
Spatial Data Infrastructure Convergence
Building SDI Bridges to address Global Challenges
3rd INSPIRE Conference
GSDI
GSDI 11 World Conference
INSPIRE
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GEONOVUM
RGI
Public sector meets Science & Industry

Global Spatial Data Infrastructure
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3rd INSPIRE Conference

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Public sector meets Science & Industry

Chair: **Alessandro Annoni**
Joint Research Centre
European Commission

INSPIRE:
A European Answer to Global Challenges

Keynote speakers:

- **Denise Lievesley**, Head of School, King's College London, UK
- **Pirkko Saarikivi**, Managing Director, Foreca Consulting Ltd.

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Keynote speech

Information is Power: Overcoming Obstacles to Data Sharing

- **Professor Denise Lievesley**
  Head of School, King's College, London

Information is Power: Overcoming Obstacles to Data Sharing

Professor Denise Lievesley

Head of School of Social Science and Public Policy,

King's College London

and President,

International Statistical Institute

Sharing data – two important publications

- Fienberg S., Martin and Straf (1985) ‘Sharing research data’ National Academy Press
- Arzberger P., Schroeder, Beaulieu, Bowker, Casey, Laaksonen, Moorman, Uhlir, Wouters (2004) ‘Promoting Access to Public Research Data for Scientific, Economic, and Social Development’ *Data Science Journal*

- Statistical datasets
- Data produced for other purposes (often administrative or management)
- Research data

Sharing Statistical data

Aim – to encourage the widest possible **informed** use of data consistent with the responsibilities with respect to confidentiality etc

Collect once, use many times

Benefits to data providers of sharing data with the research community

- Development of knowledge
- Encourage greater exploitation of data
- Contribute to sound policy decisions
- Foster multiple perspectives on data
- Facilitate comparative research
- Create knowledgeable data community
- Provide feedback on data and improve data quality
- Improving teaching and ensuring relevance to official statistics

Reduction of response burden

- Compliance costs important especially in small countries and in surveys of elites, businesses, institutions
- Fresh data collection takes time and resources
- Secondary data analysis can take place in resource –constrained environment

- There is growing awareness that failure to exploit the full potential of official data has costs for society and many official agencies now espouse the aim of ensuring that data are used as extensively as possible.
- For purposes of public accountability it is important that official data are made available.
- Often these are data which the research community could NOT collect themselves

Sharing administrative data

- Unrivalled & untapped level of detail
- Survey data has limitations
- Administrative data may have full coverage
- and better temporality
- Reduces respondent burden
- Has potential cost benefits
- Opportunities for data linkage with other sources
- Local ownership and involvement

Sharing research data

"Publicly funded research data are a public good, produced in the public interest. As such they should remain in the public realm. Availability should be restricted only by legitimate considerations of national security restrictions; protection of confidentiality and privacy; intellectual property rights; and time-limited exclusive use by principal investigators."

Scientific paradigm

- The ISI declaration on professional ethics states that “A principle of all scientific work is that it should be open to scrutiny, assessment and possible validation by fellow scientists.”
- One of the fundamental principles of scientific scholarship is that research findings together with the underlying data should be available for others to confirm, refute, clarify or extend the findings.
- Promote deliberate replication, avoid ignorant duplication

KING'S College LONDON

"In recent years, the debate on e-science has tended to focus on the "open access" to the digital *output* of scientific research, namely, the results of research published by researchers as the articles in the scientific journals. This focus on publications often overshadows the issues of access to the *input* of research - the research data, the raw material at the heart of the scientific process and the object of significant annual public investments. In terms of access, availability of research data generally poses more serious problems than access to publications." Arzberger et al (2004)

Incentives in academic system

- In 1985 the report of the US committee of national statistics pointed out that '*A scientist is recognised and rewarded through the scientific community and its institutions. Researchers will have greater incentives to share data if the community and its institutions foster the idea that the practice advances science and is part of what is recognised as necessary and proper scientific behaviour".*
- Competition, performance targets, etc
- Role of the Research Assessment Exercise

Barriers to data sharing

- Confidentiality and sensitivity of data
- Legal restrictions
- Promises made to respondents
- Concerns about misuse of data
- Ensuring equity of access
- Need for revenue generation
- Ambiguities over data ownership
- Concerns about data quality

Responsibilities of data users

- acknowledge and give credit
- respect conditions of access
- provide feedback on use
- ensure the quality of their analysis
- avoid bringing the data providers into disrepute

Value and role of data intermediaries

Importance of establishing policies on data access, sharing and preservation

- of official agencies
- funding bodies
- universities
- professional societies

Example policy

(UK Economic and Social Research Council)

restricts new data collection,

encourages secondary analysis,

requires deposit of new data and derived data in UK data archive,

sets standards for documentation,

provides resources for data access and preservation,

supports training of users,

builds data commons.

Access – one size doesn't fit all

- **Needs of users/usages differ**
  - especially in relation to their sophistication and the need for individual level data
- **Diverse data sets especially in relation to sensitivity of content and possibility of disclosure**
- **Integrated, longitudinal and spatially disaggregated data pose particular challenges**
- **So do administrative data**
  - Good practices exist for survey data but not for admin. data
- **And cross-national data**
  - European social survey

Preservation

Having collected data at some cost to society, it behoves us to manage them well.

Alongside dissemination, this entails data preservation.

Due to poor data management, human error as well as technical change and inadequate use of technology, many data sets are no longer readable.

Thus all that remains of this important legacy are the, often quite superficial, reports that were produced at the time.

To this extent an important part of our heritage is lost and we will be severely limited in our analysis of change.

Metadata

It is necessary not only to preserve data but also to create and preserve metadata and contextual information. This is essential to ensure that the interpretation of the data will be informed.

The documentation should include

- data collection instruments and forms
- instruction manuals
- definitions and concepts
- descriptions of scope and coverage and other aspects of quality
- codebooks
- basic tables
- records of validation checks

Case study– building the secondary uses services

National Health Service in England individual patient care records

- The collection of data which records every interaction with the health service from conception to autopsy

Two committees

One on potential usage

- Conducting audits of clinical practice;
- Surveillance of infectious diseases
- Management of the health system
- Monitor equity of access and provision;
- Evidence-based health policy
- Providing better information to the general public
- Improving the quality and safety of care

Second committee on governance

- Hierarchy of data access consistent with ensuring lowest risk of patient identification
- Need to know
- Role of honest brokers and safe havens
- Development of ‘virtual’ safe havens

Information governance of Secondary Uses Service

- aggregate data widely available
- default anonymised
- - or pseudonymised
- if identifiers needed consent should be obtained
- full justification in terms of benefits to be made for exceptions
- exceptions assessed by transparent, equitable, replicable and open process involving patients representatives
- requirement for safety and security of information (ie accountability)

Concluding remarks

We create a diverse range of datasets, many of which are unique, rich in information content and incapable of replication.

Sharing allows scientists to extend the value of these datasets through new, high quality, ethical research and exploitation. It also reduces unnecessary duplication of data collection.

Building preservation and documentation systematically into routine data management is part of good practice: it strengthens quality, enables replication and audit, and provides a sound basis for data sharing.

INSPIRE:
A European Answer to Global Challenges

Keynote speech

ROADIDEA: Ingredients for Innovative Transport Services

- **Pirkko Saarikivi**, Managing Director, Foreca Consulting Ltd.

ROADIDEA

Ingredients for Innovative Transport Services

Dr. Pirkko Saarikivi
Foreca Consulting Ltd

GSDI 11 World Conference / 3rd INSPIRE Conference , 17th June 2009

WTC Rotterdam, The Netherlands

Outline

- What is weather and road information made of?
- Rules and practices
- ROADIDEA: Roadmap for Radical Innovations in Transport Services
- Key problems and some innovative solutions

Weather service system

Players:

- Public national meteorological institutes
- Private weather service companies

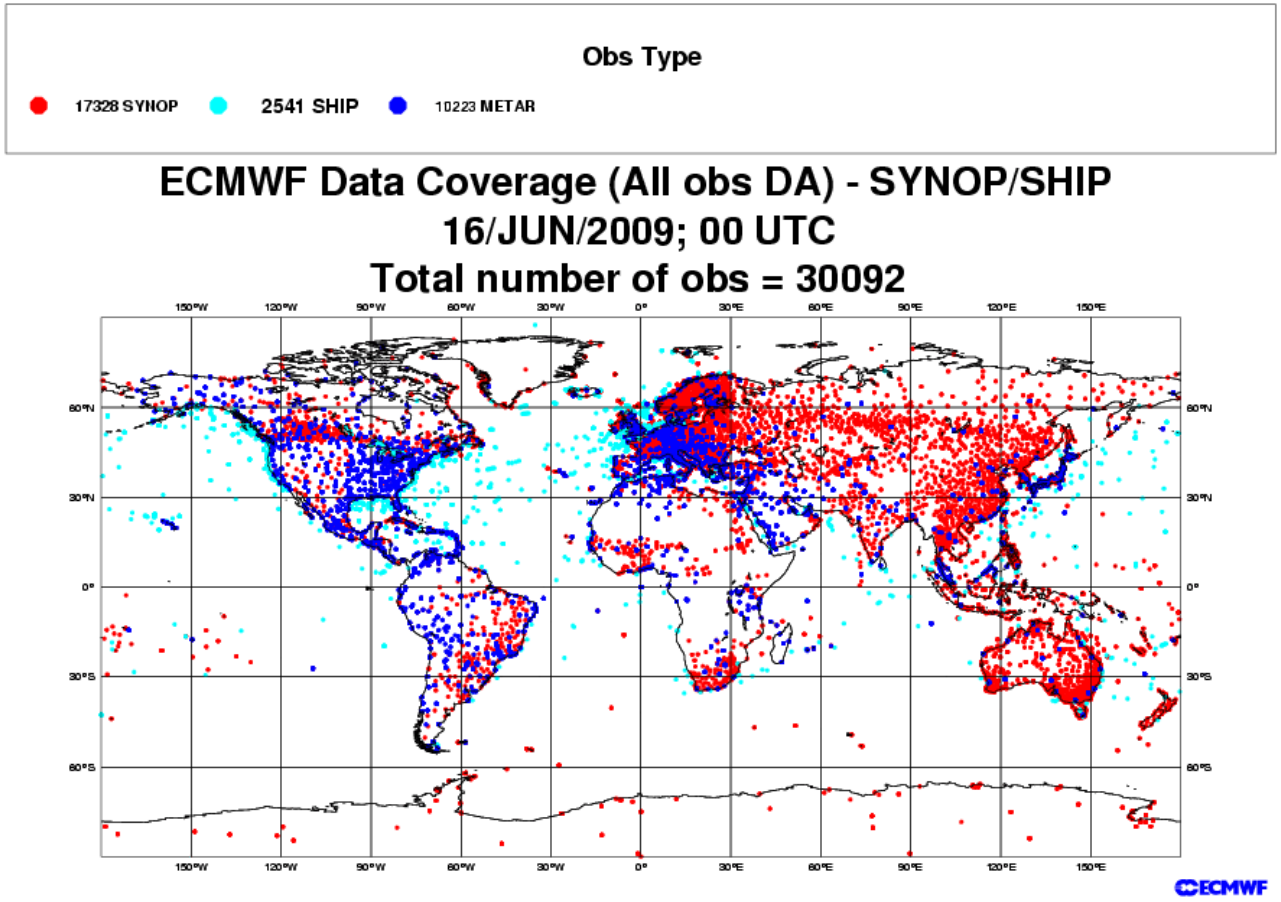
Playing with:

- Continuous 24/7 data feed of observations and forecasting model outputs

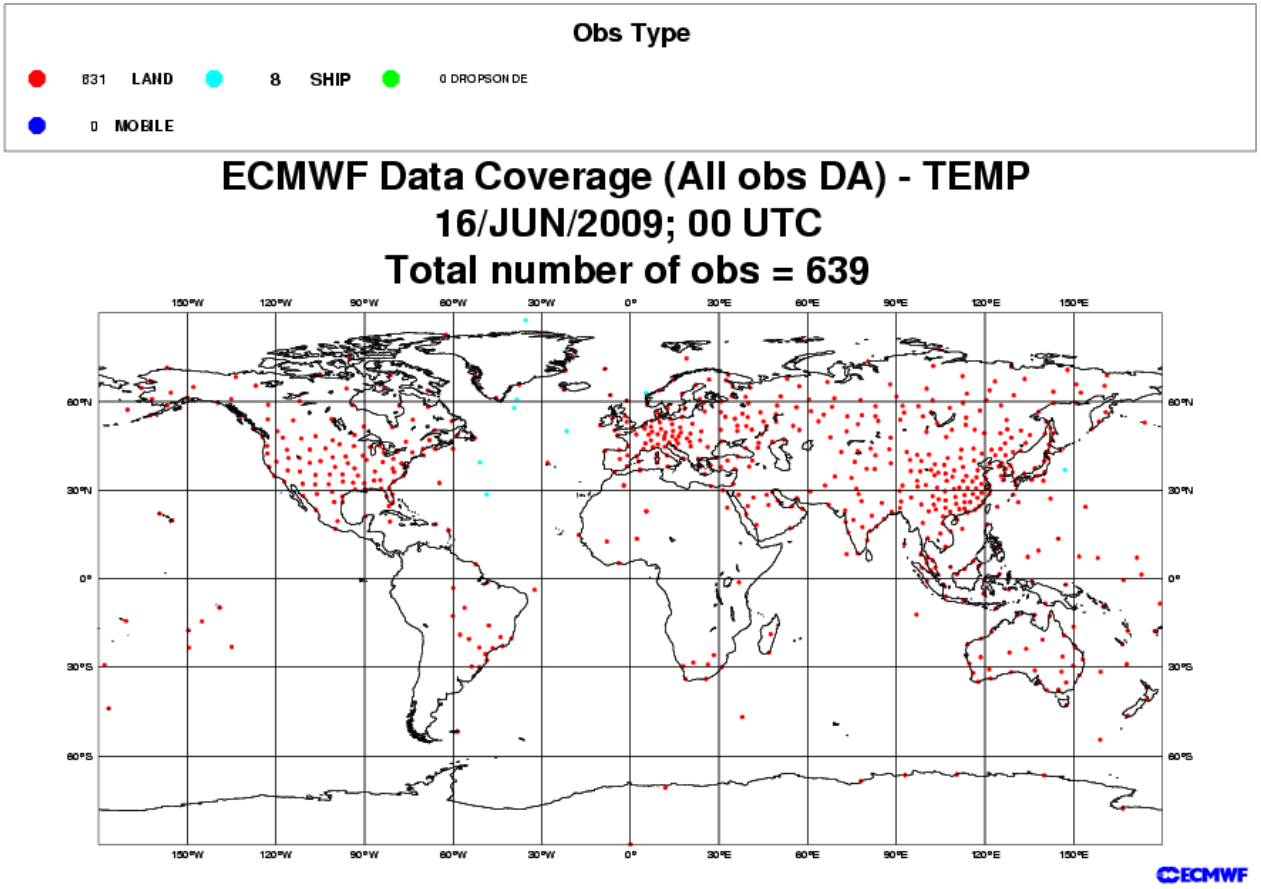
Users:

- General public through media, Internet, mobile phones...
- Weather sensitive industry, transport, etc.

