INSPIRE: La Direttiva sull'infrastruttura Europea di dati territoriali

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Commissione Europea

Centro Comune di Ricerca

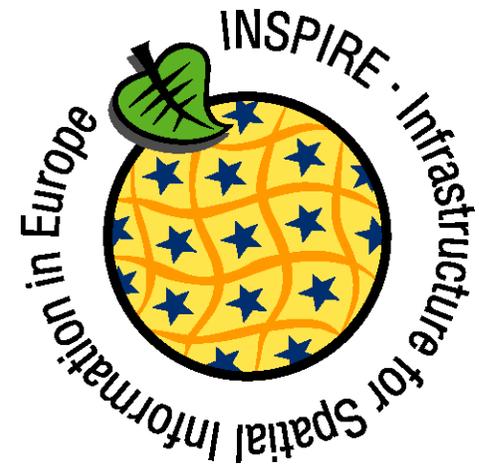Istituto per l'Ambiente e la Sostenibilità

Unità Infrastrutture di Dati Territoriali

Sommario

- Perche' INSPIRE?

- Il contenuto di INSPIRE

- INSPIRE come processo di aggregazione

- Stato dell'arte: dove siamo ora

- Opportunita'

- Oltre INSPIRE…

Perche' INSPIRE ?

*COM(2009) 433 final – "**GDP and beyond.   Measuring progress in a changing world."**

Environmental changes and challenges:
the need of near real-time information for decision-making

*Factors including globalisation and climate change are bringing ever faster changes to the economy, society and the environment. **Policy-making requires equivalent information on all those aspects** – even if this goes at the expenses of accuracy – as it has to react quickly to new developments**

quenze visibili dei cambiamenti climatici
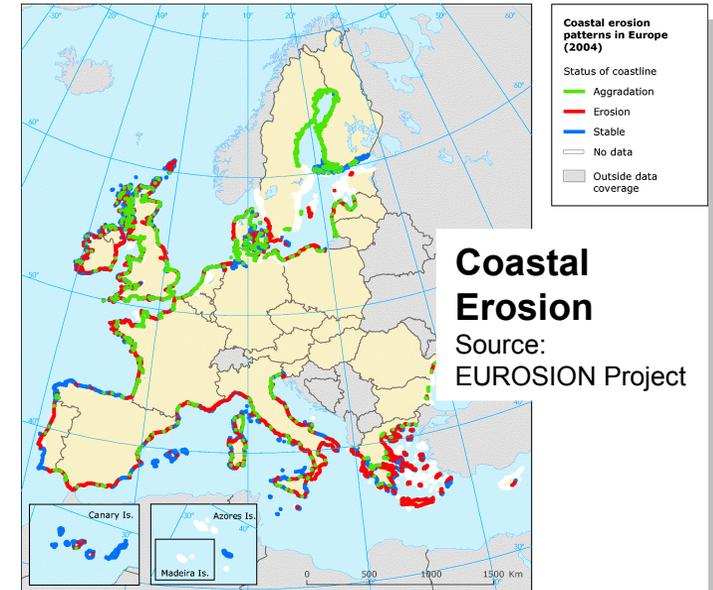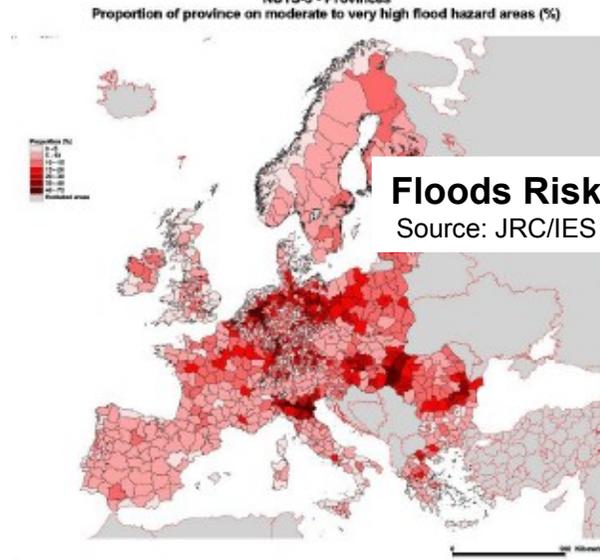

