

2. INSPIRE ESPUS školenie „Základy INSPIRE“

Harmonizácia a interoperabilita



Operačný program
**Efektívna
verejná správa**



Európska únia
Európsky sociálny fond



MINISTERSTVO

ŽIVOTNÉHO PROSTREDIA
SLOVENSKEJ REPUBLIKY



ESPUS

Efektívna správa priestorových údajov a služieb

2. INSPIRE ESPUS školenie „Základy INSPIRE“ Harmonizácia a interoperabilita

22.06.2022



Európska únia
Európsky sociálny fond

Prehľad

Úloha INSPIRE harmonizácie a interoperability

Priestorové údaje

- Legislatívne a technické požiadavky
- Identifikácia
- AsIs vs. ToBe

Interoperabilita

- Úroveň interoperability
- Rozšírenia

Harmonizácia v INSPIRE

- Údajových modelov
- Súradnicových systémov
- Údajových formátov
- Proces

Príklady harmonizácie

- Hale studio
- GeoServer





ESPUS

Efektívna správa priestorových údajov a služieb

Priestorové údaje

Legislatívne a technické požiadavky

- Legislatívne požiadavky
 - Nariadenie Komisie (ES) č. 1089/2010, ktorým sa vykonáva smernica Európskeho parlamentu a Rady 2007/2/ES, pokiaľ ide o interoperabilitu súborov a služieb priestorových údajov.
 - Nariadenie Komisie (ES) č. 102/2011, ktorým sa mení a dopĺňa nariadenie (EÚ) č. 1089/2010, ktorým sa vykonáva smernica Európskeho parlamentu a Rady 2007/2/ES, pokiaľ ide o interoperabilitu súborov a služieb priestorových údajov.
 - Nariadenie Komisie (ES) č. 1253/2013, ktorým sa mení a dopĺňa nariadenie (EÚ) č. 1089/2010, ktorým sa vykonáva smernica 2007/2/ES, pokiaľ ide o interoperabilitu súborov a služieb priestorových údajov.
 - Nariadenie Komisie (ES) č. 1312/2014, ktorým sa mení nariadenie (EÚ) č. 1089/2010, ktorým sa vykonáva smernica Európskeho parlamentu a Rady 2007/2/ES, pokiaľ ide o interoperabilitu súborov a služieb priestorových údajov.

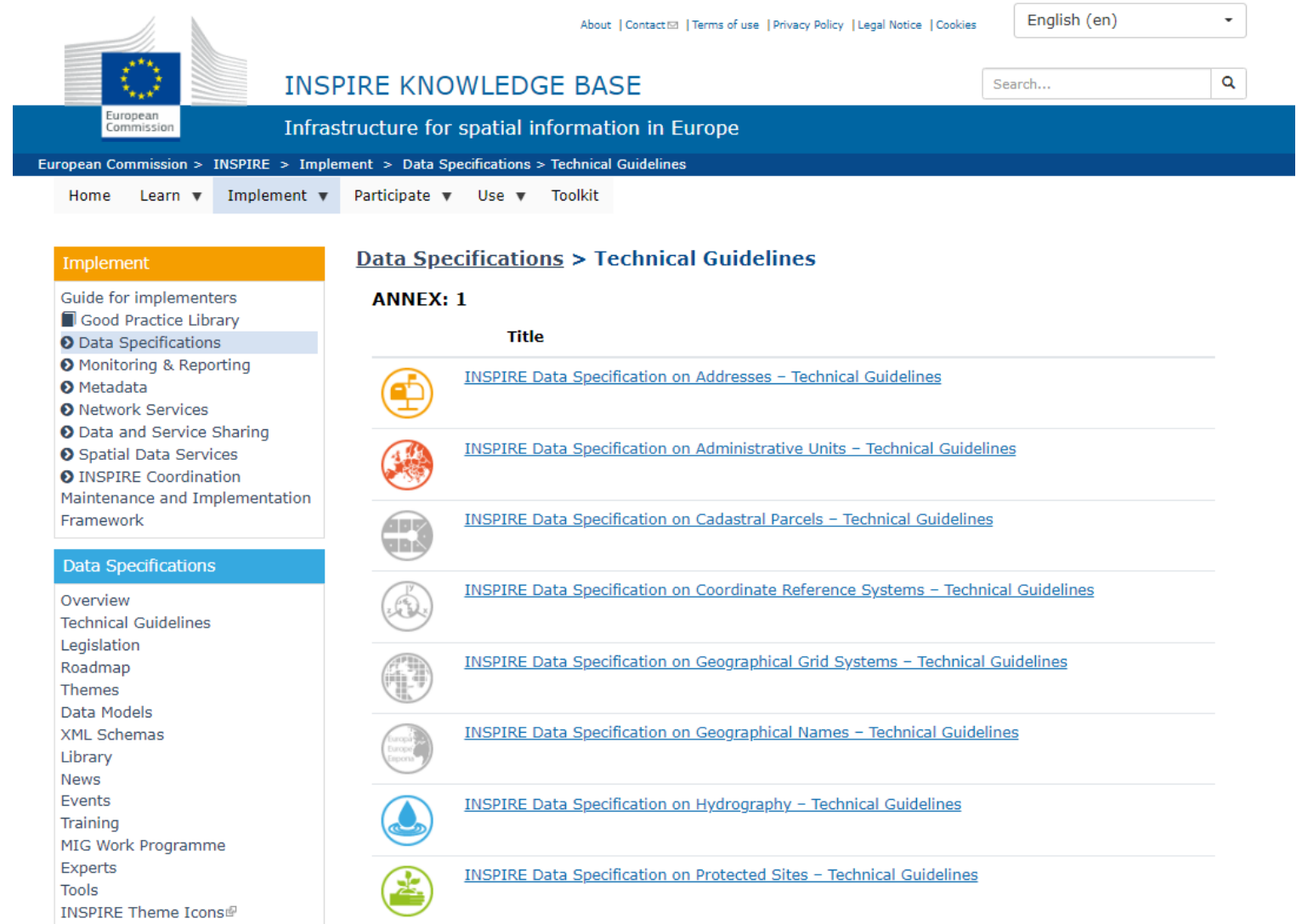
Legislatívne a technické požiadavky

- Technické špecifikácie
 - Všeobecné
 - D 2.5 INSPIRE Generic Conceptual Model (GCM)
 - D 2.3 Definition of Annex Themes and Scope
 - D 2.6 Methodology for the development of data specifications
 - D 2.7 Guidelines for the encoding of spatial data
 - INSPIRE UML Model
 - Pre INSPIRE témy

Legislatívne a technické požiadavky

- Technické usmernenia
(Technical Guidance)
- Pre témy z príloh 1. - 3.

<https://inspire.ec.europa.eu/Technical-Guidelines/Data-Specifications/2892>



INSPIRE KNOWLEDGE BASE
Infrastructure for spatial information in Europe

European Commission > INSPIRE > Implement > Data Specifications > Technical Guidelines

Home Learn Implement Participate Use Toolkit

Implement









- Guide for implementers
- Good Practice Library
- Data Specifications**
- Monitoring & Reporting
- Metadata
- Network Services
- Data and Service Sharing
- Spatial Data Services
- INSPIRE Coordination Maintenance and Implementation Framework

Data Specifications

- Overview
- Technical Guidelines
- Legislation
- Roadmap
- Themes
- Data Models
- XML Schemas
- Library
- News
- Events
- Training
- MIG Work Programme
- Experts
- Tools
- INSPIRE Theme Icons

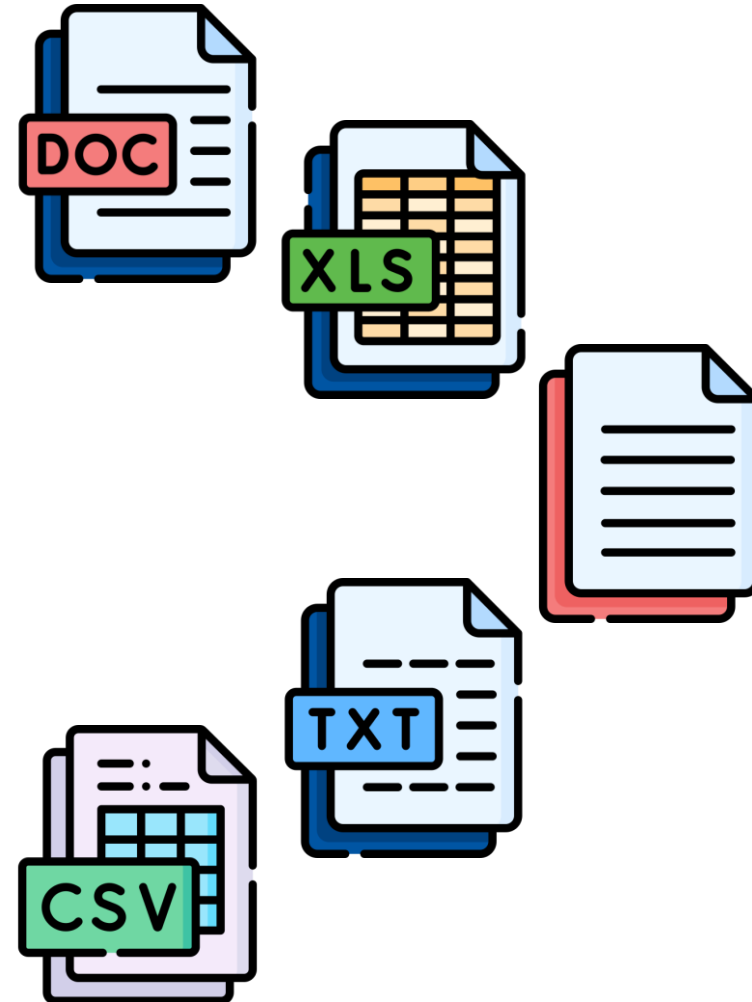
Data Specifications > Technical Guidelines

