

Enabling the 21st century Geographic Information Infrastructure in Europe: the INSPIRE Directive

Clemens Portele - interactive instruments GmbH

Geographic and Environmental information in Europe

Environmental Needs

- Better information needed to support an increasing number of policies
- Improvement of existing information flows
- Diversity 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
- 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

Environmental data

- 90% of is linked to geography
- Out of 58 data components needed for environmental policy :
 - 32 are multi-sectoral
 - 16 are environmental only
 - 10 are related to other sectors
- These 32 components allow to:
 - link different ENV themes together: policy coherence
 - link with other sectors: integration

source EEA



**Proposal for a Directive
establishing an infrastructure for
spatial information in the
Community – INSPIRE**

**EU has islands of
heterogeneous data...**



A Directive ...

- ... binds Member States to the objectives to be achieved within a certain time-limit
 - ... while leaving to the national authorities the choice of form and means
- Directives have to be implemented in national legislation in accordance with the procedures of the individual Member States



INSPIRE – the Directive

- INSPIRE lays down general rules for the establishment of an infrastructure for spatial information in Europe to support environmental policies and policies that affect the environment
- The infrastructure will be based on SDIs established and operated by the Member States
- Requires specific implementing rules



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
- 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

Aspects covered by the Directive

Process and
procedures

Data and service
sharing provisions

Monitoring & reporting
mechanisms

Spatial datasets

Metadata

Spatial data services
(network services)

Implementing rules

- The INSPIRE Directive defines the objectives, and will need transposition in national legislation to define how such objectives will be met by the member states
- Implementing Rules include those technical details which are mandated by the Commission to all member states to ensure the coherent implementation of the directive
- The Implementing Rules will be formally adopted through the INSPIRE Committee with representatives of the Member States and European Parliament

The role of the Drafting Teams

- to analyse and review the reference material
- to write draft INSPIRE Implementing Rules
- to provide recommendations to the Consolidation Team (CT, European Commission) in case of conflicting technical specifications
- to provide suggestions to the Consolidation Team for testing any proposed specification

Scope of the Drafting Teams

Metadata

Detail the INSPIRE requirements for metadata for data and services such that these can be implemented consistently across Europe (for discovery)

Data specifications

- (a) Harmonised spatial data specifications
- (b) Arrangements for the exchange of spatial data

Network services

Define functional and non-functional requirements to support the following functionalities for services: Upload, Download, Discovery, Transformation, Data view, Invoke

Data/service sharing

Framework of provisions to enable public authorities and Community bodies to share spatial data and services in order to meet user needs in the domain of environmentally related policies in a sustainable way

Monitoring & reporting

Continuous monitoring of implementation progress by Member States and use (Commission and public), reporting by Member States to the Commission and by the Commission to the Parliament / the Council

30+ spatial data themes

Annex I

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

Annex II

- Elevation
- *Identifiers of Properties*
- *Cadastral parcels*
- Land cover
- Orthoimagery
- Geology

30+ spatial data themes

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 harmonisation components – overview

