



Generalisation in INSPIRE

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Outline

- INSPIRE
- Generalisation in INSPIRE
- What can INSPIRE bring to the generalisation community
- What can the generalisation community bring to INSPIRE

Information in Europe



INSPIRE - Infrastructure for Spatial Information in Europe

INSPIRE

INSPIRE

- Motivations

A lot of geographical data across Europe

Difficulty to combine them

- catalogue needed
- lack of harmonisation

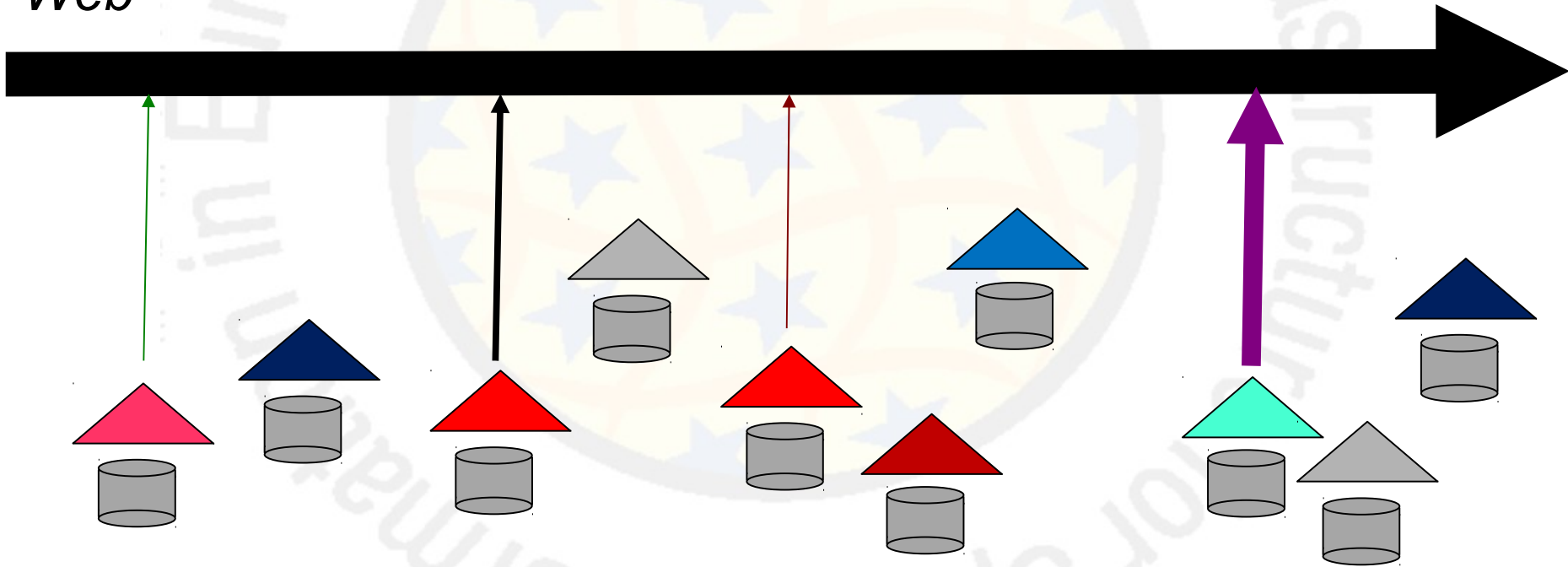
Consequence: many needs are not covered

- A European “SDI” is needed

INSPIRE

- Today:

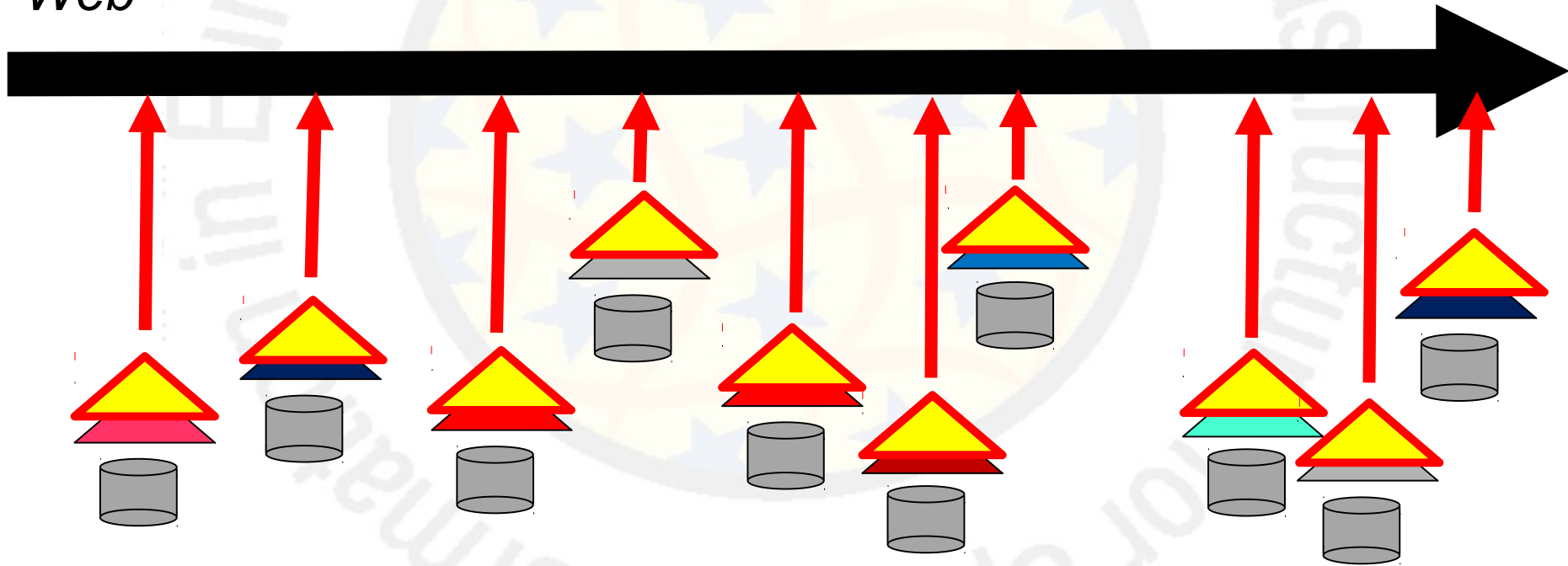
Web



INSPIRE

- Needed:

Web



INSPIRE

- Components:
 - Metadata
 - Spatial data and service specifications
 - Network services
 - Data and service sharing rules

INSPIRE

- European directive
- Purpose: setting a legal framework for the establishment of a SDI in Europe
- Purpose is not to create a new infrastructure
- Concern:
 - Spatial data
 - For environmental policies (or may have an impact on the environment)

INSPIRE

- **INSPIRE themes**

Annex 1

- Coordinate reference systems
- Geographical grid systems
- Geographical names
- Administrative units
- Addresses
- Cadastral parcels
- Transport networks
- Hydrography
- Protected sites

Annex 2

- Elevation
- Land cover
- Orthoimagery
- Geology

Annex 3

Statistical units

Buildings

Soil

Land use

Human health and safety

Utility and governmental services

Environmental monitoring facilities

Agricultural and aquaculture facilities

Population distribution — demography

Natural risk zones

Atmospheric conditions

Meteorological geographical features

Oceanographic geographical features

Sea regions

Bio-geographical regions

Habitats and biotopes

Species distribution

Energy resources

Mineral resources



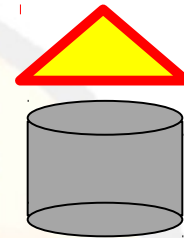
Generalisation in INSPIRE

Generalisation in INSPIRE

- INSPIRE components concerned:
 - Data specifications
 - Transformation service
 - Viewing service

