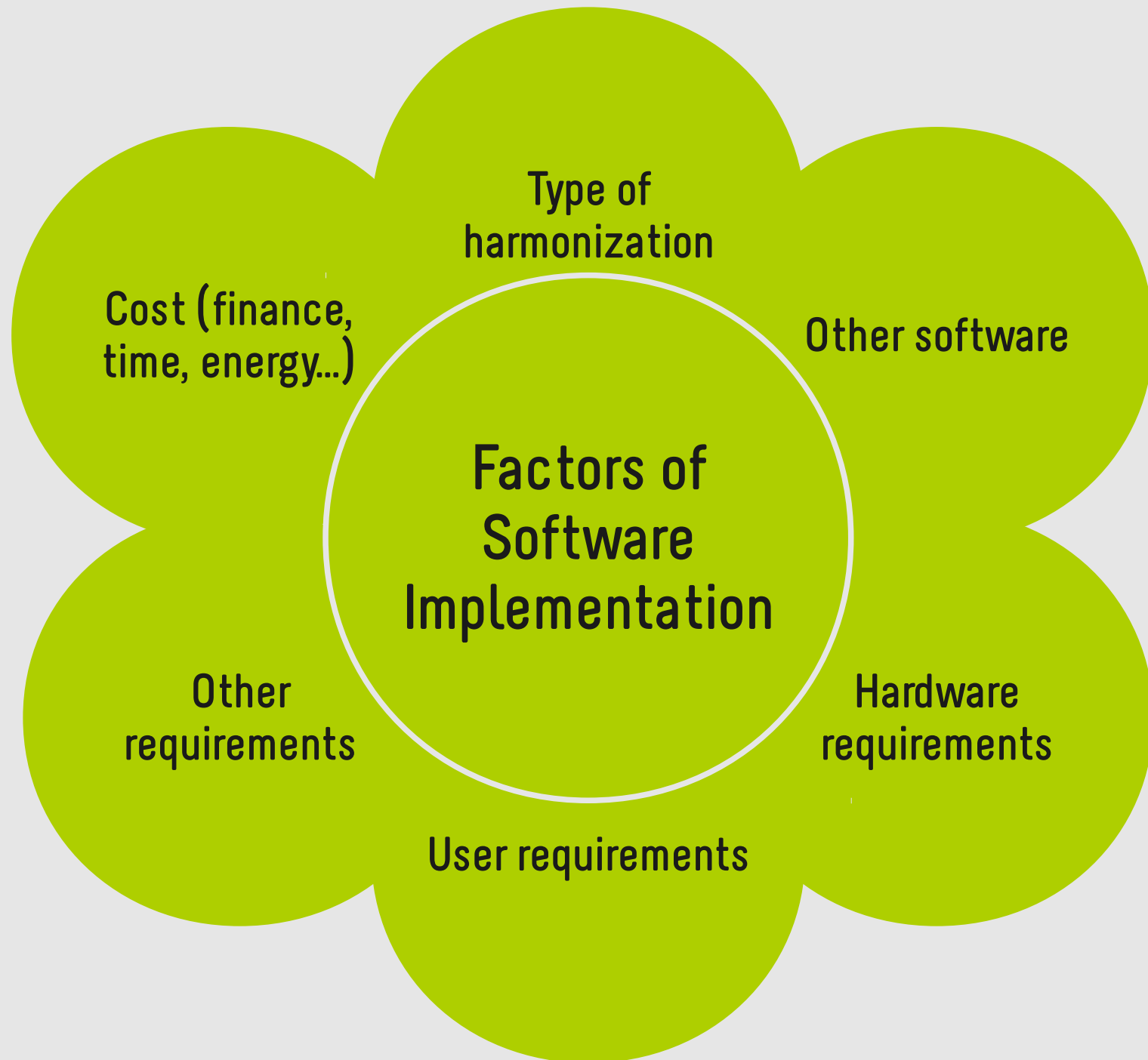


Overview of harmonization tools

Madrid (Spain), 24. 10. 2011

For spatial data harmonization
you can use any software and
web service able to manage
and process spatial data...

... the concrete usage depends
on the many factors...



Specific Harmonization Tools? Yes or No?

Single-purpose Tools...

- ...could be faster
- ...could be more hardware-friendly
- ...could be cheaper
- ...could be placed on the Internet
- ...could be not integrated to other software (no or other GUI) – not very user-friendly
- ...could be not very well integrated to other solutions (production lines)
- ...

