Inspire Directive and Spatial Data Infrastructures

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Themes

- INSPIRE directive
  - Framework
  - Content
  - Discussion
  - Implementation
  - Spatial Data Infrastructures
    - characteristics
    - evolution

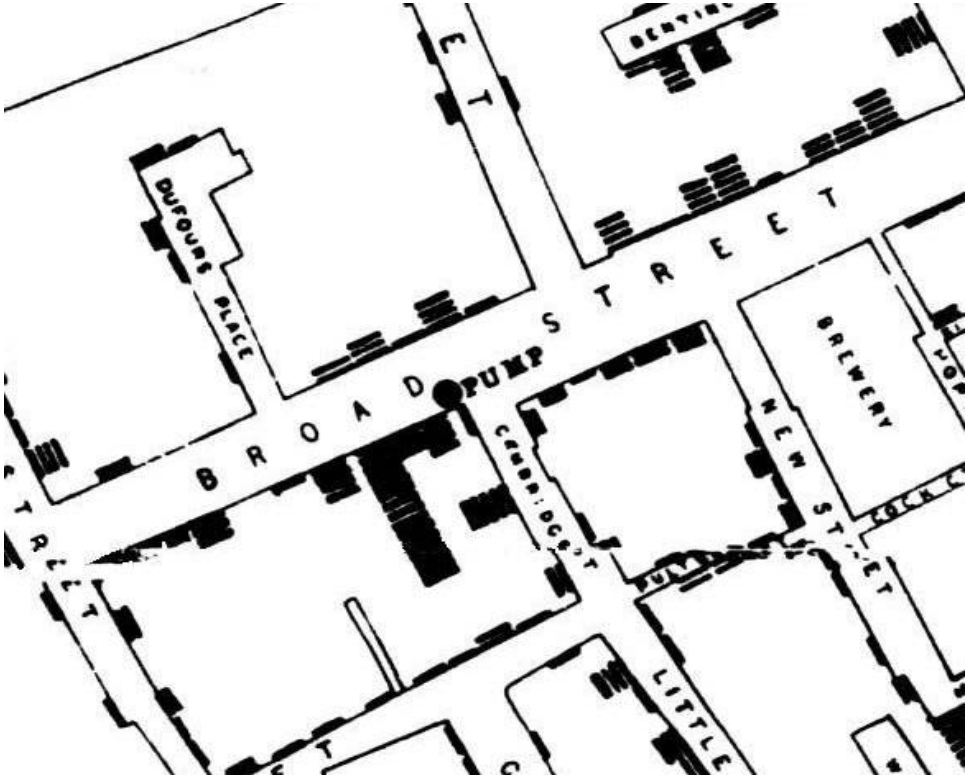
WIZ & the data - Key concepts

- One project, one language
- Authority through flexibility
- Validation

INSPIRE for WIZ

- Why?
- How useful?
- Pros & Cons?
- Problem or opportunity?

Spatial Data issues



European Commision issues

integrating spatial & environmental data

- No standards

Source: F. Merrien & M. Léobet
“La directive Inspire pour les néophytes”

European Commision issues

integrating spatial & environmental data

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- Data missing

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- Different approaches

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- Lack of coordination

European Commision issues

integrating spatial & environmental data

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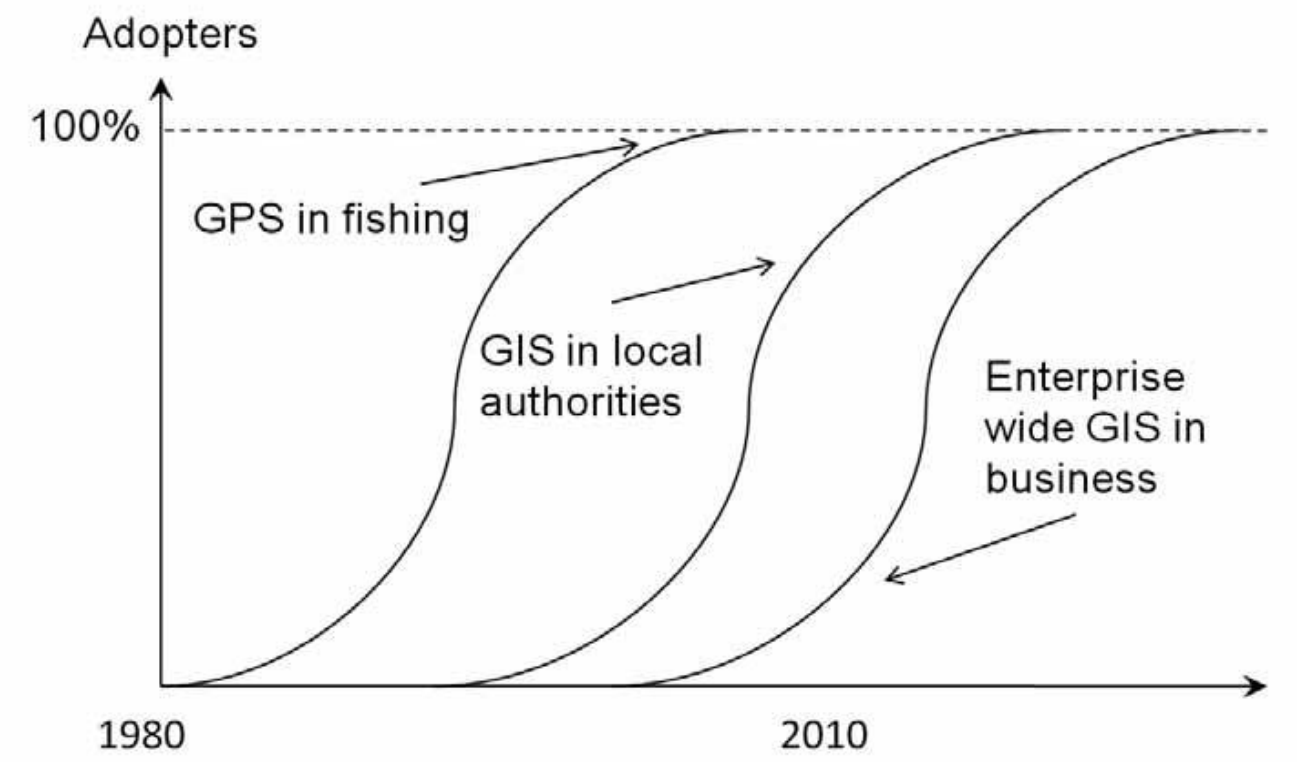
- Different approaches
- Fragmentation
- Lack of coordination
- Different technologies