Generalisation in INSPIRE

1. Data specifications

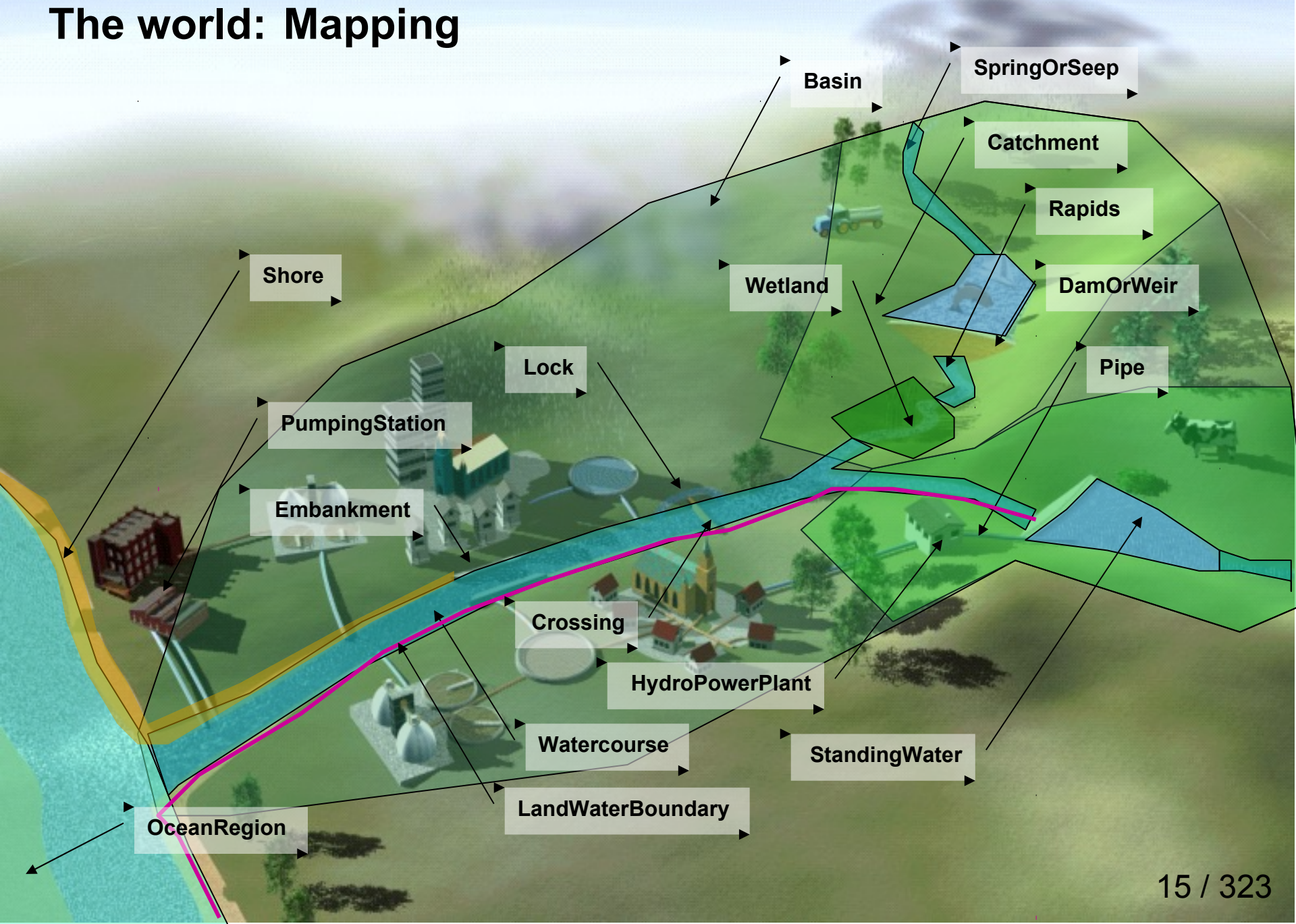


- INSPIRE data model
- Based on use cases and existing models
- Multiple representation demanded
- Example for hydrography: a data model for 3 use cases