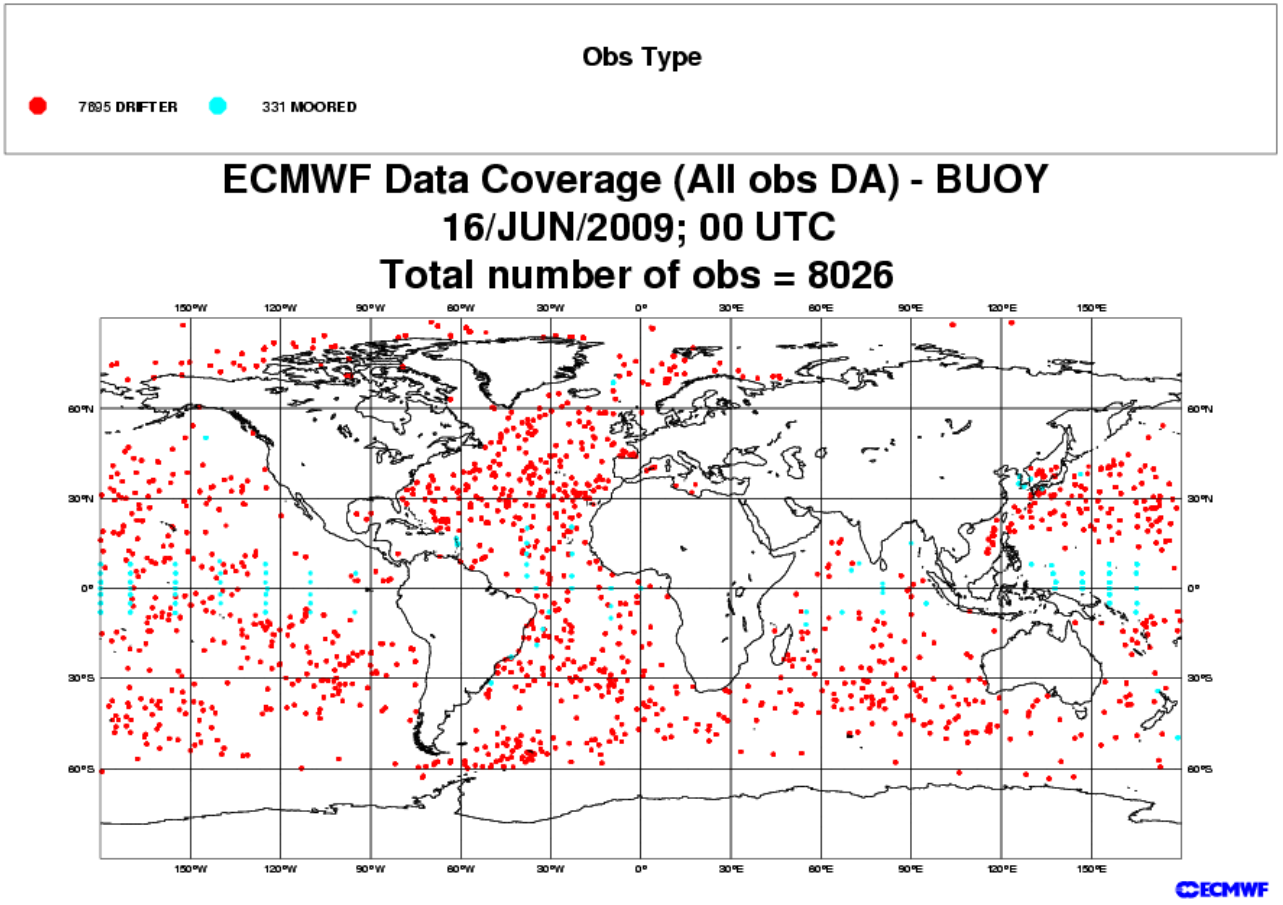
Global surface observations



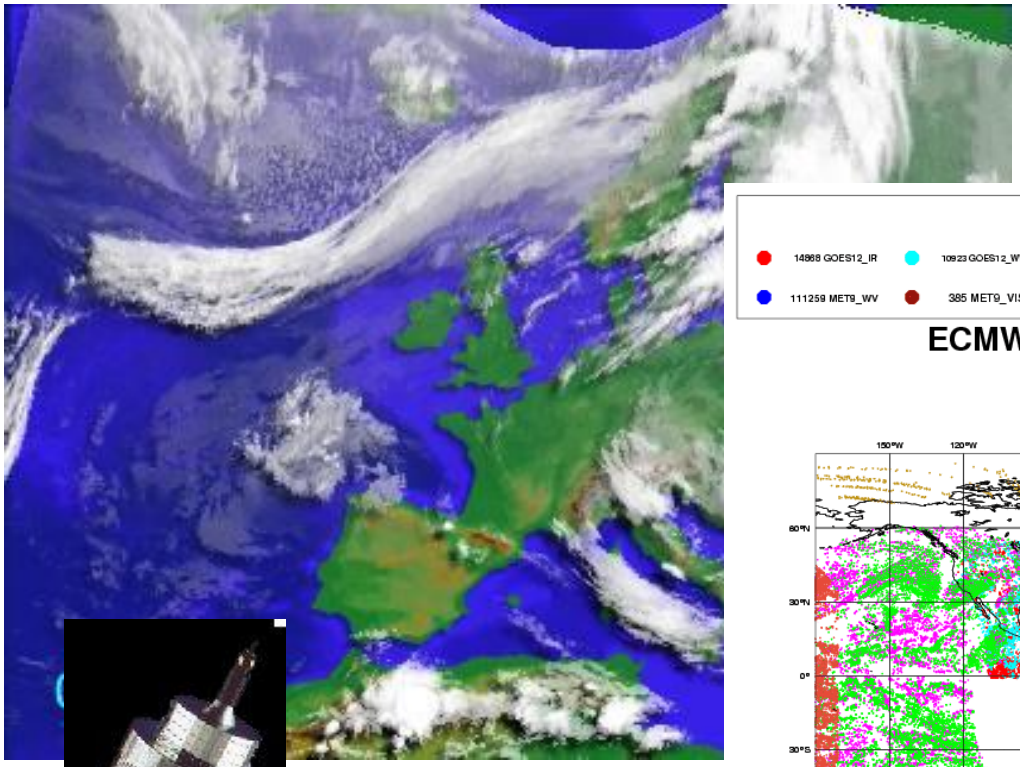
Vertical radio soundings

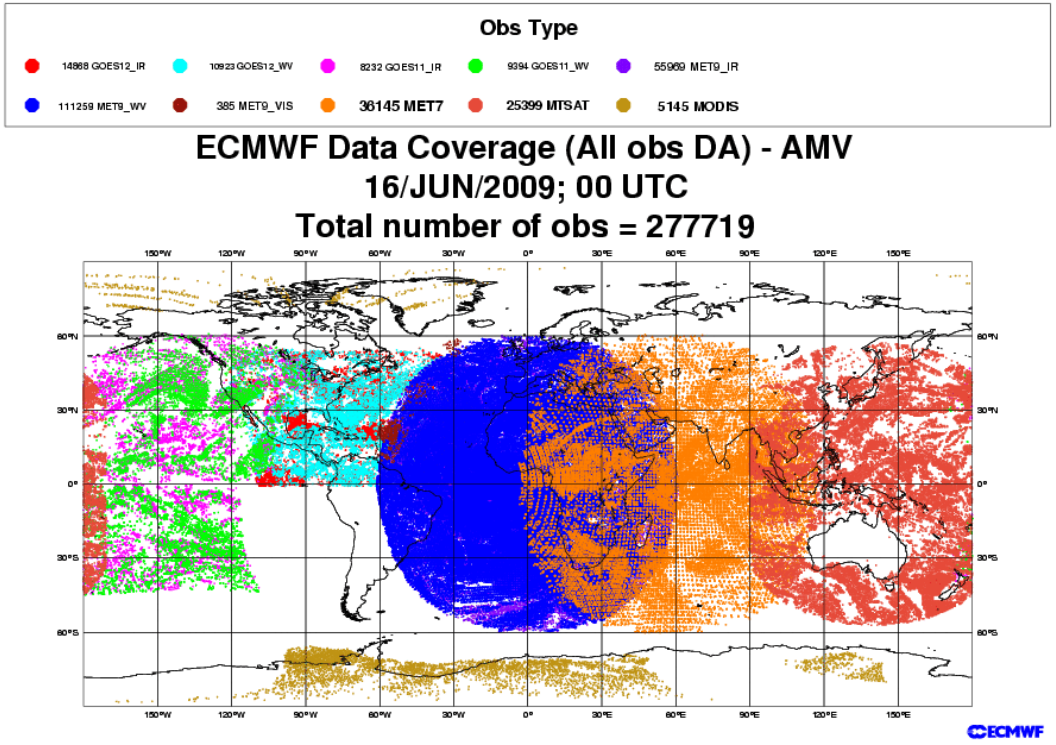


Buoys over the oceans

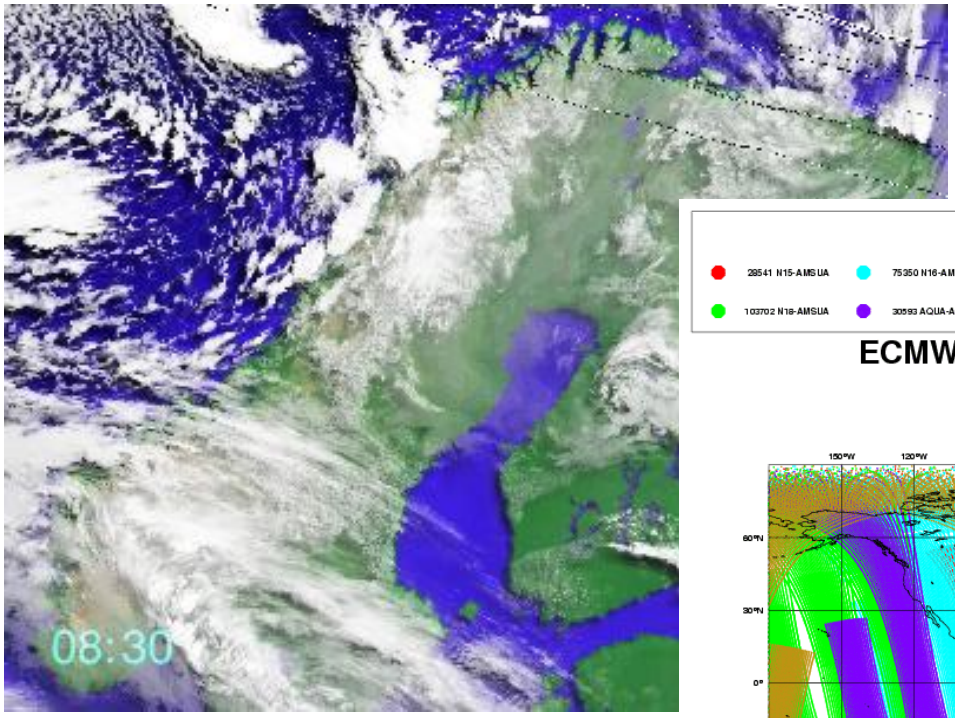


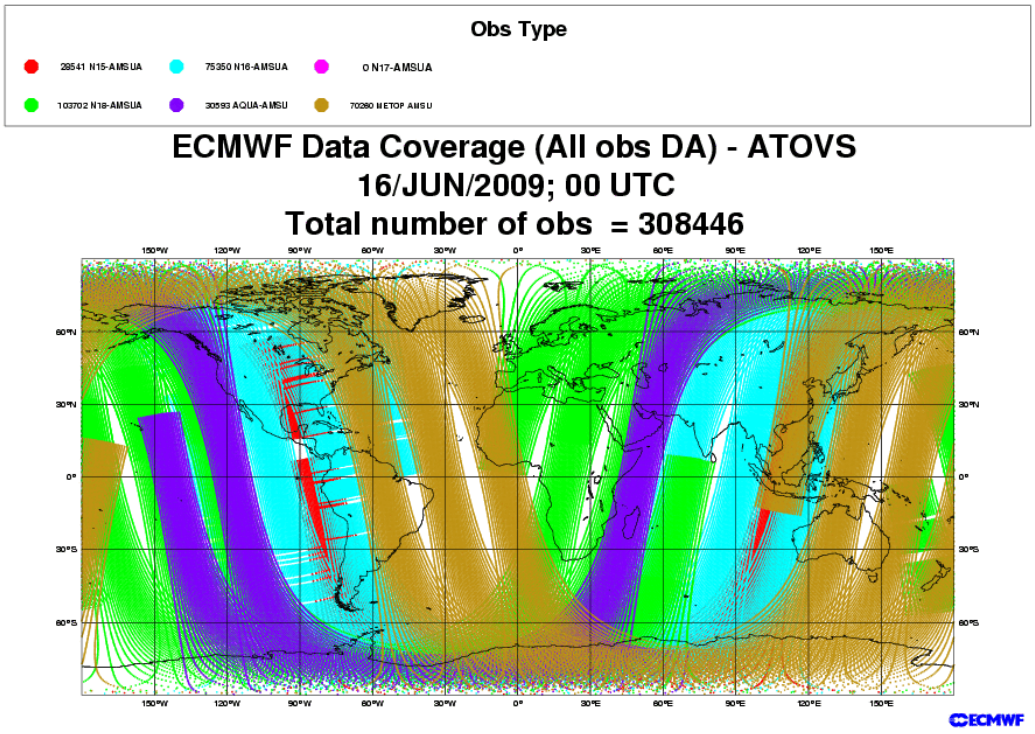
Geostationary satellites



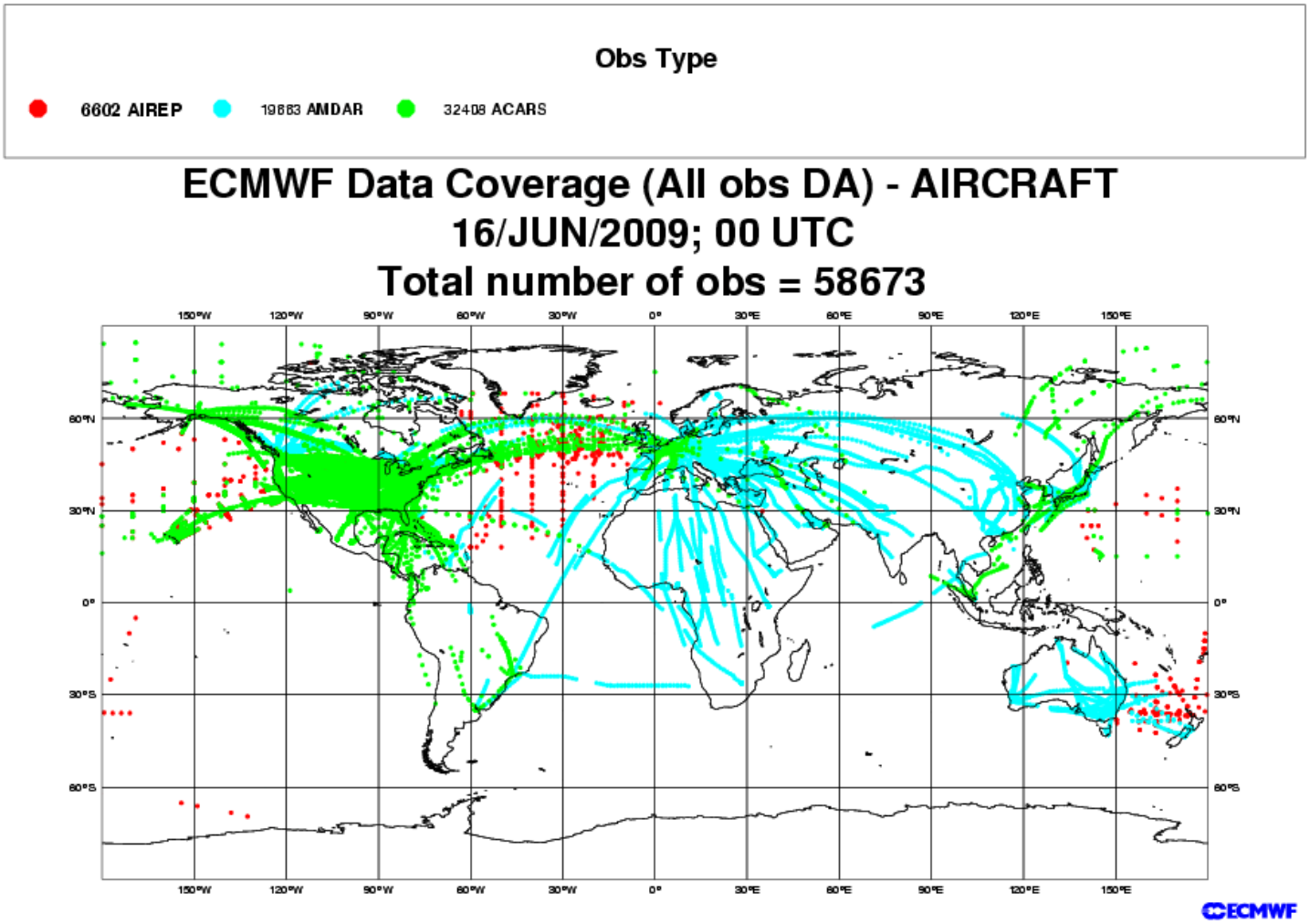


Polar orbiting satellites

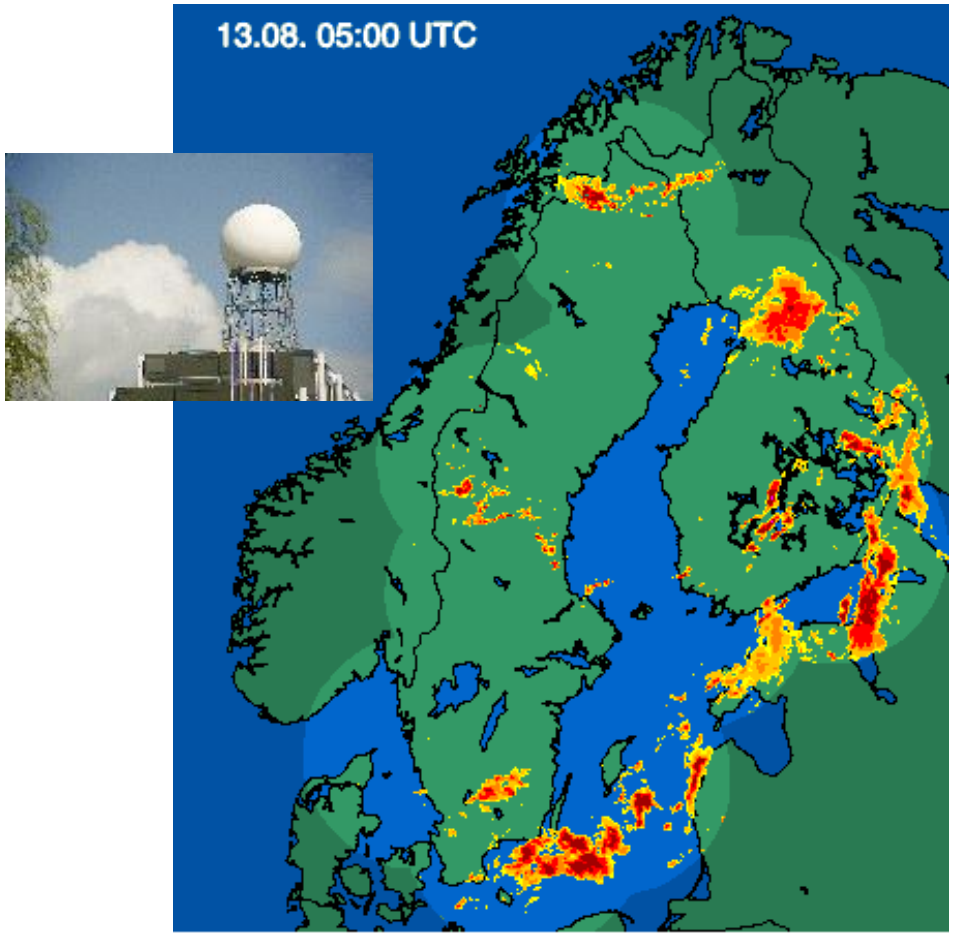




Aircraft observations

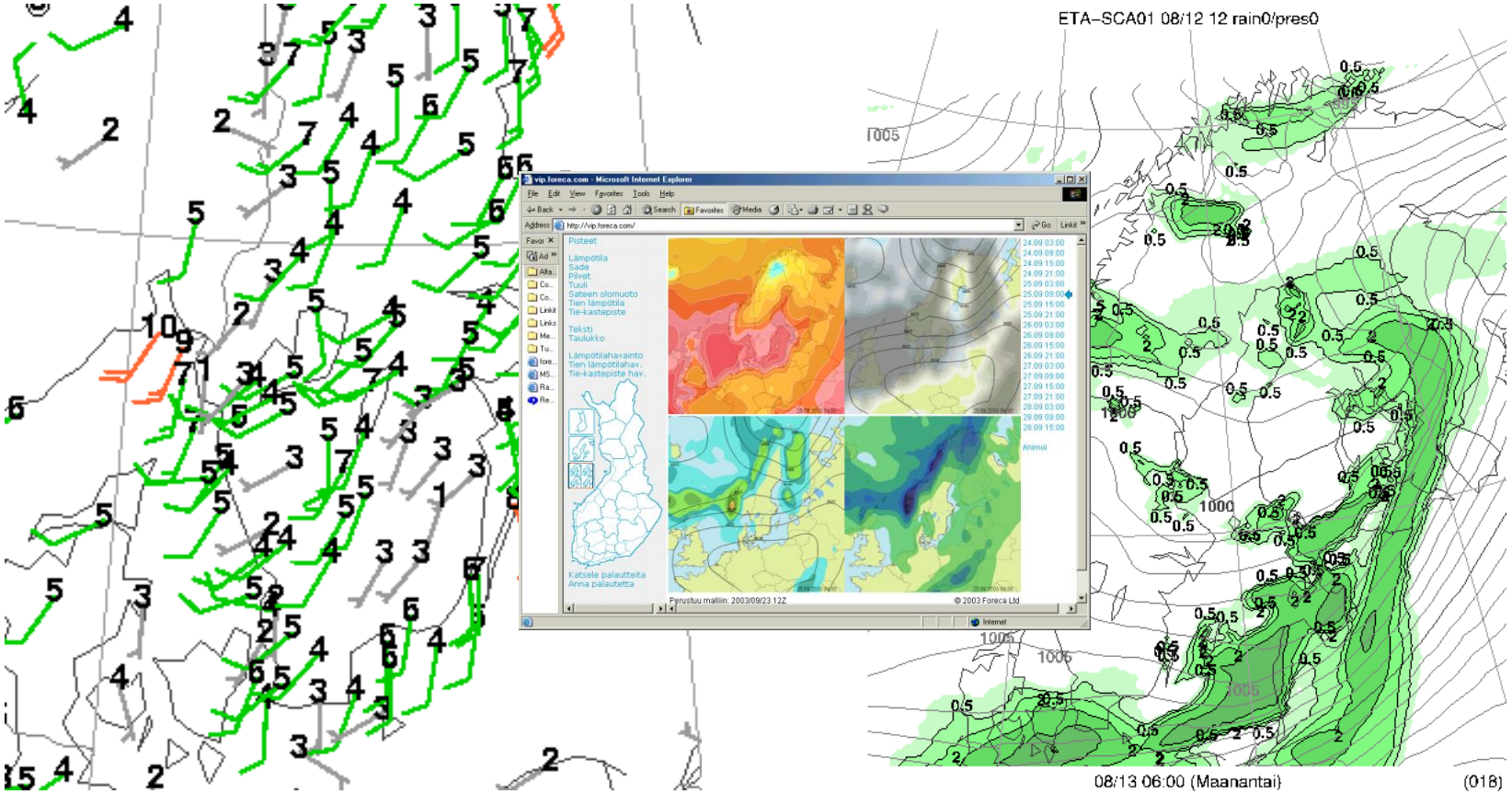


Weather radars and lightning indicators



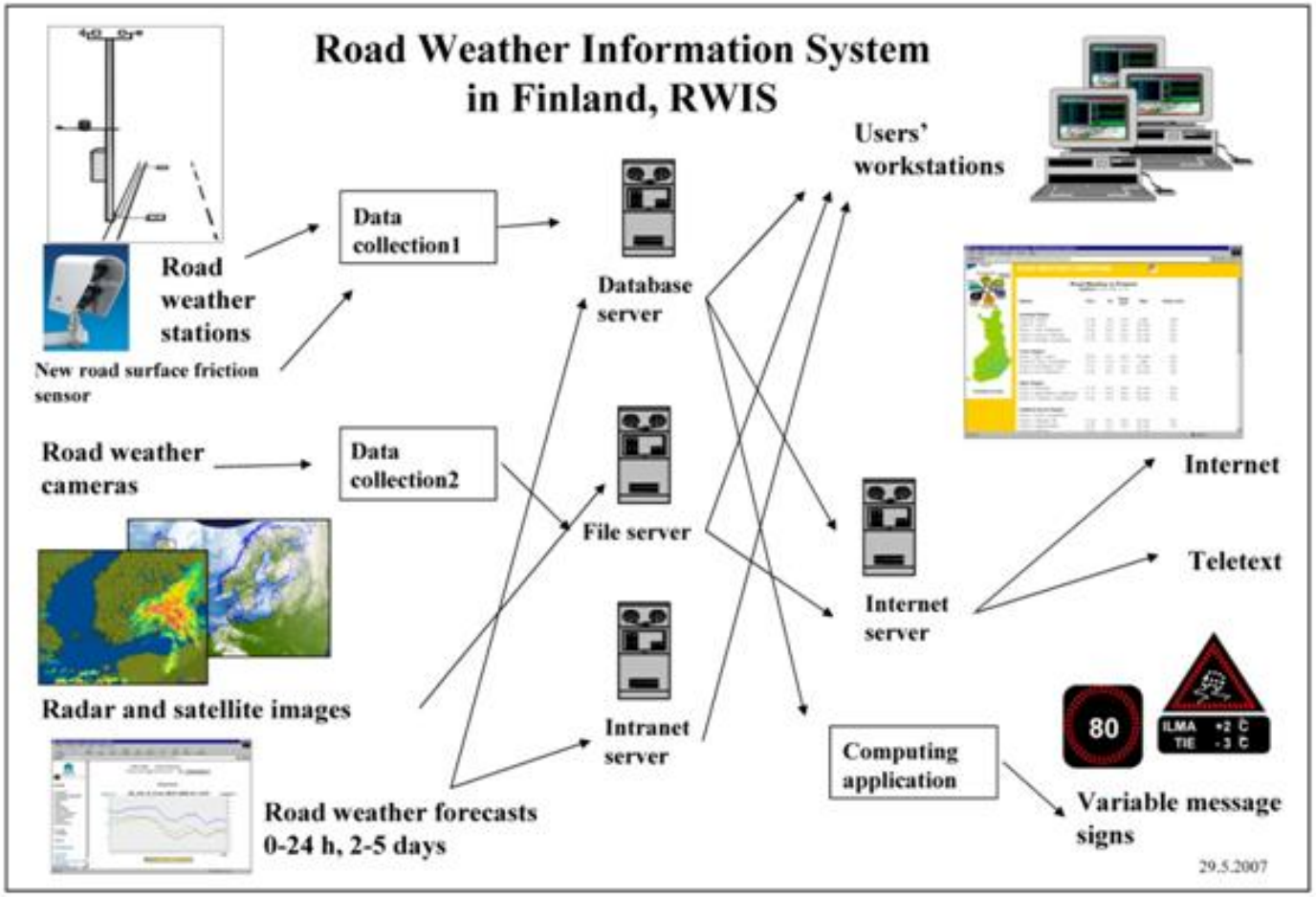
- other special observations from masts etc.

Forecasting models



- In multitude of grid resolutions and time scales

Road Weather Information Systems



How to start weather business?

- You have a brilliant product idea
- You have enthusiastic experts with entrepreneurial minds
- But...
- You must have plenty of money to buy European weather information
- For road information it is even more difficult, you may not get it at all...

Rules and practices in the EU

- European pricing model: complex, high costs
  - Governed by EC Directive 2003/98EC which allows
    - governments try to recover maximum money they can get from the sale of data.
    - The application of complex and protective licenses
    - Direct retail competition between the private sector and the dominant commercial arms of the wholesale data suppliers = conflicts of interest
    - Internal cross subsidisation?
  - Commercial Sector stagnates:
    - low penetration (~ 0.3% of potentially available market)
    - and low growth (1.2% p.a.)

Rules and practices in the US

US pricing model: simple, low costs

- data are available to all for commercial re-use at the cost of re-distribution
- re-use governed by simple, overarching license
- No conflicts of interest
- Commercial sector thrives
    - •High penetration (~7% of potentially available market)
    - •Roughly 4 times the size of the European sector
    - •Growing at 14 times the rate of the European market

And it makes a difference

The US and European markets compared

2006/7

Region	GDP $ x10^{6}	Potential Market for Meteorological services $ x10^{11}	Actual Market $ x10^{9}	Actual Annual Tax revenue $ x 10^{6}	Potential Annual **net additional** Tax Revenue $ x 10^{6}	Annual Market growth %
US	11,413,625	2.0	1.4	396	0	17.0
Europe	14,527,140	2.56	0.372	147	350	1.2

Sources: IMF, Eurostat, Meteorol. Appl **15** 305-312 2008**, Weiss 2002, Wikipedia**

To realise the EU potential…

…we must **change the model**

- Unmodified US model not necessarily best for Europe
- But move towards US model is necessary
- Requires political will and a degree of risk by governments

Changes are necessary

- PSI must ideally be available at marginal cost of distribution or at least at prices determined by genuinely competitive market
- “Downstream” arms of NMHS must be completely separated from “Upstream” arms
- Some countries already leading the way to the new world order: The Netherlands, The UK, Norway, Spain, Iceland

Problem in competitiveness

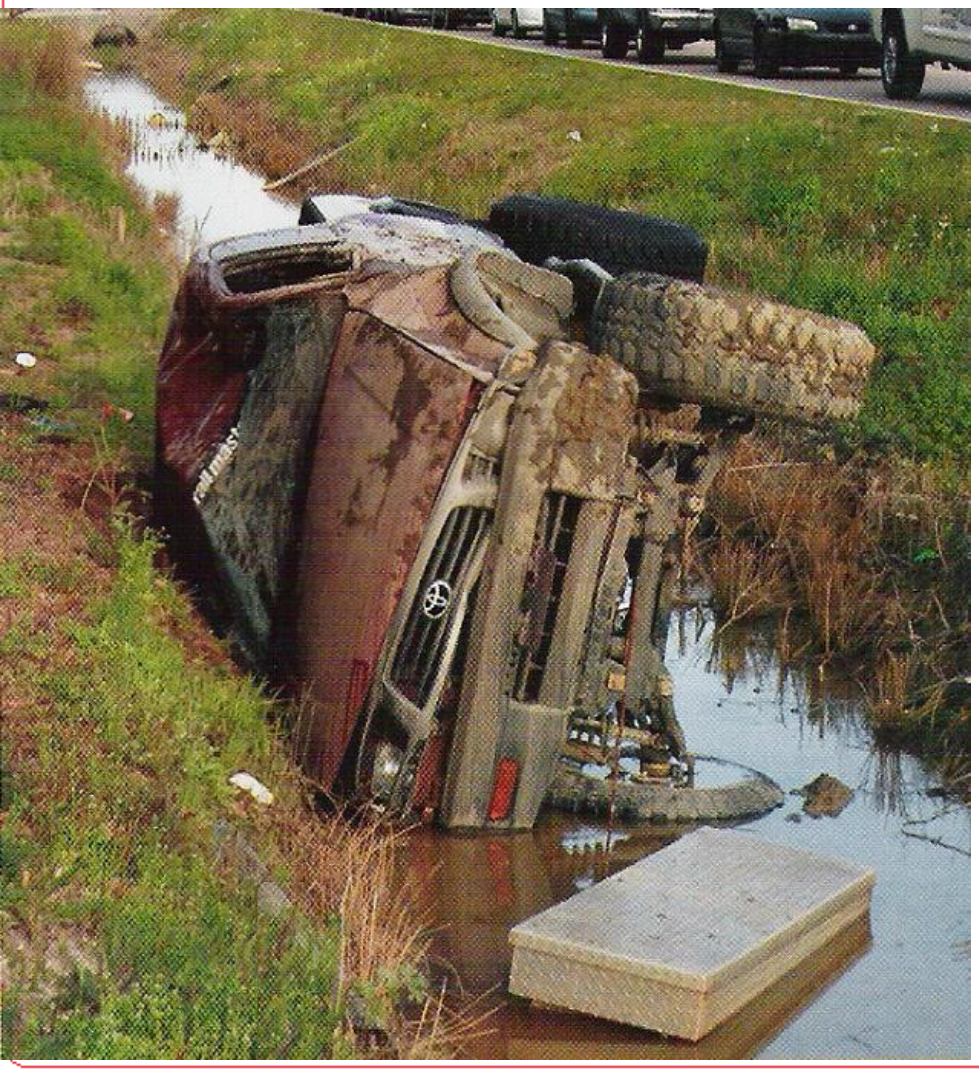
Compared to the USA,

- European meteorological value-adding sector is underperforming by a factor of at least 3
- Sector is growing at a rate ~14 times below its potential
- There is a net loss of taxation to national exchequers of ~300 million Euro per year from the sector

And meanwhile we wait…

There are much more serious problems waiting to be solved

Problem 1: Traffic may kill you!



- More than 40.000 killed every year in the EU in traffic accidents
- More than 1.200.000 injured
- Weather plays a significant role in most accidents

Problem 2: It's getting hot!

- 20% of green house gas emissions are generated by transport
- But efficient and safe transport is vital for the society and economy

Innovating is necessary!

« Innovating as activity is important, whether leading to concrete results or not »

« Do not miss the opportunity of any crises, as best innovations are produced during those »

« Ideas may not make you rich, but will always make your life richer »

Liisa Välikangas, Professor on Innovation management

Road Map for Radical Innovations in European Transport Services

- Budget: 4.9 M€ FP7/INFSO funding: 3.3 M€
- Duration: 30 months 2007-2010
- Coordinator: Foreca Consulting Ltd / Dr. Pirkko Saarikivi
- 14 Partners from **Finland**: Foreca Consulting Ltd, VTT, Finnish Meteorological Institute, Destia, Logica Suomi, **Sweden**: Klimator AB, Semcon Caran AB, **The Netherlands**: Demis BV, **Germany**: DLR, Pöyry Infra Traffic GmbH, **Italy**: ARPAV, **Hungary**: Road Safety Engineering Bureau, **Croatia**: Meteo-Info d.o.o., **Slovenia**: Amanova d.o.o.

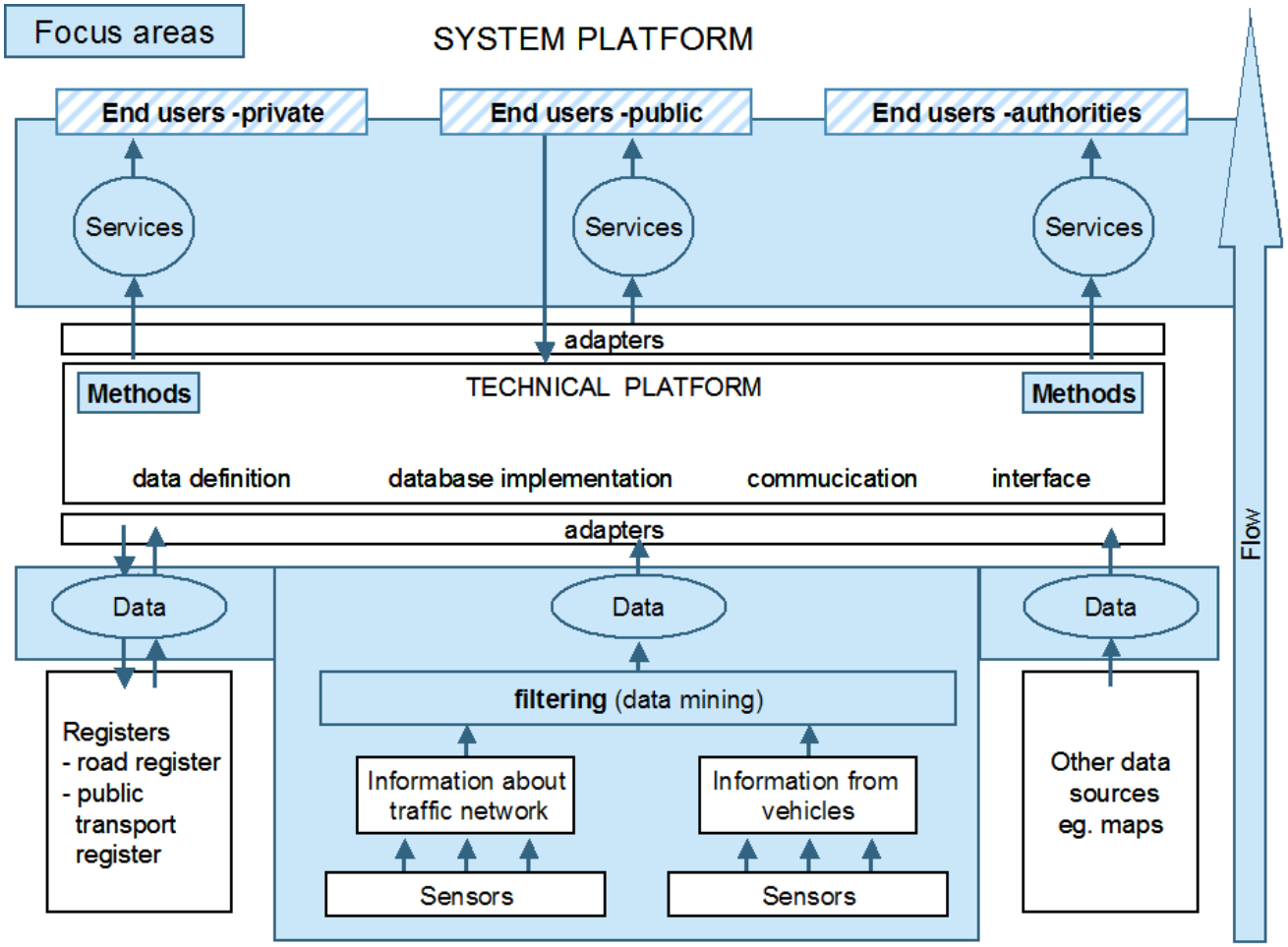
Overall objectives

- Thorough analysis of the **potential** of the European transport service sector for new **innovations**
- Opportunities and barriers?
- Can Europe produce **radical innovations**?
- We claim that…

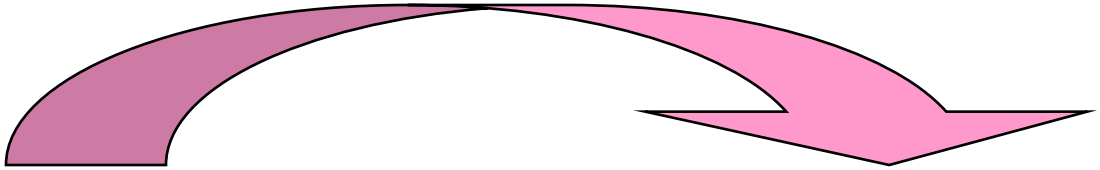
Our hypothesis

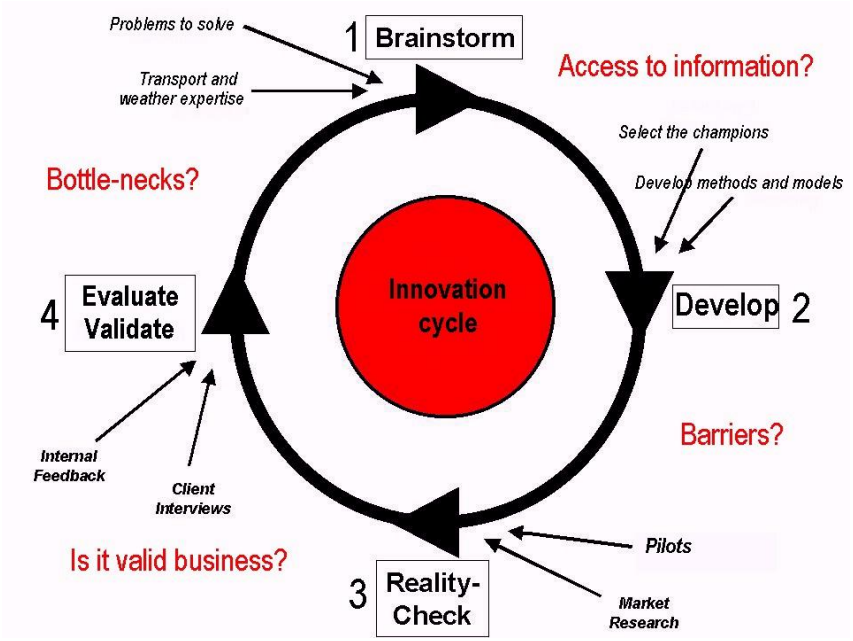
- Effective **accessibility** to all kinds of useful **information**,
- combined with **advanced data fusion** methods,
- applied on technological **information platforms**,
- with high level of **standardisation**;
- These are the prerequisites for the creation of **innovative mobility services!**

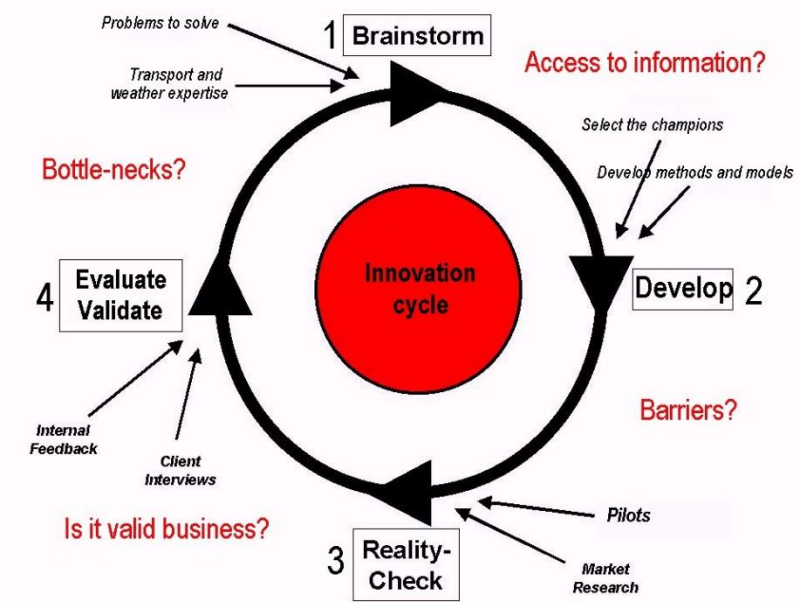
Technical platform and data flow



Two innovation cycles







Some ideas created and evaluated

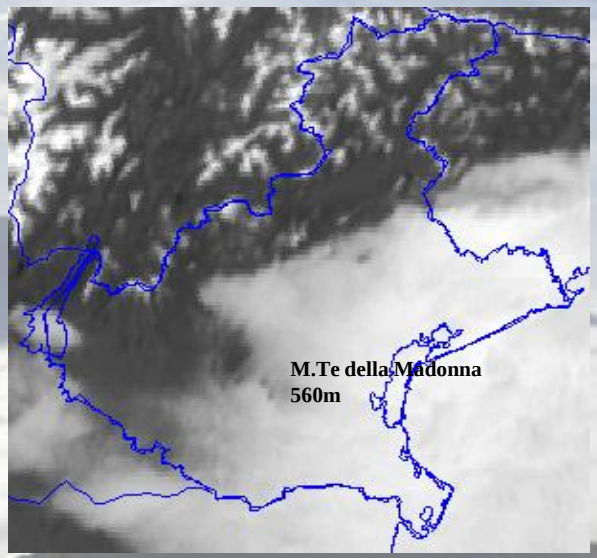
- More than 100 ideas created in brainstorming sessions
- Best ideas shortlisted and developed further
- Innovation is often combining existing information in a new way

Some good ideas

- Fog warning system in Italy
- ”Pulp Friction” slipperiness warning system
- Combining weather and traffic models in Gothenburg Sweden
- Managing traffic chaos in Hamburg port
- Semi-public high-quality transport
- Car running on bio-waste

