



Activities TWG Inspire Soils

ESBN Plenary 22 – 9 – 2010

Brussels

Arnold Arnoldussen



Outline



- What is INSPIRE?
- Requirements
- Methodology
- Challenges
- Soils



What is INSPIRE?



“Infrastructure for Spatial Information in the European Community”

Distributed infrastructure



27 countries
21 languages

General rules for establishment



Environment

34 Spatial Data Themes
Entry into force 15/5/2007



European legislation



INSPIRE Directive



- INSPIRE lays down general rules to establish an infrastructure for spatial information in Europe
 - for the purposes of Community environmental policies and
 - policies or activities which may have an impact on the environment.
- INSPIRE to be based on the infrastructures for spatial information established and operated by the Member States
 - INSPIRE is a distributed infrastructure.
- **INSPIRE does not require collection of new spatial data**
- **INSPIRE does not affect existing Intellectual Property Rights**
- Entry into force 15 May 2007





INSPIRE Components

- INSPIRE is a **Framework Directive**
- Detailed technical provisions are (will be) laid down in **Implementing Rules** on
 - Metadata
 - Interoperability of spatial data sets and services
 - Network services (discovery, view, download, invoke)
 - Data and Service sharing (policy)
 - Coordination and measures for Monitoring & Reporting



Requirements

- The Data specification will not lead to an extra data capture!
- Implementation of the Directive should be not too costly (cost – benefit analysis).
- The given data specification is obligatory for all MS. No change in features possible.
 - **Mandatory part**: all MS are obliged to deliver the data as specified
 - **Voidable**: all MS are obliged to deliver when they have the data available
- We should take the near future situation also in consideration
 - in our case: Soil Thematic Strategy, Soil Directive (not adopted) and climate change discussion



Results of work TWG



- **Guidelines (data specifications v3.0)**

- Requirements and the Recommendations to achieve interoperability in INSPIRE
- Technical basis for Implementing Rule
- Explanations and examples to help implementation
- Contributes to further coherent development of the infrastructures within the Member States
- May be extended or updated based on stakeholders' requests to accommodate emerging user requirements and technical progress

- **Implementing Rule**

- Mandatory set of provisions for interoperability
- Balanced on the basis of cost-benefit considerations
- Extendable to support emerging policies of the EU, following the legislative procedure



Steps and main actors of Implementing Rule development

Open, participatory, transparent at all steps

- 1. Preparation of common framework documents**
(Main actor: [Data Specification Drafting Team](#); Consulted: [SDICs](#), [LMOs](#))
 - D2.3 Definition of Annex Themes and Scope
 - D2.5 Generic Conceptual Model
 - D2.6 Methodology of specification development
 - D2.7 Guidelines for encoding
- 2. Data specification development for themes Annex I-II-III**
(Main actors: [8+19 Thematic Working Groups](#) ; Consultation: [SDICs](#), [LMOs](#))
 - Data specification document for each theme (published as Technical guidelines)
- 3. Maintenance of the framework documents**
(Main actor: [Data Specification Drafting Team](#); Consulted: [TWGs](#))
- 4. Drafting the Implementing Rule**
(Main actor: [EC – DG JRC](#); Consultation: [Services of the Commission](#), [Members of the INSPIRE Committee](#))
General provisions and parts addressing Annex I themes ready –
amendments for Annex II-III to be drafted

Grouping of Themes: 19 TWG's



Annex II

1. Elevation
2. Land cover
3. Ortho-imagery

4. Geology
21. Mineral resources (Annex III)

Annex III

1. Statistical units
10. Population distribution – demography

2. Buildings
3. Soil
4. Land use
5. Human health and safety
6. Utility and governmental services
7. Environmental monitoring facilities

8. Production and industrial facilities
9. Agricultural and aquaculture facilities
11. Area management/restriction /regulation zones & reporting units
12. Natural risk zones