S-shaped adoption curve



European Commision issues

- What about creating an european legislatve instrument?

Infrastructure for **Sp**atial **I**nfo**r**mation in the **E**uropean Community

- Framework of rules and standards governing the **creation**, **maintenance** and **distribution** of spatial data

Whose concern?

- **Any government or other public administration at national, regional or local scale**

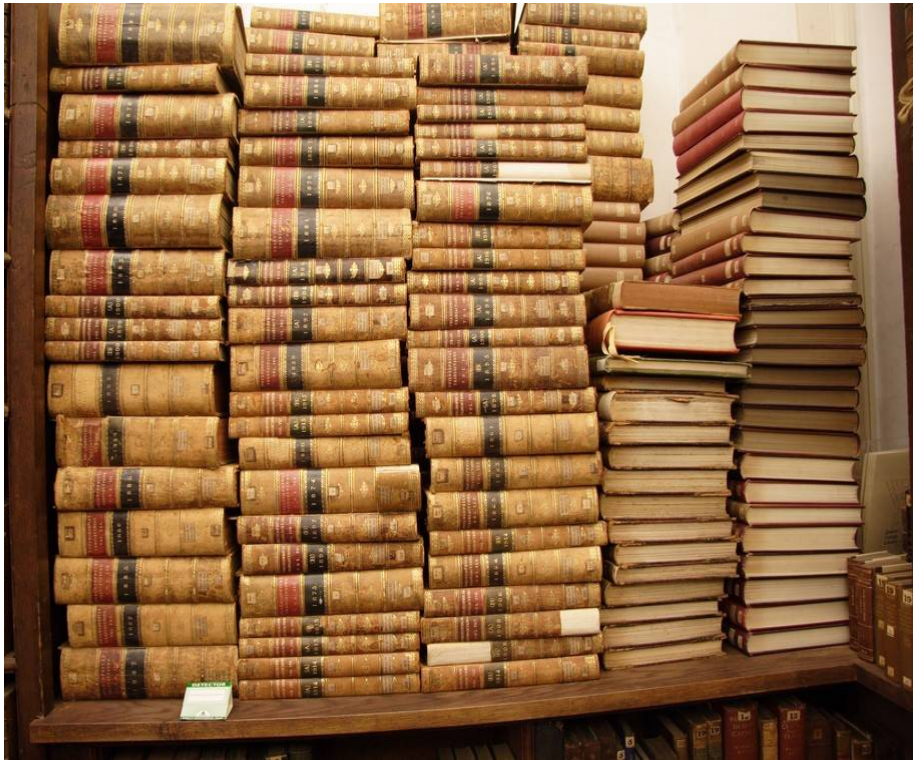
Aiming

- Availability
- Quality
- Interoperability
- Sharing
- New services

Rules

- List owned spatial data
- Have them tagged with metadata
- Publish them on the web in usable format
- Make them available for public and private organizations

Why spread the datas?



Generate

- Innovation
- New services
- Mashups
- Values
- Transparency
- Interaction
- Partecipation

