



Državna geodetska uprava



Harmonizacija podataka prema INSPIRE-u

Izv. prof. dr. sc. Vlado Cetl



Sveučilište u Zagrebu
Geodetski fakultet



Uvod

- Svrha projekta:
 - Izraditi Smjernice za transformaciju prostornih podataka u skladu s INSPIRE specifikacijama koje će pomoći subjektima NIPP-a u harmonizaciji i transformaciji podataka u skladu sa zahtjevima INSPIRE Direktive



Sveučilište u Zagrebu Geodetski fakultet

Kačićeva 26, 10 000 Zagreb

tel.: + 385 (1) 4639 191

faks: + 385 (1) 4828 081

TEHNIČKO IZVJEŠĆE



Državna geodetska uprava



NIPP specifikacija za transformacije prema INSPIRE-u

Zagreb, 2015.

Voditelj projekta:

Izv. prof. dr. sc. Vlado Cetl, dipl. ing. geod.

Suradnici:

Dr. sc. Hrvoje Tomić, dipl. ing. geod.

Mr. sc. Dragan Divjak, dipl. ing. geod.

Saša Vranić, dipl. ing. geod.

Goran Jurakić, dipl. ing. geod.



Sveučilište u Zagrebu
Geodetski fakultet



INSPIRE i NIPP

- INSPIRE Direktiva 2007
- NIPP (Zakon o državnoj izmjeri i katastru nekretnina, 2007, Zakon o NIPP-u, 2013)
- Izgradnja NIPP-a podrazumijeva **harmonizaciju** postojećih izvora prostornih podataka sukladno INSPIRE provedbenim pravilima
- INSPIRE Direktiva **ne zahtijeva od zemalja članica promjenu modela podataka** u kojem se oni pohranjuju i održavaju već samo njihovu harmonizaciju i stavljanje na raspolaganje u skladu s INSPIRE modelima podataka



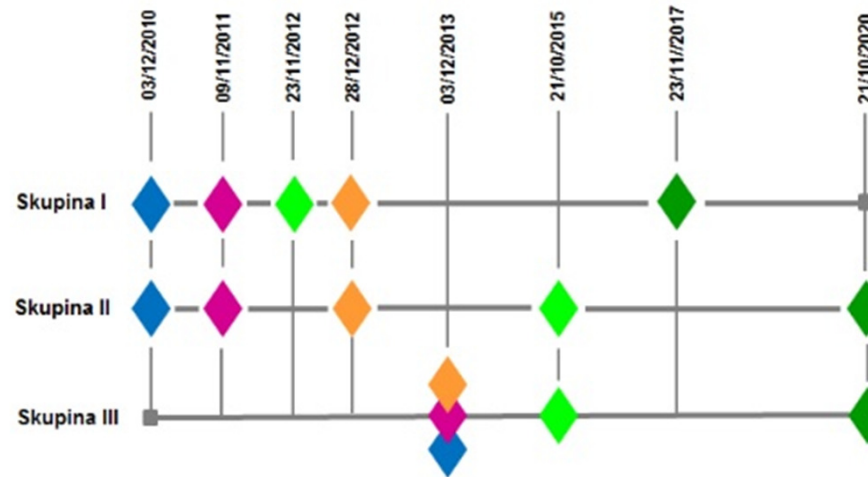
INSPIRE i NIPP

Prilog I	1. Koordinatni referentni sustavi
	2. Sustavi geografskih mreža
	3. Geografska imena
	4. Upravne jedinice
	5. Adrese
	6. Katastarske čestice
	7. Prometne mreže
	8. Hidrografija
	9. Zaštićena područja
	10. Podaci o minski sumnjivim područjima
Prilog II	1. Visine
	2. Pokrov zemljišta
	3. Ortofotosnimke
	4. Geologija

Prilog III	1. Prostorne jedinice za statistiku
	2. Zgrade
	3. Tlo
	4. Korištenje zemljišta
	5. Ljudsko zdravlje i sigurnost
	6. Komunalne i javne usluge
	7. Sustavi za nadzor okoliša
	8. Proizvodna i industrijska postrojenja
	9. Sustavi za poljoprivredu i akvakulturu
	10. Rasprostranjenost stanovništva – demografija
	11. Područja upravljanja/zaštićena područja/uređena područja i jedinice za izvješćivanje
	12. Područja prirodnih opasnosti
	13. Atmosferski uvjeti
	14. Meteorološko-geografska obilježja
	15. Oceanografsko-geografska obilježja
	16. Morske regije
	17. Biogeografske regije
	18. Staništa i biotopi
	19. Rasprostranjenost vrsta
	20. Izvori energije
	21. Izvori minerala



INSPIRE i NIPP



Pretraživanje metapodataka treba biti dostupno za skupove prostornih podataka i usluge.