GDAL/OGR – ogr2ogr

gdal.org

Look at
Bostongis.com

- Formats
- File from/to Databases (including multiple tables)
- Coordinate systems

```
ogr2ogr -f "KML"  
neighborhoods.kml  
PG:"host=myhost  
user=myloginname  
dbname=mydbname  
password=mypassword"  
neighborhoods -dsco  
NameField=name
```

```
ogr2ogr -a_srs  
"krovak.wkt" -t_srs  
"wgs.wkt"  
OSM_natural.shp  
natural.shp
```

**Command line
or Integrated to
GIS tools**

Humboldt Project



1. The **HUMBOLDT GeoModel Editor**, which you can use to develop rich Conceptual Models for your geodata.
2. The **HUMBOLDT Alignment Editor**, an application that helps you map and transform complex database and application schemas
[[download](#)] [[documentation](#)]
3. The **Workflow Design and Construction Service**, a web service that delivers executable geoprocessing workflows for data harmonisation
[[download](#)] [[documentation](#)]
4. The **Conceptual Schema Translation Service**, a Web Processing Service for transforming data from one application schema to another
5. The **Edge Matching Service**, a WPS that deals with inconsistencies in geometry

Humboldt Training
Materials &
Courses

[Home](#)[The HUMBOLDT Entrance Test](#)[Catalogue of Training Modules](#)[e-Learning Tools](#)[Subscribe to the courses](#)

Training activities towards the users Communities of the **HUMBOLDT** framework.

The Training Package is developed considering four levels:

- **The HUMBOLDT Entrance Test**

Optional test to filter trainees before entering the Humboldt Framework Training

- **The HUMBOLDT Knowledge courses**

Training related to knowledge useful to operate with the HUMBOLDT Framework
Includes courses on INSPIRE, Data Harmonisation, GMES, Metadata and Web Services.

- **The HUMBOLDT Framework**

Training on the results coming from the HUMBOLDT Framework.
Includes courses on data Harmonisation using the HUMBOLDT Tools

- **The HUMBOLDT Scenarios**

Example Use cases explaining the application areas of Humboldt.
Includes data harmonisation experiences using the HUMBOLDT Tools in Border Security, Urban Planning, Forest, Protected Areas, Risk Management, Ocean, Atmosphere and Transboundary Catchments



If you have already **subscribe** to the courses, you might go directly to the **e-Learning Platform**

The HUMBOLDT training modules are available in the **VESTA-GIS** Training Framework



The HUMBOLDT Framework tools



subscribe to this course

Author/Organisation:

Marianne de Vries, Hugo Ledoux, Sisi Zlatanova / TUDelft
Anders Östman / HIG

Course Component Names:

- Component 1: The HUMBOLDT Alignment Editor (HALE)
- Component 2: The HUMBOLDT Edge Matching Service (EMS)

Course description:

Here you will get more familiar with some of the programs that were developed during the HUMBOLDT project

Knowledge offered

- Methods (data harmonisation)
- Tools (the HUMBOLDT Framework)
- Practice (practical exercises)

It includes exercises?

YES

Component 1: The HUMBOLDT Alignment Editor (HALE)

Tutorial for the HUMBOLDT Alignment Editor (HALE), which helps us map and transform complex database and application schemas.

XSLT & Transformation Processor

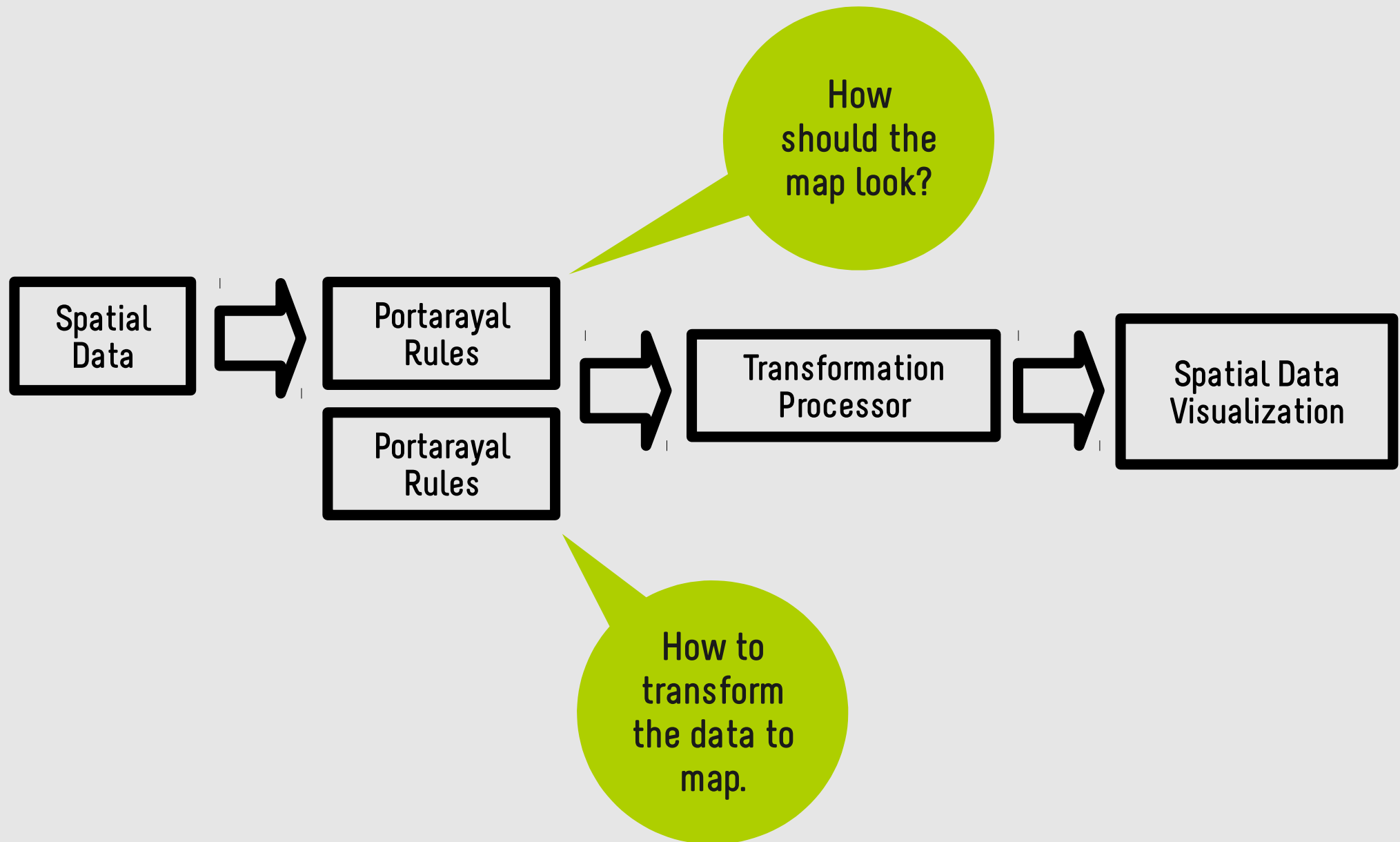
The W3C logo is a blue circle with the text "W3C" in white, located in the top right corner of the slide.