ANNEX: 1

Title	
	INSPIRE Data Specification on Addresses – Technical Guidelines
	INSPIRE Data Specification on Administrative Units – Technical Guidelines
	INSPIRE Data Specification on Cadastral Parcels – Technical Guidelines
	INSPIRE Data Specification on Coordinate Reference Systems – Technical Guidelines
	INSPIRE Data Specification on Geographical Grid Systems – Technical Guidelines
	INSPIRE Data Specification on Geographical Names – Technical Guidelines
	INSPIRE Data Specification on Hydrography – Technical Guidelines
	INSPIRE Data Specification on Protected Sites – Technical Guidelines

Priestorové údaje

- Identifikácia



As Is datasety vs INSPIRE datasety (ToBe)

- As Is datasety:
 - údajový model v štruktúre poskytovateľa údajov
 - publikované prostredníctvom služieb priestorových údajov (WMS, WFS, ...)
 - kartografia nie je podľa INSPIRE špecifikácií

- INSPIRE datasety
 - harmonizovaný údajový model podľa INSPIRE
 - dostupné prostredníctvom INSPIRE zobrazovacích a ukladacích služieb
 - kartografia je podľa INSPIRE špecifikácií

As Is datasety vs INSPIRE datasety (ToBe)

- As Is dataset: WFS - Administratívne hranice, GKÚ Bratislava

```
<wfs:FeatureCollection xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:wfs="http://www.opengis.net/wfs/2.0" xmlns:gml="http://www.opengis.net/gml/3.2"
xmlns:WFS_zbgis_administrativne_hranice_wfs="https://zbgisws.skgeodesy.sk/zbgis_administrativne_hranice_wfs/service.svc/get" xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" timeStamp="2022-06-09T11:40:18Z" numberMatched="unknown" numberReturned="8"
xsi:schemaLocation="http://www.opengis.net/wfs/2.0 http://schemas.opengis.net/wfs/2.0/wfs.xsd http://www.opengis.net/gml/3.2 http://schemas.opengis.net/gml/3.2.1/gml.xsd
https://zbgisws.skgeodesy.sk/zbgis_administrativne_hranice_wfs/service.svc/get https://zbgisws.skgeodesy.sk/zbgis_administrativne_hranice_wfs/service.svc/get?
service=wfs%26version=2.0.%26request=DescribeFeatureType" airtime-extension-installed="true" data-websigner.1.0.7="true">
▼<wfs:member>
  ▼<WFS_zbgis_administrativne_hranice_wfs:kraj gml:id="kraj.329">
    <WFS_zbgis_administrativne_hranice_wfs:OBJECTID>329</WFS_zbgis_administrativne_hranice_wfs:OBJECTID>
    <WFS_zbgis_administrativne_hranice_wfs:Dátum_aktualizácie_objektu_>2022-01-18T00:00:00</WFS_zbgis_administrativne_hranice_wfs:Dátum_aktualizácie_objektu_>
    <WFS_zbgis_administrativne_hranice_wfs:Presnosť_horizontálna>1</WFS_zbgis_administrativne_hranice_wfs:Presnosť_horizontálna>
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    <WFS_zbgis_administrativne_hranice_wfs:Číslo_kraja>5</WFS_zbgis_administrativne_hranice_wfs:Číslo_kraja>
    <WFS_zbgis_administrativne_hranice_wfs:Názov_kraja>Žilinský</WFS_zbgis_administrativne_hranice_wfs:Názov_kraja>
    <WFS_zbgis_administrativne_hranice_wfs:Výmera_z_registra>6808447154.00000000</WFS_zbgis_administrativne_hranice_wfs:Výmera_z_registra>
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    <WFS_zbgis_administrativne_hranice_wfs:Oblasť>Stredné Slovensko</WFS_zbgis_administrativne_hranice_wfs:Oblasť>
    <WFS_zbgis_administrativne_hranice_wfs:Kód_oblasti>SK03</WFS_zbgis_administrativne_hranice_wfs:Kód_oblasti>
    <WFS_zbgis_administrativne_hranice_wfs:Kraj>Žilinský kraj</WFS_zbgis_administrativne_hranice_wfs:Kraj>
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    <WFS_zbgis_administrativne_hranice_wfs:GLOBALID>{26229411-E3B6-48E8-996F-33DF18342AA4}</WFS_zbgis_administrativne_hranice_wfs:GLOBALID>
  ▼<WFS_zbgis_administrativne_hranice_wfs:SHAPE>
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      ▼<gml:surfaceMember>
        ▼<gml:Polygon gml:id="kraj.329.pl.0" srsDimension="3">
          ▼<gml:exterior>
            ▼<gml:LinearRing>
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              </gml:LinearRing>
            </gml:exterior>
          </gml:Polygon>
        </gml:surfaceMember>
      </gml:MultiSurface>
    </WFS_zbgis_administrativne_hranice_wfs:SHAPE>
  </WFS_zbgis_administrativne_hranice_wfs:kraj>
</wfs:member>
```

As Is datasety vs INSPIRE datasety (ToBe)

- INSPIRE dataset: INSPIRE Administrative units
- https://zbgisws.skgeodesy.sk/inspire_administrative_units_wfs/service.svc/get?TYPENAME=au:AdministrativeUnit&SERVICE=WFS&REQUEST=GetFeature&VERSION=2.0.0&RESULTTYPE=results&count=2

```
<wfs:FeatureCollection xmlns:act-core="http://inspire.ec.europa.eu/schemas/act-core/4.0" xmlns:ad="http://inspire.ec.europa.eu/schemas/ad/4.0" xmlns:au="http://inspire.ec.europa.eu/schemas/au/4.0" xmlns:base2="http://inspire.ec.europa.eu/schemas/base2/2.0" xmlns:bu-base="http://inspire.ec.europa.eu/schemas/bu-base/4.0" xmlns:bu-core2d="http://inspire.ec.europa.eu/schemas/bu-core2d/4.0" xmlns:gn="http://inspire.ec.europa.eu/schemas/gn/4.0" xmlns:hy-n="http://inspire.ec.europa.eu/schemas/hy-n/4.0" xmlns:hy-p="http://inspire.ec.europa.eu/schemas/hy-p/4.0" xmlns:mu="http://inspire.ec.europa.eu/schemas/mu/3.0" xmlns:net="http://inspire.ec.europa.eu/schemas/net/4.0" xmlns:ps="http://inspire.ec.europa.eu/schemas/ps/4.0" xmlns:tc="http://inspire.ec.europa.eu/schemas/tn-c/4.0" xmlns:tn-ra="http://inspire.ec.europa.eu/schemas/tn-ra/4.0" xmlns:tn-ro="http://inspire.ec.europa.eu/schemas/tn-ro/4.0" xmlns:tn="http://inspire.ec.europa.eu/schemas/tn/4.0" xmlns="http://www.interactive-instruments.de/a4i/1.0" xmlns:gco="http://www.isotc211.org/2005/gco" xmlns:gmd="http://www.opengis.net/swe/2.0" xmlns:wfs="http://www.opengis.net/wfs/2.0" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://www.interactive-instruments.de/a4i/1.0 http://zbgisws.skgeodesy.sk/rest/directories/arcgisforinspire/schema/INSPIRE/A4Iwebsigner.1.0.7=true">
  <wfs:member>
    <au:AdministrativeUnit gml:id="auAdmUnit5.8890">
      <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">https://zbgisws.skgeodesy.sk/inspire_administrative_units_wfs/service.svc/get?SERVICE=WFS&VERSION=2.0.0&REQUEST=GetFeatureById&id=auAdmUnit5.8890</gml:identifier>
      <au:geometry>
        ...
      </au:geometry>
      <au:nationalCode>1</au:nationalCode>
      <au:inspireId>
        <base:Identifier>
          <base:localId>2-1</base:localId>
          <base:namespace>SK.ZBGIS.AU.</base:namespace>
          <base:versionId>20210308T14:48:52</base:versionId>
        </base:Identifier>
      </au:inspireId>
      <au:nationalLevel xlink:href="http://inspire.ec.europa.eu/codelist/AdministrativeHierarchyLevel/2ndOrder" xlink:title="2ndOrder"/>
      <au:nationalLevelName>
        <gmd:LocalisedCharacterString locale="https://zbgisws.skgeodesy.sk/rest/directories/arcgisforinspire/schema/PT_Locale.xml">kraj</gmd:LocalisedCharacterString>
      </au:nationalLevelName>
      <au:country>
        <gmd:Country codeList="http://inspire.ec.europa.eu/codelist/CountryCode/SK" codeListValue="SK">SK</gmd:Country>
      </au:country>
      <au:name>
        <gn:GeographicalName>
          <gn:language>SLK</gn:language>
          <gn:nativeness xlink:href="http://inspire.ec.europa.eu/codelist/NativenessValue/endoronym" xlink:title="endoronym"/>
          <gn:nameStatus xlink:href="http://inspire.ec.europa.eu/codelist/NameStatusValue/standardised" xlink:title="standardised"/>
          <gn:sourceOfName>GKÚ</gn:sourceOfName>
          <gn:pronunciation nilReason="other:unpopulated" xsi:nil="true"/>
        </gn:GeographicalName>
        <gn:spelling>
          <gn:SpellingOfName>
            <gn:text>Bratislavský</gn:text>
            <gn:script nilReason="other:unpopulated" xsi:nil="true"/>
            <gn:transliterationScheme nilReason="other:unpopulated" xsi:nil="true"/>
          </gn:SpellingOfName>
        </gn:spelling>
      </au:name>
    </au:AdministrativeUnit>
  </wfs:member>
</wfs:FeatureCollection>
```