Skupovi prostornih podataka trebaju biti dostupni za pretraživanje i pregled na INSPIRE geoportalu (podaci ne trebaju još biti usklađeni sa provedbenim pravilima UK-MSPPIU).



Skupovi prostornih podataka moraju biti dostupni za preuzimanje i transformaciju¹ (kad god je to primjenjivo) na INSPIRE geoportalu (podaci ne trebaju još biti usklađeni sa provedbenim pravilima UK-MSPPIU²).



Novo prikupljeni i intenzivno restrukturirani skupovi prostornih podataka moraju biti usklađeni s provedbenim pravilima UK-MSPPIU (uključujući metapodatke za međuoperativnost) i dostupni kroz mrežne usluge.



Svi skupovi prostornih podataka moraju biti usklađeni s provedbenim pravilima UK-MSPPIU (uključujući metapodatke za međuoperativnost) i dostupni kroz mrežne usluge.



Sveučilište u Zagrebu
Geodetski fakultet



INSPIRE i NIPP

IV. RAZVOJ NIPP-a

Članak 30.

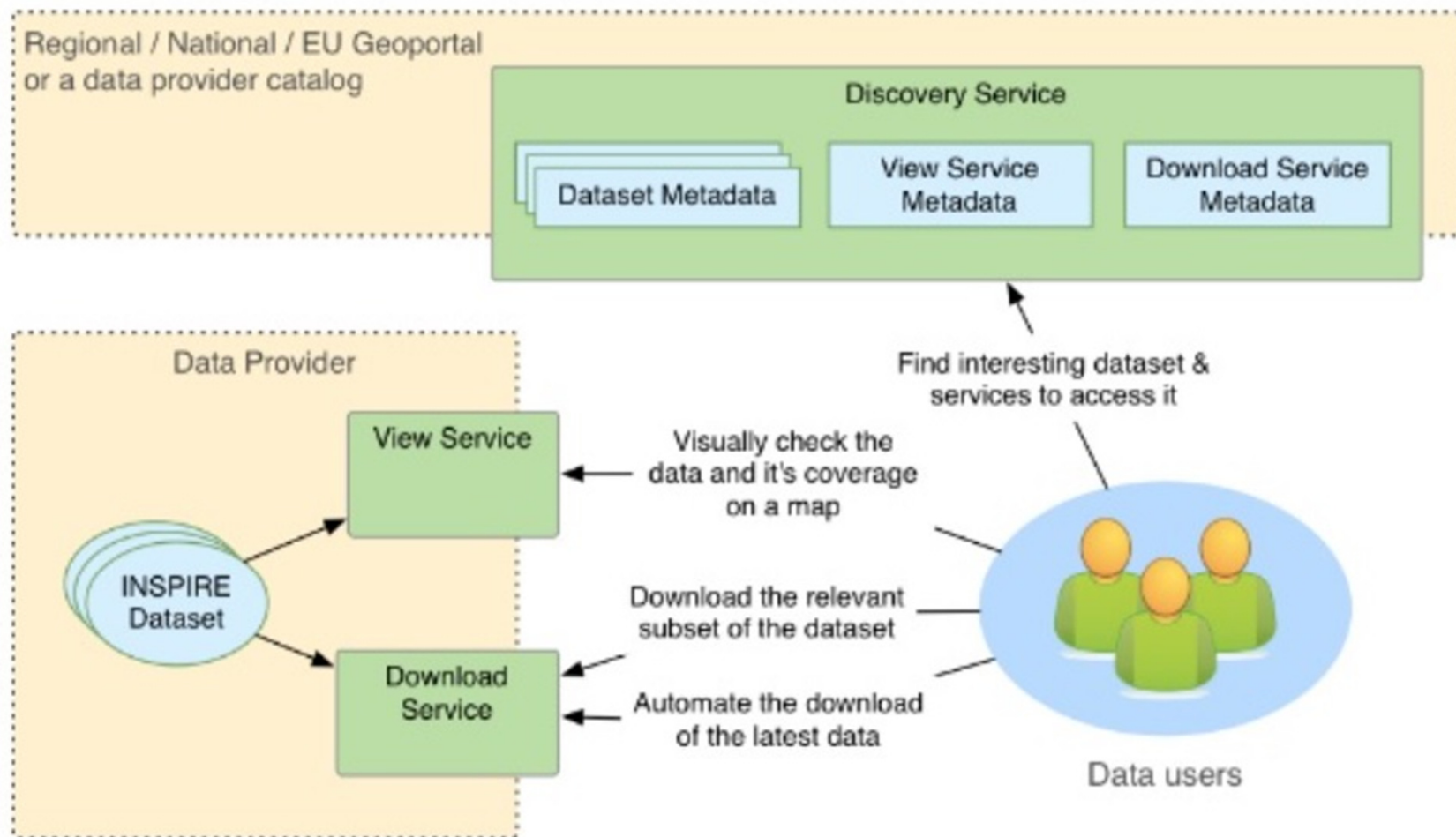
Razvoj NIPP-a bit će usklađivan s razvojem INSPIRE-a.

