PERSPEKTIVEN FÜR UMWELT & GESELLSCHAFT umweltbundesamt

Assistenzstelle Datenharmonisierung

Aktivitäten der Assistenzstelle im Rahmen der Datenharmonisierung

Grillmayer Roland

13.12.2016, Wien

Aktivitäten

- Workshops
  - 19.04.2016 – Workshop Länder
  - 05.09.2016 – Workshop MA Wien
  - 14.12.2016 – Hands on Session INSPIRE Workshop

Inhalte Workshops

- Bundesländer Workshop
  - Erfahrungsaustausch Datenharmonisierung
  - Praktische Umsetzung Protected Sites
    - HALE ✓
    - Erzeugung eines Predefinied Dataset ✓
    - Validierung Datensatz Schematon (Oxygene) ✓
  - Demo Konfiguration INSPIRE Download Service für PS
    - Geoserver ✓ ✗

Inhalte Workshops

- MA Wien Workshop
  - Erfahrungsaustausch Datenharmonisierung
  - Praktische Umsetzung Protected Sites
    - HALE ✓
    - FME ✓
    - Erzeugen Predefind Dataset ✓
    - Validierung Schematron (Oxygene) ✓
  - Demonstration Konfiguration INSPIRE Download Service für PS
    - Geoserver ✓ ✗
    - Deegree INSPIRE NODE - Workflow ✗
      - Konzept – noch nicht lauffähig für DS Version 4.0
      - Weitere Informationen siehe: http://wiki.deegree.org/deegreeWiki/InspireNode

Inhalte Workshops

- INSPIRE Workshop (morgen)
  - Praktische Umsetzung Protected Site
    - HALE ✓
    - Einbinden der Registry in den Harmonisierungsprozess ✓
    - Validieren mit der Testversion des ETL Webportals ✓
  - Praktische Umsetzung Land Use (Demonstration)
    - Skizzieren der Unterschiede zu PS ✓
    - Exponieren Download-Service (Geoserver) ✓
  - Diskussion
    - Thematische Ausrichtung der Assistenzstelle Themenbereich Datenharmonisierung 2017
    - Priorisierung der nächsten Arbeitsschwerpunkte

Sonstige Aktivitäten

- **ISO Plenary**
  - Tromsö (13.06-17.06.2016)
  - Redlands (28.11-2.12.2016)
- **AGIT**
  - Freiheitsgrade in der UML/GML basierten Geodatenmodellierung und deren Auswirkungen auf die Harmonisierung von INSPIRE Datensätzen www.grillmayer.eu

AGIT-Rückblick

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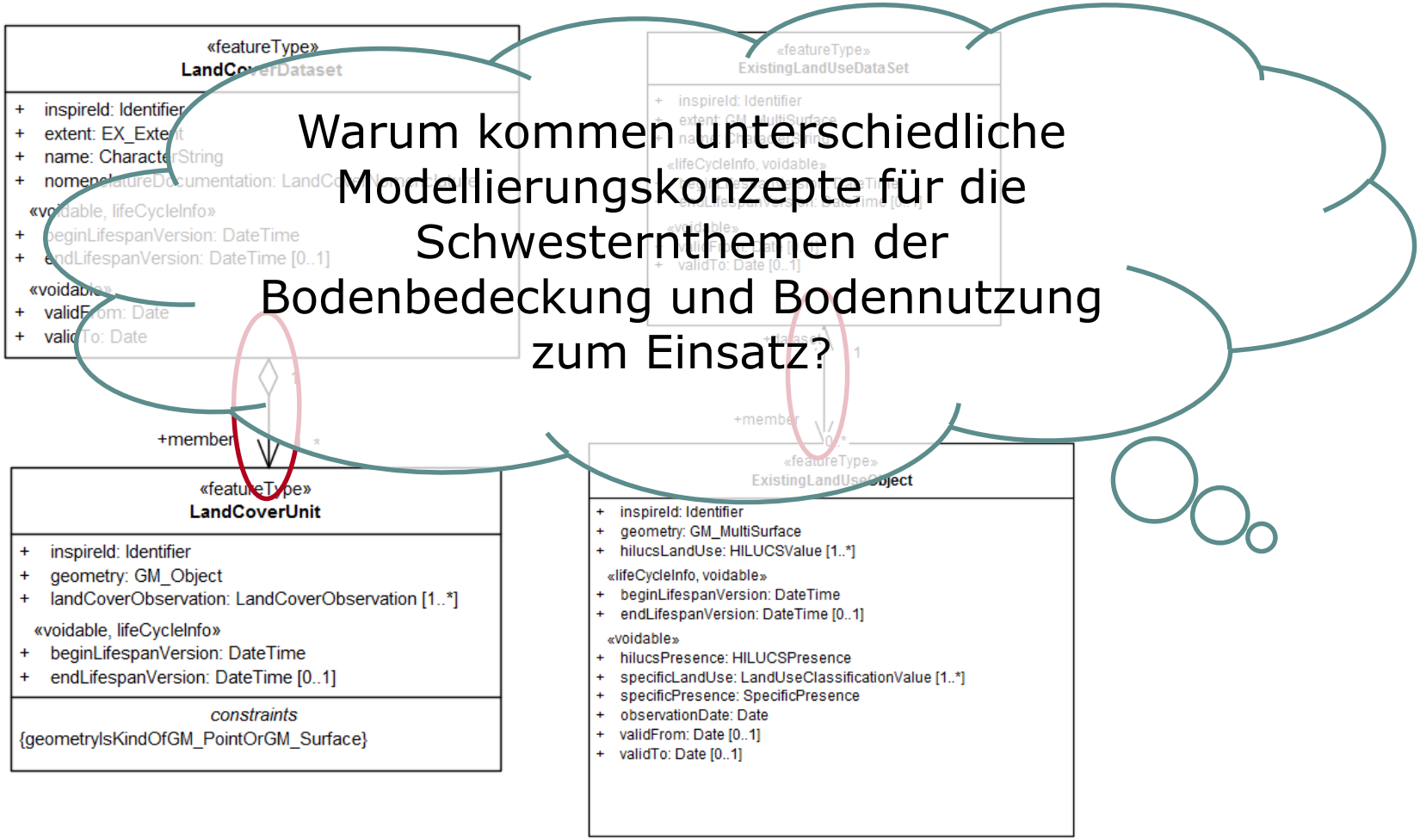
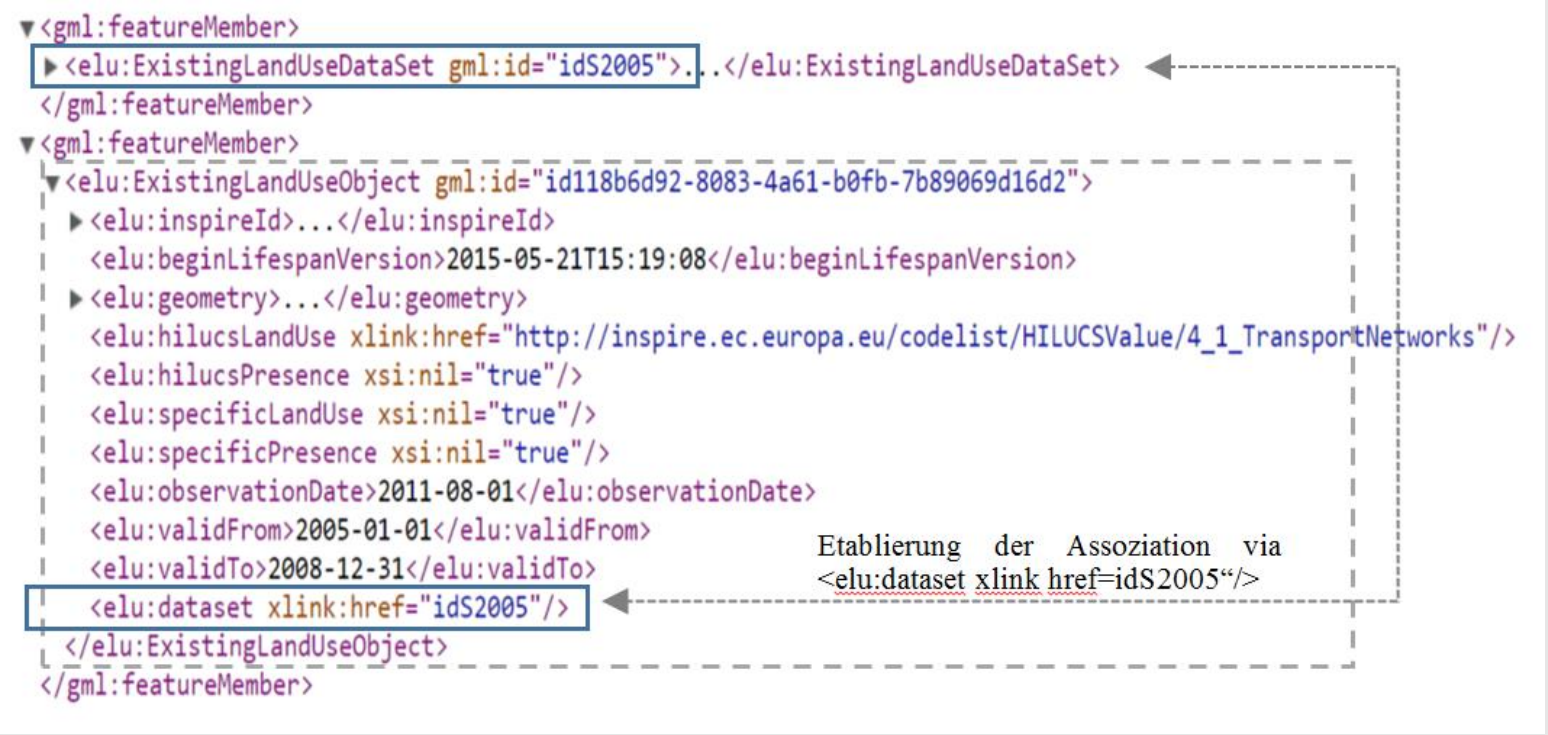
..unnötige Verkomplizierung eines ohnehin schon komplexen Prozesses