Efektívna správa priestorových údajov a služieb

Interoperabilita

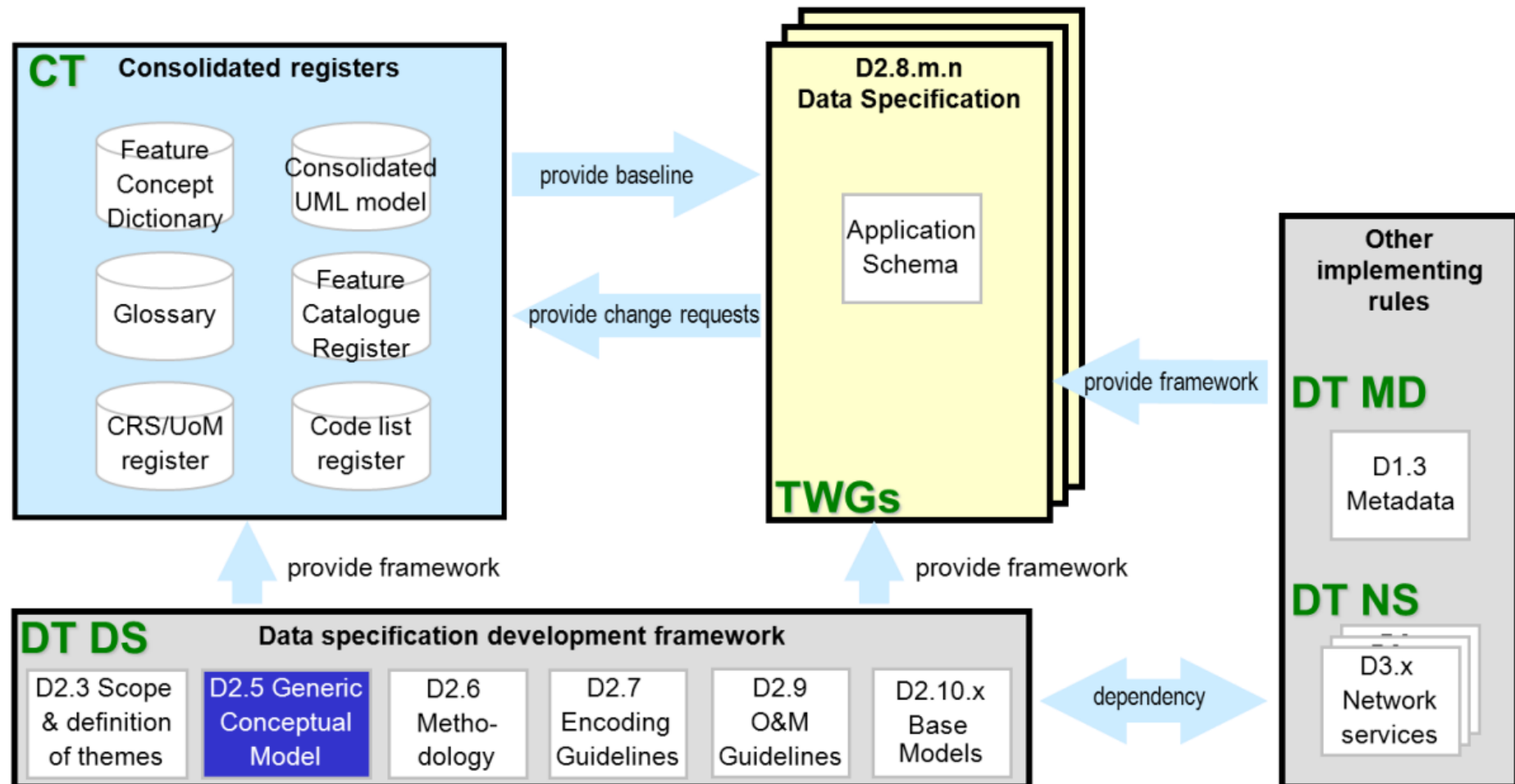
Interoperabilita

- Prvá úroveň interoperability
 - Použitie GCM (Generic Conceptual Model) v rámci rôznych tém
- Druhá úroveň interoperability
 - Dátové špecifikácie
 - Dohoda o spoločnej (formálnej) sémantike medzi rôznymi témami
- Tretia úroveň interoperability
 - Ako sú geografické informácie skutočne zakódované pre proces prenosu



Interoperabilita

- Úroveň interoperability a GCM

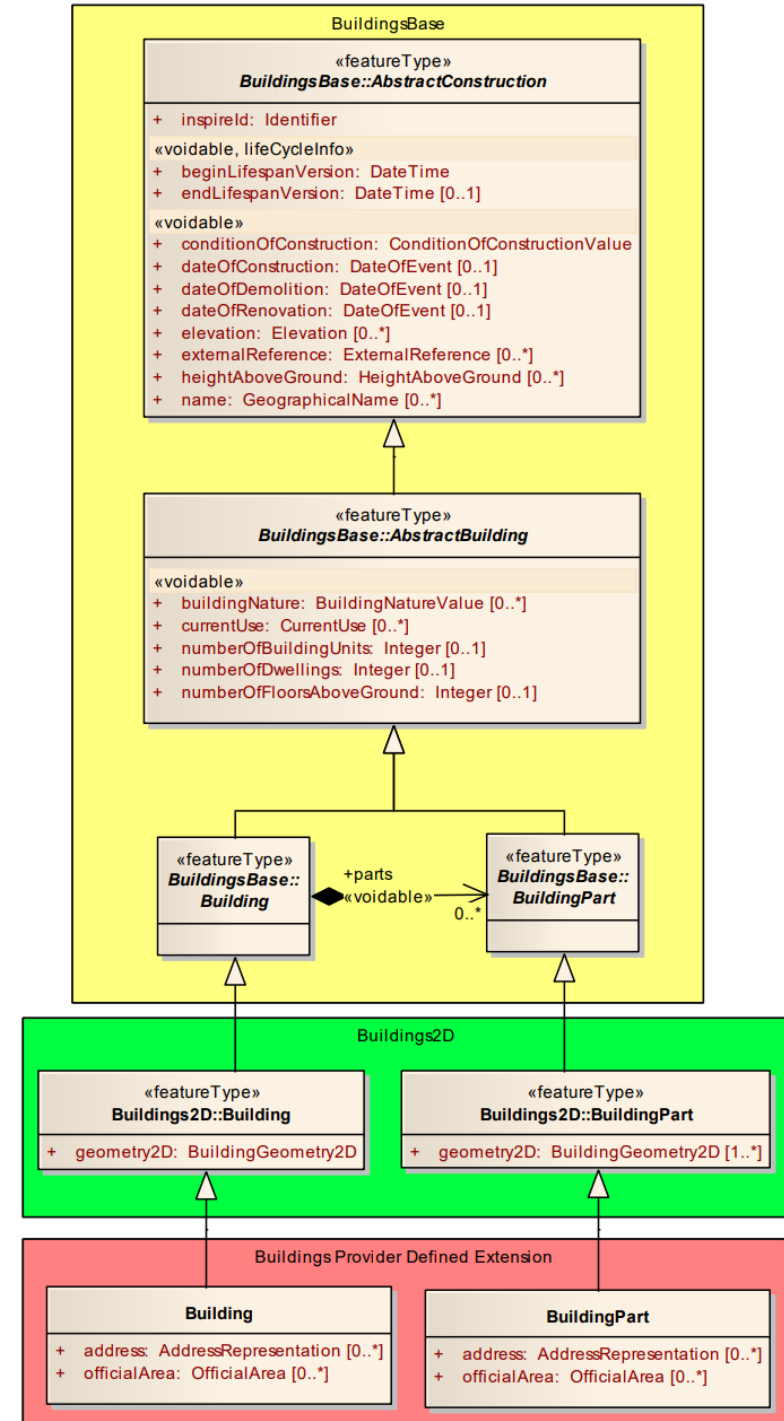


Interoperabilita

- Rozšírenia INSPIRE dátových špecifikácií
 - Aplikačné schémy a typy, údajové modely, číselníky, súradnicové systémy, štýly
- Výhody:
 - Valídne INSPIRE služby s pridanou hodnotou
 - Eliminuje duplicitné publikovanie služieb
 - Vaše údaje sú súčasťou INSPIRE a všetkých jeho benefitov
 - Rozširovanie INSPIRE do praxe