13. Atmospheric conditions
14. Meteorological geographical features

15. Oceanographic geographical features
16. Sea regions

17. Bio-geographical regions
18. Habitats and biotopes
19. Species distribution

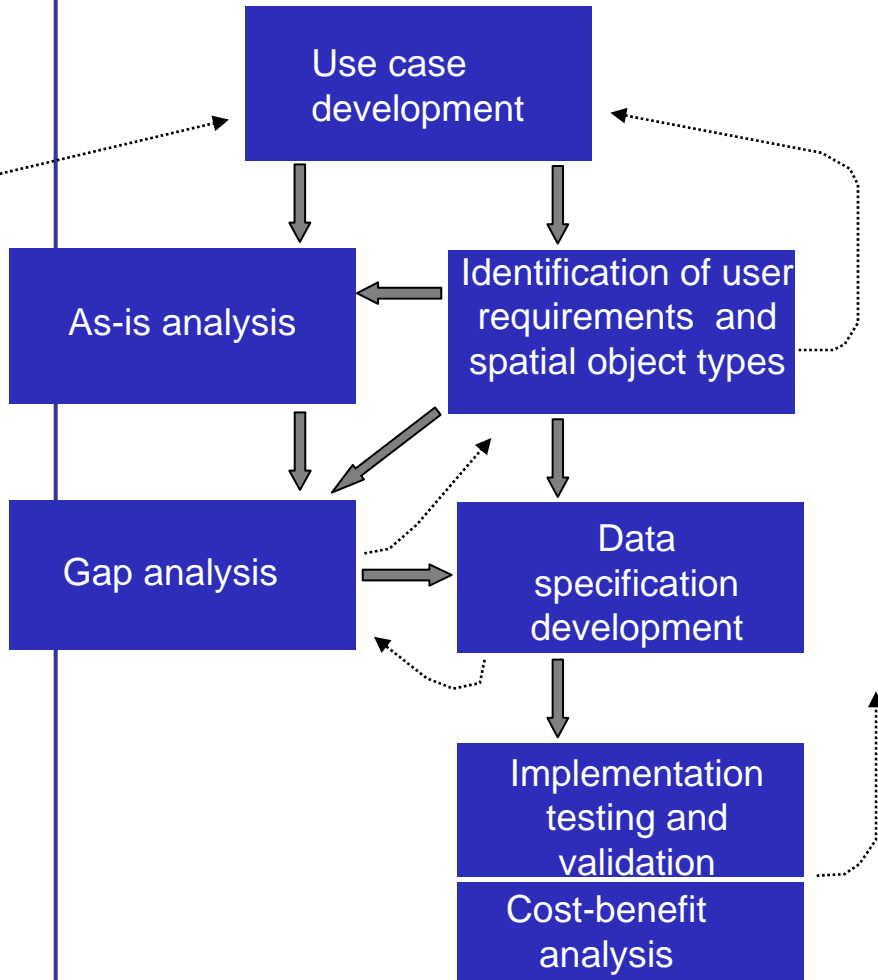
20. Energy Resources



D2.6 - Data specification methodology



follows ISO 19131



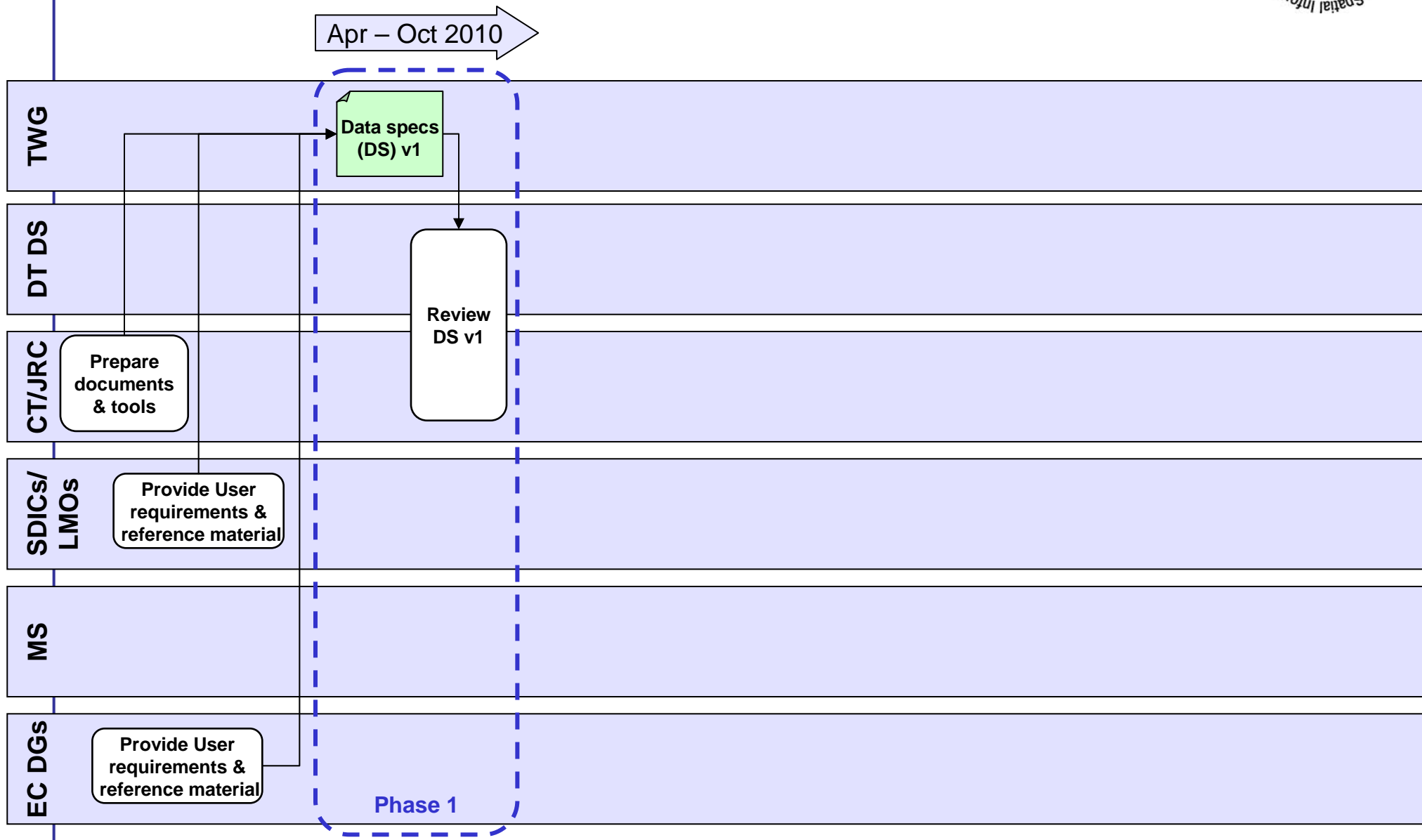
- User requirements
 - submission from the stakeholders
 - Screening of EU legislative acts
- Reference material
 - Studies of the European Commission
 - Use cases documented in EU funded research and development projects
 - Standards
 - Submissions from the stakeholders
- Cost-benefit consideration methodology
- Material how to deal with data quality (first release in September)
- Registers and repositories
 - Glossary, Feature Concept dictionary <http://inspire-registry.jrc.ec.europa.eu>
 - UML repository