Auswirkungen auf das Encoding

- UML abgeleitetes GML Schema
  - *Assoziationen* werden immer über Links (xlink) etabliert
  - Assoziation in diesem Fall beide Richtungen navigierbar (Gekennzeichnet durch Rollenname & Peilsymbol)

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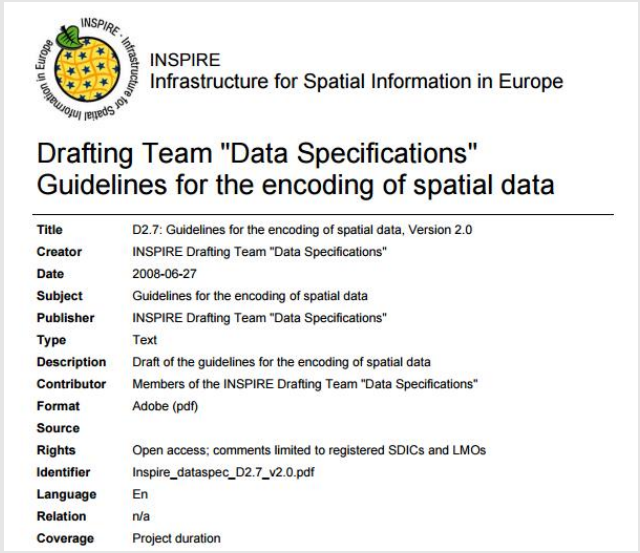
Klare Richtlinie

- Encoding for Spatial Dataset (INSIRE Dokument D2.7)



INSPIRE
Infrastructure for Spatial Information in Europe

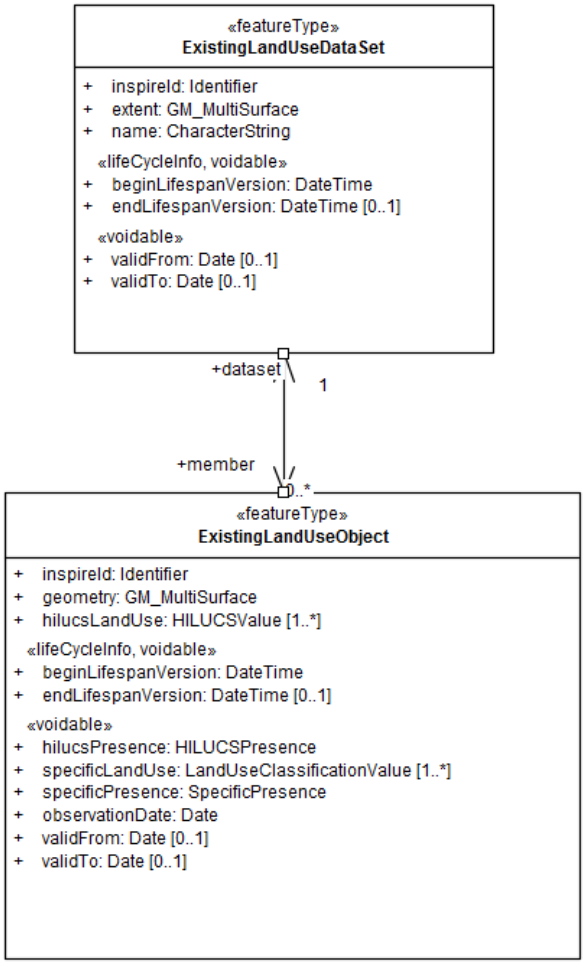
Drafting Team "Data Specifications"
Guidelines for the encoding of spatial data

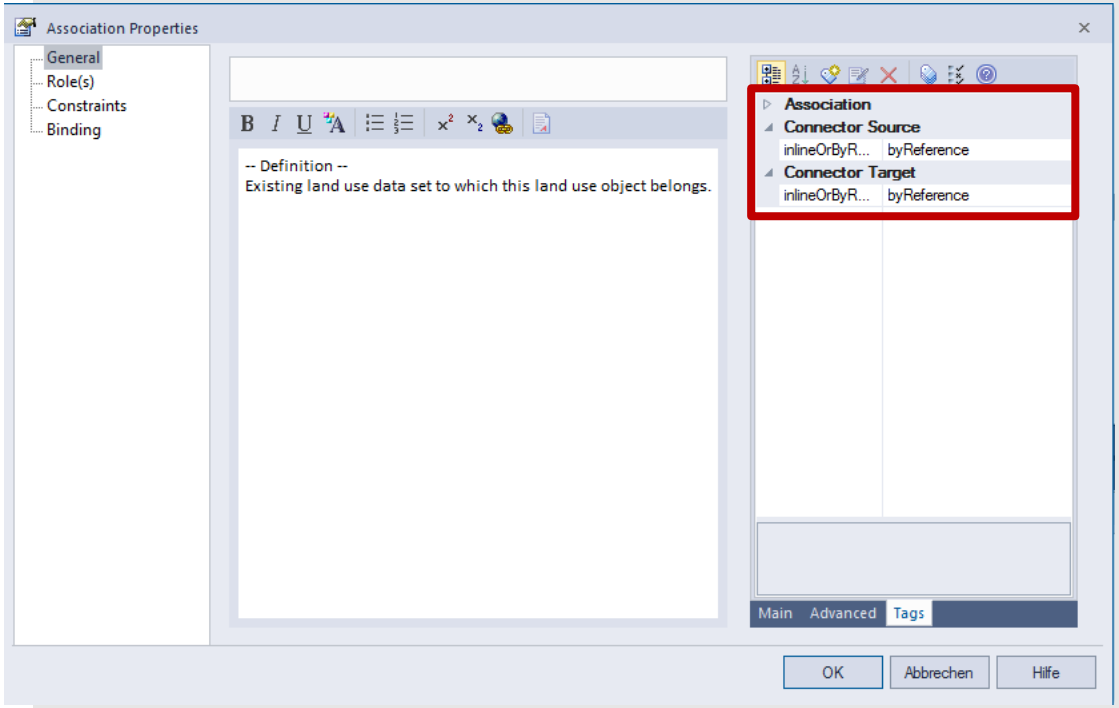
Title	D2.7: Guidelines for the encoding of spatial data, Version 2.0
Creator	INSPIRE Drafting Team "Data Specifications"
Date	2008-06-27
Subject	Guidelines for the encoding of spatial data
Publisher	INSPIRE Drafting Team "Data Specifications"
Type	Text
Description	Draft of the guidelines for the encoding of spatial data
Contributor	Members of the INSPIRE Drafting Team "Data Specifications"
Format	Adobe (pdf)
Source	
Rights	Open access; comments limited to registered SDICs and LMOs
Identifier	Inspire_dataspec_D2.7_v2.0.pdf
Language	En
Relation	n/a
Coverage	Project duration

Recommendation 7 All navigable feature association roles should be assigned a tagged value "inlineOrByReference" with the value "byReference".

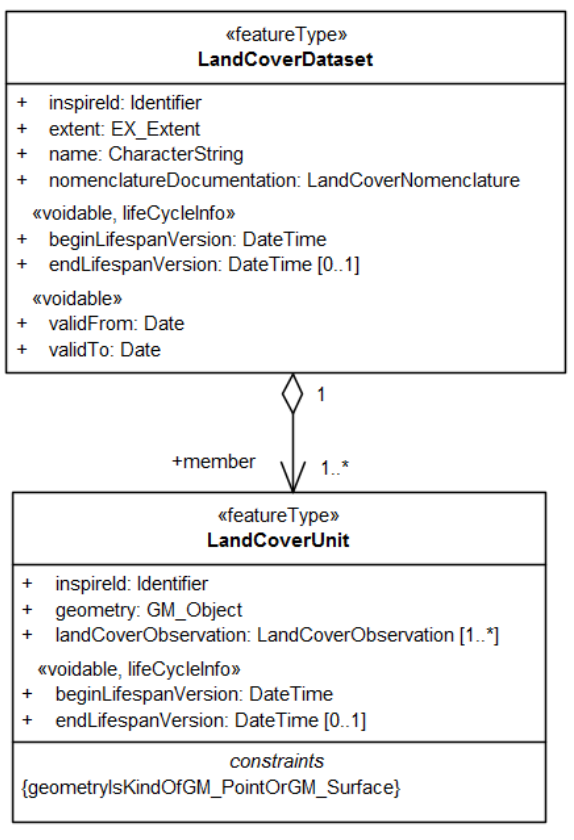
NOTE 2 The result of this particular recommendation is that features are not embedded in other features in XML documents but that they are all first level objects in a feature collection. An example where this recommendation would in general be ignored are complex spatial objects that own their parts.

