

European Directive (2007/2/EC) INSPIRE – sharing data in an interoperable way

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www.jrc.ec.europa.eu

*Serving society
Stimulating innovation
Supporting legislation*

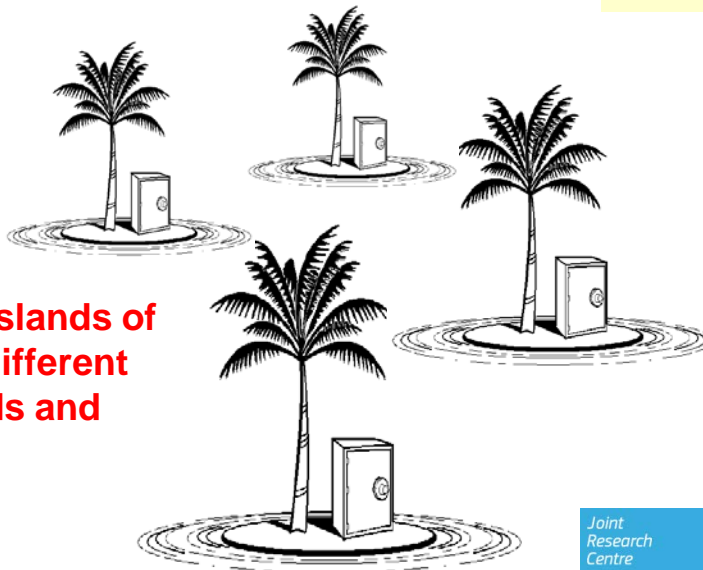
Initial Assessment 2001

Needs

- **Better information** needed to support policies
- Improvement of existing **information flows**
- **Differentiation across regions** to be considered
- Revision of approach to reporting and monitoring, moving to concept of **sharing of information**

Situation in Europe

- **Data policy restrictions**
 - pricing, copyright, access rights, licensing policy
- **Lack of co-ordination**
 - across borders and between levels of government
- **Lack of standards**
 - incompatible information and information systems
- **Existing data not re-usable**
 - fragmentation of information, redundancy, inability to integrate

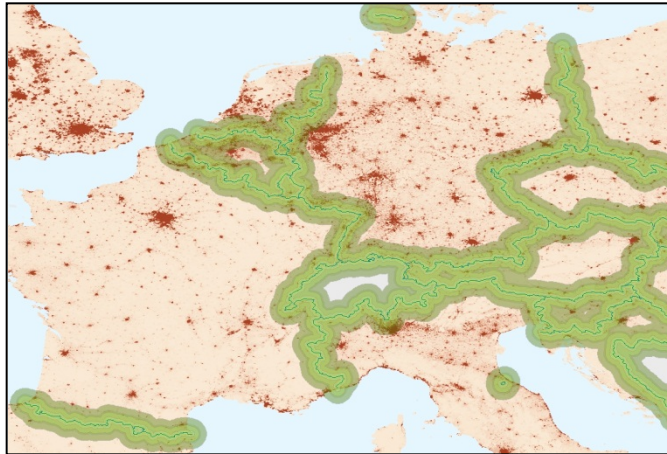


EU has islands of data of different standards and quality...

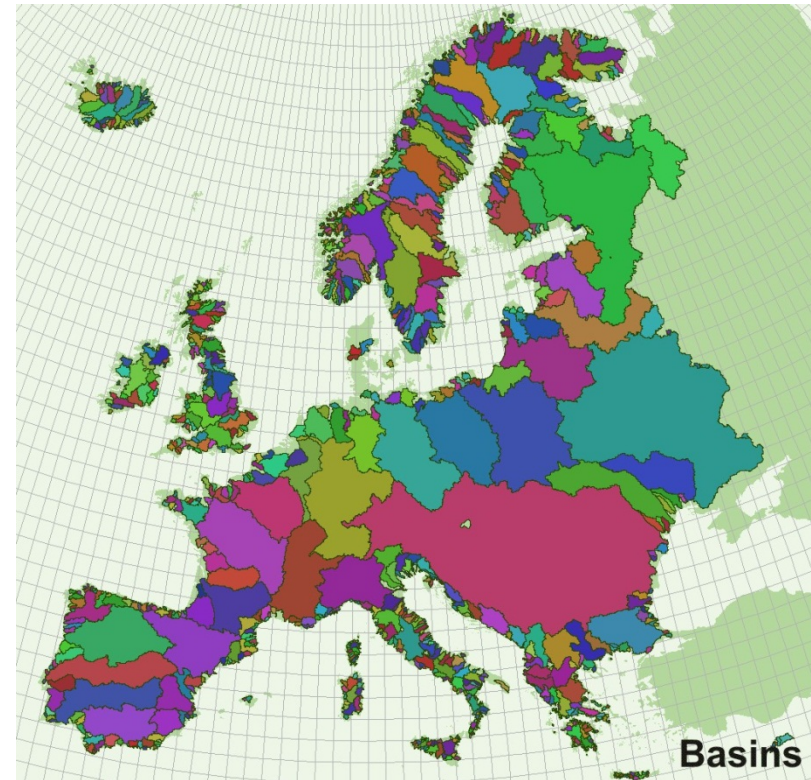
July 2004 - EC Proposal COM(2004) 516
November 2006 - Political Agreement
15 May 2007 – INSPIRE Directive entered into force !