Land use evolution

- Example
  - Firenze 1954, 1978, 2006

1978

2006

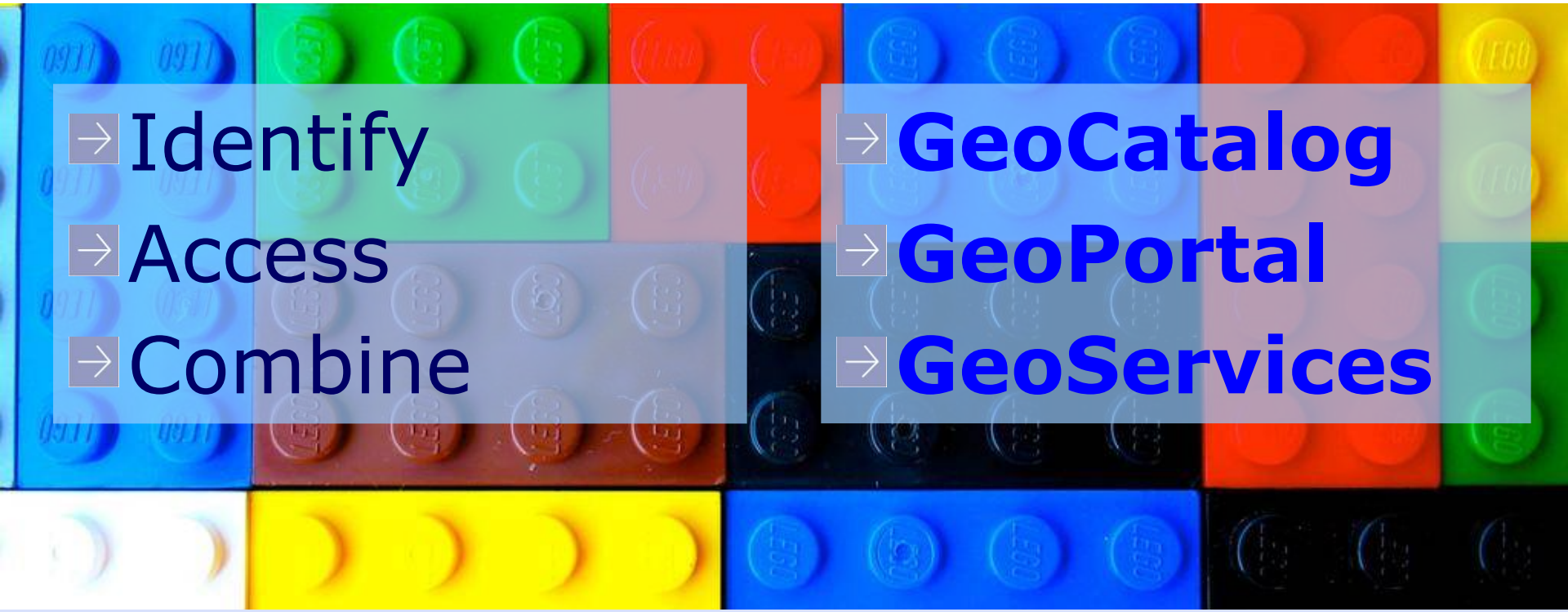
What we needed 10 years ago?

- Deep thematic knowledge
- (Personal) relationships
- A car
- Conversion tools ($)
- GIS Desktop application ($)
- ≈ 5 day work

What we need NOW?

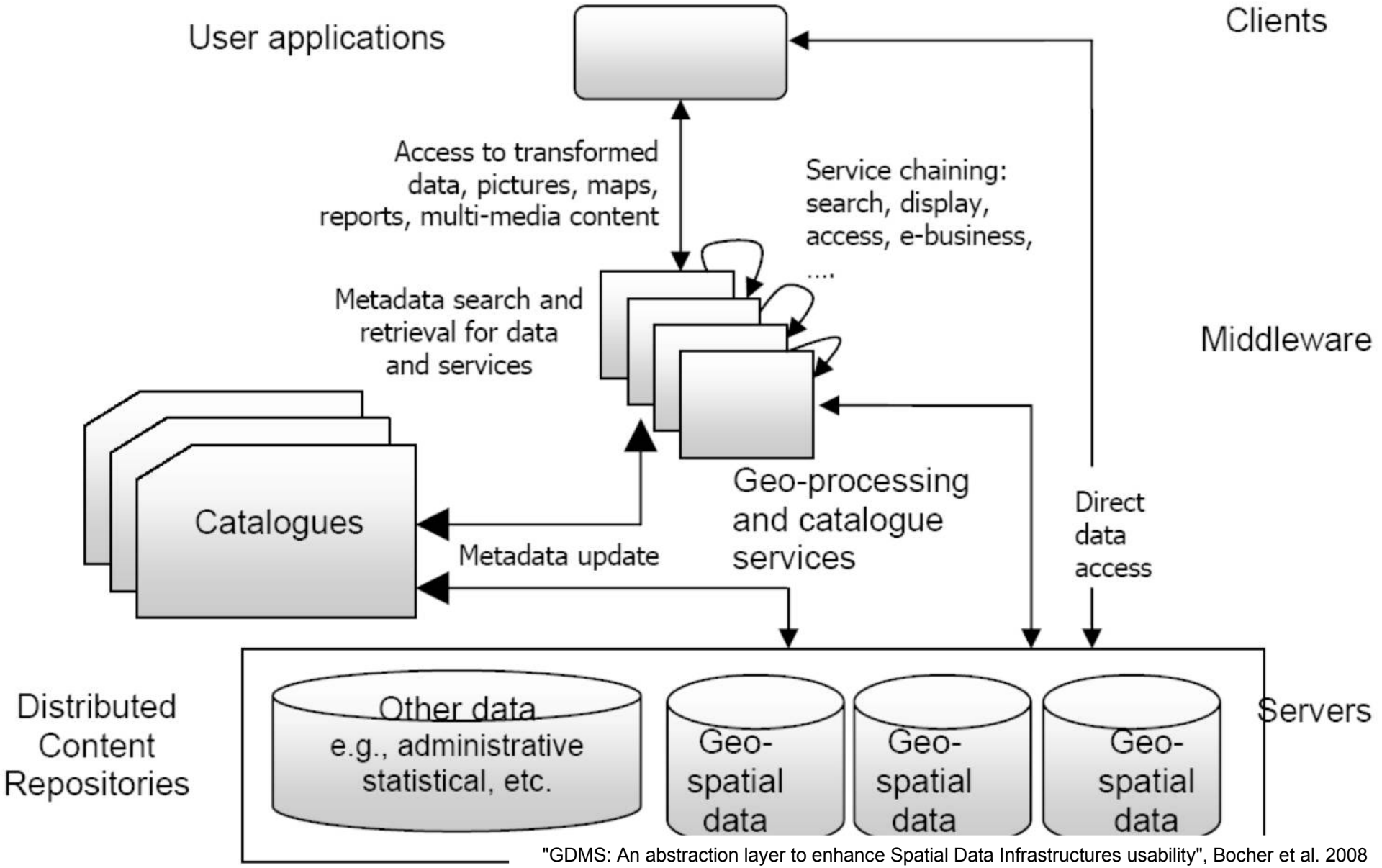
- GeoCatalog (PCN, GeoScopio RT)
- Standard web-services (WMS)
- GIS Desktop application (uDig)
- ≈ 5 min. work