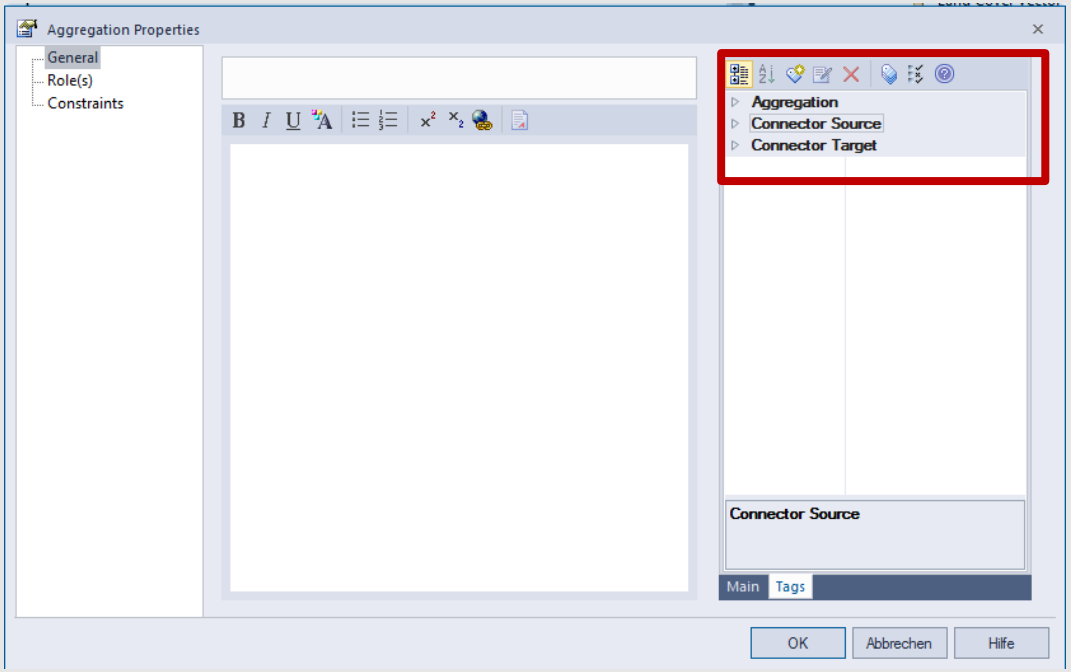
Tagges value inlineOrByReference
Land Use



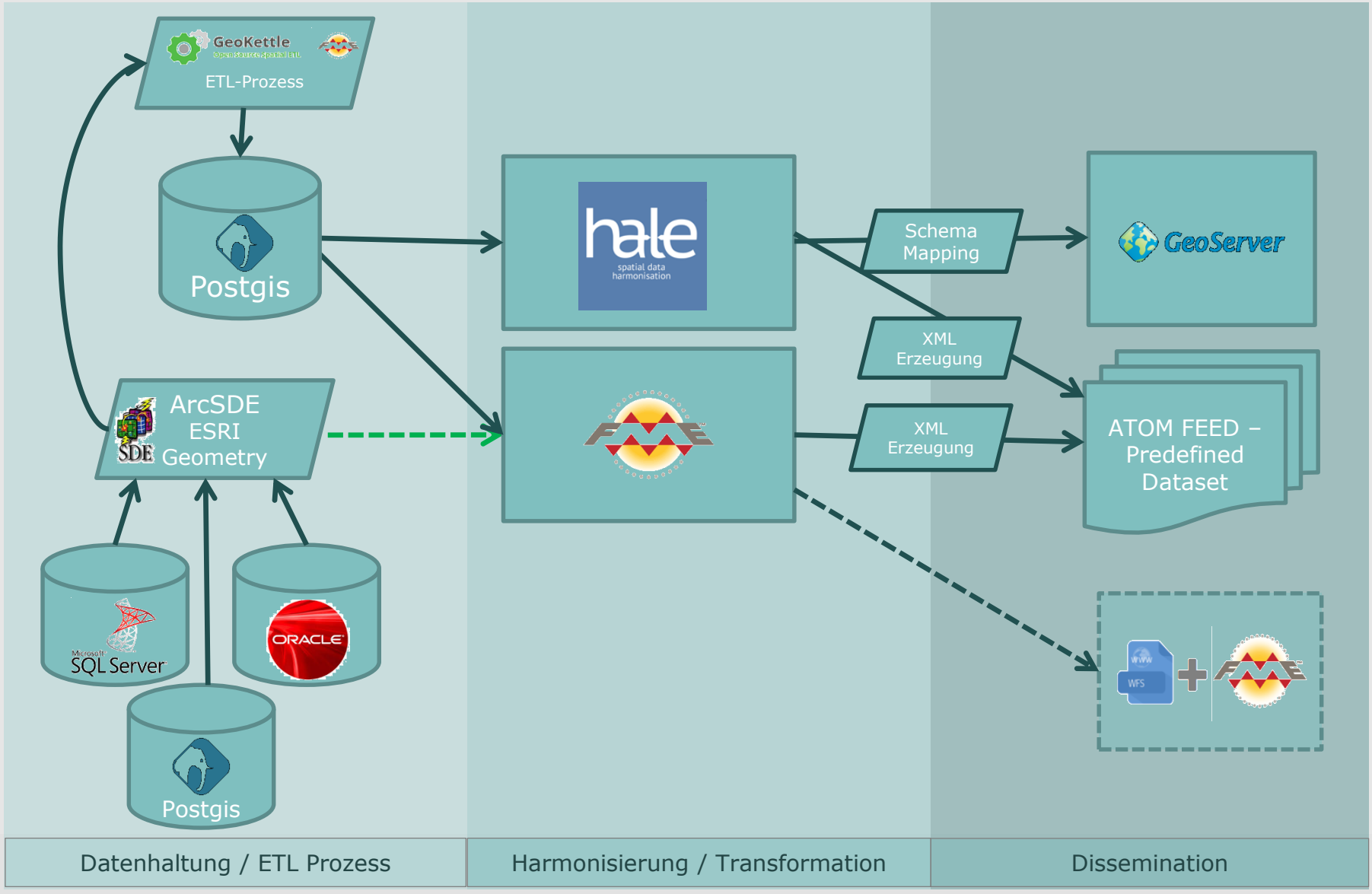


Tagges value inlineOrByReference
Land Cover

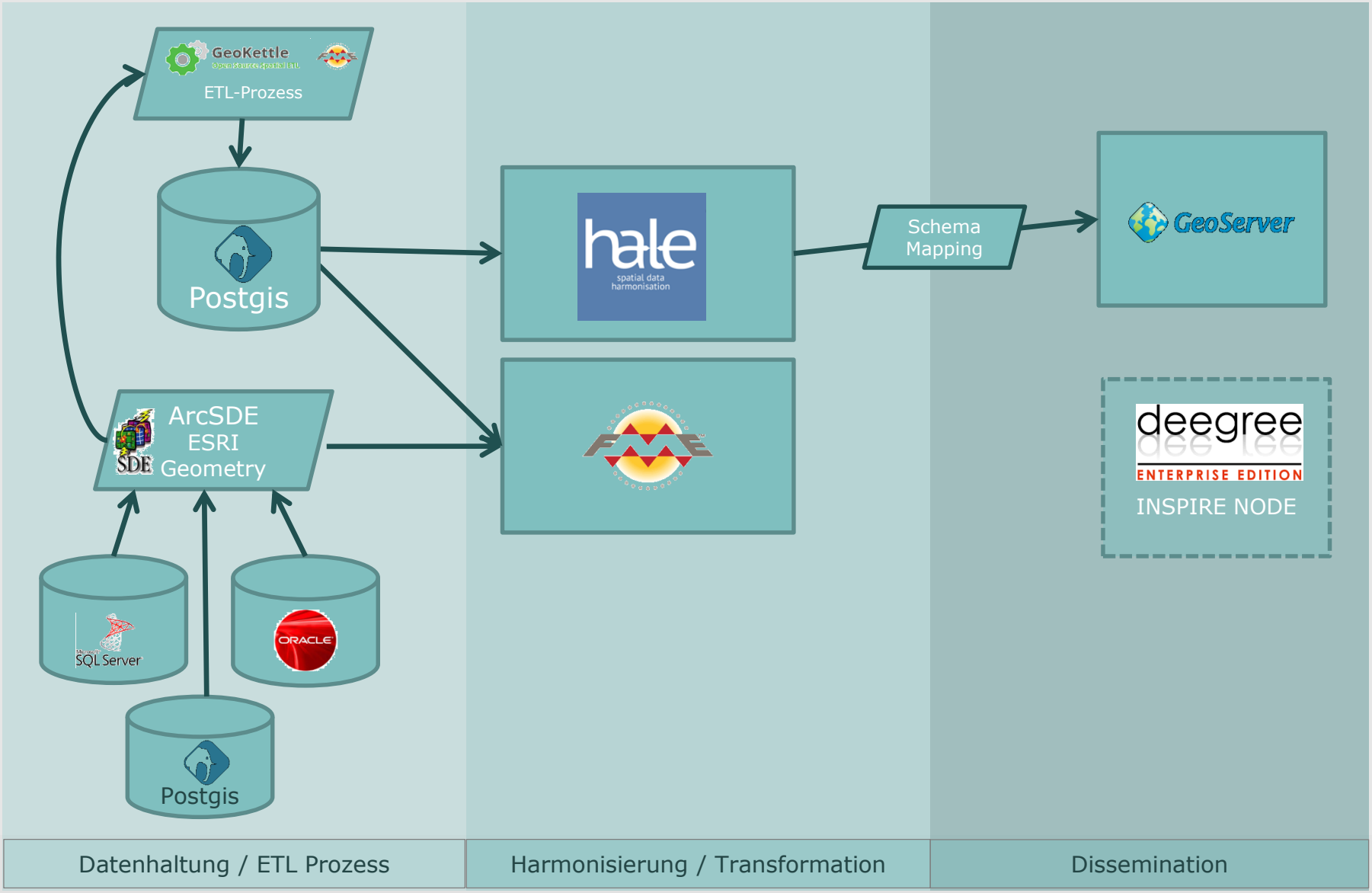




Mögliche INSPIRE Umsetzungsszenarien (erprobt)



INSPIRE Umsetzungsszenarien – Variante Deegree
INSPIRE Node (noch nicht getestet)



Deegree´s INSPIRE Node (Input Christian Ansorge?)

