

Spatial Data Transformation and GML

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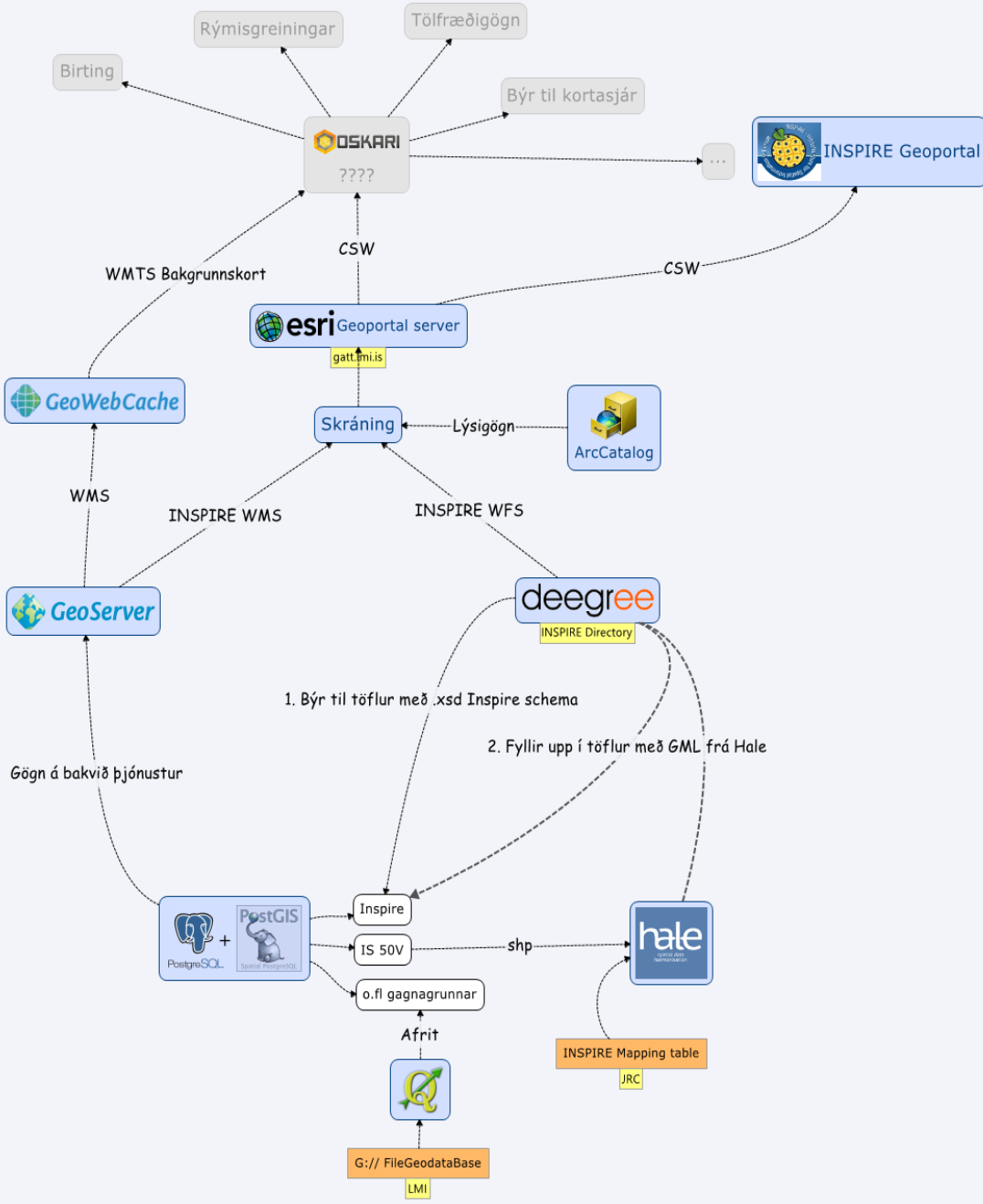
What is a Data Transformation?

- It is a data processing functionality with a primary focus on the ability to manage spatial data.

How is it done?

- It needs input – a mapping table*, data in source data model, target data model, knowledge of both data models.
- Transformation software – FME, snowflake (GoPublisher), ArcGIS for INSPIRE, HALE, application schema plug-in for Geoserver or other.
- It creates an output – data in target data model (INSPIRE).

Why do we need it?



Data transformation is part of a much bigger picture...

Data transformation vs. data harmonization

- Transformation is done when changing a dataset from one version to another (i.e. from a national standard* to INSPIRE).
- Harmonization can be done when you have more than one dataset of *different* data models and you need to work with both of them.
- Harmonization can be done by *transforming* one of them to match the data model of the other.
- The key concept is compatible **data models**.

The Data Transformation consists of...