Fog in Veneto and elsewhere

Typical fog day in Veneto as seen from satellite



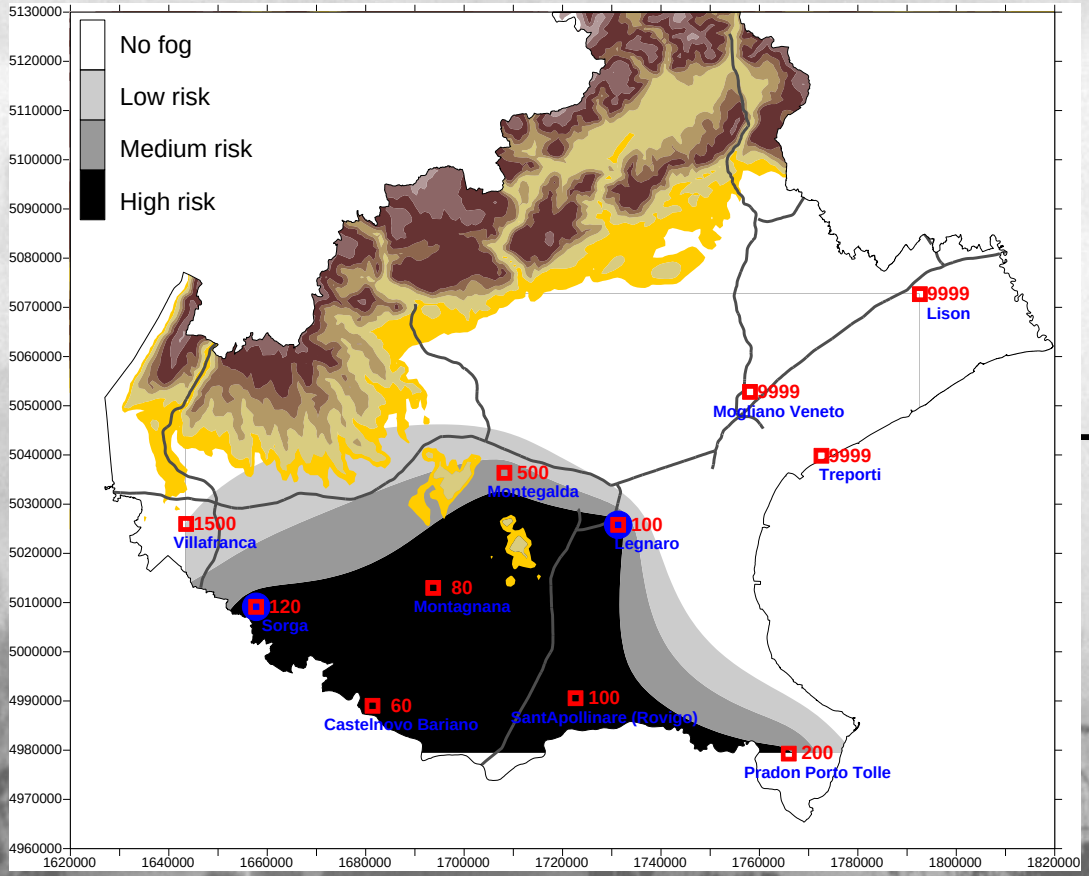
Trip up to Mt Madonna

Satellite is not sufficient to detect fog at the ground

ROADIDEA arpav

Fog pilot products

Real-time fog alert maps



DISSEMINATION

Private car drivers

Transport companies

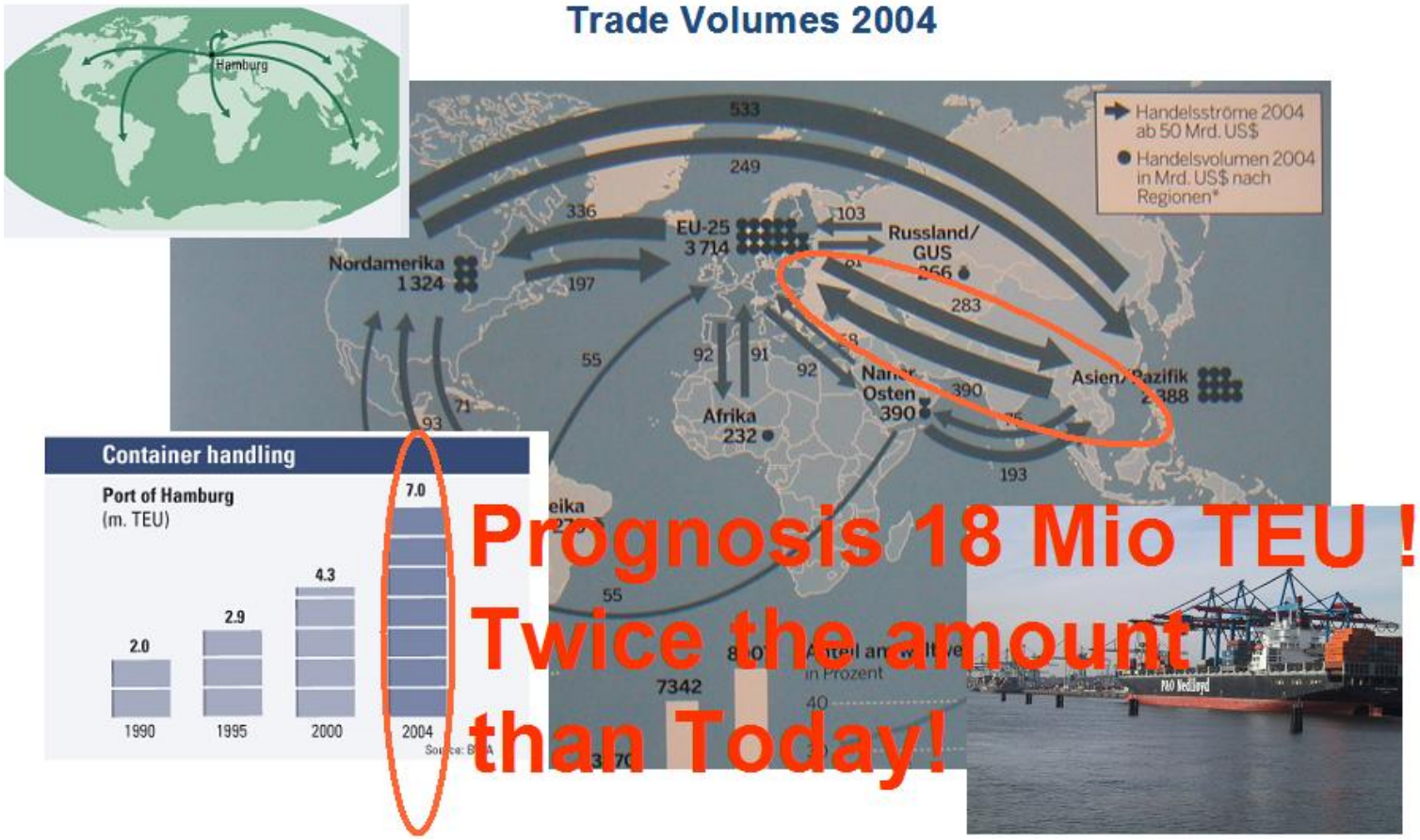
Road management

Authorities

ROADIDEA

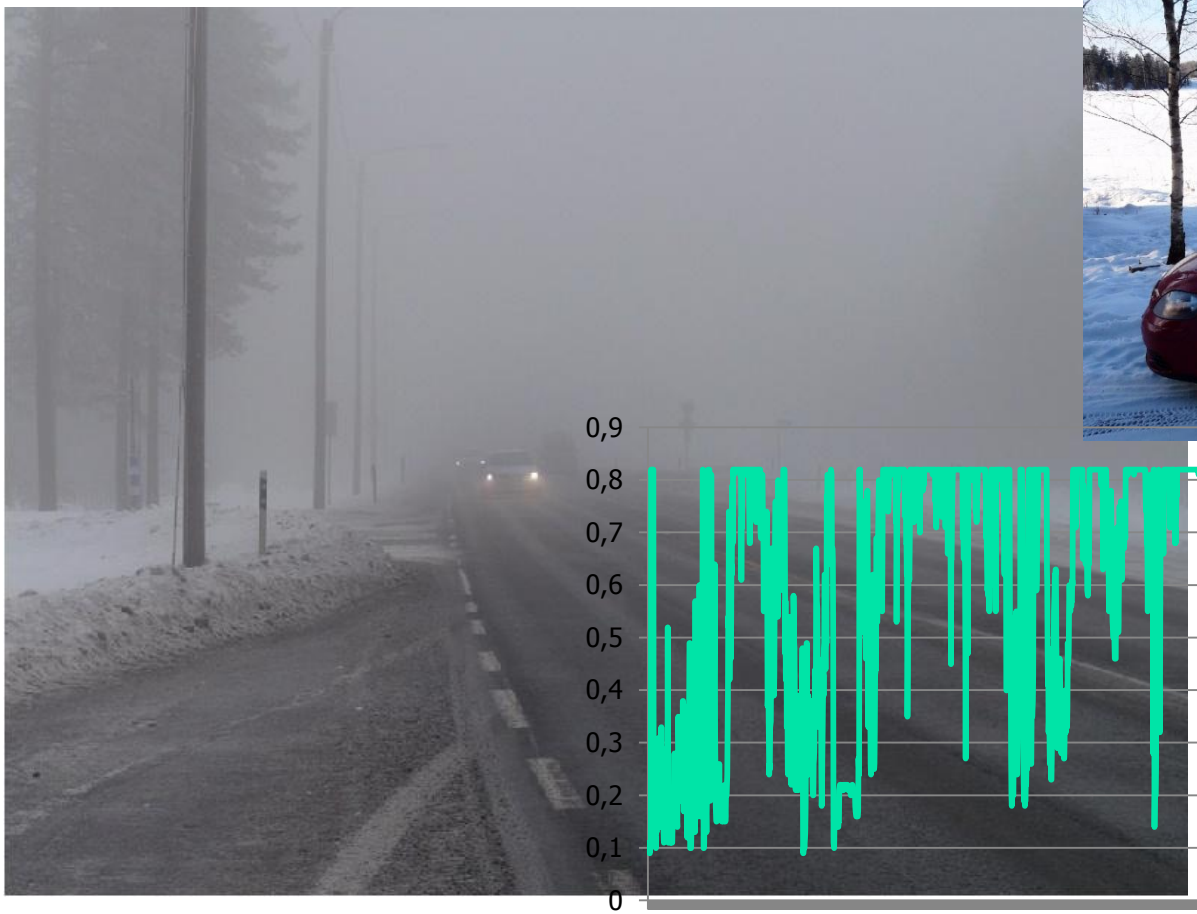
arpav

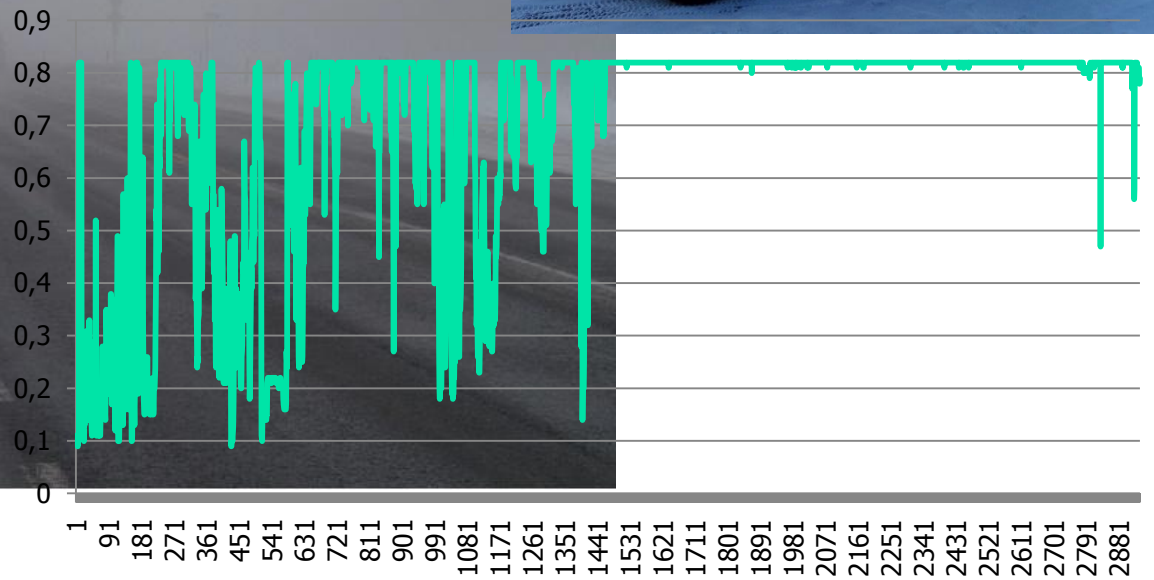
Case Hamburg Port



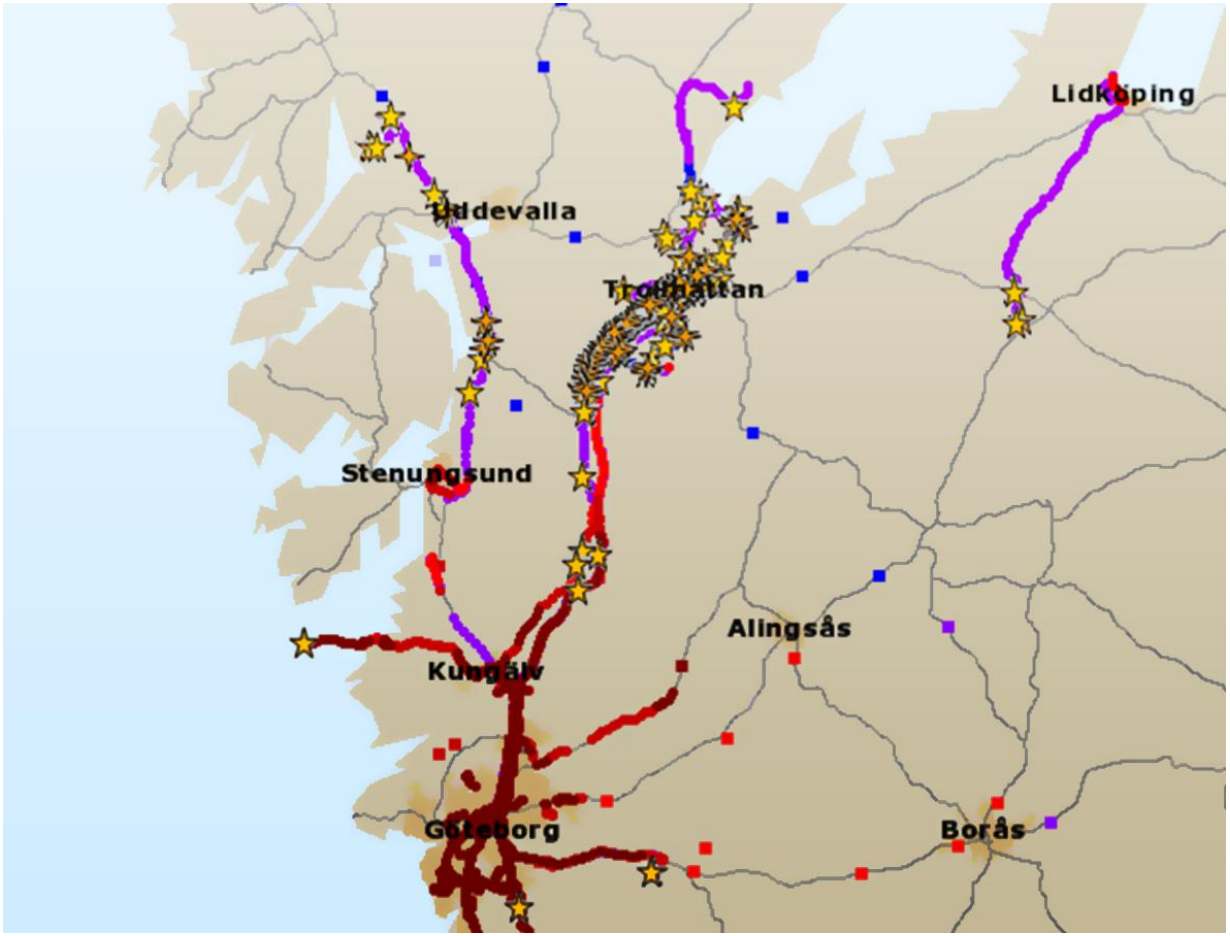
Port-related multimodal traffic modeling

Mobile friction monitoring



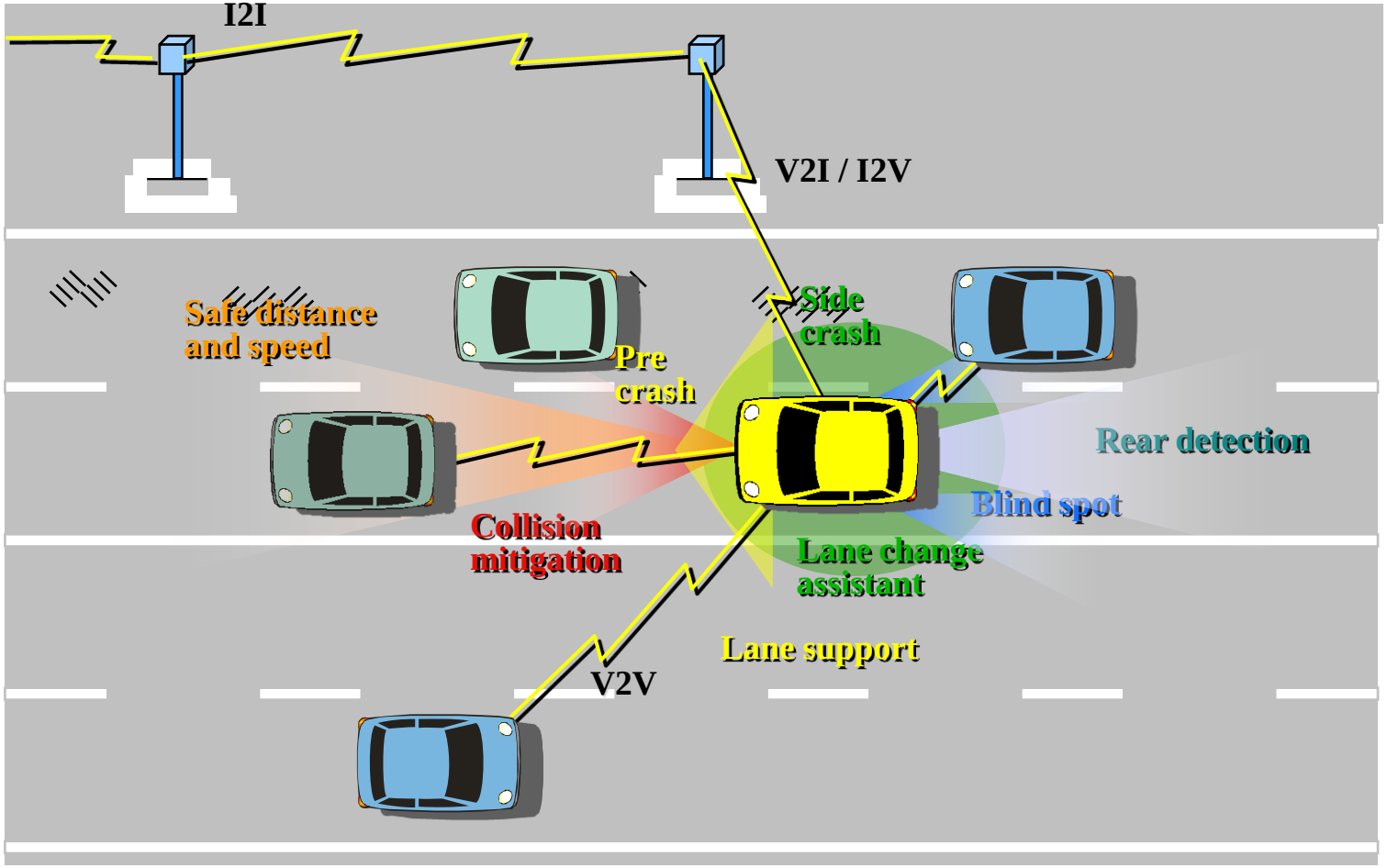


Gothenburg pilot

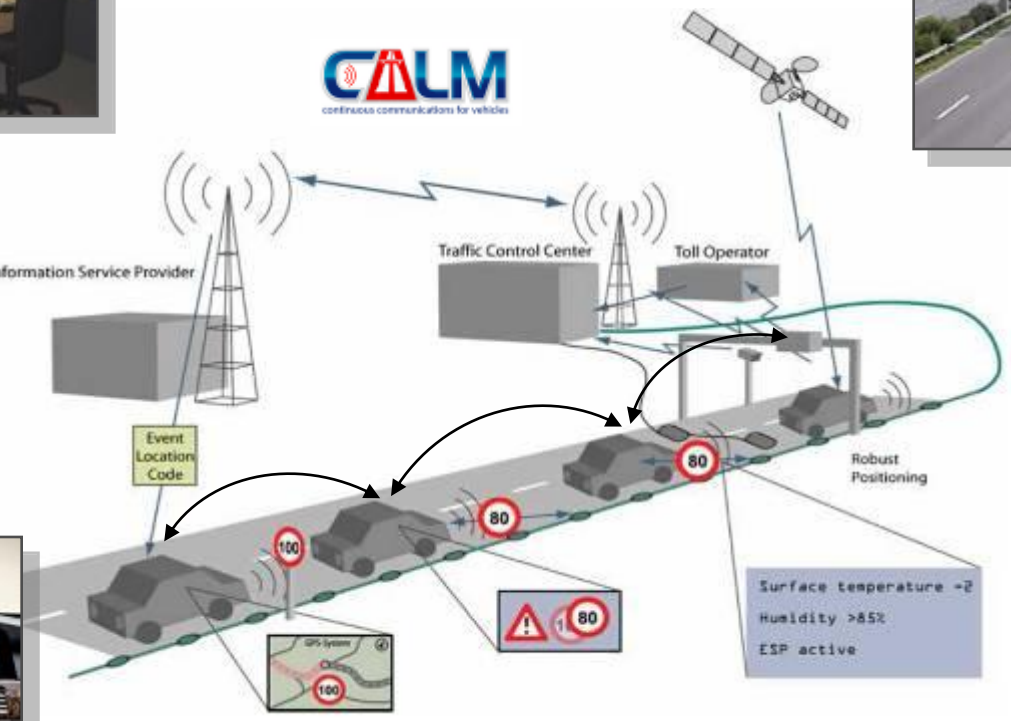


- Info from ordinary cars combined to weather model

New V2I/I2V communication



Increasingly complex systems



IEEE 802

CAR 2 CAR COMMUNICATION CONSORTIUM

Source: COMeSafety and COOPERS projects

And we do not have to use gasoline anymore

- You can make electricity out of bio-waste
- European innovation: car running on compressed air!

First ROADIDEA conclusions

- Technology or delivery is no problem any more
- More data and more complex data systems are emerging and need development
- Access to data is the barrier for new European-wide services
- Recommendation for a minimum data set that would be available in all EU countries with reasonable conditions

www.roadidea.eu

- Plenty of documents available also on the data issue
- You can write down your own ideas, too
- All ideas are welcome, whether silly or not!

Thank you!

Now Q & A

Contact:

Pirkko.Saarikivi@foreca.com

Discussion and Questions

Coffee Break at the Exhibition 'Geo Connects the World'

Resume at 11.30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Chair: **Daniele Rizzi**, EUROSTAT, European Commission

INSPIRE: Building the European SDI

Keynote speakers:

- **Massimo Craglia**, DG JRC, European Commission
- **Hugo de Groof**, DG Environment, European Commission

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INSPIRE: The European Spatial Data Infrastructure

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INSPIRE:
The European Spatial Data Infrastructure 2009

Max Craglia

on behalf of INSPIRE Team

Joint Research Centre – DG Environment – EUROSTAT

Outline

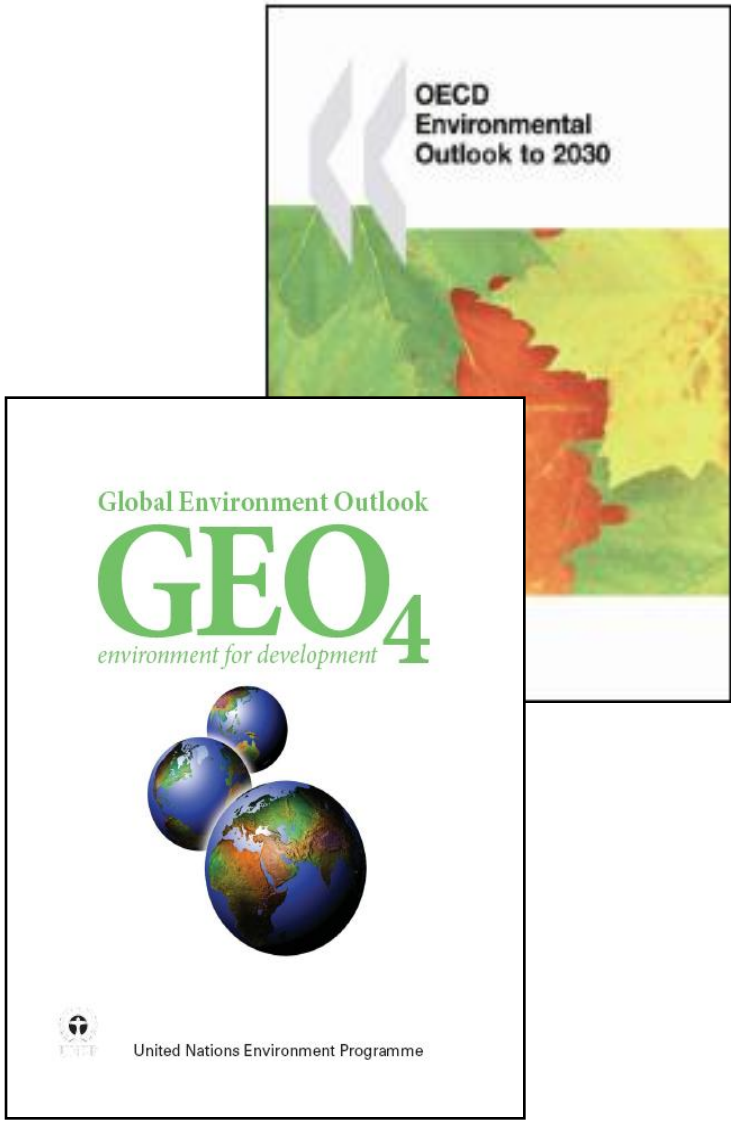
- Background to INSPIRE
- Key components
- Where are we now in developing them
- Implementation in the Member States
- INSPIRE as a process
- Conclusion

Background to INSPIRE

- The environment!
- …..as well as a lot of background discussions and research activities leading up to INSPIRE in the 1990s.

Looking ahead

- Large degree of consensus that climate change, energy, water scarcity, and the impact of environment on health particularly in relation to air pollution and chemicals will continue to be the major issues in the next 20-30 years
- The global nature of phenomena and their interconnections will require more and more an integrated horizontal multi-sectoral approach to data analysis and modeling across the environmental and socio-economic domains, underpinned by relevant, timely, and global information systems



It is not just a data (or technology) problem

- Increasing shift from sector-based (silos) policy making towards more integrated, cross-sectoral approaches.

http://www.wintermantel-lagersysteme.de/uploads/pics/IndustrieSilos.jpg

- This new approach particularly important for environmental policy
- But very difficult to work across sectors and boundaries

INSPIRE Process (long one… -:) but needed !
Bottom-up Stakeholder Involvement

– Building consensus in expert groups	2001
• Orientation and Position papers of experts	2002
• Establishing the state-of-play	
– Preparing the proposal -> A Framework Directive	2003
• Scoping policy measures with expert advice	
• Assessing the political and socio-economic impact	
• A public review of the proposed measures	
– Adoption of the Framework Directive by the Commission	2004
– The proposal on the political agenda of the EU Presidency	
– Co-Decision Procedure by Council and Parliament	2004-7
– Adoption of the Framework Directive	
– Transposing the Framework Directive	2007-09
– Sharing data and implementing the infrastructure	2009-16

INSPIRE Expert Group

History – INSPIRE Expert Group activities

1. Brussels, 17 Sep 01(Expert Group created)
2. Vienna, 17 Dec 01
   - Action plan & WGs **(>70 Experts mobilised)**
3. Madrid, 29-30 May 02
4. Dublin, 2-July 02
5. Athens, 30-31 Oct 02 **(Position Papers)**
6. Brussels, 13-14 Mar 03 **(Internet Consultation)**
7. Rome, 10-11 July 03
8. Brussels, 15 Dec 03
9. Brussels, 5 March 04
10. Warsaw, 22 June 04 **(Adopted Proposal)**
11. The Hague, 1-2 Dec 04
12. Alghero, June 05 **(Common Position)**
13. Innsbruck, June 06

INSPIRE principles

- Data should be collected once and maintained at the level where this can be done most effectively
- Combine seamlessly spatial data from different sources and share it between many users and applications (the concept of interoperability)
- Spatial data should be collected at one level of government and shared between all levels
- Spatial data needed for good governance should be available on conditions that are not restricting its extensive use
- It should be easy to discover which spatial data is available, to evaluate its fitness for purpose and to know which conditions apply for its use

INSPIRE general provisions

- 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 does not require collection of new spatial data
- INSPIRE does not affect existing Intellectual Property Rights

INSPIRE components

- Metadata
- Interoperability of spatial data sets and services
- Network services (discovery, view, download, transform, invoke)
- Data and Service sharing (policy)
- Coordination and measures for Monitoring & Reporting

- *INSPIRE is a Framework Directive*
- *Detailed technical provisions for the issues above will be laid down in Implementing Rules (IR)*

Scope

Existing spatial data held by or on behalf of a public authority operating down to the lowest level of government when laws or regulations

Annex I

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

Annex II

- Elevation
- Land cover
- Ortho-imagery
- Geology

Annex III

- Statistical units
- Buildings
- Soil
- Land use
- Human health and safety
- Utility and governmental services
- Environmental monitoring facilities
- Production and industrial facilities
- Agricultural and aquaculture facilities
- Population distribution – demography
- Area management/restriction /regulation zones & reporting units
- 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

Where are we now

- Metadata
- Network services
- Interoperability of spatial data sets and services
- Initial operating capability and GeoPortal

Metadata

- INSPIRE Metadata Regulation published 4th December 2008
- Two years for Member States to create metadata for Annex I and II, 5 years for Annex III.
- Long process to find the balance between “as little as possible” and “as much as necessary”
- Separation between legal text (what needs doing) from non-binding Guidelines explaining How to do. Flexibility in the face of evolving standards and practices.
- Maintenance of Technical Guidelines

Discovery and View services

- Draft regulation adopted by INSPIRE Committee in December 2008.
- European Parliament scrutiny during the summer, expected adoption end of the year
- Key features:
  - Key building block of any SDI. Important to make an assessment of resources available.
  - supporting both European and international Coordinate Reference Systems.
- Additional technical reports:
  - INSPIRE SOAP primer for INSPIRE Discovery and View Services (see INSPIRE web site)
  - Public availability of the new version of technical guidance documents in June 2009

Download and Transformation Services

- Review by stakeholders completed, comments being addressed
- Draft Regulation prepared by the Commission in the second half of September
- Submission to the INSPIRE Committee in December
- Main features: providing access to harmonised data either directly or via services able to transform the data models from the national ones to the INSPIRE ones.
- Interoperability through services in practice.