1. INSPIRE Information Model

1.1 INSPIRE Principles

1.4 ISO 19100 Profile

1.7 Object referencing modelling

1.2 Reference model

1.5 Multi-lingual text and cultural adaptability

1.8 Data translation model/guidelines

1.3 Application Schemas

1.6 Coordinate referencing and units model

1.9 Portrayal model

2. Operational components/registers

2.1 Identifier Management

2.3 Feature catalogues

2.5 Conformance

2.2 Terminology

2.4 Dictionaries

3. Guidelines & Best Practice

3.1 Metadata

3.5 Derived reporting & multiple representations

3.2 Maintenance

3.6 Consistency between data

3.3 Quality

3.7 Data capturing

3.4 Data Transfer

Services

„Upload services“ publishing spatial data sets and services

„Discovery services“ searching for spatial data sets and services

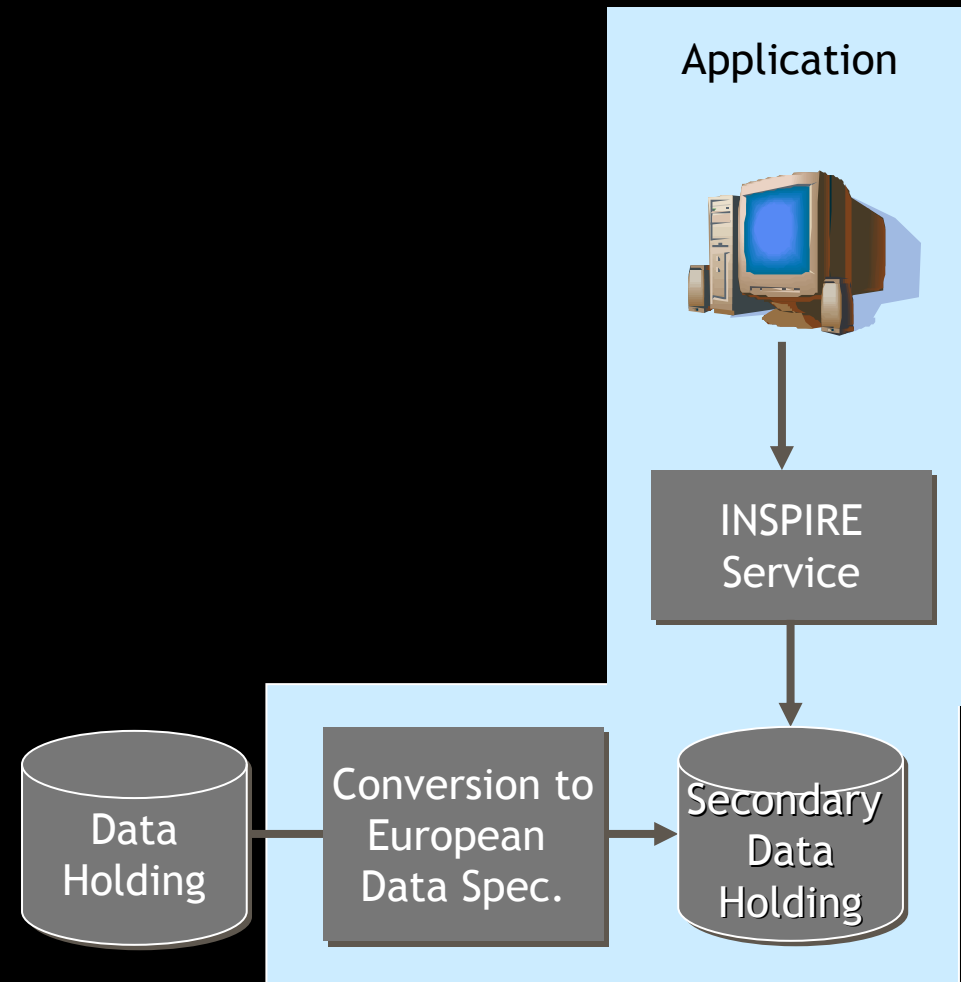
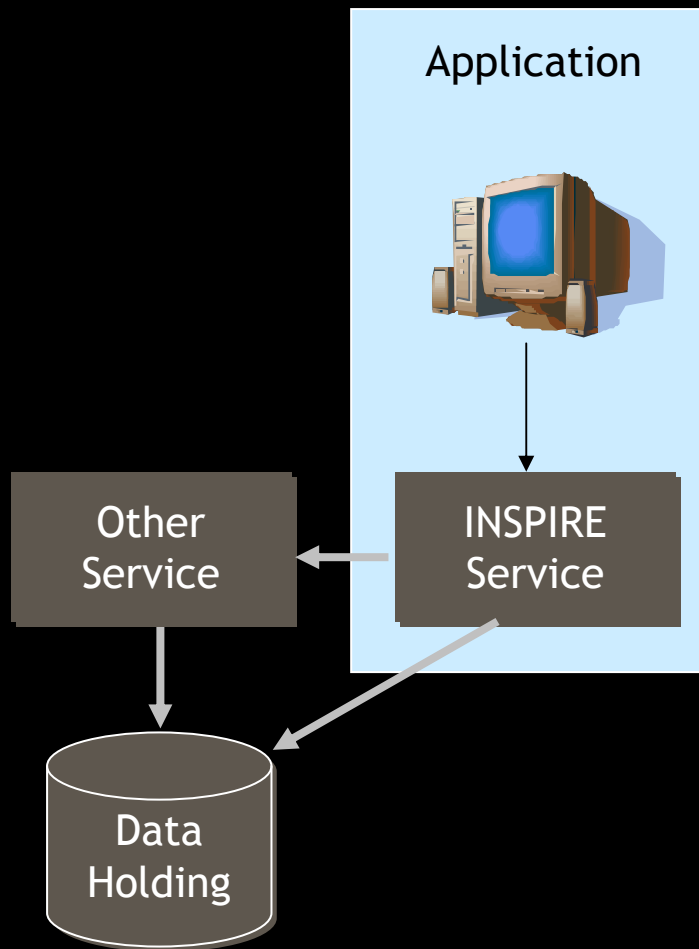
„View services“ mapping spatial data sets

