

Infrastruktura za zagotovitev INSPIRE skladnih omrežnih storitev

*Infrastructure for the implementation of
Inspire network services*

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- Trenutno stanje infrastrukture

Namen in cilji vzpostavitve infrastrukture

Main purpose and objectives

- Zagotoviti **zahtevam EU Inspire** direktive

To be compliant with EU Inspire directive

- **Test implementacije** Inspire skladnih omrežnih storitev z uporabo/nadgradnjo obstoječe infrastrukture omrežnih storitev Geodetske uprave RS

Test implementation

- Jedro **skupne državne prostorske infrastrukture** za implementacijo Inspire skladnih omrežnih storitev

Common Spatial Data Infrastructure

Omrežne storitve – ISKANJE

Network services - SEARCH

CSW=catalog service for the web

Zahtevek:

<http://prostor3.gov.si/imps/srv/si/csw?request=GetRecordById&service=CSW&elementSetName=full&resultType=results&id=a41113133d61862d3a8d2e3791fd4d941da6b8f9>

Odgovor – metapodatek v XML obliki:

```
▼<csw:GetRecordByIdResponse xmlns:csw="http://www.opengis.net/cat/csw/2.0.2">
  ▼<csw:Record xmlns:geonet="http://www.fao.org/geonetwork" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:ows="http://www.opengis.net/ows"
    xmlns:dct="http://purl.org/dc/terms/">
    <dc:identifier>a41113133d61862d3a8d2e3791fd4d941da6b8f9</dc:identifier>
    <dc:title>GeoServer Web Map Service</dc:title>
    <dc:type>service</dc:type>
    <dc:subject>WFS</dc:subject>
    <dc:subject>WMS</dc:subject>
    <dc:subject>GEOSERVER</dc:subject>
    <dc:format/>
    ▼<dct:abstract>
      A compliant implementation of WMS plus most of the SLD extension (dynamic styling). Can also generate PDF, SVG, KML, GeoRSS
    </dct:abstract>
    <dc:source/>
    <dc:format/>
    <dc:URI protocol="OGC:WMS-1.1.1-http-get-capabilities">http://192.168.255.85/ows2-ins-m/ows?SERVICE=WMS</dc:URI>
    <dc:URI protocol="application/vnd.ogc.wms_xml" description="http://192.168.255.85/ows2-ins-m/ows?SERVICE=WMS">http://192.168.255.85/ows2-ins-
      m/ows?SERVICE=WMS</dc:URI>
    </csw:Record>
  </csw:GetRecordByIdResponse>
```

Omrežne storitve – PREGLED

Network services - VIEW

WMS = *web map service*

Zahtevek:

http://prostor4.gov.si/ows2-inspire/wms?LAYERS=inspire_wms%3AAU.AdministrativeUnit&STYLES=AdministrativeUnit4th&TRANSPARENT=TRUE&SERVICE=WMS&VERSION=1.1.1&REQUEST=GetMap&FORMAT=image%2Fpng&SRS=EPSG%3A3912&BBOX=452638.53596709,109457.70379013,478303.17062969,116054.66142849&WIDTH=1455&HEIGHT=374

Odgovor – georeferencirana slika:



Komponente Inspire infrastrukture

Main components of the Inspire infrastructure

EU Inspire spletna stran

<http://inspire.ec.europa.eu/>



Slovenski Inspire geoportal

<http://www.geoportal.gov.si/>



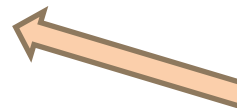
EU Inspire geoportal

<http://inspire-geoportal.ec.europa.eu/>



Slovenski Inspire
metapodatkovni sistem

<http://prostor3.gov.si/imps/>



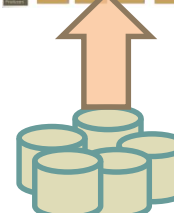
ELF

<http://www.elfproject.eu/>



Inspire omrežne storitve

<https://prostor3.gov.si/isv-test/inspire.html>



Skupna prostorska podatkovna infrastruktura

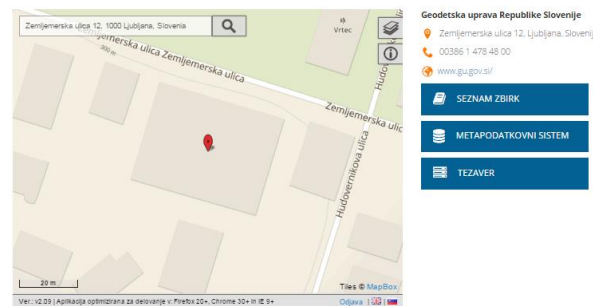
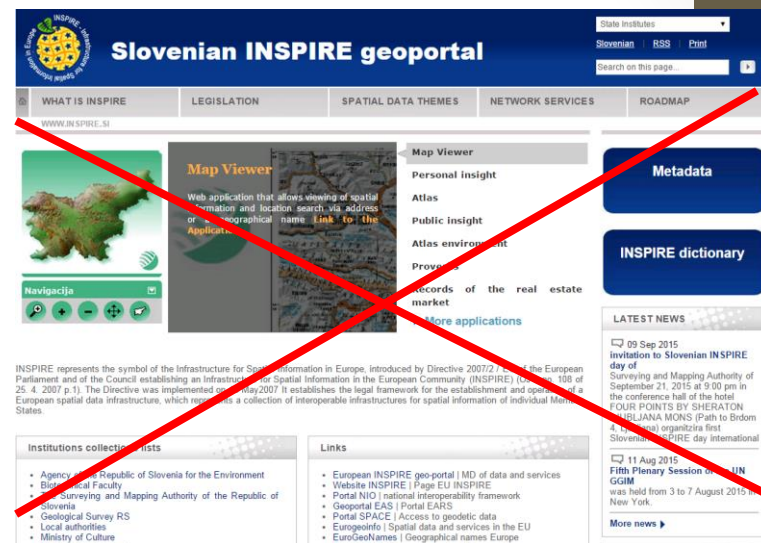
Zbirke prostorskih podatkov

UPRAVLJAVCI PROSTORSKIH PODATKOV

Slovenski Inspire Geoportal

Slovenian Inspire Geoportal

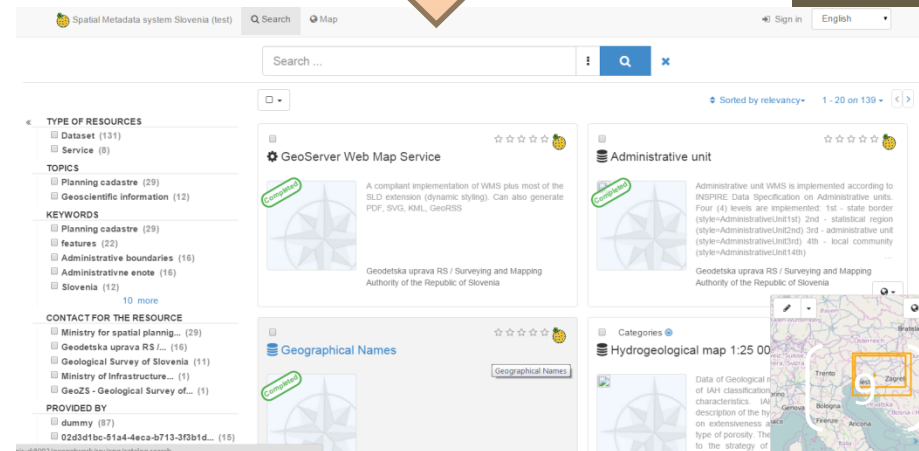
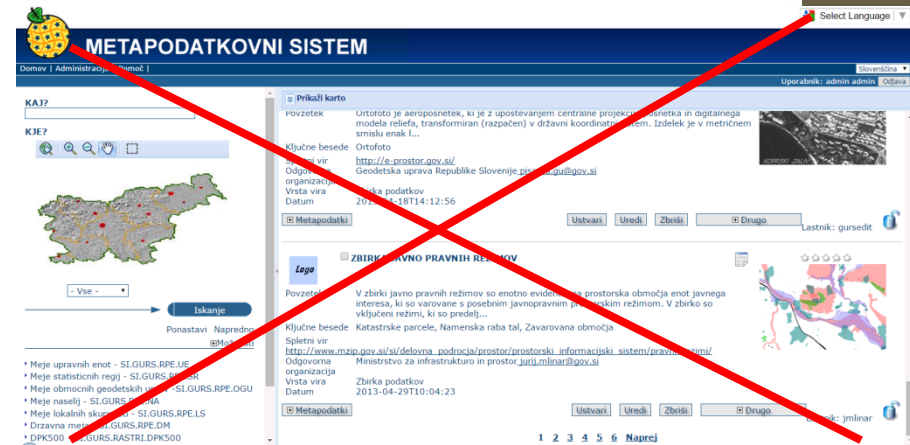
- <http://www.geoportal.gov.si/>
- Trenutna verzija obsega predvsem osnovne informacije, povezave do aplikacij in **aktualne novice** povezane z Inspire področjem
- Prenova geoportala:
 - Pregled in povezava do omrežnih storitev
 - **Katalog imenskih prostorov (namespace)**
 - Prenovljen katalog podatkov
 - Dostop do spletnih zemljevidov



