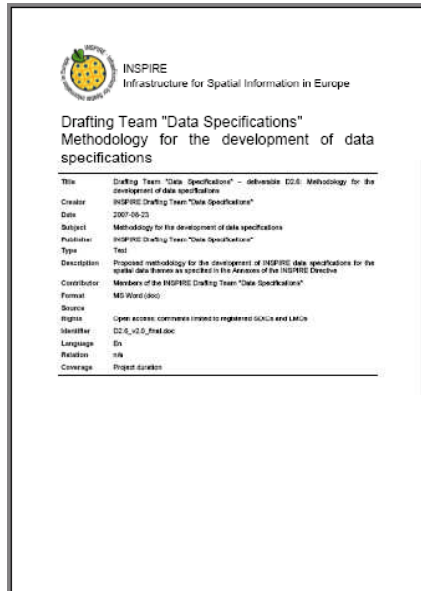



Methodology for the development of INSPIRE data specifications

Andreas Illert,
Drafting Team Data Specifications

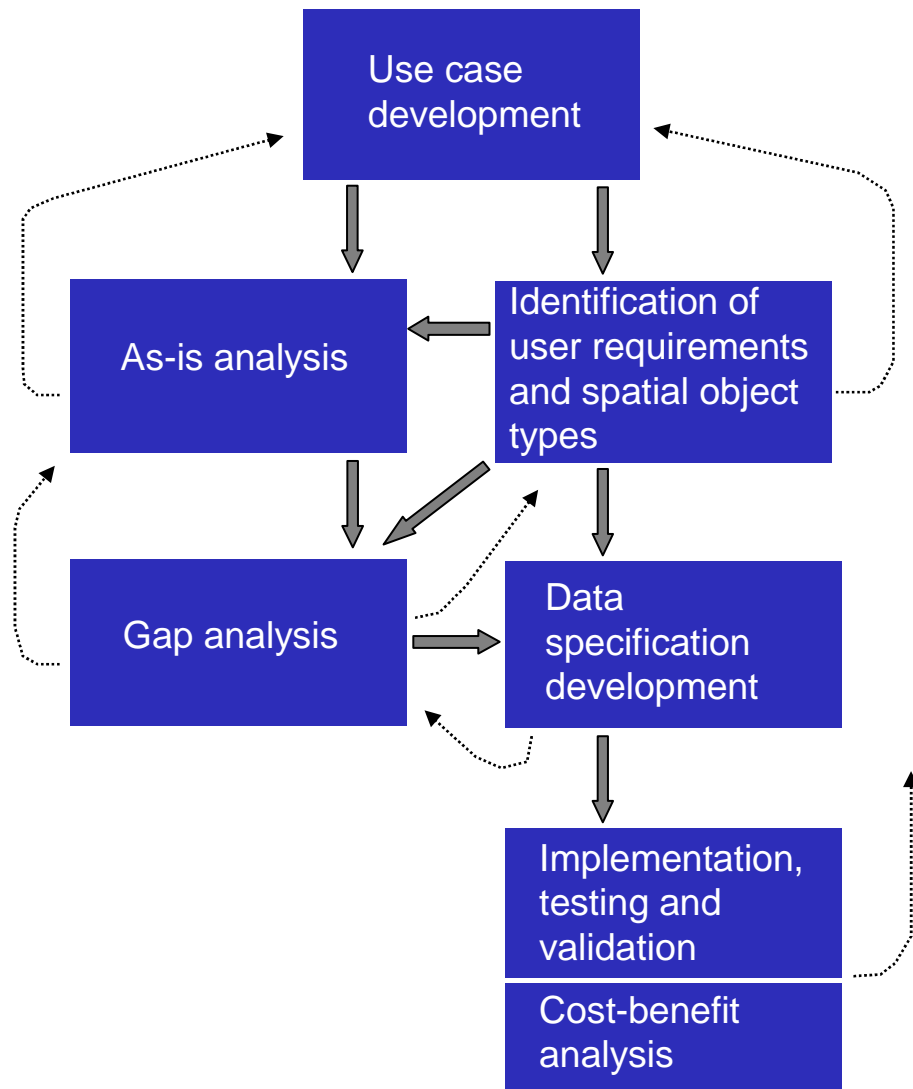
INSPIRE conference, Maribor, June 24, 2008