2016 Study on Inspire Services

Zip download

This folder contains the results of a EEA study (in cooperation with KU Leuven, Epsilon Italia and WeTransform). The scope of the study was to test the feasibility of providing 3 different types of datasets by 3 different software products as INSPIRE WMS and WFS service. The INSPIRE network services which could be set up are further tested for their conformity and response times.

Three types of datasets were tested:

- Corine Land Cover Vector 2006 (high number of features, low feature complexity)
- Biogeographical Regions (low number of features, high feature complexity)
- CDDA (Extended data model based on INSPIRE Protected Sites)

Three different software had been tested to provide the datasets via WMS and WFS

- Deegree
- Geoserver
- ArcGIS for INSPIRE

The documentation on this site assumes the reader is familiar with the basic geographical protocols used extensively in GIS applications, such as WMS (Web Map Service) and WFS (Web Feature Service) as well as with the technical implementation of the INSPIRE Directive.

Go to parent

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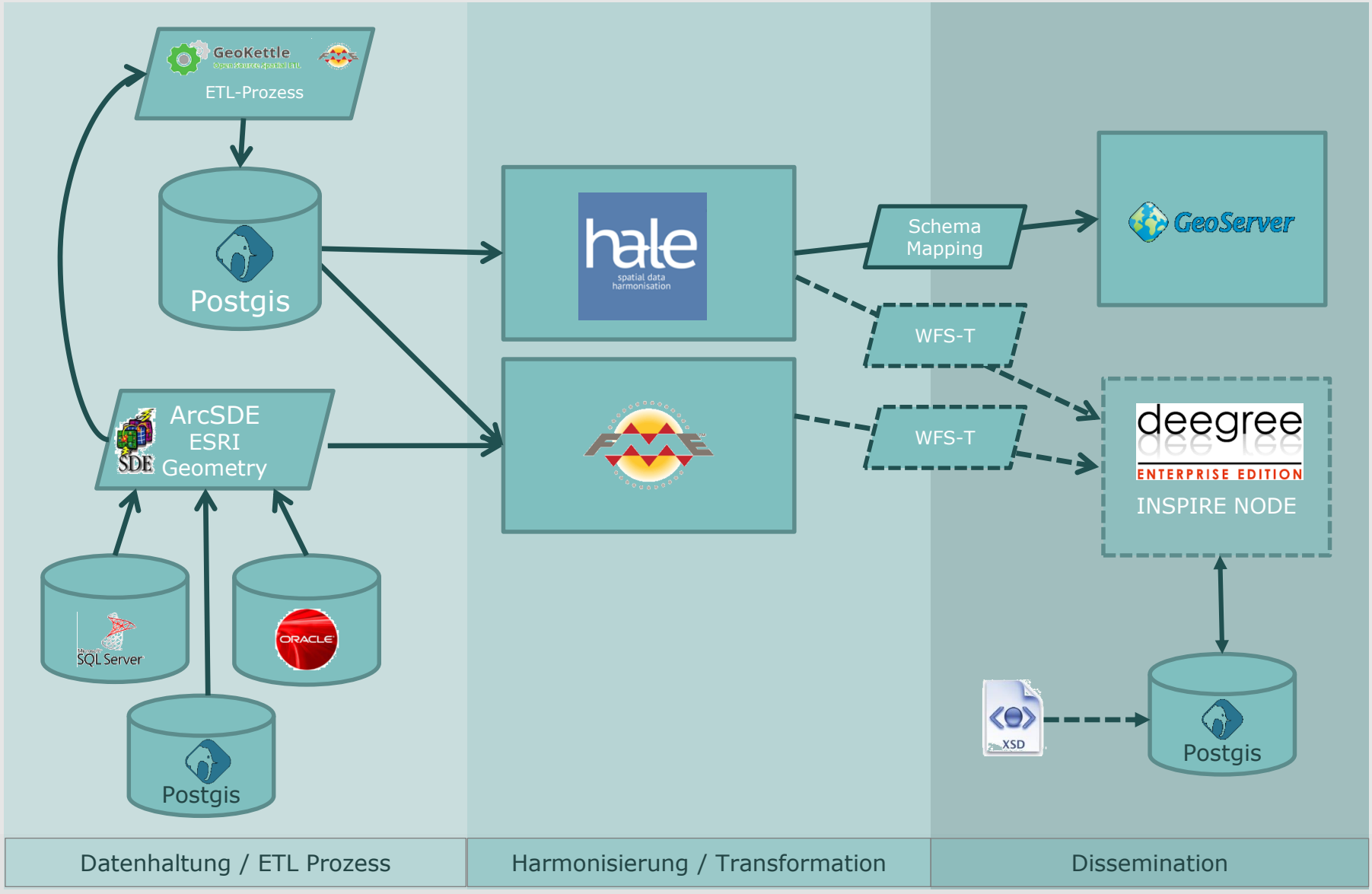
Type	Title	Restrictions	Owner	Modification date and time	File size	Edit
	2016_INSPIRE_Services_BGR_Deegree_Geoserver		Christian Ansorge	22/09/2016, 11:33	1 MB	
	2016_INSPIRE_Services_CDDA_Deegree		Christian Ansorge	22/09/2016, 11:34	1 MB	
	2016_INSPIRE_Services_CDDA_Geoserver		Christian Ansorge	22/09/2016, 12:10	762 KB	
	2016_INSPIRE_Services_CDDA_dataTransformation		Christian Ansorge	22/09/2016, 12:10	826 KB	
	2016_INSPIRE_Services_CLC_ArcGIS		Christian Ansorge	22/09/2016, 11:34	1 MB	
	2016_INSPIRE_Services_CLC_Deegree_Geoserver		Christian Ansorge	22/09/2016, 11:35	2 MB	
	2016_INSPIRE_Services_Testing		Christian Ansorge	22/09/2016, 11:35	1 MB	

Quelle: http://projects.eionet.europa.eu/eea-inspire-activities/library/2016-study-inspire-services

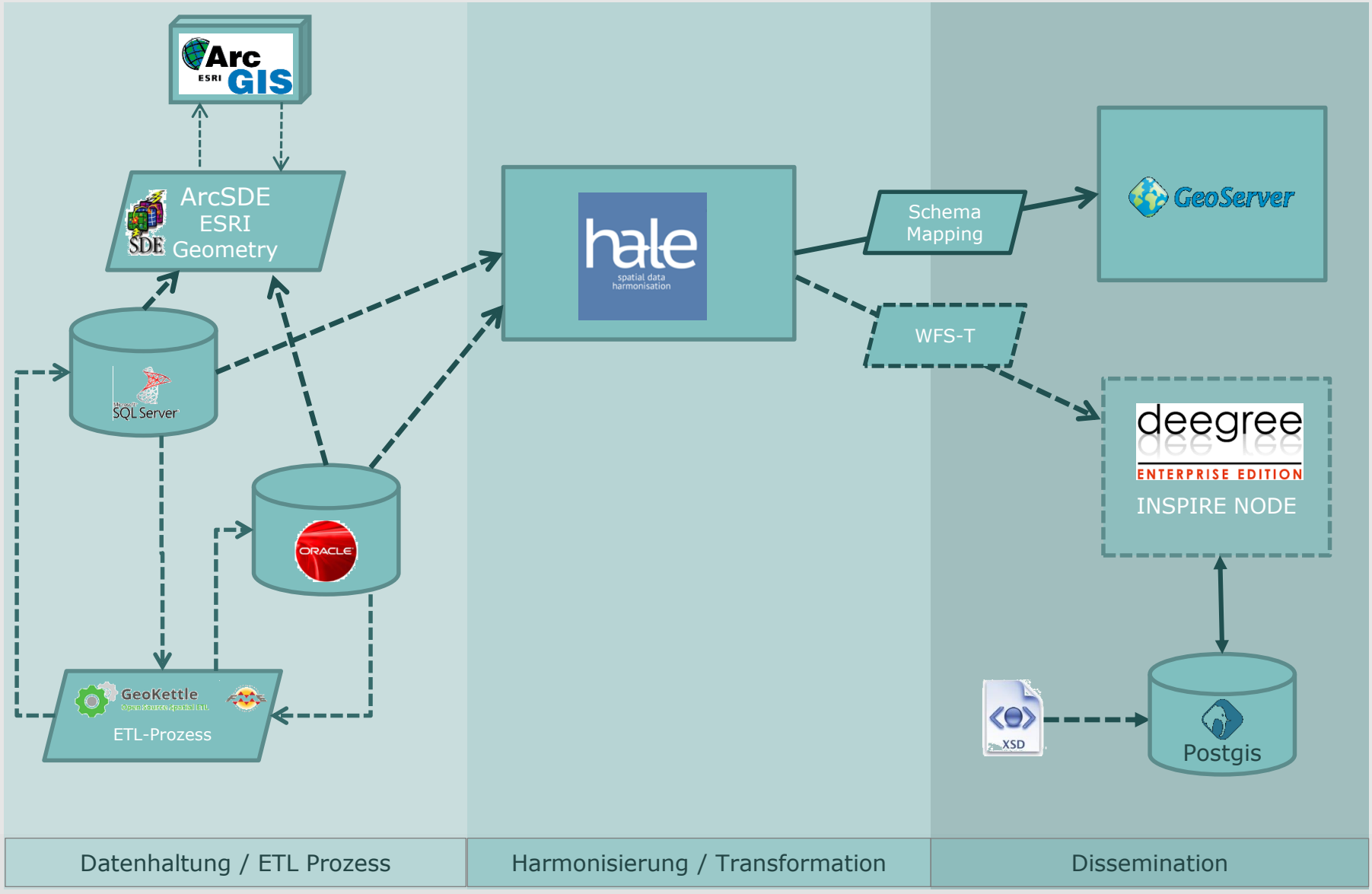
Mögliche INSPIRE Umsetzungsszenarien – Variante Deegree INSPIRE Node