- Family of Markup Languages → GML format
- Filtering & Queries
- Harmonization of Portrayal Rules

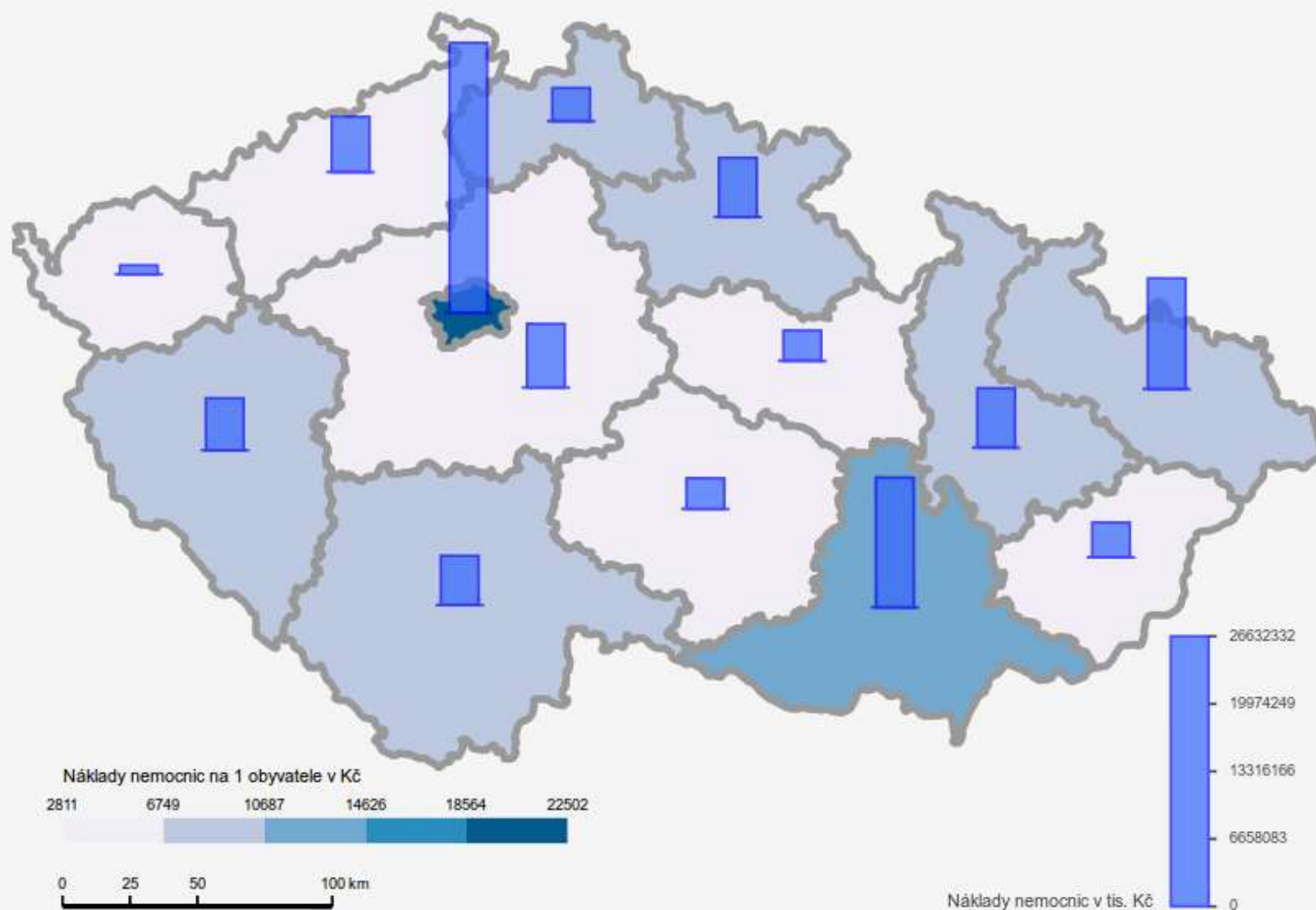
`<!-- Definition of colour schmes
according ColorBrewer →`

```
<xsl:variable name="colours">  
<scheme name="Qual1">  
<color>#7fc97f</color>  
<color>#beaed4</color>  
<color>#fdc086</color>  
<color>#ffff99</color>  
<color>#386cb0</color>  
</scheme>  
</xsl:variable>
```