..while disasters do not stop at the border

*20% of the
EU citizens
(115
million) live
within 50
Km from a
border.*



*Hence need to develop a
shared infrastructure
(INSPIRE)*



**70% of all fresh water bodies in Europe
are part of a trans-boundary river basin !!**



Infrastructure for Spatial Information in the European Community -INSPIRE Directive

INSPIRE lays down general rules to establish an infrastructure for spatial information in Europe for **the purposes of Community environmental policies and policies or activities which may have an impact on the environment.**

INSPIRE based on the infrastructures for spatial information established and operated by the Member States

INSPIRE is a **distributed infrastructure.**

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

Entry into force 15 May 2007

Spatial Data Infrastructure – bringing data together



Like a road infrastructure makes it possible to connect different sites, a spatial data infrastructure makes it possible to connect data located at different sources



Data easily discoverable and accessible to users



Facilitating development of new applications and services

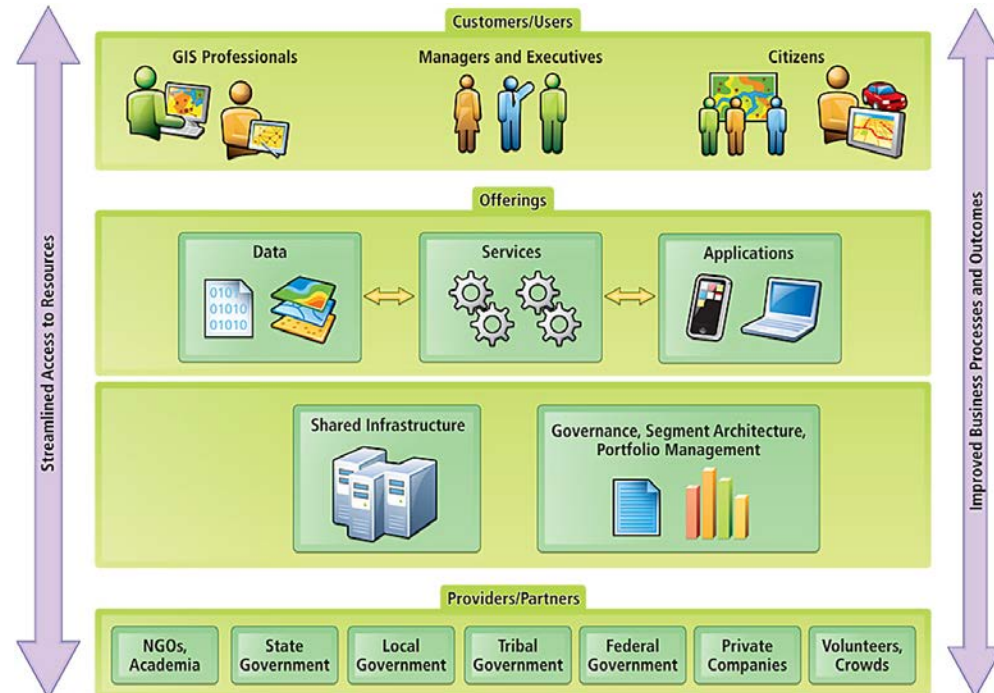
Components

Institutional framework	Technical standards
Fundamental data sets	Data Services

INSPIRE

Spatial Data Infrastructure (SDI) are seen in many countries across the world as way to:

- Increase **efficiency** of public administration by sharing information and processes
- Contribute to open Public Sector Information increasing **transparency** in decision making, and new services, **innovation**, and jobs.



INSPIRE Components

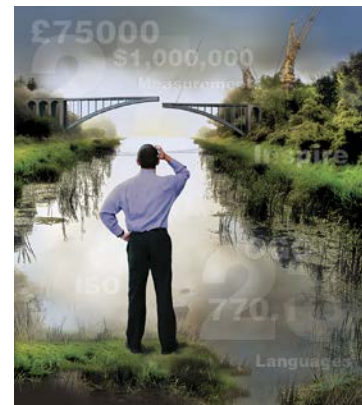
- INSPIRE is a **Framework Directive**
- Detailed technical provisions are laid down in **Implementing Rules** on
 - Metadata
 - Interoperability of spatial data sets and services
 - Network services (discovery, view, download, transform, invoke)
 - Data and Service sharing (policy)
 - Coordination and measures for Monitoring & Reporting
- Once adopted, Implementing Rules become European **legislative acts** and national law in 27 Member States and in some EFTA countries