Neuigkeiten HALE

- **Version 3.1 ab 16.12.2016 verfügbar**
  - Anbindung 3.1.0 MS SQL Server vorhanden
  - Finanziert durch die deutsche Marine Dateninfrastruktur / Bundesanstalt für Wasser (BWA) sowie das Bundesamt für Seeschifffahrt und Hydrographie (BSH)
- **Version 3.2 – Release Veröffentlichung?**
  - Finanziert Landesamt für Digitalisierung, Breitband und Vermssung
  - Implementierung weiterer HALE Funktionen für die Harmonisierung von ANNEX III Themen
- **News für Oracle User (MA Wien)**
  - Hale pro Plugin
  - Verfügbar mit HALE Support Subscribtion
  - Lizenzen in Ausnahmefällen verfügbar (für named user, named sever, named application)
  - Lizenzkosten 750 – 2500 Euro
- **Anfrage (Torsten Reiz –weTransform)**
  - Entwicklung Unterstützung ESRI Geometry
  - Ca. 20.000 Euro
  - Wird aber nicht empfohlen da ESRI die SDE nicht mehr weiterentwickeln wird

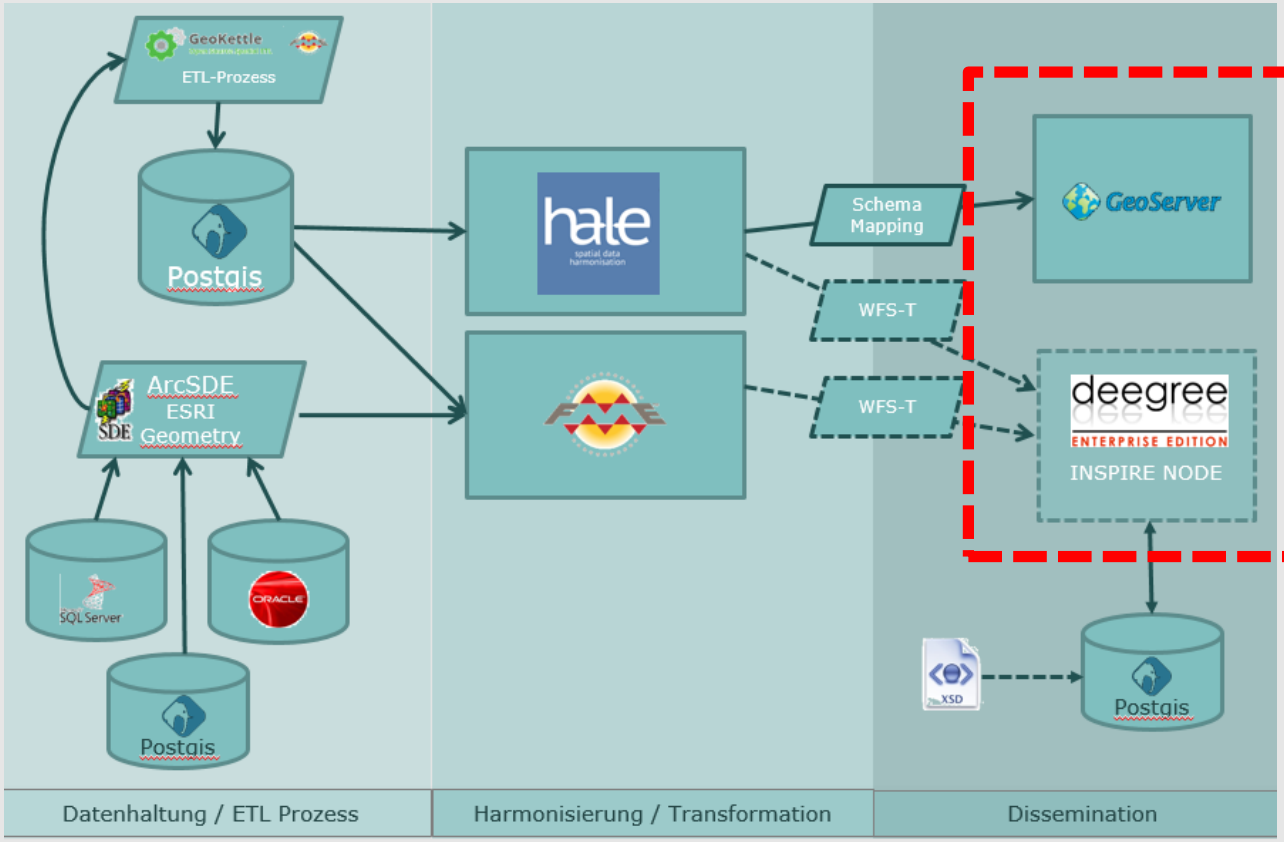
Mögliche INSPIRE Umsetzungsszenarien – ArcGIS/SDE-User



Conclusio: Werkzeuge & Tool

- Werkzeuge für die Transformation
  - HALE und FME
    - Gleichwertige
    - Bisher keine Limitierungen feststellbar, alle Datenspezifikationen umsetzbar
    - Skalierbarkeit
      - FME –Modelloptimierung, Expertise benötigt
      - HALE – Größter Datensatz 500.000 Polygonen – ohne Probleme
        - Durch die überschaubare Anzahl an HALE Funktionen sind die Freiheitsgrade hinsichtlich der Umsetzung der Transformationsmodelle eingeschränkt
        - Vereinfachungen durch vorgeschaltete ETL Prozesse ,möglich und bei großen Datensätzen sinnvoll

Conclusio: Werkzeuge & Tool



Colclusio: Werkzeuge & Tool

- **Netzwerkdienste**
  - Geoserver vs. INSPIRE Node (Deegree)
  - Geoserver
    - In Zusammenspiel mit HALE (Schema Mapping) sehr fehleranfällig
    - Obwohl im HALE die Transformation als gültig validiert wird, ist ein fehlerfreier Upload auf den Geoserver nicht möglich bzw. erfolgt ein nicht korrektes Encoding
    - Händisches editieren der Mapping-Dateien (noch) erforderlich
    - Bisher Fokus auf Umsetzung/Encoding der verschiedenen DS
      - PS, LU, LC → Mindestanforderungen waren umsetzbar (soweit Validierungsregeln verfügbar waren)
    - Validierung Download-Services und Viewing-Services ausständig!!

Conclusio: Werkzeuge & Tool

- **Netzwerkdienste**
  - Geoserver vs. INSPIRE Node (Deegree)
  - Deegree – INSPIRE Node
    - Eventuell bessere Variante in Zusammenspiel mit HALE
    - Kombination wird immer wieder favorisiert
      - IGN (Instituto Geográfico Nacional)
      - Bayern (Landesamt für Digitalisierung, Breitband und Vermessung)
      - …….
    - Expertise in Österreich fehlt
    - Validierung Download-Services und Viewing-Services ausständig!!

deegree
ENTERPRISE EDITION

Fragen

- Welche Technologien / Umsetzungsvarianten sollen im Rahmen der Assistenzstelle 2017 priorisiert werden
  - Deegree INSPIRE Node?
  - FME-Workfow in Kombination mit Deegree INSPIRE Node?
  - HALE-Workflow in Kombination mit Deegree INSPIRE Node?
  - SDE – MSSQL-Server Anbindung HALE?
  - SDE – Oracle Anbindung HALE?
  - Priorisierung der Datenspezifikationen für die eine Harmonisierung erarbeitet werden soll
  - Aktuelle / dringende Fragen für die ein Abklärungsbedarf gegeben ist

