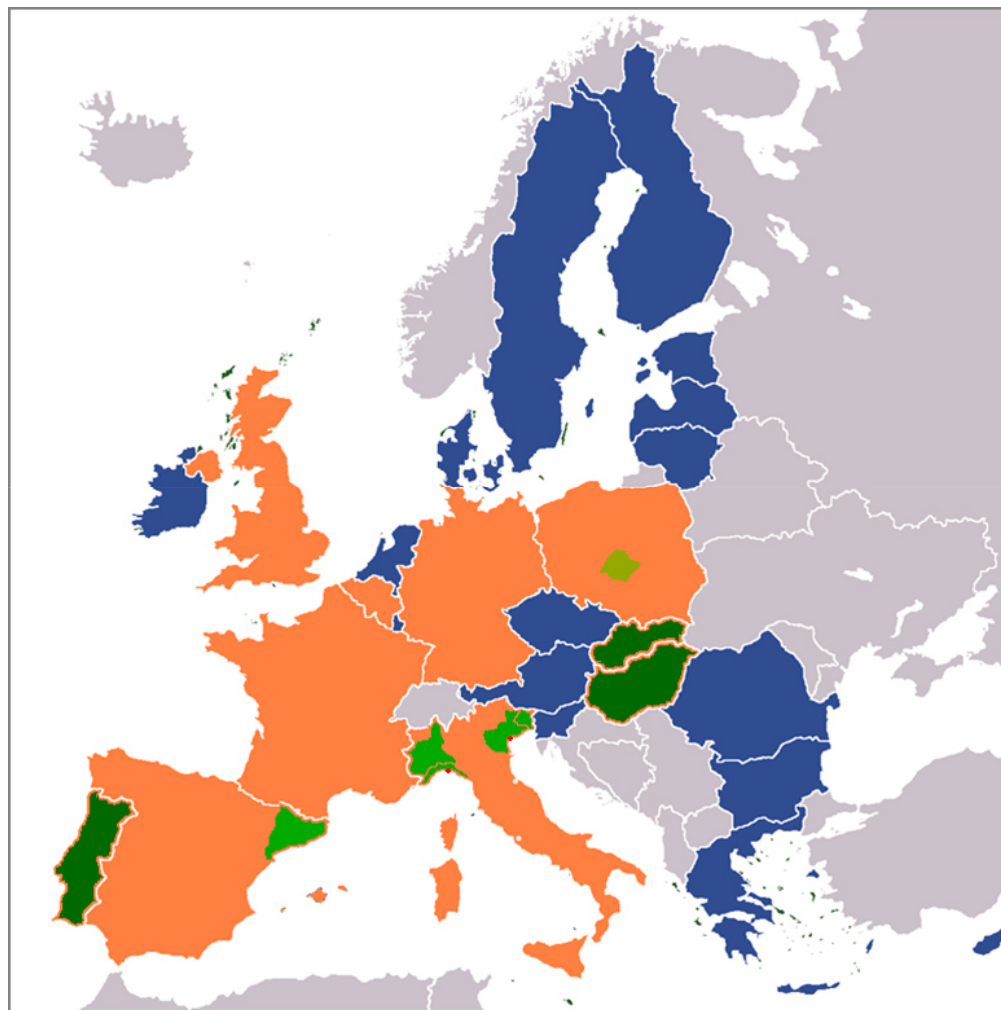# Harmonization Process: Role of Data Providers

Rui Reis, Instituto Geográfico Português
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Gis4eu a Cooperative project to apply the INSPIRE directive - Krakow, June 22, 2010

