Joint Research Centre

The European Commission's in-house science service

www.jrc.ec.europa.eu

Serving society
Stimulating innovation
Supporting legislation

Who are we and what do we do?

JRC is the European Commission's in-house science service. It provides the science for policy decisions, with a view to ensuring that the EU achieves its Europe 2020 goals for a productive economy as well as a safe, secure and sustainable future.

The JRC plays a key role in the European Research Area and reinforces its multi-disciplinarity by networking extensively with leading scientific organisations in the Member States, Associated Countries and worldwide.

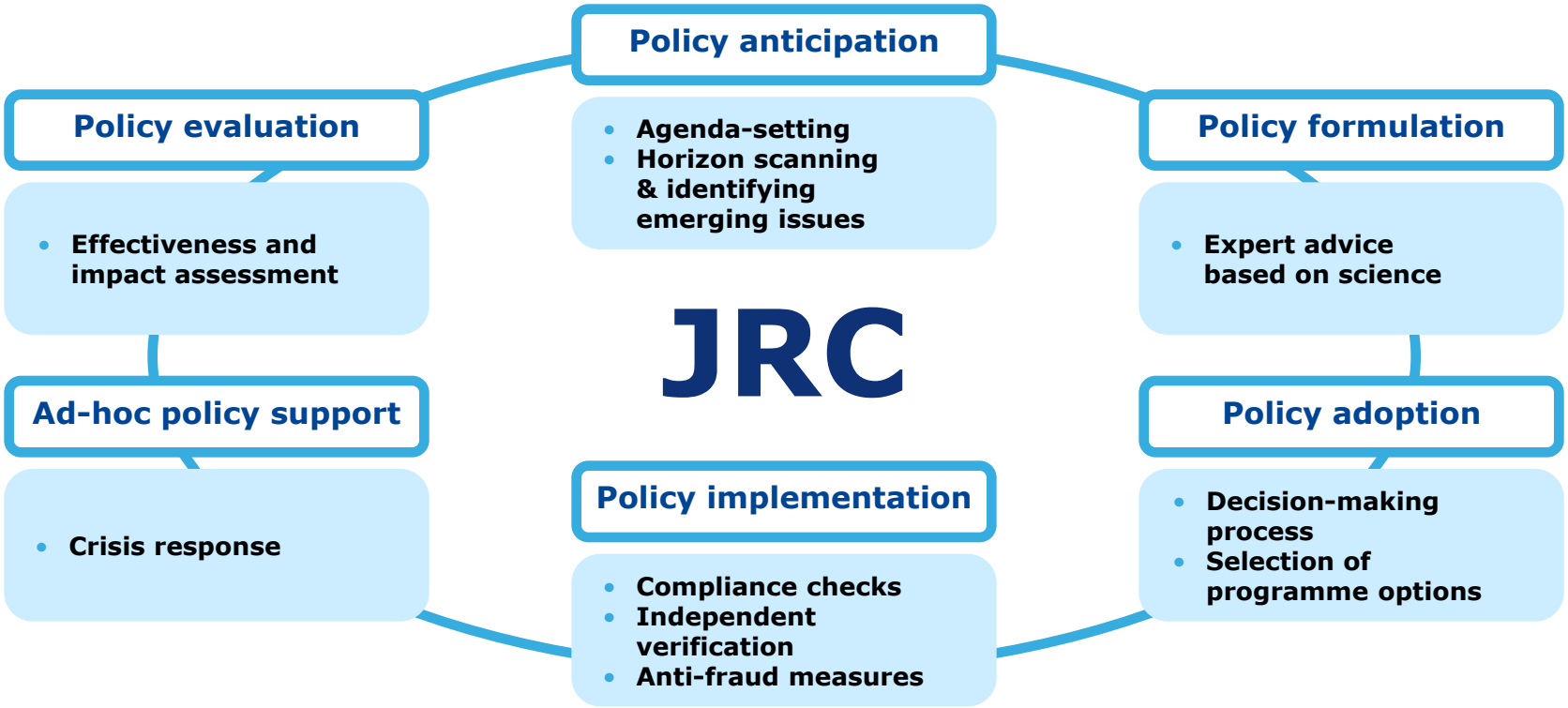
Our Mission… is to work in close cooperation with policy Directorates General to provide EU policies with independent, evidence-based scientific and technical support throughout the whole policy cycle.