Forest Fire Risk
Source: JRC/IES
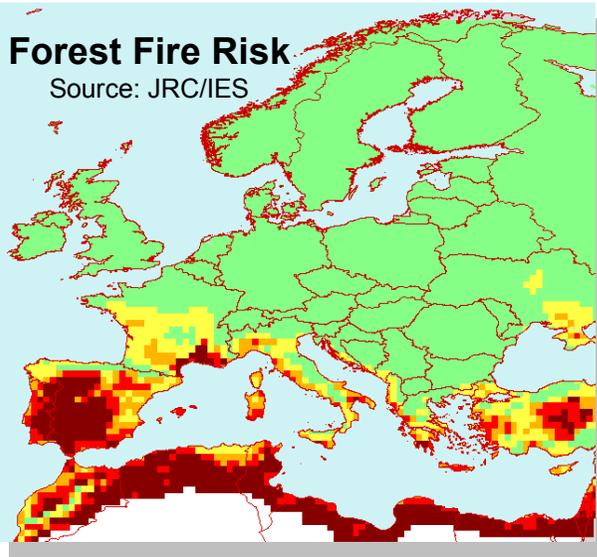
NUTS-3 - Provinces
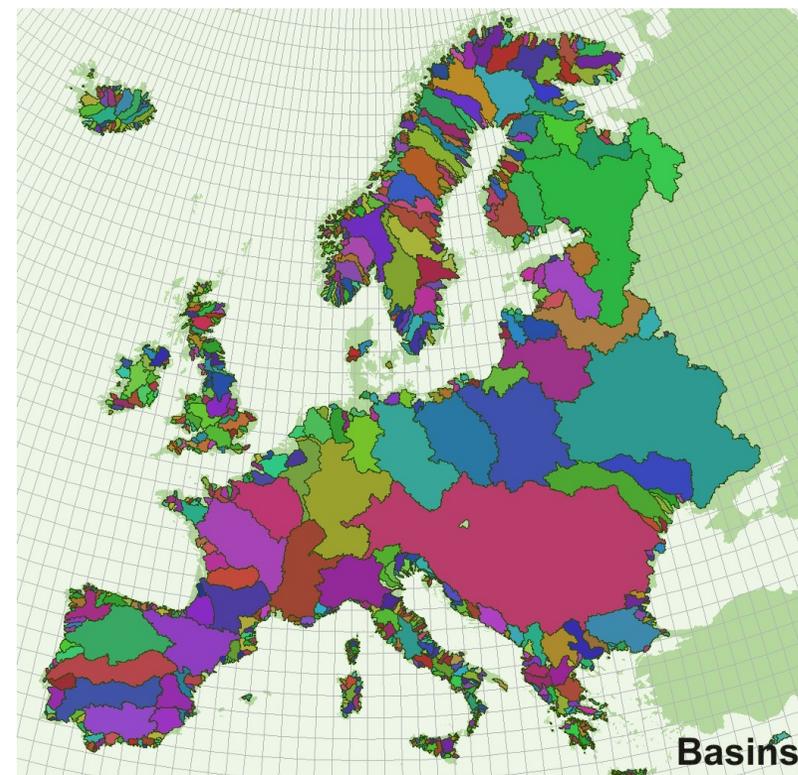Proportion of province on moderate to very high flood hazard areas (%)

Floods Risk
Source: JRC/IES

Coastal erosion patterns in Europe (2004)
Status of coastline
- Aggradation
- Erosion
- Stable
- No data
- Outside data coverage

Coastal Erosion
Source: EUROSION Project
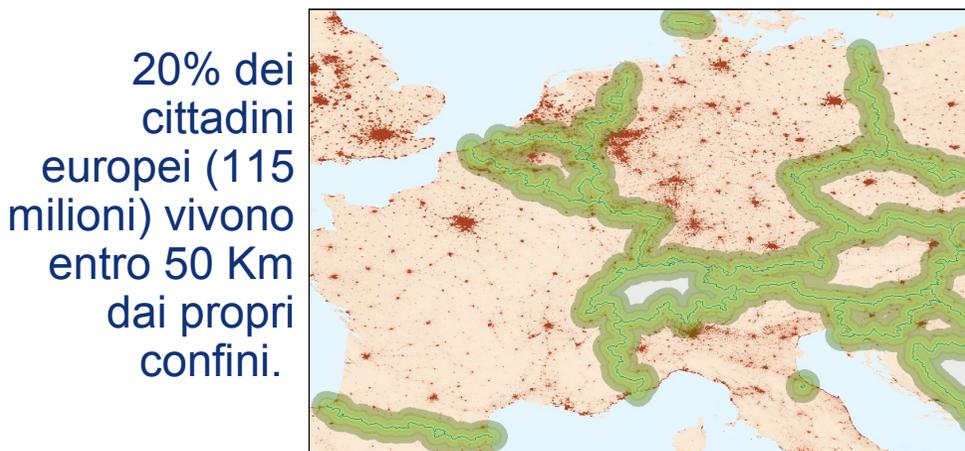
Perché l' Europa necessita interoperabilità e armonizzazione?

I disastri naturali ed altri fenomeni ambientali non si arrestano ai bordi nazionali

20% dei cittadini europei (115 milioni) vivono entro 50 Km dai propri confini.

Population

Bar chart values: POPat 50 Km: 115, DE: 82, FR: 64, UK: 60, IT: 59, SP: 45, PL: 39, RO: 22, NL: 16

Basins
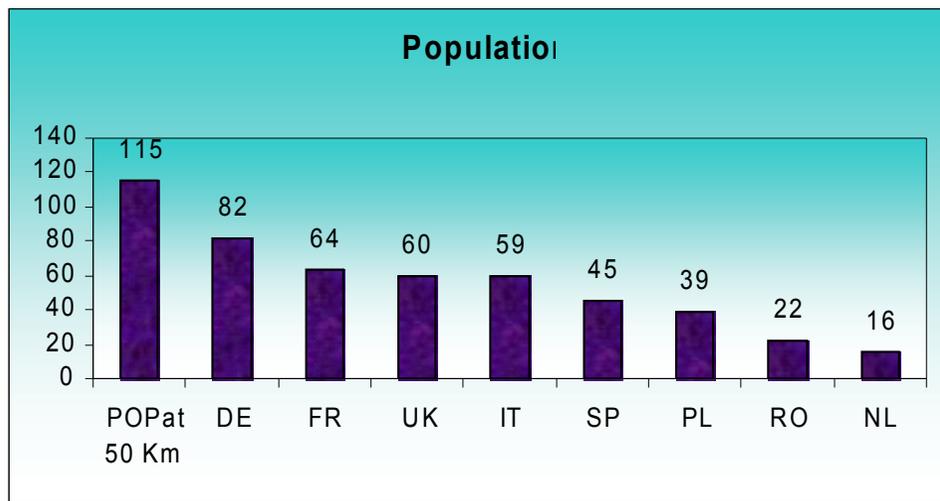
70% dell'acqua in Europa è parte di bacini transnazionali !!