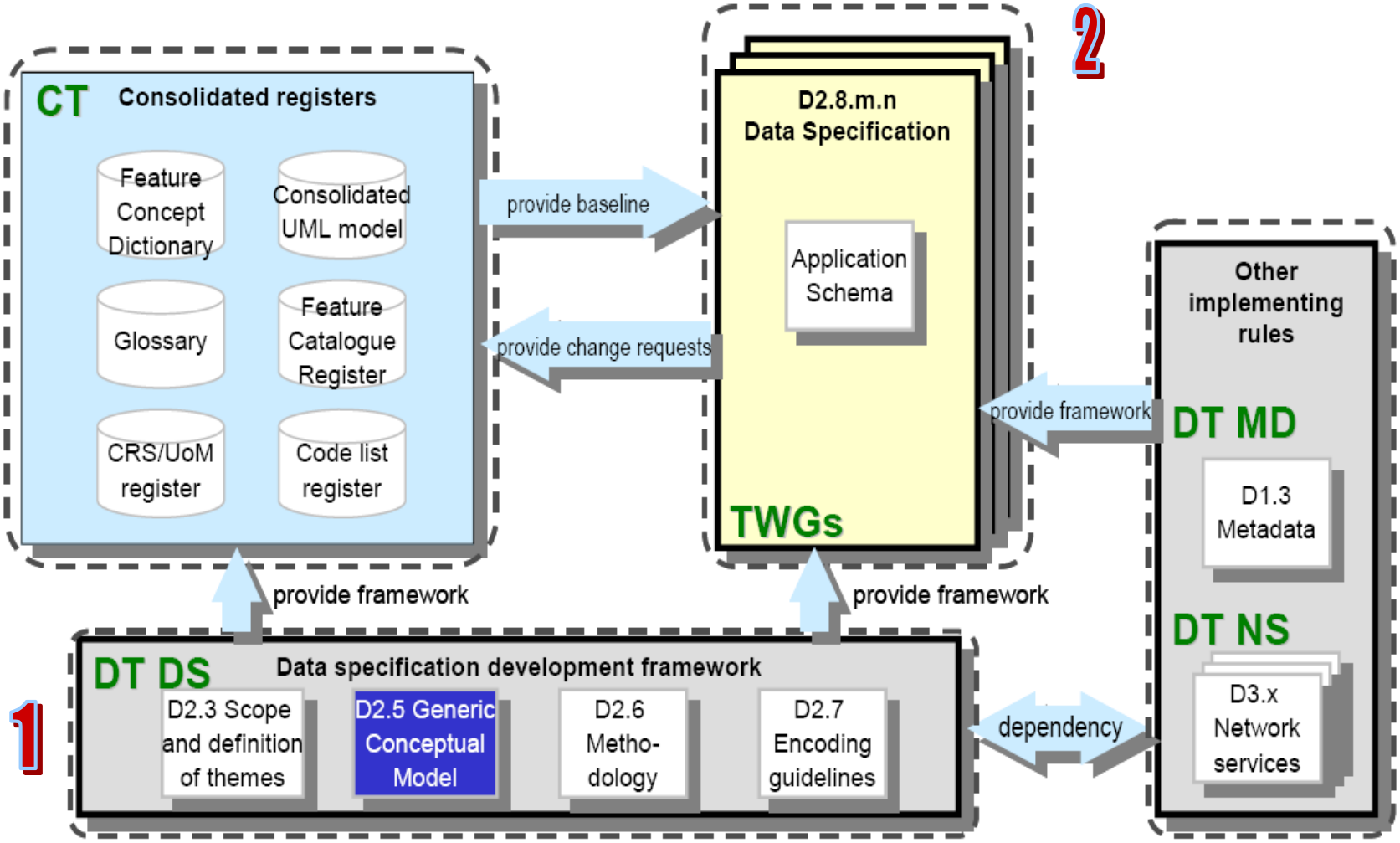
Invoke Services

- Technical Report on the state of play for service invocation.
- Network Service Drafting Team start of activity on this service
- As more and more geo-processing services become available, the issues of how to chain them is increasingly important to move from a data-centric to an information-centric SDI, able to respond to much wider user base.
- Several important research issues to address including better documentation of services, quality and trust, dependencies, rights management, and so on.

Interoperability of spatial data sets and services

- Development of these Implementing Rules follow a three-step approach:
  1. Development of conceptual framework and specification methodology (by Data Specification Drafting Team)
  2. Development of data specifications for each spatial data theme (by different Thematic Working Groups)
  3. Preparation of the Implementing Rules based on data specifications (by the Commission)

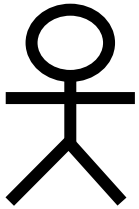
Data specification development



The Outcome and Scope of INSPIRE DS

Any user e.g.:

- European Institutions
- Emergency in cross-borders



Needs seamless access to

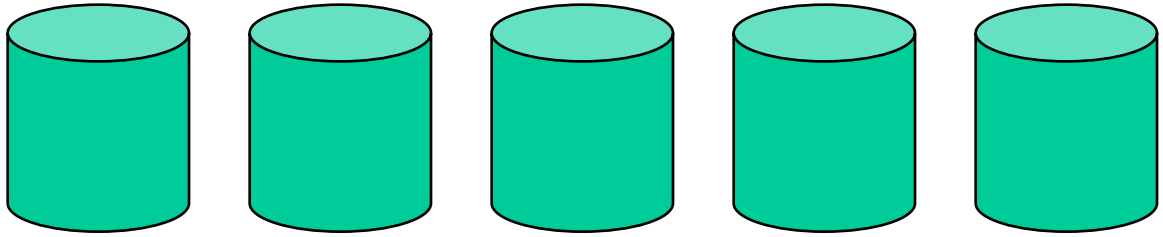
INSPIRE Implementation Rules

(e.g. Data Specifications)

Mechanisms for sharing and exchange

Member States Data

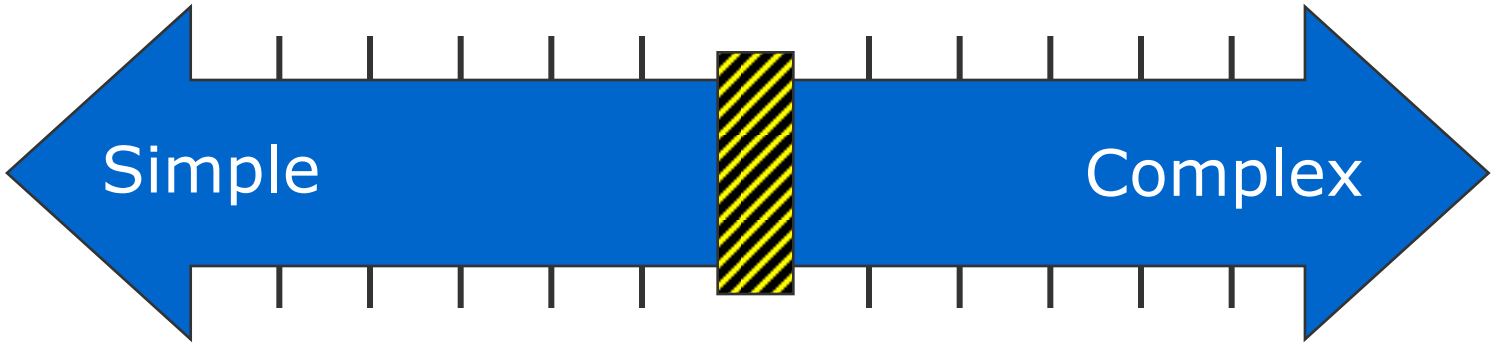
(e.g. Addresses)



(This is a very generic diagram!)

“The Balance Challenge”

Which level of interoperability is “just right”?



Too simple:

- Identified requirements can not be supported
- Insufficient harmonisation
- Few benefits

Too complex:

- Difficult to implement
- Substantial benefits available only to few users
- High costs

Status

Eight Thematic Working Groups

- Kick-off meeting in February 2008
- Data specifications for Themes of Annex I in November 2008 based on user requirements, reference material, and relevant use cases

Consultation and Testing

- Consultation draft guidelines and draft structure and contents of Implementing Rules Annex I completed, including testing by stakeholders
- Proposed regulation to be submitted to INSPIRE Committee in December
- For more details see Session 4.6 and 5.6 on Thursday

Interoperability of spatial data sets and services – Annex II, III

- Process for Annex II, III - Principles:
  - Open, participatory and transparent process
  - Involvement of stakeholders and relevant thematic experts and communities at all steps
  - Increasing importance of projects for development and testing of data specifications
  - Submission of candidate specifications is important. They will need to be evaluated by the community and adjusted to be coherent with data specifications of Annex I, and the Generic Conceptual Model as well as being coherent across themes.
  - **Experiences learnt from Annex I taken into account**

Data and Service Sharing between Member States and CIB

- The INSPIRE Directive requires Member States to adopt measures for the sharing of data and services between public authorities for public tasks relating to the environment without restrictions occurring at the point of use. Such measures are open to international bodies and Community institutions and bodies
- Public authorities may charge, license each other and Community institutions provided this does not create an obstacle to sharing.
- When spatial data or services are provided to Community institutions for reporting obligations under Community law relating to the environment then this will not be subject to charging.
- Member States shall provide the institutions and bodies of the Community with access to spatial data sets and services in accordance with harmonised conditions.
- The regulation on these harmonised conditions has now been approved by the INSPIRE Committee and will go through the review by the European Parliament. Best practice and guidelines allow to identify measures that are successful in ensuring and maintaining quality of data as well as increasing access and use

Monitoring and Reporting

- Monitoring and Reporting IR approved by INSPIRE Committee in December 2008, published in OJ 11th June 2009.
- Quantitative indicators on the progress of the SDI in the member states and qualitative reports about implementation experiences and benefits will enrich our collective knowledge in SDI assessment.
- For more details see Session 2.6 this afternoon

Initial Operating Capability Task Force

In Network services regulation introduced the concept of IOC i.e services provide full functionality but not required yet full quality of service.

Task Force created to manage this process.

Purpose

- to help and support the implementation of INSPIRE in the Member States

Scope

- architectural aspects and implementation of Network Services to ensure interoperability with the INSPIRE geoportal and among Member States

Focus

- implementation of the INSPIRE Discovery and

INSPIRE Geoportal

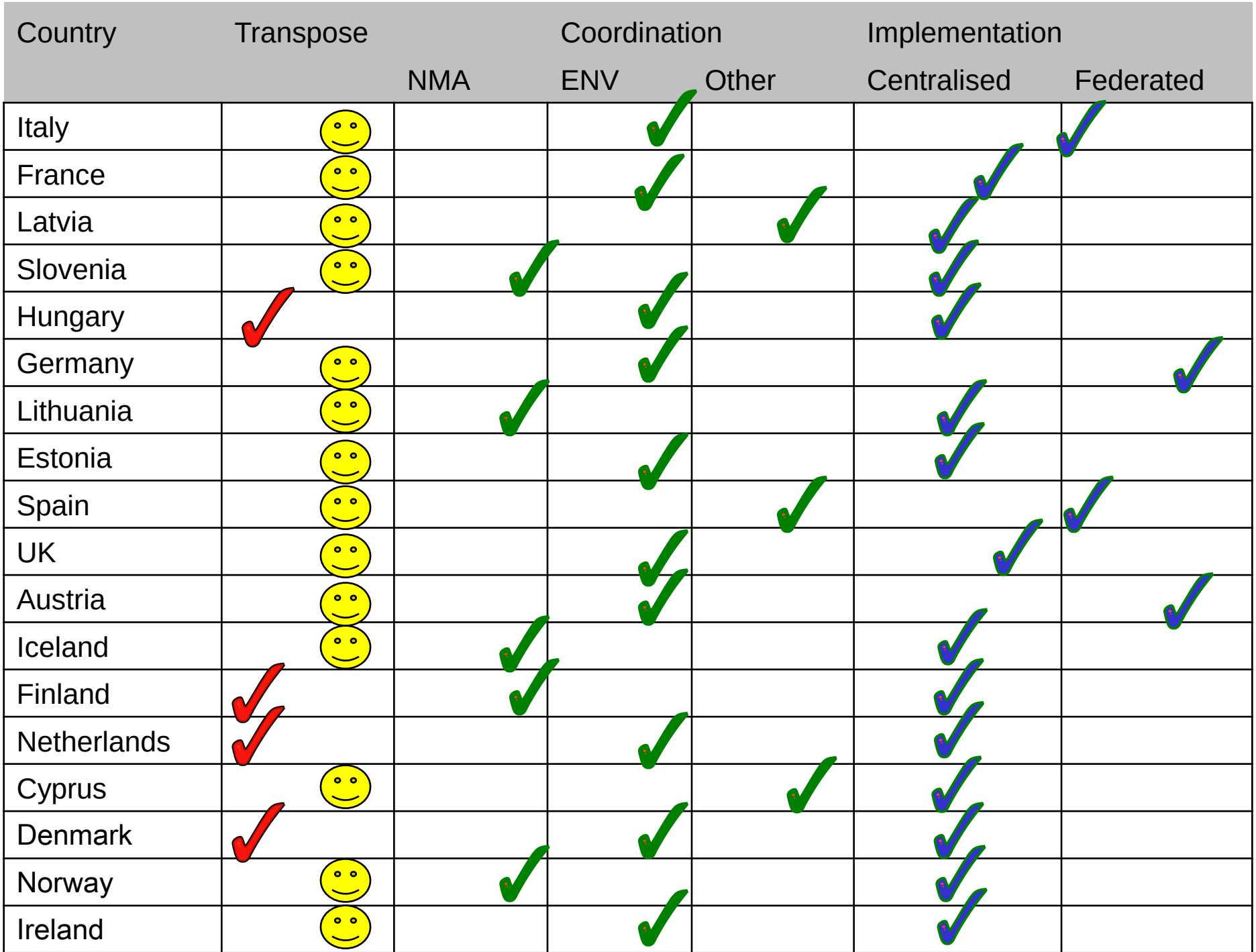
http://www.inspire-geoportal.eu

State of Progress

- Current focus on
  - INSPIRE Discovery & View services, metadata
  - Tools (metadata editor, multilinguality, …)
- Technical aspects addressed:
  - Access to distributed INSPIRE Network Services
  - Performance, Quality of service
  - Multilingual support (GEMET, translators, …)
- Discovery & view web clients based on open source S/W and internal development
  - Support the draft Technical guidelines (OGC CSW ISO AP, ISO 19128)
- Based on the prototype geoportal, specifications for the operational portal will be drafted. Public procurement expected end- 2011
- Operational infrastructure subject to the availability and testing of MS INSPIRE network services
- More information this afternoon at 16.00hrs

Implementing INSPIRE in the Member States

- Request to Member State to provide some information for this presentation on:
  - Status of transposition into national legislation
  - Who is responsible for coordination
  - Features of the implementation strategy e.g. centralised or decentralised
- 18 Countries responded within 1 week, we are grateful for their contribution


Country
Transpose
Coordination
Implementation
NMA
ENV
Other
Centralised
Federated
Italy
France
Latvia
Slovenia
Hungary
Germany
Lithuania
Estonia
Spain
UK
Austria
Iceland
Finland
Netherlands
Cyprus
Denmark
Norway
Ireland

Italy: EIA application integrated in EU-geoportal

France: CARMEN environmental info system

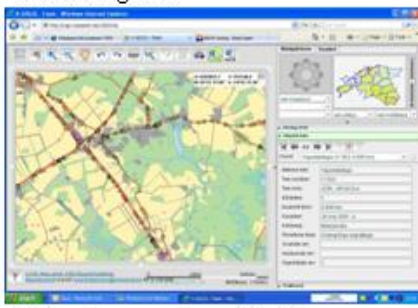
Latvia: IACS-LPIS view services

Slovenia: real estate market value register

Hungary: OKIR environmental info system

Germany: GDI-DE organisational structure

Lithuania: LGII discovery service



Estonia: road and traffic information systems

Spain: interoperable Cadastre

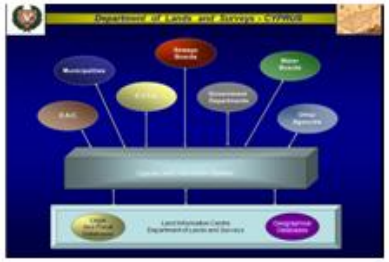
UK: Geohub Northern Ireland

Austria: 9 states,1 geoservice

Iceland: getting ready for INSPIRE

Finland: open source viewer

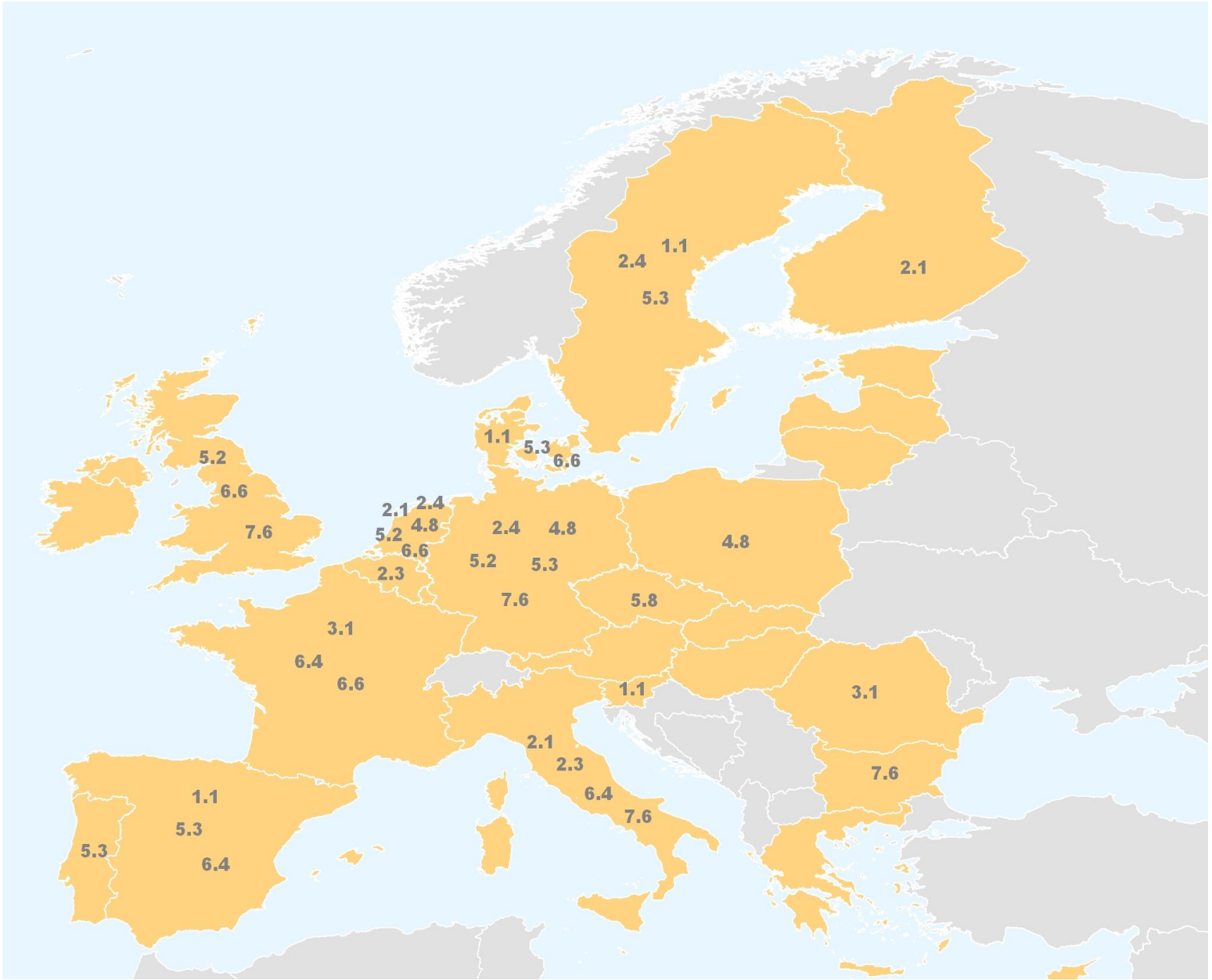
Netherlands: Space for GeoInformation



Cyprus: National Land Information Systems

Norway: Norge Digitalt

To know more


2.4
1.1
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5.3
6.4

Examples of impacts

- It is soon to get INSPIRE impact evidence, but it is clear that INSPIRE brought a huge dynamism and stress business model considerations in France.
- In Iceland there is a need to develop a NSDI. .. By making a introduction on the benefits of INSPIRE there is already a positive impact happening between governmental institutes.
- Key benefits of INSPIRE in Lithuania: all state and local authorities will be following common standards and requirements maintaining spatial data + wider use and higher quality of state data and process control
- The implementation of INSPIRE in Cyprus is expected to play a very important role in the every day activities of all government departments using spatial information.. local authorities, utilities, education, and the private sector.

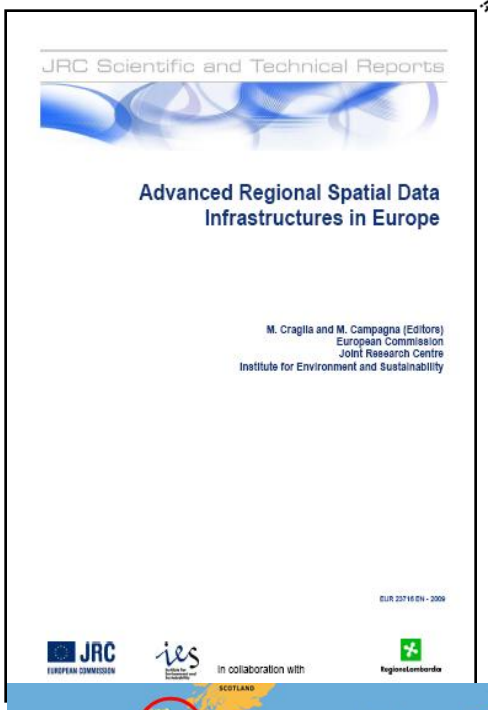
Examples of impacts

Identified Benefits to Date in EIRE, following consultations

- Supporting an improved evidence base for public policy making
- Supporting monitoring of public policy implementation and impacts
- Facilitating ‘joined up government’
- Facilitating better targeted service provision and more effective use of public resources
- Facilitating more robust evidence-based research, spatial analysis and modelling
- Facilitating environmental protection

Examples of impacts

- INSPIRE has fostered the development of advanced SDIs also at the sub-national level
- Evidence from Catalonia and Lombardia indicates that costs of setting up and maintaining regional SDI can be recovered in less than 2 years, with real benefits to citizens, business and public administration
- For more info see Session 4.2

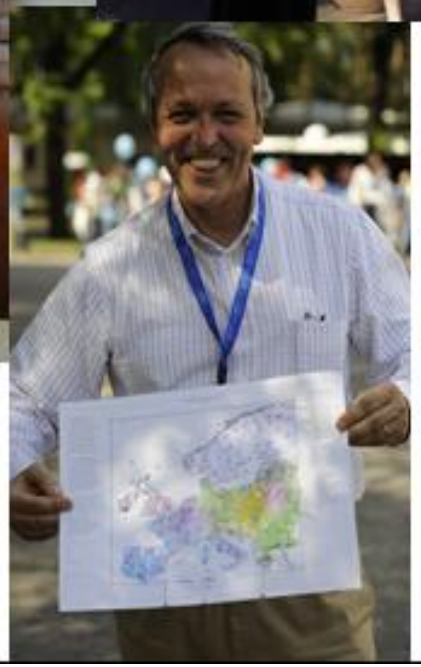


INSPIRE as a process

- Open and transparent approach in:
  - Formulating the policy (Experts from Member States writing position papers as input)
  - Assessing likely impact (Expert from MS preparing Extended Impact Assessment, chaired by EA for England and Wales)
  - Advising on process (INSPIRE Expert Group with representatives MS)
  - Mobilizing stakeholder through open registration of Spatial Data Interest Communities and Legally Mandated Organisations
  - Providing input to drafting of Implementing Rules through experts, reference material, and projects
  - Commenting on Drafts, and testing

Building the community

Building the spirit



Contribution of INSPIRE to international SDI development

- INSPIRE's architectural approach is suitable for multi-country situations in which SDIs already exist in some form
- Fostering a shared approach to international environmental challenges.
- Adding to the pool of knowledge on assessment of socio-economic impacts of SDIs
- Multilingual approach is both a challenge and opportunity
- Best practice and technical guidance documents
- Contributing to revision and development of standard based on real-life implementations

Conclusions

- INSPIRE is an interesting model for developing not only a technological infrastructure, but also shared practices and working methods, thorough collaboration and partnership.
- It takes (a lot) of time and effort but it is well worth it to achieve a shared sense of ownership of both process and outcomes.

Thank you for your attention !

http://www.ec-gis.org/inspire/

inspire-info@jrc.cec.eu.int

massimo.craglia@jrc.ec.europa.eu

INSPIRE: Building the European SDI

Keynote speech

INSPIRE in the European Shared Environmental Information System (SEIS)

- **Hugo de Groof**, DG Environment, European Commission

GSDI
GSDI 11
World Conference

INSPIRE
3r INSPIRE Conference

GEONOVUM
RGI
Public sector meets
Science & Industry

Discussion and Questions

Lunch Break at the Exhibition
´Geo Connects the World´

INSPIRE Sessions
Resume at 14:00

Here in the Rotterdam Hall

Global Spatial Data Infrastructure
GSDI
GSDI 11 World Conference

INSPIRE
3rd INSPIRE Conference

GEONOVUM
RGI
Public sector meets Science & Industry

Chair: **Beatrice Eiselt**, EUROSTAT, European Commission

INSPIRE: Reports from the Drafting Teams

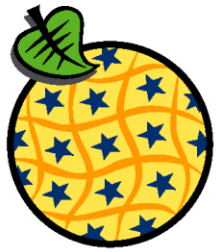
- **Marie Louise Zambon**, INSPIRE Monitoring and Reporting Drafting Team
- **Clare Hadley**, INSPIRE Data and Service Sharing Drafting Team
- **Clemens Portele**, INSPIRE Data Specifications Drafting Team

INSPIRE: Reports from the Drafting Teams

INSPIRE: Monitoring and Reporting Regulation and Guidelines

- **Marie Louise Zambon**, INSPIRE Monitoring and Reporting Drafting Team

INSPIRE Report from the Drafting Team Monitoring and Reporting Regulation and Guidelines



INSPIRE conference – 17 June 2009

Marie-Louise ZAMBON
Chair of the INSPIRE Drafting Team Monitoring and Reporting

Monitoring and Reporting INSPIRE

Contents :

- Objectives of the INSPIRE Drafting Team
- Members
- Methodology
- Results : Regulation and Guidelines
- Next steps : Implementation and tools
- Complementary studies : State of Play

Abbreviations:

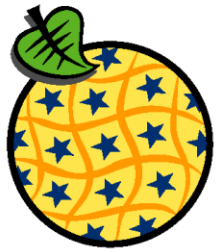
DT: Drafting Team

IR: Implementing Rules

MR: Monitoring and Reporting

Objectives of the MR in the directive

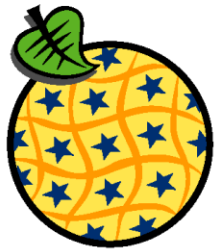
Objectives
Members
Methodology
Results
Next step
Other studies



- INSPIRE - Article 21(1) : Monitor the implementation and use of the infrastructures for spatial information
  - Make the results of the monitoring accessible on a permanent basis
- INSPIRE - Article 21(2) : Three yearly report to European Commission by Member States
  - Organisation, coordination, quality assurance, use of the infrastructure, progress data-sharing, costs/benefits
- *Why ?*
  - *Recital (34) : Needed for decisions concerning the implementation of the directive and for the future evolution of INSPIRE*

Scope of the drafting team MR

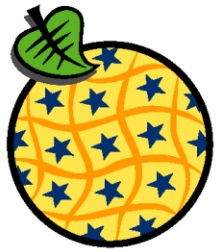
Objectives
Members
Methodology
Results
Next step
Other studies



- Propose the mechanisms, methodology and indicators by which:
  - a continuous monitoring of the implementation progress is measurable with respect to the targets set out by INSPIRE,
  - a three yearly report to the Commission is provided to describe the approach applied by the Member States to translate the requirements set out by INSPIRE into concrete measures and describe the developments of its SDI
  - collected indicators are validated and transferred to the Commission, as well as being made accessible to the public through appropriate information channels
- 3 deliverables

Members (2007-2008)

Objectives
Members
Methodology
Results
Next step
Other studies



Team

From : Universities – Mapping Agencies – Statistics agency – Ministries of Environment – Private sector

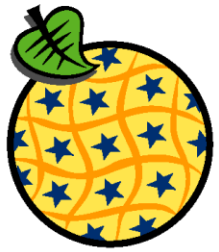
1.	Joep CROMPVOETS	The Netherlands
2.	Ute DAUERT	Germany
3.	Nathalie DELATTRE	Belgium
4.	Dimitri DELLO BUONO	Italy
5.	Pedro R. MURO-MEDRANO	Spain
6.	Mark PROBERT	UK
7.	Marja TAMMILEHTO-LUODE	Finland
8.	Danny VANDENBROUCKE – Co-chair	Belgium
9.	Marie-Louise ZAMBON – Chair	France

Reduced availability or no longer available :

1.	*Barbara ALBINIAK*	*Poland*
2.	*Maico CENTIS*	*Italy*
3.	*Daniela FLOREA*	*UK/Romania*
4.	*Przemyslaw GRUSZECKI*	*Poland*
5.	*Dirk VANDERSTIGHELEN*	*Belgium*

First step (2005-2006): Analysis of reference material and …

Objectives
Members
Methodology
Results
Next step
Other studies



- Reference material provided by SDIC/LMO
  - Nearly 20 documents => two main documents
    - State of Play – European Commission (2003, 2004, 2005)
    - Methodologies : Implementation of performance indicators in IGN-F in 2004-2005 (result based management – French 2001 financial law)

First step:
… and analysis of the Directive

Objectives
Members
Methodology
Results
Next step
Other studies

- What are the requirements of INSPIRE?
  - List of questions
- For each chapter (the 5 components of the infrastructure)
  - Metadata / Interoperability of spatial data sets and services / Network services / Data-sharing / Coordination and complementary measures
- Examples :
  - Objective for Metadata :

    Guaranteeing metadata available, complete and up-to-date
  - Examples of questions:
    - Does metadata exist for each dataset of the themes in annex I, II, III ?
    - Is metadata in conformity with the requirements of the directive (article 5) ?