Locating the data



Mapping it

Configurations			DCI Information	
Transmission Mode	NumOFCWs	RNTI	DCI Format	Resource Allocation Type
TM1	1	C-RNTI	1A	Type 2
		C-RNTI	1	Type 0
		C-RNTI	1	Type 1
TM2	1	C-RNTI	1A	Type 2
		C-RNTI	1	Type 0
		C-RNTI	1	Type 1
TM3	1	C-RNTI	1A	Type 2
		C-RNTI	2A	Type 0
		C-RNTI	2A	Type 1
	2	C-RNTI	2A	Type 0
		C-RNTI	2A	Type 1
		C-RNTI	2A	Type 1
TM4	1	C-RNTI	1A	Type 2
		C-RNTI	2	Type 0
		C-RNTI	2	Type 1
	2	C-RNTI	2	Type 0
		C-RNTI	2	Type 1
		C-RNTI	2	Type 1
TM5	1	C-RNTI	1A	Type 2
		C-RNTI	1D	Type 2
TM6	1	C-RNTI	1A	Type 2
		C-RNTI	1B	Type 2
TM7	1	C-RNTI	1A	Type 2
		C-RNTI	1	Type 0
		C-RNTI	1	Type 1

Transforming it



Example of transformation (AU lines)

Mapping table

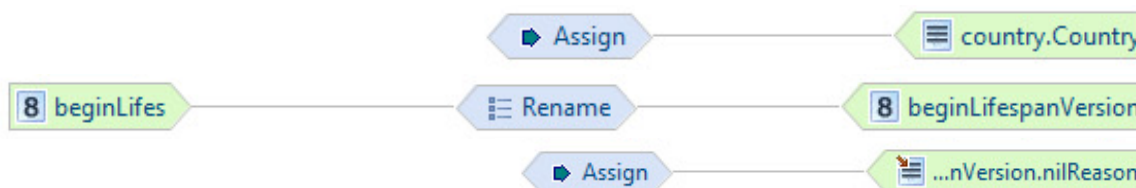
country	-- Name -- country Two-character country	CountryCode* BE* BG* CZ* DK*	1	
beginLifespanVersion	-- Name -- begin lifespan version	DateTime	1	voidable
endLifespanVersion	-- Name -- end lifespan version Date and	DateTime	0..1	voidable

INSPIRE

ICC	IS	IS	
beginLifes	13.3.2004	Thu Mar 13 00:00:00 GMT 2014	
			unpopulated

EBM

HALE mapping



GML

```

<au:beginLifespanVersion>2014-03-13T00:00:00+00:00</au:beginLifespanVersion>
<au:endLifespanVersion nilReason="unpopulated" xsi:nil="true"></au:endLifespanVersion>
<au:country>
  <gmd:Country>IS</gmd:Country>
  
```

Example of HALE mapping (PS)

Source data

Target

HALE Mapping

Schema Explorer

Source

type filter text

- Export_eENVplus ×120
 - dagsheimil (0..1) ×120
 - filename ×120
 - IUCNCAT (0..1) ×120
 - km2 (0..1) ×120
 - nafnFitju (0..1) ×120
 - natturuv_1 (0..1) ×120
 - nrGildandi (0..1) ×120
 - Shape_Area (0..1) ×120
 - Shape_Leng (0..1) ×120
 - SITE_ID (0..1) ×120
 - siteID (0..1) ×120
 - the_geom (0..1) ×120

Target

type filter text

- DesignationType
- ProtectedSite ×120
 - location (0..1)
 - boundedBy (0..1)
 - description (0..1)
 - descriptionReference (0..1)
 - geometry ×120
 - id
 - identifier (0..1)
 - inspireID ×120
 - legalFoundationDate ×120
 - legalFoundationDocument ×120
 - metaDataProperty (0..n)
 - name (0..n)
 - siteDesignation (1..n) ×120
 - DesignationType ×120
 - designation ×120
 - designationScheme ×120
 - codeSpace (0..1) ×120
 - percentageUnderDesignation (0..1)
 - nilReason (0..1) ×120
 - siteName (0..n) ×120
 - siteProtectionClassification (1..n) ×120
 - nilReason (0..1)

Alignment

Export_eENVplus ×120 Retype ProtectedSite ×120

Source Type	Operation	Target Type
Export_eENVplus	Retype	ProtectedSite
dagsheimil	Rename	legalFoundationDate
nafnFitju	Rename	siteName
nrGildandi	Rename	...undationDocument
siteID	Rename	...eID.Identifier.localId
the_geom	Rename	geometry
	Assign	...entifier.namespace
	Assign	...Identifier.versionId
	Assign	...tion.date.nilReason
	Assign	...ation.title.nilReason
	Assign	...onType.designation
	Assign	...Scheme.codeSpace
	Assign	...signation.nilReason
	Assign	...icalName.language
	Assign	...pellingOfName.text
	Assign	...ectionClassification

Why HALE?



Questions...