Armonizzare l'informazione geografica in Europa e' un esercizio complesso

… diverse tradizioni, culture, modelli socio-economici .. *che si riflettono in diverse scelte per la gestione dell'informazione geografica*

Lambert Conformal Conic
Oblique Conformal Conic
Oblique Conformal Cylindric
Oblique Stereographic
Transverse Mercator
Transverse Mercator (Gauss-Krüger-System)
Transverse Mercator (UTM)
Bonne

Proiezioni cartografiche

Diversi livelli del mare
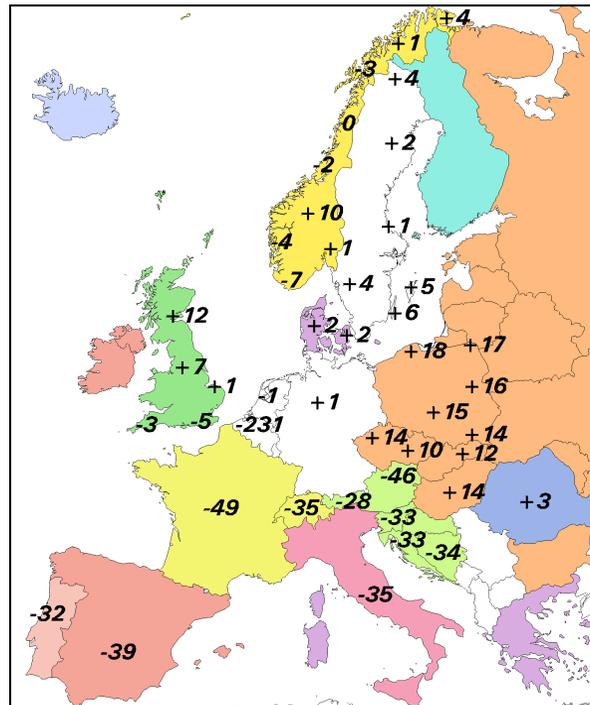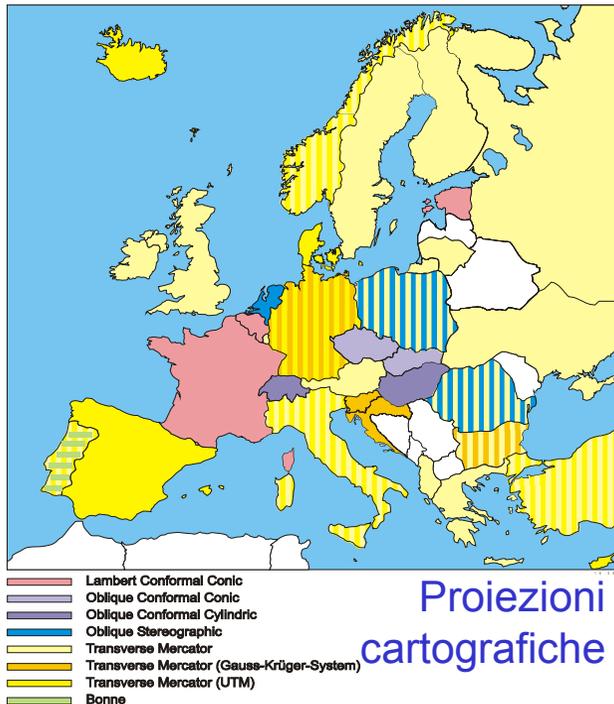
Country	Official and national Languages
Austria	German, Slovene (official in Carinthia), Croatian and Hung
Belgium	Dutch 60%, French 40%, German less than 1%
Bulgaria	Bulgarian
Cyprus	Greek, Turkish, English
Czech Republic	Czech (cestina)
Denmark	Danish (dansk)
Estonia	Estonian (eesti keel)
Finland	Finnish (suomi) 93.4%, Swedish 5.9%
France	French (français)
Germany	German (Deutsch)
Greece	Greek (elliniká, the Koine-Demotic version)
Hungary	Hungarian (magyar)
Ireland	Irish (Gaeilge), English (generally used),
Italy	Italian (italiano)
Latvia	Latvian (latviesu valoda)
Lithuania	Lithuanian (lietuviu kalba)
Luxembourg	Luxembourgish (Lîtzebuergesch), French and German
Malta	Maltese (Malti)
Netherlands	Dutch (Nederlands, official language), Frisian (official lang
Poland	Polish (polski)
Portugal	Portuguese (português)
Romania	Romanian (romana)
Slovakia	Slovak (slovensky jazyk)
Slovenia	Slovenian (slovenski jezik)
Spain	Spanish (español - the Castilian version) 74%, Catalan 17
Sweden	Swedish (svenska)
Switzerland	German 63.7%, French 19.2%, Italian 7.6%, Romansch 0.
United Kingdom	English