XSLT & Transformation Processor



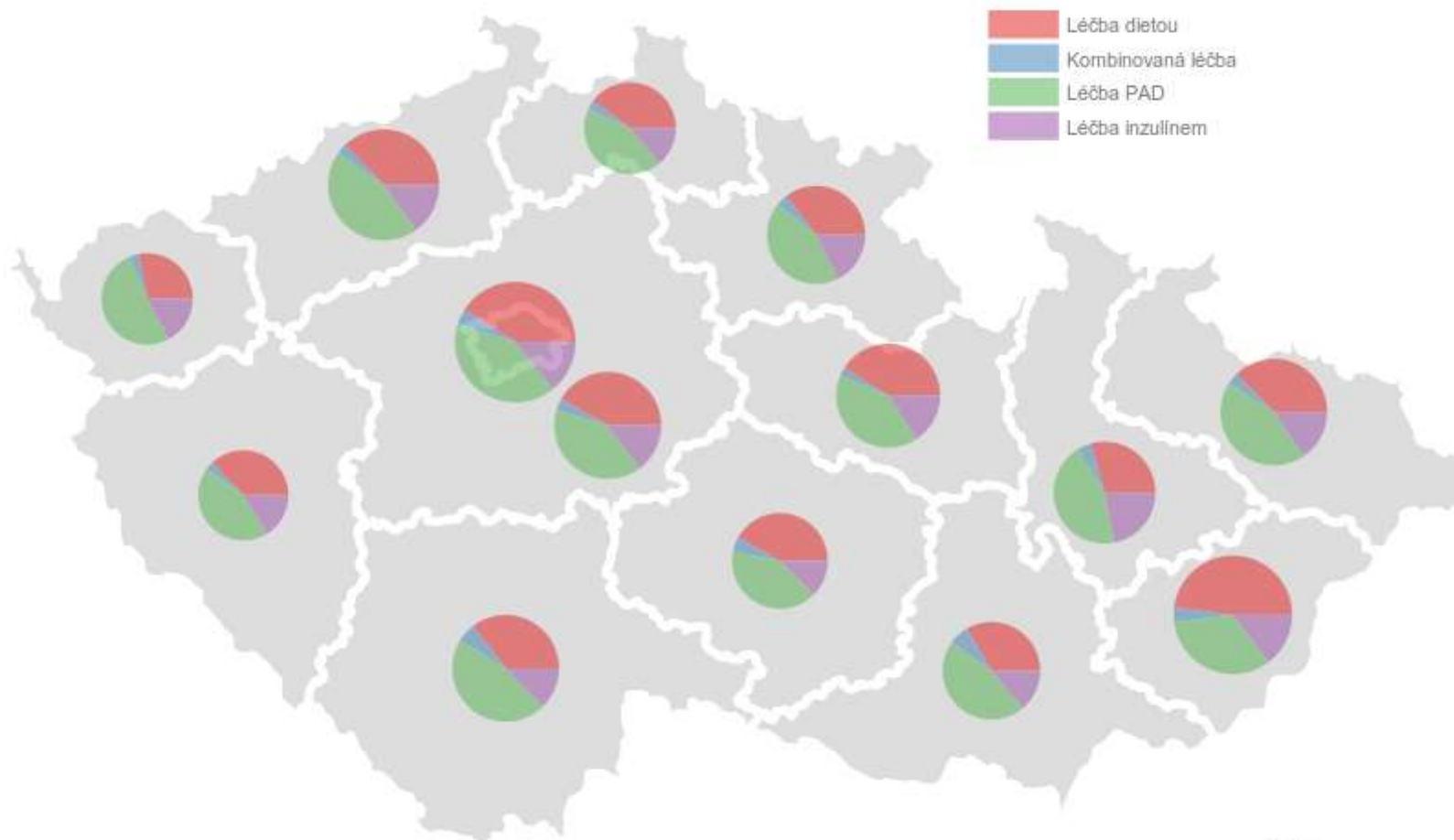
Diabetes
Náklady na léčení
Úvodní stránka
Nápověda
Lékařský slovník



