



# **The Geostat Project and INSPIRE Data Specifications**

**Workshop  
Tallinn Oct 5th, 2010**

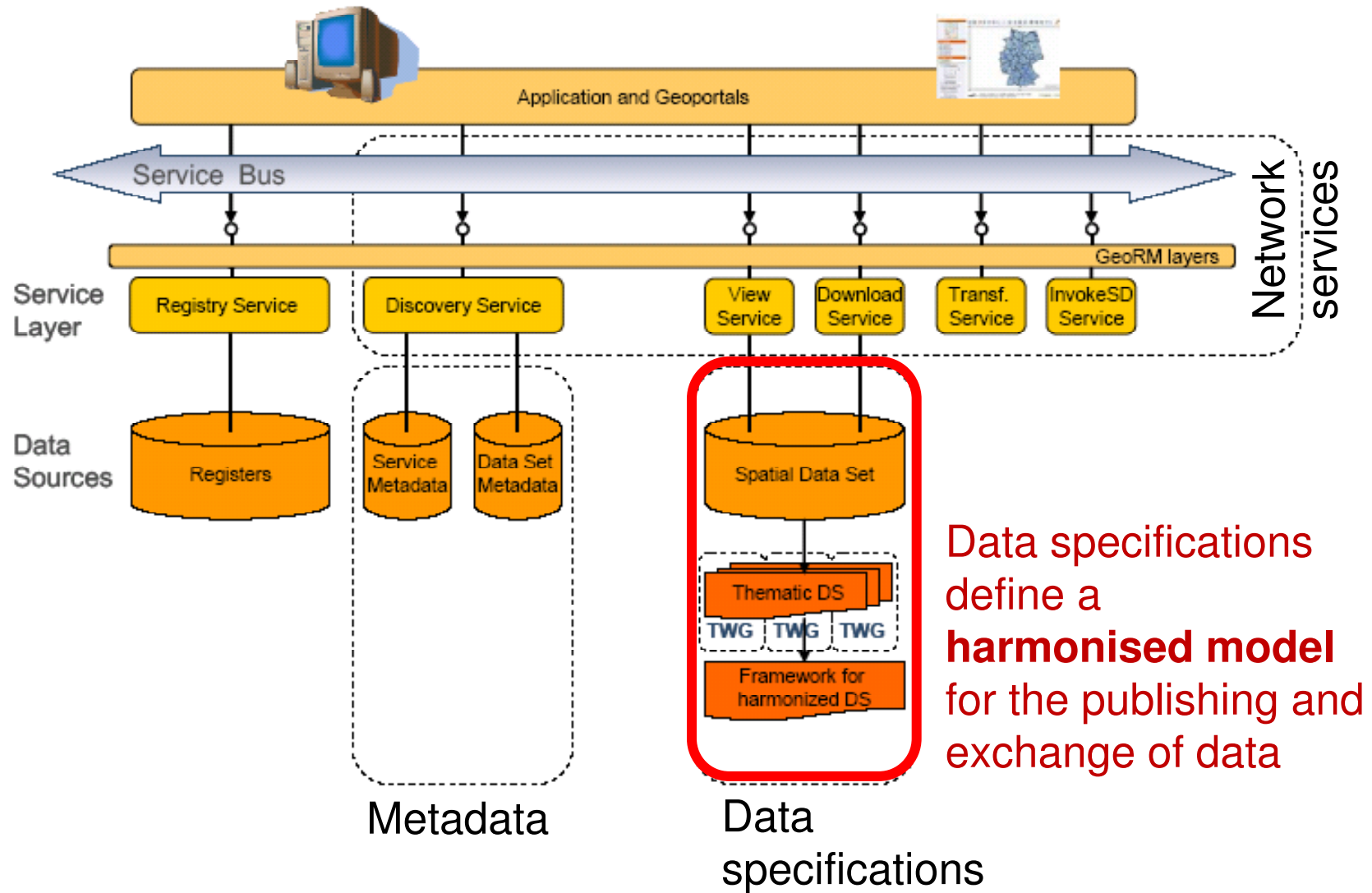


# The process for the development of INSPIRE Data Specifications

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# INSPIRE Architecture





# INSPIRE Annex themes

## Themes, Annex I

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

## Themes, Annex II

Elevation  
Land cover  
Orthoimagery  
Geology

## Themes, Annex III

Statistical units  
Population distribution – demography  
Buildings  
Soil  
Land use  
Human health and safety  
Utility and Government services  
Environmental monitoring facilities  
Production and industrial facilities  
Agricultural and aquaculture facilities  
Area mgmt./restriction/regulation zones & reporting units  
Natural risk zones  
Atmospheric conditions  
Meteorological geographical features  
Oceanographic geographical features  
Sea regions  
Energy resources  
Mineral resources  
Bio-geographical regions  
Habitats and biotopes  
Species distribution



## Data Specification objectives

All Annex themes

Article 6

4. Implementing rules referred to in paragraph 1 shall cover the definition and classification of spatial objects relevant to spatial data sets related to the themes listed in Annex I, II and III and the way those spatial data are geo-referenced.

Annex I and II

Article 8

2. The implementing rules shall address the following aspects of spatial data:

- (a) a common framework for the unique identification of spatial objects, to which identifiers under national systems can be mapped in order to ensure interoperability between them;
- (b) the relationship between spatial objects;
- (c) the key attributes and the corresponding multilingual thesauri commonly required for policies which may have an impact on the environment;
- (d) information on the temporal dimension of the data;
- (e) updates of the data



## Data Specification objectives

The Data Specifications define:

- an application schema in UML;
- spatial object types, attributes, attribute values and relationships between spatial objects,
- rules for unique identifiers for spatial objects, derived from national identifiers
- theme specific metadata (including data quality)
- simple portrayal rules for the INSPIRE Viewing Service



## Data Specification objectives

The Data Specifications do NOT define:

- collection criteria;
- scale and resolution,
- minimum quality requirements

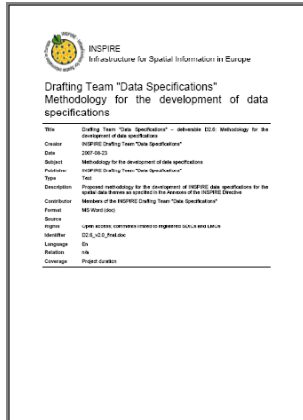
because INSPIRE

aims at interoperability of data as it exist,  
and must not mandate collection of new data.