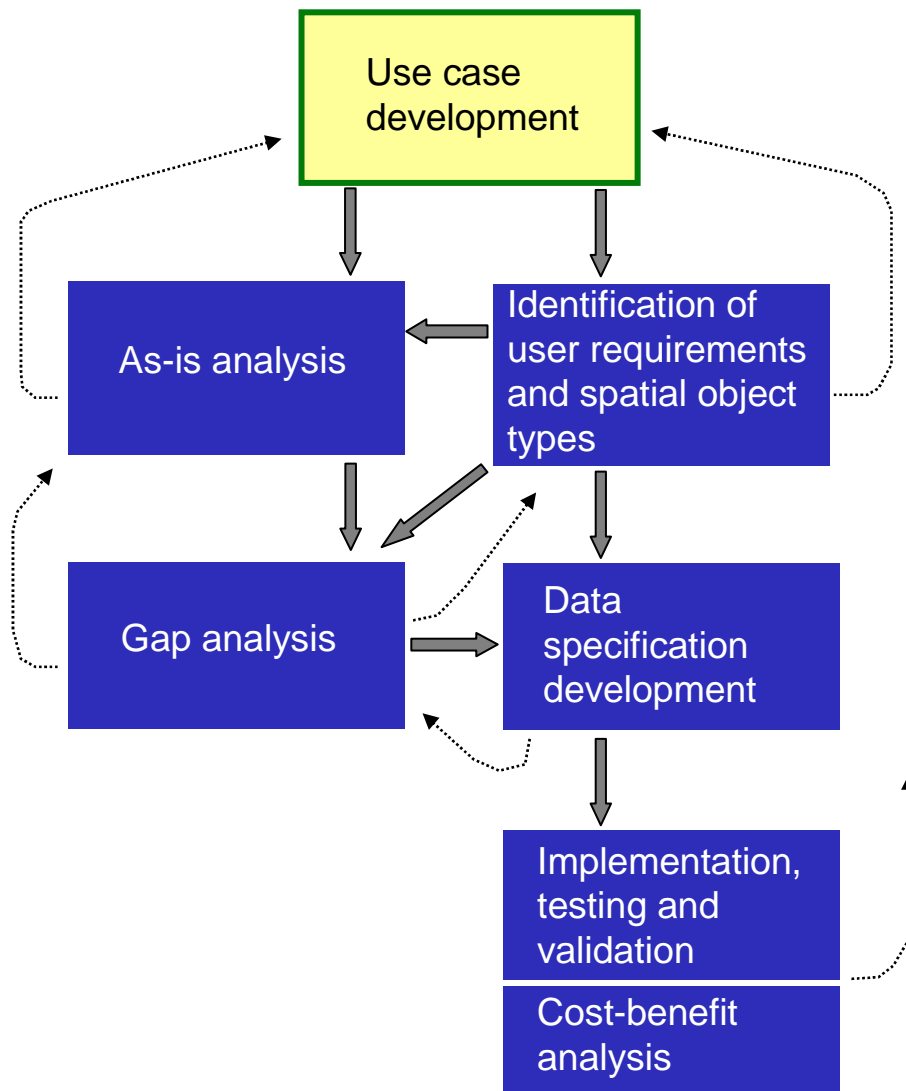
D2.6 Methodology for the development of data specifications



- proposed by the **INSPIRE Drafting Team Data Specifications**
- based on guidelines from **OGC** and results of the **RISE** project 
- version 2.0 has passed review by **SDICs and LMOs** (1148 comments)
- Guideline for the **INSPIRE Thematic Working Groups (TWGs)**

Step-wise methodology



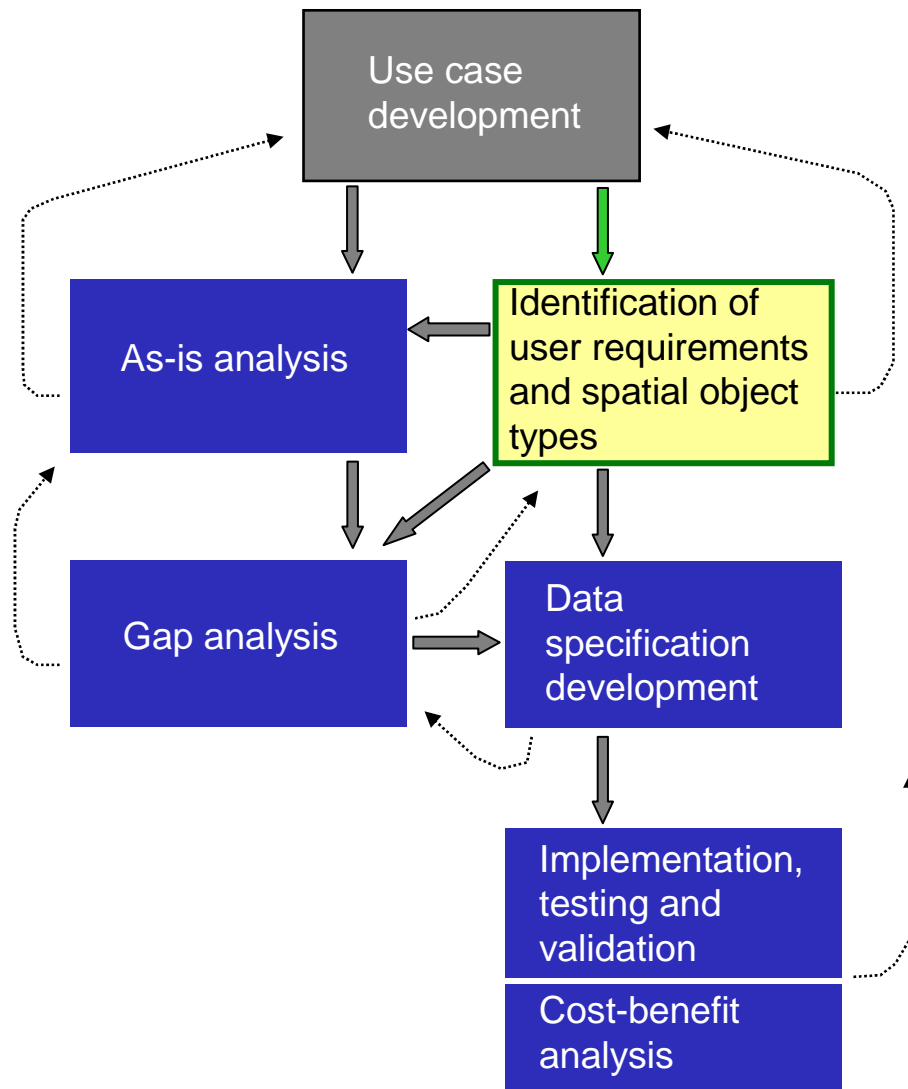


Step 1: Use Case Development

responsibility of the
Consolidation Team

Major sources are:

- European environmental policies
- user requirements survey
- SDIC/LMO reference material
- studies by JRC and EuroStat,
- EU-funded initiatives and projects



Step 2: Identification of user requirements and spatial object types

responsibility of the TWG

The TWG should identify requirements on

- the data content
- the level of detail,
- relationships between objects,
- data consistency,
- updating and temporal dimension of data,
- unique identifiers,
- metadata for evaluation,
- data quality

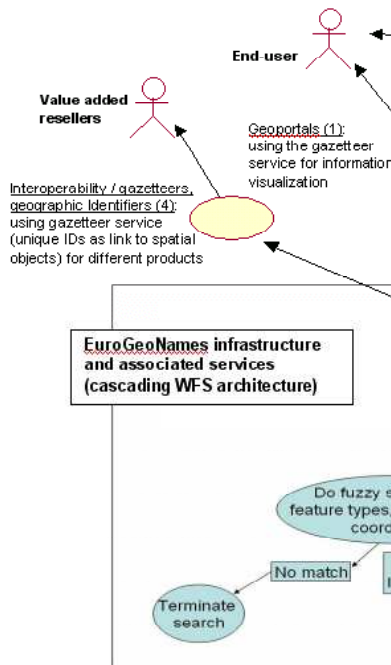
Results:

- Use case descriptions
- list of spatial object types
- „first-cut“ application schema

Step 2: Identification of user requirements and spatial object types

1) UML use case diagram

to provide an overview of the use case(s) and the involved actors (example below).



Use case diagram

	A		
1	Data harmonisation component	User requirements questions	User requirement answers
0	Context	Main characteristics of the use case (general purpose, geographic extent, level of detail, ...)	pan european policy, large scale level accuracy requirements, explicitly linked to EU environment policies. Due to inability of cadastres to meet requirements, a parallel LUIS has often been developed
2	(B) Terminology	Which concepts are required? Is there a document where they are defined? (e.g. a glossary)	specific
3	(D) Application schemas and feature catalogues	Which features and attributes are required? Which relationships between features?	parcel/ identifier/ area/ eligible land cover percentage
4	(E) Spatial aspects (Vector geometry)	Geometries required: Dimensionality of the geometries (0D, 1D, 2D, 3D)? - interpolation types for curves and surfaces?	vector polygon for area calculation / boundary for communication farmer/administration
5	(E) spatial aspects (Topology)	Topological structure? Cadastration of public domain? Gaps and overlaps?	topology required (no overlap) - slivers allowed. Public domain irrelevant when used for agriculture
6	(E) Spatial aspects (Coverages)	Is the use of raster data acceptable? Which are the drawbacks? The advantages?	raster not acceptable (experience of Poland)
7	(E) Spatial and temporal aspects (Temporal profile)	Which information about time is required? Need of historic data?	condition in the claim year, land use over the previous 5 year in some case. Land cover area on a historic moment in some cases
8	(F) Multi-lingual text and cultural adaptability (specification)	Is the data specification (or application schema or feature catalogue) required in several languages, Which?	no, technical documents are in English, although this creates some misunderstandings
9	(F) Multi-lingual text and cultural adaptability (content)	Are geographical names required in several languages? Which languages?	not required
10	(G) Coordinate referencing and units model	Reference systems required: - Coordinate Reference Systems (horizontal, vertical) - Temporal Reference Systems - Units of measurement	Only horizontal is regarded, required to be in "national geodetic system". Temporal reference is the campaign with aid application often closing at June 30th

Data requirements (checklist)

Results:

- Use case descriptions
- list of spatial object types
- „first-cut“ application schema