Slovenski metapodatkovni sistem

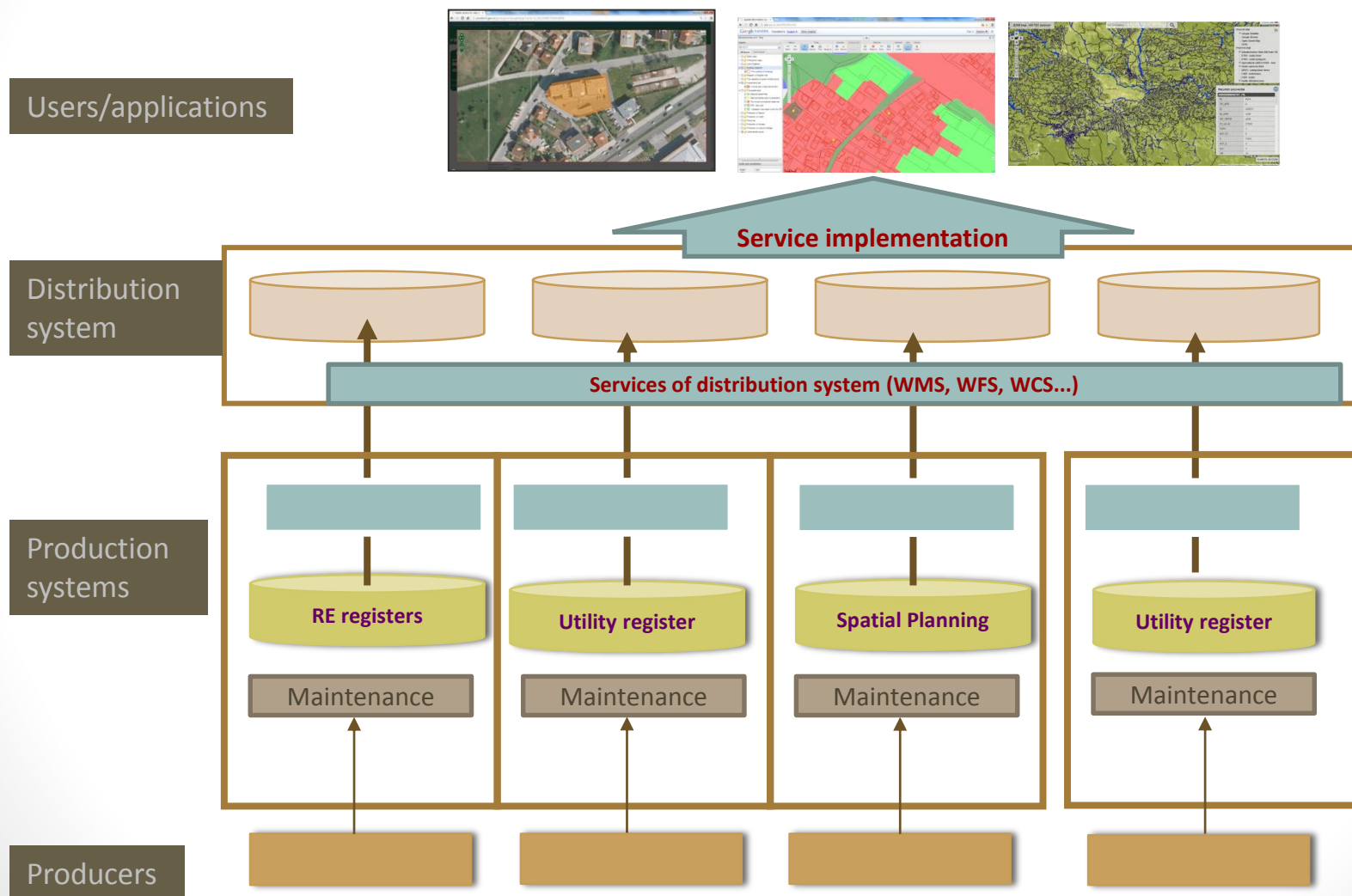
Slovenian national metadata system

- Geonetwork -
<http://prostor3.gov.si/imps/>
- Harvesting iz drugih metapodatkovnih strežnikov in strežnikov omrežnih storitev
- Harvesting v EU Inspire geoportal
<http://inspire-geoportal.ec.europa.eu/>
- Predviden prehod na novo verzijo Geonetwork