INSPIRE - current Legal framework

- **Directive** 2007/2/EC of the European Parliament and of the Council (INSPIRE) **14.03.2007**
- INSPIRE **Metadata** Regulation **03.12.2008**
- Commission Decision regarding INSPIRE **monitoring and reporting** **05.06.2009**
- Regulation on INSPIRE **Network Services** **19.10.2009** (*View and discovery*)
- Corrigendum to INSPIRE **Metadata** Regulation **15.12.2009**
- Regulation on INSPIRE **Data and Service Sharing** **29.03.2010**
- Commission Regulation amending Regulation (EC) No 976/2009 as regards **download services and transformation services** **10.12.2010**
- COMMISSION REGULATION implementing Directive 2007/2/EC of the European Parliament and of the Council as regards **interoperability of spatial data sets and services** **10.12.2010** (*Annex I*)
- COMMISSION REGULATION amending Regulation 1089/2010 as regards interoperability of spatial data sets and services **05.02.2011** (*code lists*)

Implementing Rules in preparation

- 2012-06 Submission for opinion of the INSPIRE committee of IR for the services allowing spatial data services to be invoked
- 2012-12 Submission for opinion of the INSPIRE committee of IRs for the interoperability of spatial data sets and services for Annex II and III spatial data themes**



Implementation Roadmap

What

When

Metadata available for Annex I+II spatial data

Dec 2010

Discovery and view services IOC

May 2011

Discovery and View Services operational

Nov 2011

Download and Transformation Services IOC

June 2012

Download and Transformation Services operational

end 2012

Access to (newly collected / all) Annex I spatial data sets under harmonised conditions

end 2012 / 2017

Metadata available for Annex III spatial data

Dec 2013

Access to (newly collected / all) Annex II+III spatial data sets under harmonised conditions

**around
Oct 2015 / 2020**

Annex I

1. RS:Coordinate reference systems
2. GG:Geographical grid systems
3. GN:Geographical names
4. AU:Administrative units
5. AD:Addresses
6. CP:Cadastral parcels
7. TN:Transport networks
8. HY:Hydrography
9. PS:Protected sites

Annex II

1. EL:Elevation
2. LC:Land cover
3. Ol:Ortho-imagery
4. **GE:Geology**
- 21.**MR:Mineral resources (A III)**

Annex III

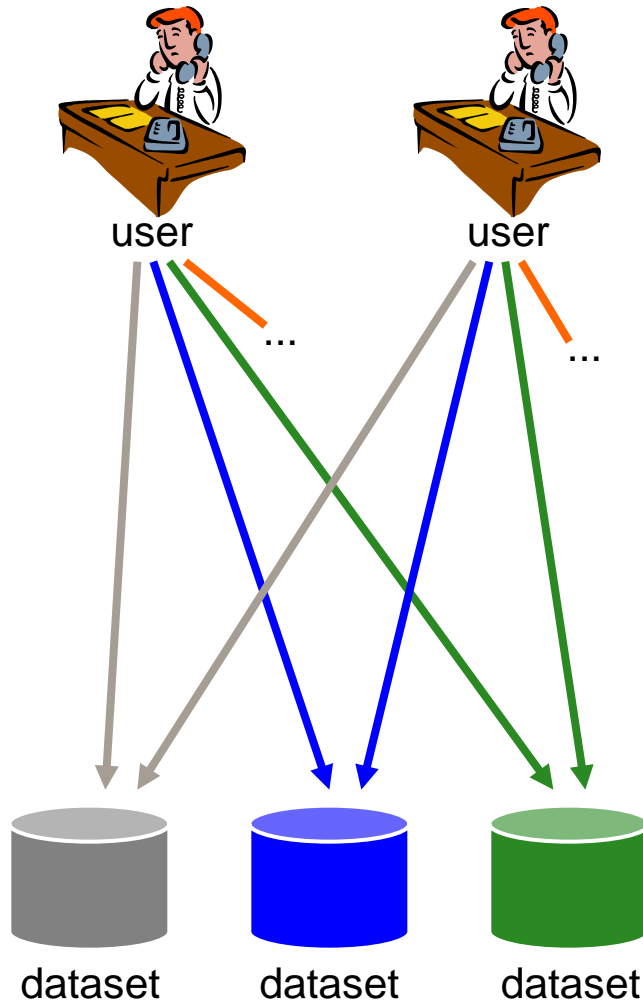
1. SU:Statistical units
10. PD:Population distribution – demography
2. BU:Buildings
3. **SO:Soil**
4. LU:Land use
5. HH:Human health and safety
6. US:Utility and governmental services
7. EF:Environmental monitoring facilities
8. PF:Production and industrial facilities
9. AF:Agricultural and

11. AM:Area management/ restriction/ regulation zones & reporting units
12. **NZ:Natural risk zones**
13. AC:Atmospheric conditions
14. MF:Meteorological geographical features
15. OF:Oceanographic geographical features
16. SR:Sea regions
17. BR:Bio-geographical regions
18. HB:Habitats and biotopes
19. SD:Species distribution
20. **ER:Energy Resources**