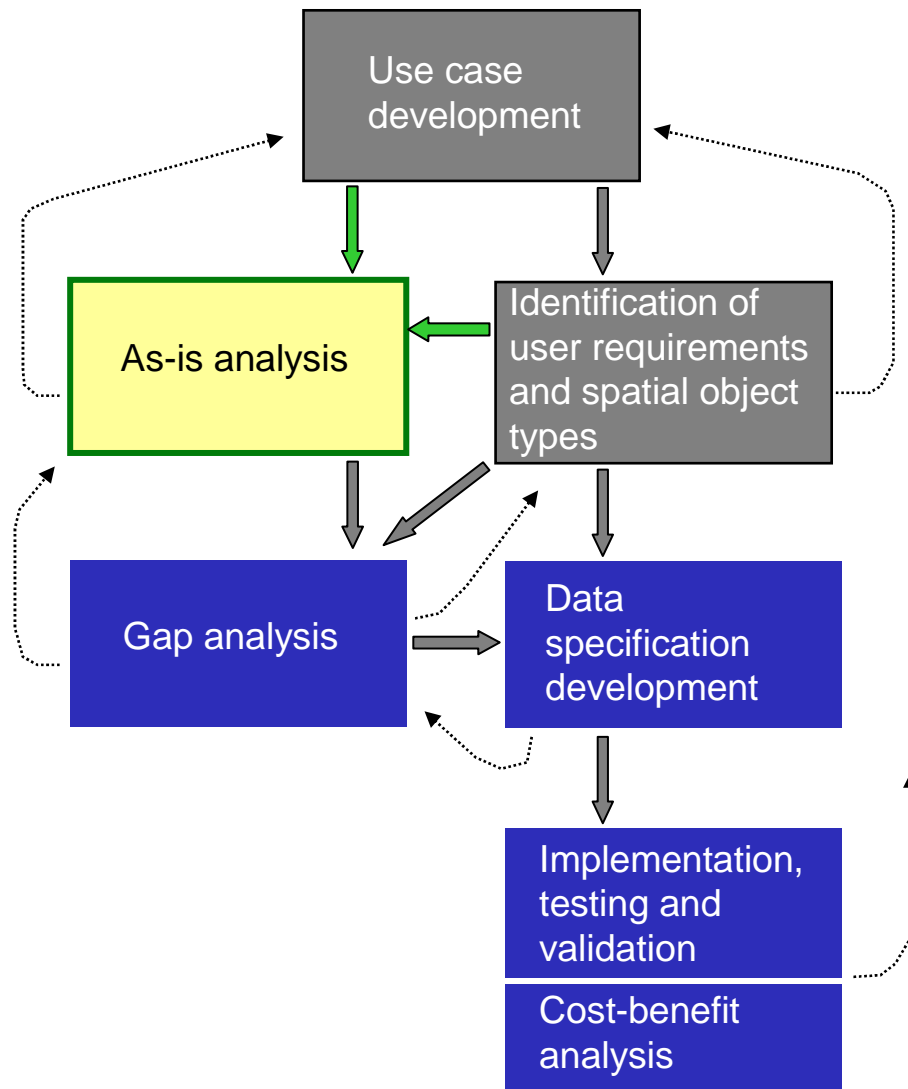
Step 2: Identification of user requirements and spatial object types

	B	C	D	E	F	G
3	Feature concept dictionary					
4						
5	spatial object type concepts		Definition			
6						
7	AdministrativeUnit		area controlled by an administrative authority			
8						
9	AdministrativeUnitLowestLevel		lowest level administrative area in the hierarchy of administrative units			
10						
11	AdministrativeBoundary		a line of demarcation between controlled areas (administrative units).			
12						
13	AdministrativeUnitLabelPoint		reference point for the main area of an administrative unit, can be used for labelling purpose			
14						
15	NomenclatureOfTerritorialUnitsForStatistics		relationship between local administrative units of EU countries and national statistical (LAU2)			
16						
17						

proposed entries to the Feature Concept Dictionary

Results:

- Use case descriptions
- list of spatial object types
- „first-cut“ application schema



Step 3: As-is analysis

responsibility of the TWG

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

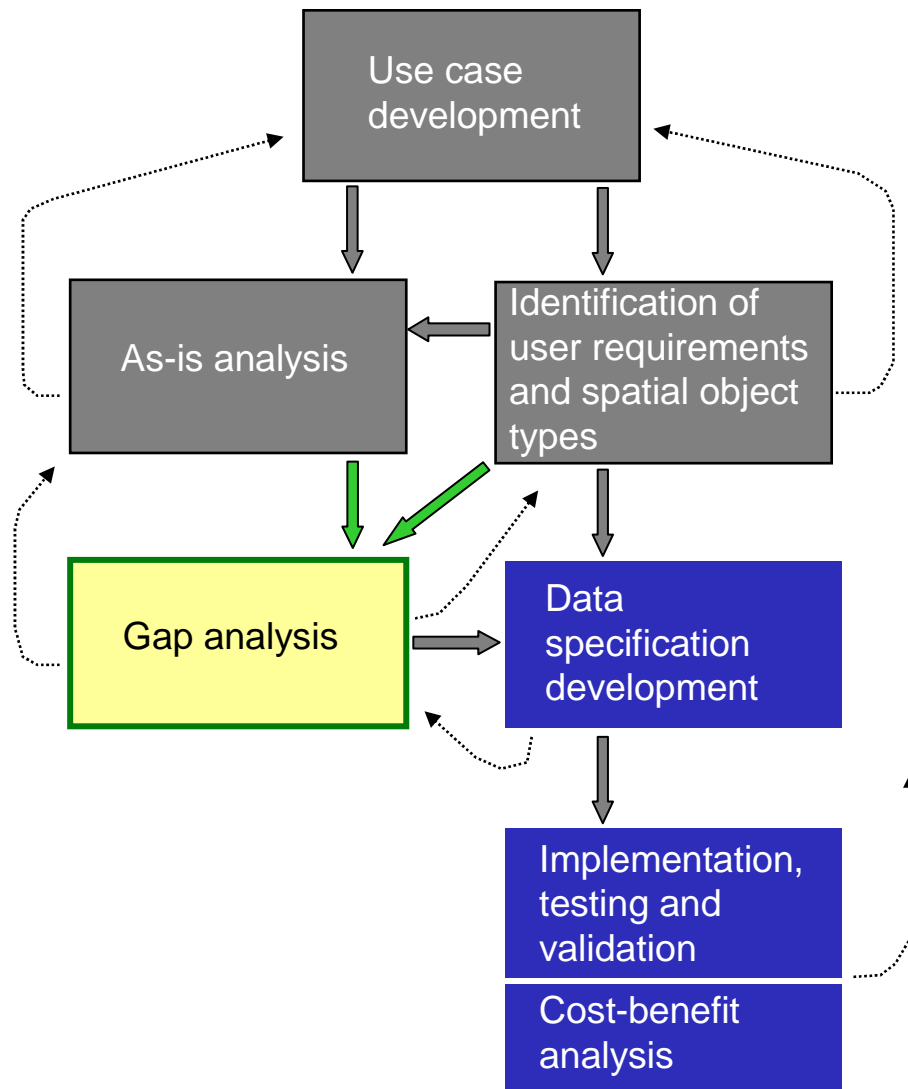
- the reference material submitted by SDICs + LMOs,
- existing internationally standardised data specifications