23 linguaggi ufficiali
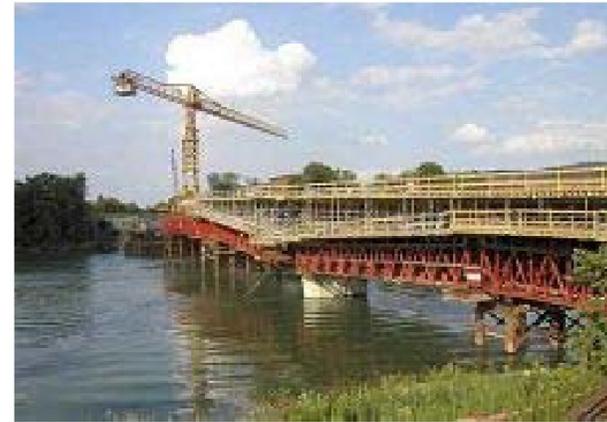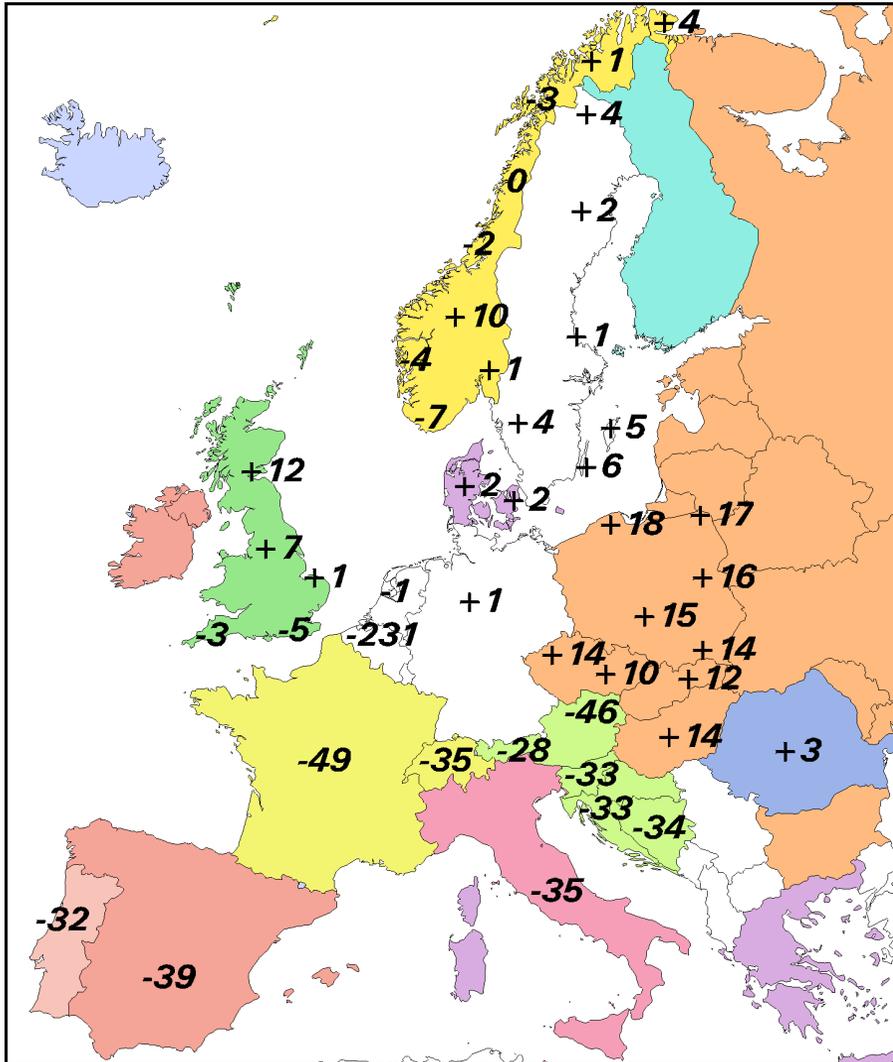
Die neue Brücke bei Laufenburg
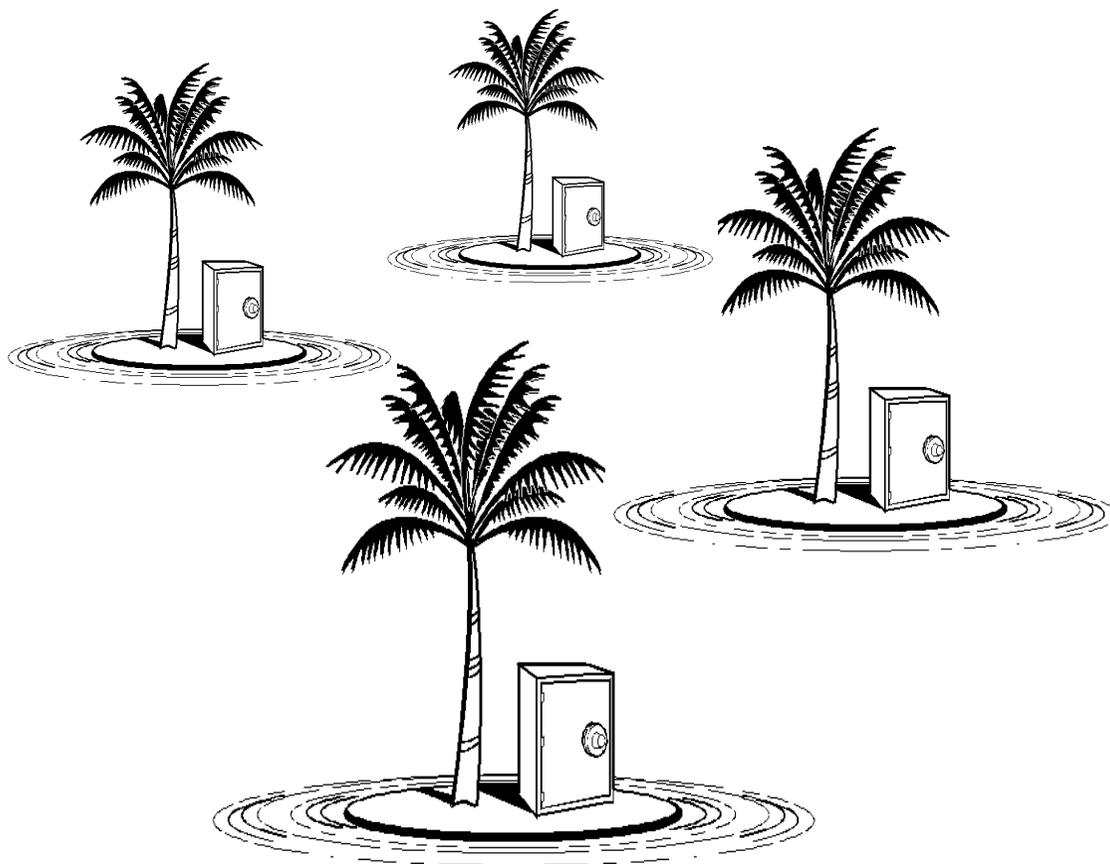
14.01.2004
Città di Laufenburg nel cantone di Argaau sul fiume Reno.