Ausblick Hands on Session morgen

HANDS ON SESSION DATENHARMONISIERUNG

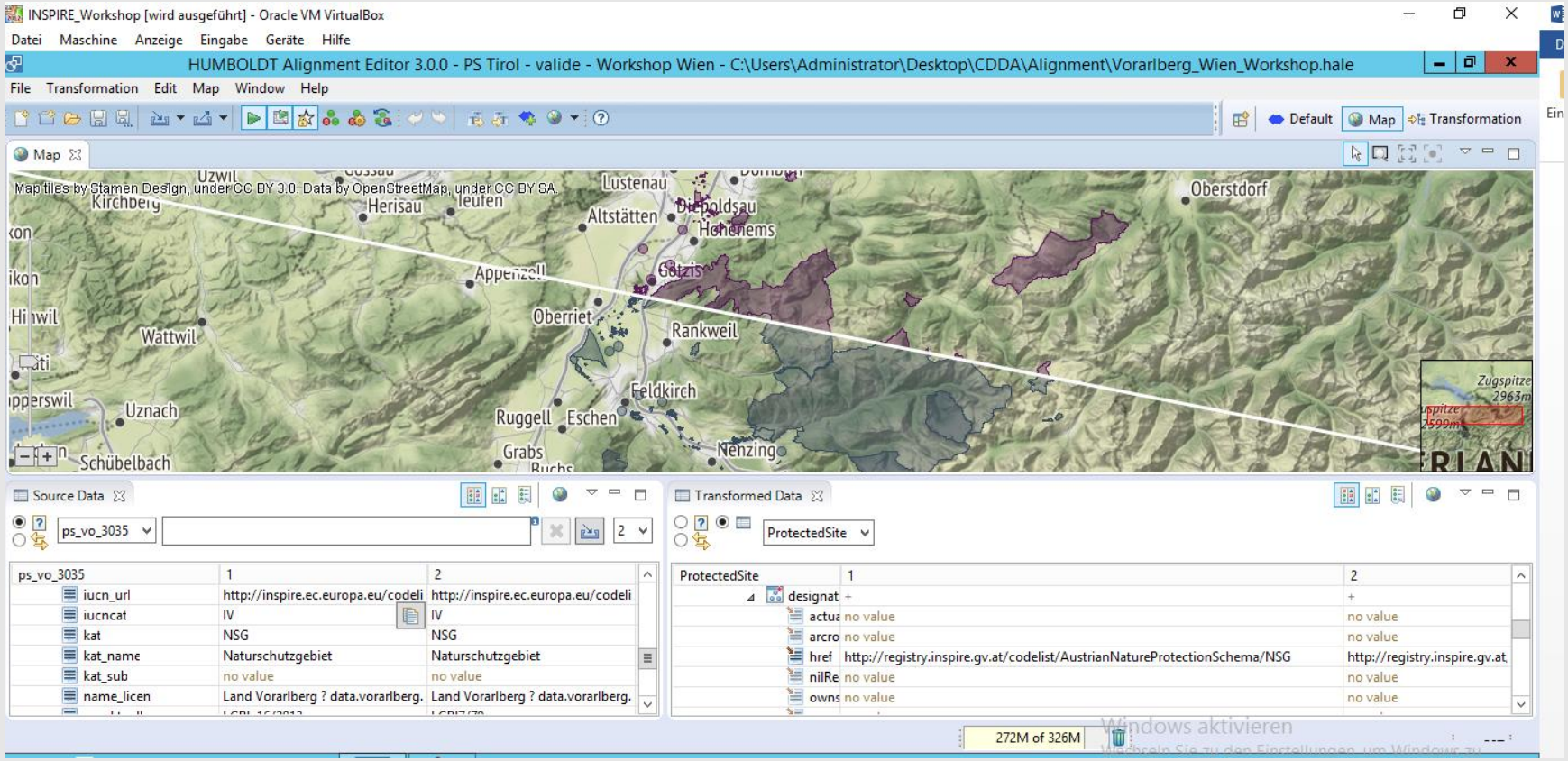
Harmonisierung und Validierung der österreichischen Schutzgebiete entsprechende der DS für Protected Sites

Demonstration Datenharmonisierung Land Use inklusive exponieren als Download-Service (Geoserver)

Organisatorisches

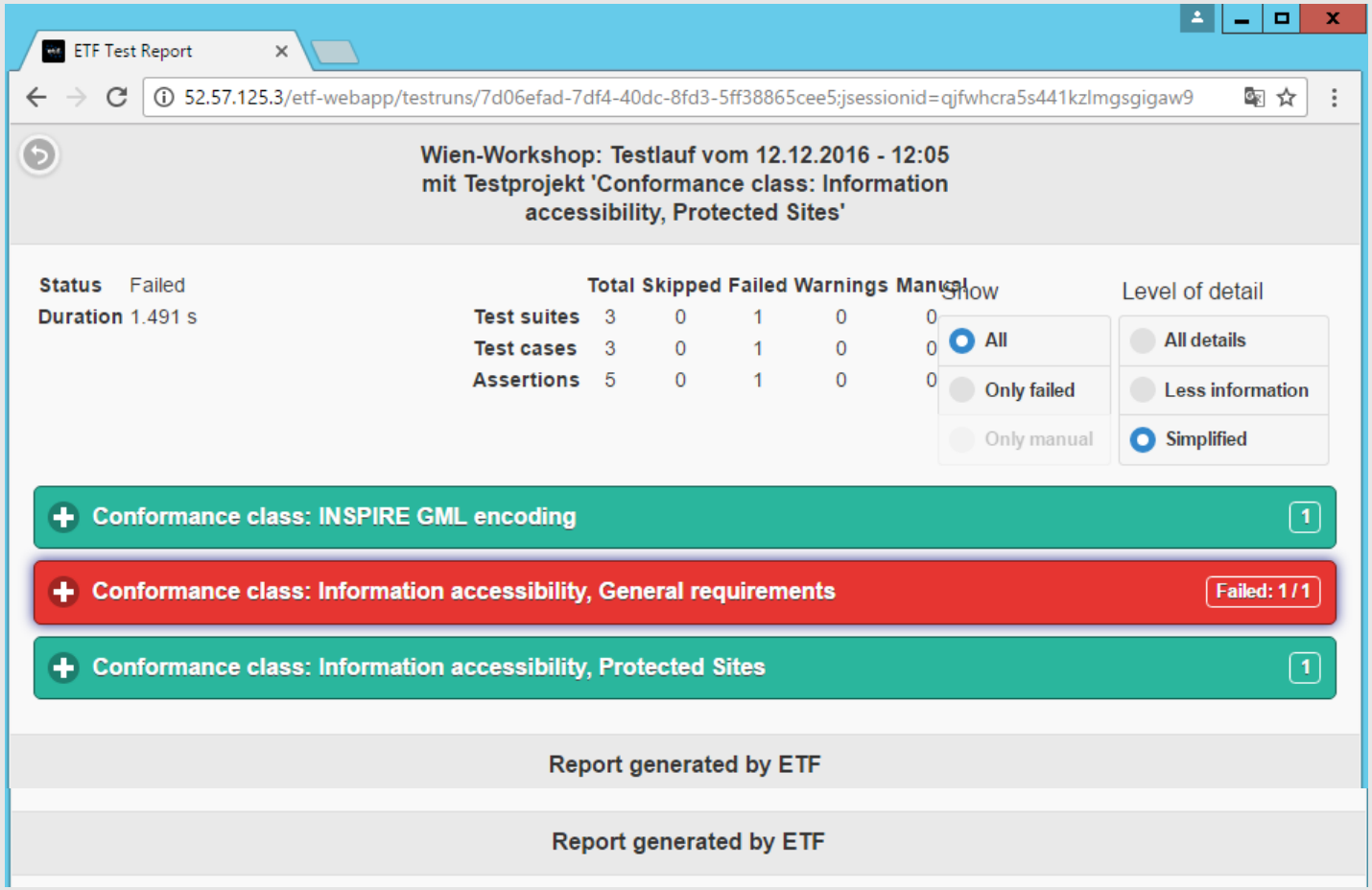
- Voraussetzungen
  - Oracle Virtual Box / 6GB Arbeitsspeicher / 64bit-Virtualisierung freigeschalten
  - Image (Windows 2012 Server) wird zur Verfügung gestellt
  - Heute auf Rechner transferieren
  - Gasterweiterungen installieren & testen…..