Action list

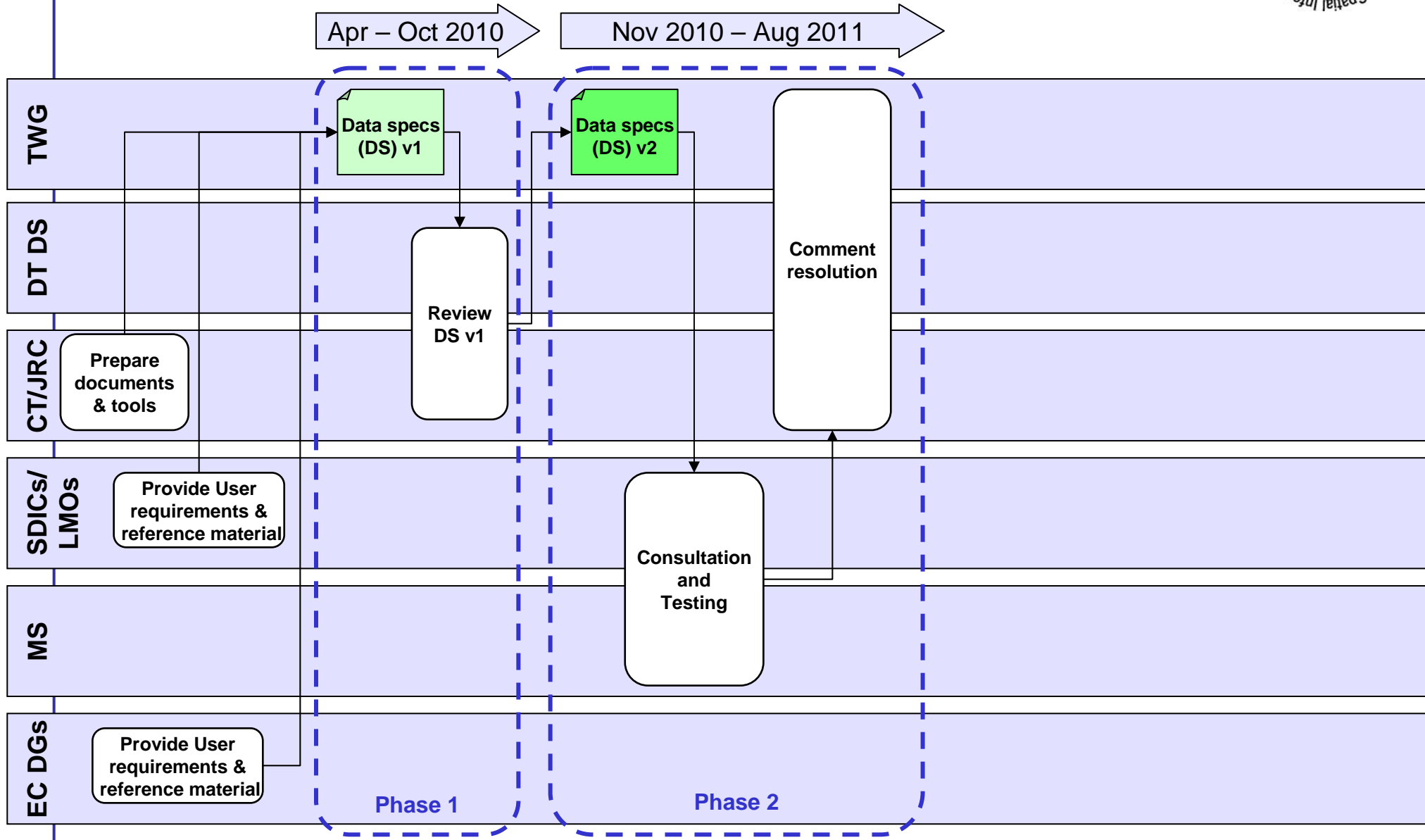
- Evaluate the above references
- Try to understand the commonalities
- Use existing – check the available content
- Document the decisions