## Data Specification development

# Framework documents



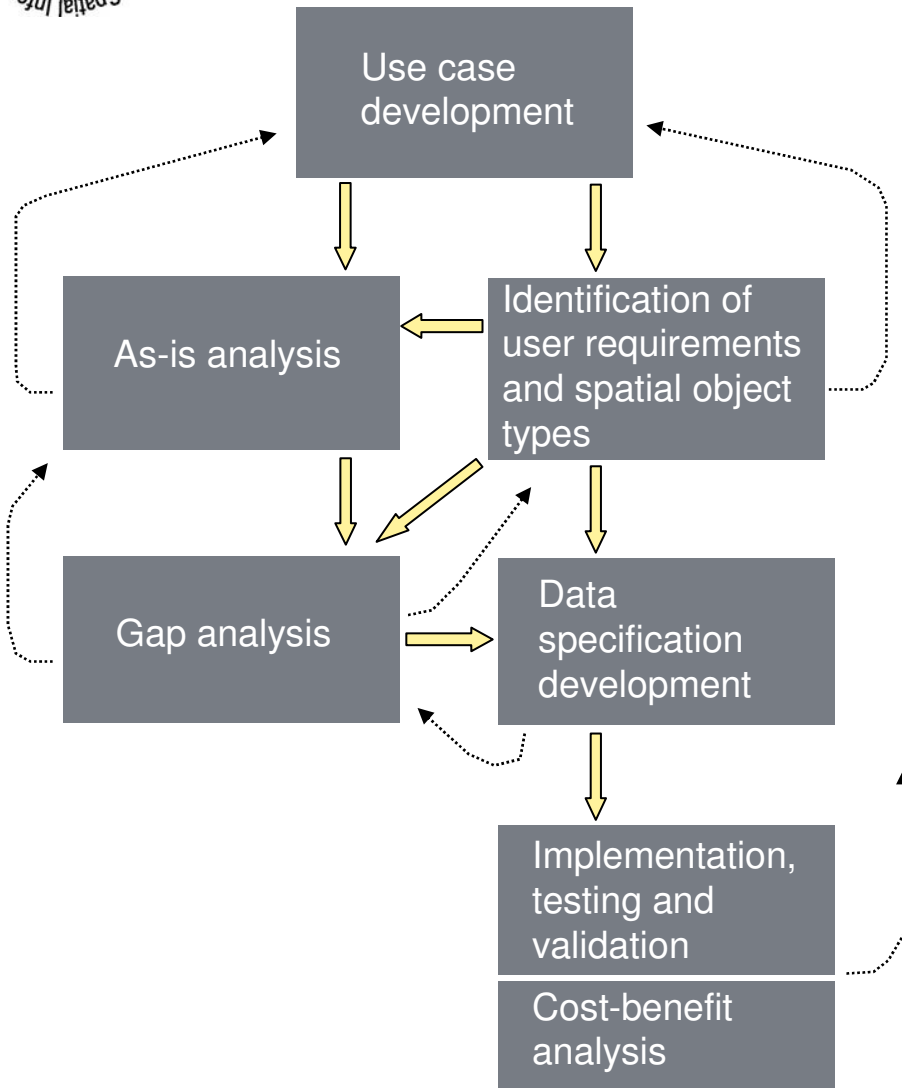
- established by the Drafting Team Data Specifications
- Guidance for the Thematic Working Groups (TWGs)
- D2.3 Scope of Themes
- D2.5 Generic Conceptual Model
  - Rules for Application Schema
  - elements that are common to several themes
- D2.7 Encoding
  - GML
- D2.6 Methodology for the development of data specifications





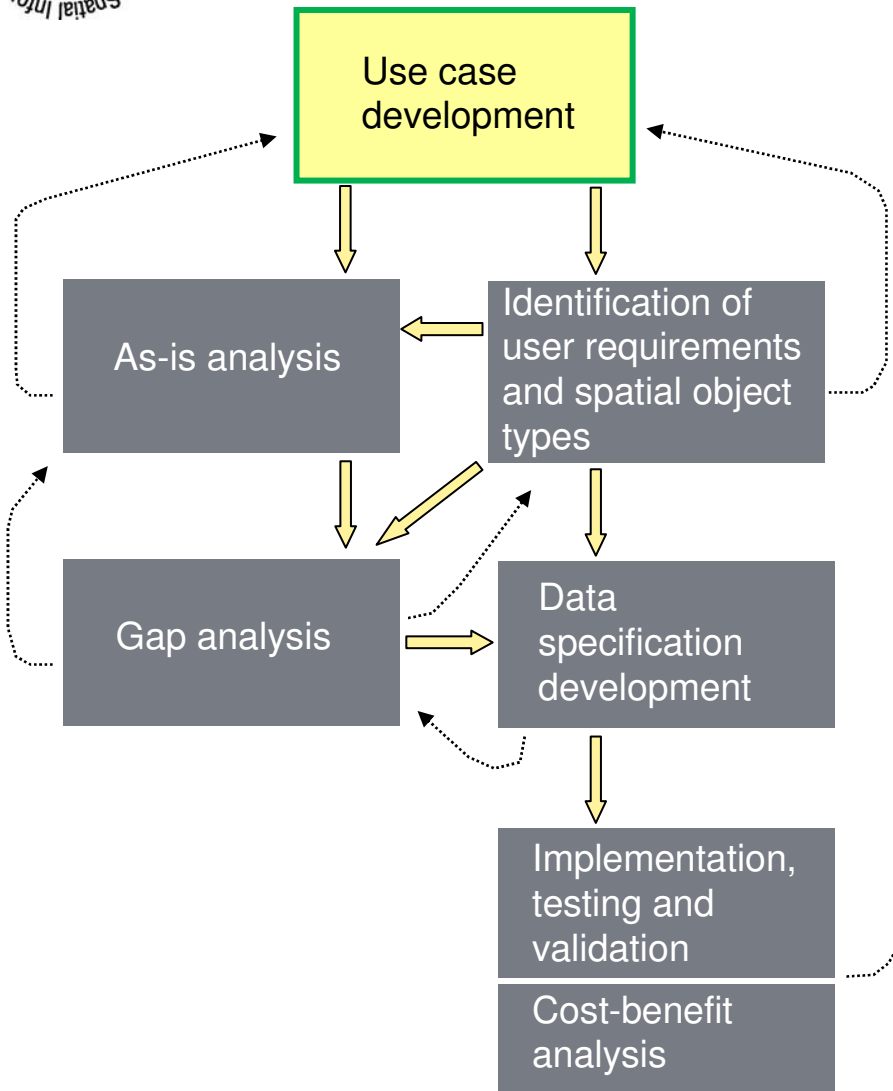
## Data Specification development

### Step-wise methodology





# Data Specification development



## Step 1: Use Case Development

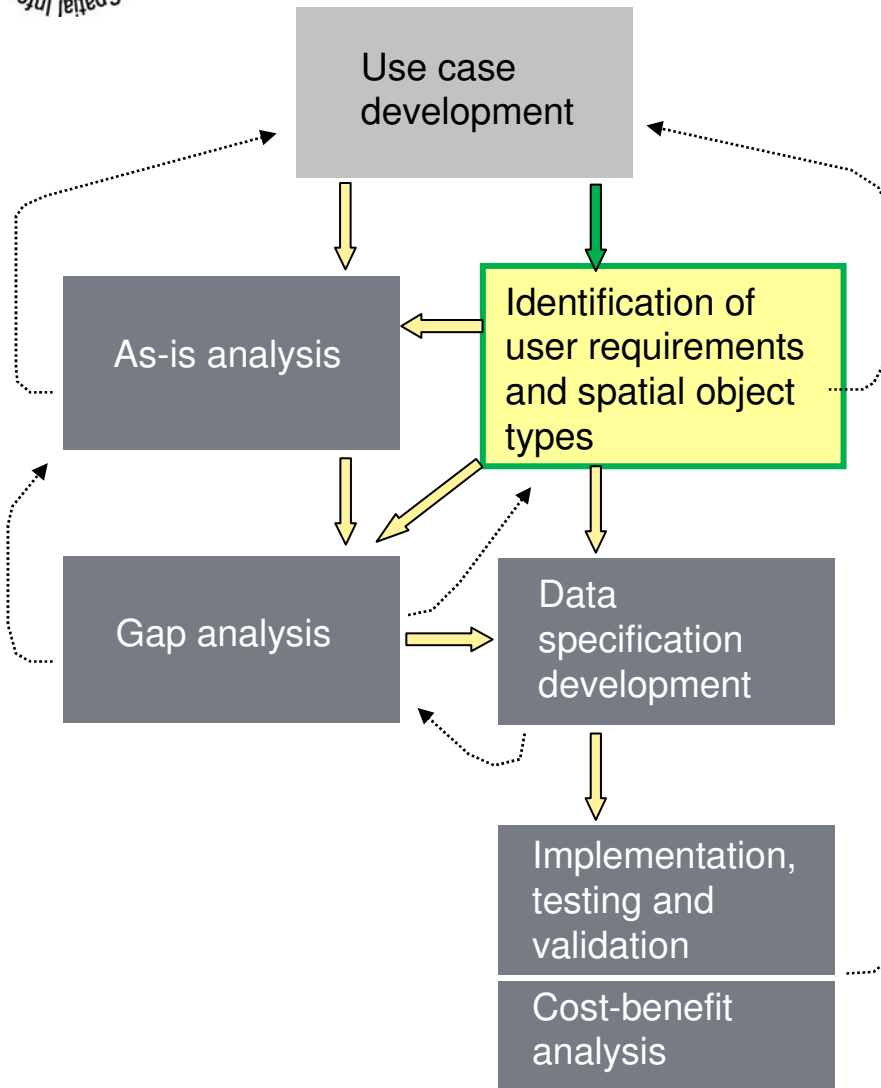
responsibility of the  
Consolidation Team