Use Case – PS-VO



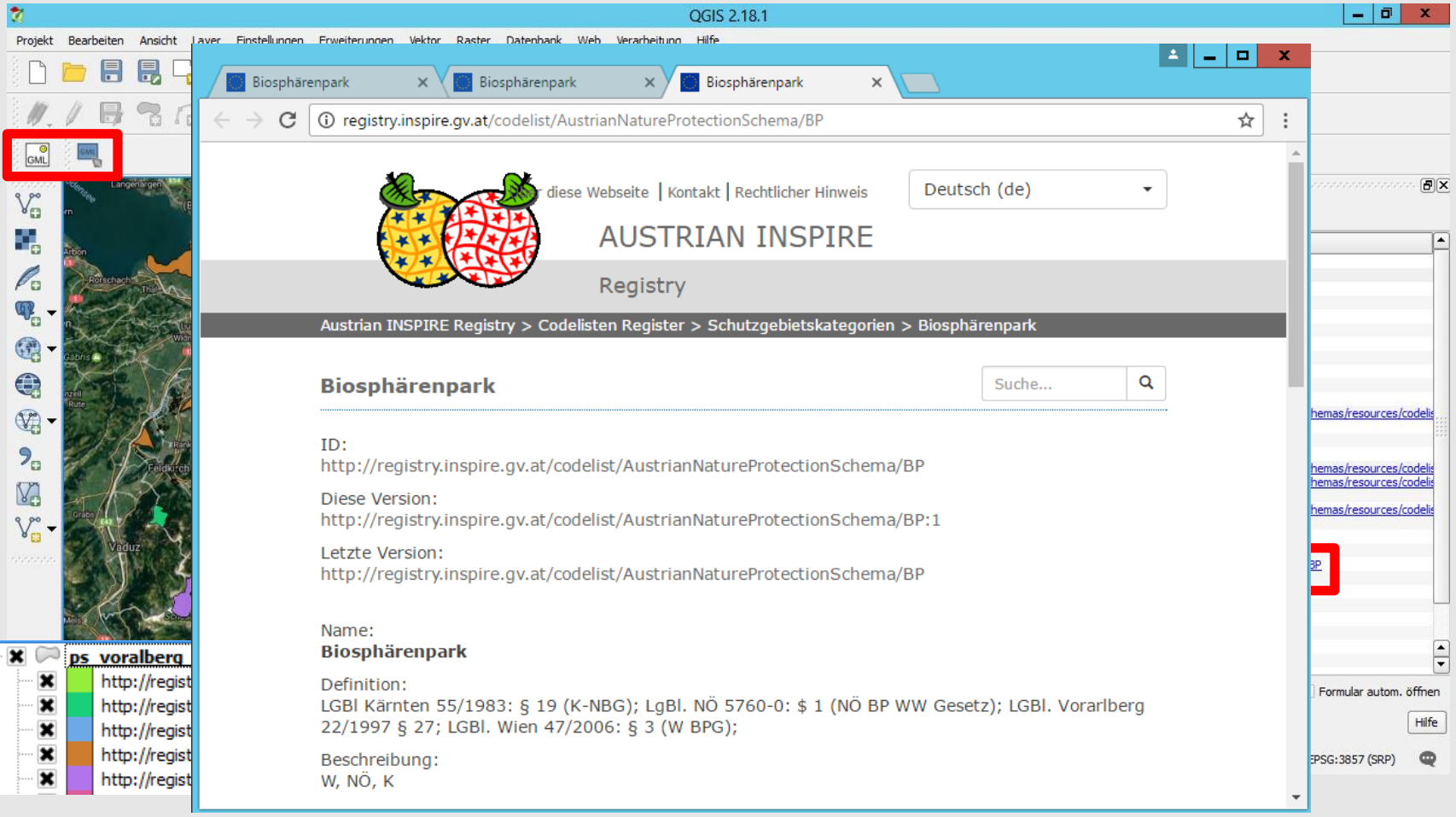
USE CASE – PS VO - INSPIRE AT Registry

- Validierung & Debugging

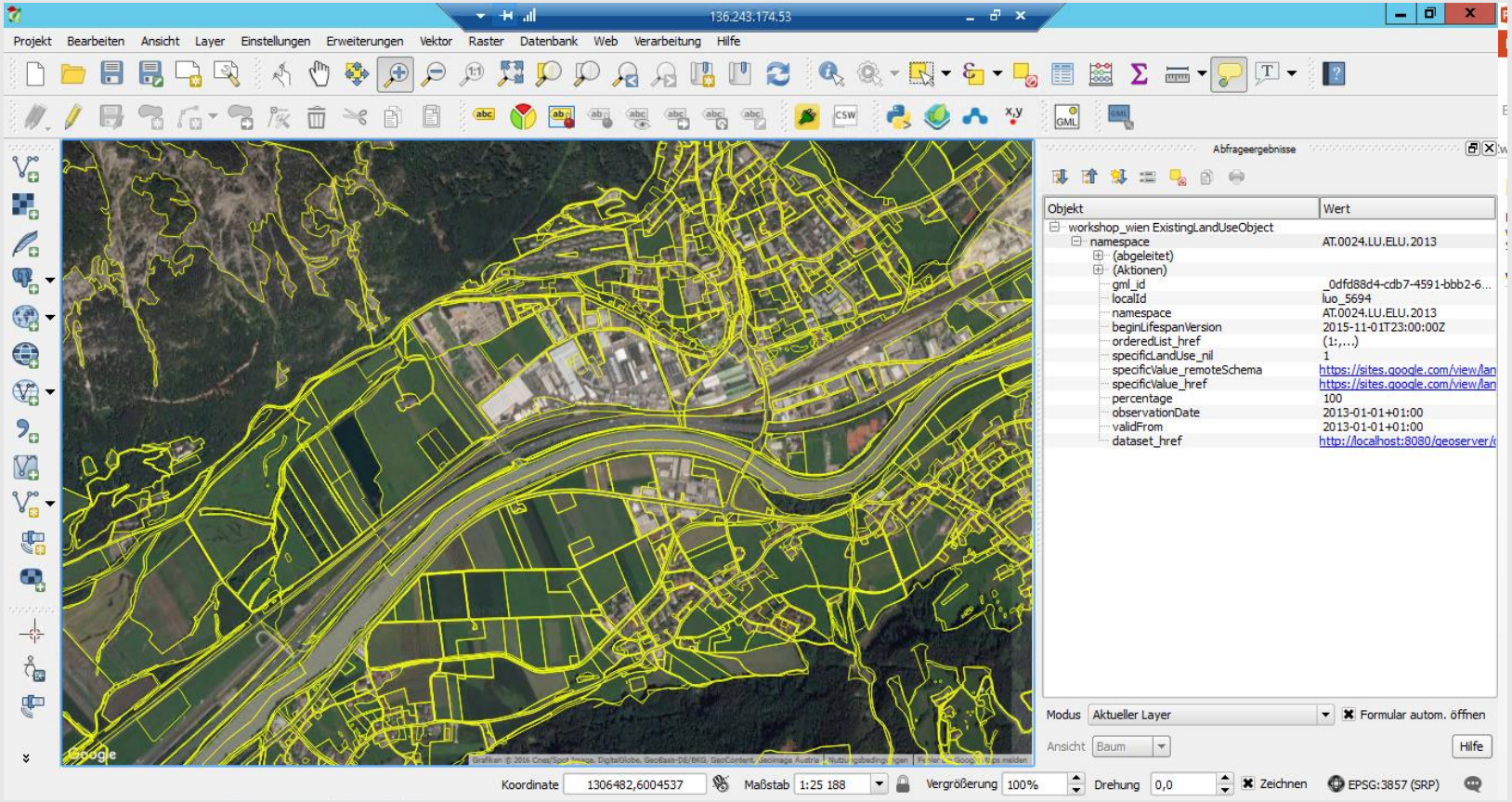


USE CASE – PS VO – GML im Praxis-Test

- Zugriff (Nutzung von qGIS-Plugins (WFS2.0 / Load Complex GML / Complex GML Info…..)

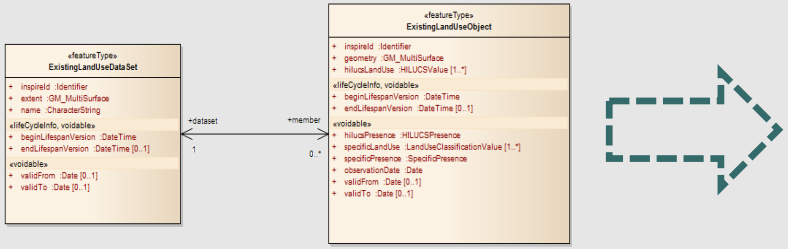


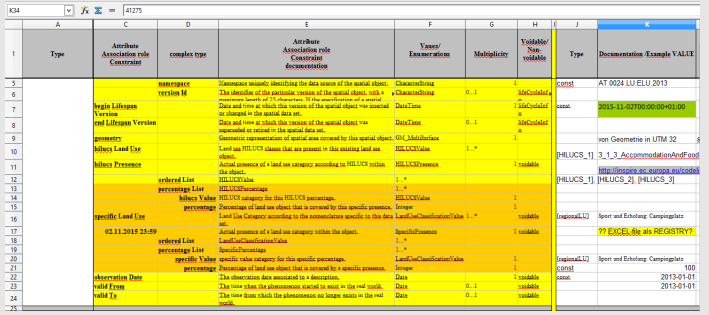
Use Case – Datenharmonisierung LU-Tirol



232965 - Objekte

Use Case – Datenharmonisierung LU-Tirol





K34 = 41275

	A	C	D	E	F	G	H	J	K
1	Type	Attribute Association role Constraint	complex type	Attribute Association role Constraint documentation	Vaues/ Enumerations	Multiplicity	Voidable/ Non-voidable	Type	Documentation /Example VALUE
5			namespace	Namespace uniquely identifying the data source of the spatial object.	CharacterString	1		const	AT.0024.LU.ELU.2013
6			version Id	The identifier of the particular version of the spatial object, with a maximum length of 25 characters. If the specification of a spatial	CharacterString	0...1	lifeCycleInfo		
7		begin Lifespan Version		Date and time at which this version of the spatial object was inserted or changed in the spatial data set.	DateTime	1	lifeCycleInfo	const	2015-11-02T00:00:00+01:00
8		end Lifespan Version		Date and time at which this version of the spatial object was superseded or retired in the spatial data set.	DateTime	0...1	lifeCycleInfo		
9		geometry		Geometric representation of spatial area covered by this spatial object.	GM_MultiSurface	1			von Geometrie in UTM 32
10		hilucs Land Use		Land use HILUCS classes that are present in this existing land use object.	HILUCSValue	1...*		[HILUCS_1]	3_1_3_AccommodationAndFood
11		hilucs Presence		Actual presence of a land use category according to HILUCS within the object.	HILUCSPresence	1	voidable		http://inspire.ec.europa.eu/codeli
12			ordered List	HILUCSValue	1...*			[HILUCS_1]	[HILUCS_2], [HILUCS_3]
13			percentage List	HILUCSPercentage	1...*				
14			hilucs Value	HILUCS category for this HILUCS percentage.	HILUCSValue	1			
15			percentage	Percentage of land use object that is covered by this specific presence.	Integer	1			
16		specific Land Use		Land Use Category according to the nomenclature specific to this data set.	LandUseClassificationValue	1...*	voidable	[regionalLU]	Sport und Erholung: Campingplatz
17		02.11.2015 23:59		Actual presence of a land use category within the object.	SpecificPresence	1	voidable		?? EXCEL-file als REGISTRY?
18			ordered List	LandUseClassificationValue	1...*				
19			percentage List	SpecificPercentage	1...*				
20			specific Value	specific value category for this specific percentage.	LandUseClassificationValue	1		[regionalLU]	Sport und Erholung: Campingplatz
21			percentage	Percentage of land use object that is covered by a specific presence.	Integer	1		const	100
22		observation Date		The observation date associated to a description.	Date	1	voidable	const	2013-01-01
23		valid From		The time when the phenomenon started to exist in the real world.	Date	0...1	voidable		2013-01-01
24		valid To		The time from which the phenomenon no longer exists in the real world.	Date	0...1	voidable		
25									