Second step : Methodology

Objectives
Members
Methodology
Results
Next step
Other studies

1-Guidelines for defining indicators

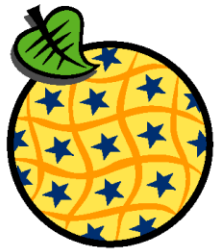
- What are the main goals of the Directive?
- Who will use the indicators?
- Characteristics of indicators ?
- Level of monitoring
  - EC ? Member State ? Stakeholders ?

Second step : Methodology

2-Tools

Objectives
Members
Methodology
Results
Next step
Other studies

- What automatic tools can be used?
  - Web counters
  - On-line questionnaires
- Templates for report ?
- Clear description of an indicator (generic grid)



7.1 Annex A: Generic indicator description grid

Indicator (*Indicator name and short code for its identification*)	
Definition	*Clarification of the indicator*
Chapter of the INSPIRE Directive	*Title of the chapter (INSPIRE directive) to which the indicator refers to.*
Performance objective	*A sentence to explain which part of the INSPIRE objective is achieved*
Rationale	*Describe:* *-why to use this calculation method to address the corresponding performance and link with IR* *-what is the link with the implementing rules defined by the other drafting team*
Description of the indicator	
Sub-indicators	*List of components of the indicator*

First proposal : a list of indicators (2007)

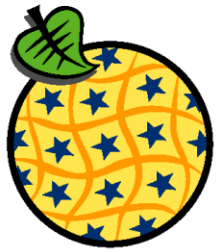
Objectives
Members
Methodology
Results
Next step
Other studies

- 14 indicators
  - Described in a grid - Kept simple, “yes/no” data collected
  - Users ?
    - Commission / Member States / Citizens
  - National level
    - Member States will collect data from stakeholders to calculate indicators
  - Objectives and target ? From the directive
- Review
  - EC and the other DTs
- Feasibility tests
  - Internal test (BE – ES – FR)
  - Feasibility test (DE – ES – IT – NL)

⇒ Proposal for IR MR

Proposal : Draft IR MR (2007-2008) 1/2

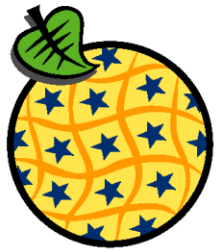
Objectives
Members
Methodology
Results
Next step
Other studies



- With two additional documents
  - Justification (why ?)
  - Guidelines (how ?) => spreadsheet for monitoring and template for reporting
- Review
  - EC and the others DTs => proposal simplified (e.g. less indicators – no composed indicators – monitor what changes)
  - SDIC/LMO

Proposal : Draft IR MR (2007-2008) 2/2

Objectives
Members
Methodology
Results
Next step
Other studies



⇒Conclusion

- Principles of MR accepted

But (major issues):

- Is it feasible ?
- How to monitor the conformity with INSPIRE when other IRs don't exist ?

Answers:

- Implementation of INSPIRE is not easy => MR will use data needed for implementation
- MR will be progressive :
  - monitor what exists (data/metadata/services)
  - then what is in conformity with INSPIRE (when IR will be adopted)

Regulation for MR adopted in December 2008 and published in June 2009

Objectives
Members
Methodology
Results
Next step
Other studies

- 8 indicators (technical components)
  - … based on a list of relevant data sets (for each theme, grouped by annex)
  - … for which the INSPIRE conformity is measured
  - … and the INSPIRE metadata created
  - … and the INSPIRE services established
  - And a list of services
  - … for which the INSPIRE conformity is measured
  - … and their use

8 Indicators

Objectives
Members
Methodology
Results
Next step
Other studies

Metadata

MD i1 : Existence
MD i2 : Conformity to INSPIRE

Which data sets?

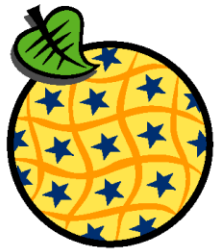
DS i1 : Geographical coverage of spatial data sets
DS i2 : Conformity to INSPIRE

Services

NS i1 : Accessibility of metadata
NS i2 : Accessibility of spatial data sets (view/download services)
NS i3 : Use
NS i4 : Conformity to INSPIRE

IR M&R adopted by the Committee in December 2008 and published in June 2009

Objectives
Members
Methodology
Results
Next step
Other studies



- Report :
  - Coordination and quality assurance
    - E.g. Coordination structures – Quality assurance procedures for the maintenance of the infrastructures
  - Contribution
    - E.g. stakeholders - roles - cooperation
  - Data-sharing
    - E.g. overview of data-sharing arrangements between public authorities – barriers to data-sharing
  - Use
    - E.g. use of spatial data sets and services – examples of cross-border use
  - Costs-benefits
    - E.g. examples of positive effects

Regulation MR : calendar

Objectives
Members
Methodology
Results
Next step
Other studies

- Monitoring
  - Year Y : data collected to calculate indicators (that can be calculated : waiting for other IRs)
  - 15th May year Y+1 : indicators published
  - First monitoring : June-December 2009
- Reporting
  - 1st report : 15 May 2010
  - Updated every three years

How to help MS ? Guidelines

Objectives
Members
Methodology
Results
Next step
Other studies

- Key element: list of all the spatial data sets and the services set up in the framework of the INSPIRE infrastructure.
  - Not only needed for MR
  - Shows what MS intend to make INSPIRE compliant, including existing data and newly collected data.
- Templates
  - Monitoring : Spreadsheet (Excel file)
  - Reporting : Template (Word file)

Spreadsheet: to collect data for indicators

- Objectives
- Members
- Methodology
- **Results**
- Next step
- Other studies

MS - Member State	RA - Responsible authority within the MS	Annex	Theme	Component	Data Set (ID)	Scale		Area covered per each data set	Total relevant area		Data set specification: Existence	Harmonizatio	Interoperabilit	Consistency	Metadata: Existence	Compliance	Net. Services: MD Accesibil	Existence		
												conformance testing for the three levels of harmonisation and interoperability will come the metadata.					Discovery	View	Download	Transformatic
										Indicator	*DS i1*	*DS i2*	*DS i3*	*DS i4*	*MD I1*	*MD I2*	*NS I1*	*NS i21*	*NS i22*	*NS iS2*
								N1	*N2*	*Variable*	*N3*	*N4*	*N5*	*N6*	*N7*	*MD I2*	*N9*	*N11*	*N12*	*N13*
										Formula	*(sum(N1/N*	*(sum(N4/N*	*(sum(N5/N*	*(sum(N6/N*	*(sum(N7/N*	*(sum(N8/N*	*(sum(N9)/*	*(sum(N11*	*(sum(N12*	*(sum(N13*
		I																		
		I	2-Geographical grid systems																	
					MTN25 GRID	1/25000		504 645	504 645		1	1			0	0				
		I	3-Geographical names																	
					IGN Gazetteer	1/50000		504 645	504 645		1	1			1	0	1			0
		I	4-Administrative units																	
					BDLL	1/25000		504 645	504 645		1	1			1	1	1	1	1	0
					SABE	1/200000		504 645	504 645		1	0			1	0	1			
		I	5-Adresses																	
					Cartociudad	1/25000 to 1/1000		260 000	504 645		0,515	0			1	0	0			
		I	6-Cadastral parcels																	
					Catastro	1/1000 to 1/5000		490 000	504 645		0,971	1			1	0	0			
		I	7-Transport networks																	
				Road																
					BCN25	1/25000		504 645	504 645		1	1			1	0	1			
					BCN200	1/200000		504 645	504 645		1	0			1	0	0			
				Rail																
					BCN25	1/25000		504 645	504 645		1	1			1	0	1			
					BCN200	1/200000		504 645	504 645		1	0			1	0	0			
				Water																
				Air																
				TEN-T (Trans-European Network transport)																
		I	8-Hydrography																	
				Hydrographic network																
					BCN25	1/25000		504 645	504 645		1	1			1	0	0			

How to help MS in implementing the MR regulation ?

Objectives
Members
Methodology
Results
Next step
Other studies

- Guidelines : living document => will evolve
  - 1st version : end of June
- Additional help : tools
  - The EC will develop tools for MS
- Feedback from MS
  - Workshops might be organised by the EC
  - NCP can send questions to the EC

Other studies : New State of Play

Objectives
Members
Methodology
Results
Next step
Other studies

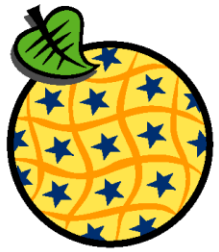
- State of Play in Europe for the EC
  - First assessment of national spatial data infrastructures (NSDI) in 32 countries in Europe (2003-2007)
  - New call for 2009-2011: assessment of INSPIRE and NSDI
- Why such a need?
  - INSPIRE regulation MR: implementation of INSPIRE (requirements of INSPIRE, list of indicators/reports for each MS)
  - State of Play: analysis at the European level (classification, lessons learnt) with another methodology (information from websites, documents, experts, INSPIRE MR, in-dept surveys)

Conclusion (1/2)

- INSPIRE Regulation for Monitoring and Reporting
  - Measure the status (what exists) and progress of the implementation of INSPIRE (conformity):
    - 8 indicators => quantitative evaluation
    - Reports => qualitative information
  - Monitoring based on a list
    - What exists : data / metadata /services
    - Need of such a list for MS to know what falls under the scope of INSPIRE (not only for the MR regulation)
  - Publication
    - Every year: indicators and data used to calculate them
    - Every three years : a report

Conclusion (2/2)

- Help from the EC
  - Guidelines : to be published end of June and spreadsheet/report template during summer
  - Workshops might be organised with MS to collect feedback
  - Tools to be developed by the EC to help MS
- Complementary study
  - Start of a new state of play in September



Thank you

Questions ?

INSPIRE: Reports from the Drafting Teams

INSPIRE: Data and Service Sharing

- **Clare Hadley**, INSPIRE Monitoring and Reporting Drafting Team
- **Beatrice Eiselt,** Eurostat, European Commission

GSDI 11 World Conference

3r INSPIRE Conference

GEONOVUM

RGI

Public sector meets Science & Industry

IR DSS

Implementing rules on the provision of access to spatial data sets and services by Member States to the Community institutions and bodies under harmonised conditions

EC INSPIRE TEAM
Joint Research Centre - Directorate-General Environment – EUROSTAT

beatrice.eiselt@ec.europa.eu

European Commission
EUROSTAT
E4

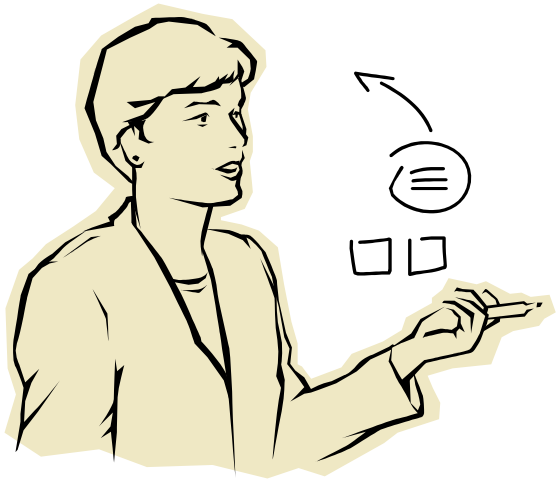
The Data and Service Sharing Drafting Team

Clare Hadley

Chair

Presentation

- A quick reminder …
- DT progress since 2008 INSPIRE Conference in Maribor
- Recent Developments
- Next steps
- Concepts in the Guidance
- Good Practice criteria



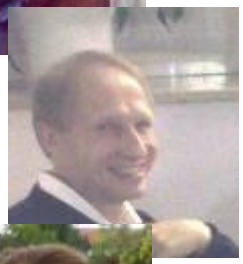
A reminder – Main Objective

To develop a draft data and service sharing Implementing Rule governing access and rights of use to spatial data sets and services for Community institutions and bodies available for adoption by 2009 according to the roadmap.

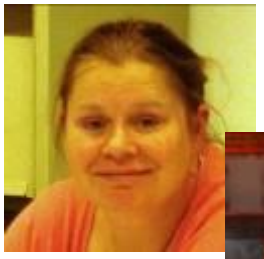
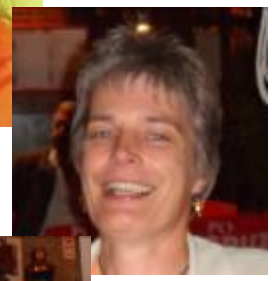
A reminder – Secondary Objectives

- to develop a commentary and recommendations accompanying the draft data and service sharing Implementing Rule
- to develop recommendations for cross border data and service sharing

Team Members 2008-9


Laila Aslesen	NO	
Stefan Bjorkhammar	SE	
Clare Hadley	UK	Chair
Matti Holopainen	FI	
Ian Jackson	UK	
Katleen Janssen	BE	Co-Chair
Martin Lenk	BE	
Lea Leskinen	FI	
Claire Stacino	BE	
Romain Vialle	FR	
Ewa Wysocka	PL	



DT Meetings

- June 2008 in Maribor
- Sep 2008 in Paris
- Dec 2008 in London
- Mar 2009 in Brussels
- In addition:
  - teleconferences
  - ad hoc meetings of Chair, Co-Chair and Commission representatives

Situation last year

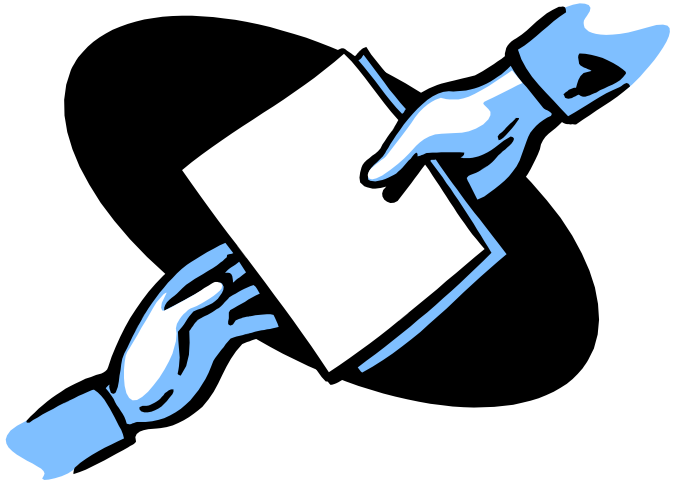
- Outline comments on D4.9b received earlier that month from Coordination Team.
- Some detailed suggestions received from Commission - DT to consider at next meeting
- Commission are investigating issues relating to:
  - impact of Commission procurement regulations
  - degree of detail to be included in implementing rule (as opposed to guidance)

DT work since Maribor (1)

- Sept 08: Further legal guidance received from Commission relating to the procurement regulations, degree of detail to include in the draft documents and the format to be used
- Nov 08: New drafts prepared and submitted to the Commission
- Dec 08: SDIC/LMO Consultation period

DT work since Maribor (2)

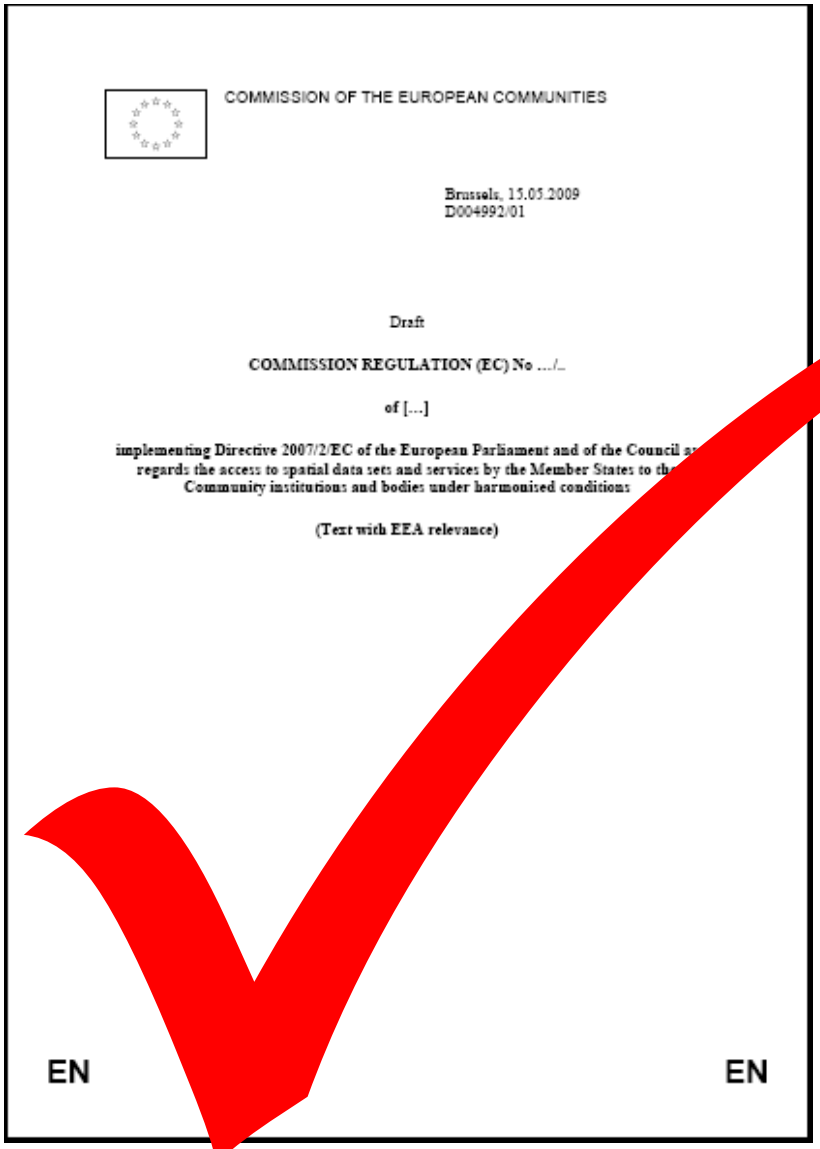
- Feb 09: Consultation Comments received - over 500
- Mar 09: Comments considered. Legal advice received and new drafts the Regulation and Commentary prepared and submitted to the Commission
- Apr 09: New draft of the Guidance document prepared
- Apr/May 09: DT responses to the Consultation comments prepared and submitted to the Commission



Recent developments

- April 09: Commission stage of the process begins
  - Informal consultation with Member States on Commission's draft Regulation
  - Further legal advice received by Commission
  - Commission re-draft Regulation and commentary
  - New draft Regulation sent to INSPIRE Committee followed by Commentary

- June 09: INSPIRE Committee votes in favour of the Regulation



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 15.05.2009
D004992/01

Draft

COMMISSION REGULATION (EC) No .../..

of [...]

implementing Directive 2007/2/EC of the European Parliament and of the Council as regards the access to spatial data sets and services by the Member States to the Community institutions and bodies under harmonised conditions

(Text with EEA relevance)

EN EN

And next?

- Regulation will go the Parliament and Council
- Commission will set out next steps at DT meeting this week
- Likely to be:
  - to continue with the Good Practice document
  - to produce a further draft of the Guidance document for submission to the Commission incorporating material which was removed from the DT's draft Regulation and Commentary
  - Target completion date: November 2009?

Concepts in the Guidance

- Preference for ‘upstream’ framework agreements

Framework INSPIRE Agreement

- Upstream agreement
- Involves more than two organisations or dataset/service
- Includes the terms and conditions of the Specific INSPIRE Licence within the Framework Agreement
- The preferred method to avoid obstacles at point of use

Concepts in the Guidance

- Preference for ‘upstream’ framework agreements
- Transactional licences - Basic and Specific

Basic INSPIRE Licence

- Fixed text – no changes allowed
- Not product or party specific
- Can only be used when no charge is made
- Can be applied in several ways
  - Can be simply referred to a website
  - By reference to correspondence on access.
  - As a click use licence

Specific INSPIRE Licence

- Based on a licence template
- Used if any of the Basic INSPIRE Licence terms and conditions do not apply
- Some topics are fixed
- Some have limited options
- Some allow further details in a schedule

Concepts in the Guidance

- Preference for ‘upstream’ framework agreements
- Transactional licences - Basic and Specific
- Measures to make the Regulation work
  - Coordination
  - Transparency

Good Practice Document

- Criteria for good practice:
  - Coordination
  - Emergency Use
  - Transparency
  - Framework Agreements
  - Charging mechanisms
  - Licences
  - 3rd party access to network
  - E-commerce
  - Public Access

Good Practice Document

- Criteria for good practice:
  - Coordination
  - Emergency Use
  - Transparency
  - Framework Agreements
  - Charging mechanisms
  - Licences
  - 3rd party access to ne
  - E-commerce
  - Public Access

✓Licences in place
✓Increasing harmonisation of licence terms
✓Small number of standard licences
✓Provision of digital on-line licensing
✓Increase in on-line licensing

Good Practice Document

- Criteria for good practice:
  - Coordination
  - Emergency Use
  - Transparency
  - Framework Agreements
  - Charging mechanisms
  - Licences
  - 3rd party access to network
  - E-commerce
  - Public Access

✓Reduction of obstacles at the point of use
✓Licences have become more harmonised
✓Reduction of total effort to put licences in place and recover charges
✓Increase in integrated use of different data sets
✓Clear and consistent data policies
✓Provision of a forum for exchange of information

Your input still welcome!

- Examples of good practice in data and service sharing still required
- Register reference material from your SDIC or LMO
- Email me on clare.hadley@ordnancesurvey.co.uk
- Or better still come and talk to us this week (we meet on Thursday and Friday)


INSPIRE - Infrastructure for Spatial Information in Europe

Thank You!

The mandate for IR on DSS

Article 17(8) of INSPIRE Directive 2007/2/EC

- Member States shall provide the institutions and bodies of the Community with access to spatial data sets and services in accordance with harmonised conditions.
- Amend non-essential elements of this Directive by supplementing it.
- These implementing rules shall fully respect the principles set out in paragraphs 1 to 3.

Legislative proposal: key features (1)

- Metadata:
  - 8.1 Conditions applying to access and use for Community institutions and bodies
- Transparency:
  - Information for evaluation and use
  - Basis for charges and factors taken into account
- Use of spatial data sets and services:
  - Contractors
  - Avoid unauthorised use
  - No further passing on
- Response time for access:
  - 20 days / mutually agreed

Legislative proposal: key features (2)

- Restrictions on access:
  - Give reasons for the restriction (category)
  - MS *may* state under which conditions access can be allowed (no obligation)

- Arrangements:
  - Compatible with this Regulation
  - Definitions from INSPIRE Directive

- Transitional provisions:
  - 18 month / 3 years

→Voted positively by INSPIRE Committee 5 June 2009

Guidelines on DSS

Importance of guidelines to promote the non binding provisions!

- INSPIRE licence
  - INSPIRE Basic licence
  - INSPIRE Specific licence template
- Framework contracts

→ Good practice document: sharing within and between Member States

Thank you for your attention!

INSPIRE: Reports from the Drafting Teams

INSPIRE: Data Specifications

- **Clemens Portele**, INSPIRE Data Specifications Drafting Team

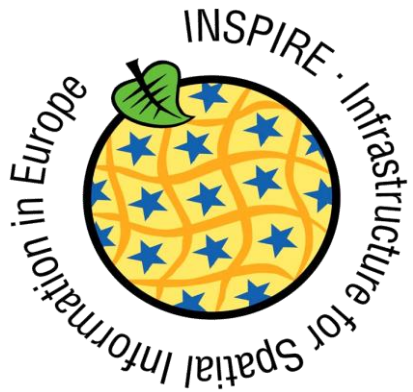
GSDI 11 World Conference

3r INSPIRE Conference

GEONOVUM

RGI

Public sector meets Science & Industry



INSPIRE Drafting Team “Data Specifications”

Clemens Portele
interactive instruments
Drafting Team “Data Specifications” (Chair)

INSPIRE Reports from the Drafting Teams

INSPIRE & GSDI Conference

Rotterdam, 17 June 2009

Overview

- Motivation and background
  - Requirements of the INSPIRE Directive
  - Interoperability of spatial data
- INSPIRE Modelling Framework
- Development of INSPIRE Data Specifications
  - Progress and status
  - Cross-theme harmonisation
  - INSPIRE Data Interoperability and Harmonisation session on Thursday 14:00-17:30
- Maintenance of INSPIRE Data Specifications

Key requirement in the INSPIRE Directive

- Article 7(1) requires:
  - „Implementing rules laying down **technical arrangements** for the **interoperability** and, where practicable, **harmonisation** of spatial data sets and services, [...]“
- Article 3(7):
  - „‘interoperability’ means the possibility for **spatial data sets to be combined**, and for services to interact, **without repetitive manual intervention**, in such a way that the **result is coherent** and the added value of the data sets and services is enhanced“
- ...

Thematic scope: spatial data themes

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

Annex II
- Elevation
- Land cover
- Orthoimagery
- Geology

Annex III
- Statistical units
- Buildings
- Soil
- Land use
- Human health and safety
- Utilities and government service
- Environmental monitoring facilities
- Production and industrial facilities
- Agricultural and aquaculture facilities
- Population distribution - demography
- Area management/restriction/ regulation zones & reporting units
- 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

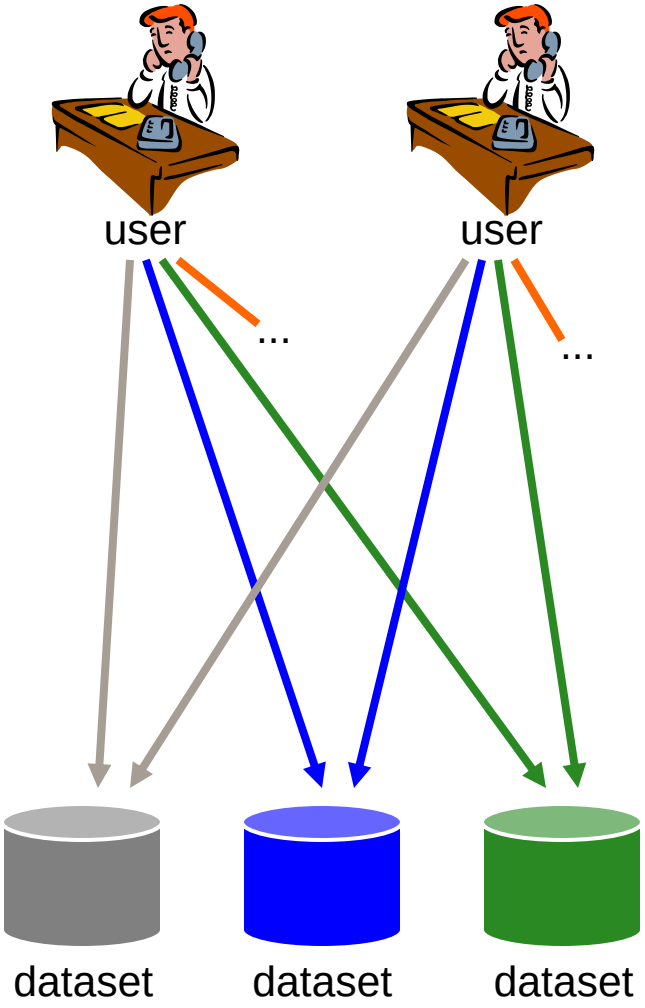
Data-related requirements – highlights

- Provision of spatial data from 34 themes in an interoperable way
  - Common data specifications
  - Harmonised locations
- For spatial objects of the Annex I & II themes also:
  - Identification
  - Key characteristics, temporal aspects, relationships between spatial objects
  - Updates
- Feasibility, costs and benefits have to be considered

Data-related requirements – highlights

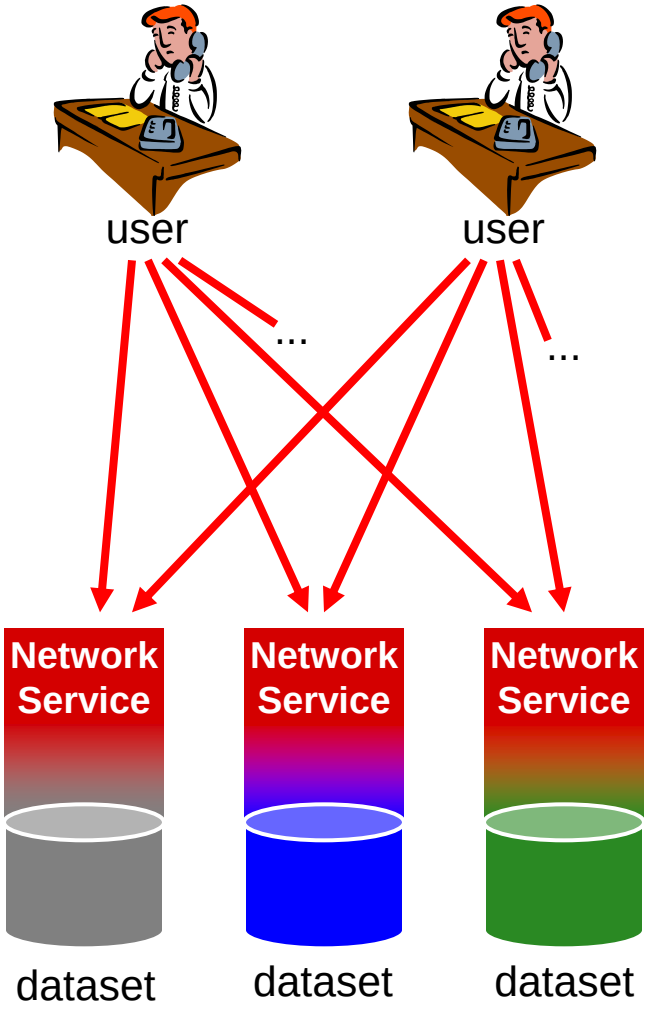
- Spatial data available between 2011-2016 (Annex I) or 2014-2019 (Annex II/III)
  - Dates are subject to changes depending on when the implementing rule enters into force

Interoperability of data – The starting point ...