Make data mashable



- Identify
- Access
- Combine

- **GeoCatalog**
- **GeoPortal**
- **GeoServices**



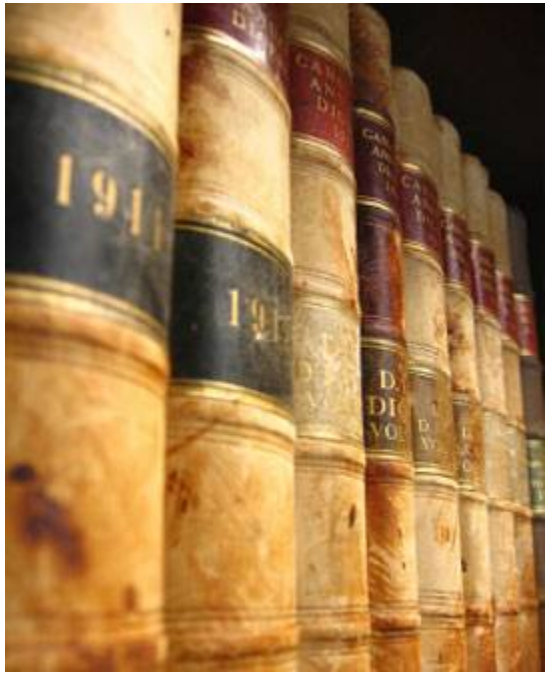
"GDMS: An abstraction layer to enhance Spatial Data Infrastructures usability", Bocher et al. 2008

What data are we talking about?

Any spatial data

Not only spatial data...

- Extended use of metadata
  - Media (photo, video, ...)
  - Documents
  - Internal proceedings
  - ...



INSPIRE themes

Annex 1

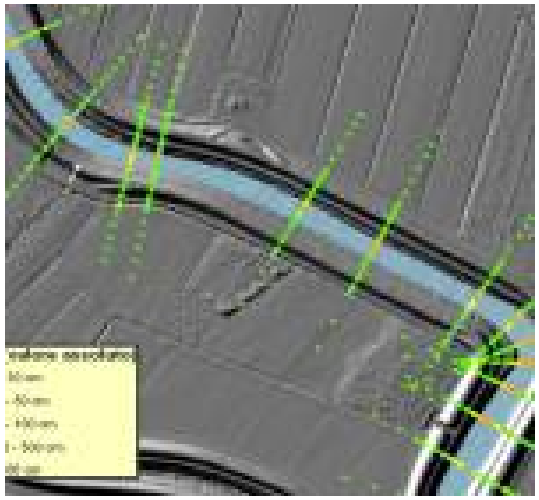
- Coordinate reference systems
- Transport networks
- Hydrography
- Protected sites
- Administrative units
- Geographical names
- Geographical grid systems