Il ponte già costruito crolla. C'e' una differenza in altezza di 54 cm. fra la parte Svizzera e quella tedesca !

Come è potuto accadere ?
I due Paesi usano diversi sistemi di misurazione e non se ne è tenuto conto correttamente nella fase di progettazione http://www.laufenburg.ch

Il contesto Europeo

1. **Restrizioni nella Politica di Accesso ed Uso dell'informazione**

2. **Mancanza di coordinamento**

3. **Carenze in termini di standardizzaione**

4. **Non utilizzabilità' dei dati**

5. **Incompletezza e duplicazione dei dati**

Cosa richiede INSPIRE ?

La Direttiva INSPIRE 2007/02/EC

INSPIRE stabilisce norme generali per l'istituzione di un'infrastruttura per l'informazione territoriale europea

basata sulle infrastrutture per l'informazione territoriale create e mantenute operative da ciascun Stato Membro

INSPIRE richiede anche specifiche regole di attuazione da adottare attraverso la procedura di Comitologia

Quali dati/servizi?

… dati gestiti da o per conto della pubblica amministrazione.

Annex I	Annex III
1. Coordinate reference systems	1. Statistical units
2. Geographical grid systems	2. Buildings
3. Geographical names	3. Soil
4. Administrative units	4. Land use
5. Transport networks	5. Human health and safety
6. Hydrography	6. Utility and governmental services
7. Protected sites	7. Environmental monitoring facilities
Annex II	8. Production and industrial facilities
1. Elevation	9. Agricultural and aquaculture facilities
2. Addresses	10. Population distribution – demography
3. Cadastral parcels	11. Area management/restriction /regulation zones & reporting units
4. Land cover	12. Natural risk zones
5. Orthoimagery	13. Atmospheric conditions
6. Geology	14. Meteorological geographical features
	15. Oceanographic geographical features
	16. Sea regions
	17. Bio-geographical regions
	18. Habitats and biotopes
	19. Species distribution
	20. Energy resources
	21. Mineral resources

Harmonised spatial data specifications more stringent for Annex I and II than for Annex III

Cos'è una infrastruttura di dati territoriali (SDI*)?

Una SDI facilita l'accesso ai dati ed ai servizi da parte dei suoi utilizzatori

Una SDI rende più facile lo sviluppo di nuove applicazioni e servizi

Così come la rete stradale rende possibile connettere città diverse, così una SDI rende possibile connettere servizi informativi e database territoriali remoti.

*SDI – Spatial Data Infrastructure

I componenti di INSPIRE

1. Metadati

2. Interoperabilità dei dati territoriali e dei servizi

3. Servizi e tecnologie di rete

    accessibili anche tramite il portale Europeo

4. Accordi sulla condivisione dei dati

5. Misure di coordinamento e monitoraggio

Use: Geoportal Viewer

INSPIRE come processo di aggregazione

INSPIRE come processo

Approccio aperto e trasparente per:

Formulare il testo della Direttiva
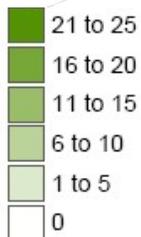
Valutarne l'Impatto