Rozšírenie INSPIRE Budovy

- Doplnenie dodatočných atribútov do základného 2D profilu:
 - adresa
 - oblasť



Rozšírenie INSPIRE Budovy

```

<?xml version="1.0" encoding="utf-8" ?>
<wfs:FeatureCollection xmlns:mybu="http://www.myorg.com/ns/bu/1.0" xsi:schemaLocation="http://www.myorg.com/ns/bu/1.0 http://www.myorg.com/ns/bu/1.0/BuildingsExtensions.xsd http://...
  <wfs:member>
    <mybu:Building gml:id="Building.1">
      <gml:identifier codeSpace="http://inspire.jrc.ec.europa.eu/ids">Building.1</gml:identifier>
      <bu-base:beginLifespanVersion>2010-01-01T00:00:00Z</bu-base:beginLifespanVersion>
      <bu-base:conditionOfConstruction xlink:href="http://inspire.ec.europa.eu/codeList/ConditionOfConstructionValue" xlink:title="unknown"/>
      <bu-base:dateOfConstruction>
      <bu-base:dateOfDemolition>
      <bu-base:dateOfRenovation>
      <bu-base:elevation xsi:nil="true" nilReason="unknown"/>
      <bu-base:endLifespanVersion xsi:nil="true" nilReason="unpopulated"/>
      <bu-base:externalReference xsi:nil="true" nilReason="unpopulated"/>
      <bu-base:heightAboveGround>
      <bu-base:inspireId>
      <bu-base:name>
      <bu-base:buildingNature xlink:title="tower"/>
      <bu-base:currentUse>
      <bu-base:numberOfDwellings xsi:nil="true" nilReason="unknown"/>
      <bu-base:numberOfBuildingUnits xsi:nil="true" nilReason="unknown"/>
      <bu-base:numberOfFloorsAboveGround xsi:nil="true" nilReason="unknown"/>
      <bu-base:parts xsi:nil="true" nilReason="unknown"/>
      <bu-core2d:geometry2D>
      <mybu:address>
        . . .
      </mybu:address>
      <mybu:officialArea>
        . . .
      </mybu:officialArea>
    </mybu:Building>
  </wfs:member>
</wfs:FeatureCollection>

```



ESPUS

Efektívna správa priestorových údajov a služieb

Harmonizácia v INSPIRE

Harmonizácia údajov

Definície

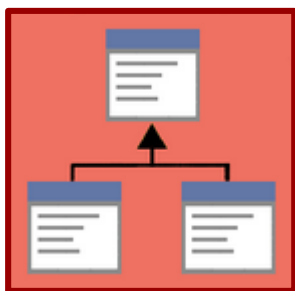
- Harmonizácia údajov je **proces úpravy/doladenia sémantiky a štruktúry údajov** s cieľom uľahčiť súlad s dohodami (špecifikáciami, normami alebo právnymi aktmi) naprieč hranicami alebo komunitami používateľov (INSPIRE Conceptual Model)
- Harmonizácia údajov má vytvoriť možnosť spájať údaje z heterogénnych zdrojov do integrovaných, konzistentných a jednoznačných informačných produktov spôsobom, ktorý sa netýka koncového používateľa. (http://www.coastalwiki.org/wiki/Data_harmonization)
- Harmonizácia je úprava rozdielov a nezrovnalostí medzi rôznymi meraniami, metódami, postupmi, harmonogramami, špecifikáciami alebo systémami tak, aby boli jednotné alebo vzájomne kompatibilné.
(Business Dictionary, 2016)



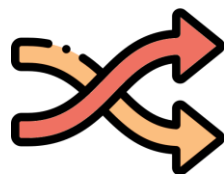
Harmonizácia

- Údajových modelov

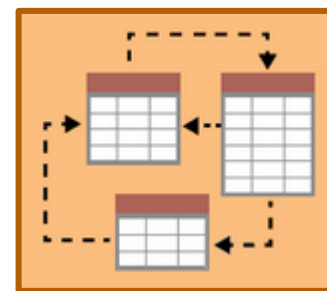
As Is



Údajový model
poskytovateľa



To Be



Údajový model
INSPIRE

Údajové modely INSPIRE



INSPIRE KNOWLEDGE BASE

Infrastructure for spatial information in Europe

European Commission > INSPIRE > Implement > Data Models

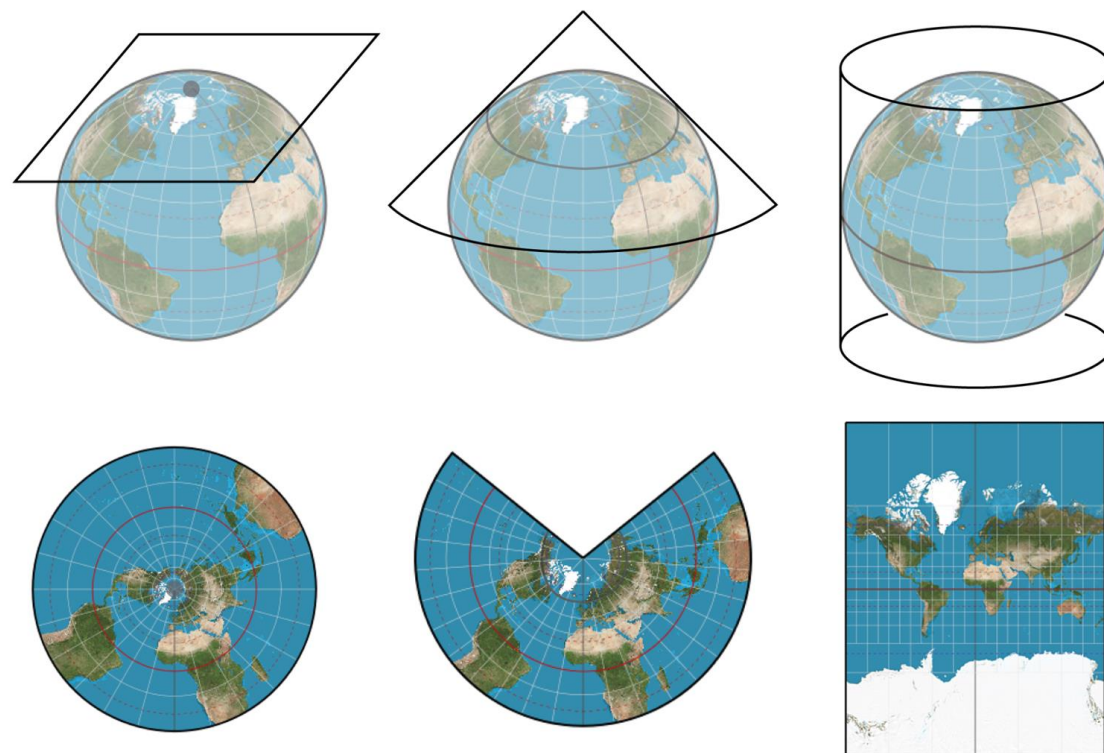
- Údajové modely INSPIRE
 - Technické usmernenia
 - Katalóg objektov
 - UML diagramy v HTML
 - XSD schémy
 - EA project / XMI
- Dva typy model:
 - Schválené modely podľa implementačných pravidiel
 - Návrh (rozšírené modely)



Harmonizácia

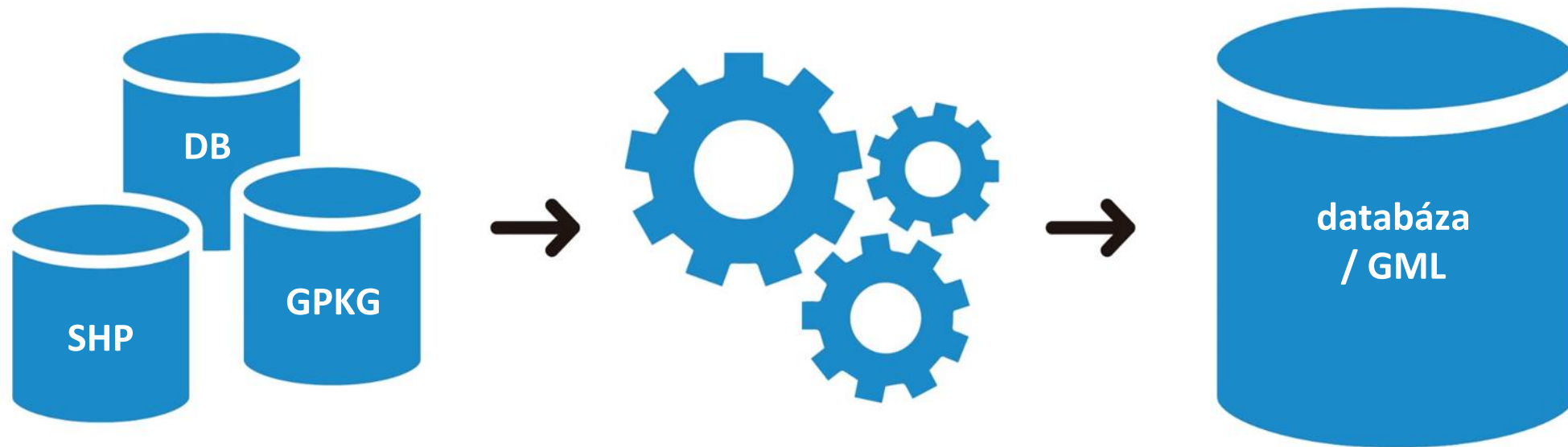
- Súradnicových systémov
 - Je potrebné používať ETRS89 a GRS80
 - Zobrazenia ETRS89-LAEA, ETRS89-LCC, ETRS89-TMzn

- Kedy transformovať?
 - Pred transformáciou údajového modelu?
 - Po transformáciou údajového modelu?
 - On-the-fly?