Our Vision driven by the Europe 2020 Strategy… is to be a trusted provider of science-based policy options to EU policy-makers to address key challenges facing our society, to stimulate innovation and share know-how with the Member States, scientific community and international partners.

Main competence areas

- Energy
- Clean transport
- Environment & Climate change
- Agriculture & Food security
- Health & Consumer protection
- Safety and security, including nuclear
- Information and communication technology

Implementing the JRC Mission in the EU Policy Cycle



European Commission

Environment and Sustainability

To provide scientific and technical support to EU policies for the protection of the environment and thee more efficient and sustainable management of natural resources at global and continental scales.

7 May 2013

Joint Research Centre

Goals and Policy Objectives

Europe 2020 - Resource Efficient Europe, Digital Agenda, Innovation Union, Integrated Industrial Policy, Global Europe

Eco-design (DG ENTR; DG ENER)
Waste directive (DG ENV)
Bio-economy (DG ENTR, DG RTD)
SCP/SIP Action Plan (DG ENV)

EU Marine strategy (DG ENV, MARE)
Biodiversity Action Plan (DG ENV)
Soil Thematic Strategy (DG ENV)
Water Blueprint – 2050 (DG ENV)
EU Air Policy (DG ENV)
UNCCD
UNCBD
Cohesion funds (DG REGIO)

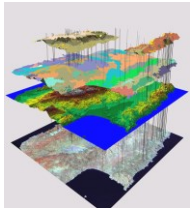
INSPIRE (DG ENV, ESTAT)
GEO (DG RTD)
e-government (DG CONNECT)
GMES (DG ENTR)

Greening the CAP (DG AGRI)
G20 Action Plan
Global agri. monitoring (DG AGRI, DEVCO)

20/20/20 targets (DG CLIMA)
UNFCCC
EU strategy for adaptation to climate change (DG CLIMA, ECHO)
REDD