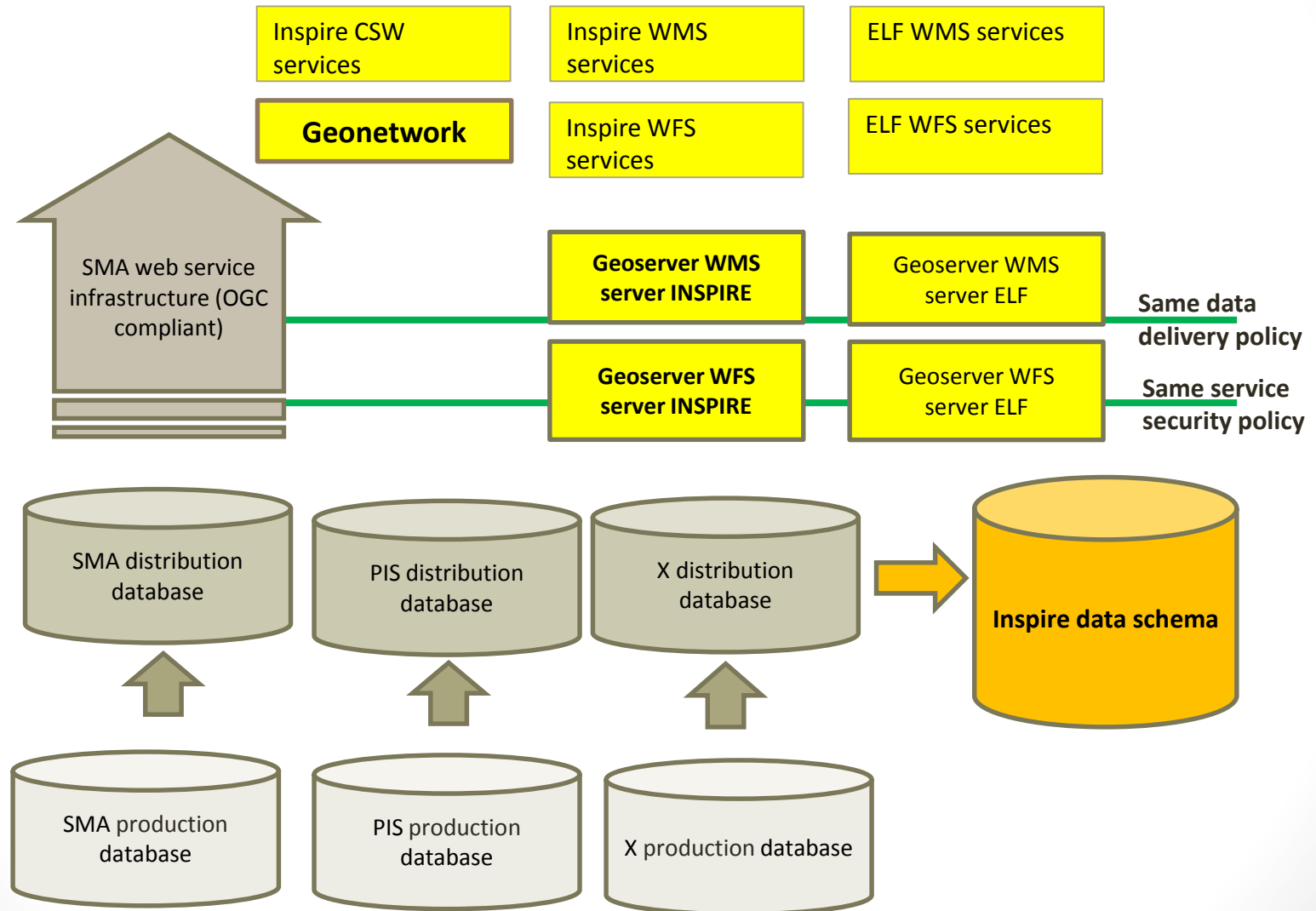
Skupna prostorska podatkovna infrastruktura

Common Spatial Data Infrastructure



Model Inspire infrastrukture

Model of the Inspire infrastructure



Implementacija spletnih storitev prenosa

Implementation of download services

- Izvorni podatki – **distribucijski sistem**
- Transformacija podatkov v Inspire **prilagojene podatkovne sheme** (Oracle materializirani view)
- Uporaba Geoserver **aplikacijskih shem** za definicijo kompleksnih storitev tipa WFS - *app-schema plugin*
- WFS sheme definirane z XSD shemami (repozitorij aplikacijskih shem <http://inspire.ec.europa.eu/schemas/>)
- Inspire podatkovna specifikacija **ver. 4.0**
- Uporaba **Inspire registra** - href kazalci (<http://inspire.ec.europa.eu/registry/>)
- Uporaba **varnih spletnih storitev** (varnostni žeton, varna spletna povezava – digitalni aplikacijski certifikat)

Tehnologija modeliranja WFS servisov

Modelling technology of WFS services

- HUMBOLT Hale Alignment Editor
- Modeliranje, dokumentacija preslikav

	Source Type	Source properties	Target type	Target properties	Relation name	Cell explanation
	CP		CadastralParcel		Retype	Creates a 'CadastralParcel' instance for each 'CP' instance in the source data set.
	CP	ID	CadastralParcel	inspireId	Inspire Identifier	The 'inspireId' property is populated with an Inspire Identifier composed as follows: 1. localId contains the value of the 'ID' property. 2. The namespace is SI:GURS:ZK:CadastralParcel. 3. No reason for the missing version number is given.
	CP	LABEL	CadastralParcel	label	Rename	For each value in 'LABEL' adds the same value to the 'label' property. If necessary a conversion is applied.
	CP	GEOMETRY	CadastralParcel	geometry.MultiGeometry	Rename	For each value in 'GEOMETRY' adds the same value to the 'MultiGeometry' property. If necessary a conversion is applied.
	CP	BEGINDATE	CadastralParcel	beginLifespanVersion	Date extraction	Populates the 'beginLifespanVersion' property with a date created by parsing the 'BEGINDATE' property using the format 'dd-MM-yyyy'.
	CP	ZONECODE	CadastralParcel	zoning	Rename	For each value in 'ZONECODE' adds the same value to the 'zoning' property. If necessary a conversion is applied.
	CP	REFERENCE	CadastralParcel	nationalCadastralReference	Rename	For each value in 'REFERENCE' adds the same value to the 'nationalCadastralReference' property. If necessary a conversion is applied.