Harmonizácia

- Údajových formátov



Harmonizácia

- Údajových formátov
 - GeoPackage navrhovaný ako vhodný formát pre alternatívne kódovanie INSPIRE údajov (oproti predvolenému GML kódovaniu)
 - SQLite databáza
 - vektorové údaje
 - rastrové údaje a dlaždice
 - atribúty a nepriestorové údaje
 - Rozšírenia
 - INSPIRE podpora
 - Príprava [GeoPackage Good practice](#)
 - Najnovšie info @ [70th MIG-T meeting 2022-07-07](#)



Harmonizácia

- Proces

- **Konceptuálne mapovanie**

- Pochopiť údajové špecifikácie
 - Konzultácie s doménovými expertmi
 - Priradenie schémy
 - Vzťah medzi zdrojovými údajmi a INSPIRE témami
 - Zvážiť možnosti publikácie
 - Vybrať typ ukladacej služby

- **Konfigurácia mapovania, transformácia, validácia**

- Voľba ETL / transformačného nástroja
 - Konfigurácia mapovania logických / fyzických schém
 - Transformácia a generovanie údajov, validácia

- **Publikácia**

- Konfigurácia služieb



FIND YOUR SCOPE

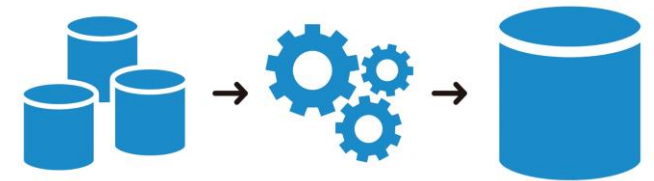


INTERACTIVE
WORKFLOW



DIRECT SEARCH

[Find Your Scope](#)



Mapovanie

- Konceptuálne mapovanie / mapovania logických / fyzických schém

Application Schema 'AdministrativeUnits' (version 3.0)							Application Schema				
Type	Documentation	Attribute Association role Constraint	Attribute / Association role / Constraint	Values / Enumerations	Multiplicity	Voidable / Non-Voidable	Type	Documentation	Attribute Association role Constraint	Attribute / Association role / Constraint	
AdministrativeBoundary	-- Name -- administrative boundary A line of demarcation between administrative units.										
		beginLifespanVersion	-- Name -- begin lifespan version Date and	DateTime	1	voidable					
		country	-- Name -- country Two character country	CountryCode* BE* BO* CZ* DK* DE*	1						
		endLifespanVersion	-- Name -- end lifespan version Date and	DateTime	0..1	voidable					
		geometry	-- Name -- geometry Geometric	GM_Curve	1						
		inspireId	-- Name -- inspire id External object identifier	Identifier	1						
		legalStatus	-- Name -- legal status Legal status of this	LegalStatusValue* agreed* notAgreed	1	voidable					
		nationalLevel	-- Name -- national level The hierarchy level	AdministrativeHierarchyLevel* 1stOrder*	1..6						
		technicalStatus	-- Name -- technical status The technical status	TechnicalStatusValue* adminMatched*	1	voidable					
admUnit	-- Name -- adm unit The administrative unit	AdministrativeUnit	1..*	voidable							
AdministrativeUnit	-- Name -- administrative unit Unit of administration where a Member State has and/or exercises jurisdictional rights, for local, regional and national governance.										
		beginLifespanVersion	-- Name -- begin lifespan version Date and	DateTime	1	voidable					
		country	-- Name -- country Two character country	CountryCode* BE* BO* CZ* DK* DE*	1						
		endLifespanVersion	-- Name -- end lifespan version Date and	DateTime	0..1	voidable					
		geometry	-- Name -- geometry Geometric	GM_MultiSurface	1						
		inspireId	-- Name -- inspire id External object identifier	Identifier	1						
		name	-- Name -- name Official national	GeographicalName	1..*						
		nationalCode	-- Name -- national code Thematic	CharacterString	1						
		nationalLevel	-- Name -- national level Level in the	AdministrativeHierarchyLevel* 1stOrder*	1						
nationalLevelName	-- Name -- national level name Name of the	LocalisedCharacterString	1..*	voidable							

Publikácia harmonizovaných údajov

- Časť procesu harmonizácie je závislá od zvolenej technológie



GeoServer



MapServer
open source web mapping



ArcGIS

deegree



ESPUS

Efektívna správa priestorových údajov a služieb

Praktická ukážka

Praktická ukážka

- Harmonizácia
 - Hale studio, Geoserver



























Publikácia cez GeoServer

- App Sc

```

<wfs:FeatureCollection xmlns:wfs="http://www.opengis.net/wfs/2.0" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:base33="http://inspire.ec.europa.eu/schemas/base/3.3"
"http://www.opengis.net/gml/3.2" xmlns:cp="http://inspire.ec.europa.eu/schemas/cp/4.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gmd="http://www.isotc21
"https://maps.geocloud.sk/geoserver/cp/wfs?REQUEST=GetFeature&am;OUTPUTFORMAT=gml32&am;VERSION=2.0.0&am;TYPENAMES=cp%3ACadastralParcel&am;COUNT=50&am;SERVICE=WFS&am;
"2022-05-19T07:46:40.682Z" xsi:schemaLocation="http://www.opengis.net/wfs/2.0 http://schemas.opengis.net/wfs/2.0/wfs.xsd http://inspire.ec.europa.eu/schemas/cp/4.0 https:
http://www.opengis.net/gml/3.2 http://schemas.opengis.net/gml/3.2.1/gml.xsd">
  <wfs:member>
    <cp:CadastralParcel gml:id="CadastralParcel.1">
      <gml:identifier codeSpace="http://inspire.ec.europa.eu/ids">https://data.geocloud.sk/so/uqkk/cp:CadastralParcel/CadastralParcel.1</gml:identifier>
      <cp:areaValue uom="m2">1.0</cp:areaValue>
      <cp:beginLifespanVersion xsi:nil="true" nilReason="other:unpopulated"/>
      <cp:endLifespanVersion xsi:nil="true" nilReason="other:unpopulated"/>
      <cp:geometry>
        <gml:MultiSurface srsName="http://www.opengis.net/def/crs/EPSSG/0/4258">
          <gml:surfaceMember>
            <gml:Polygon>
              <gml:exterior>
                <gml:LinearRing>
                  <gml:posList>48.46318707 17.97791269 48.4632179 17.97788014 48.46321754 17.97788915 48.46318707 17.97791269</gml:posList>
                </gml:LinearRing>
              </gml:exterior>
            </gml:Polygon>
          </gml:surfaceMember>
        </gml:MultiSurface>
      </cp:geometry>
      <cp:inspireId>
        <base33:Identifier>
          <base33:localId>803006_193/3.C</base33:localId>
          <base33:namespace>SK.ESKN.CP</base33:namespace>
          <base33:versionId xsi:nil="true" nilReason="other:unpopulated"/>
        </base33:Identifier>
      </cp:inspireId>
      <cp:label>193/3</cp:label>
      <cp:nationalCadastralReference>https://zbqis.skgeodesy.sk/mkzbqis/sk/kataster/detail/kataster/parcela-c/803006/193_3</cp:nationalCadastralReference>
      <cp:referencePoint nilReason="unknown"/>
      <cp:validFrom>2021-12-14T17:00:00Z</cp:validFrom>
      <cp:validTo xsi:nil="true" nilReason="other:unpopulated"/>
      <cp:administrativeUnit xsi:nil="true" nilReason="other:unpopulated"/>
      <cp:zoning xlink:href="https://data.geocloud.sk/so/uqkk/cp:CadastralZoning/CadastralZoning.19"/>
    </cp:CadastralParcel>
  </wfs:member>

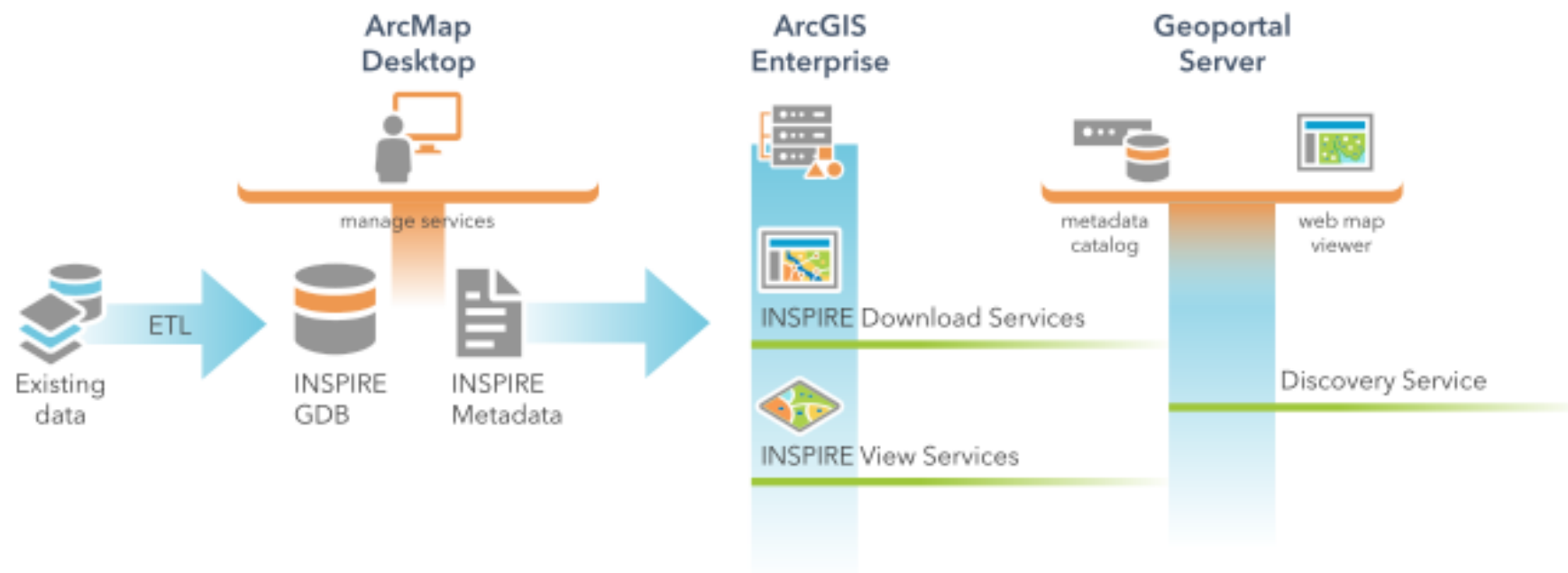
```