Green production & consumption

Managing our natural resources



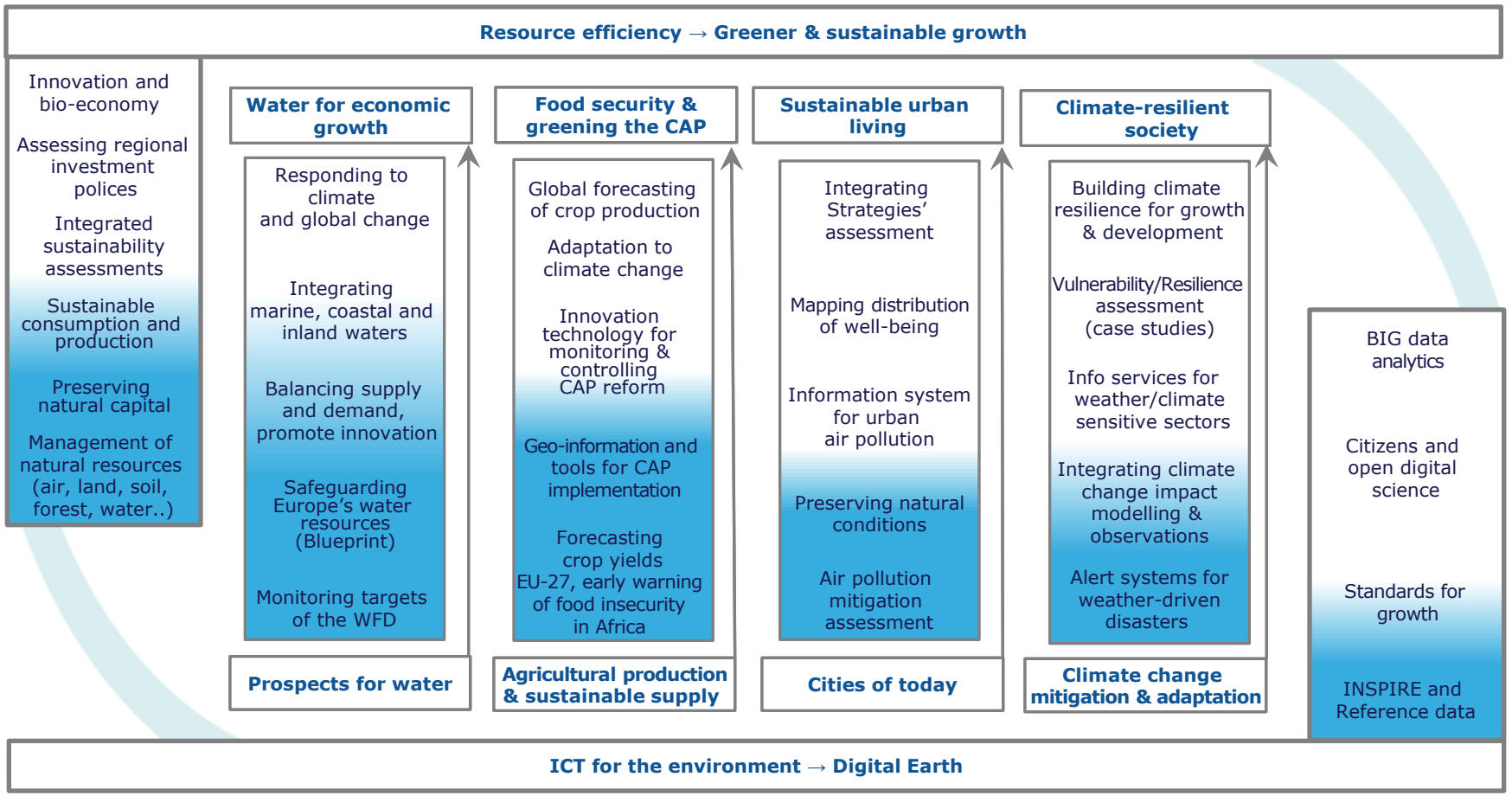
Food Security

Digital Earth

Living with climate change

Joint Research Centre

Priorities


Resource efficiency → Greener & sustainable growth
Innovation and bio-economy
Assessing regional investment polices
Integrated sustainability assessments
Sustainable consumption and production
Preserving natural capital
Management of natural resources (air, land, soil, forest, water..)
Water for economic growth
Responding to climate and global change
Integrating marine, coastal and inland waters
Balancing supply and demand, promote innovation
Safeguarding Europe's water resources (Blueprint)
Monitoring targets of the WFD
Prospects for water
Food security & greening the CAP
Global forecasting of crop production
Adaptation to climate change
Innovation technology for monitoring & controlling CAP reform
Geo-information and tools for CAP implementation
Forecasting crop yields EU-27, early warning of food insecurity in Africa
Agricultural production & sustainable supply
Sustainable urban living
Integrating Strategies' assessment
Mapping distribution of well-being
Information system for urban air pollution
Preserving natural conditions
Air pollution mitigation assessment
Cities of today
Climate-resilient society
Building climate resilience for growth & development
Vulnerability/Resilience assessment (case studies)
Info services for weather/climate sensitive sectors
Integrating climate change impact modelling & observations
Alert systems for weather-driven disasters
Climate change mitigation & adaptation
BIG data analytics
Citizens and open digital science
Standards for growth
INSPIRE and Reference data
ICT for the environment → Digital Earth
Future expansion
Already deployed
Joint Research Centre

Our integrated approach

- Multi-policy dimension – towards policy coherence
- European and global perspective
- Strengthened modelling capacity
- Collaboration with MSs, international community, private sector
- Multi-customer profile