Članak 31.

(1) Nacionalna kontaktna točka je dužna kontinuirano pratiti razvoj infrastrukture prostornih podataka na međunarodnoj razini, razini Europske unije i nacionalnoj razini, kao i sve međunarodne akte, akte Europske unije i nacionalne akte koji su od neposrednog interesa za NIPP te njihovu primjenu.



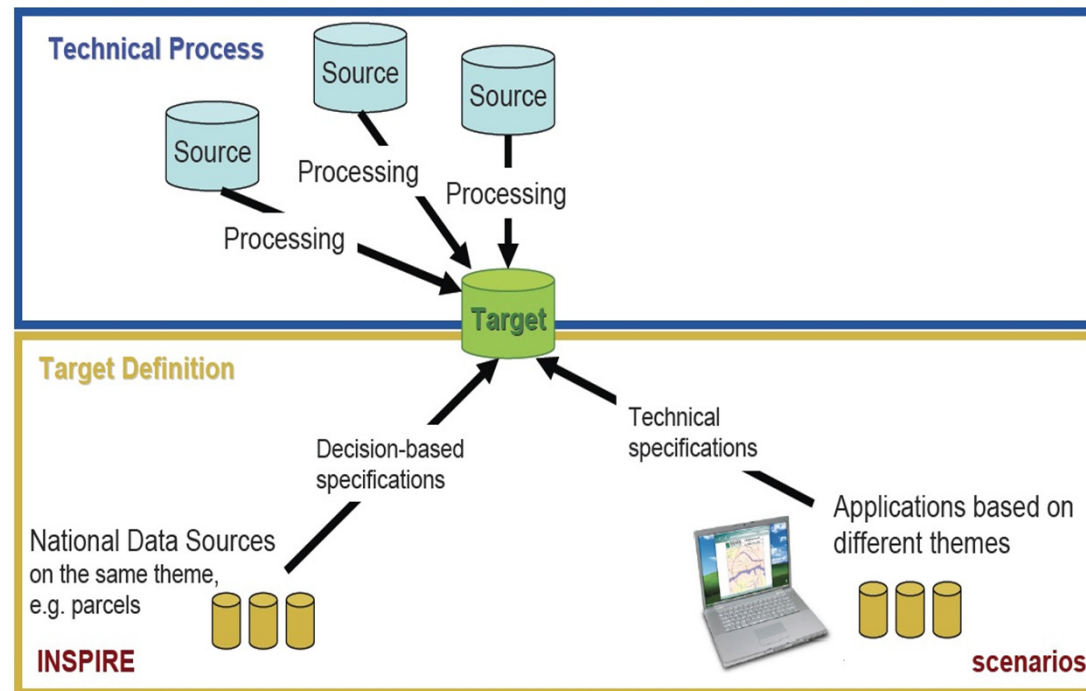
INSPIRE i NIPP u praksi



HARMONIZACIJA

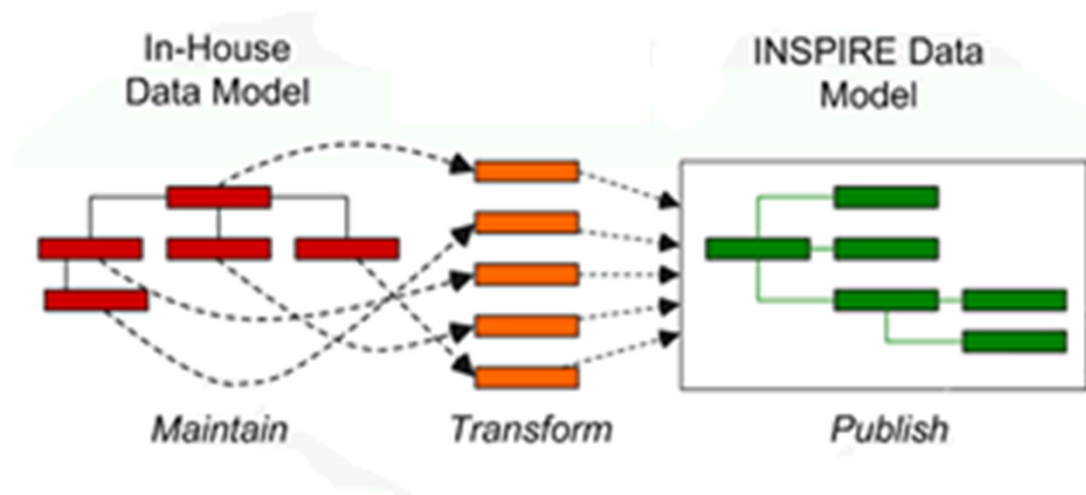
INSPIRE: “Providing access to spatial data through network services in a representation that allows for combining it with other harmonised data in coherent way by using a common set of data product specifications”

- ***Evaluacija***
- ***Mapiranje***
- ***Transformacija***
- ***Validacija***
- ***Publikacija***