Major sources are:

- European environmental policies
- user requirements survey
- SDIC/LMO reference material
- **EU-funded initiatives and projects**



# Data Specification development



## Step 2: Identification of user requirements and spatial object types

responsibility of the TWG

identify requirements on

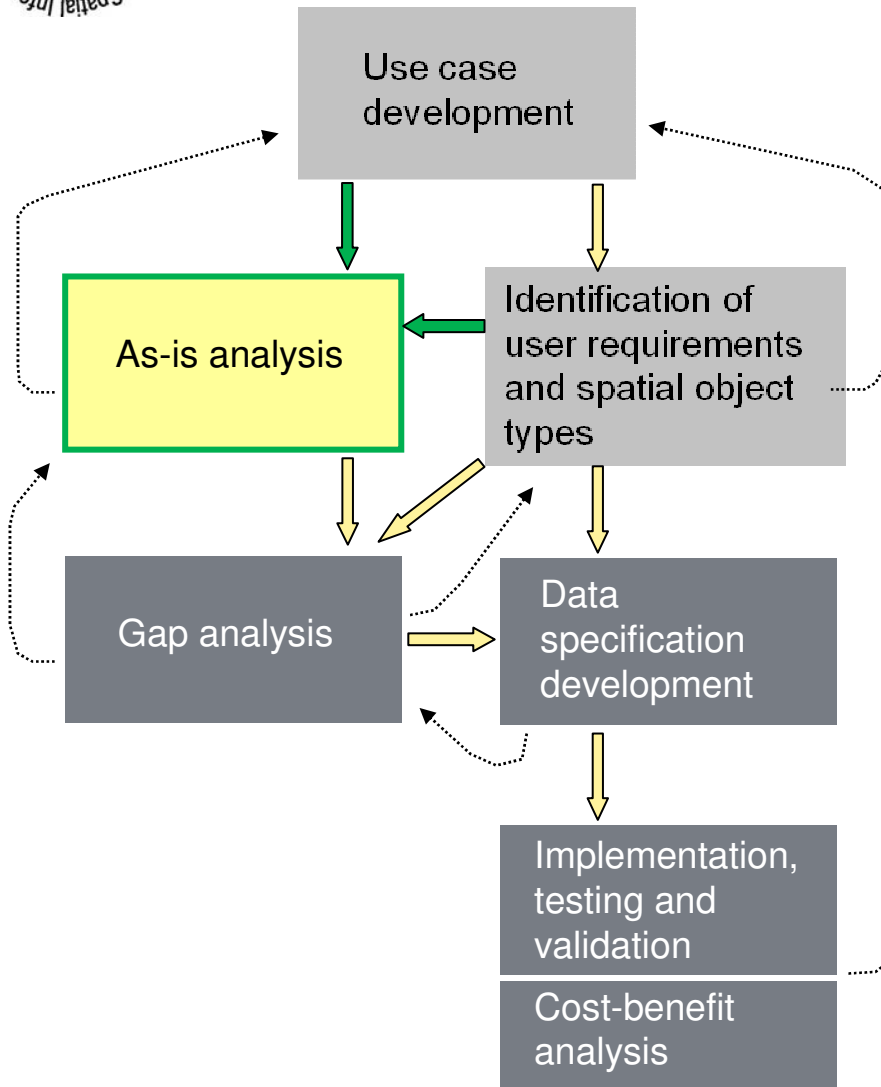
- the data content
- metadata, data quality, portrayal and the other elements of the data specification

Results:

- list of spatial object types
- first draft of application schema



## Data Specification development



### Step 3: As-is analysis

responsibility of the TWG

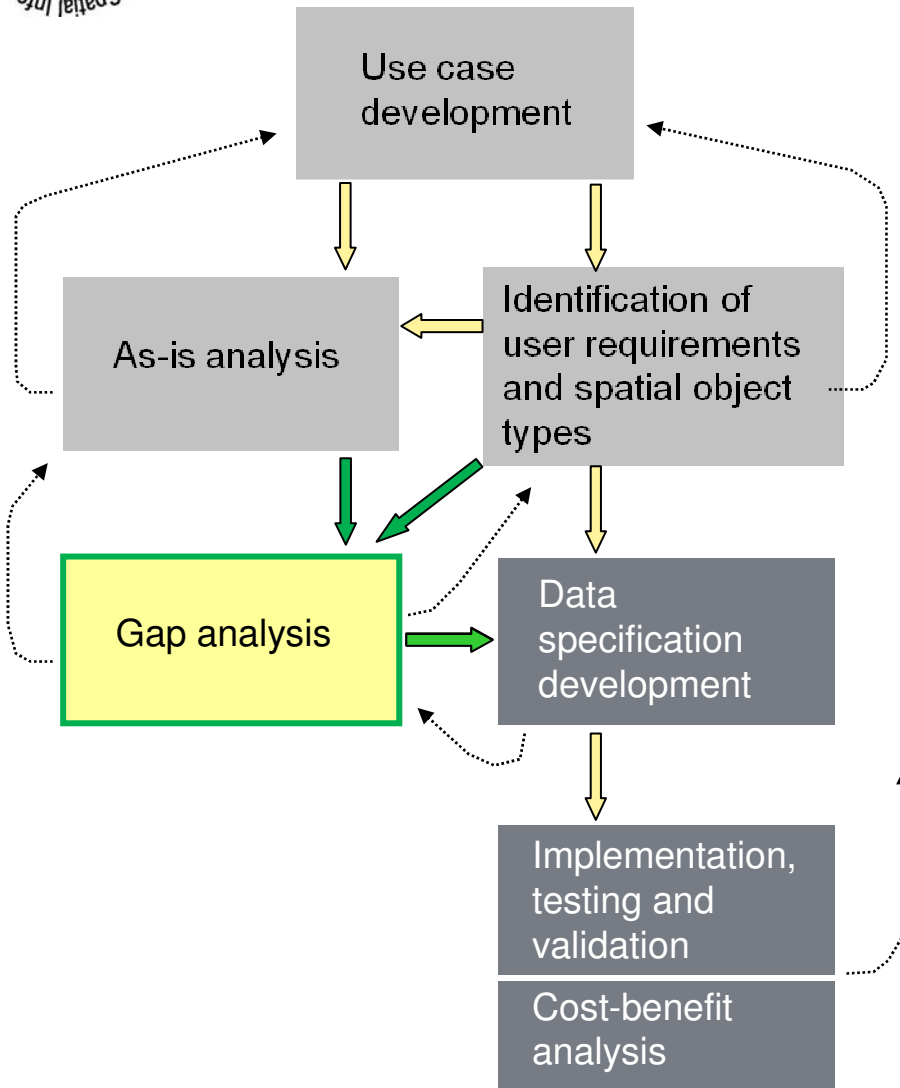
analyse the current situation regarding spatial data sets for the theme, based on:

- the reference material submitted by SDICs + LMOs,
- existing internationally standardised data specifications
- expertise of TWG members

*experience from Annex I:  
first draft application schema  
was built on as-is analysis  
rather than use cases*