Cañon del Sil

INSPIRE themes

Annex 2

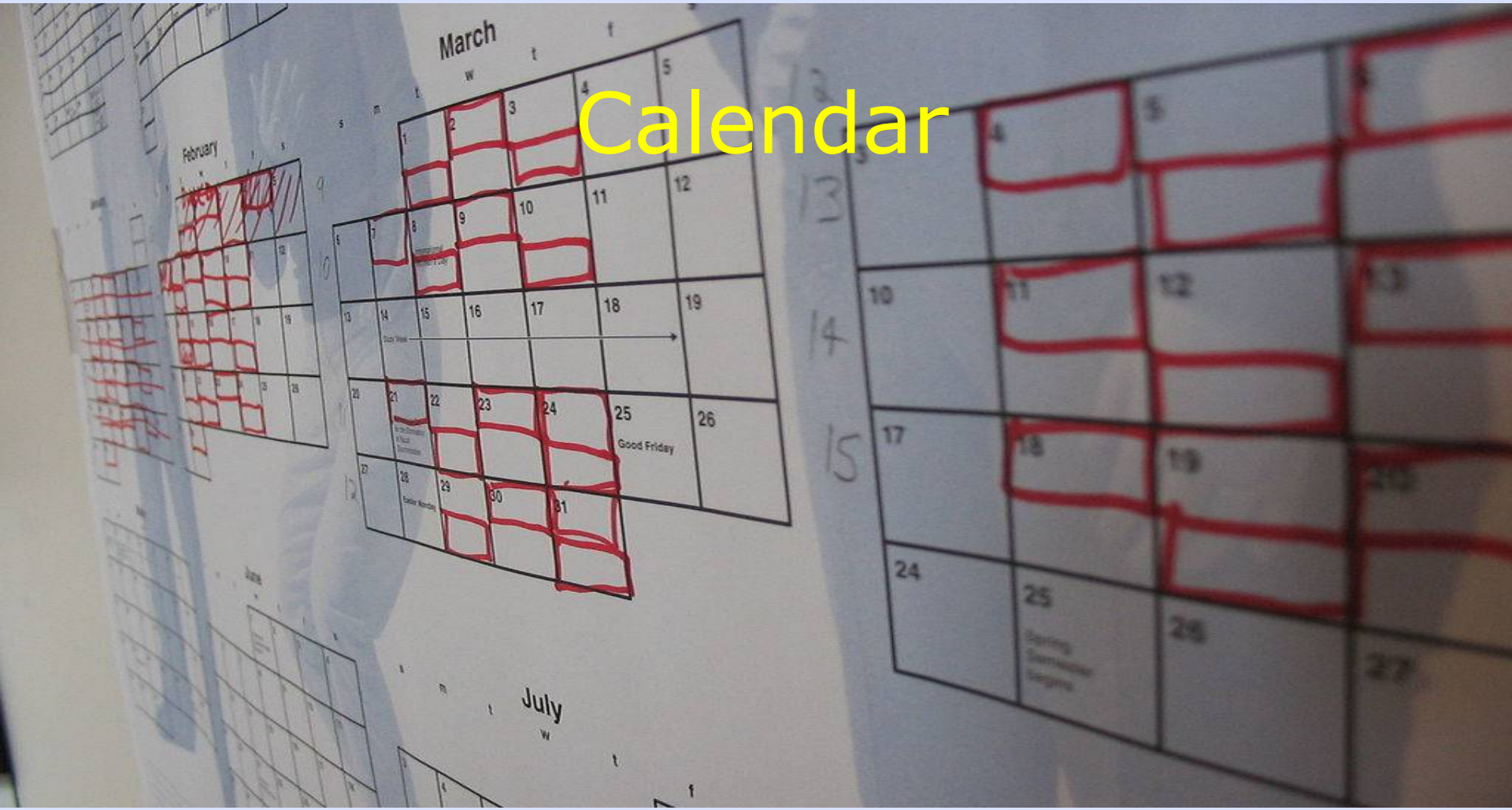
- Public land registry
- Identifiers of properties
- Elevation
- Land cover
- Orthoimagery