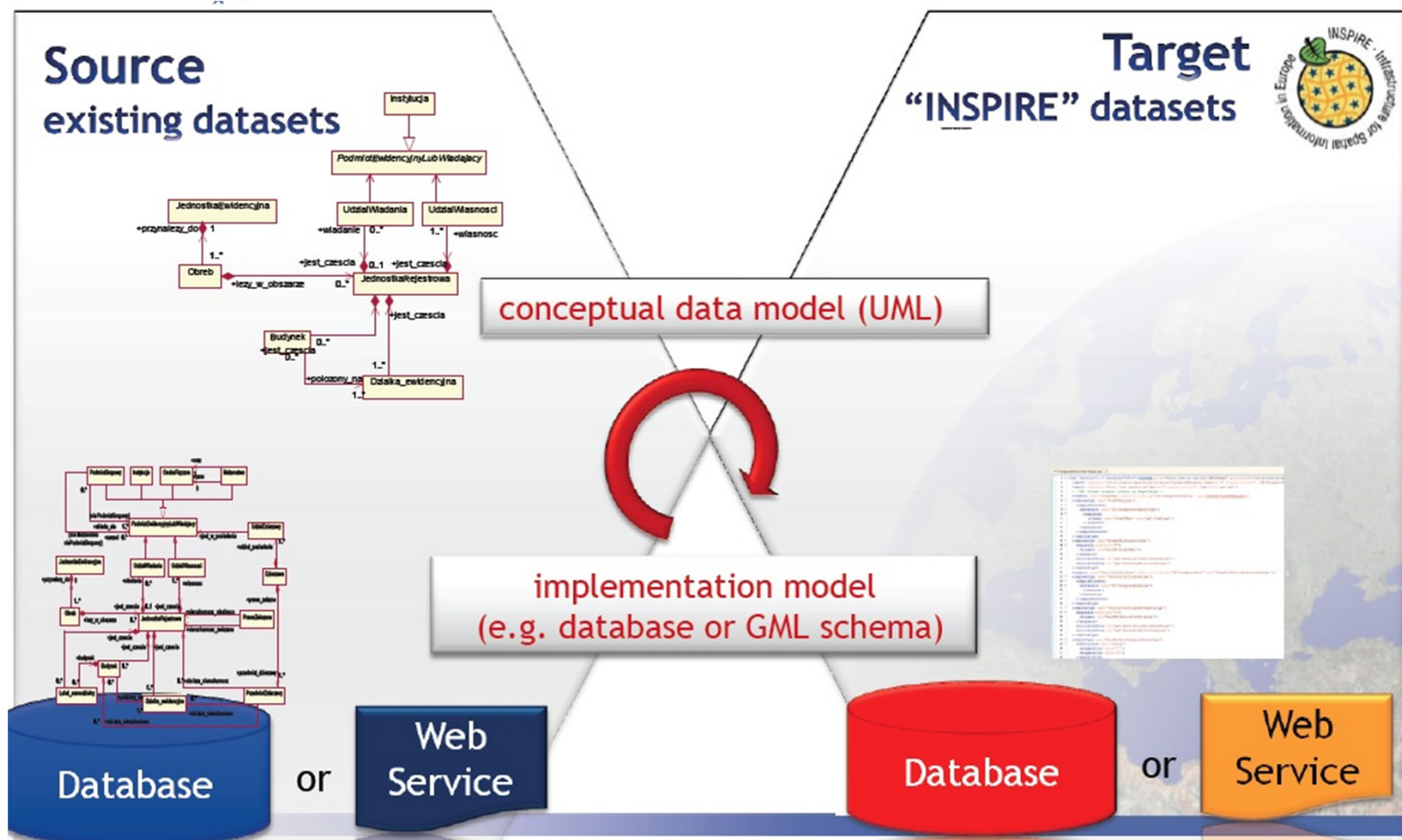


TRANSFORMACIJA

1. „On the fly”
 - OGC Web Processing Service (WPS)
2. „Offline”
 - ETL (Extract, Transform, Load)
 - Mapiranje i izrada tablica podudarnosti (Mapping tables)
 - Transformacija, validacija i publiciranje (WMS, WFS, ...)