„Download services“ accessing/downloading spatial data

„Transformation services“ transforming spatial data to achieve interoperability

„Invoke spatial data services“ allowing spatial data services to be invoked

Translation vs. conversion/adaptation



Stakeholder participation

- The implementation of INSPIRE needs to consider the broader context of existing initiatives
- The development of the INSPIRE Implementing Rules requires the participation of stakeholders → the concept of **Spatial Data Interest Communities**

Spatial Data Interest Communities (SDICs)

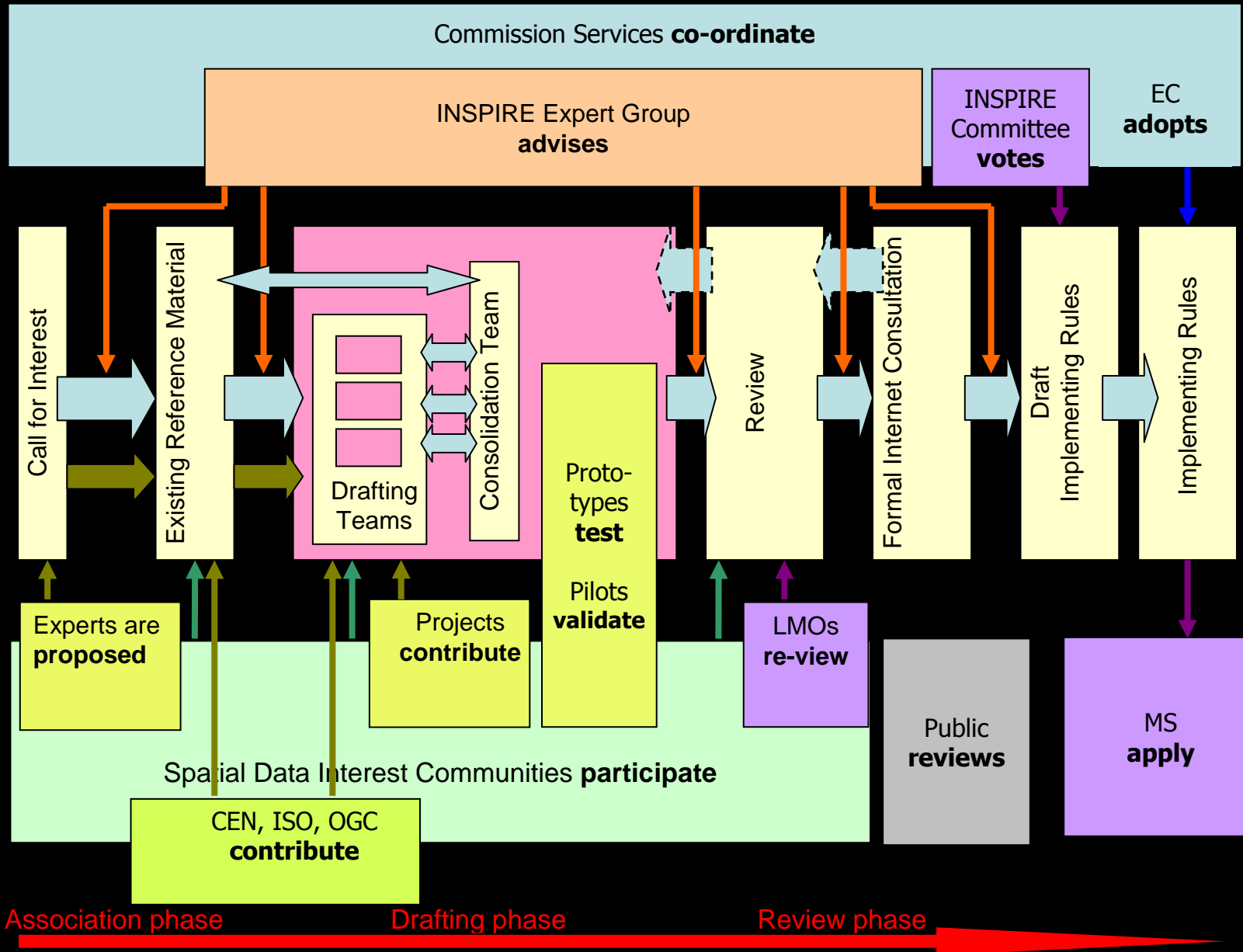
- are organised by region, societal sector and thematic issue
- include spatial data providers and users
- bundle human expertise, technical competence, financial resources and policies
- share an interest to better use these resources
- provide reference material for the Implementing Rules
- nominate experts for the Drafting Teams