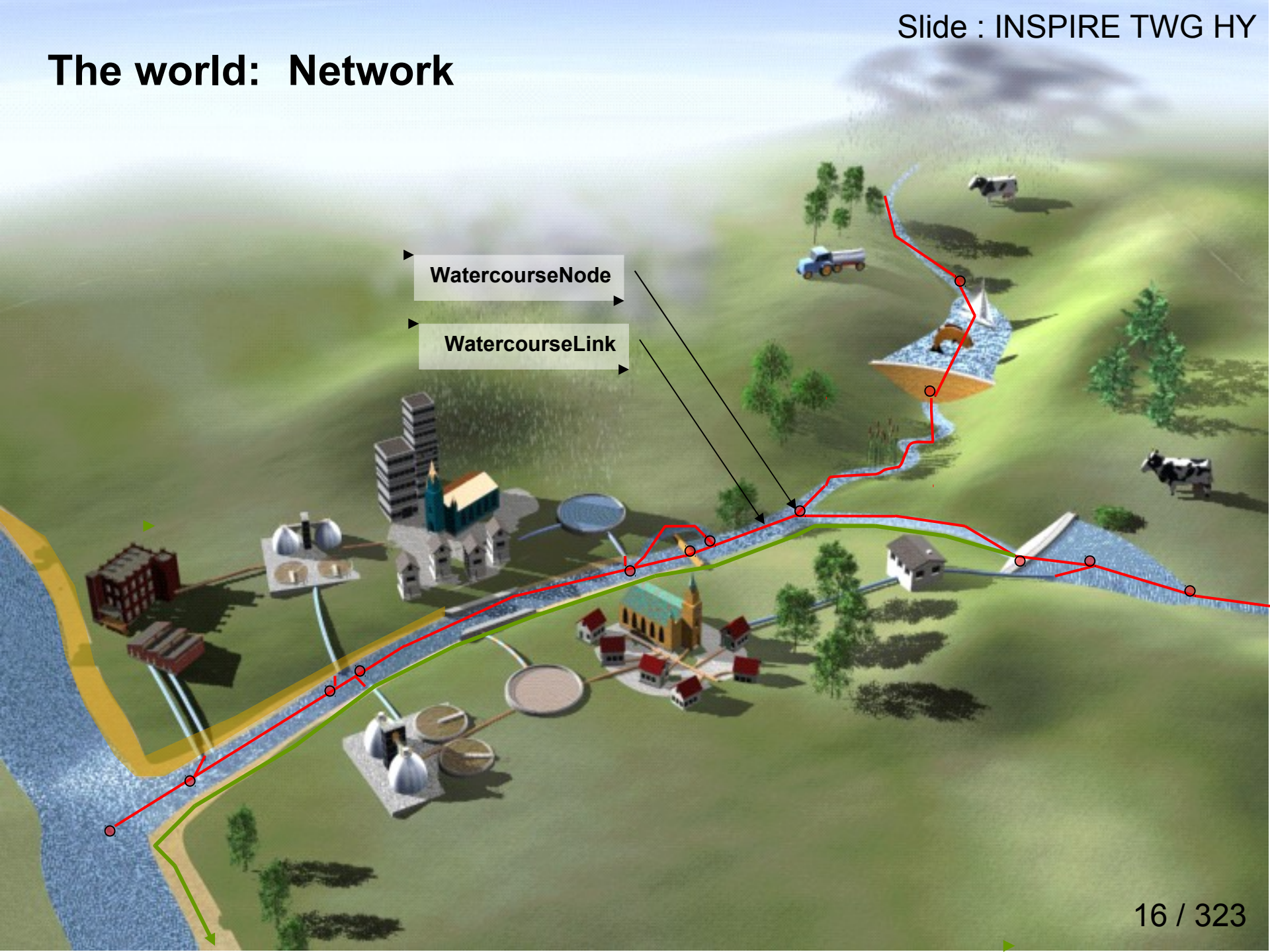
The world:



The world: Mapping



The world: Network



The world: Reporting



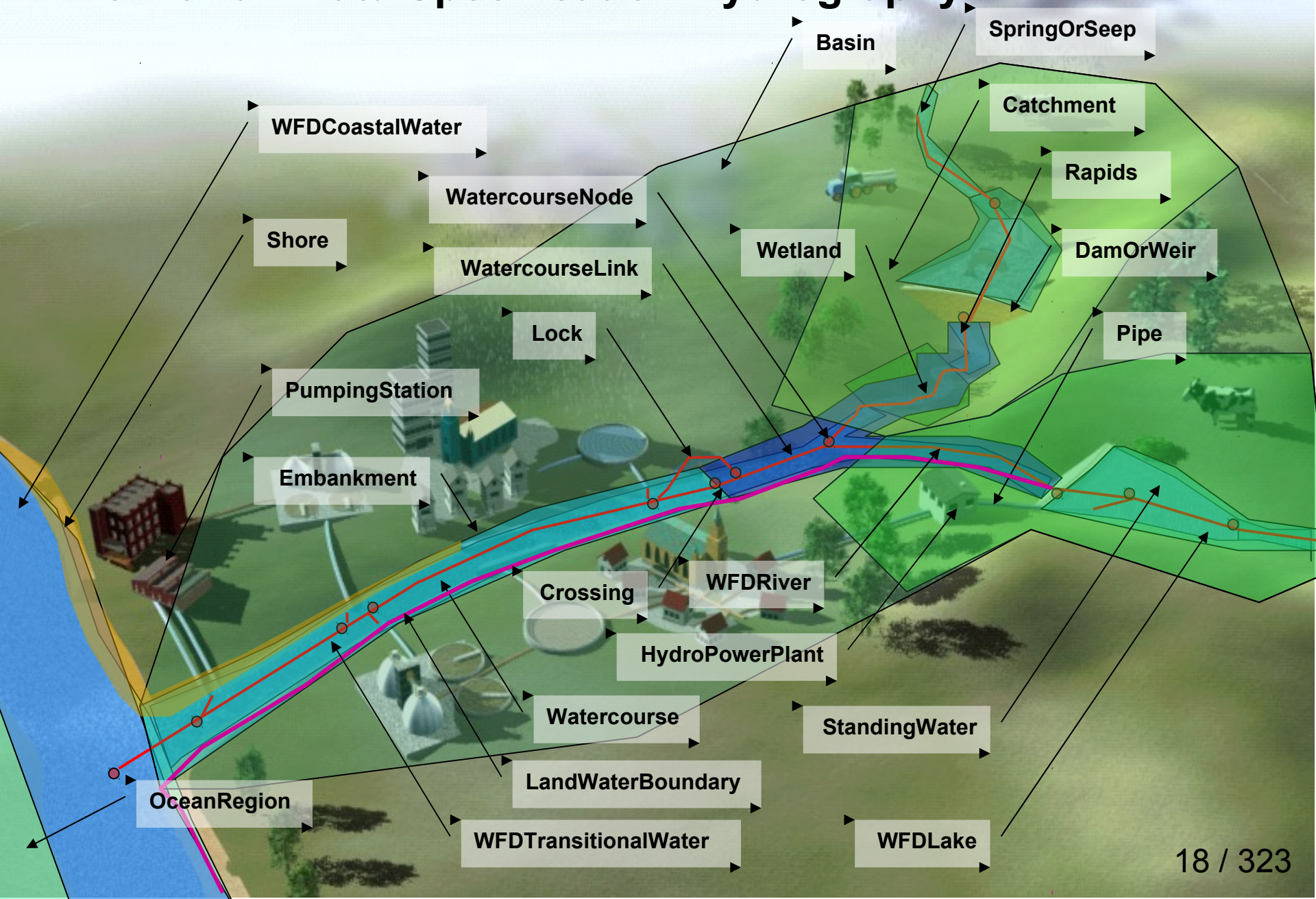
WFD Coastal Water

WFD River

WFD Transitional Water

WFD Lake

The world: Data Specification Hydrography



Generalisation in INSPIRE

2. Transformation service

Data providers will have to make their dataset compliant with INSPIRE schema



INSPIRE specifies the transformation service

Generalisation in INSPIRE

2. Transformation service

Call for tender to specify the transformation services



**Rob Walker
Consultancy**

Proposition: renaming of class and attribute.

True generalisation not yet considered.

Generalisation in INSPIRE

3. Viewing service

INSPIRE geoportal

Well-known problem of map generalisation



**What can INSPIRE bring to the
generalisation community**

INSPIRE → Gene. community

- The INSPIRE data model, a candidate model for the generalisation community