Columns	
	Name
 	fid
 	id
 	parcel_number
 	parcel_number_label
 	cadastral_unit_id
 	descriptive_area_of_parcel
 	valid_to_date
 	shape_length
 	shape_area
 	geom
 	cadastral_unit_code
 	parcel_type
 	app_url

Publikácia cez GeoServer

- Praktická ukážka mapovania a konfigurácie pre GeoServer AppSchema plugin “**skolenie 02 - CadastralParcelAppSchemaMapping.xml**”

Publikácia cez ArcGIS



Publikácia cez ArcGIS

Feature Class 'auAdmUnits'

Index

- [General Description](#)
- [Fields](#)
- [auAdmUnits_nationalLevelName](#) (dependent Object Class)
- [auAdmUnits_name](#) (dependent Object Class)
- [auAdmUnits_residence](#) (dependent Feature Class)
- [auAdmUnit_admBySS](#) (n:m relationship to 'auAdmUnits')

General description

This class contains instances of the INSPIRE feature type 'au:AdministrativeUnit'. It is used to represent instances with a polygon geometry.

Table: Feature types stored in Feature Class 'auAdmUnits'

Feature type	Source application schema	Subtype code	Documentation
au:AdministrativeUnit	AdministrativeUnits	124	Unit of administration where a Member State has and/or exercises jurisdictional rights, for local, regional and national governance.

[back to top](#)

[back to overview](#)

Fields

Field	Property name	In feature types	Type	Documentation
admBy_void	-	au:AdministrativeUnit	SmallInteger	This field indicates whether the associated property au:administeredBy, see the corresponding relationship table(s) between auAdmUnitS and the tables containing instances of type au:AdministrativeUnit, is NIL. If the field admBy_void is NULL, then the property is not NIL and the property applies. If the value is '0', the property is NIL with no additional information about the reason for the NIL value. If the value is '1', the property is NIL with a reason of 'Unknown'. If the value is '2', the property is NIL with a reason of 'Unpopulated'. In the GML encoding, this field is represented by the following Xpath expression: 'au:administeredBy/@xsi:nil'.
beginLifespanVersion	beginLifespanVersion	au:AdministrativeUnit	Date	Date and time at which this version of the spatial object was inserted or changed in the spatial data set. In the GML encoding, this field is represented by the following Xpath expression: 'au:beginLifespanVersion'.
beginLifespanVersion_void	-	au:AdministrativeUnit	SmallInteger	This field indicates whether the property in field beginLifespanVersion is NIL. If the field beginLifespanVersion_void is NULL, then the property is not NIL and the value in field beginLifespanVersion applies. If the value is '0', the property is NIL with no additional information about the reason for the NIL value. If the value is '1', the property is NIL with a reason of 'Unknown'. If the value is '2', the property is NIL with a reason of 'Unpopulated'. In the GML encoding, this field is represented by the following Xpath expression: 'au:beginLifespanVersion/@xsi:nil'.
boundary_void	-	au:AdministrativeUnit	SmallInteger	This field indicates whether the associated property au:boundary, see the corresponding relationship table(s) between auAdmUnitS and the tables containing instances of type au:AdministrativeBoundary, is NIL. If the field boundary_void is NULL, then the property is not NIL and the property applies. If the value is '0', the property is NIL with no additional information about the reason for the NIL value. If the value is '1', the property is NIL with a reason of 'Unknown'. If the value is '2', the property is NIL with a reason of 'Unpopulated'. In the GML encoding, this field is represented by the following Xpath expression: 'au:boundary/@xsi:nil'.
coAdminister_void	-	au:AdministrativeUnit	SmallInteger	This field indicates whether the associated property au:coAdminister, see the corresponding relationship table(s) between auAdmUnitS and the tables containing instances of type au:AdministrativeUnit, is NIL. If the field coAdminister_void is NULL, then the property is not NIL and the property applies. If the value is '0', the property is NIL with no additional information about the reason for the NIL value. If the value is '1', the

Publikácia cez ArcGIS

- ☰ A4I_Info
- ☰ adAddress
- ☰ adAddress_buildingOO
- ☰ adAddress_componentOO
- ☰ adAddress_locator
- ☰ adAddress_locator_designator
- ☰ adAddress_locator_name
- ☰ adAddress_locator_name_name
- ☰ adAddress_parcelOS
- ☰ adAddress_position
- ☰ adComponent
- ☰ adComponent_name
- ☰ adComponent_postName
- ☰ adComponent_withinOO
- ☰ adThoroughfName_linkOL
- ☰ auAdmBoundary_admUnitLS
- ☰ auAdmBoundaryL
- ☰ auAdmBoundaryL_nationalLevel
- ☰ auAdmUnit_admBySS
- ☰ auAdmUnitS
- ☰ auAdmUnitS_name
- ☰ auAdmUnitS_nationalLevelName
- ☰ auAdmUnitS_residence
- ☰ auCondominium_admUnitSS
- ☰ auCondominiumS
- ☰ auCondominiumS_name
- ☰ cpBasicPropertyUnit
- ☰ cpCadastralBoundary_parcelLS
- ☰ cpCadastralBoundaryL
- ☰ cpParcel_basPropUnitSO
- ☰ cpParcels
- ☰ cpParcels_refPoint

Editing the InspireView properties

Select one of the following options for defining INSPIRE View service metadata

Enter a url referencing the INSPIRE metadata record describing this INSPIRE View service

Enter all INSPIRE metadata element values, these will be exposed directly in the service capabilities document

Properties of the service

Required fields are marked yellow.

Properties	English
Title	INSPIRE View Service
Abstract	This service provides INSPIRE Data.
Common keywords	WMS,INSPIRE,ViewService,InfoMapAccessService
Access constraints	None
Fees	no conditions apply
Online resource	http://inspiresrv4:6080/arcgis/rest/services/buid454/MapServer/exprts/InspireView/service
External GetFeatureInfo URL	
Authority Name	
Authority URL	
Metadata URL	
Metadata published at (YYYY-MM-DD)	2011-01-01
Metadata contact organisation	Esri
Metadata contact mail	
Service created at (YYYY-MM-DD)	
Service last revised at (YYYY-MM-DD)	
Service published at (YYYY-MM-DD)	2012-05-29
Individual temporal extent value covered by the service (YYYY-MM-DD)	
Begin of temporal extent covered by the service (YYYY-MM-DD)	
End of temporal extent covered by the service (YYYY-MM-DD)	
Degree of conformity	Conform