- ## National DP
  IGP, FOMI, VUGK

- ## Regional DP
  ICC, RLIG, RPIE, RVEN, RFVG, LDOZ

- ## Local
  CGE, MAV

| Introduction | Common model | Remodelling | Aggregation | Conclusions |

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Directive 2007/2/ EC

Directive shall cover spatial **data sets held by** or on behalf of a **public authority** operating at the lowest level of government within a Member State only if the Member State has laws or regulations requiring their collection or dissemination
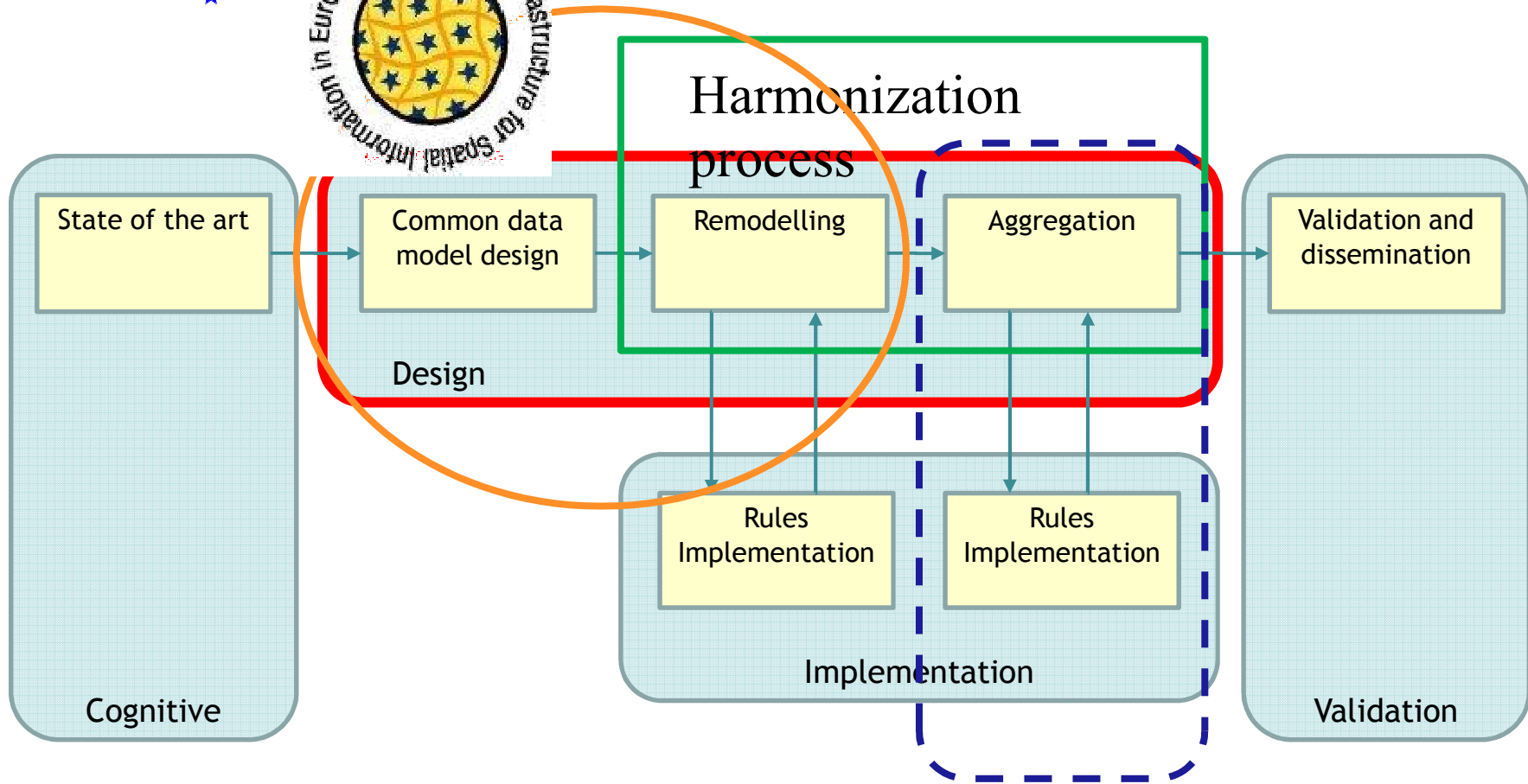
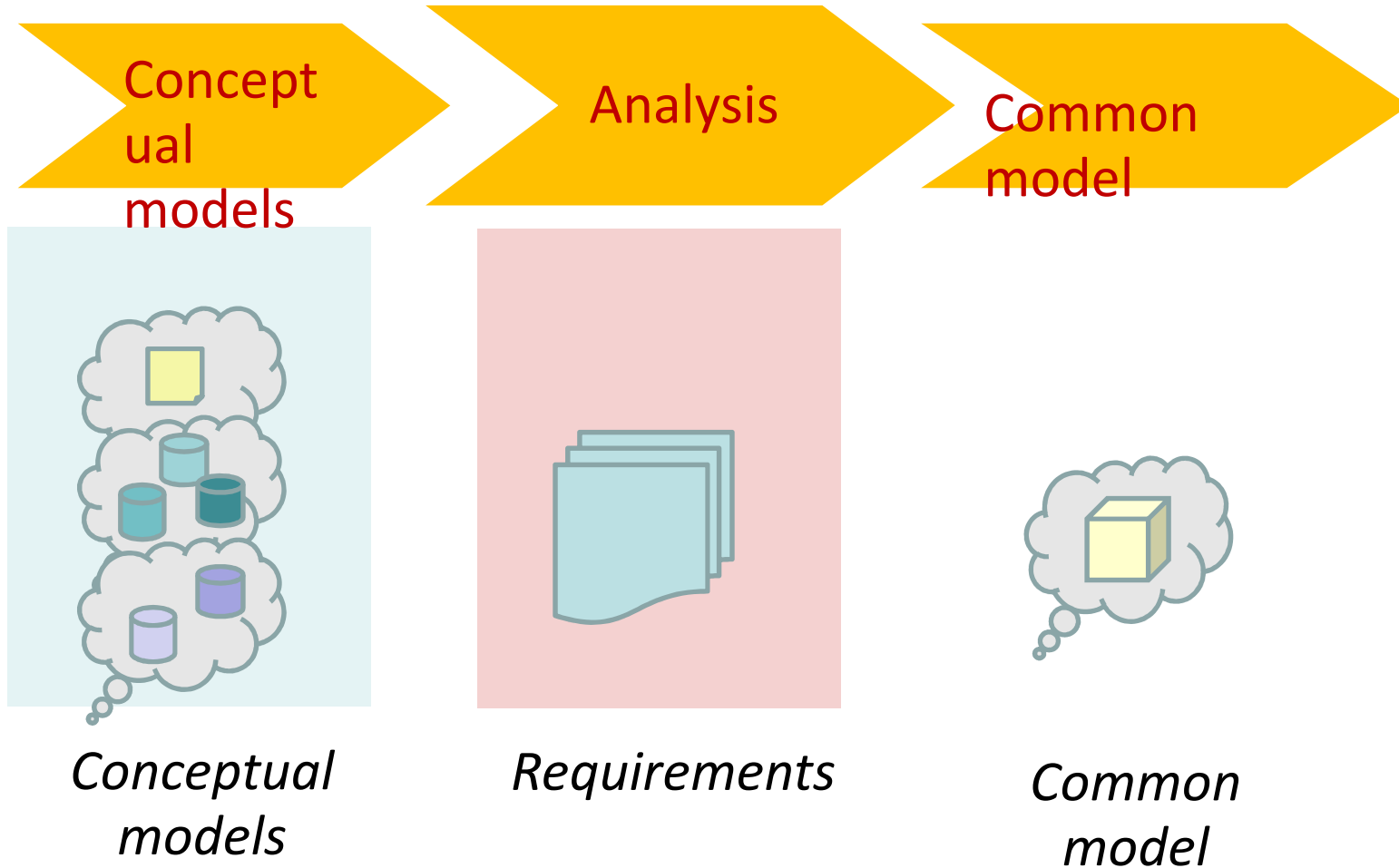(Article 4.6)