- Necessity in generalisation to use enriched data
- Example: road network model, elevation
- Enable algorithms comparison, improve chaining

INSPIRE → Gene. community

- Improve development reuse and testing

Generalisation treatments that apply on INSPIRE compliant data could be reused on all European data.

INSPIRE → Gene. community

... a new play ground !



**What can the generalisation
community bring to INSPIRE**

Gene. community → INSPIRE

- Generalisation methods (of course)
 - For data providers, to produce INSPIRE compliant databases



- Inside INSPIRE data model, to derive multiple representations
- “voidable“ representations: let's help to fill the void
!

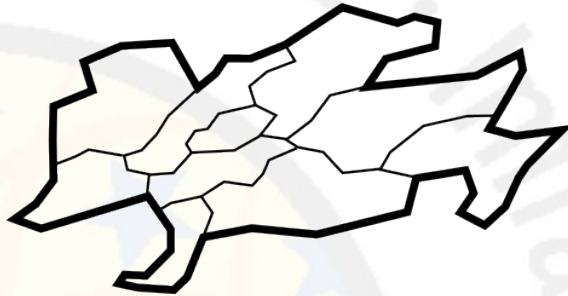
Example for statistical units

Level 1

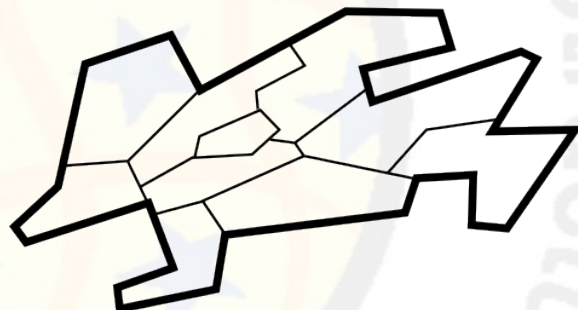
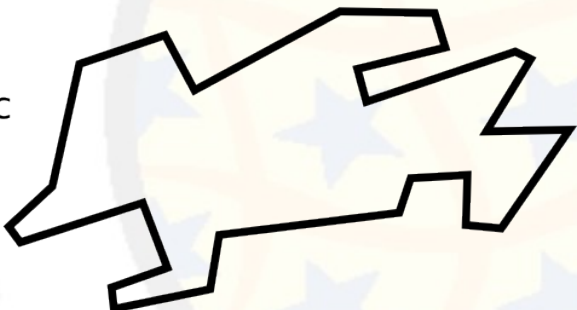
Level 2