GEMET keywords

Supported GEMET themes

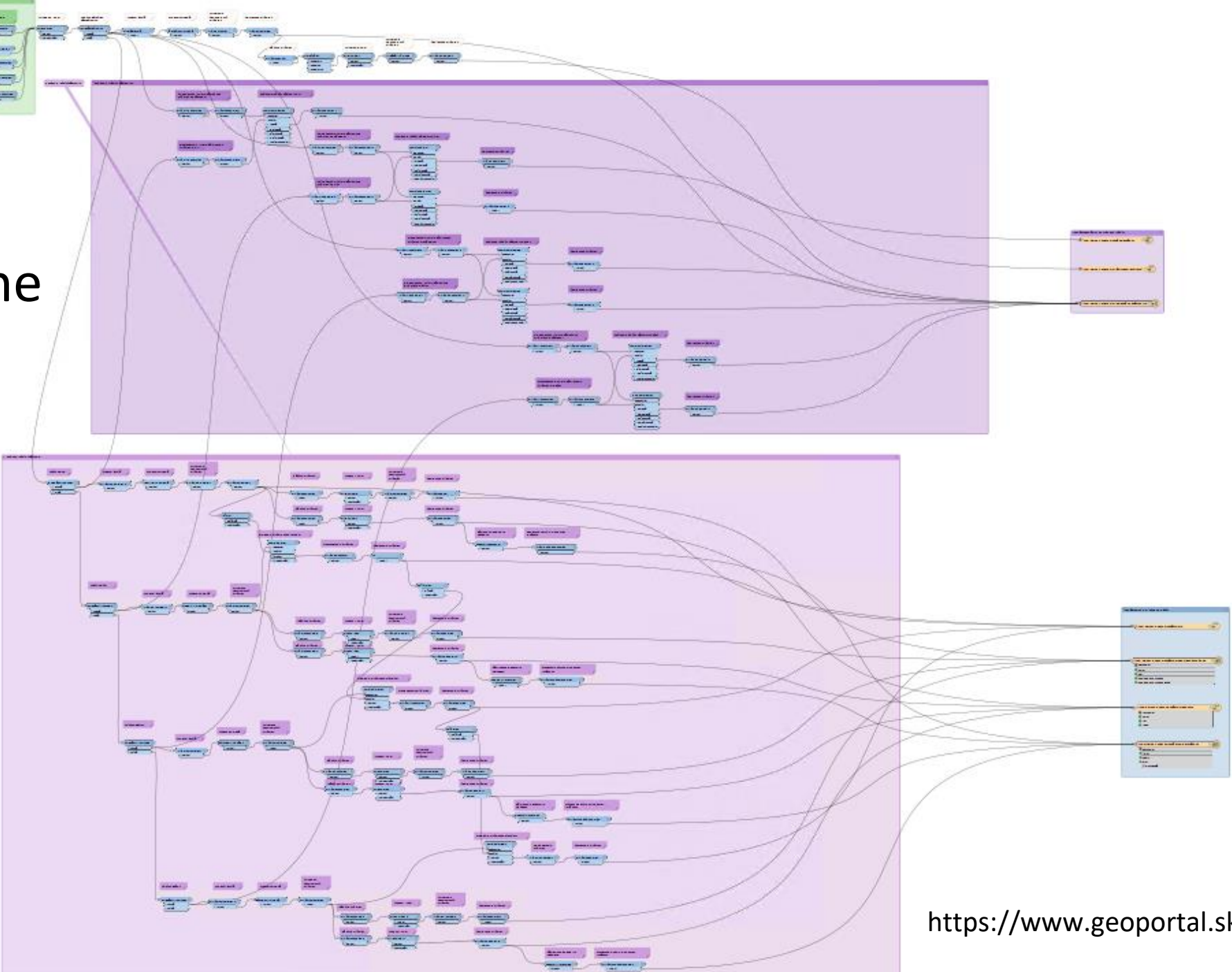
Contact metadata of the service

Properties	English
Name	[your name]
Organization	[your organization]
Position	service administrator