Diabetés: Náklady na léčbu (2000)

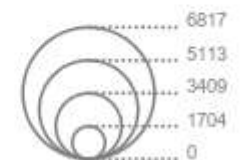
Diabetés
Náklady na léčení
Úvodní stránka

2000
2001
2002
2003
2004
2005
2006



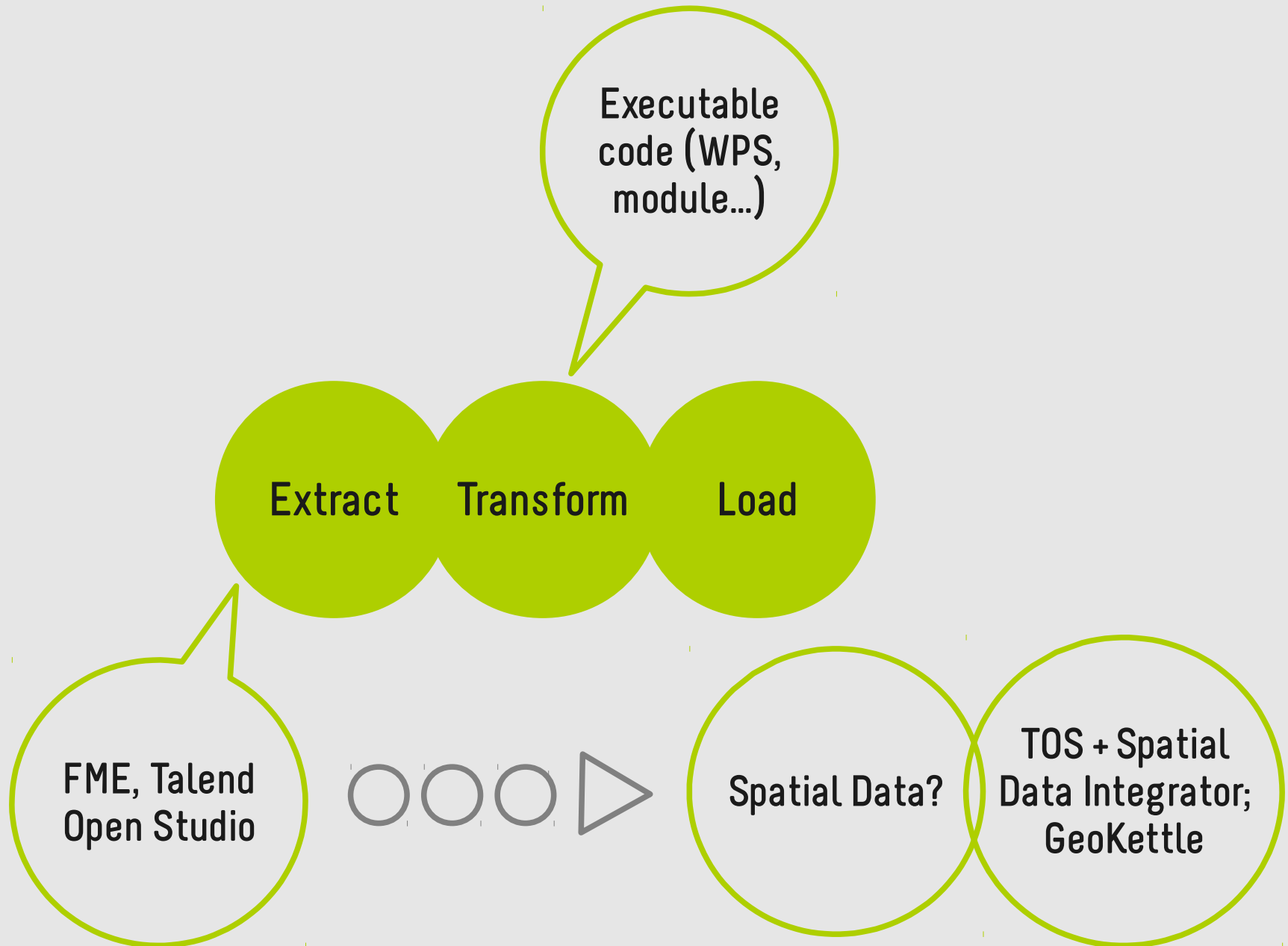
Léčba dietou
Kombinovaná léčba
Léčba PAD
Léčba inzulinem