Richiedere l'opinione degli Stati Membri

Mobilizzare gli stakeholders

Fornire materiale per le regole di attuazione

Commentare e proporre revisione ai draft …

Open call per il coinvolgimento degli esperti europei
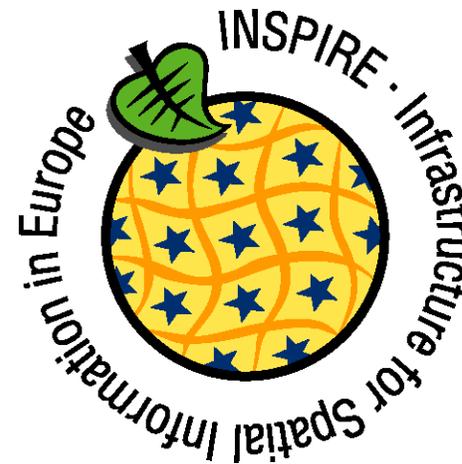## Marzo 2005

	22-06-2005
Spatial Data Interest Communities (SDICs)	139
Legally Mandate Organisations (LMOs)	89
Proposed Experts	193
Referenced Materials	96
Identified Projects	94

21 to 25
16 to 20
11 to 15
6 to 10
1 to 5
0

INSPIRE Stato dell'arte: dove siamo ora

Policy Development - Regulations

Approved

    INSPIRE Directive 2007/2/EC

    Regulation (EC) No 1205/2008 on metadata

    Decision 2009/443/EC on monitoring and reporting

Under approval

    Regulation on Discovery and View services

    Regulation on Data and Services Sharing

To be developed

    Regulation on data interoperability for Annex I

    Regulation on Download and Transformation Services

    Regulation on Invoke Services

    Regulation on data interoperability for Annex II and III

Implementation (started in 2009 after transposition)

December 2010 : The EC establishes and runs a geo-portal at Community level

October 2011: Metadata available for spatial data corresponding to Annex I and II

June 2012: Discovery, view, download and transformation services operational

…

May 2019 : Annex II and III spatial data sets interoperable

Initial Operating Capabilities started in June 2009

INSPIRE Roadmap

Last Updated:22/07/2009

Adoption

Milestone date	Article	Description
15-May-2007	-	Entry into force of INSPIRE Directive
15-Aug-2007	22§2	Establishment of the INSPIRE Committee
14-May-2008	5§4	Submission for opinion of the INSPIRE committee of IR for the creation and updating of metadata
03-Dec-2008	5§4	Adoption of INSPIRE Metadata Regulation
19-Dec-2008	21(4)	Submission for opinion of the INSPIRE committee of IR for monitoring and reporting
19-Dec-2008	16	Submission for opinion of the INSPIRE committee of IR for discovery and view services
24-Dec-2008	5§4	Entry into force of INSPIRE Metadata Regulation
15-May-2009	24§1	Provisions of Directive are brought into force in MS
05-Jun-2009	17(8)	Submission for opinion of the INSPIRE committee of IR governing the access rights of use to spatial data sets and services for Community institutions and bodies
05-Jun-2009	21(4)	Adoption of COMMISSION DECISION regarding INSPIRE monitoring and reporting
December 2009[3]	16	Adoption of INSPIRE Regulation on discovery and view services
14-Dec-2009	9(a)	Submission for opinion of the INSPIRE committee of IRs for the interoperability of spatial data sets and services for Annex I spatial data themes
14-Dec-2009	16	Submission for opinion of the INSPIRE committee of IR for download services
14-Dec-2009	16	Submission for opinion of the INSPIRE committee of IR for transformation services
December 2009[3]	17(8)	Adoption IR governing the access rights of use to spatial data sets and services for Community institutions and bodies
15-May-2012	9(b)	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
June 2012[1]	16	Submission for opinion of the INSPIRE committee of IR for the services allowing spatial data services to be invoked

Implementation

Milestone date	Article	Description
15-May-2010	21§1 21§2	Implementation of provisions for monitoring and reporting
30-Nov-2010	15	The EC establishes and runs a geo-portal at Community level
24-Dec-2010	6(a)	Metadata available for spatial data corresponding to Annex I and II
October 2011[5]	16	Discovery and view services operational
June 2012[1]	16	Download services operational
	16	Transformation services operational
	7§3, 9(a)	Newly collected and extensively restructured Annex I spatial data sets available
24-Dec-2013	6(b)	Metadata available for spatial data corresponding to Annex III
January 2015[5]	7§3, 9(b)	Newly collected and extensively restructured Annex II and III spatial data sets available
June 2017[5]	7§3, 9(a)	Other Annex I spatial data sets available in accordance with IRs for Annex I
30-May-2019	7§3, 9(b)	Other Annex II and III spatial data sets available in accordance with IRs for Annex II and III

1   Date proposed by the commission
3   Under scrunity by European Parliament and Council
5   Date depending on entry into force of measure

Implementazione di INSPIRE negli Stati Membri
(June 2009 – source INSPIRE Committee members)

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
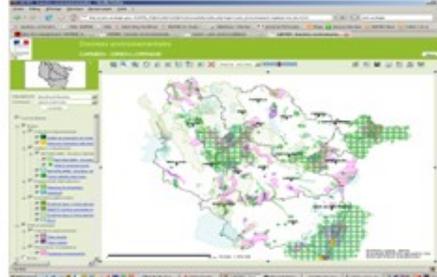
France: CARMEN environmental info system