Annex II+III Data specifications development:

19 Thematic Working Groups (TWG)

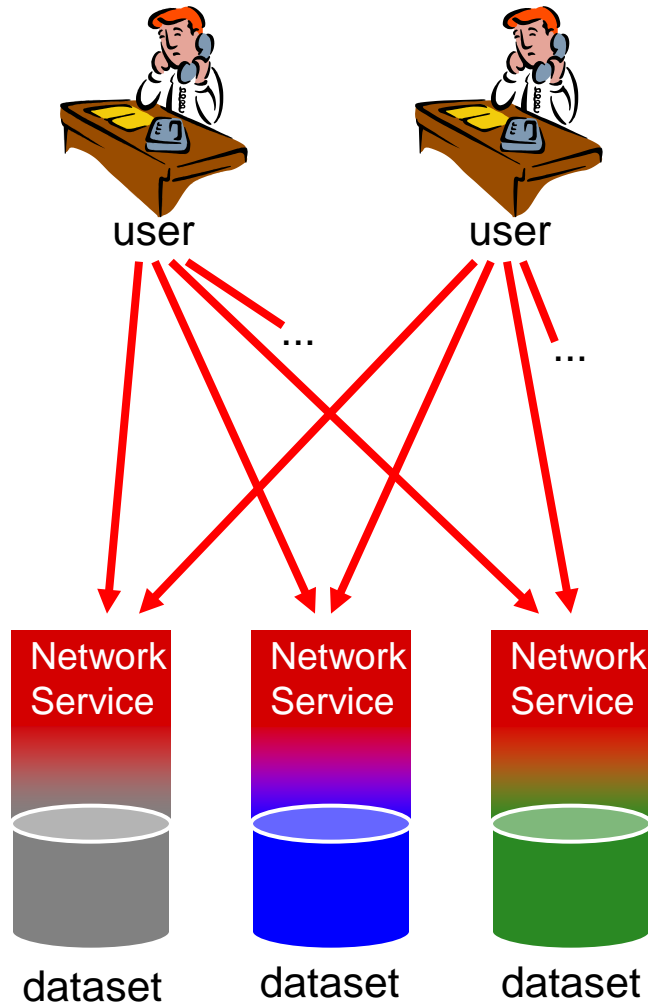
Data interoperability



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

Data interoperability



... 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

Development of data specification – step wise, managed process

Directive
(2007)

Modelling
Framework
for INSPIRE
data
specifications
(2008)

Data
specifications
for the 9
Annex I
data themes
(2009)

Data
specifications
for the 25
Annex II/III
data themes
(2012)

Part of the legal framework →
Implementation mandatory for
European Member States

Interoperability of spatial data sets
and services (Implementing Rule)
(2009..2012)

Data interoperability – Actors

- **Thematic working groups** – 19 TWGs for Annex II&III
 - TWG Facilitators
 - TWG Editors
 - Domain experts
- **EC INSPIRE Team** (DG ENV, DG JRC, DG ESTAT)
 - Technical coordination = **JRC INSPIRE team**
- Data Specifications **Drafting Team** (DS DT)
- **Stakeholders**
 - Legally mandated organisations (LMOs)
 - Spatial data interest communities (SDICs)