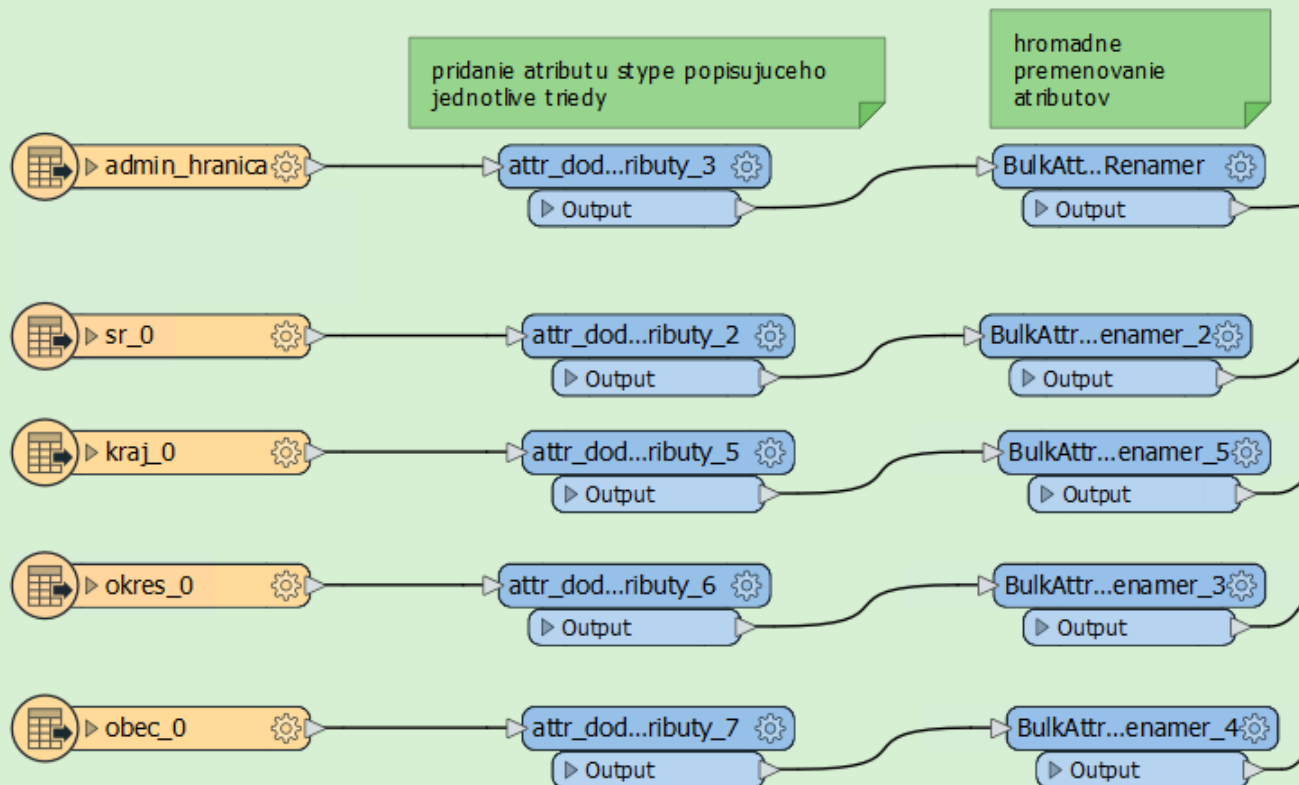
Close Cancel



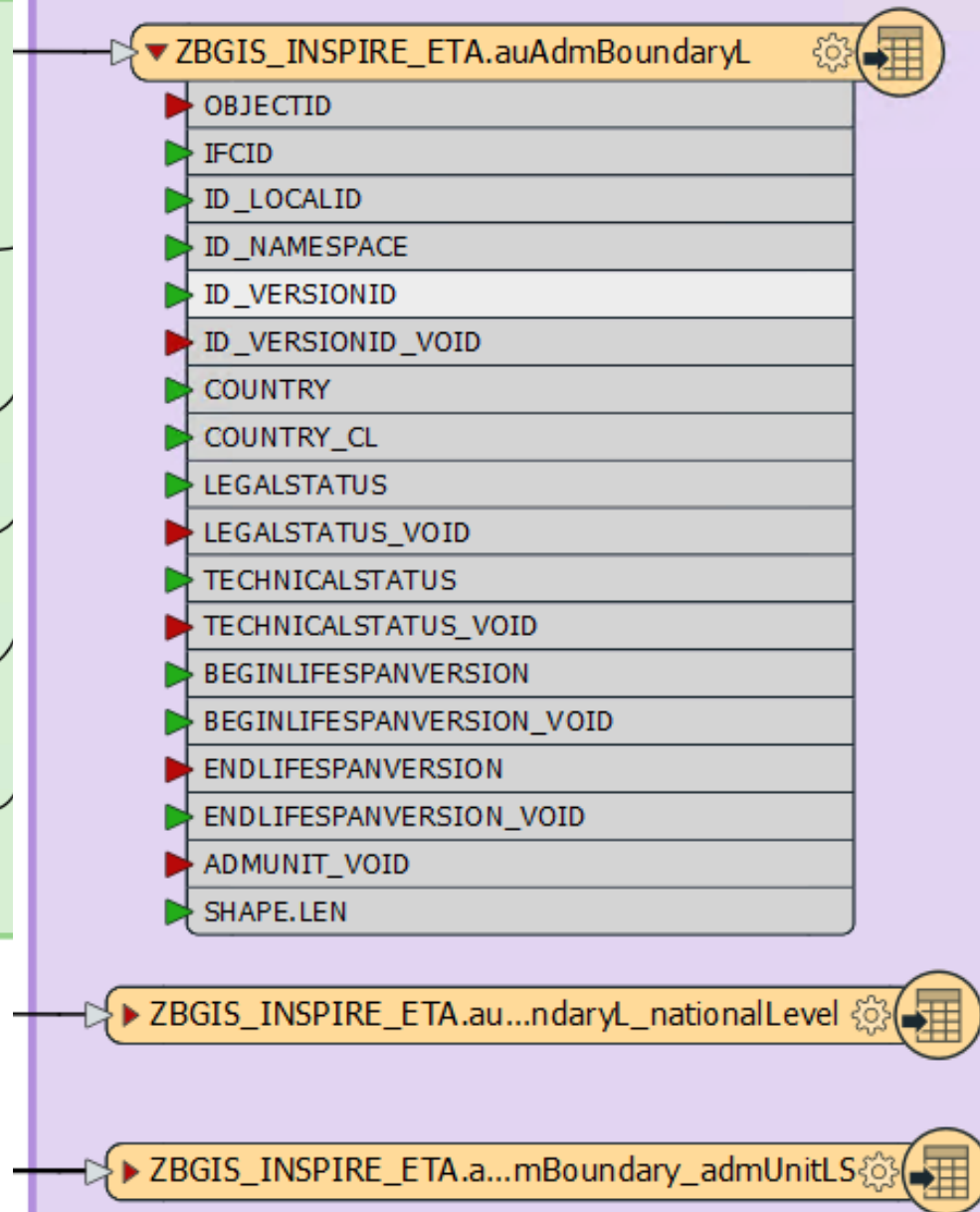
INSPIRE Administratívne jednotky



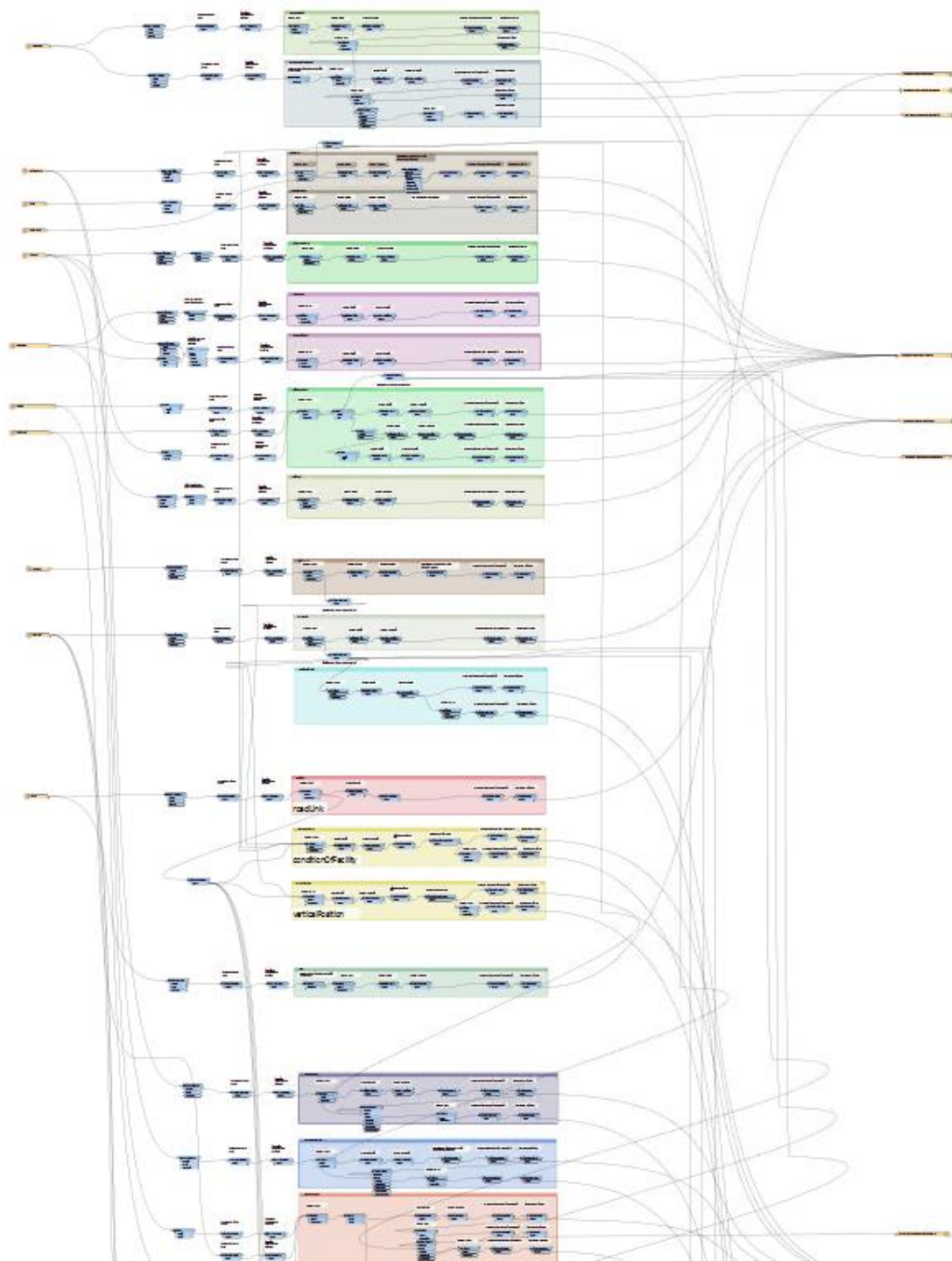
▼ načítanie a delenie



▼ auAdmBoundaryL a pridenene tabulky



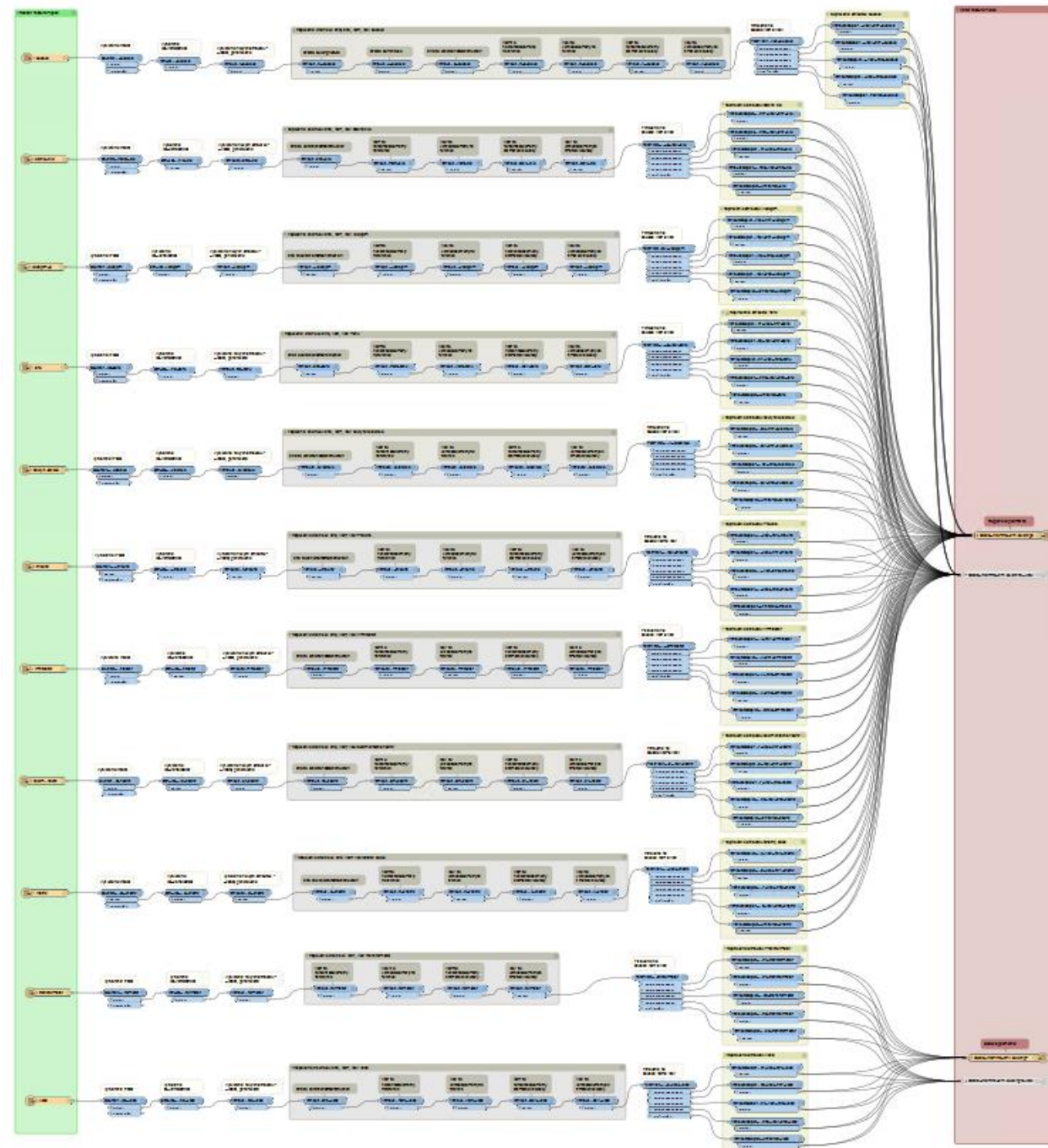
INSPIRE Dopravné siete



INSPIRE Budovy

- Zvážiť využitie:
 - ETL
 - SQL
 - programovacie/skriptovacie jazyky

<https://www.geoportal.sk/sk/inspire/>



Zdroje a literatúra

- <https://inspire.ec.europa.eu/portfolio/training-library>
- <https://inspire.gov.sk/>
- <https://www.geoportal.sk/sk/geoportal.html>
- <https://inspire.ec.europa.eu/>
- <https://geoserver.org/>
- <https://www.freepik.com/>
- <https://mapserver.org/>
- <https://www.deegree.org/>
- <https://www.esri.com/>