.... Level n

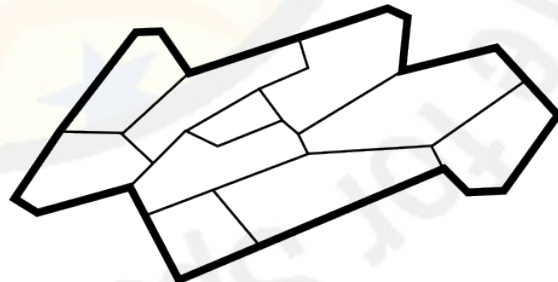
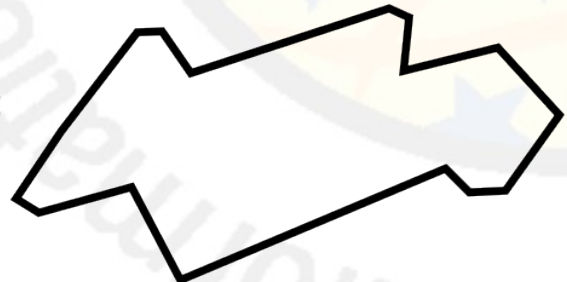
Spatial objects



Cartographic objects scale 1



Cartographic objects scale 2



...
Cartographic objects scale n

Gene. community → INSPIRE

Solutions to (new) issues !

Gene. community → INSPIRE

1. How to generalisation the new theme data?

Are the existing methods extendable to these themes?

Temporal data

Gene. community → INSPIRE

INSPIRE themes

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Gene. community → INSPIRE

2. How to manage the consistency between the themes?

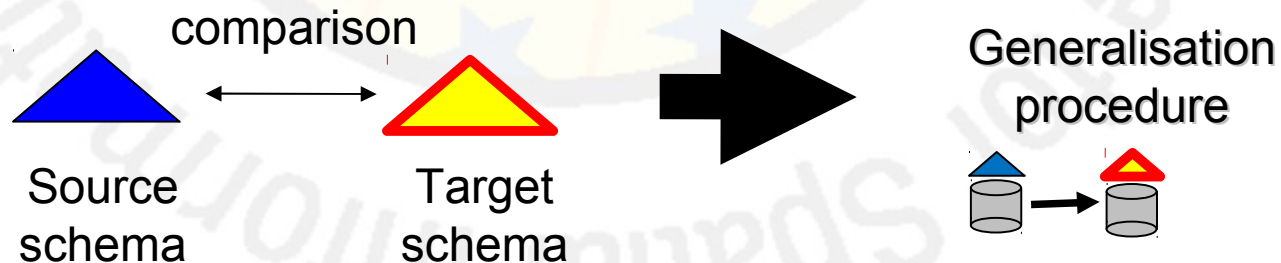
Generalisation of an integrated data schema: how to generalise several themes altogether?

Gene. community → INSPIRE

3. How to better formalise the LOD description in data schemas?

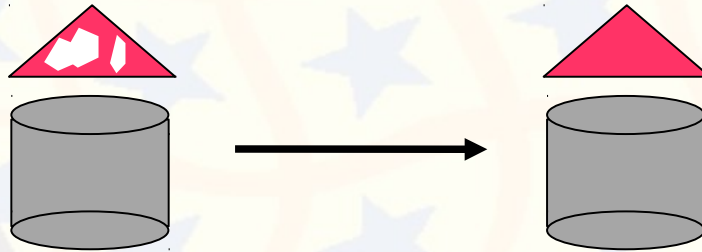
Is a GML extension needed ?

How to analyse the differences between 2 data schemas to make it usable for generalisation systems?



Gene. community → INSPIRE

4. How to automatically complete imperfectly described data schema?



How to deal with heterogeneous data?

Gene. community → INSPIRE

5. How to build a target data schema from a use case ?

(On demand data)

My need



Gene. community → INSPIRE

6. How to visualise multi-thematic data?

New covisualisations of data

INSPIRE data mashups

How to represent the style for these new visualisations ?

Gene. community → INSPIRE

6. How to better integrate complex processes into a SDI?

Data processing capabilities (transformation, analysis, simulation)

Conclusion

- INSPIRE as:

An opportunity to integrate generalisation works

A new playground

A new opportunity to show the usefull things our community produces !



Conclusion

- Collaboration with INSPIRE

Contact your national network to promote our work,

Implement INSPIRE specifications to provide requirements/feedback for generalisation case.