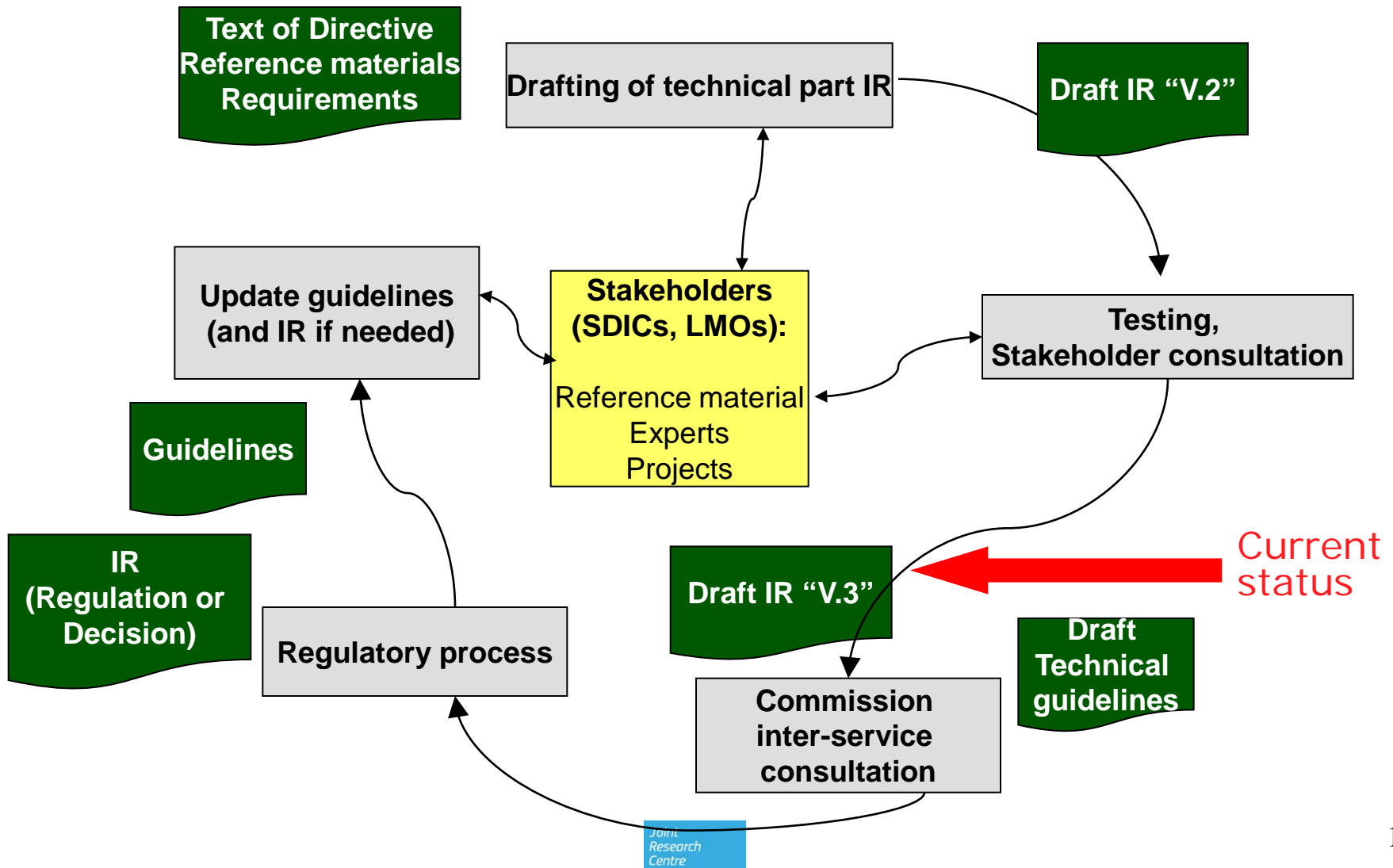
Technical Guidelines for each 34 Themes

- Technical documents
- Describe full set of provisions necessary for system interoperability within INSPIRE
- Contain requirements and recommendations (mandatory and optional elements), explanations and examples
- Basis for the Implementing Rule /Regulation on Interoperability of Spatial Data Sets and Services
- Full implementation not mandatory
- May contribute to further coherent development of SDIs of the Member States

Implementing Rule

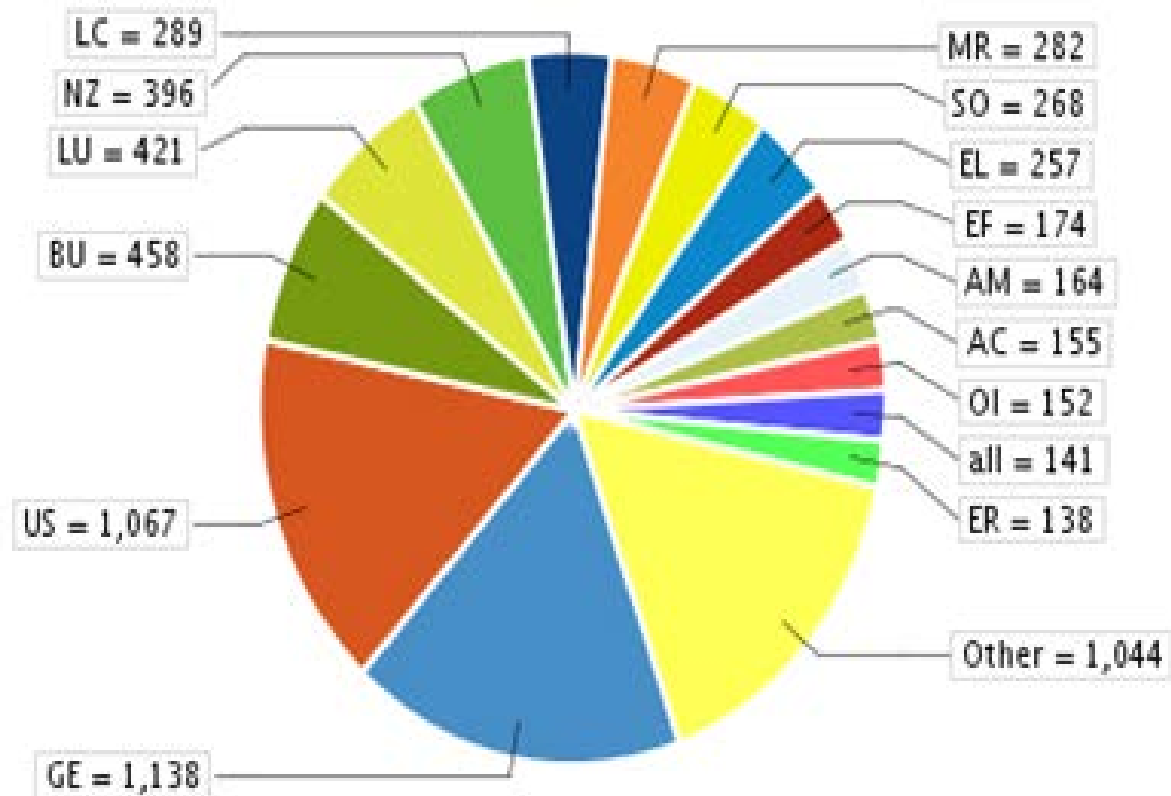
- Reflects what is necessary to be achieved taking into account cost-benefit considerations
- Text of legal relevance and technical provisions expressed in natural language (when notation is necessary, it will be explained)
- Includes mandatory elements of the specifications
- Implementation is mandatory within the period specified in the Directive