# Data Specification development



## Step 4: Gap analysis

Responsible party: TWG

compare

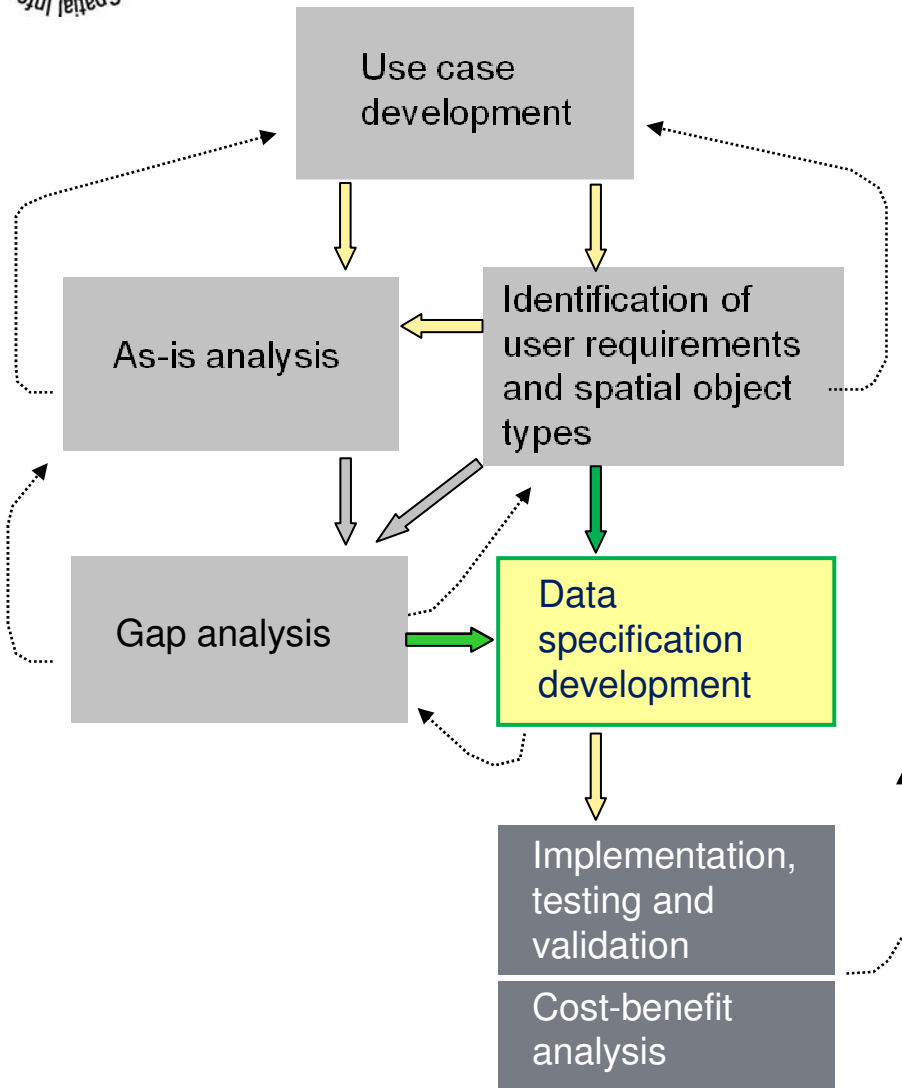
- identified data sources at the Member States

with

- identified user requirements
- draft application schema



# Data Specification development



## Step 5: Data specification development

*The INSPIRE data specifications must be designed to ensure easy mapping between existing data and the harmonised data specification.*

consider:

*Recital 16: No excessive costs to Member States!*

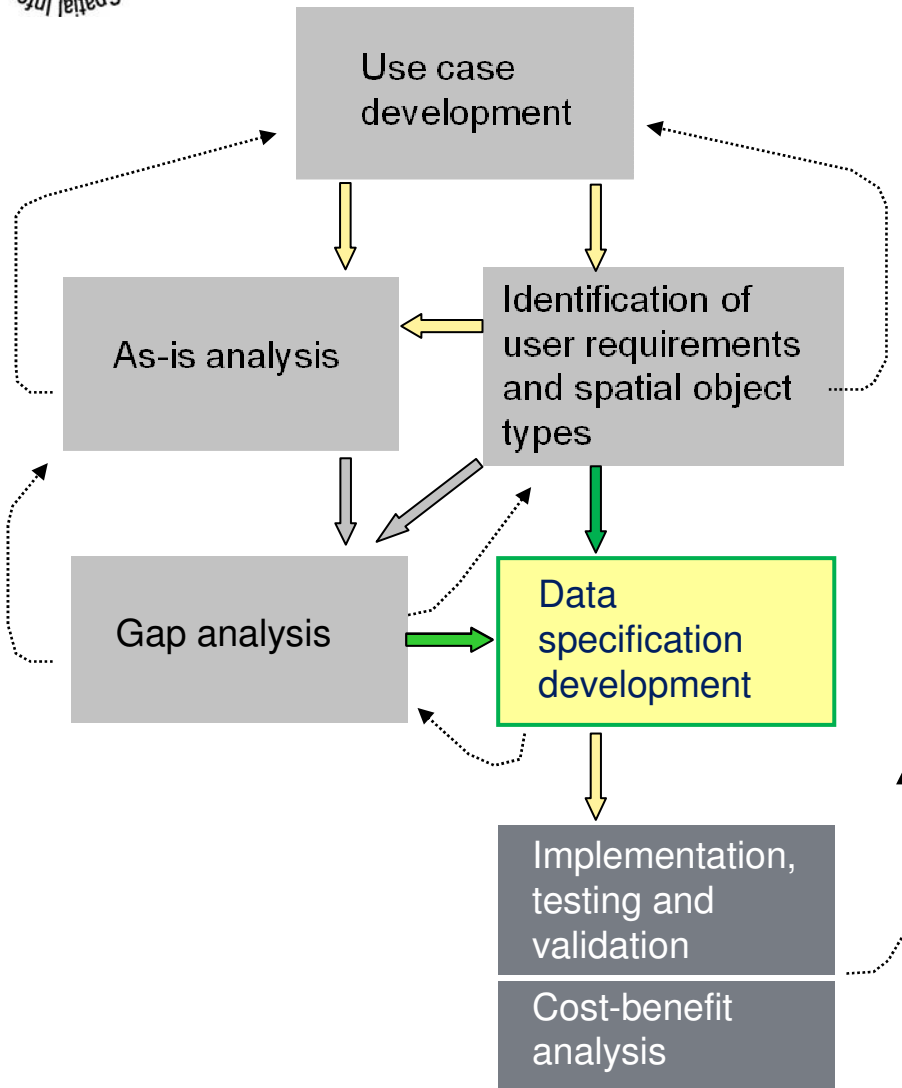
*Article 4(2): No collection of new data!*

Result:

**Data specification version 1.0**



# Data Specification development



## Step 5: Data specification development

Internal review  
of data specification version 1.0  
by other TWGs, CT, DT DS, ....

Result:  
Data specification version 2.0



# Data Specification development



INSPIRE  
Infrastructure for Spatial Information in Europe

## Step 5: Data specification development

### INSPIRE Data Specification <Theme Name>

*<Theme Name> is a reference of the custom document property 'Theme Name'. Please change the value of this document property (Select "File → Properties → Custom") and do not directly change the text in the document. To refresh all references press ctrl+A and F9.*

<b>Title</b>	INSPIRE Data Specification <Theme Name>
<b>Creator</b>	INSPIRE Thematic Working Group <Theme Name>
<b>Date</b>	<yyyy-mm-dd>
<b>Subject</b>	INSPIRE Data Specification for the theme <Theme Name>
<b>Publisher</b>	INSPIRE Thematic Working Group <Theme Name>
<b>Type</b>	Text
<b>Description</b>	<description of the document>
<b>Contributor</b>	Members of the INSPIRE Thematic Working Group <Theme Name>
<b>Format</b>	MS Word (doc)
<b>Source</b>	
<b>Rights</b>	Restricted to TWG members, DT DS and CI
<b>Identifier</b>	DataProductSpecification_Template_v3.doc
<b>Language</b>	En
<b>Relation</b>	n/a
<b>Coverage</b>	Project duration

Result:

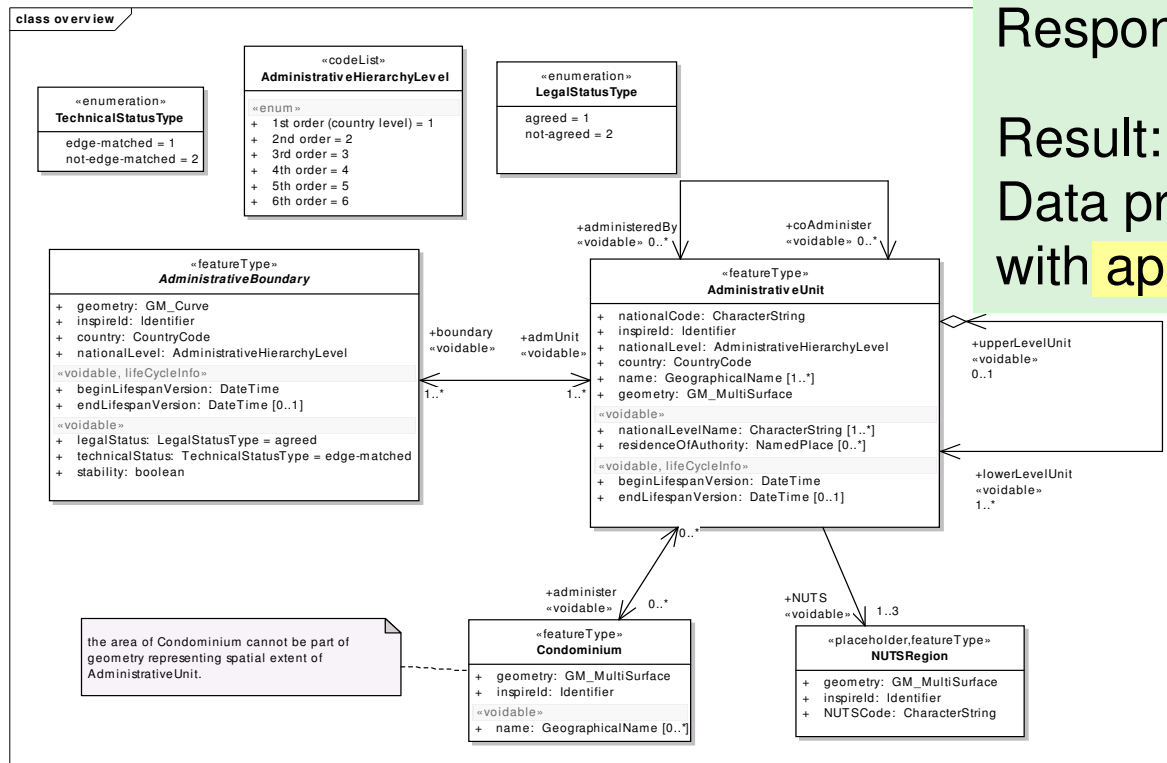
Data product specification  
with application schema





# Data Specification development

## Step 5: Data specification development

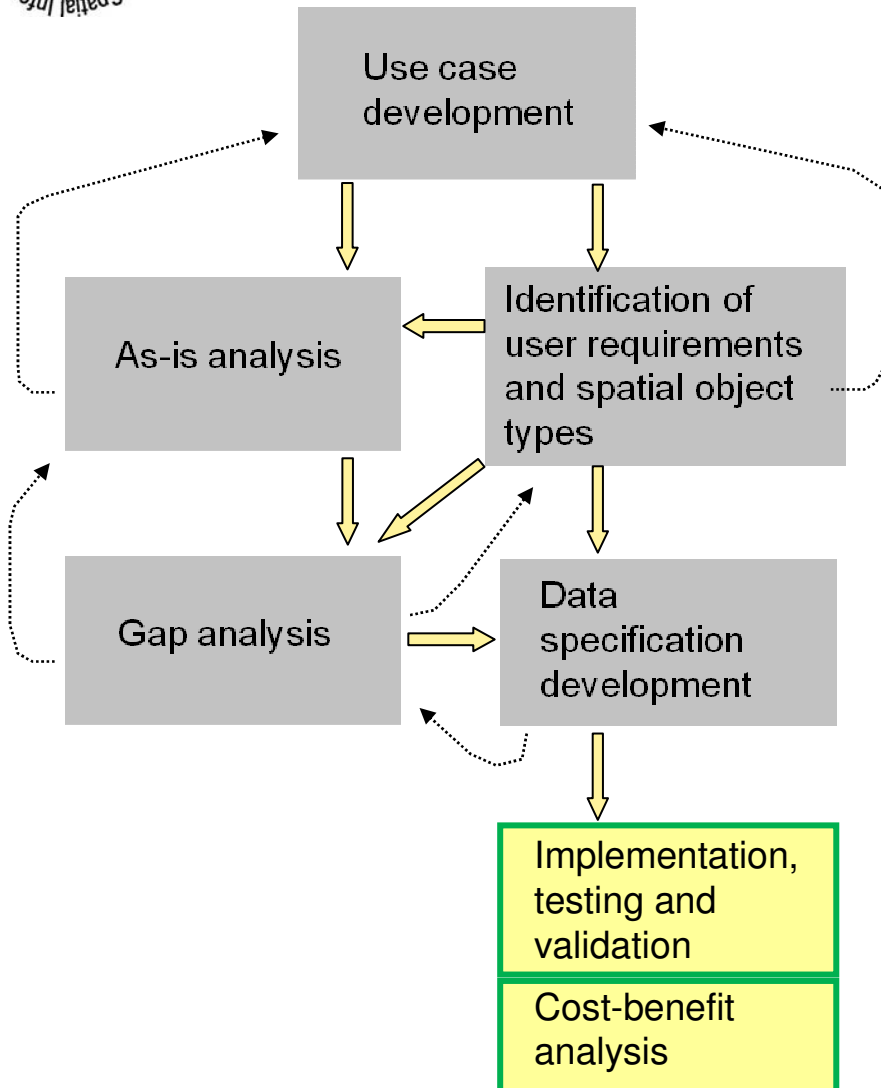


Responsible party: TWG

Result:  
Data product specification  
with application schema



## Data Specification development



### Step 6: Implementation, test and validation, cost-benefit analysis

responsibility of the  
Consolidation Team.

- review by SDICs and LMOs
- test under real world conditions (by selected projects, SDICs and LMOs)
- costs and benefits as required by Article 7(2) of the Directive

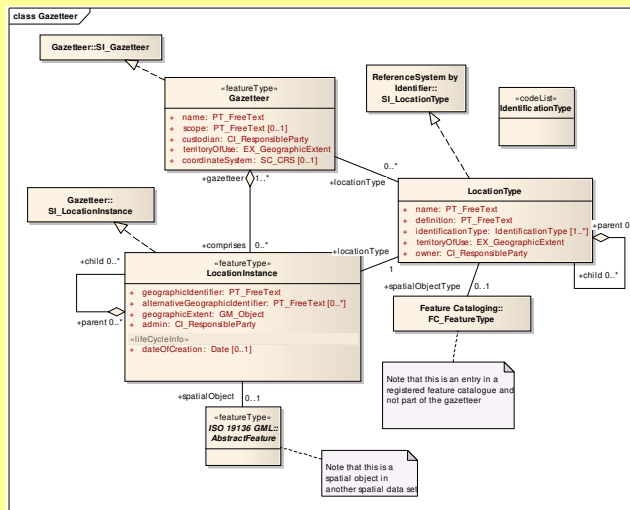
1. TWG considers the comments from review and test
2. final round of harmonisation between themes

Result:

**Data specification version 3.0**

# Data Specification development

**data specification v3.0**  
 according to ISO 19131  
 which includes an  
**application schema**  
 in UML



Commission Services  
 will split into:

## 1. Regulation

legal text. includes:

- spatial object types and associated data types, enumerations and code lists
- identifier management
- encoding,
- updates
- metadata elements
- portrayal