Result documented in checklist

Step 3: As-is analysis

	A	B	C
1	Data harmonisation component	Questions for as-is analysis of reference documents	As-is analysis for Norwegian feature catalogue and standards
2		Identify and describe the reference document as good as possible from a hydrological (WFD, Flood directive etc.) point of view	SOSI, the Norwegian feature catalogue contains of 37 different appli
3	0 Context	What are the existing data sets described in this reference document?	This is a description of a feature catalogue, not about existing data se
4	(B) Terminology	Which concepts are used in existing data? Do the documents about existing data include a glossary ?	n/a
5	(D) Application schemas and feature catalogues	The point is to identify the existing application schemas and specially the existing features and attributes. Is there a documentation about existing data? Are there already application schema(s) ? If yes, which Conceptual Schema Language(s) do it use? Which elements of General Feature Model are used in existing data : - features - attributes - association - inheritance relation - properties - constraints - operations - others.	SOSI contains a feature catalogue and application schemas (UML) f Features, attributes, association, inheritance relation, properties and The theme "Inland Water and Rivers" contains 43 features where the LAKE RIVER_CREEK CANAL_DITCH DRAIN_LAKE DRAIN_RIVER GLACIER SLACK WATER RAPIDS All Norwegian features and attributes can be translated into English if
6	(E) Spatial and temporal aspects (Vector geometry)	Geometries used: - Dimensionality of the geometries (0D, 1D, 2D, 3D)? - Interpolation types for curves and surfaces ?	point, line, curve, area
	(E) spatial and temporal aspects (Topology)	Topology used? If yes: - Which rules (e.g need for continuous network ? Initial and final	Topology, yes, but no rules described. There is an application that ar

Result documented
in checklist



Step 4: Gap analysis

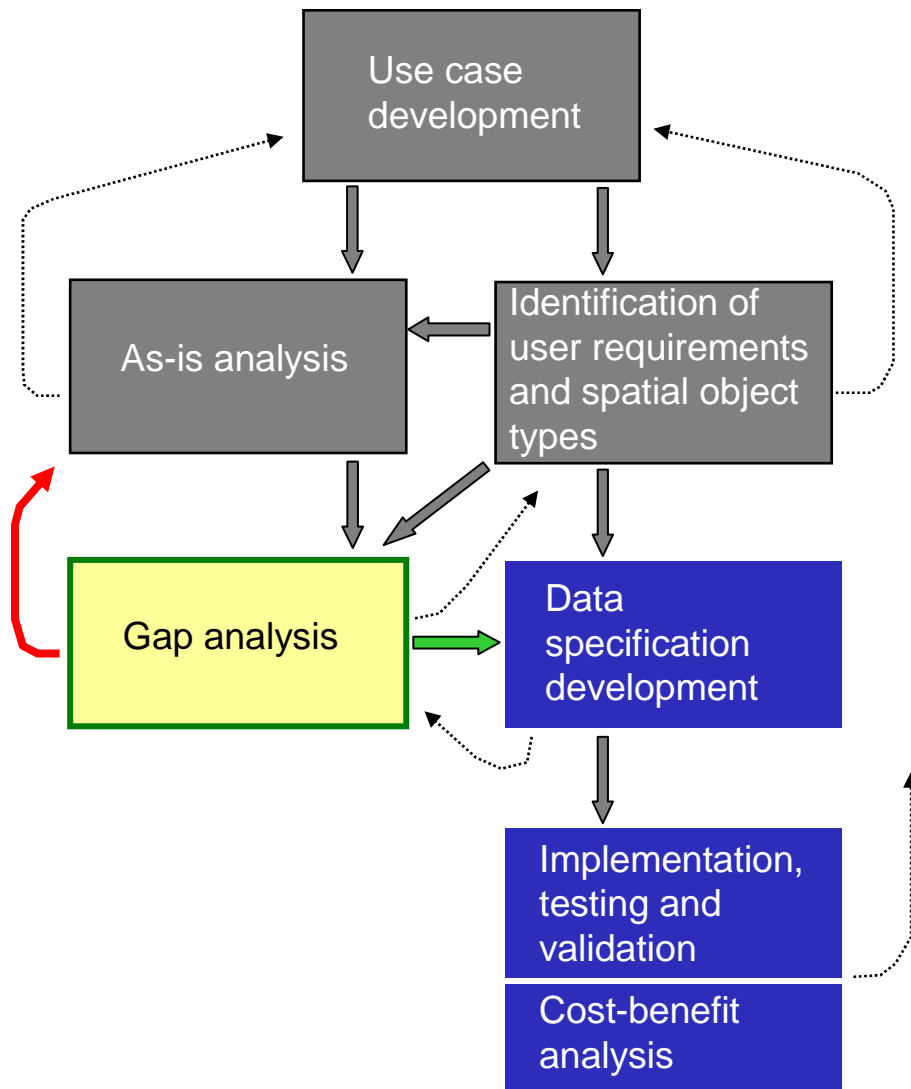
Responsible party: TWG

Compare identified data sources at the Member States with identified user requirements and draft INSPIRE data specifications

consider:

Recital 16: No excessive costs to Member States!