Implementing Rule development cycle



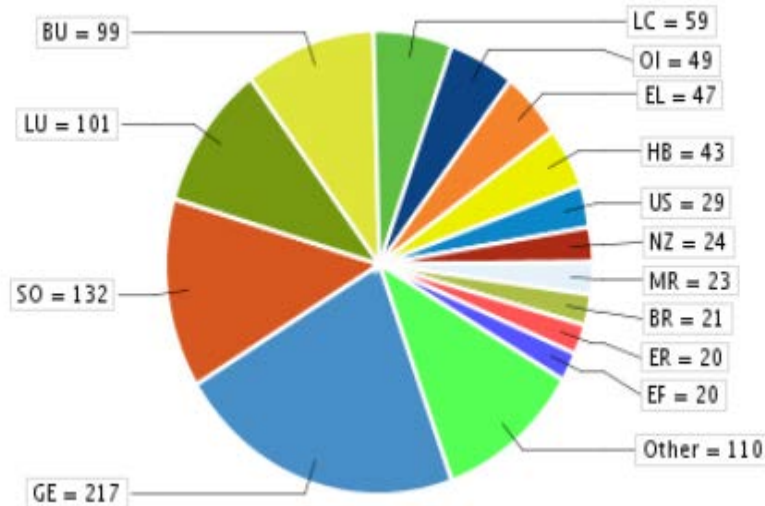
Public consultation / testing of V2.0 6/2011 – 9/2011

6212 comments received
5218 from review; **994** from testing



Testing V2.0 stats.

- 994 comments
 - 17 countries
 - 64 Testing reports (7 unfinished)
 - 37 LMOs
 - 27 SDICs



Theme	Issues	%
CS	1	0
GCM & encoding	1	0
GN	1	0
GS	1	0
HY	1	0
PD	1	0
None	1	0
HH	2	0
OF	4	0
PS	5	0
SR	6	0
PF	7	0
AM	8	0
SU	9	0
AC	13	1
MF	13	1
SD	18	1
all	18	1
EF	20	2
ER	20	2
BR	21	2
MR	23	2
NZ	24	2
US	29	2
HB	43	4
EL	47	4
OI	49	4
LC	59	5
BU	99	9
LU	101	10
SO	132	13
GE	217	21

- **Data specifications too complex**

- ✓ Requests for simplification accepted, identified where complexity needs to be reduced and initiated ways to implement