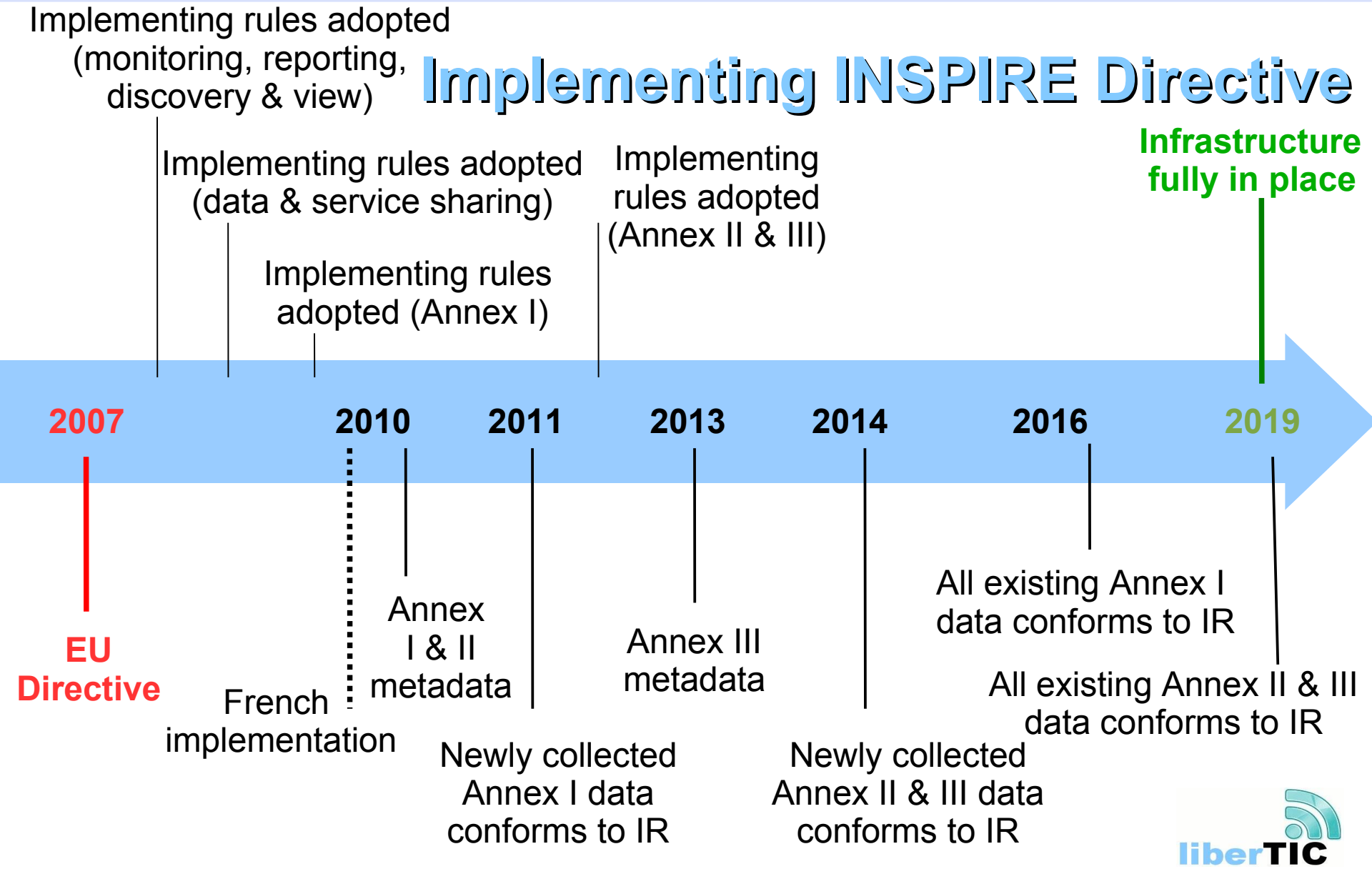
INSPIRE themes

Annex 3

Species distribution
Habitats and biotopes
Natural risk zones
Population distribution – demography
Agricultural and aquaculture facilities
Land use
Geology
Soil
Buildings (...)