Pregled Inspire serviso – aneks I

Overview of the Inspire services – annex I

Theme	Spatial Database	Institution	Namespace localID	CSW (iD)	Inspire WMS	Inspire WFS
I.3 Geographical Names	REZI	GURS	SI.GURS.REZI.NPEN_MID	0f5fd804-9073-42d9-ad3c-b273f59fc16c	GN.GeographicalNames	inspire_gn:NamedPlace
I.4 Administrative Units	RPE	GURS	SI.GURS.RPE.DRDR_ID SI.GURS.RPE.D44D44_ID SI.GURS.RPE.UEUE_ID SI.GURS.RPE.OBOB_ID	25e80f41-8348-4759-bac1-ec56c7223509	AU.Administrative Unit (OPEN)	inspire_au:Administrative Unit (OPEN)
I.5 Address	RPE (EHIŠ)	GURS	SI.GURS.RPE.ADHS_MID	25e80f41-8348-4759-bac1-ec56c7223509	AD.Address	inspire_addr:Address inspire_addr:AddressArea Name inspire_addr:Thoroughfare Name
I.6 Cadastral Parcel	ZK	GURS	SI.GURS.ZK.CPSIFKO_PARCELA	3e0b727e-49d5-4c7f-835b-823c5392a307	CP.CadastralParcel	inspire_cp:CadastralParcel
I.7 TN Transport Networks	ZK GJI	GURS	SI.GURS.GJI.RLID	923dfad8-6172-4ffa-be2a-4436e26a8d78	TN.RoadTransport Network.RoadLink	inspire_rtn:RoadLink inspire_rtn:FormOfWay
9. Protected Sites	PIS	MOP	SI.MOP.PIS.PS	1bf0893d-124c-43e5-8aaa-0cb22b21b759	Modelling	Modelling

Pregled Inspire serviso – aneks II in III

Overview of the Inspire services – annex II and III

Theme	Spatial Database	Institution	Namespace localID	CSW (iD)	Inspire WMS	Inspire WFS
II.2 Land Cover	RABA-KGZ	MKGP	SI.MKGP.KGZ RABA_PID	67cea1ee-8f9d-463d-b5de-87518ec50b33	Modelling	Modelling
III.2 Building	KS	GURS	SI.GURS.KS SID	5aa2b97b-2ea3-427f-a9fb-d7827c61c115	BU.Building	inspire_bu-core2d:Building
III.4 Land Use	PIS	MOP	SI.MOP.PIS.ZE FEATUREID		Testing	Testing
III.6. Utility and Government Services Electricity Network	ZK GJI	GURS	SI.GURS.GJI.UL.EN ID	923dfad8-6172-4ffa-be2a-4436e26a8d78	US.ElectricityNetwork.ElectricityCable	inspire_us-net-el:ElectricityCable
III.6 ... Sewer Network	ZK GJI	GURS	SI.GURS.GJI.UL.SW ID	923dfad8-6172-4ffa-be2a-4436e26a8d78	Modelling	Modelling
III.6 ... Water Network	ZK GJI	GURS	SI.GURS.GJI.UL.WA ID	923dfad8-6172-4ffa-be2a-4436e26a8d78	Modelling	Modelling