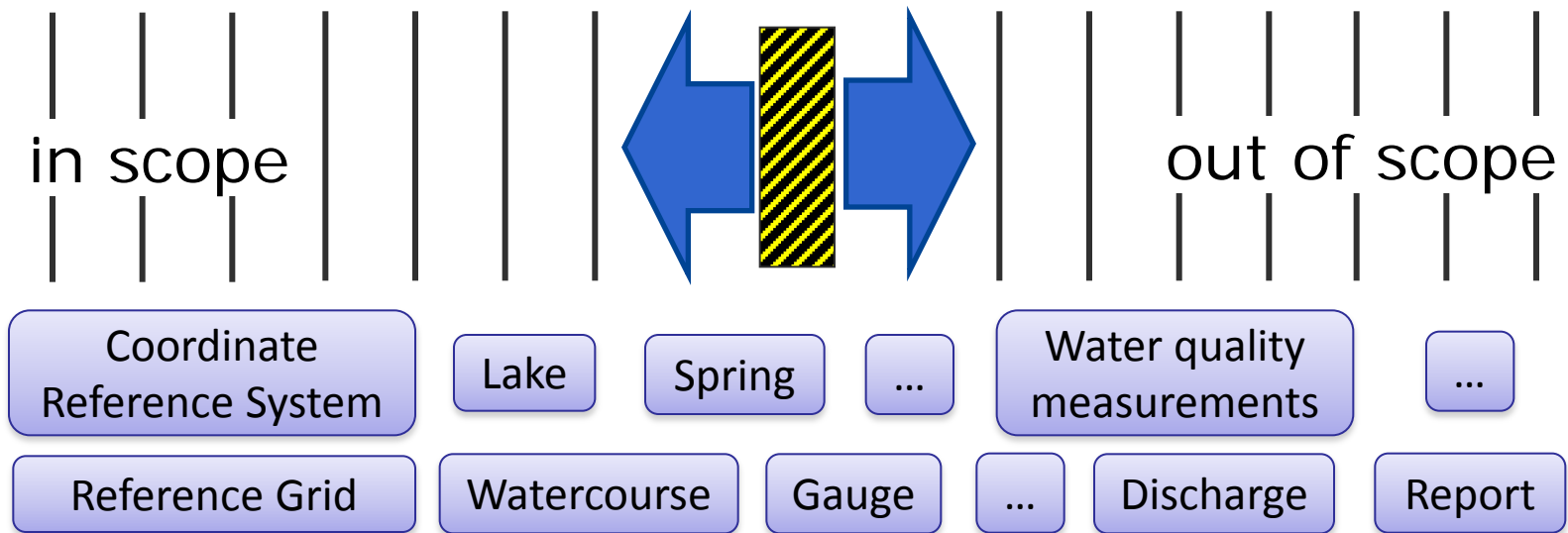
- **Scope**

- **enlarging the scope**
- **invading EU reporting; conflicting with EU reporting**
- ✓ Scope clarified when necessary; cross-theme discussions agreed how to improve
- ✓ INSPIRE should facilitate the obligations on environmental related policies as spatial data infrastructure, including reporting, but the content is defined by the thematic legislations and the associated Technical groups,

- ✓ **Support in general the distinction between**

- core model to go into the legal act
- extended application schema(s) to cover different use cases

Finding the appropriate level of interoperability



Spatial data

Reference systems

Widely used and widely referenced spatial objects

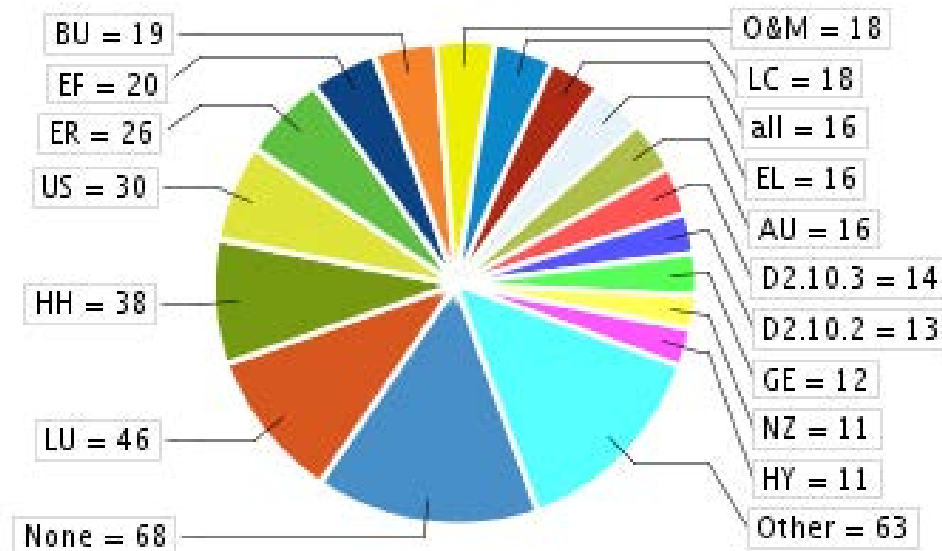
Application-specific – referenced and referencing other spatial objects

“Business data”

Mostly non-spatial, but may contain explicit or implicit references to spatial objects

MS review of the 1st Draft of the IR 14.5.– 8.6./2012

455 comments received + generic overview statements
from **12** countries



Development of IRs for interoperability of datasets and services Annex II-III

Preparation draft IR v1	EC (with TWG support)	23 Apr – 11 May
Review IR v1 by MS	MS	14 May – 8 Jun 2012
Preparation draft IR v2 (based on MS comments)	EC	11 June – 9 July 2012
Inter-service consultation (ISC)	EC services	9 July – 3 August 2012
Final draft IR (based on ISC comments)	EC	3 Aug – 21 Sep 2012
Option: Translation in all EU official languages	EC (with MS support)	X*
IC meeting (opinion on IR)		15 Oct 2012 or X+ 3weeks?