Calendar
March
February
July
Good Friday

Implementing INSPIRE Directive



Chapters

1. General provisions
2. Metadata
3. Interoperability of data sets and services
4. Network services
5. Data Sharing

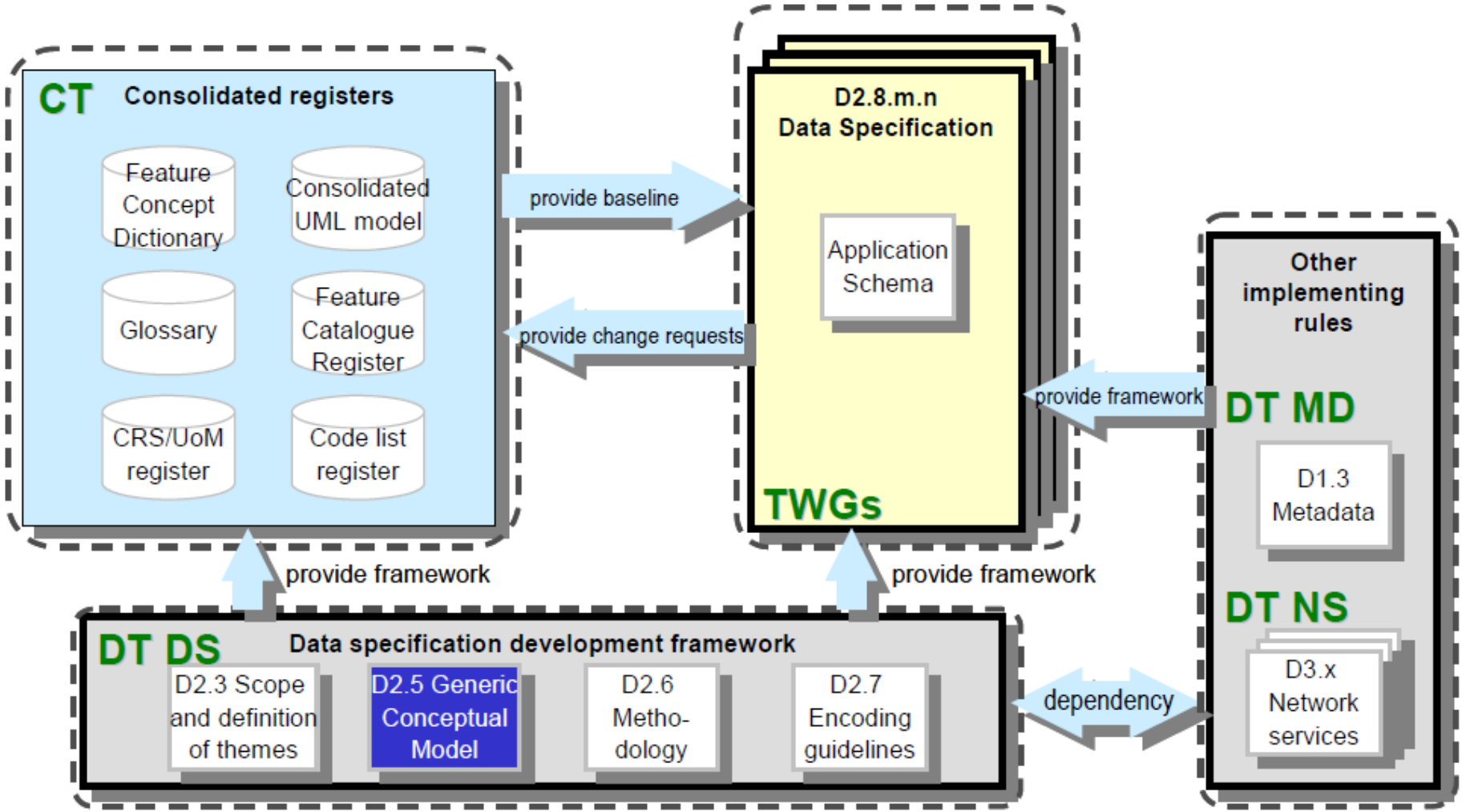
Good practice

INSPIRE
Infrastructure for Spatial Information in Europe

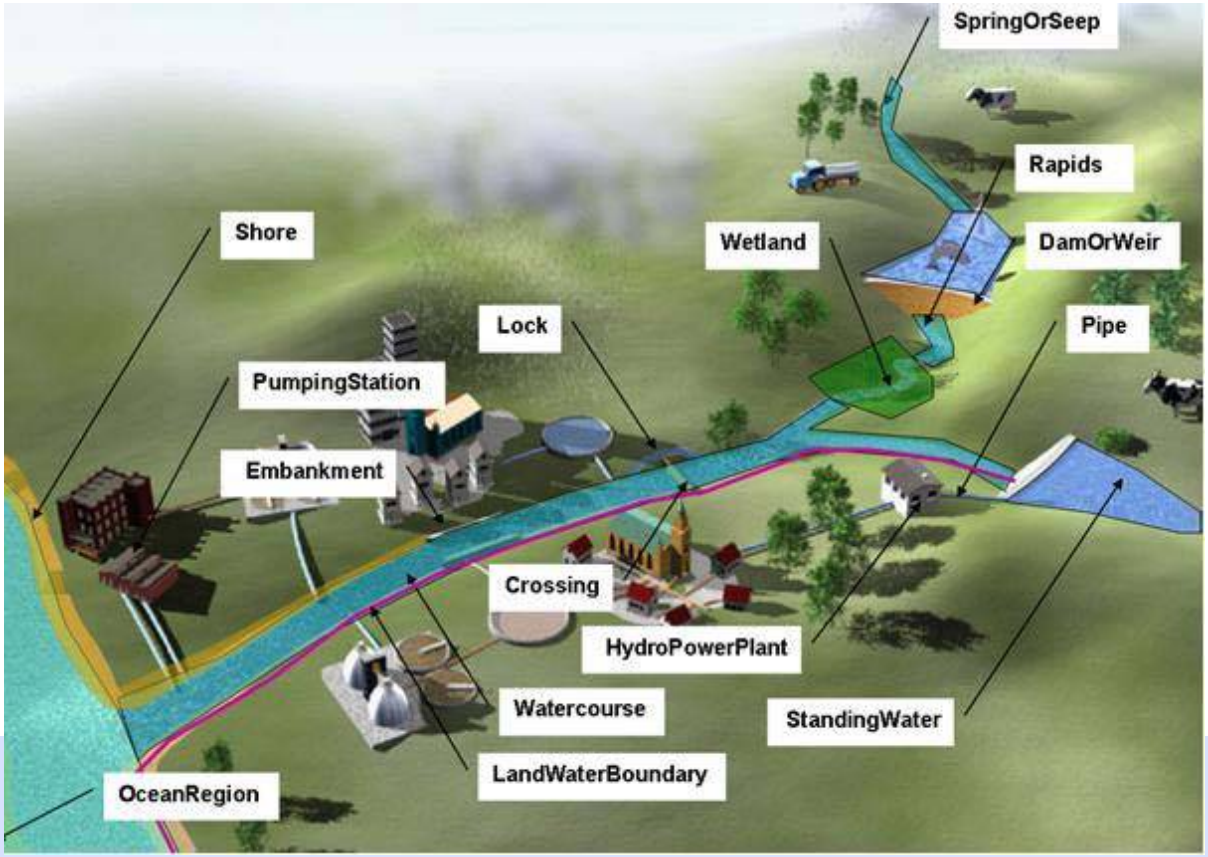
Good practice in data and service sharing

Specification development framework

- Registers
- Data specification
- Metadata


CT
Consolidated registers
Feature Concept Dictionary
Consolidated UML model
Glossary
Feature Catalogue Register
CRS/UoM register
Code list register
provide baseline
provide change requests
D2.8.m.n
Data Specification
Application Schema
TWGs
provide framework
Other implementing rules
DT MD
D1.3 Metadata
DT NS
D3.x Network services
provide framework
provide framework
DT DS
Data specification development framework
D2.3 Scope and definition of themes
D2.5 Generic Conceptual Model
D2.6 Metho-dology
D2.7 Encoding guidelines
dependency

Data specification for Hydrography



INSPIRE feature concept dictionary

INSPIRE glossary

Standards

- Services
  - Discovery
  - View
  - Download
  - Transformation

OGC

Standards

- Metadata
  - Chapter II
    - Art. 5 – included information
    - Art. 6 – implementation timetable

Standards

INSPIRE
Infrastructure for Spatial Information in Europe

INSPIRE Metadata Implementing Rules: Technical Guidelines based on EN ISO 19115 and EN ISO 19119

Standards

- EN ISO 19115 – Geographic information – Metadata
  - Definisce le classi ed i campi utili ad organizzare un database del catalogo di dati geospaziali che consenta di renderli ricercabili