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



Step 4: Gap analysis

Responsible party: TWG

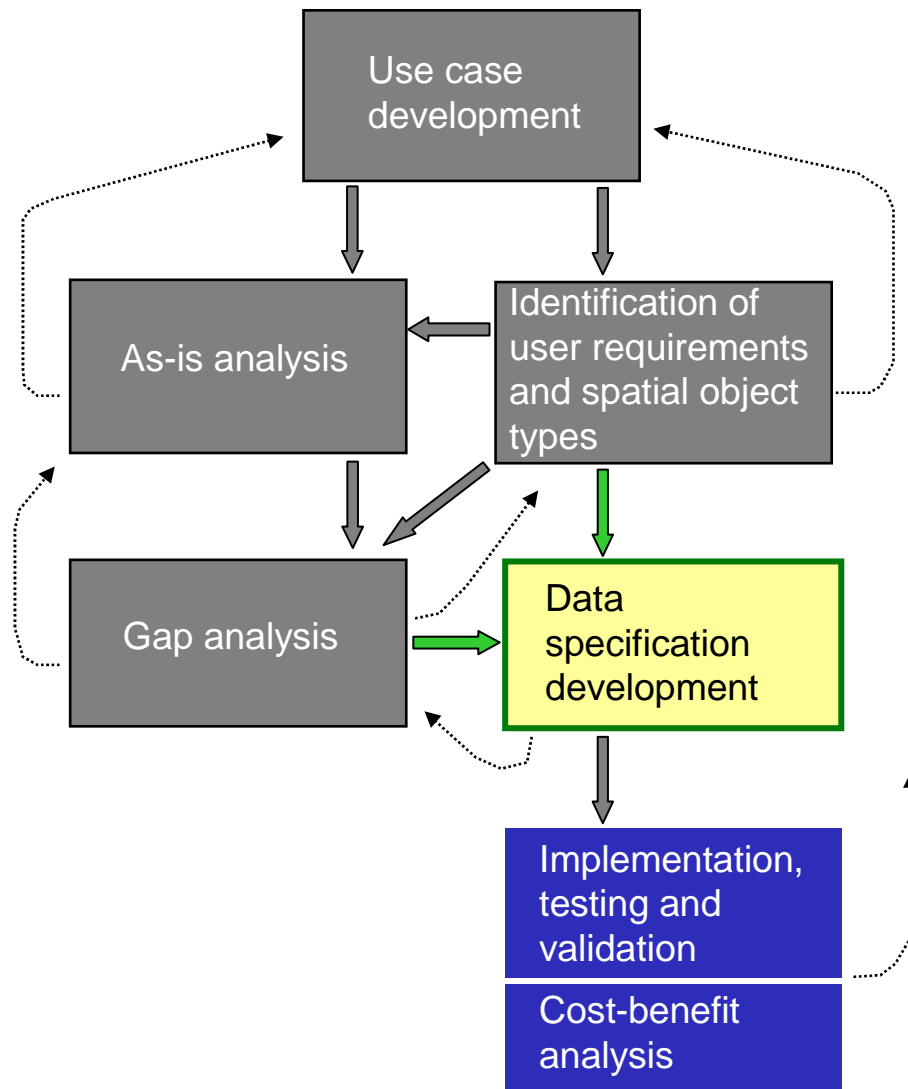
Compare identified data sources at the Member States with identified user requirements and draft INSPIRE data specifications

consider:

Recital 16: No excessive costs to Member States

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

feasible ? **Yes:** Step 5
No: Step 1 or 2



Step 5: Data specification development

Responsible party: TWG

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

Result:
Data product specification
with application schema

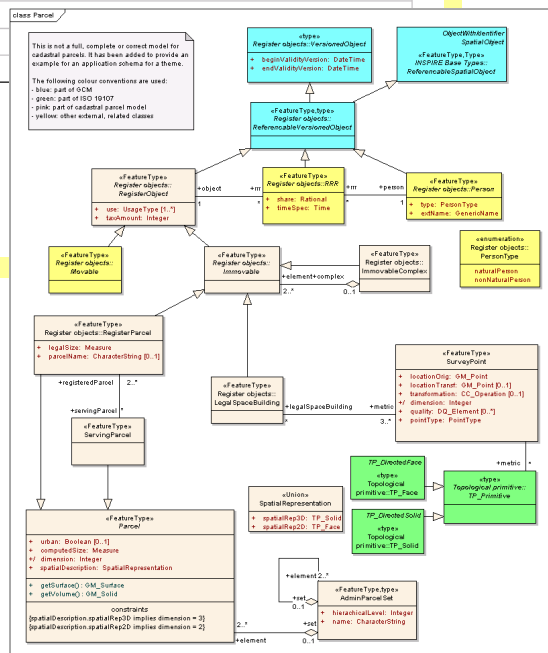


INSPIRE
Infrastructure for Spatial Information in Europe

INSPIRE Data Specification <Theme Name>

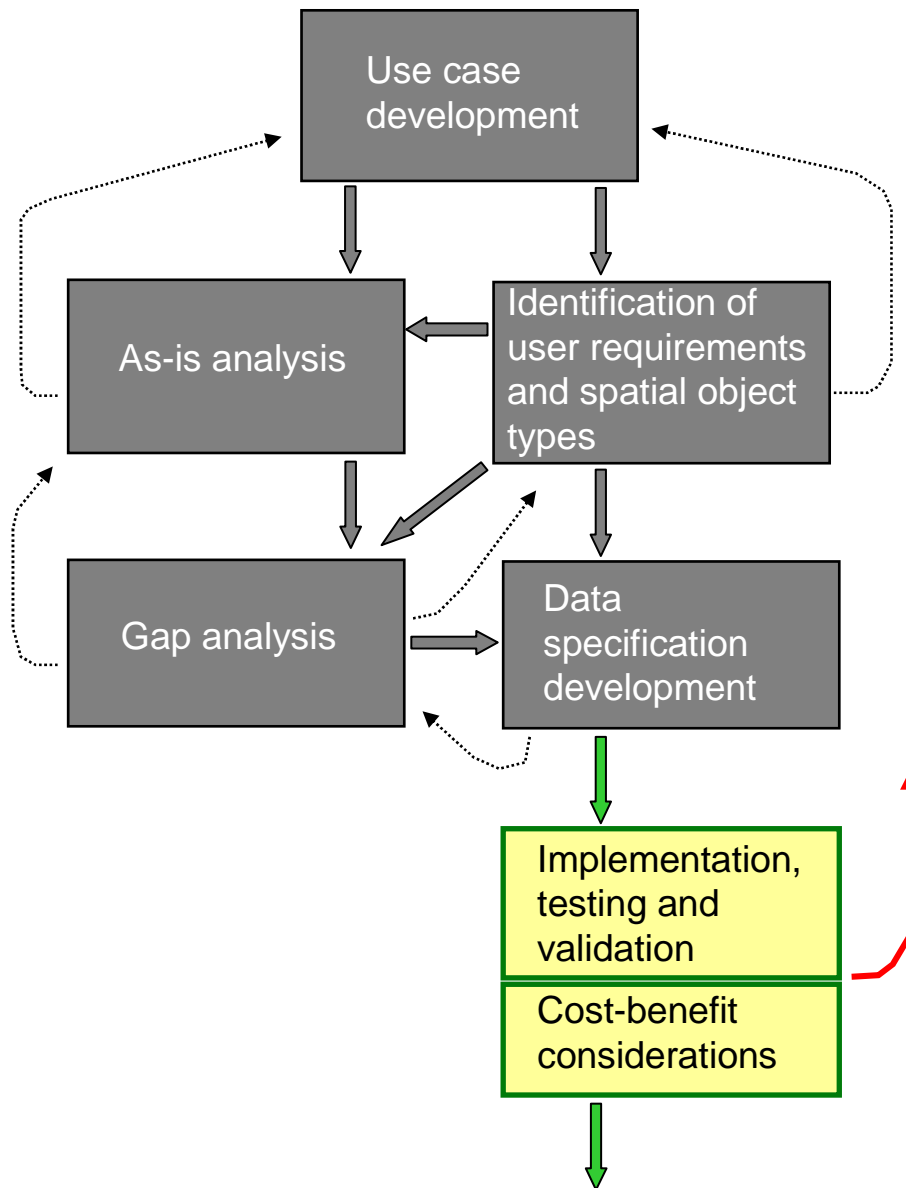
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Creator	INSPIRE Thematic Working Group <Theme Name>
Date	<www.dd>
Subject	INSPIRE Data Specification for the theme <Theme Name>
Publisher	INSPIRE Thematic Working Group <Theme Name>
Type	Text
Description	<description of the document>
Contributor	Members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



Step 5: Data specification development

Result:
Data product specification
with application schema



Step 6: Implementation, test and validation, cost-benefit considerations

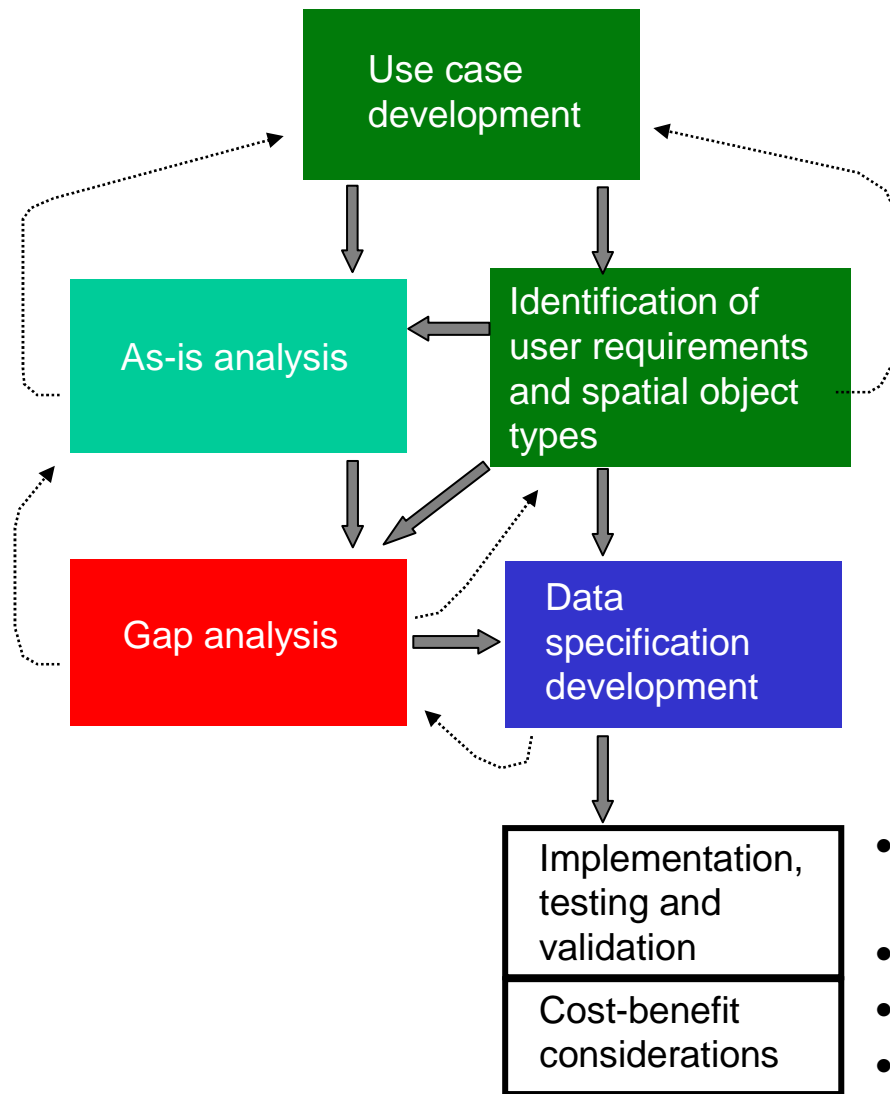
responsibility of the
Consolidation Team.