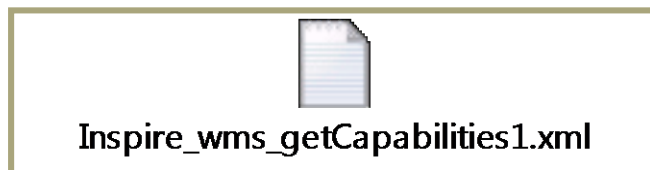
Inspire omrežni strežnik

Inspire network servers

- WMS server

Zahtevek: <http://prostor4.gov.si/ows2-ins-m/wms?&REQUEST=GetCapabilities>

Odgovor:



- WFS server

Zahtevek: <http://prostor4.gov.si/ows2-ins/wfs?&REQUEST=GetCapabilities>

Odgovor:



Testna spletna aplikacija

Test web application

<https://prostor3.gov.si/isv-test/inspire.html?lang=en>

The screenshot displays the INSPIRE web application interface. On the left, a map of Slovenia is shown with regional boundaries labeled: Koroška, Podravska, Gorenjska, Savinjska, Zasavska, Goriška, Osrednjeslovenska, Notranjsko-kraška, Obalno-kraška, and Jugovzhodna Slovenija. A search bar at the top center contains the text "Search by address...". On the right, a panel titled "Base layers" shows "DOF5" selected, and "Overlays" includes "NamedPlace" and "Address". Below this, an "Identify result" panel is open, showing a tree view of metadata for a "Building" feature. The metadata includes properties like "beginLifespanVersion", "conditionOfConstruction", "elevation", "inspireId", "LOCALID", "NAMESPACE", "NUMBEROFDWELLINGS", "NUMBEROFBUILDINGUNITS", "NUMBEROFFLOORSABOVEGROUND", "geometry2D", "BuildingGeometry2D", "geometry", "Polygon", "exterior", "LinearRing", "POSList", "REFERENCEGEOMETRY", "horizontalGeometryReference", and "horizontalGeometryEstimatedAccuracy".

INSPIRE

Search by address...

Koroška Podravska

Gorenjska Savinjska

Zasavska

Goriška Osrednjeslovenska

Notranjsko-kraška Obalno-kraška Jugovzhodna Slovenija

10 km

Application optimized for: Firefox 20+, Chrome 30+ and IE 9+

Base layers

DOF5

Overlays

NamedPlace

Address

Identify result Tree

Address CadastralParcel Building RoadLink

FeatureCollection

member

Building

beginLifespanVersion

conditionOfConstruction

elevation

Elevation

elevationReference

ELEVATIONVALUE > 289

inspireId

Identifier

LOCALID > 21439987

NAMESPACE > SI.GURS.KS

NUMBEROFDWELLINGS > 5

NUMBEROFBUILDINGUNITS > 5

NUMBEROFFLOORSABOVEGROUND > 11

geometry2D

BuildingGeometry2D

geometry

Polygon

exterior

LinearRing

POSList > 462995.85 100380.26 462985.44 100347.3 463027.19 100334.1 463029.48 100341.43 463031.3 100340.86 463035.17 100353.22 463033.35 100353.79 463037.52 100367.11 463009.83 100375.85 463011.27 100380.45 463009.83 100380.92 463015.68 100399.57 463014.34 100399.99 463008.49 100381.35 463002.89 100383.15 463001.5 100378.48 462995.85 100380.26

REFERENCEGEOMETRY > true

horizontalGeometryReference

horizontalGeometryEstimatedAccuracy

Testna izdelava ELF spletnih storitev

Test implementation of ELF services

- **AdministrativeUnit**
 - AdministrativeUnit
- **Addresses**
 - Addresses
 - AddressAreaName
 - AdminUnitName
 - ThoroughfareName
- **CadastralParcel**
 - CadastralParcel
- **GeographicalNames**
 - NamedPlace
- **RoadTransportNetwork**
 - RoadLink