Latvia: IACS-LPIS view services

Slovenia: real estate market value register
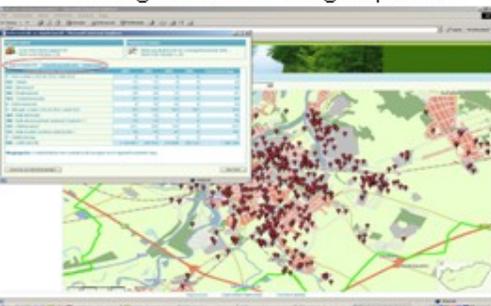
Hungary: OKIR environmental info system

Germany: GDI-DE organisational structure

Lithuania: LGII discovery service

Estonia: road and traffic information systems
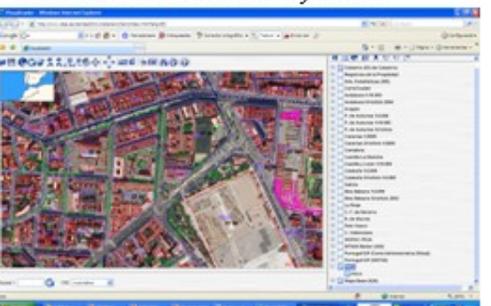
Spain: interoperable Cadastre

UK: Geohub Northern Ireland

Austria: 9 states,1 geoservice
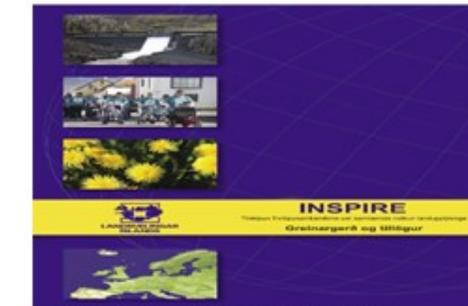
Iceland: getting ready for INSPIRE
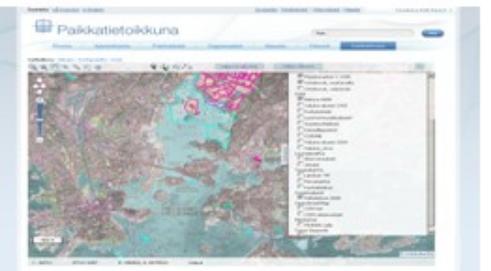
Finland: open source viewer

Netherlands: Space for GeoInformation
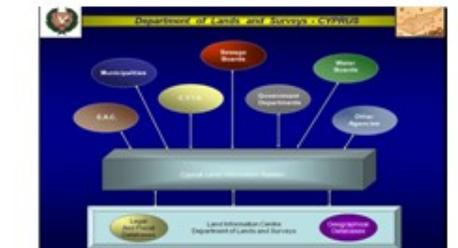
Cyprus: National Land Information Systems

Norway: Norge Digitalt

Opportunita'