Directive 2007/2/ EC

"**public authority**" means

(a) **any** government or other **public administration**, including public advisory bodies, **at national, regional or local level**;

(b) any natural or legal person performing public administrative functions under national law, including specific duties, activities or services in relation to the environment; and

(c) any natural or legal person having public responsibilities or functions, or providing public services relating to the environment under the control of a body or person falling within (a) or (b).

DP Main activities

State of the art

Common data model design

Remodelling

Aggregation

Validation and dissemination

Harmonization process

Design

Rules Implementation

Rules Implementation

Implementation

Cognitive

Validation

Introduction

Common model

Remodelling

Aggregation

Conclusions

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Common data model design

Conceptual models

Analysis

Common model

Conceptual models

Requirements

Common model

Common data model design

- Data model revision -> test DP's datasets specs

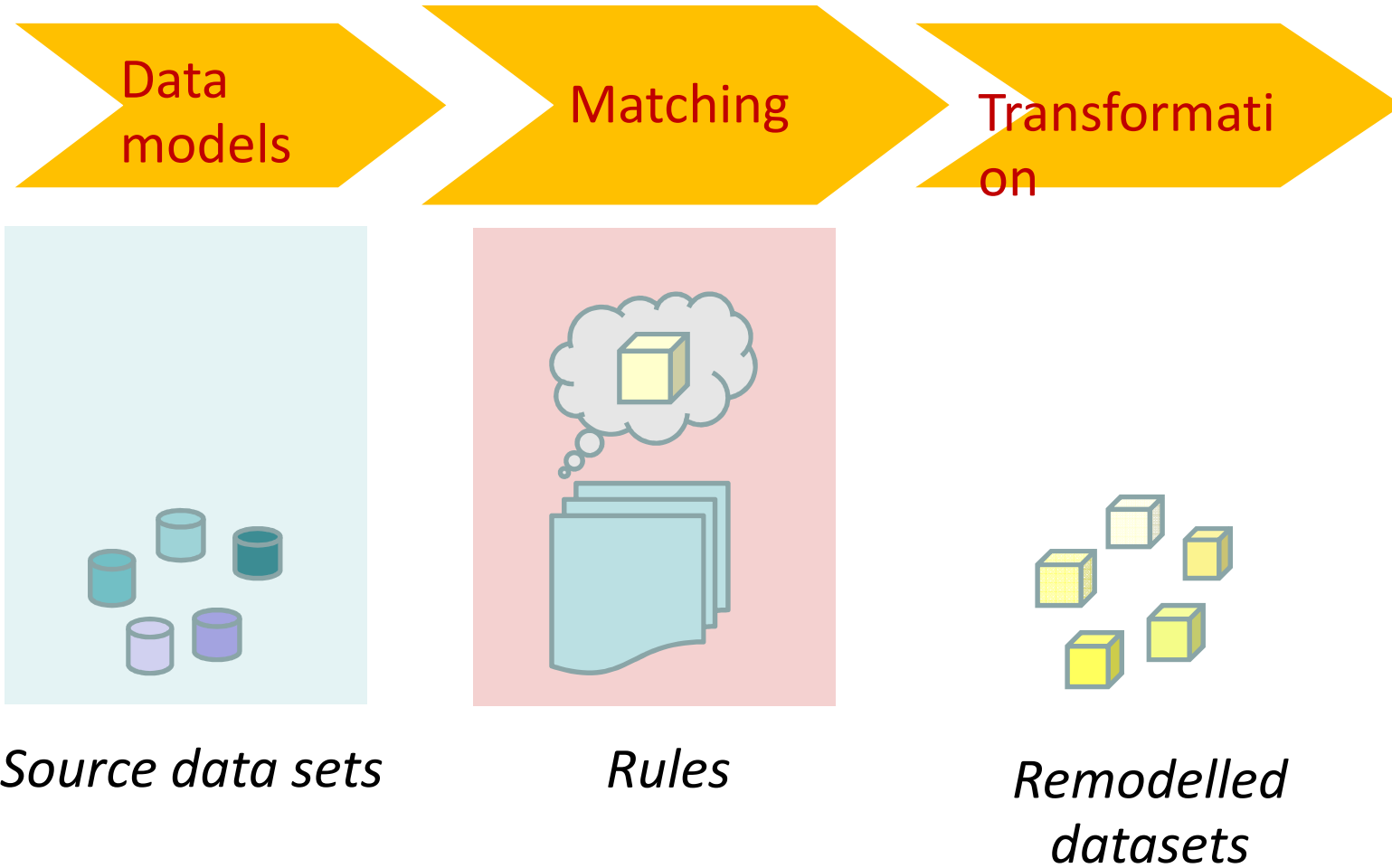- First contact with INSPIRE technical documents