- Access to spatial data in various ways
- User has to deal with interpreting heterogeneous data in different formats, identify, extract and post-process the data he needs
  → **lack of interoperability**

Interoperability of data – ... and what INSPIRE is aiming at

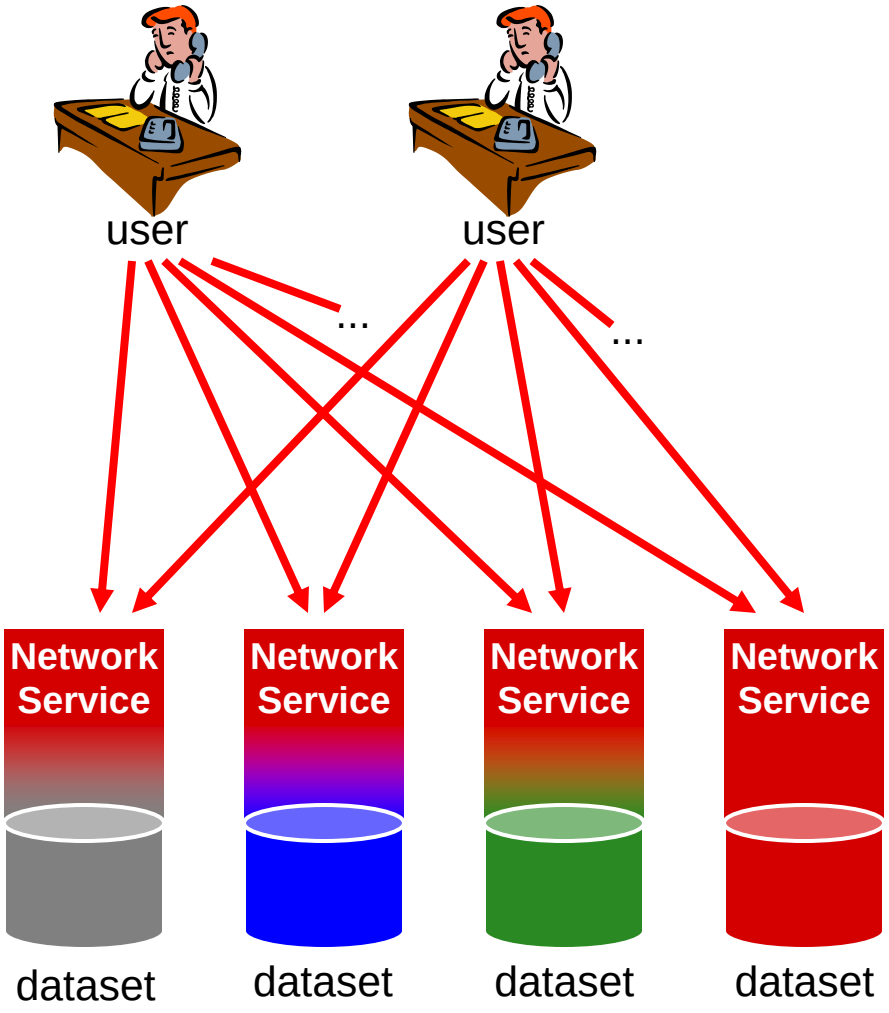


- Provide access to spatial data via network services and according to a **harmonised data specification to achieve interoperability of data**

! Datasets used in Member States may stay as they are

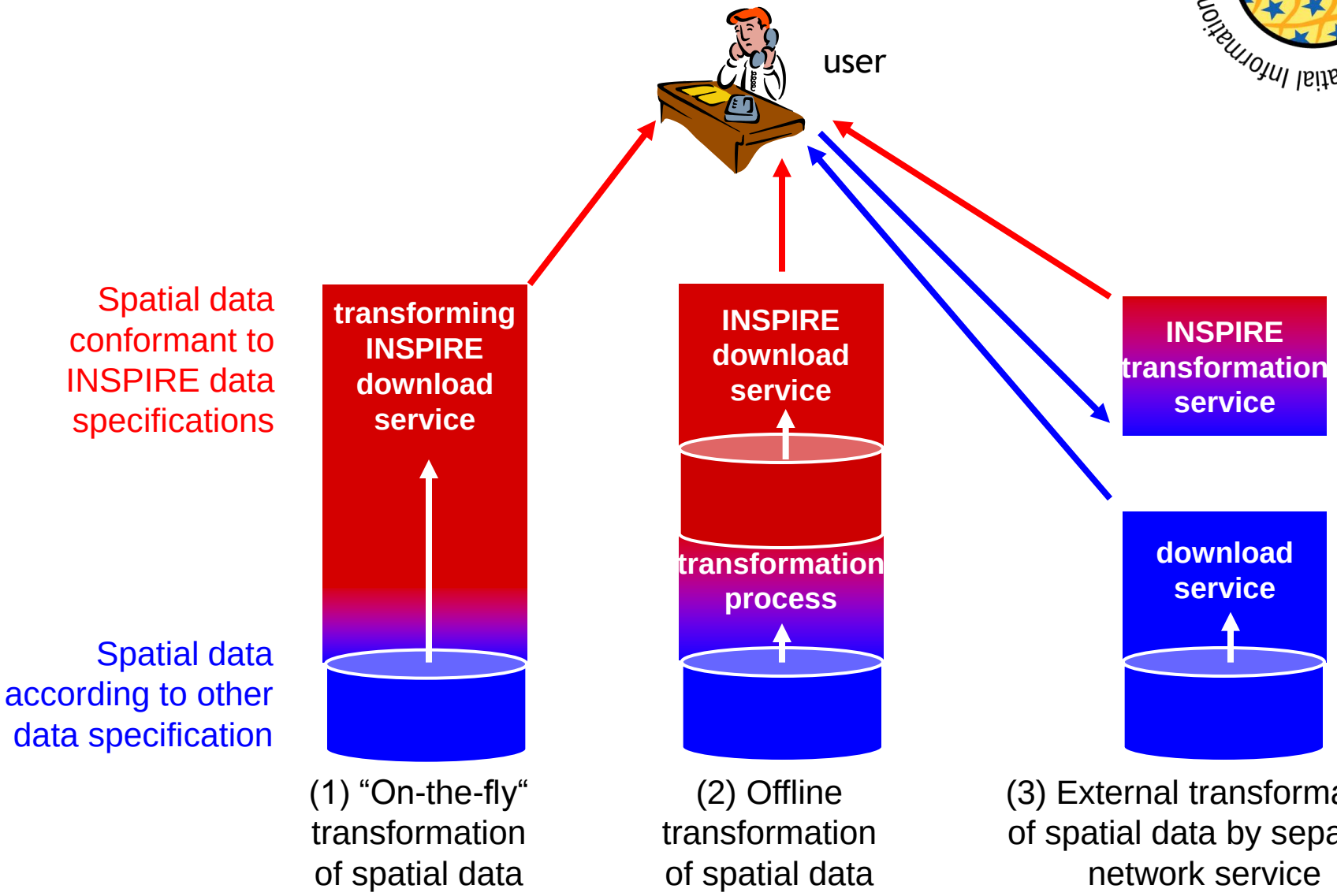
! Data or service providers have to provide a transformation between their internal data model and the harmonised data specification

Interoperability of data –
... and what INSPIRE is aiming at

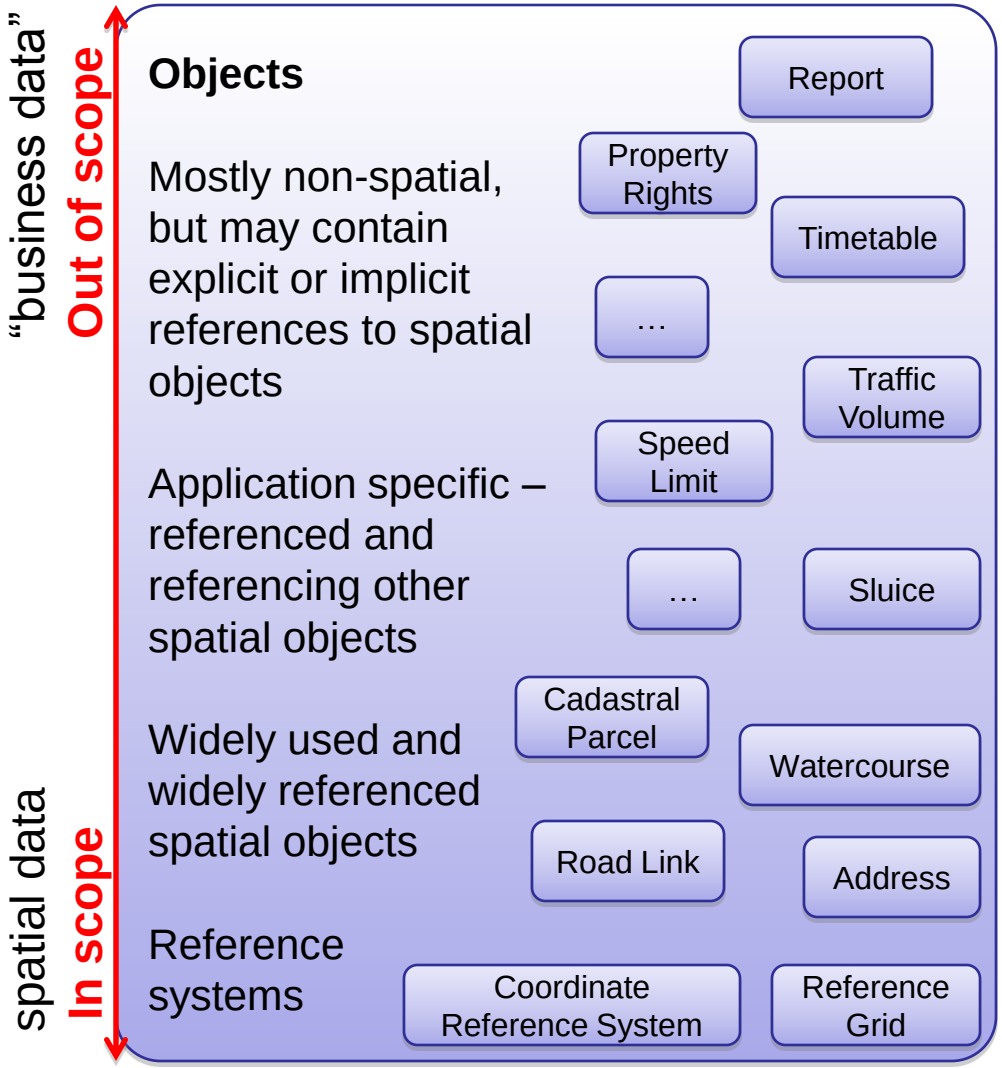


- Data providers may also choose to align their internal data model with the harmonised data specifications and extend these based on their requirements

Implementation alternatives



INSPIRE data scope

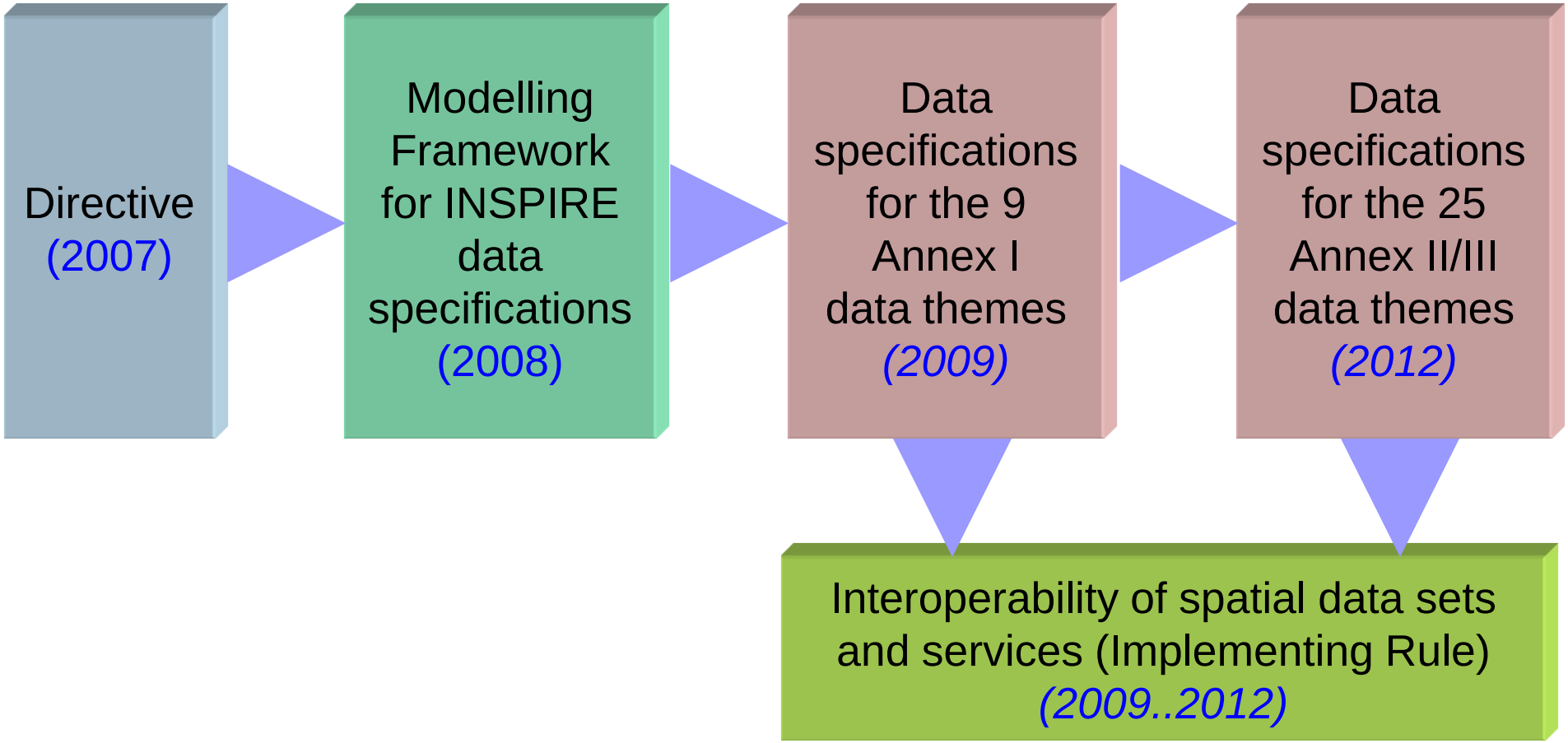


- The scope of INSPIRE is spatial data – not all kinds of thematic data
- INSPIRE should provide a consistent concept of space (and time) & provide reference systems and spatial objects that can be used in environmental applications to (re-)use spatial and temporal location

Extensions by Member States or information communities

- INSPIRE data specifications are not intended to cover all kinds of data requirements
  - Legally Mandated Organisations in Member States will typically maintain more data than covered by INSPIRE data specifications
  - Focus is on the spatial aspects
- Member States are encouraged to re-use the INSPIRE data specifications for their own usage
  - Extend spatial object types and add new properties
  - Specify additional constraints applicable to the own data sets
  - Re-use of INSPIRE objects to spatially enable application data

Development of INSPIRE data specifications - a multi-step process

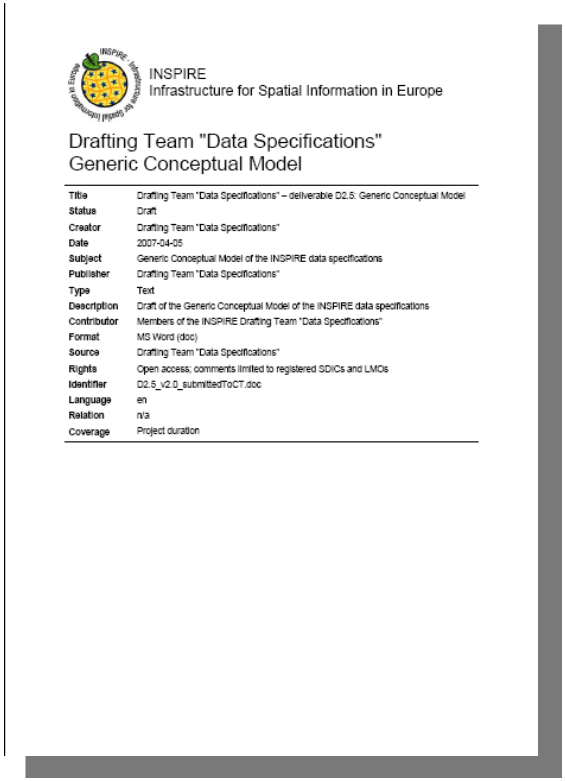


Modelling framework

Document	Status
Scope and Definition of Annex I/II/III Themes	Available as “baseline versions” on the INSPIRE website
Generic Conceptual Model	
Methodology for the development of data specifications	
Guidelines for the encoding of spatial data	

Generic Conceptual Model

- Rules that apply to all INSPIRE spatial data themes
  - Common terminology and basic concepts
  - Components of spatial data interoperability
  - Requirements and recommendations
- Based on ISO 19100 standards
  - More specific requirements where needed
  - Extensions where needed
- Specification of cross-theme concepts
  - including a INSPIRE identifiers, Generic Network Model and Gazetteers
- Core thematic concepts maintained in INSPIRE registers and „copied“ to INSPIRE data specifications

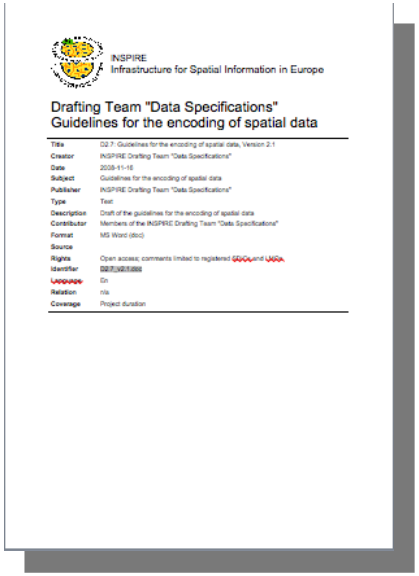


INSPIRE
Infrastructure for Spatial Information in Europe

Drafting Team "Data Specifications"
Generic Conceptual Model

Title	Drafting Team "Data Specifications" – deliverable D2.5: Generic Conceptual Model
Status	Draft
Creator	Drafting Team "Data Specifications"
Date	2007-04-05
Subject	Generic Conceptual Model of the INSPIRE data specifications
Publisher	Drafting Team "Data Specifications"
Type	Text
Description	Draft of the Generic Conceptual Model of the INSPIRE data specifications
Contributor	Members of the INSPIRE Drafting Team "Data Specifications"
Format	MS Word (doc)
Source	Drafting Team "Data Specifications"
Rights	Open access; comments limited to registered SDICs and LMOs
Identifier	D2.5_v2.0_submittedToCT.doc
Language	en
Relation	n/a
Coverage	Project duration

Guidelines for the encoding of spatial data


INSPIRE
Infrastructure for Spatial Information in Europe

Drafting Team "Data Specifications"
Guidelines for the encoding of spatial data

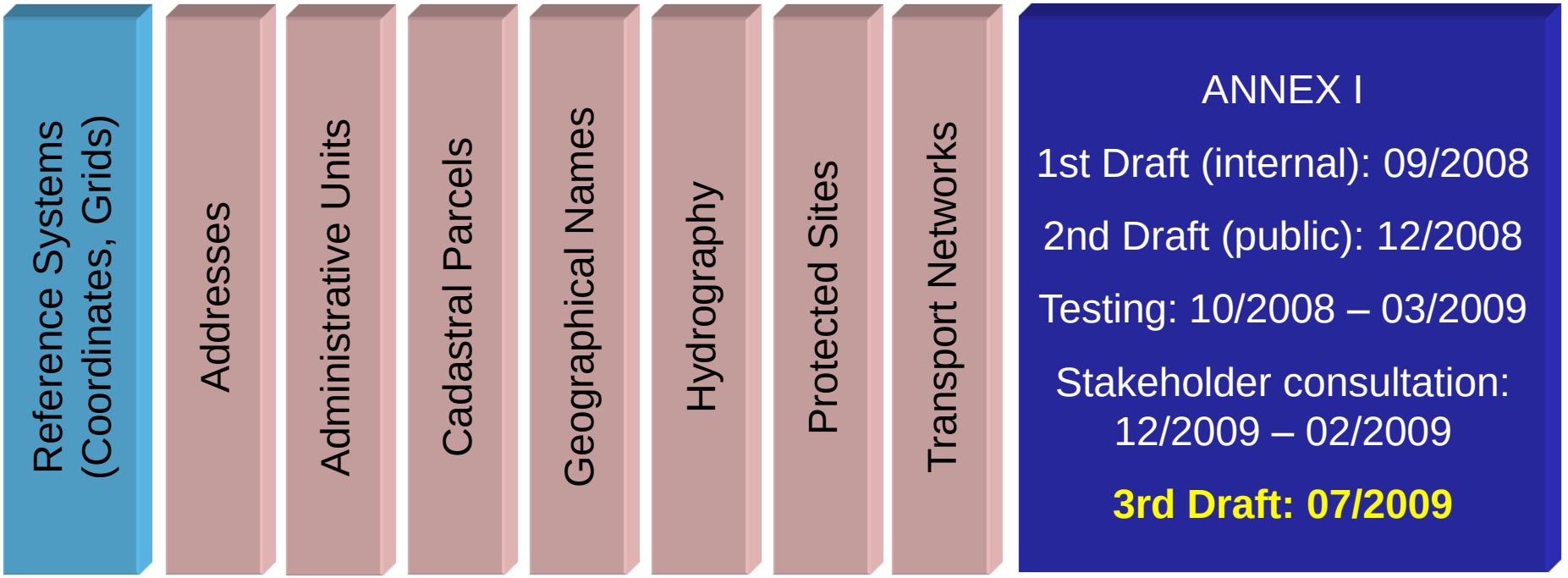
Title	D2.7: Guidelines for the encoding of spatial data, Version 2.1
Creator	INSPIRE Drafting Team "Data Specifications"
Date	2008-11-16
Subject	Guidelines for the encoding of spatial data
Publisher	INSPIRE Drafting Team "Data Specifications"
Type	Text
Description	Draft of the guidelines for the encoding of spatial data
Contributor	Members of the INSPIRE Drafting Team "Data Specifications"
Format	MS Word (doc)
Source	
Rights	Open access; comments limited to registered GIVOs and JRCs
Identifier	D2.7/v2.1/doc
Language	En
Relation	n/a
Coverage	Project duration

- The Generic Conceptual Model is independent of a particular implementation platform (SQL, GML, KML, Java, etc.)
- Technical arrangements on the implementation level are required for the communication between software systems
- The document specifies requirements and recommendations for the encoding of spatial objects
- Default: GML & ISO 19139 encoding rules
- Additional encoding rules may be specified in data specifications

Development of Annex I data specifications

- Based on the methodology (part of modelling framework)
- In Thematic Working Groups (TWGs) - per theme
  - Facilitator, editor, domain experts
- User requirements and as-is analysis based on knowledge of domain experts in Thematic Working Groups and reference material from Member States
- JRC and Drafting Team coordinate cross-theme aspects and consistency
  - Generic Conceptual Model and common document template
- Feature catalogue and GML application schemas automatically derived from application schema in UML

INSPIRE data specifications for Annex I themes



Cross-theme topics as a result of consultation and testing

- Theme complexity / simplification
- Consistency between data specifications, e.g.
  - Metadata and data quality
  - Identifiers and spatial object life-cycle
  - Portrayal
  - Abstract test suite
- Clarifications on the distinction between
  - Missing information about a property (void)
  - Property does not apply (empty value set)
- Spatial resolution vs. level of detail
- Improvements to the Generic Network Model
- Encoding

INSPIRE data specifications for Annex I themes

- INSPIRE Data Interoperability and Harmonisation

  Thursday 14:00-15:30 and 16:00-17:30

  Penn Room 2
- Agenda
  - INSPIRE Data Specifications, Implementing Rules and their Relation
  - Results from the Consultation and Testing
  - Roundtable with Facilitators of the Thematic Working Groups
    - **Overview of each theme**
    - **Your questions / discussion**
  - Lessons learned from Annex I data specification development and process for Annex II and III data themes

Maintenance of INSPIRE Data Specifications

- Data Specifications are really comprised of
  - Data specification documents (Technical Guidance)
  - Modelling framework documents
  - INSPIRE registers
  - Tools used to create/maintain the above
- INSPIRE is an infrastructure - reliable and active maintenance is essential for its sustainability
- Need to clarify:
  - Organisation and processes
  - Versioning rules
  - Toolset

  This process has been initiated

Questions ?

Clemens Portele

Managing Director

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Global Spatial Data Infrastructure
GSDI
GSDI 11 World Conference

INSPIRE
3rd INSPIRE Conference

GEONOVUM
RGI
Public sector meets Science & Industry

Chair: **Paul Smits**,
Joint Research Center,
European Commission

INSPIRE: Progress Reports

- **Jean Jacques Serrano**, INSPIRE Network Services Drafting Team
- **Ioannis Kanellopoulos**, Joint Research Centre, European Commission
- **Paul Smits**, Joint Research Centre, European Commission

INSPIRE: Network Services

- **Jean Jacques Serrano**, INSPIRE Network Services Drafting Team

INSPIRE DT on Network Services, Status and work plan

Jean-Jacques Serrano (BRGM, France)

INSPIRE NS DT Meeting – Rotterdam – The Netherlands – June 2009

Content

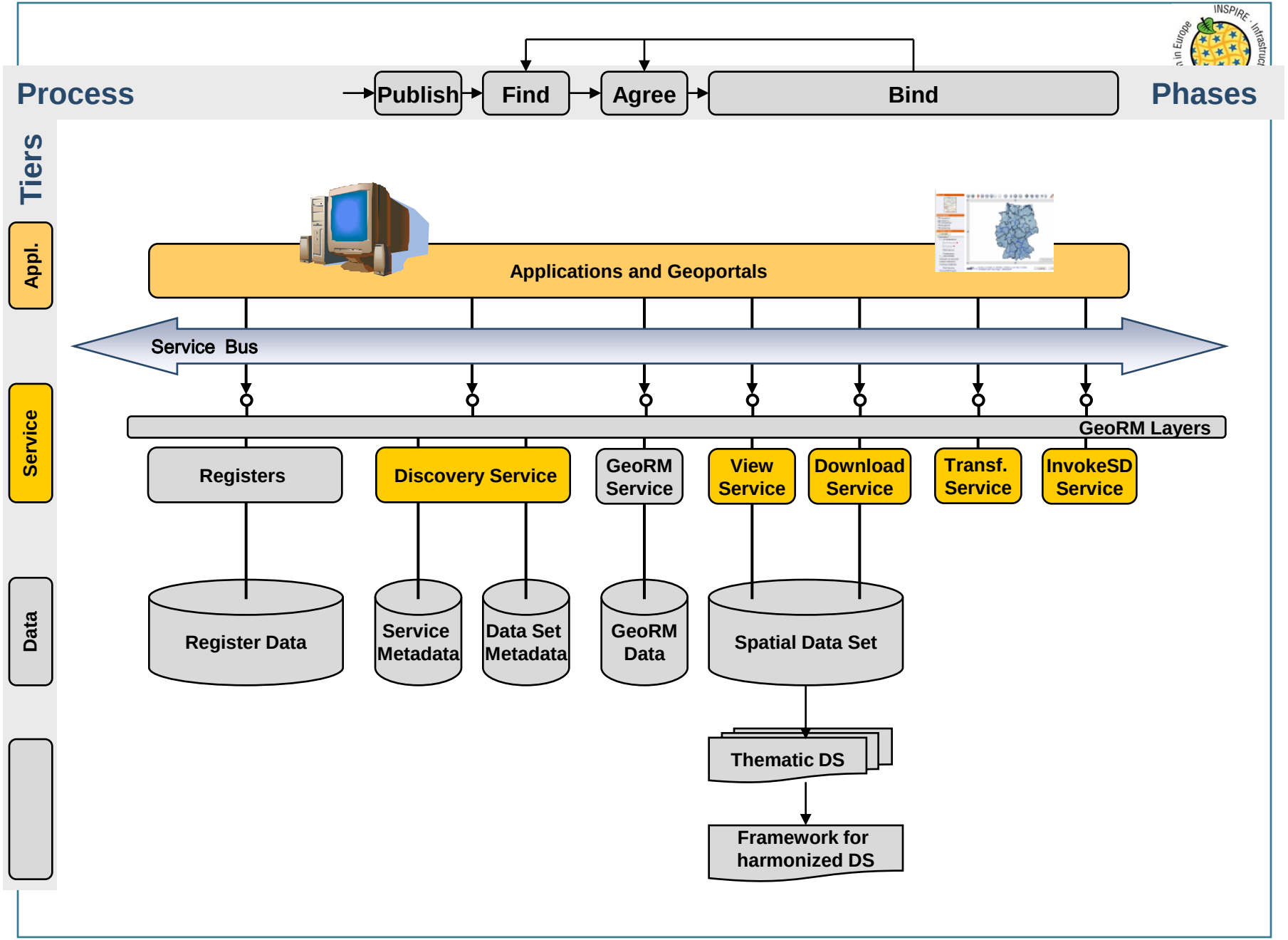
- 1 - Progress since June 2008
- 2 - Technical overview for Download and Transformation Services
- 3 - Next steps