0 25 50 100 km



Počet pacientů žijících s diabetem

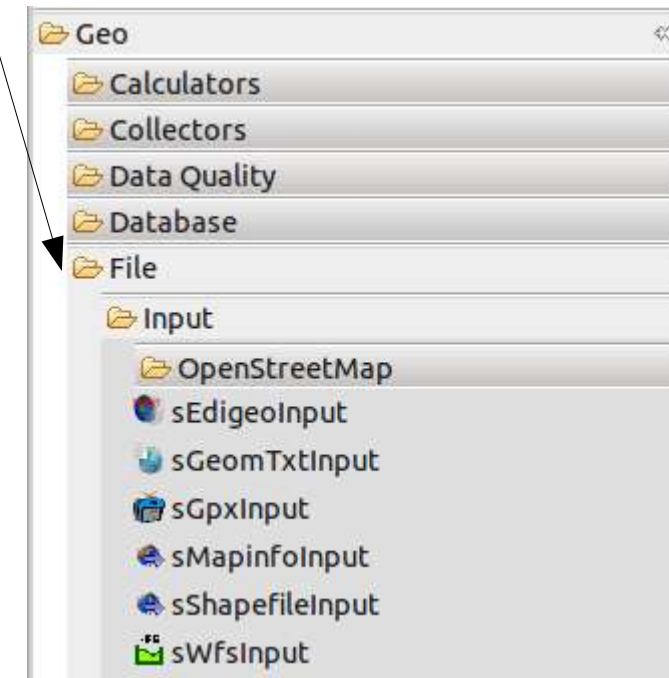
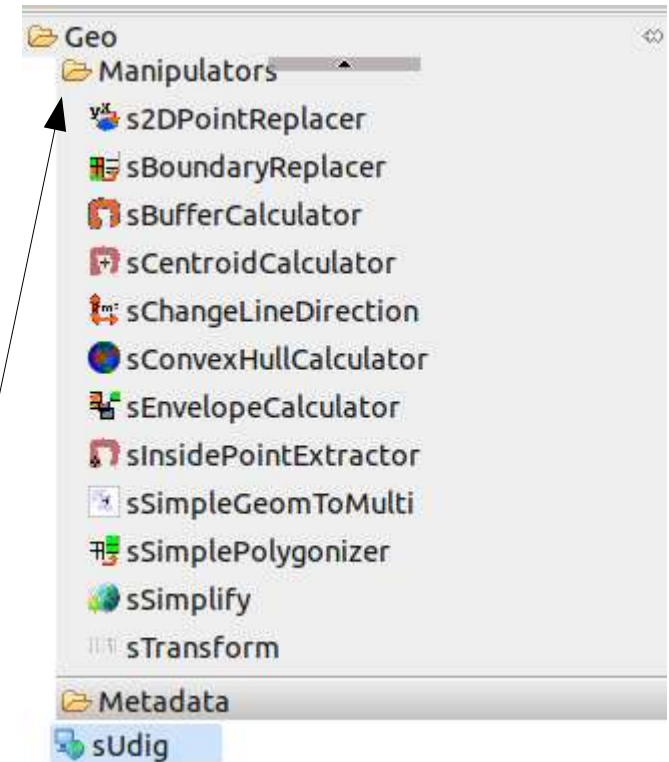
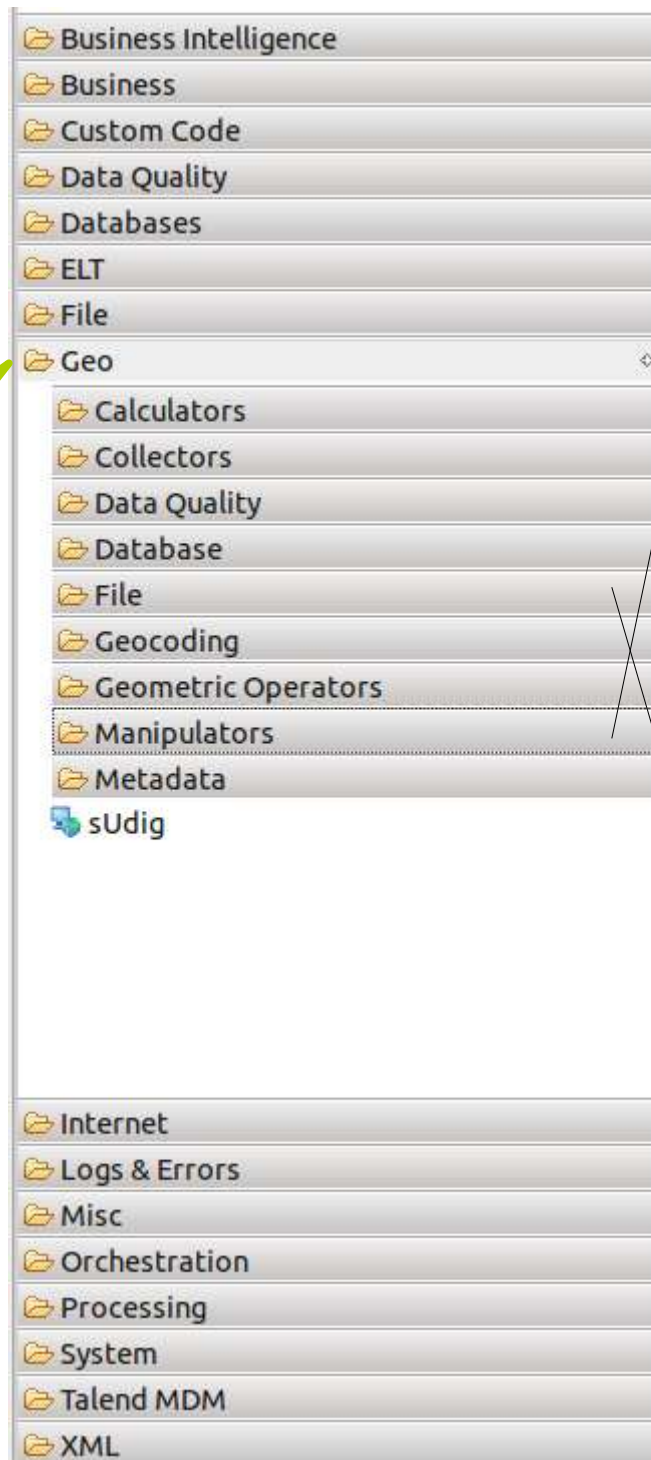
ETL