- INSPIRE contribution

Introductio n	Common model	Remodelli ng	Aggregati on	Conclusio ns

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DP: Impact analysis - Drawbacks

Common data model design

- Language

- GIS4EU DP mainly Mapping Agencies

Data model

- Full and formal description of data models

  - Lists of features and attributes

  - Code lists

  - Feature relations (UML diagrams)

- Structure and contents of Metadata

| Introductio n | Common model | Remodelli ng | Aggregati on | Conclusio ns |

Matching: rules definition

- In-depth knowledge of data models and their context

- Define rules to transforming DP's datasets and metadata to common data model (INSPIRE)

Transform: rules implementation

- Use of data remodelling software

| Introductio n | Common model | Remodelli ng | Aggregati on | Conclusio ns |

DP: Impact analysis - Benefits

Remodelling

- Data model revision -> test DP's datasets specs

- INSPIRE conformance level of DP datasets

- Personnel training about INSPIRE Directive
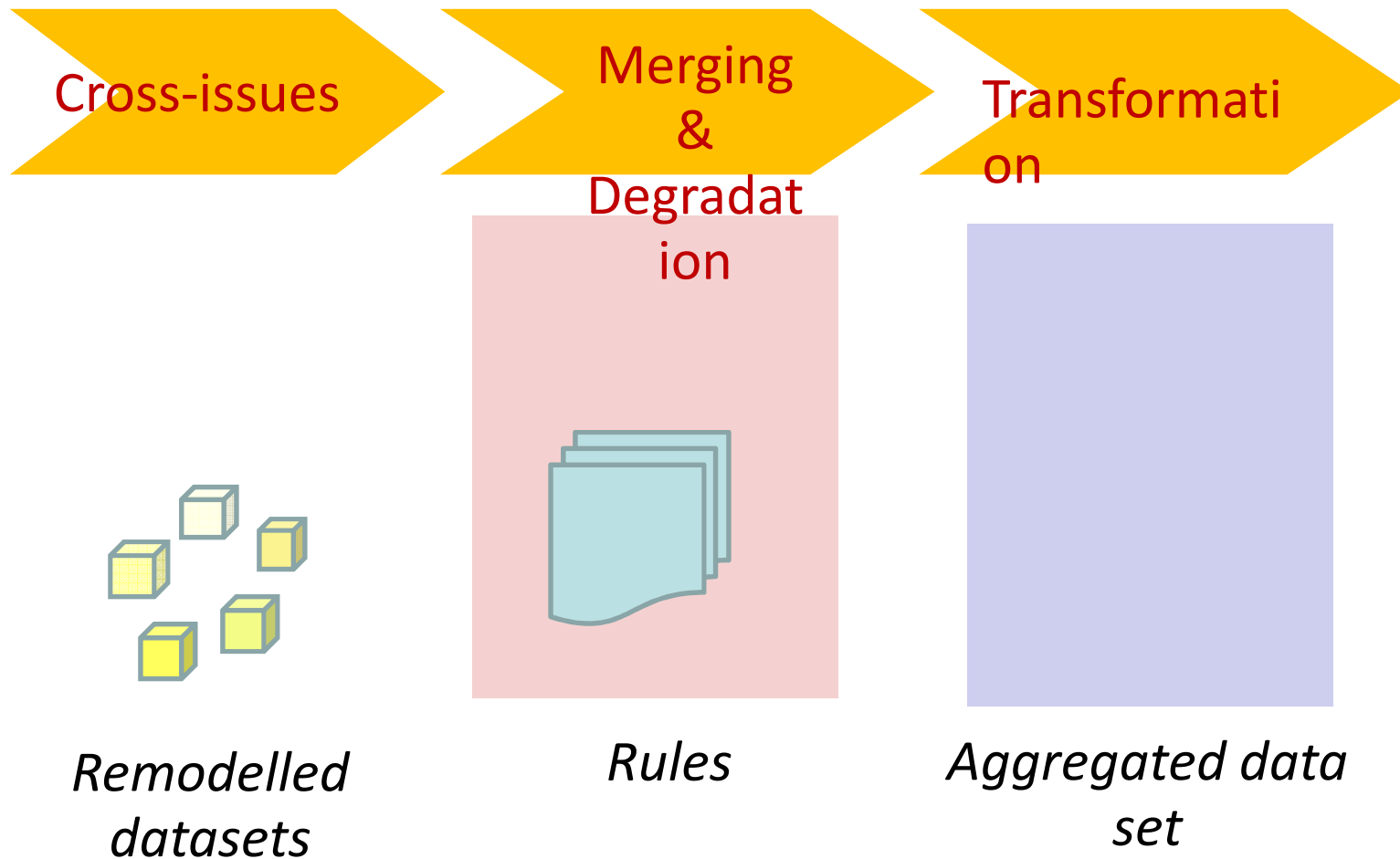
- Cost estimation