Organisation

Drafting team members	
Olaf Østensen	NO
Markus Müller	DE
Didier Richard	FR
Tapani Sarjakoski	FI
Jean-Jacques Serrano (Chair)	FR
Graham Vowles (Co-Chair)	UK
Dominique Flandroit	BE
Michel Grothe	NL
Roland Wagner	DE
Lars Bernard	DE
Marek Brylski	PL
Lassi Lehto	FI
Christian Elfers	DE

Facilitators :
- Michel Millot – JRC
- Ioannis Kanellopoulos - JRC

One sub-group for each service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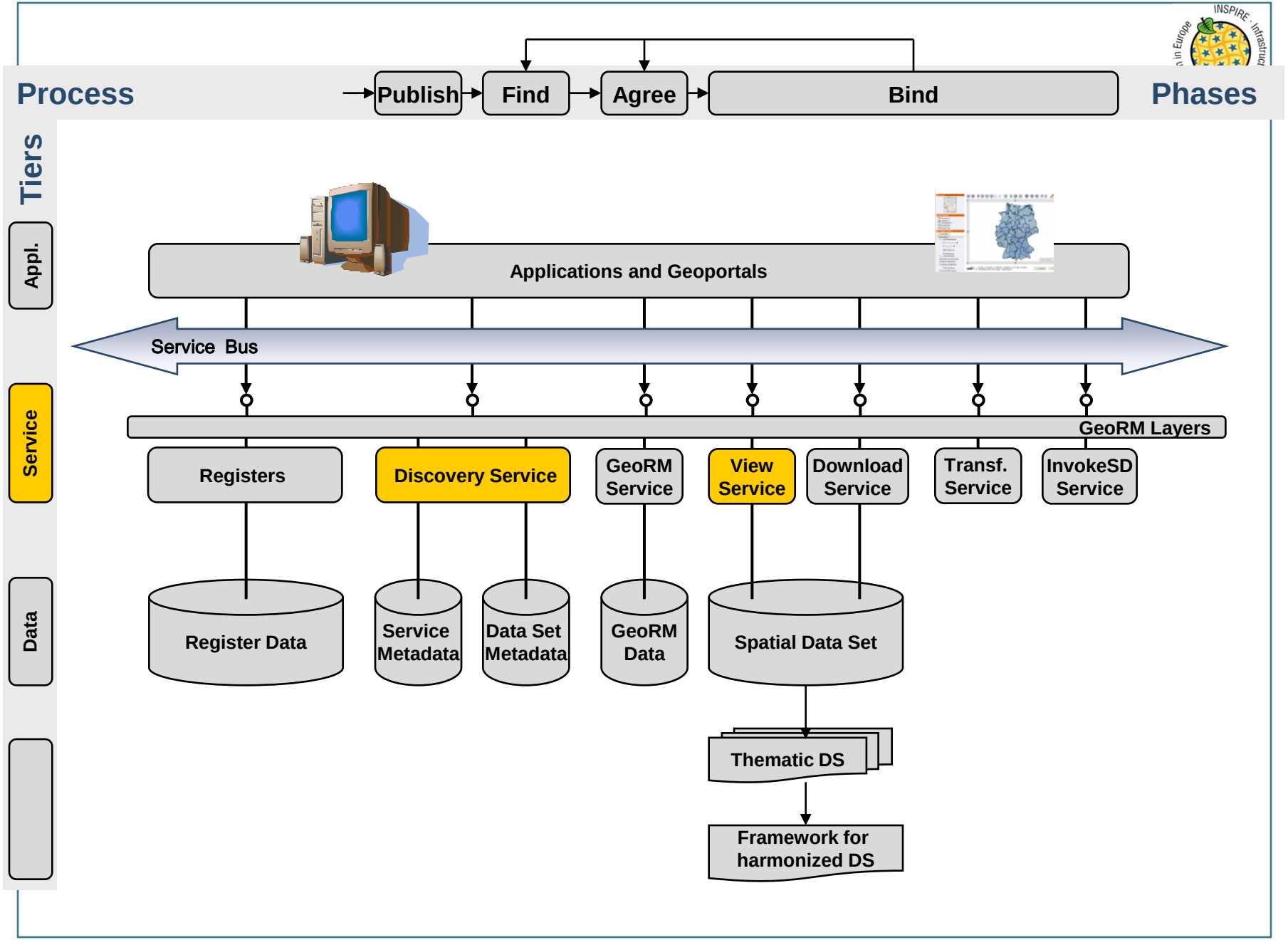
Tiers
Appl.
Service
Data
Applications and Geoportals
Service Bus
GeoRM Layers
Registers
Discovery Service
GeoRM Service
View Service
Download Service
Transf. Service
InvokeSD Service
Register Data
Service Metadata
Data Set Metadata
GeoRM Data
Spatial Data Set
Thematic DS
Framework for harmonized DS

Objectives of the drafting team

To draft Implementing rules for INSPIRE network services:

- **Discovery** services: to search for spatial data sets and services using metadata
- **View** services: to display spatial data sets, legend information and metadata
- **Download** services: to download copies of spatial data sets, or parts of such sets
- **Transformation** services: to transform spatial data sets for achieving interoperability
- "**Invoke** services": to invoke spatial data services (chaining services)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InvokeSD Service
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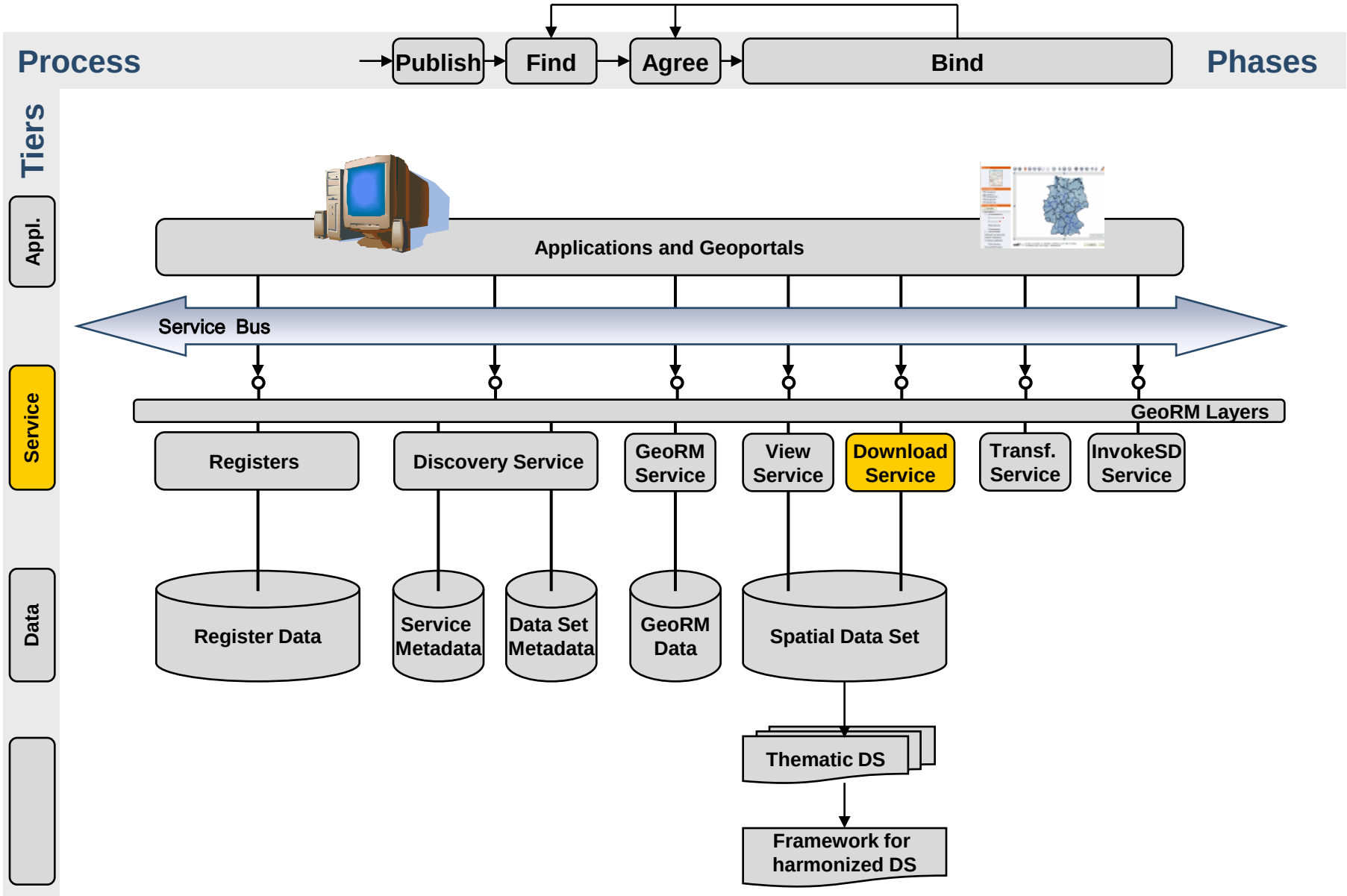
Data Set Metadata
GeoRM Data
Spatial Data Set
Thematic DS
Framework for harmonized DS

1 – Progress – Discovery and View services

- Implementing Rules:
  - approved by the INSPIRE Committee (December 2008)
- Technical Guidance documents:
  - Draft Technical Guidance documents version 1.0 (November 2008)
  - New version will be available soon
- About SOAP for Network services:
  - INSPIRE SOAP Framework (JRC, December 2008)
  - SOAP Primer for Discovery and View services (JRC, March 2009)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Thematic DS
Framework for harmonized DS

1 – Progress – Download and Transformation services

- Draft IR version 2.0 and Technical Guidance version 1.0 available for SDIC/LMO review (February 2009):
  - Comments received (April 2009):
    - 400 for Download Services
    - 150 for Transformation Services
- Comments processed during May 2009
- Comments resolution workshop with some SDIC/LMOs May 2009
- New documents IR version 3.0 and TG version 1.1:
  - will be updated with results from Workshop on Download and Transformation Services (Monday 15/06)

2 – Technical overview – Download Services

- Name: INSPIRE Download Service
- Role: to provide access to geographic and thematic information in datasets of INSPIRE themes
- Two types of Download services:
  - download pre-defined datasets
  - direct access to data based on user defined criteria (query)

  criteria “where practicable” download or direct access?

  => defined by IR for the various themes or by the Member States.
- Metadata:
  - Metadata of the Download Service
  - Metadata of datasets provided by the Download Service:
    - mandatory for pre-defined datasets (metadata available through the Discovery Service),
    - but no requirements for metadata of a part of dataset provided by direct access.
- Coordinate Reference Systems:
  - for direct access: all INSPIRE CRSs shall be supported
  - for pre-defined datasets: they shall be available in one of the INSPIRE CRSs

2 – Technical overview – Download Services

- Temporal dimension:
  - requirement addressed by the temporal predicate of the query
- Query built with a set of predicates:
  - general predicates (logical, comparison)
  - identifier prdicate (check a resource identifier)
  - spatial predicate (bounding box)
  - temporal predicates (after, during, …)
- Output format:
  - Shall support at least one of the encodings defined by the INSPIRE theme (if applicable)
- Multilingualism
  - “Language parameter” mandatory
- Geo Rights Management:

  Possibility for MS to restrict access, to licence, to charge datasets:
  - Shall be as transparent as possible for the users,
  - Shall be compatible with INSPIRE directive requirements,
  - Service metadata shall contain information about “Access constraints” and “Fees”.

2 – Technical overview – Download Services

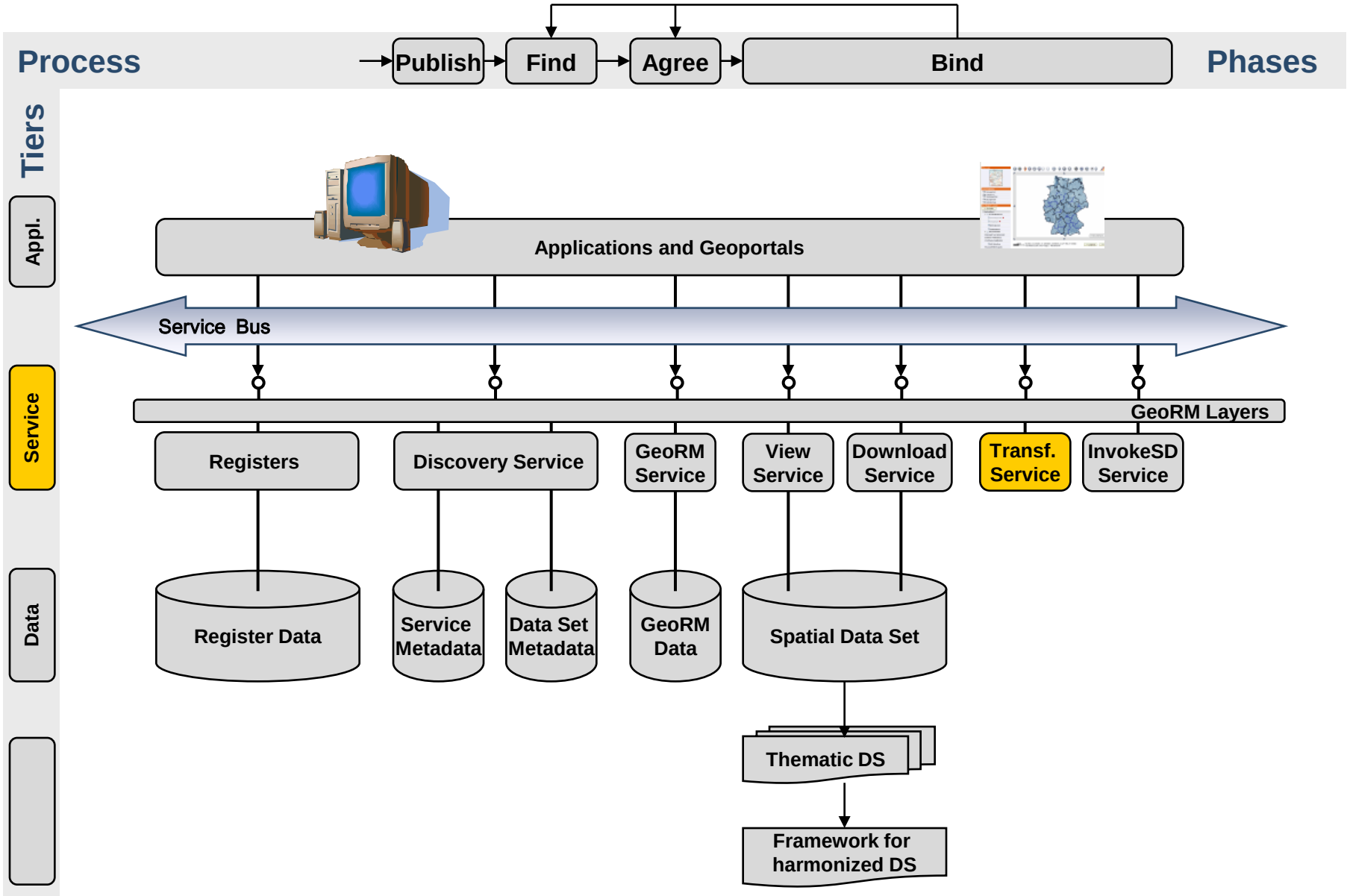
Functions		
Get Service Metadata	Provides information about the service	M
Get Spatial Objects	Retrieves all spatial objects (based on query if direct access)	M
Describe Spatial Object Types	Provides the description of spatial object types	C (M if direct access)
Define Query	Defines the query to be used in the Get Spatial Objects operation	
Link Download Service	Allows the declaration of the Download Service	M

M: Mandatory, C: Conditional

2 – Technical overview – Download Services

- Performance requirements:
  - Performance, for Get Spatial Objects : initial response 30 s, then > 0.5 MB/s or 500 spatial objects/s
  - Availability: service up by 99% of the time
  - Capacity: 10 simultaneous service requests per second

- In the **Technical Guidance**, the proposal for INSPIRE Download services is:
  - Pre-defined data sets: they have metadata, the metadata contains a link (URL) whereby the dataset can be immediately downloaded using a simple HTTP Get protocol
  - Direct access data with queries:
    - Web Feature Service: OGC WFS - ISO/DIS 19142
    - Filter Encoding: OGC FE – ISO/DIS 19143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Data Set Metadata
GeoRM Data
Spatial Data Set
Thematic DS
Framework for harmonized DS

2 – Technical overview – Transformation Services

- Name: INSPIRE Transformation Service
- Role:
  - To carry out data content transformations from native data forms to INSPIRE-compliant form
  - To help other services to work in conformance with INSPIRE IR

    => no need to be available to the general public.
- Transformation categories:
  - Coordinate Reference System transformation
  - Data Model transformation
- For the current IR Transformation Services considered in connection with Download Services

2 – Technical overview – Transformation Services

Functions		
Get Service Metadata	Provides information about the service	M
Transform	Carries out the current transformation process	M
Is Transformable	Checks if the transformation can be performed	O
Get Transformation	Retrieves the definition of a specific transformation	O
Put Transformation	Stores a transformation definition into the service	O

Transform operation parameters:

- Input data: Indicates the dataset to be transformed
- Source Model: Specifies the model in which the dataset is provided
- Target Model: Specifies the model in which the results are expected
- Transformation: Controls in detail how the transformation is carried out
  Can be a reference to a predefined transformation

2 – Technical overview – Transformation Services

- Performance requirements (for coordinates transformation):
  - Performance: simple map projection, input dataset GML encoded, only geometric properties included : 1MB/s
  - Availability: service up by 99% of the time
  - Capacity: 5 simultaneous service requests per second

- In the **Technical Guidance**, the proposal for INSPIRE Coordinate Transformation service is:
  - An Application Profile of the Web Processing service (WPS) based on the Web Coordinate Transformation Service (WCTS)
  - WPS is an OGC standard specification. Specific processes can be specified as Application Profiles of the WPS.

A mapping is defined between INSPIRE Transformation Service and WPS:

ex: Transform operation => Execute (TransformCoordinate)

3 – Next steps

- Discovery and View Services
  - Technical Guidance documents to be updated for end of June
- Download and Transformation Services
  - IR version 3.0 => 15/07/2009
  - For INSPIRE Committee => Autumn 2009
  - Technical Guidance documents version 1.x => 15/07/2009
- Invoke spatial service Services
  - Definition
  - First Draft IR: to be defined

Thank you for your attention

All documents available here: http://inspire.jrc.ec.europa.eu/

INSPIRE: Building the European SDI

INSPIRE Geo-portal development

- **Ioannis Kanellopoulos**, Joint Research Centre, European Commission

Infrastructure for Spatial Information in the European Community

Initial Operating Capability
&
The INSPIRE Community Geoportal

EC INSPIRE GEOPORTAL TEAM

European Commission
Joint Research Centre
Institute for Environment and Sustainability
Spatial Data Infrastructures Unit

Initial Operating Capability

- "Initial Operating Capability" means the ability of a Network Service to provide full functionality without guaranteeing
  - quality of service in conformity with the rules set out in Regulation, or
  - access to the service for all users through the INSPIRE geo-portal
- Not later than 18 months after the date of entry into force of the network services Regulation, Member States shall provide the Discovery and View Services with initial operating capability.

Initial Operating Capability Task Force

- Purpose
  - to help and support the implementation of INSPIRE in the Member States
- Scope
  - architectural aspects and implementation of Network Services to ensure interoperability with the INSPIRE geoportal and among Member States
- Focus on
  - implementation of the INSPIRE Discovery and View Services.

Initial Operating Capability Task Force

- Key Objectives
  - Best Practices and preliminary implementations of INSPIRE services in the Member States
  - Help promote exchange of experiences, according to National policies and the INSPIRE Directive and Regulations.

Initial Operating Capability Task Force

- Composition
  - representatives, from all Member States, responsible for the Architecture design and the service implementation of the National SDIs.
- The European Commission JRC is in charge of the Task Force.
- First meeting:
  - INSPIRE Architecture workshop, Rotterdam 18 June 2009

INSPIRE Geoportal

http://www.inspire-geoportal.eu

INSPIRE Geoportal

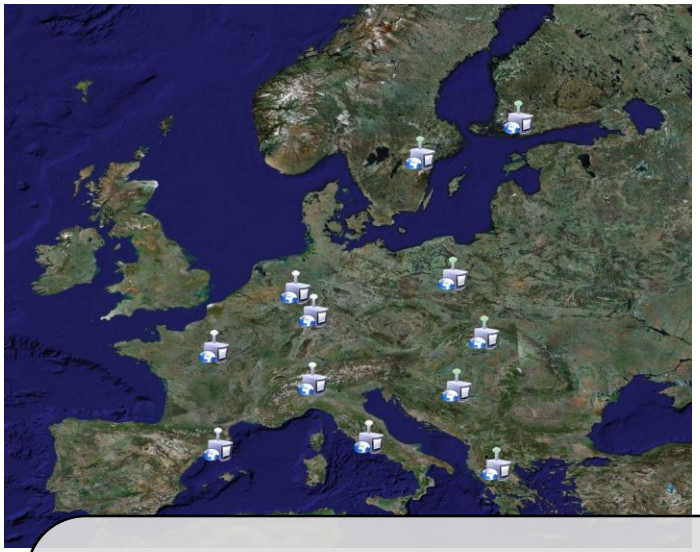
Requirements (1)

- Required by the INSPIRE Directive
  - Provide access to the Member States INSPIRE services
- Aims to provide an operational platform to satisfy the requirements of the directive and IR
- Development and operation under EC responsibility
- INSPIRE geoportal dependent on the IR development

Requirements (2)

- **discovery services** - search for spatial data sets and spatial data services on the basis of the content of corresponding metadata, display the metadata content;
- **view services** - as a minimum, display, navigate, zoom in/out, pan, or overlay spatial data sets and display legend information and any relevant content of metadata;
- **download services**, enabling copies of complete spatial data sets, or of parts of such sets, to be downloaded;
- **transformation services**, enabling spatial data sets to be transformed;
- "**invoke spatial data services**", enabling data services to be invoked.

Challenges of the INSPIRE Geoportal

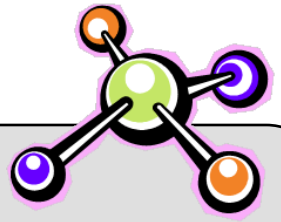


Multilinguality

The European Union comprises 23 official languages. This has significant impact on how discovery of data and services is performed.

Distribution

A European SDI is formed by regional and local SDIs that have their own Metadata models, Catalogues, etc.



Diversity

Information is represented in various data models and coordinate reference systems.

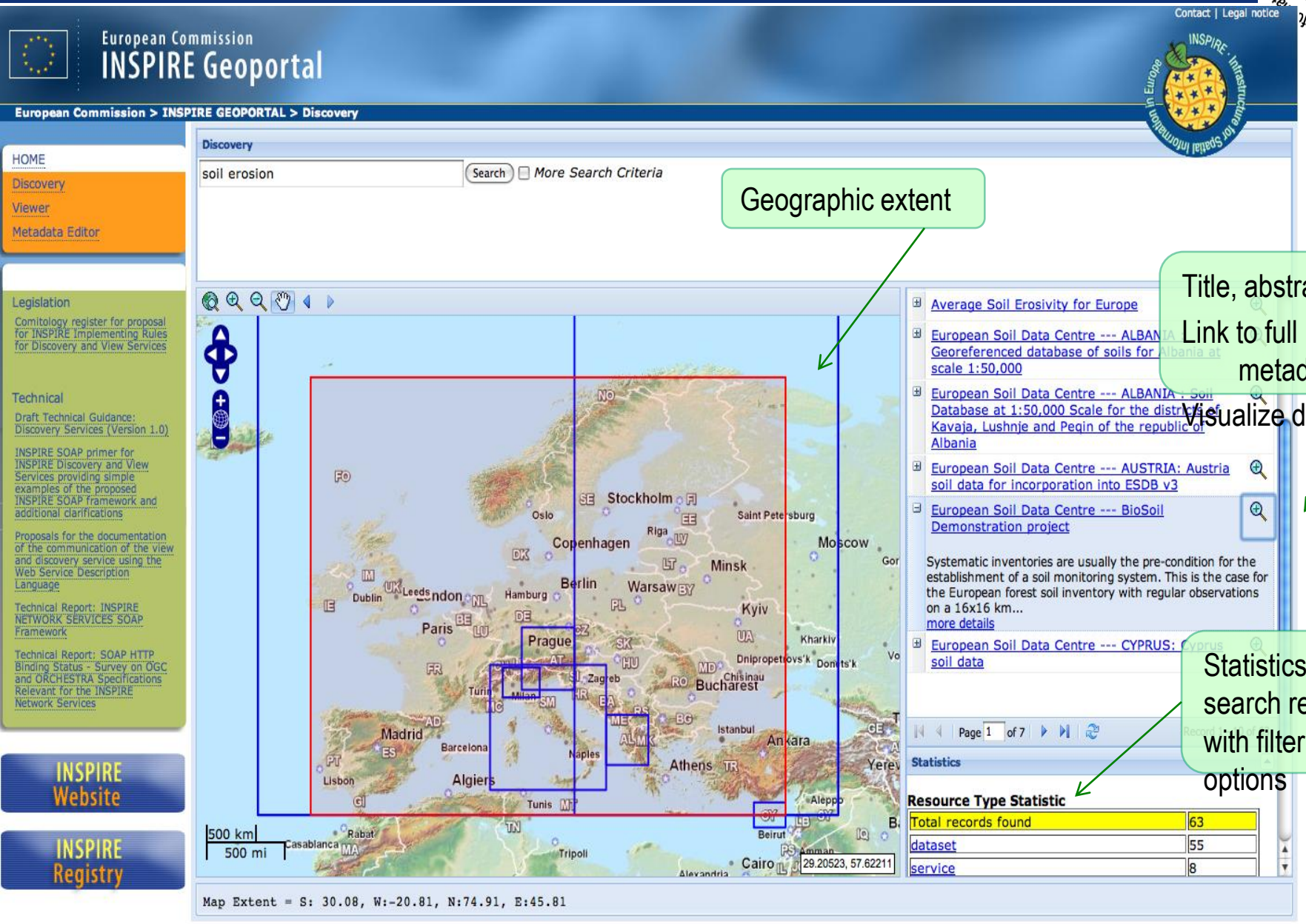
Scope

- interoperability assessment through use of INSPIRE Network Services
- establish an architecture for the INSPIRE geoportal in terms of functional requirements of the components and their interactions and the experience and lessons learned
  - Drive the specifications for the operational geoportal
- evaluate fitness for purpose of standards & specifications;
- assess the performance of different search scenarios;
- provide feedback to standardisation organisations

Progress

- Current focus on
  - INSPIRE Discovery & View services, metadata
  - Tools (metadata editor, metadata validation, …)
- Technical aspects addressed:
  - Access to distributed INSPIRE Network Services
    - *Heterogeneities (e.g. interface, information encoding)*
  - Performance, Quality of service
- Updated prototype geoportal available 11-6-2009
- Discovery & view web clients based on open source S/W and internal development
  - Support draft Technical guidelines (OGC CSW ISO AP, ISO 19128)

Search results presentation



Geoportal architecture

INSPIRE Web Portal

Each Network Service
Recommended Interface Standard

Network Service
Proxy

INSPIRE
Geo-portal

Member State N
Network Service Interface
implementation

NS X
NS 1
MS Network
Service

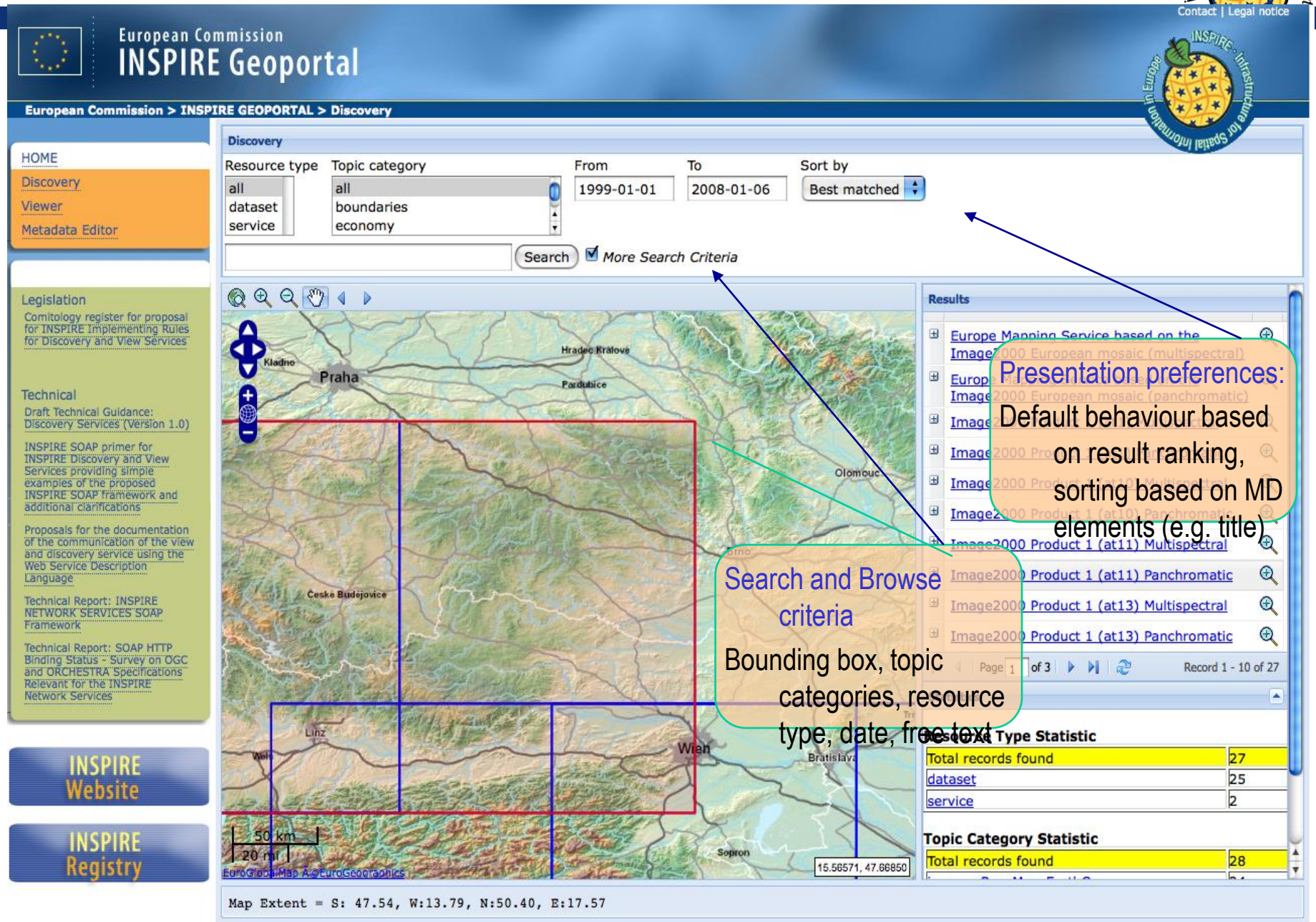
Member State 1
Network Service Interface
implementation