….be INSPIREd…

Servizi e tecnologie di rete

Discovery and View

Download

Transformation

Invoke
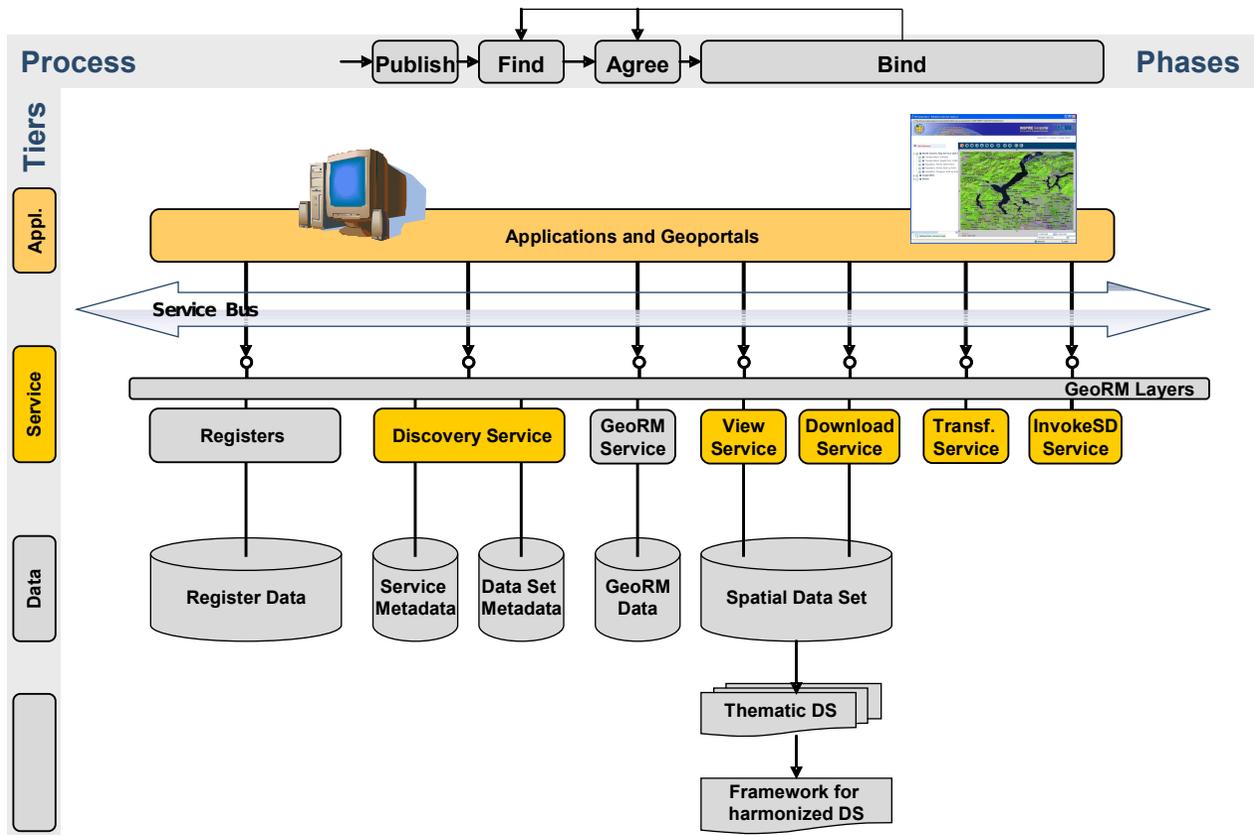

Services Oriented Architecture

Oltre INSPIRE

INSPIRE …

- Non richiede raccolta di nuovi dati…

- Non obbliga a mantenere archivi storici ..

- Non copre tutta l'informazione geografica ma si limita ai dati necessari per le politiche ambientali..

- Non coinvolge direttamente il settore privato.….

- Stabilisce un livello di interoperabilita' "accettabile" da tutti gli stati membri secondo criteri pesati di costi/benefici
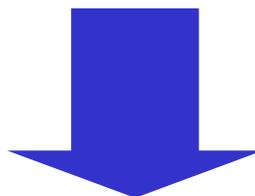
"The Balance Challenge"

Quale livello di interoperabilta' e' piu' appropriato?

Semplice   Complesso
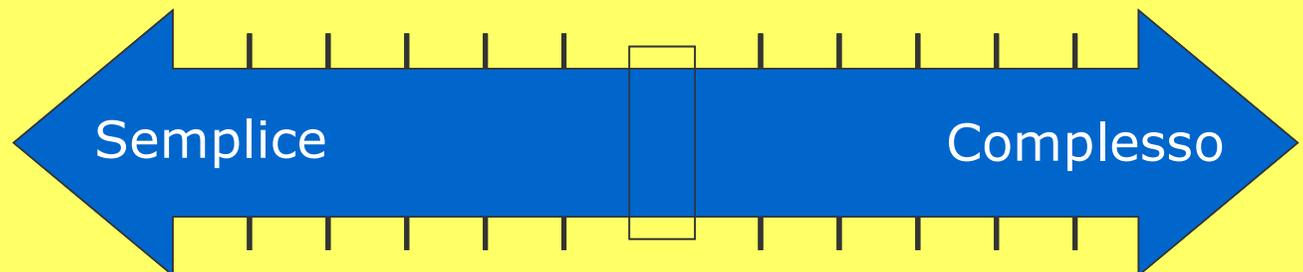
Da INSPIRE verso la nuova Generazione di Digital Earth

Lo sviluppo di una SDI utilizza ancora un approccio top-down orientato al produttore dei dati.

Come unire questi due approcci?

Come possiamo costruire l'infrastruttura oggi (INSPIRE) in modo che resti aperta agli sviluppi di domani?

Quale dovrebbe essere la nostra visione per la nuova Generazione di Digital Earth?

Neogeography e Web 2.0 utilizzano approcci bottom-up tipo social network, in cui gli utilizzatori diventano anche produttori dell'informazione
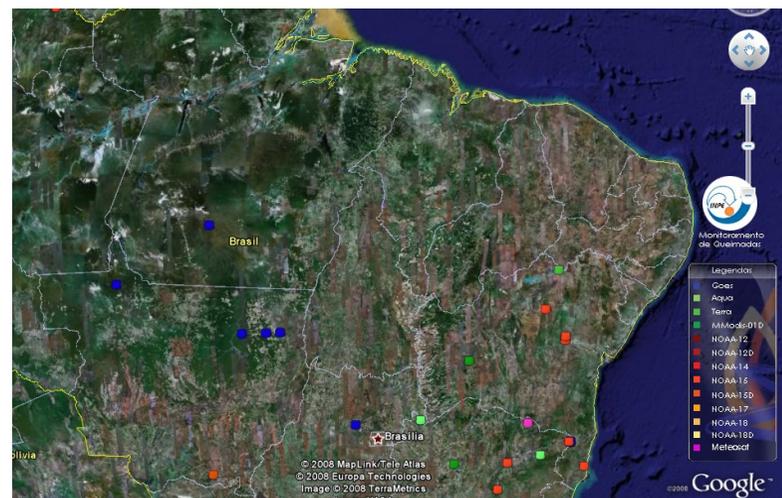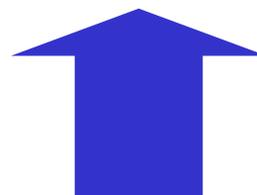
Setting the agenda…

Editorial

Next-Generation Digital Earth*
A position paper from the Vespucci Initiative for the Advancement of Geographic Information Science

Max Craglia[1], Michael F. Goodchild[2], Alessandro Annoni[1], Gilberto Camara[3], Michael Gould[4], Werner Kuhn[5], David Mark[6], Ian Masser[7], David Maguire[8], Steve Liang[9,] Ed Parsons[10]

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http://ijsdir.jrc.ec.europa.eu/

Grazie per l'attenzione

INSPIRE website: **http://inspire.jrc.ec.europa.eu/**

INSPIRE geoportal: **http://www.inspire-geoportal.eu/**