Remodelling

- Exact matching is not the most frequent situation.

- INSPIRE data models were not the final ones

- Metadata (structure and contents)

Introduction | Common model | Remodelling | Aggregation | Conclusions

Cross-issues

- Identify datasets characteristics

  - Determine common scales

    - European, national, regional and local

  - Data visibility criteria

    - Define the visibility of features at the reference scales or if they are not visualized

  - Define common portrayal

Cross-issues

- Identify pairs of topologically related datasets

  - Multiple representations of world phenomena

  - Geometry matching issues

  - Agree common representation

| Introduction | Common model | Remodelling | Aggregation | Conclusions |

Cross-issues

- Identify Cross-border inconsistencies

Inconsistency Rule D3.6	Elements outside the administrative area	Topology						Different identifier	Different names
		Overlap and gap surfaces	Overlap curve and surface	Gap curves and surface	Overlap curves	Gap curves	Inconsistency because different scale		
RVEN-INSIEL		X							
RLIG-CGE			X	X			X		X
RLIG-RPIE									

Introduction VUGK-FOMI → Common model → Remodelling → Aggregation → Conclusions

Merging & degradation: rules definition

- Define generalization rules to be applied at each

  dataset feature

- Agree on merging rules to be applied to solve

  inconsistencies

Transform: rules implementation

- Use of software tools to harmonize remodelled

Introductio n	Common model	Remodelli ng	Aggregati on	Conclusio ns

DP: Impact analysis - Benefits

Aggregation

- Know-how on the harmonization processes

- Cost estimation

DP: Impact analysis - Drawbacks

Aggregation

- Absence of recommendations in the INSPIRE documents to deal with different levels of detail

- Lack of a procedure (not technical) to solve cross-border inconsistencies

- Tools for automatic generalization

Introduction → Common model → Remodelling → **Aggregation** → Conclusions   2020

Conclusions

GIS4EU project has been a real scenario of the situation that INSPIRE will face when the Implementing Rules enter into force.

The methodology used in the project and the experience achieved is a starting point to deal with INSPIRE adoption.

Introduction   Common model   Remodelling   Aggregation   Conclusions