## 2. Guidance Document

not binding. Data specification in full as provided by the TWG



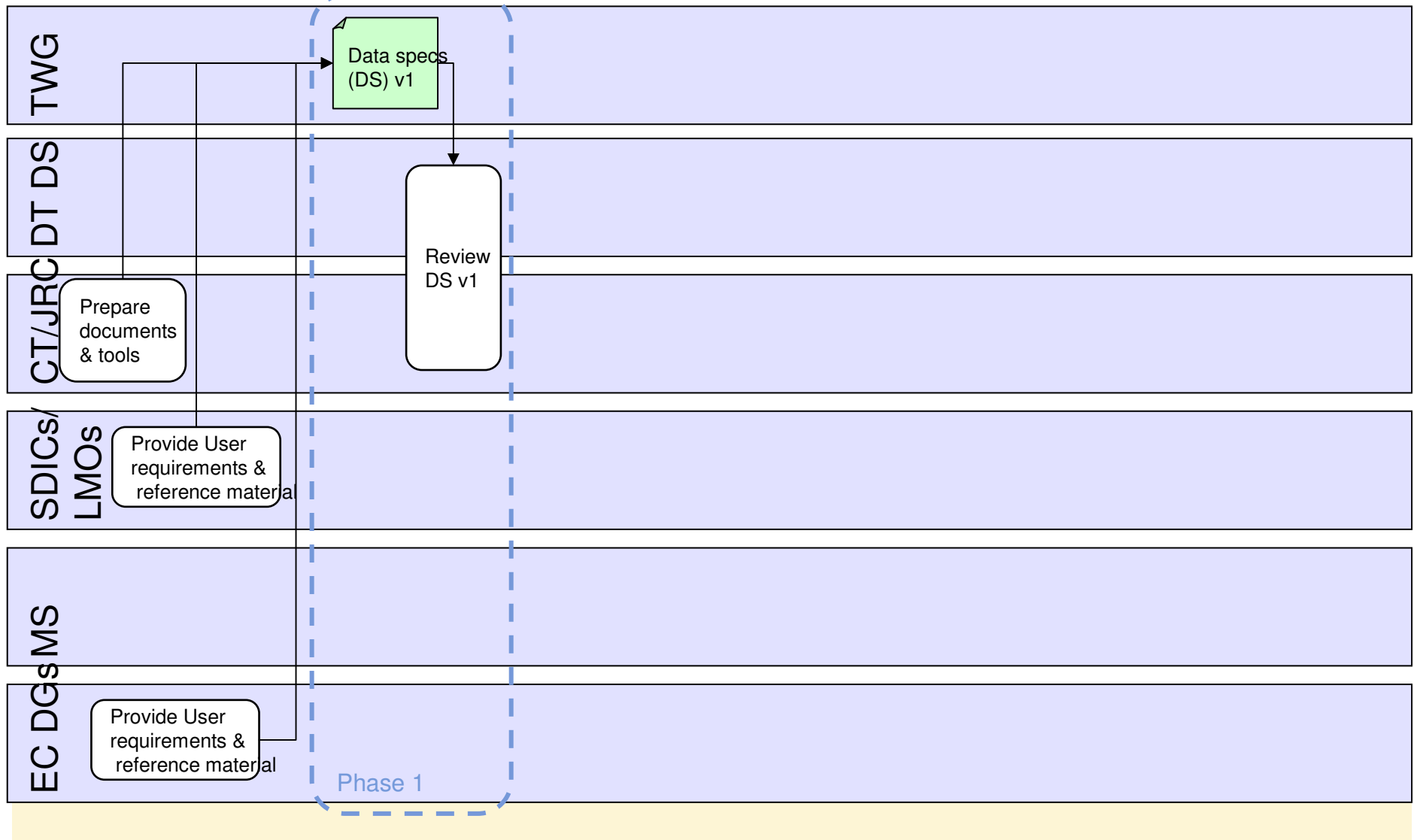
## Preliminary Planning

- February 2010 Set-up of Thematic Working Groups
- 10 March 2010 Workshop with National Contact Points
  - present the composition of TWGs
  - discuss proposal for Working Group on Data Interoperability & Harmonisation: implementation and maintenance
- 19-20 April 2010 Kick-off with Facilitators and Editors
- Autumn 2010 Data Specifications v1.0
- Spring 2011 Data Specifications v2.0
- Summer 2011 Stakeholder consultation and testing on v2.0
- End 2011 Data Specifications V3.0
- 2012 Drafting IR for Annex II and III themes



