server**
Manage, Publish and Share Ontologies, Taxonomies, Thesauri, lists

GitHub

 UKGovLD / [ukl-registry-poc](#)

ThManager

ShapeChange

Context

- Which tool?
- Not have enough resources available to investigate and compare all the different tools available.
- No time allocated in the project plan to install a tool and learn how to use it.
- ELF WP2 was already behind schedule with the delivery of the data specifications.
- Less than 20, relatively small code lists in ELF.

Decision

«Given this context, the best choice for a **first, minimal and working implementation** of ELF code lists was considered to be to **create and edit the SKOS files manually.**»

«ELF WP2 does have experience with XML because of the task of creation of GML application schemas on the basis of the UML model. Therefore the **RDF/XML serialisation format** was chosen, and not e.g. Turtle.»

```
<rdf:RDF
```

```
  xmlns:skos="http://www.w3.org/2004/02/skos/core#"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-
```

```
ns#"
  xmlns:dcterms="http://purl.org/dc/terms/"
  xml:base="http://www.locationframework.eu/codelist/">
```

```
<skos:ConceptScheme rdf:about="ByProductCode">
```

```
  <skos:prefLabel xml:lang="en">By-product  
Code</skos:prefLabel>
```

```
  <dcterms:description xml:lang="en">See also  
https://www.dgiwg.org/FAD/fdd/view?i=1361</dcterms:descri  
ption>
```

```
  <dcterms:source  
rdf:resource="https://www.dgiwg.org/FAD/fdd/view?i=1361"  
</>
```

```
</skos:ConceptScheme>
```

```
<skos:Concept rdf:about="ByProductCode/15">
  <skos:inScheme rdf:resource="ByProductCode" />
  <skos:topConceptOf rdf:resource="ByProductCode"
/>
  <skos:prefLabel
xml:lang="en">Slag</skos:prefLabel>
  <skos:definition xml:lang="en">Stony material
composed of waste matter or dross separated from metals
during smelting or refining.</skos:definition>
  <skos:scopeNote xml:lang="en">Also any similar
waste product resulting from the fusion of other
substances.</skos:scopeNote>
  <dcterms:source
rdf:resource="https://www.dgiwg.org/FAD/fdd/view?i=106363
" />
</skos:Concept>
```

Visualisation: SKOS Play

By-product Code

See also <https://www.dgiwg.org/FAD/fdd/view?i=1361>

- **Refuse** 

DEF: Waste material that is thrown away as worthless.

- **Slag**

DEF: Stony material composed of waste matter or dross separated from metals during smelting or refining.

SN: Also any similar waste product resulting from the fusion of other substances.

- **Spoil**

DEF: Rocky or soil-like material resulting from excavating, mining, dredging, and/or processing activities.

SN: Spoil from mining activities is known as 'Tailings'.

Extending INSPIRE code lists

Natural object type

- Natural object type
 - <http://inspire.ec.europa.eu/codelist/NaturalObjectTypeValue/fen>
 - <http://inspire.ec.europa.eu/codelist/NaturalObjectTypeValue/notSpecified>
 - <http://inspire.ec.europa.eu/codelist/NaturalObjectTypeValue/seep>
 - <http://inspire.ec.europa.eu/codelist/NaturalObjectTypeValue/spring>
 - Hot spring
 - Geyser
 - Walled-in spring
 - <http://inspire.ec.europa.eu/codelist/NaturalObjectTypeValue/swallowHole>
 - Fumarole
 - Resurgence
 - Water-hole












```
<skos:Concept rdf:about="NaturalObjectTypeValue/3">
  <skos:inScheme rdf:resource="NaturalObjectTypeValue"
/>
  <skos:inScheme
rdf:resource="http://inspire.ec.europa.eu/codeList/NaturalObject
ctTypeValue/NaturalObjectTypeValue" />
  <skos:topConceptOf
rdf:resource="NaturalObjectTypeValue" />
  <skos:topConceptOf
rdf:resource="http://inspire.ec.europa.eu/codeList/NaturalObje
ctTypeValue/NaturalObjectTypeValue" />
  <skos:prefLabel
xml:lang="en">Fumarole</skos:prefLabel>
  <skos:definition xml:lang="en">A vent in or near a
volcano, from which hot vapour is emitted.</skos:definition>
...
```

```
<skos:Concept
rdf:about="http://inspire.ec.europa.eu/codeList/NaturalObjectT
ypeValue/fen">
  <skos:inScheme rdf:resource="NaturalObjectTypeValue"
/>
  <skos:topConceptOf
rdf:resource="NaturalObjectTypeValue" />
</skos:Concept>
```