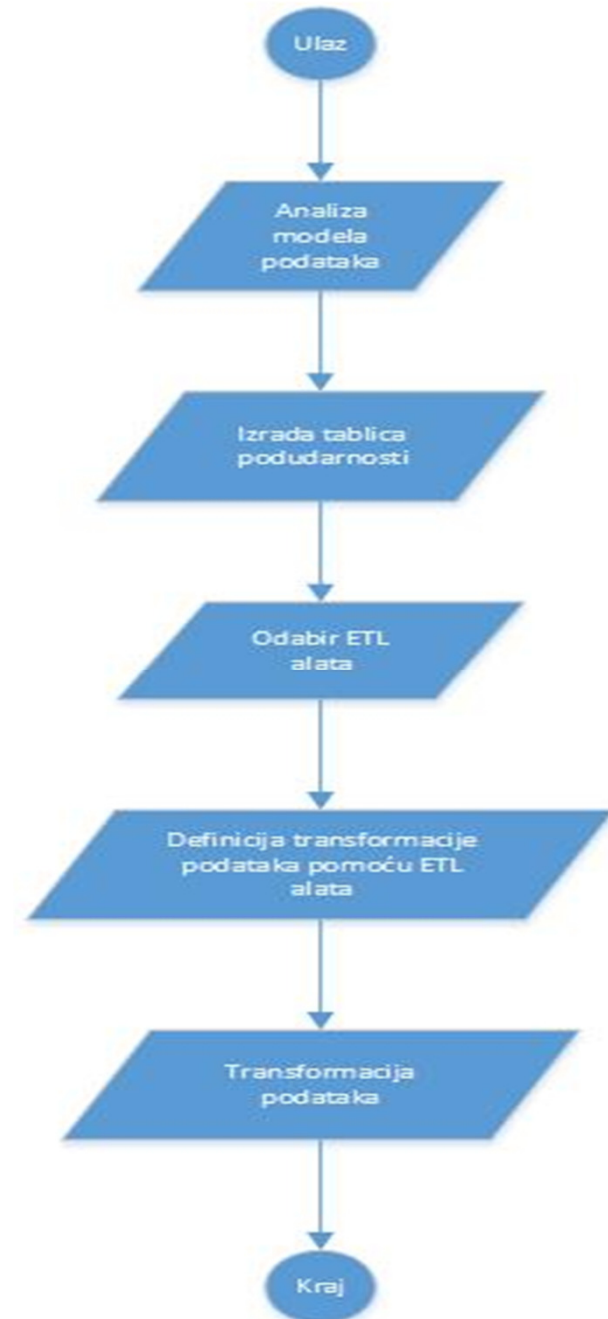


TRANSFORMACIJA

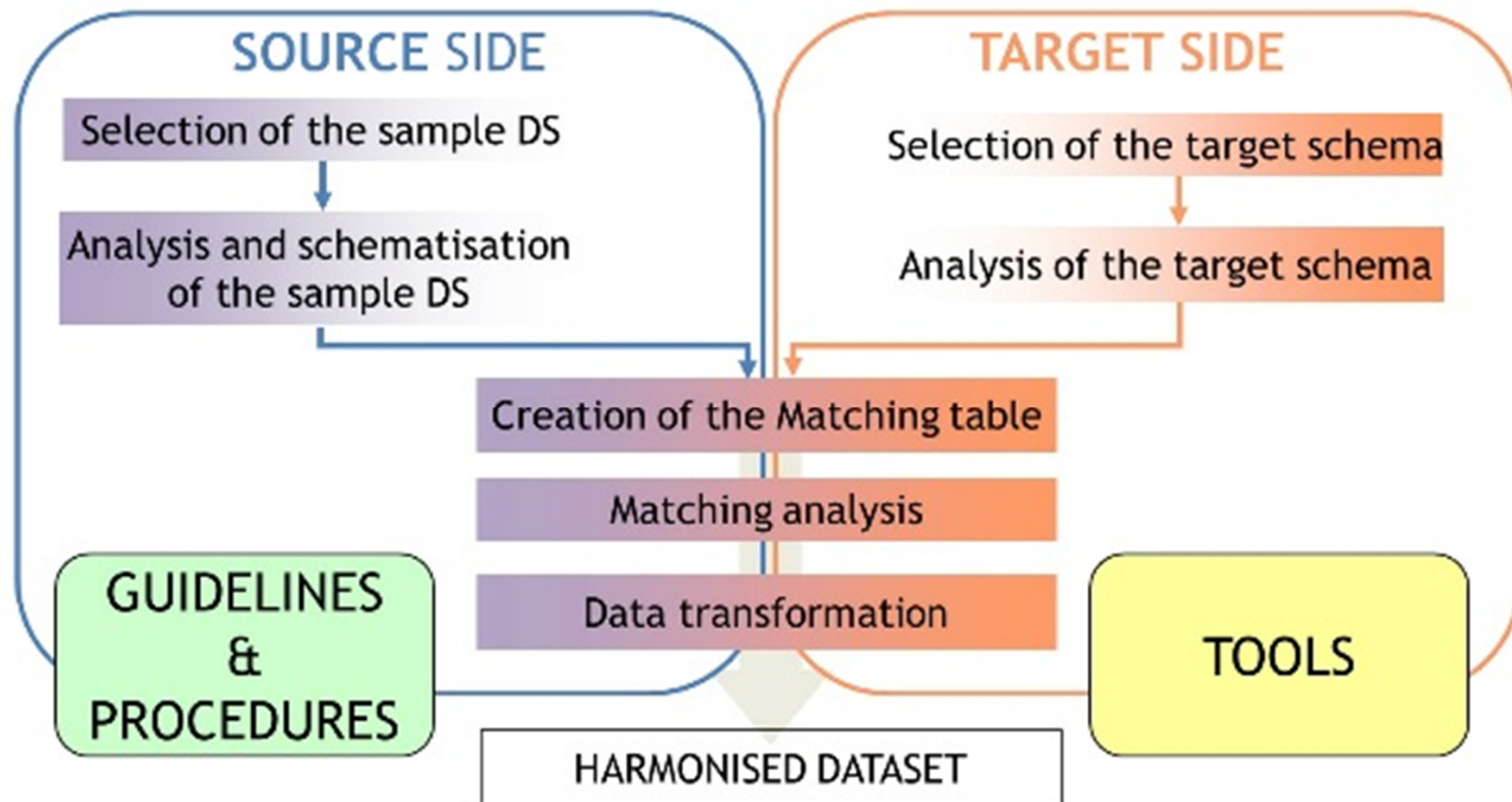


TRANSFORMACIJA

1. Analiza podataka i identifikacija izvornog modela podataka
2. Identifikacija i analiza ciljnog modela podataka
3. Izrada tablice podudaranja (Mapping table)
4. Analiza i rješavanje problema
5. Transformacija s odabranim alatom



TRANSFORMACIJA



TRANSFORMACIJA

Subjekti NIPP-a:

1. Identificirati podatke za koje su nadležni i harmonizirati ih sukladno INSPIRE specifikacijama podataka
2. Opisati podatke i usluge iz svoje nadležnosti sukladno NIPP specifikaciji za metapodatke, a koja je u skladu sa specifikacijama za metapodatke INSPIRE-a
3. Publicirati i održavati metapodatke sukladno INSPIRE specifikacijama za usluge pronalaženja
4. Publicirati podatke sukladno INSPIRE specifikacijama za mrežne usluge (pregled i preuzimanje)



TRANSFORMACIJA

INSPIRE Geographical Names			
Naziv tablice	Naziv atributa	Brojnost	Obaveznost
PronunciationOfName	pronunciationSoundLink	0..1	voidable
	pronunciationIPA	0..1	voidable
GeographicalName	language	1	voidable
	nativeness	1	voidable
	nameStatus	1	voidable
	sourceOfName	1	voidable
	pronunciation	1	voidable
	spelling	1..*	
	grammaticalGender	0..1	voidable
grammaticalNumber	0..1	voidable	
SpellingOfName	text	1	
	script	1	voidable
	transliterationScheme	0..1	voidable
NamedPlace	beginLifespanVersion	1	voidable
	endLifespanVersion	0..1	voidable
	geometry	1	
	inspireId	1	
	leastDetailedViewingResolution	0..1	voidable
	localType	1..*	voidable
	mostDetailedViewingResolution	0..1	voidable
	name	1..*	
	relatedSpatialObject	0..*	voidable
	type	1..*	voidable