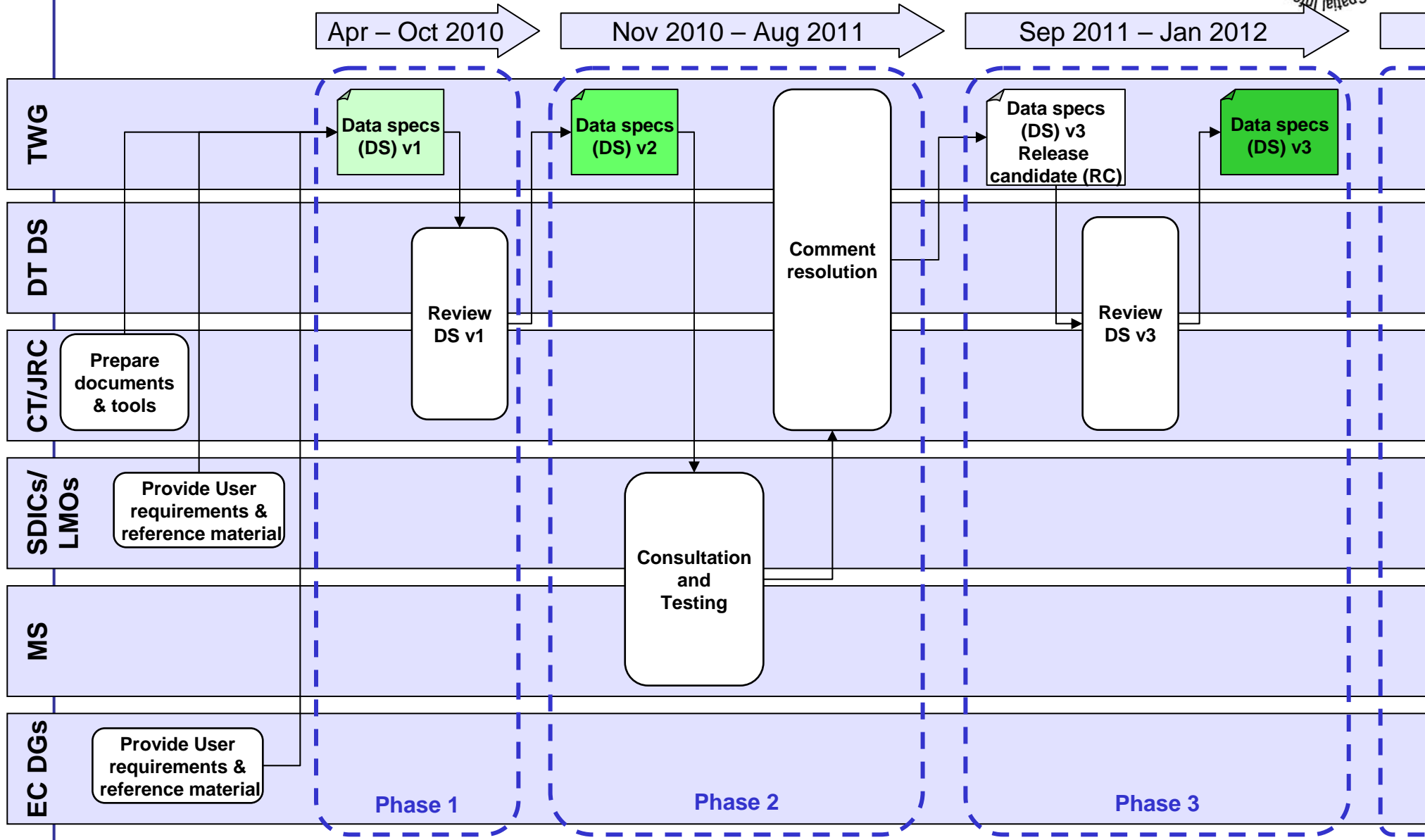
Roadmap Data Specifications



Roadmap Data Specifications

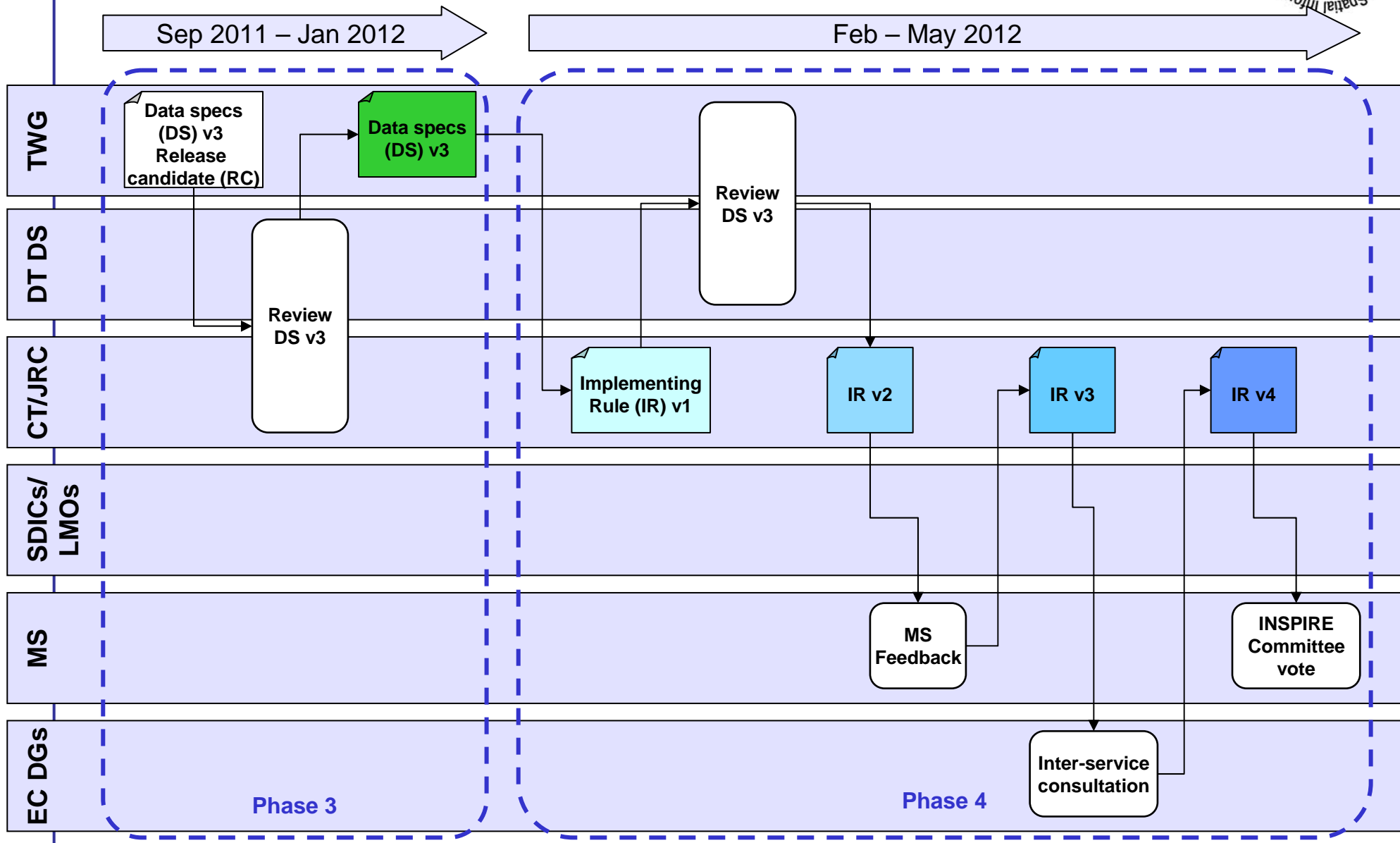


Roadmap Data Specifications





Roadmap Implementing Rule





Challenges

- Inspire methodology is new for most of the TWG Soil members
- The level of detail
- Cross theme issues
- Cost – benefit analysis
- Time frame
- Near future situation: Soil directive – contents some items heavily under discussion.



Level of detail

Which level of harmonisation is „just right“?



Too simple:

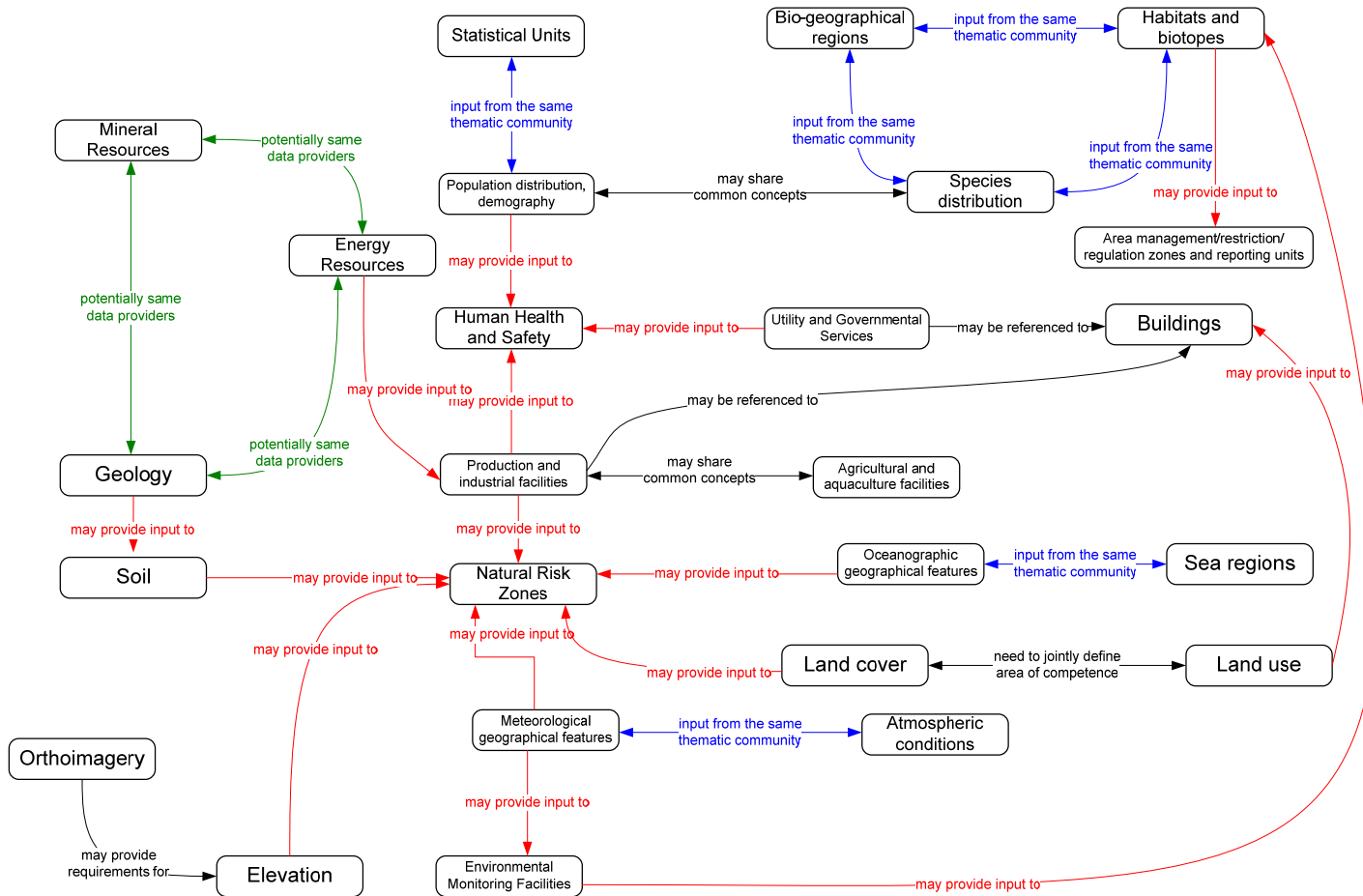
- identified requirements cannot be supported
- insufficient harmonisation
- few benefits

Too complex:

- difficult to implement
- substantial benefits available only to few users
- high cost



Cross theme issues





Cross theme issues for soil



- Areas:
 - Human health and Safety
 - Land Cover
 - Land Use
 - Geology and Mineral resources
 - Environmental Monitoring Services
 - Natural risk zones
 -
- Challenge: different levels of detail.



Challenges

- Cost – benefit analysis: the costs in developing an infrastructure seen in relation to the benefits. Costs implementing Inspire should stand in relation to its benefits.
- Time frame: very short time frame for developing data specification, its testing and consolidation. Find a balance with the needed quality.



Scope Soils

- **Definition:**
„Soils and subsoil characterized according to depth, texture, structure and content of particles and organic material, stoniness, erosion, where appropriate mean slope and anticipated water storage capacity.“
(INSPIRE 2007)
- **Rephrasing part of the scope**



Scope TWG Soils



- Focus on:
 - Soil inventories and monitoring:
 - > Inventory contaminated sites
 - > Monitoring contaminated sites
 - > Soil monitoring programs (Biosoil, Carbon etc).
 - Soil mapping: Soil geographical databases varying from European to national to regional level.
 - Thematic maps derived from soil information: soil threats, agricultural production, carbon loss,
- TWG's should be ambitious in the phase of DS v1.0!!
- Inspire is user driven. Use cases generally based on models using parameters stored in geographical soil data bases.



Analysis User Requirements and Reference Material



- Analysis
 - Reference Material: submitted 40+ cases
 - Use Cases: submitted 53+ cases
 - Relevant EU Directives: 9 cases
 - Relevant EU projects: 12 cases
 - Reports ESDaC Consortium



Reference material

- Boundary between submitted Reference Material and Use Cases is not always that sharp – analysis together.