- review by CT, DT DS, EIONET
- 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

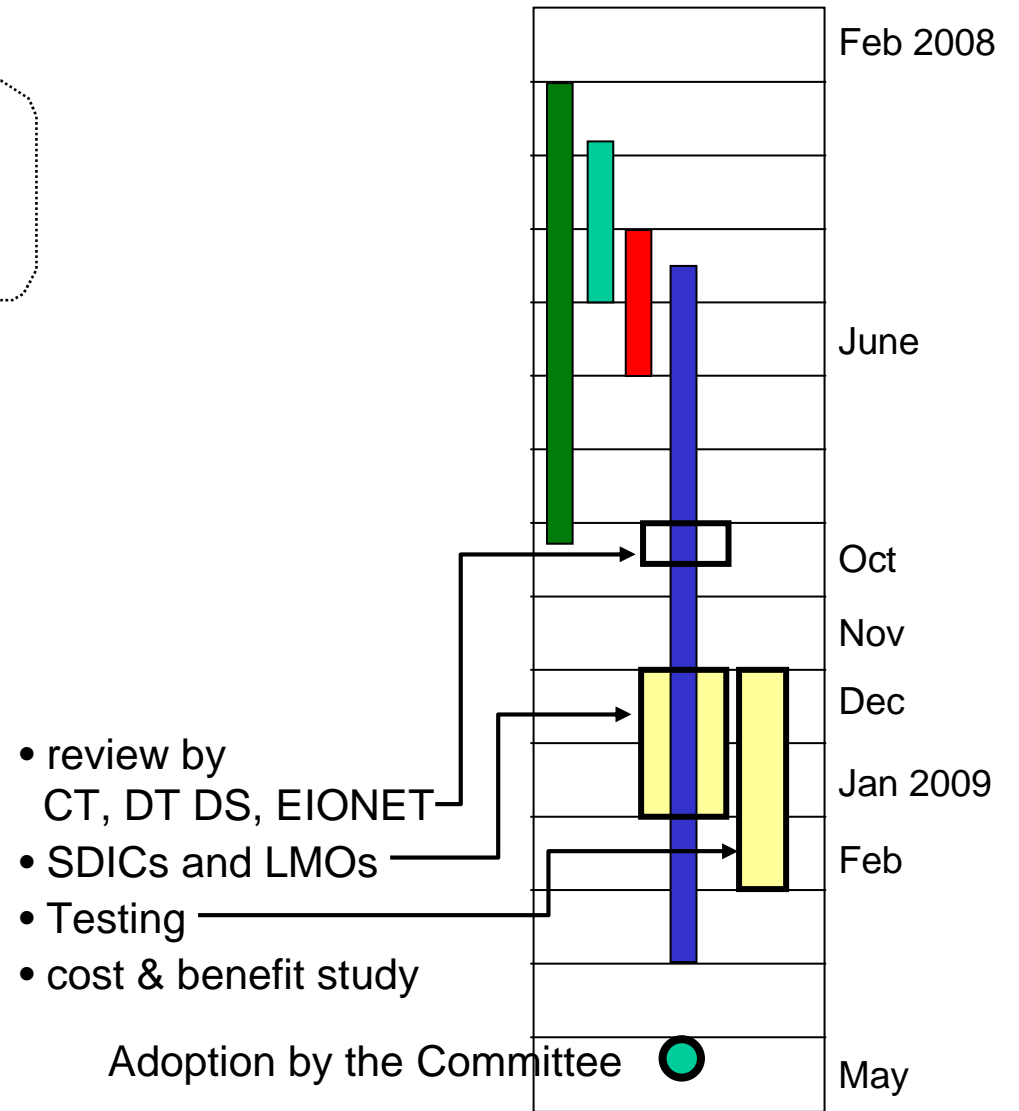
O.K. ?

Yes: forward to Committee

No: back to any previous step



Roadmap



Roadmap

Risks

- tight schedule
- dependencies between themes
- as-is analysis and gap analysis might not cover all Member States

SDICs, LMOs and National Contact Points: get prepared for review and testing in winter 2008/2009 !