ETL: TOS+SDI

Specific
Functions

talend*
*open data solutions



Ontology

... clearly semantically
defined concepts

... directly expressed

... suitable for re-use

...formal and
formalized explicit
specification of
sharing
conceptualization

... exactly defined syntax

... precise list of terms

... way how a human
understands the world and
how it expresses

Ontologies & Reasoning

```
graph TD; A((Ontologies & Reasoning)) --- B((Formal and formalized specification of a shared conceptualization)); A --- C((The most abstract form of description of data → information & knowledge)); A --- D((Markup languages)); A --- E((Buzzword)); A --- F((Process enabling to generate new information based on original asserted model described in ontology.)); A --- G((Philosophy)); A --- H((Semantic Web))
```

Formal and formalized specification of a shared conceptualization

The most abstract form of description of data → information & knowledge

Markup languages

Buzzword

Process enabling to generate new information based on original asserted model described in ontology.

Philosophy

Semantic Web

Reasoning...

Object
Relation

Class

Class

River intakesTo Sea

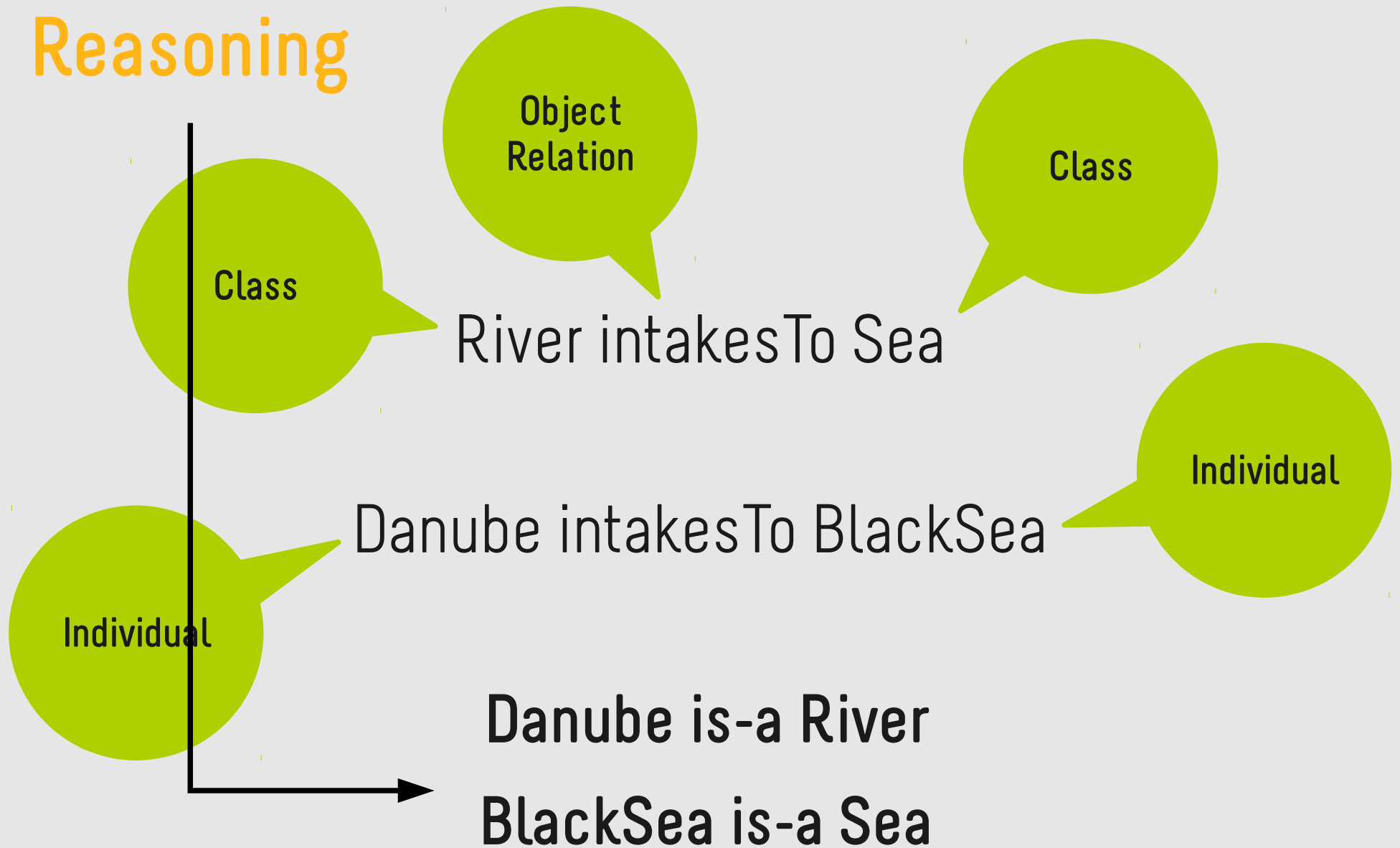
Individual

Danube intakesTo BlackSea

Individual

...Basic Components of Ontologies

Reasoning



Ontology

Knowledge

For whom?

Computers

Users

What?

Domains

What to do with them?

Understanding

Re-use

Analyses

Sharing

Description



Thesauruses, Vocabularies

GEMET

duna

Definition: *

A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand, sometimes volcanic ash), either bare or covered with vegetation, capable of movement from place but always retaining its characteristic shape.

* **Note:** Definition is not available for the current language

broader terms

charakter terénu

narrower terms

duna písčaná

Scope note:

scope note is not available

Groups:

PÚDA [krajina, geografie]

Themes:

geografie

přírodní území, krajina, ekosystémy

Other relations:

Wikipedia article

[Dune](#)

Has close match

[UMTHES: Düne](#)

Arabic:	الكثيب
Basque:	duna