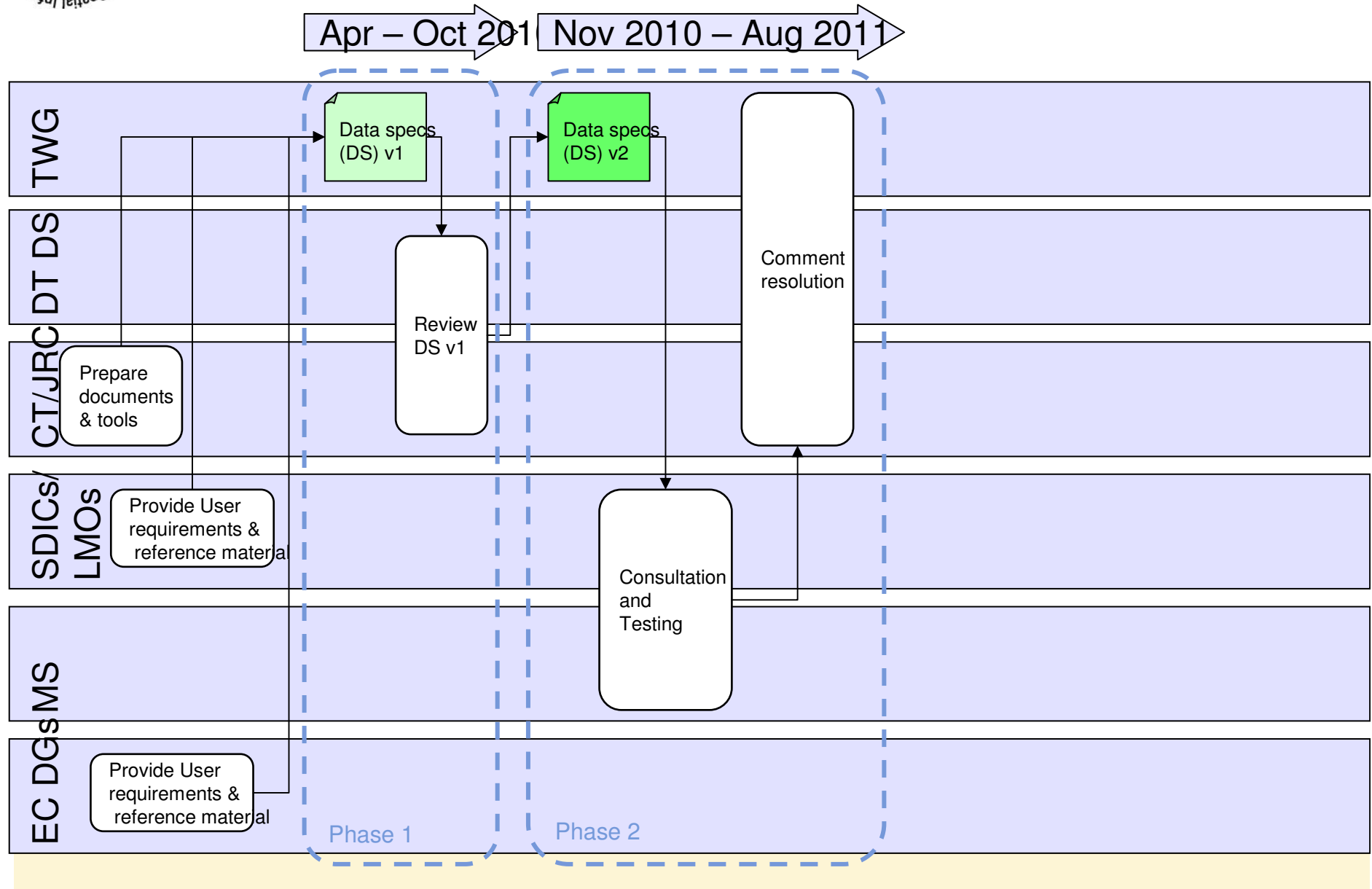
# Roadmap Data Specifications

Apr – Oct 2010



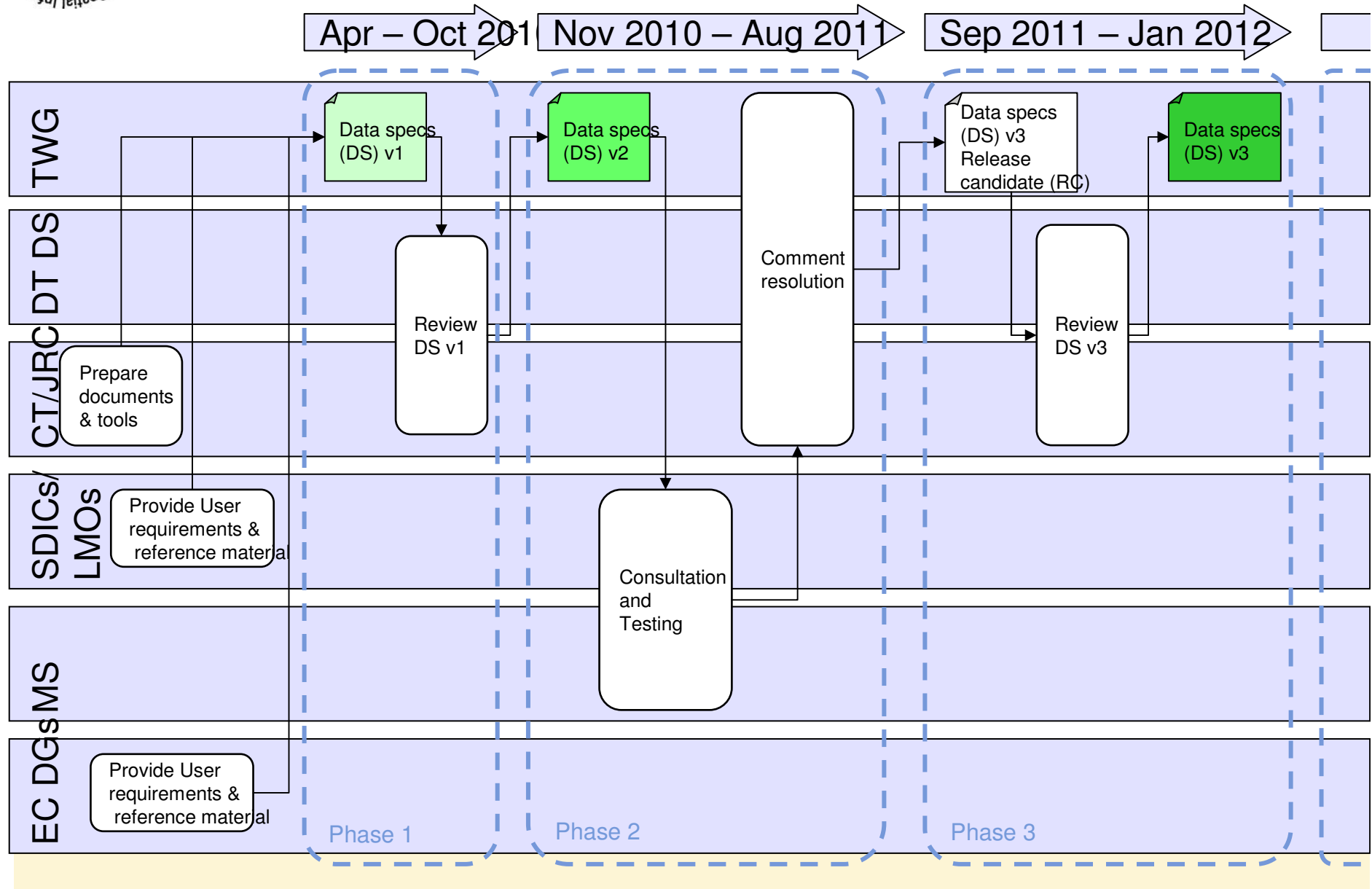


# Roadmap Data Specifications



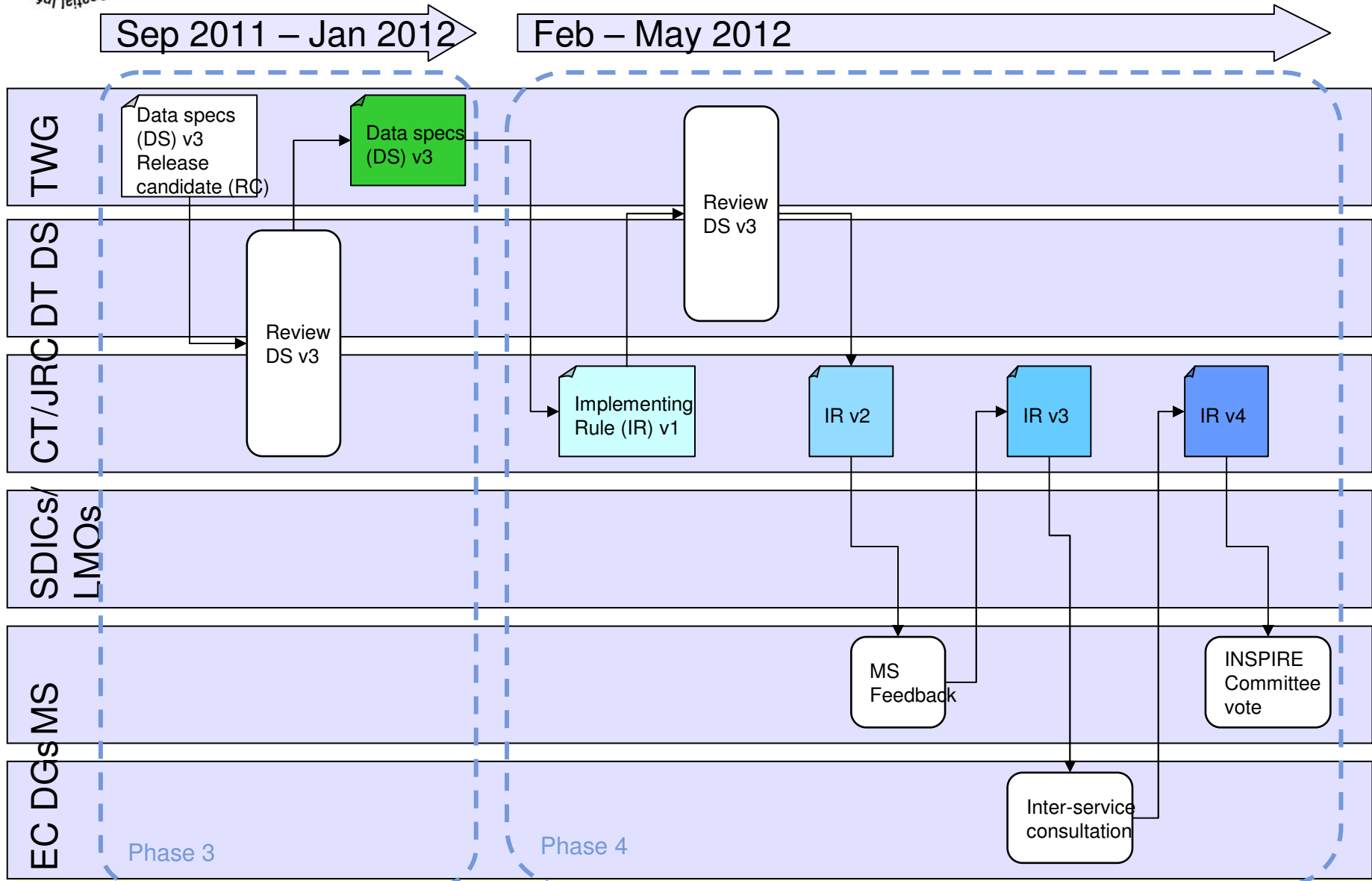


# Roadmap Data Specifications





# Roadmap Implementing Rule







# TWG Statistical Units – Population Distribution

## TWG SU-PD

Active	Surname	Name	Country
A	Bresters	Pieter Wrister	NL
A	Haldorson	Marie	SE
A	Lipatz	Jean-Luc	FR
A	Maack	Udo	DE
A	Migacz	Mirosław	PL
A	Schnorr	Susanne	DE
A	Hahnefeld	Ute	DE
(A)	Coady	Ian	UK
P	Gaffuri	Julien	E (JRC)
P	Kmiecik	Alina	F (PL)
S	Bianchini	Roberto	I
Z	Garcia Ferrero	Sara	ES
Z	Martinez Vidal	Miguel Angel	ES