NS X
NS 1
MS Network
Service

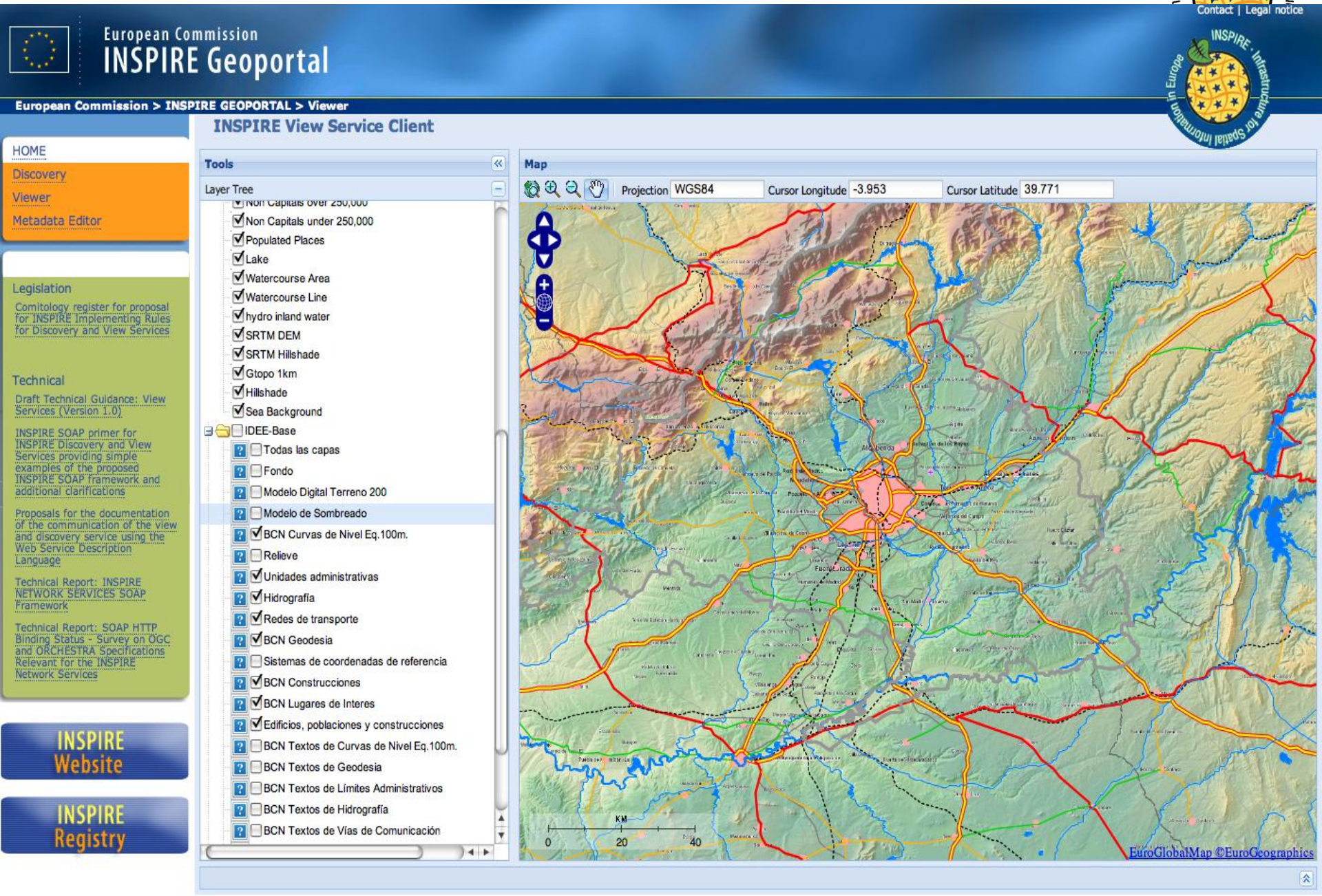
Dependency with MS implementation

No Dependency with MS implementation

Search client



Geoportal Viewer



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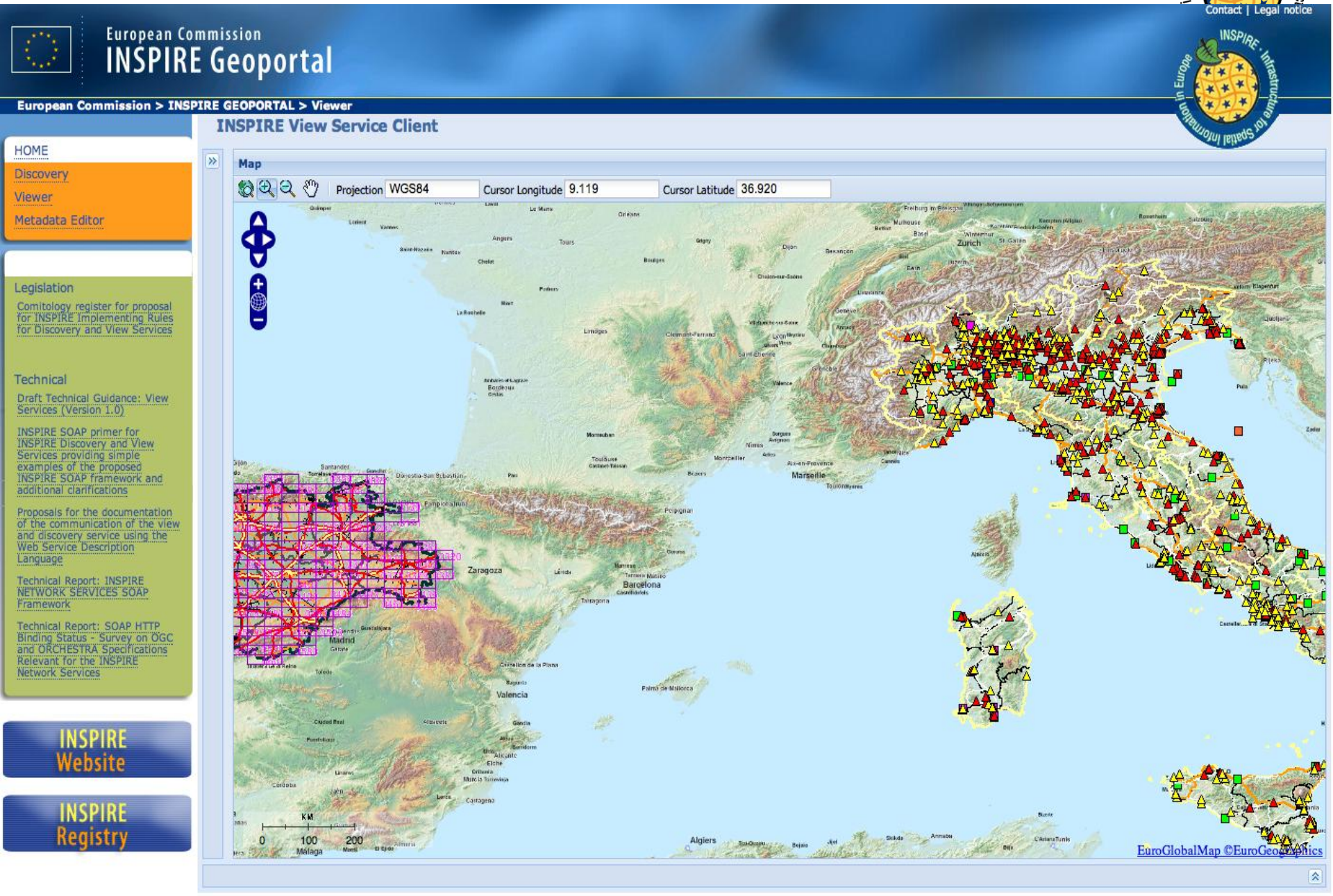
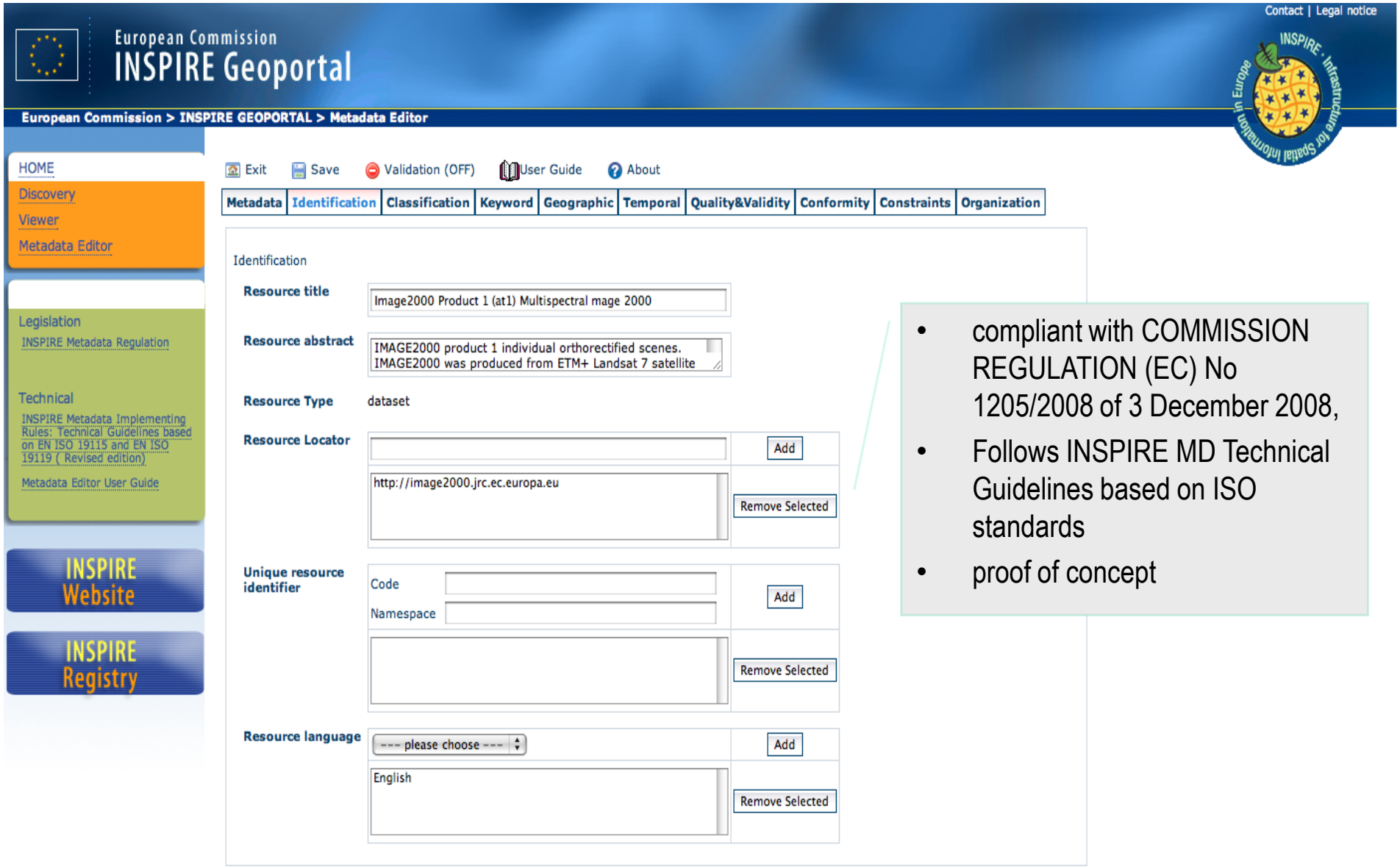


Metadata Editor



- compliant with COMMISSION REGULATION (EC) No 1205/2008 of 3 December 2008,
- Follows INSPIRE MD Technical Guidelines based on ISO standards
- proof of concept

Registers & registry services

INSPIRE Registry - Version 1.00 Search Contact Legal notice English (en)

European Commission
Joint Research Centre
Institute for Environment and Sustainability

INSPIRE registry

Europa > European Commission > JRC > INSPIRE Registry

Wednesday, June 10, 2009

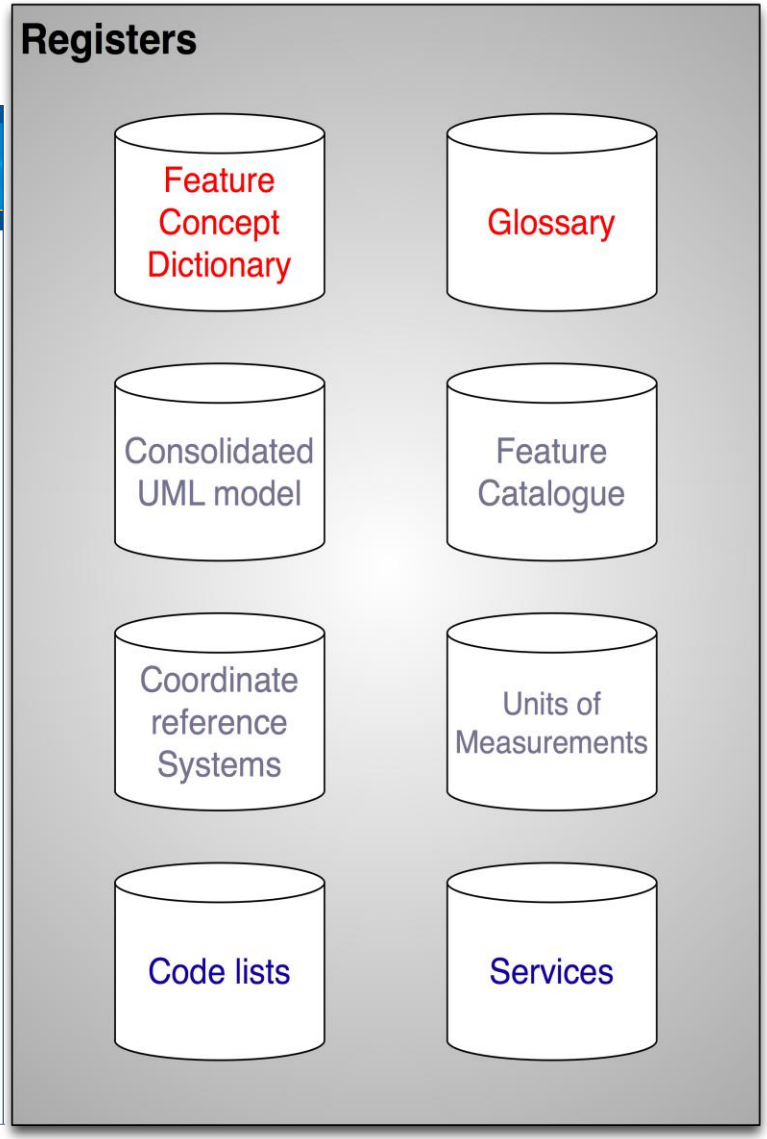
Not logged in

- Registry Home
- Registers
  - Feature Concept Dictionary
    - Items
  - Glossary
    - Items

Feature Concept Dictionary
View Register Items

Valid | Superseded | Retired

Item Identifier	Item Class	Name	Status	Date Accepted	Date Amended
1	theme	Coordinate reference systems	Valid	05-Dec-08	
2	theme	Geographical grid systems	Valid	05-Dec-08	
10	theme	Elevation	Valid	05-Dec-08	
11	theme	Land cover	Valid	05-Dec-08	
12	theme	Orthoimagery	Valid	05-Dec-08	
13	theme	Geology	Valid	05-Dec-08	
14	theme	Statistical units	Valid	05-Dec-08	
15	theme	Buildings	Valid	05-Dec-08	
16	theme	Soil	Valid	05-Dec-08	
17	theme	Land use	Valid	05-Dec-08	
18	theme	Human health and safety	Valid	05-Dec-08	
19	theme	Utility and governmental services	Valid	05-Dec-08	
20	theme	Environmental monitoring facilities	Valid	05-Dec-08	
21	theme	Production and industrial facilities	Valid	05-Dec-08	
22	theme	Agricultural and aquaculture facilities	Valid	05-Dec-08	
23	theme	Population distribution — demography	Valid	05-Dec-08	
24	theme	Area management/restriction/regulation zones and reporting units	Valid	05-Dec-08	
25	theme	Natural risk zones	Valid	05-Dec-08	
26	theme	Atmospheric conditions	Valid	05-Dec-08	
27	theme	Meteorological geographical features	Valid	05-Dec-08	
28	theme	Oceanographic geographical features	Valid	05-Dec-08	
29	theme	Sea regions	Valid	05-Dec-08	
30	theme	Bio-geographical regions	Valid	05-Dec-08	
31	theme	Habitats and biotopes	Valid	05-Dec-08	
32	theme	Species distribution	Valid	05-Dec-08	
33	theme	Energy resources	Valid	05-Dec-08	
34	theme	Mineral resources	Valid	05-Dec-08	
38	spatial object type	Administrative unit upper level	Valid	05-Dec-08	
43	spatial object type	Address Component	Valid	05-Dec-08	
45	spatial object type	Address Area Name	Valid	05-Dec-08	
46	spatial object type	Postal Descriptor	Valid	05-Dec-08	
47	spatial object type	Thoroughfare Name	Valid	05-Dec-08	



http://inspire-registry.jrc.ec.europa.eu

Future development

- Establish Interoperability arrangements in the context of Initial Operating Capability
- Multilingualism
  - GEMET,
  - In collaboration with DG Translation explore machine translation systems
- Download Services
- Expand registry with additional registers
  - Services
  - Code lists

Web Site: http://www.inspire-geoportal.eu

For more information contact

inspire-geoportal@jrc.ec.europa.eu

INSPIRE: Building the European SDI

INSPIRE Forum

- **Paul Smits**, Joint Research Centre, European Commission

INSPIRE Progress

INSPIRE Forum

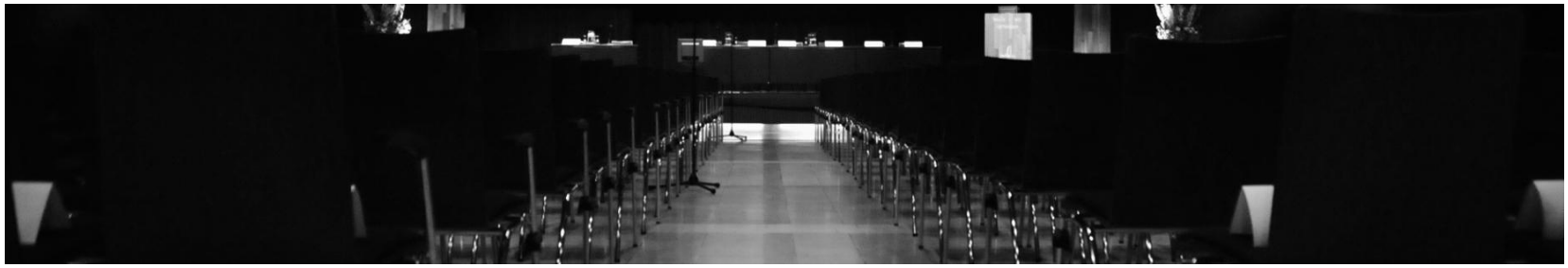
The INSPIRE Team

Rotterdam, The Netherlands

17 June 2008

Outline

- Governance of INSPIRE development
- Complementing governance structures for implementation
- Towards improved communication with and between stakeholders
- Next steps



INSPIRE Directive Governance Structures

- The Commission (Article 22)
  - Shall be assisted by a Committee -> Comitology Procedure
  - Coordinating INSPIRE at Community level assisted by relevant organisations and, in particular, by the European Environment Agency

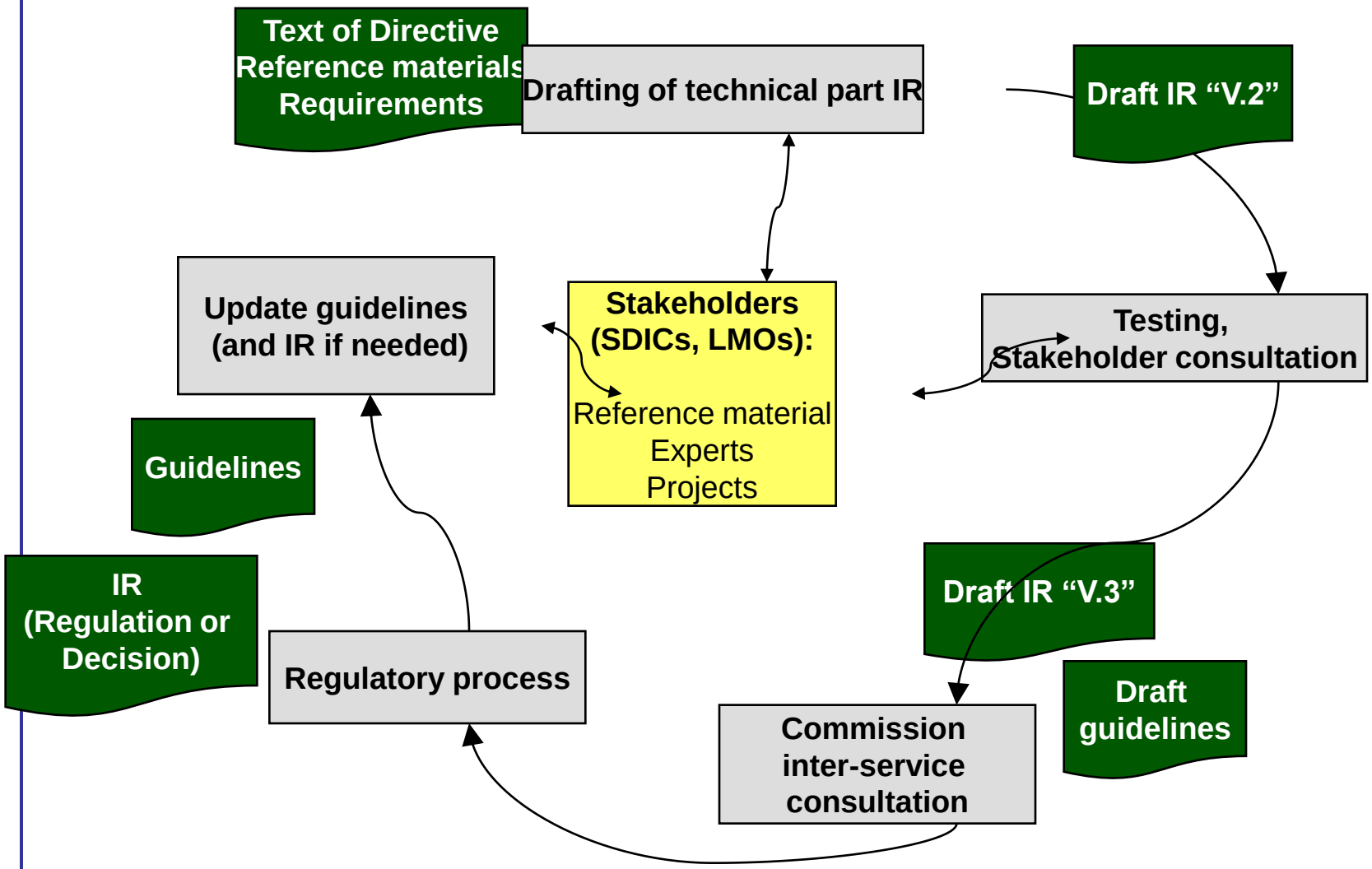
- The Member States
  - Are members of the Committee (Article 22)
  - Contact points to the Commission supported by a coordination structure, taking account of the distribution of powers and responsibilities within the Member State. (Article 19)

INSPIRE Directive Governance Structures

- Representatives of Member States at national, regional and locallevel as well as other natural or legal persons, including users, producers, added value service providers or any coordinating body (Article 7)
- The European Parliament and Council

Focus on Implementing Rule development and adoption

INSPIRE Directive Governance Structures



Outline

- Governance of INSPIRE development
- Complementing governance structures for implementation
- Towards improved communication with and between stakeholders
- Next steps

Complementing the governance structures

- Successful implementation of Directive and Implementing Rules requires more
  - Share experiences and best practices
  - Maintenance of guidelines for Implementing Rules
  - Provide the means for reaching consensus among interested stakeholders on standards and support their use
  - Education and training
  - Coordination of supporting activities
  - Tools

Focus on **implementation** and **operation**

Outline

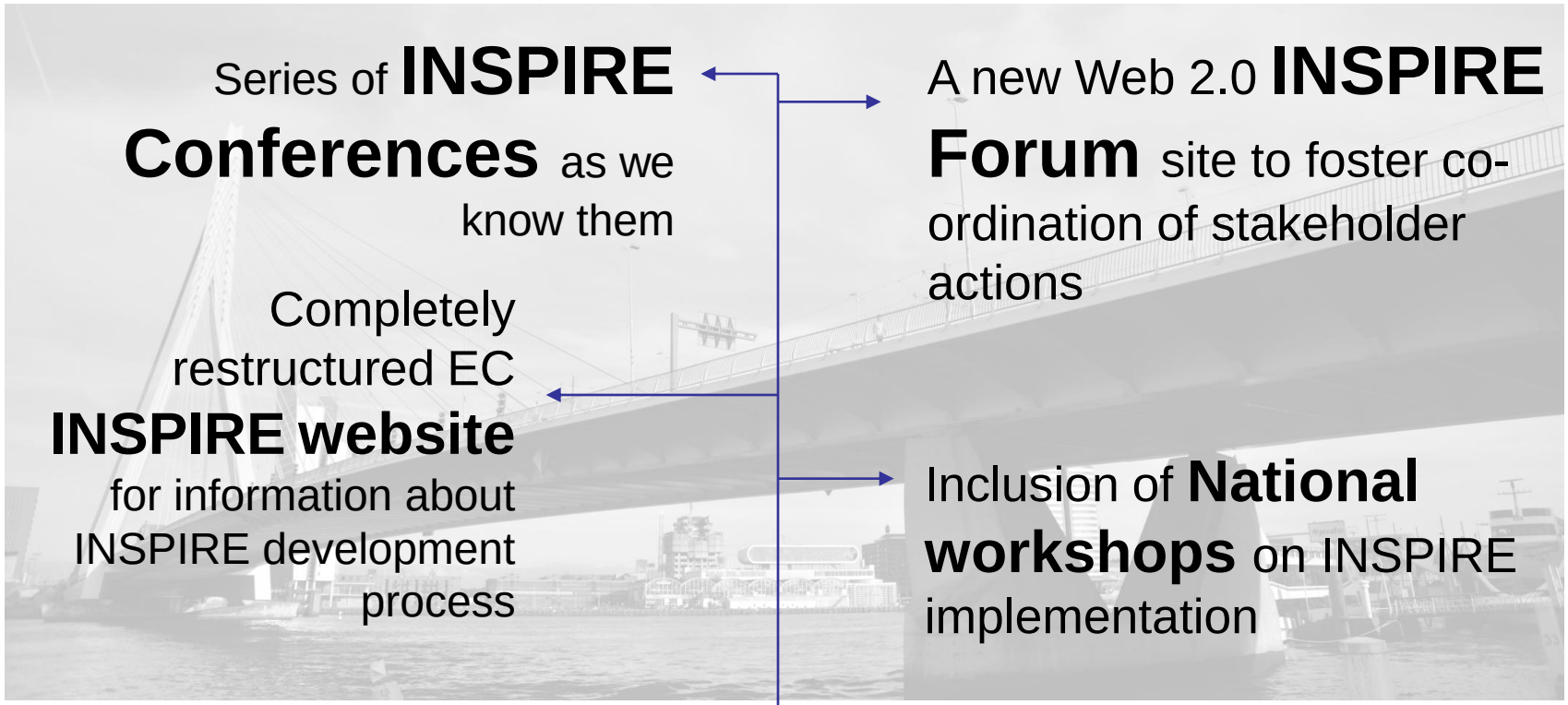
- Governance of INSPIRE development
- Complementing governance structures for implementation
- Towards improved communication with and between stakeholders
- Next steps

INSPIRE Forum: Towards improved communication with and between stakeholders

- An INSPIRE Forum will integrate and complement existing structures by bringing them together with multiple societal stakeholders.
- It will serve to share experiences and best practices while fostering the co-ordination of stakeholder actions.
- The Forum is a mechanism through which the INSPIRE community can co-operate, share a common vision and organise themselves to collectively and individually contribute towards the shared vision:

INSPIRE Forum: Towards improved communication with and between stakeholders

INSPIRE Forum: Towards improved communication with and between stakeholders



Series of **INSPIRE Conferences** as we know them

Completely restructured EC **INSPIRE website** for information about INSPIRE development process

Thematic workshops to address specific INSPIRE implementation issues

A new Web 2.0 **INSPIRE Forum** site to foster co-ordination of stakeholder actions

Inclusion of **National workshops** on INSPIRE implementation

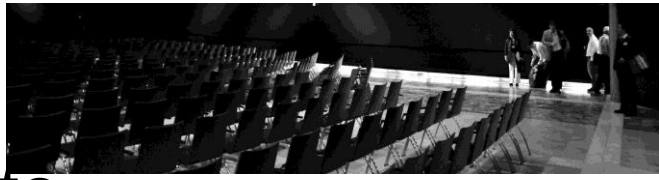
Material for education and training like **videos** and lectures

Key components

Outline

- Governance of INSPIRE development
- Complementing governance structures for implementation
- Towards improved communication with and between stakeholders
- Next steps

Next steps



- Renewed EC INSPIRE website
- Web 2.0 INSPIRE Forum website
- Bring national and thematic workshops addressing INSPIRE aspects under Forum umbrella