Model podataka Geografskih imena		
Naziv tablice	Naziv atributa	Napomena
IzgovorImena	zvucniZapis	
	IPA_Zapis	
Geografskolme	jezik	
	prirodalmena	
	statusImena	
	0	
	izgovorImena	
	pisanjelmena	
	rodImenice	
brojnostImenice		
Pisanjelmena	0	
	pismo	
	0	
ImenovanoMjesto	pocetakObjekta	
	krajObjekta	
	geometrija	
	geografskiIdentifikator	
	najsitnijeMjeriloPrikaza	
	vrstaObiljezja	
	0	
	0	
	0	
	0	



TRANSFORMACIJA

Kako?

Guidelines	Support
INSPIRE Data Specifications (DS) Technical Guidelines for the Annex I, II and III Spatial Data Themes.	<ul style="list-style-type: none">• Provide guidelines for the implementation of the provisions laid down in the Implementing Rule for spatial data sets and services of the INSPIRE Directive (ISDSS Regulation).• Include additional requirements and recommendations that, although not included in the Implementing Rule, are relevant to guarantee or to increase data interoperability.• Help the conformance testing process providing an Abstract Test Suite (ATS) which include a set of tests to be applied on a data set to evaluate whether it fulfils the requirements included in the relevant DS and the corresponding parts of ISDSS Regulation.



How to read the data specifications

Foreword

General Executive Summary

Theme-specific Executive Summary

1. Scope

2. Overview (incl. 2.2 informal description)

3. Specification scopes

4. Identification information

5. Data content and structure

5.2 Basic notions

5.3 – 5.x Application schemas (incl. UML diagrams and feature catalogues)

6. Reference Systems

How to read the data specifications

7. Data Quality

7.1 DQ Elements

7.2 Minimum DQ requirements and recommendations

8. Metadata

8.1 Additional requirements and recommendations for MD elements defined in the MD Regulation

8.2 MD Elements for interoperability

8.3 Recommended theme-specific MD elements

9. Delivery (incl. Encodings)

10. Data Capture

11. Portrayal (incl. layers, styles)

How to read the data specifications

Annex A: Abstract Test Suite

Annex B: Use cases

Annex C: Code list values

Other Annexes (e.g. examples)

TRANSFORMACIJA

Contact | Legal notice | Privacy statement | English (en) ▼

INSPIRE
Infrastructure for Spatial Information in the European Community

European Commission > INSPIRE > Data Specifications

Navigation: Legislation | Who | Consultations | Testing | Roadmap | Library | News | Themes | **Data Models**

Legislation

- Commission Regulation (EU) No 1312/2014 of 10 December 2014 amending Regulation (EU) No 1089/2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data services 11.12.2014
- COMMISSION REGULATION (EU) No 1253/2013 of 21 October 2013 amending Regulation (EU) No 1089/2010 implementing Directive 2007/2/EC as regards interoperability of spatial data sets and services 10.12.2013
- COMMISSION REGULATION (EU) No 102/2011 of 4 February 2011 amending Regulation (EU) No 1089/2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services 05.02.2011
- COMMISSION REGULATION (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services 08.12.2010

Technical Guidelines Annex I

- INSPIRE Data Specification on Addresses – Technical Guidelines 3.1 17.04.2014
- INSPIRE Data Specification on Administrative Units – Technical Guidelines 3.1 17.04.2014
- INSPIRE Data Specification on Cadastral Parcels – Technical Guidelines 3.1 17.04.2014
- INSPIRE Data Specification on Coordinate Reference Systems – Technical Guidelines 3.2 17.04.2014
- INSPIRE Data Specification on Geographical Grid Systems – Technical Guidelines 3.1 17.04.2014
- INSPIRE Data Specification on Geographical Names – Technical Guidelines 3.1 17.04.2014
- INSPIRE Data Specification on Hydrography – Technical Guidelines 3.1 17.04.2014
- INSPIRE Data Specification on Protected Sites – Technical Guidelines 3.2 17.04.2014
- INSPIRE Data Specification on Transport Networks – Technical Guidelines 3.2 17.04.2014

Technical Guidelines Annex II & III

- INSPIRE Data Specifications – All v3.0 Technical Guidelines for Annexes II & III 13.12.2013
- INSPIRE Data Specification on Agricultural and Aquaculture Facilities – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Area Management/Restriction/Regulation Zones and Reporting Units – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Atmospheric Conditions and Meteorological Geographical Features – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Bio-geographical Regions – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Buildings – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Elevation – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Energy Resources – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Environmental Monitoring Facilities – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Geology – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Habitats and Biotopes – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Human Health and Safety – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Land Cover – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Land Use – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Mineral Resources – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Natural Risk Zones – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Oceanographic geographical features – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Orthoimagery – Technical Guidelines 10.12.2013
- INSPIRE Data Specification on Population Distribution – Technical Guidelines 10.12.2013

Left sidebar menu: About, Implementation, Adoption, Stakeholder Participation, News and Events. 'Data Specifications' is highlighted with a red circle.