INSPIRE maintenance – principles

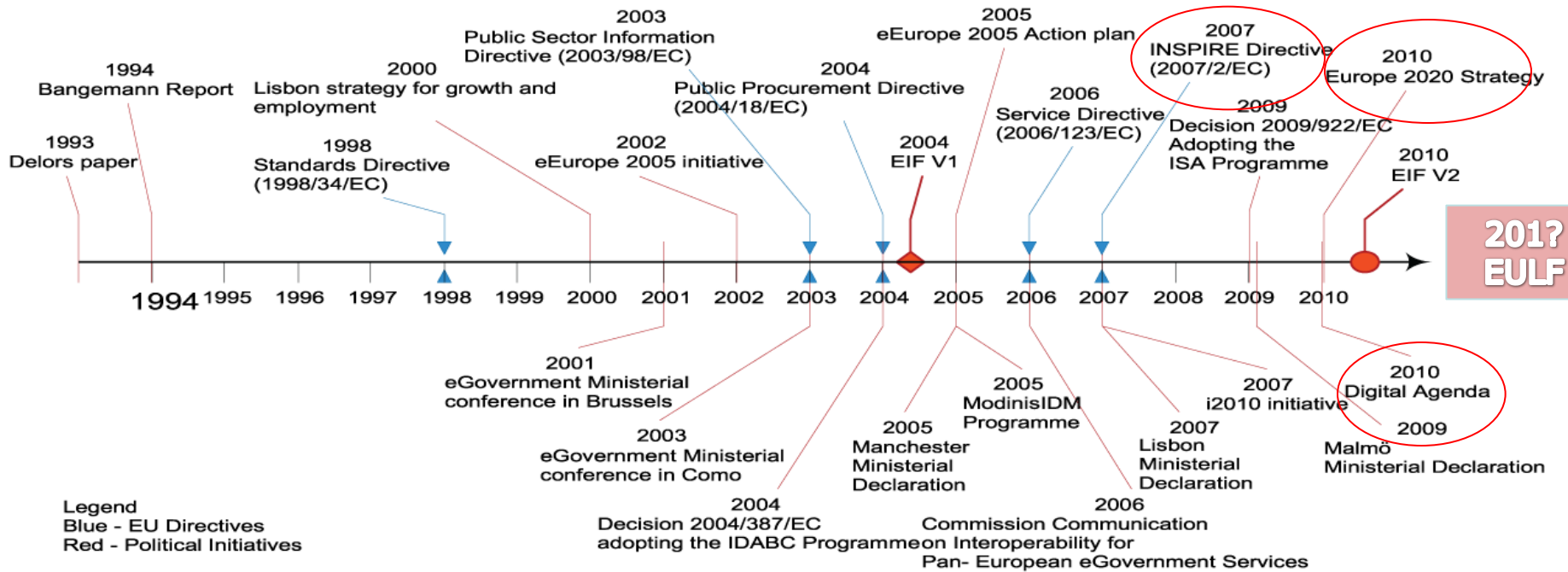
- Support further implementation of the IRs in the Member States
- Maintain the open participatory approach
- Ensure the cross-cutting coherence of the components of the infrastructure
 - Some of the issues resulting from implementation of the IRs may affect more than one INSPIRE component, e.g. DS+NS
- Flexible for taking into account requirements emerging from environmental policies and policies or activities which may have an impact on the environment

Bigger picture..



EUROPEAN INTEROPERABILITY FRAMEWORK FOR EUROPEAN PUBLIC SERVICES

The EU initiatives shown below illustrate, from a historical perspective, the support provided at political level for interoperability among public administrations.



Timeline of EU initiatives concerning interoperability

The “Digital Agenda for Europe”

a flagship initiatives of the Europe 2020 Strategy



As recognized in the recent communication “Towards interoperability for European public services” COM(2010) 744 Action on *interoperability is essential to maximise the social and economic potential of ICT.*

Digital Agenda and INSPIRE

- Geoinformation and environmental information – important parts of PSI Domain
- INSPIRE and PSI complementary
- The INSPIRE successful standardization effort acknowledged and will be re-used
- INSPIRE Geoportal (services) will be integrated in the pan European Data Portal

*Neelie Kroes – Digital Agenda
Vice president of the EC*



Success story of INSPIRE non-restrictive – transparent approach

	22-06-2005	01-06-2007	22-04-2009	22-05-2012
Spatial Data Interest Communities (SDICs)	139	201 (+45%)	301 (+117%)	474
Legally Mandate Organisations (LMOs)	89	116 (+30%)	173 (+94%)	269
Proposed Experts	193	210 (+9%)	284 (+47%)	318
Referenced Materials	96	144 (+50%)	354 (+296%)	
Identified Projects	94	112 (+19%)	122 (+30%)	
Proposals testing Annex I data specifications			78	62/994



More information: **INSPIRE Conference Istanbul 23-27.6. 2012**

- INSPIRE
 - <http://inspire.jrc.ec.europa.eu/>
- INSPIRE data specifications
 - Overview
 - <http://inspire.jrc.ec.europa.eu/index.cfm/pageid/2>
 - Data models
 - http://inspire.jrc.ec.europa.eu/index.cfm/pageid/2/list/d_atamodels
 - Schemas
 - <http://inspire.ec.europa.eu/schemas/>