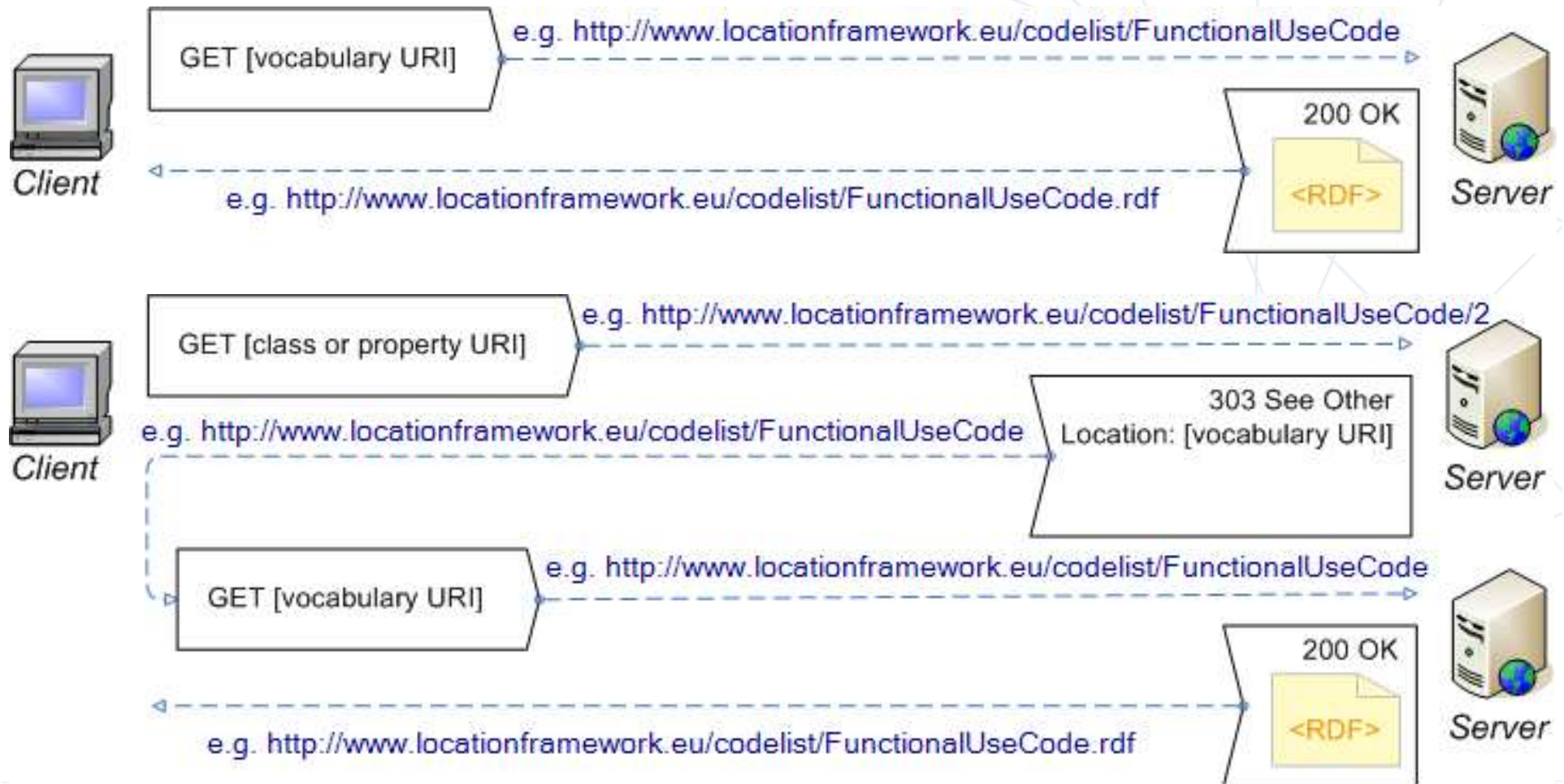
Publishing

<http://www.locationframework.eu/codelist/>

Index of /codelist

	<u>Name</u>	<u>Last modified</u>	<u>Size</u>	<u>Description</u>
	Parent Directory		-	
	ByProductCode.html	24-Dec-2014 11:13	24K	
	ByProductCode.rdf	24-Dec-2014 11:13	2.2K	
	EmbankmentTypeCode.html	24-Dec-2014 11:13	26K	
	EmbankmentTypeCode.rdf	24-Dec-2014 11:13	4.3K	
	EuroGeoNamesLocation..>	24-Dec-2014 11:13	77K	
	EuroGeoNamesLocation..>	24-Dec-2014 11:13	14K	
	ExtractionMineTypeCo..>	24-Dec-2014 11:13	29K	
	ExtractionMineTypeCo..>	24-Dec-2014 11:13	8.3K	
	FunctionalUseCode.html	24-Dec-2014 11:13	23K	
	FunctionalUseCode.rdf	24-Dec-2014 11:13	1.6K	

Minimal configuration



Apache HTTP server configuration

```
# Enable Rewriting
RewriteEngine on
RewriteBase /codelist

# Rewrite rule to redirect 303 from any class or prop URI
RewriteRule ^FunctionalUseCode/.+ FunctionalUseCode/
[R=303]

# Rewrite rule to serve RDF/XML content from the
vocabulary URI
RewriteRule ^FunctionalUseCode/$ FunctionalUseCode.rdf
```

E.L.F. WP2 E.L.F. Specifications

Start Page

Documents

Contact



ELF_MatchingTableGuidelines_v1.3.pdf (247 KB) Last changed: 19 Nov 2014



Status_INSPIRE_ELF_applicationSchema_20141118.pdf (14 KB) Last changed: 20 Nov 2014

This document provides an overview of the current status of INSPIRE and ELF application schemas a



ELF_Modelling guidelines_v1.15.pdf (803 KB) Last changed: 20 Nov 2014



ELF codelists.pdf (390 KB) Last changed: 17 Dec 2014



ELF_UML_repositoryInstructionv 1.2.pdf (1.0 MB) Last changed: 22 Dec 2014

Adjustments with respect to the new structure in the ELF UML repository.

Responsible for content: Anja Hopfstock

<https://service.projectplace.com/pub/english.cgi/0/865376303>