Right sidebar: SEARCH INSPIRE, LOGIN / REGISTRATION, GEOSPATIAL WORLD FORUM (25 – 29 MAY 2015, LISBON, PORTUGAL), Countdown timer (34 days, 06 hours, 50 minutes), INSPIRE IN YOUR COUNTRY, Years: 2011-2014 SEARCH FOR PAST INSPIRE CONFERENCE PRESENTATIONS.



Sveučilište u Zagrebu
Geodetski fakultet



TRANSFORMACIJA

[About](#) | [Contact](#) | [Legal notice](#)

English



INSPIRE Interactive Data Specifications

European Commission > INSPIRE Interactive Data Specifications

[Intro](#)

[Data Specifications](#)

[Find your scope](#)

[Additional resources](#)

The process of building of the European Spatial Data Infrastructure based on the INSPIRE requirements and recommendations is now fully in its implementation phase. [See the official INSPIRE Roadmap](#)

This [INSPIRE Interactive Data specification platform](#) offers INSPIRE data providers two new applications to support them in the implementation of the INSPIRE data specifications.

1. The application [Data Specifications](#) facilitates the reading of INSPIRE Data Specification – Technical Guidelines documents by enabling to study only selected parts of the INSPIRE technical documentation. Furthermore the selected parts can be compared with the same parts from up to 3 data themes.
2. The application [Find your scope](#) supports data providers with identification of the INSPIRE spatial data themes and spatial object types that are relevant to the dataset(s) they administer. This application is foreseen to be useful especially in situations when datasets fall under two or more INSPIRE data themes / application schemas content.

This platform also provides links ([Additional resources](#)) to useful additional resources of information (e.g. INSPIRE Registry, website etc.).

This application was developed in the framework of the official EU INSPIRE Maintenance and Implementation Framework (MIF) defined under work package 1 (MIWP 1) - Improve accessibility and readability of TG. [MIG](#)



Sveučilište u Zagrebu
Geodetski fakultet



TRANSFORMACIJA

- INSPIRE MIG
- NKT (DGU)
- NIPP Specifikacija (Smjernice za transformaciju)
- Online izvori ...

The screenshot shows the homepage of the INSPIRE Thematic Clusters platform. At the top, there is a blue header with the INSPIRE logo and the text "INSPIRE Thematic Clusters". Below the header is a navigation menu with links for "News", "Events", "Pages", "Clusters", and "More". A search bar is located on the right side of the header. Below the navigation menu, there are two main content areas. The left area is titled "About the INSPIRE Thematic Clusters Platform" and contains a welcome message and a detailed description of the platform's purpose and goals. The right area is titled "Tag cloud" and lists various tags such as "Best Practice", "Statistical Units", "EU Thematic Databases", etc. Below the tag cloud, there is a section for "INSPIRE on Twitter" showing a tweet from @spatineo. At the bottom of the page, there are several images representing different thematic clusters, including a wind turbine, a city street, a landscape, a globe, a desert landscape, and a factory interior.



TRANSFORMACIJA

Softverska podrška:

1. Provjeriti da li je softver usklađen s odgovarajućim OGC standardima (WMS, WFS, CSW, GML)
2. Provjeriti mogućnost korištenja INSPIRE ekstenzija odnosno proširenja za uspostavu usluga pretraživanja, pregleda i preuzimanja
3. Provjeriti da li softver može proizvesti (transformirati) podatke sukladno INSPIRE specifikacijama podataka za odgovarajuću temu
4. Testirati zahtjeve u pogledu osiguranja zadovoljavajuće razine kvalitete usluga (Quality of Service) sukladno zahtjevima INSPIRE-a



TRANSFORMACIJA

Softverska podrška:

- **FME**
- GeoKettle
- Talend Open Studio Spatial
- **HALE**



Sveučilište u Zagrebu
Geodetski fakultet





Hvala na pažnji!

vlado.cetl@geof.hr



Sveučilište u Zagrebu
Geodetski fakultet