Bulgarian:	Дюна
Catalan:	duna
Chinese:	沙丘
Danish:	klit
Dutch:	duin
English:	dune
English (US):	dune
Estonian:	luide
Finnish:	dyyni, lentohiekka
French:	dune
German:	Düne
Greek:	θίβα
Hungarian:	dűne
Irish:	dumhach
Italian:	duna
Latvian:	kāpas
Lithuanian:	kopa
Maltese:	duna
Norwegian:	sanddyne
Polish:	wydma
Portuguese:	dunas
Romanian:	dună
Russian:	дюна
Slovak:	duna
Slovenian:	peščena sipina

Thesauruses, Vocabularies

GEMET

duna

Definition: *

A low mound, ridge, bank, or hill of loose, windblown granular material (generally sand, sometimes volcanic ash), either bare or covered with vegetation, capable of movement from place but always retaining its characteristic shape.

* **Note:** Definition is not available for the current language

broader terms

↳ charakter terénu

narrower terms

↳ duna písčná

Scope note:

scope note is not available

Groups:

PÚDA [krajina, geografie]

Themes:

geografie

přírodní území, krajina, ekos

Other relations:

Wikipedia article

[Dune](#)

Has close match

[UMTHES: Dūne](#)

WordNet Search - 3.1

- [WordNet home page](#) - [Glossary](#) - [Help](#)

Word to search for:

Display Options:

Key: "S:" = Show Synset (semantic) relations, "W:" = Show Word (lexical) relations

Display options for sense: (frequency) {offset} <lexical filename > [lexical file number]
(gloss) "an example sentence"

Display options for word: word#sense number (sense key)

Noun

- (1){09293641} <noun.object>[17] [S: \(n\) dune#1 \(dune%1:17:00::\)](#), [sand dune#1 \(sand dune%1:17:00::\)](#) (a ridge of sand created by the wind; found in deserts or near lakes and oceans)

Portuguese: dunas

Romanian: dună


Russian: дюна


Slovak: duna


Slovenian: peščena sipina


Metadata Editors & Systems


MICKA metainformation catalogue





 Search form

 Help

 Info

SEARCH METADATA RECORDS:

Words

<<

☒ Fulltext ☐ In keywords




☒ Exact phrase
☐ Any word
☐ All words


Topic category


Temporal extent
from: to:

Standard

Language

Bounding box (longitude, latitude)
From map



west south east north



☐ Datasets fit the extent

Search >>

Reset

Clear