Standards

- EN ISO 19119 – Geographic information – Services
  - Regola la definizione di un catalogo di servizi di dati geospaziali
  - Classico esempio: servizi WMS
  - Forte sovrapposizione con il precedente per quanto riguarda la descrizione del dato

Standards

- ISO/TS 19139 – Geographic information – Metadata – XML Schema Implementation
  - Specifica lo schema XML dello standard EN ISO 19115. In realtà si può applicare anche per l'implementazione di EN ISO 19119 (e per altri standard ancora)

Standards – italian law framework

- Decreto Legislativo 7 marzo 2005, n. 82 – Codice dell'Amministrazione Digitale – G.U. n. 112 del 16 maggio 2005, supplemento ordinario n. 93
- Decreto Legislativo 19 agosto 2005, n. 195 – G.U. n. 222 del 23 settembre 2005
- Decreto legislativo 27 gennaio 2010, n. 32 – G.U. n. 56 del 9 marzo 2010

Accesso alle informazioni

- Direttiva 90/313/CEE del Consiglio, del 7 giugno 1990, concernente la libertà di accesso all'informazione in materia di ambiente
- Convenzione sull'accesso alle informazioni, la partecipazione del pubblico ai processi decisionali e l'accesso alla giustizia in materia ambientale (Århus, Danimarca, 25 giugno 1998)
- Direttiva 2003/4/CE del Parlamento europeo e del Consiglio del 28 gennaio 2003 sull'accesso del pubblico all'informazione ambientale e che abroga la direttiva 90/313/CEE del Consiglio

Accesso alle informazioni

- Regolamento (CE) n. 1367/2006 Parlamento europeo e del Consiglio del 6 settembre 2006 sull'applicazione alle istituzioni e agli organi comunitari delle disposizioni della convenzione di Aarhus sull'accesso alle informazioni, la partecipazione del pubblico ai processi decisionali e l'accesso alla giustizia in materia ambientale
- Comunicazione della Commissione al Consiglio, al Parlamento europeo, al Comitato economico e sociale europeo e al comitato delle regioni verso un Sistema comune di informazioni ambientali (Shared Environmental Information System - SEIS)

Accesso alle informazioni

- Legge 8 luglio 1986, n. 349 “Istituzione del Ministero dell'ambiente e norme in materia di danno ambientale”
- Legge 7 agosto 1990, n. 241 “Nuove norme in materia di procedimento amministrativo e di diritto d’accesso”
- Decreto legislativo 24 febbraio 1997, n. 39 “Attuazione della Direttiva 90/313/CEE concernente la libertà di accesso alle informazioni in materia di ambiente”
- Decreto legislativo 19 agosto 2005, n. 195 “Attuazione della direttiva 2003/4/CE sull’accesso del pubblico all’informazione ambientale”

INSPIRE for WIZ

- Why?
- How useful?
- Pros & Cons?
- Problem or opportunity?

Principles (from TBL)

- Make your stuff available on the web (whatever format)
- Make it available as structured data (e.g. Excel instead of PDF)
- Non-proprietary format (e.g. CSV instead of XLS)
- Use URLs to identify things, so that people can point at your stuff
- Link your data to other's people'data to provide context

Principles (spatial way)

- Make your stuff available on the web (whatever format)
- Make it available as structured data (e.g. Vectors data instead of PDF)
- Non-proprietary format (e.g. SHP instead of DWG)
- Use URLs to identify things, so that people can point at your stuff
- Link your data to other's people'data to provide context

Spatial Data Infrastructure (art. 3)

- metadata, spatial data sets and spatial data services
- network services and technologies
- agreements on sharing, access and use
- coordination and monitoring mechanisms, processes and procedures, established, operated or made available in accordance with this Directive

Spatial Data Infrastuctures

- Examples

Instruments

- GeoServer

Instruments

- GeoNetwork
- CatMDEdit

Instruments

- Desktop applications

Linked data & location

Existing problems

- Lack of technical interoperability
- Lack of businness interoperability
- Duplication of datasets
- Lack of awareness (of existing data)
- Under utilised existing information assets

The Linked Data Principles

1. Use URIs as names for things
2. Use HTTP URIs so that people can look up those names
3. When someone looks up a URI, provide useful RDF information
4. Include RDF statements that link to other URIs so that they can discover related things

Linked data – Basic terms

- URI
  - Uniform Resource Identifier
    - URL http://www.adbarno.it/
    - URN urn:isbn:88-8329-054-2
- RDF
  - Resource Description Framework
    - Risorse, proprietà, valori

How can INSPIRE help linked data?

INSPIRE GCM	*Description*	Linked Data alignment
Spatial Objects	*Features that you can recognise like buildings and roads (i.e. not cartographic lines)*	We can associate other information with these objects.(or aggregations of them)
Unique identifiers for these objects	*Persistent and traceable*	Required to explicitly link data
Classification of the objects	*Explicit type [codelist and enumerations will be mandatory]*	Easier to relate to things you understand
Object Referencing	*Link data things together (spatial and non-spatial)*	= Linked Data
All other aspects are also predefined	*Coord Systems, Network Services Registries etc*	Master data management – codelists & vocabs etc


uk location

Thank you!

- Grazie
- Gracias
- Grazas