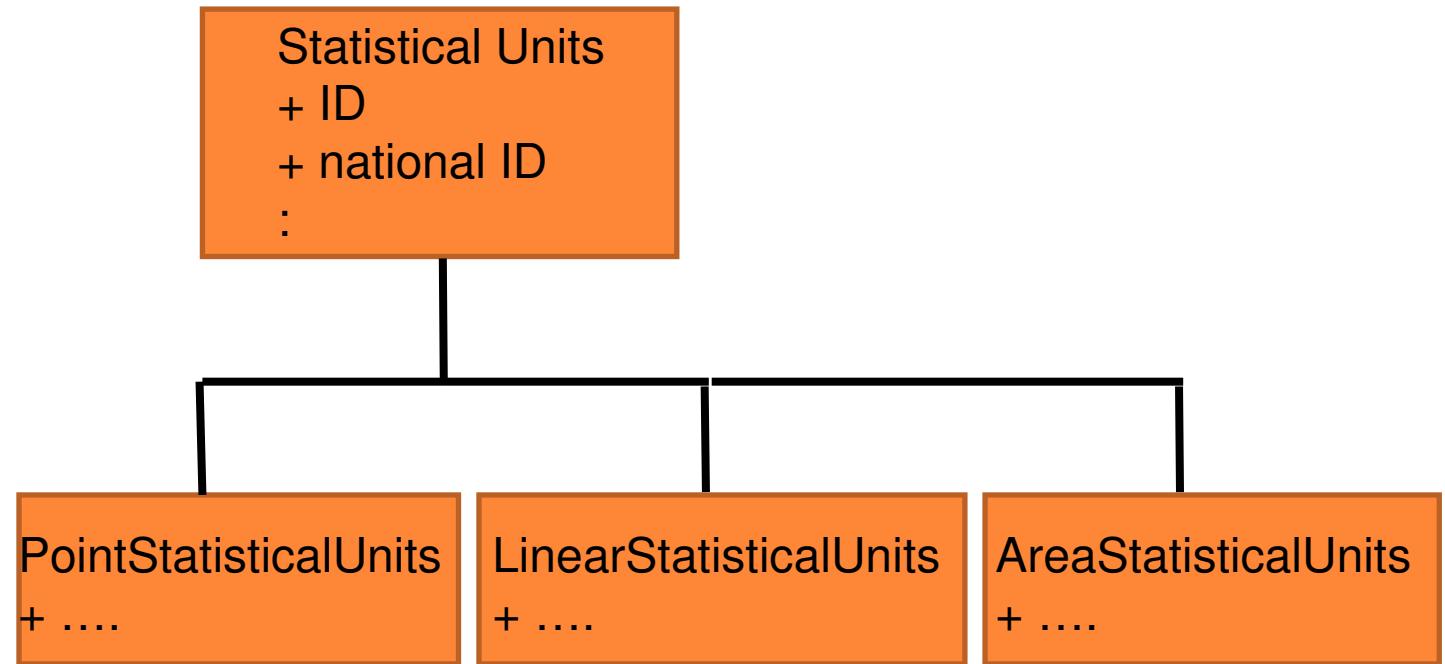
## TWG Statistical Units – Population Distribution

Aims are:

- To specify semantically harmonised data model
- To support the easy exchange of statistical data via Web
- Using the OCG Services (WMS, WFS)
- Integrated into the European Spatial Data Infrastructure



# TWG Statistical Units – Population Distribution





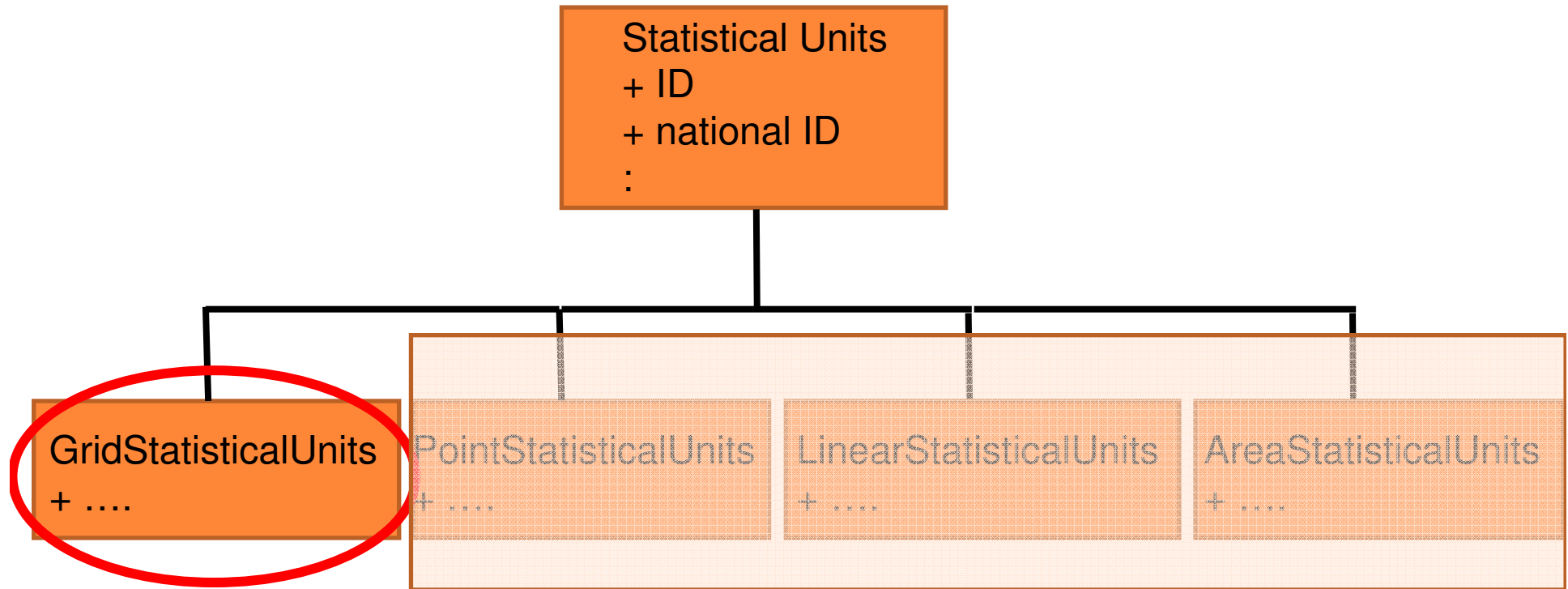
## TWG Statistical Units – Population Distribution

Main issues to be discussed:

- Flexibility
- Level of detail
- Provisions to keep the history
- X-Theme relations



# TWG Statistical Units – Population Distribution





## **TWG Statistical Units – Population Distribution**

Important issues to be considered:

- INSPIRE Data specifications
- INSPIRE Framework Documents
- ISO-Norms
- OGC-Standards



## TWG Statistical Units – Population Distribution

To be considered specifying Statistical Grids:

- Data Specifications “GRIDS” (Annex I)
  - Based projected coordinate reference system
  - Hierarchical (resolutions of 1m,  $10^{(n)}$ m)
  - The coding system



# **TWG Statistical Units – Population Distribution**

Discussion please