Results of the call for Experts

Spatial Data Interest Communities (SDICs)	139
Legally Mandated Organisations (LMOs)	89
Proposed Experts	193

(June 2005)

The INSPIRE process



From proposal to implementation

2004

2005

2006

2007

2008

2009

2010

Preparatory phase

Co-decision procedure

Preparation of Implementing Rules

Transposition phase

Directive enters into force

Transposition into national legislation

Adoption of Implementing Rules

Implementation phase (to 2013)

Implementation

Monitoring of measures

Adoption of additional Implementing Rules

Roadmap

- 2007 Entry into force of INSPIRE Directive
- 2008 Adoption of Implementing Rules for the creation and updating of the **metadata**
Adoption of Implementing Rules for **network services**
Adoption of Implementing Rules on third parties use of the **upload services**
Adoption of Implementing Rules for **monitoring and reporting**
Adoption of Implementing Rules governing **access and rights of use to spatial data sets and services for Community institutions and bodies**
- 2009 Adoption of Implementing Rules for the **use of spatial data sets and services by third parties**
Adoption of Implementing Rules for **harmonised spatial data specifications and for the exchange of Annex I spatial data**

Roadmap

- ... Designation of **responsible public authorities** for spatial data sets and services
- Implementation of **sharing framework** of spatial data sets and services between public bodies
- Implementation of provisions on **monitoring**
- Network services** are operational
- Provisions of Directive are brought into force in MS (transposition date)**
- 2010 Metadata** available for spatial data corresponding to **Annex I and Annex II** spatial data
- Member States' First Report** to the Commission. From then onwards MS have to present reports every 3 years

Roadmap

- 2011 **New or updated spatial data sets available in accordance with Implementing Rules for harmonised spatial data specifications and exchange for Annex I spatial data**
 - 2012 **Adoption of Implementing Rules for harmonised spatial data specifications and for the exchange of Annex II and Annex III spatial data**
 - 2013 **Metadata available for Annex III spatial data**
 - 2014 **New or updated spatial data sets available in accordance with Implementing Rules for harmonised spatial data specifications and exchange for Annex II and Annex III spatial data**
- Commission's report to the EP and the Council. From then onwards the Commission has to present reports every 6 years**

Thank you !

Clemens Portele
interactive instruments GmbH



Trierer Strasse 70-72

53115 Bonn

Germany



+49 228 91410 73



portele@interactive-instruments.de



<http://www.interactive-instruments.de/>