K34 = 41275

	A	C	D	E	F	G	H	J	K
1	Type	Attribute Association role Constraint	complex type	Attribute Association role Constraint documentation	Vaues/ Enumerations	Multiplicity	Voidable/ Non-voidable	Type	Documentation /Example VALUE
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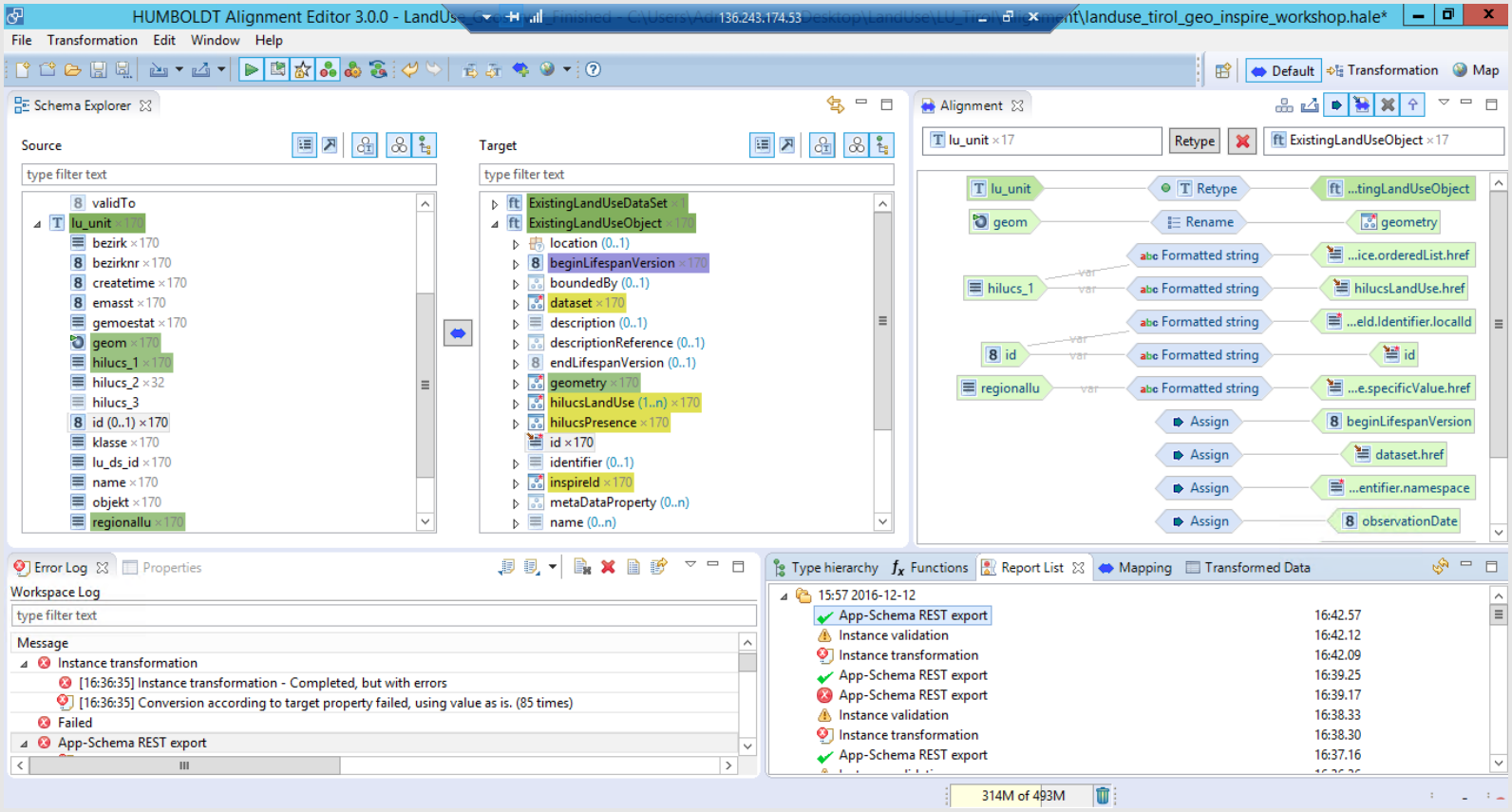
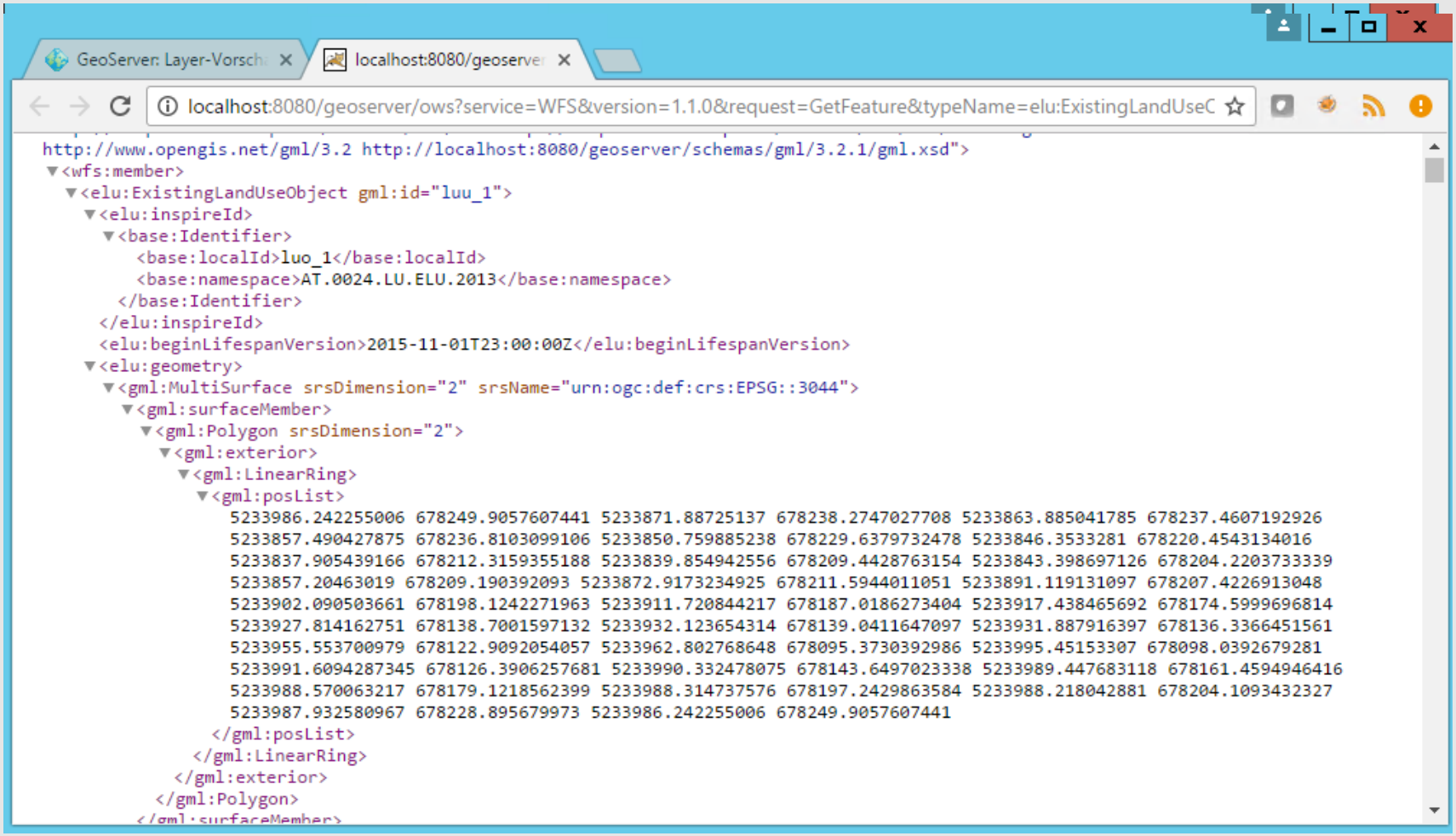
22		observation Date		The observation date associated to a description.	Date	1	voidable	const	2013-01-01
23		valid From		The time when the phenomenon started to exist in the real world.	Date	0...1	voidable		2013-01-01
24		valid To		The time from which the phenomenon no longer exists in the real world.	Date	0...1	voidable		
25									

Use Case – Datenharmonisierung LU-Tirol




```
<lunom:SpecificPercentage>
  <lunom:specificValue xlink:href="https://sites.google.com/view/landnutzungsklassen-tirol/Grünland"
  gml:remoteSchema="https://sites.google.com/view/landnutzungsklassen-tirol"/>
  <lunom:percentage>100</lunom:percentage>
</lunom:SpecificPercentage>
```

Schema Mapping Geoserver



Kontakt

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