Reference Material	Submitted
Document: general description	19
Document: user guide	17
Academic journal/paper	3
Public website	1
Total	40



Use Cases

Classes Submitted Use Case	Number
Generalised soil quality and conditions, soil landscapes viewer / interrogation for educational purposes	16
Development-oriented site investigation and conditions and contaminated land	6
Agri-environmental scheme, with habitat recreation and restoration	1
Planning, land and property registry application with cadastral and valuation administration	2
Agricultural and Forestry productivity and rational land capability assessment	6
Soil monitoring activities, resilience to environmental change	4
Scientific toolkit for environmental modelling applications	13
Biodiversity and environmental zonation	2
Assessment of impact of soil threats	2
European and National Policy making support	1
<i>Total</i>	53



Relevant EU regulations



- Relevant: CAP, Soil Directive (not adopted), Energy from renewable sources, Sludge directive, Less Favoured Areas, Waste Landfill Directive.
- Indirect: Water Framework Directive.



Relevant EU projects



- ENVASSO
- European Soil Data Base
- EU Soil Regions
- GS Soil
- e-SOTER
- iSOIL
- Digisoil
- BIOSOIL

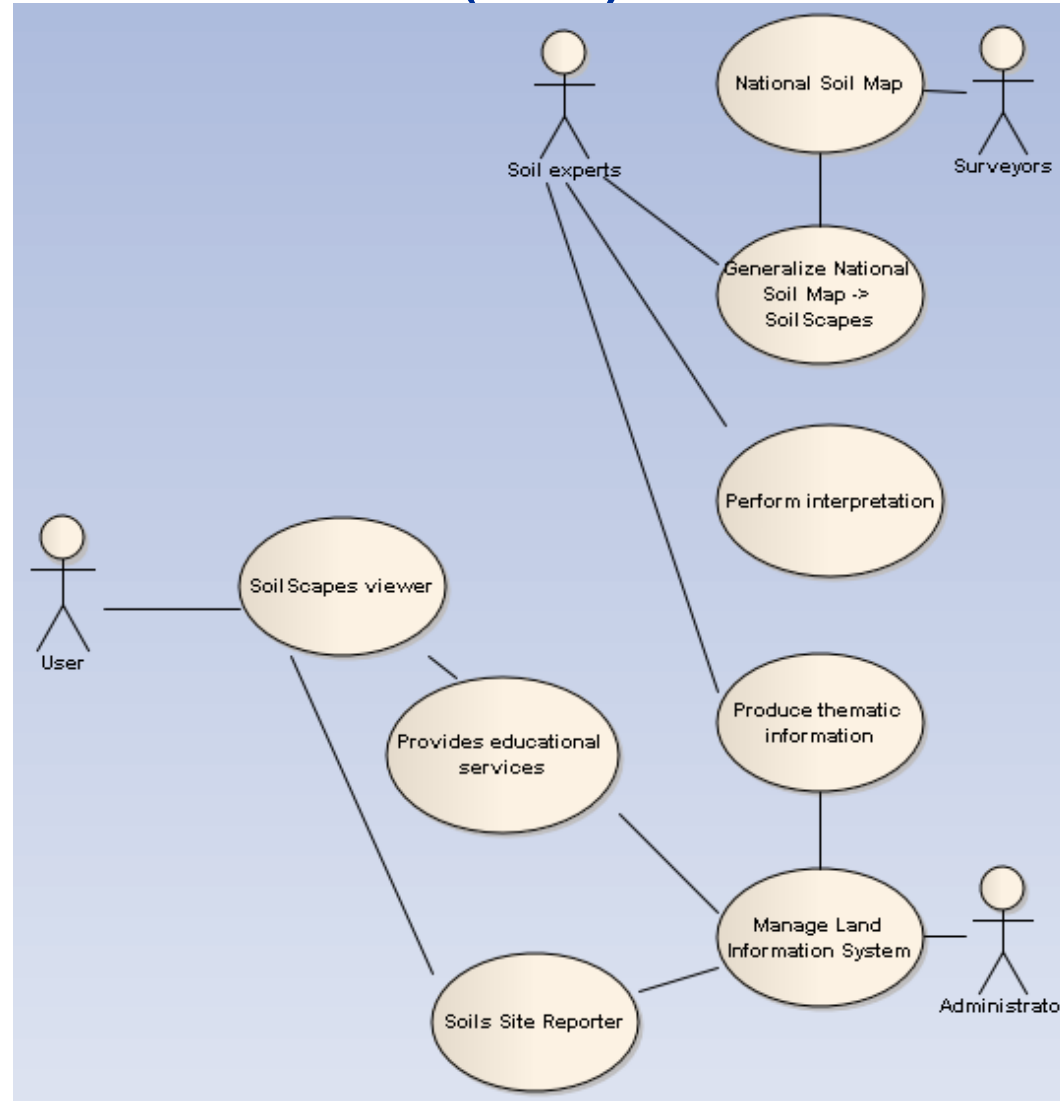


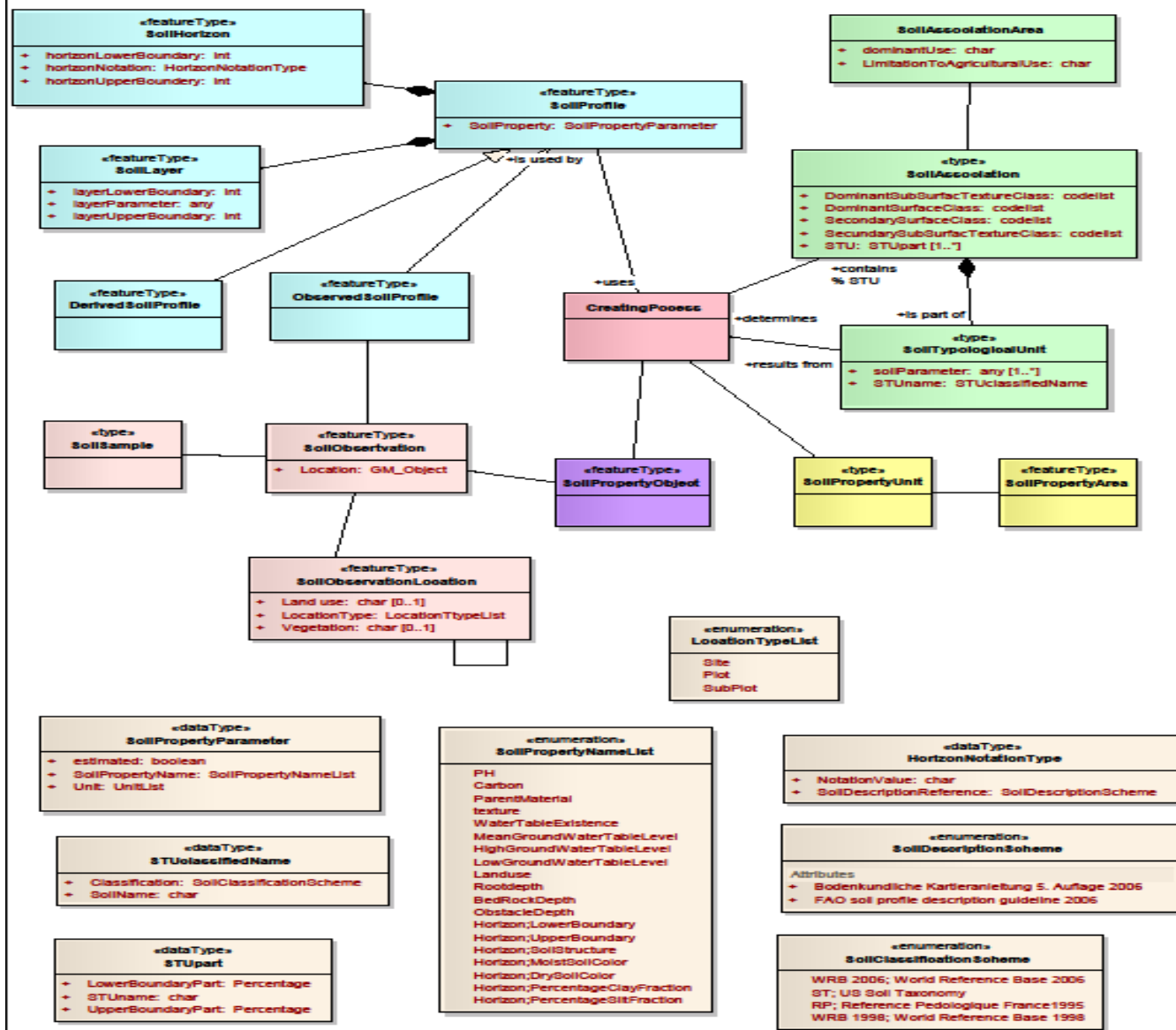
What we did so far

- First screening Use Cases and Reference Material
- Analysis relevant EU Regulations and EU projects
- Description of three use cases in detail:
 - “Simplified version of the national Soil Map of England and Wales ”: Soil scape viewer
 - Register of potentially contaminated sites in Austria
 - Soil monitoring UK
- Description data setup for contaminated sites and soil monitoring
- Start modelling work.



Use Case description: soil scape viewer (UK)







Lacking knowledge



- Consultation networks and known experts.
Challenging time frame.



Conclusions

- INSPIRE is an inspiring and challenging topic.
- Even as we as soil community did prepare us beforehand many challenges are not solved yet.
- Remember: INSPIRE has scientists not as principal target group – target group is SOCIETY
- As soil science community you will be involved.



Thanks