CLIMATE RISK MANAGEMENT

2050

climate scenario's

MITIGATION

TODAY

infrastructure

natural resources

people

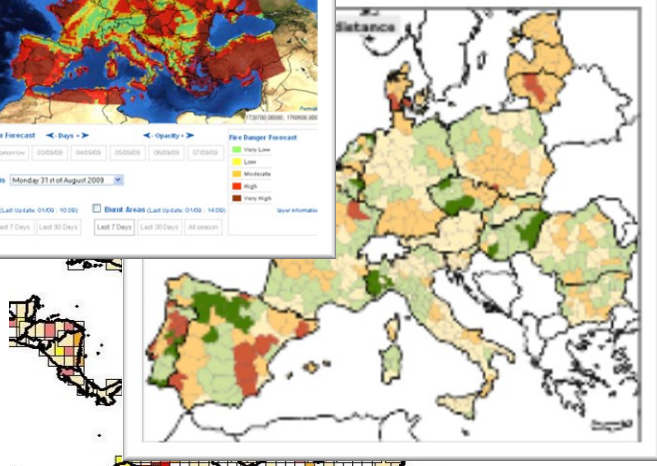
- VULNERABILITY
- ADAPTATION

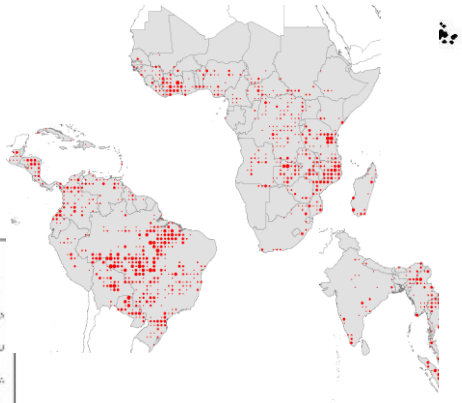
floods droughts heat waves

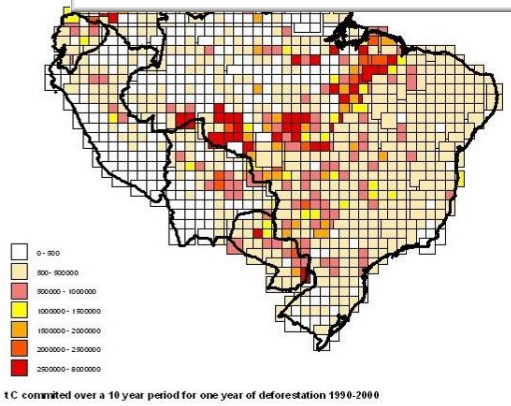
Supported by Earth Observations and Earth System Modelling

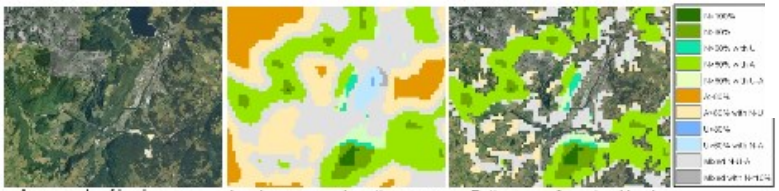
Forest Resources and Climate

- **Collecting base parameters:** forest cover, species
- **Monitoring Fire:** danger mapping, alerts
- **Change:** especially deforestation
- **Climate parameters:** carbon sinks, sources, emissions
- **Modelling:**
  - fragmentation, LULUCF
  - support to policy definition









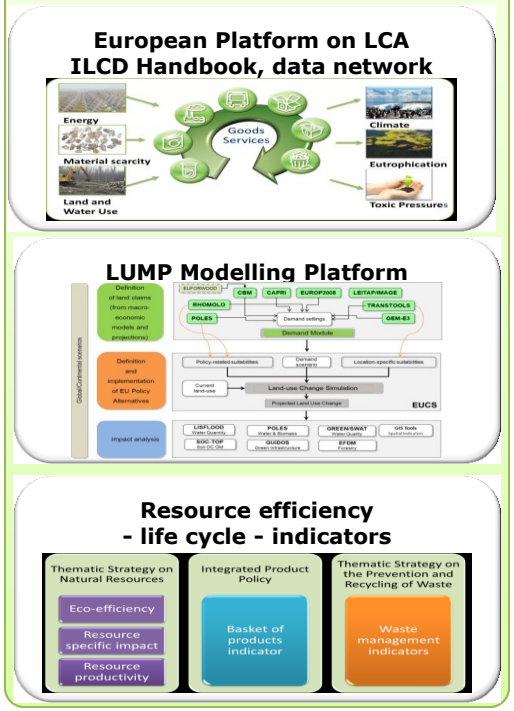
tC commited over a 10 year period for one year of deforestation 1990-2000

From Natural Resource Efficiency towards Sustainable Development

EU Strategies

1. Resource Efficient Europe
2. Innovating for Sustainable Growth: a Bioeconomy for Europe Strategy
3. SCP/SIP Action Plan
4. Review of the Sustainable Development Strategy

Integrated Sustainability Assessment



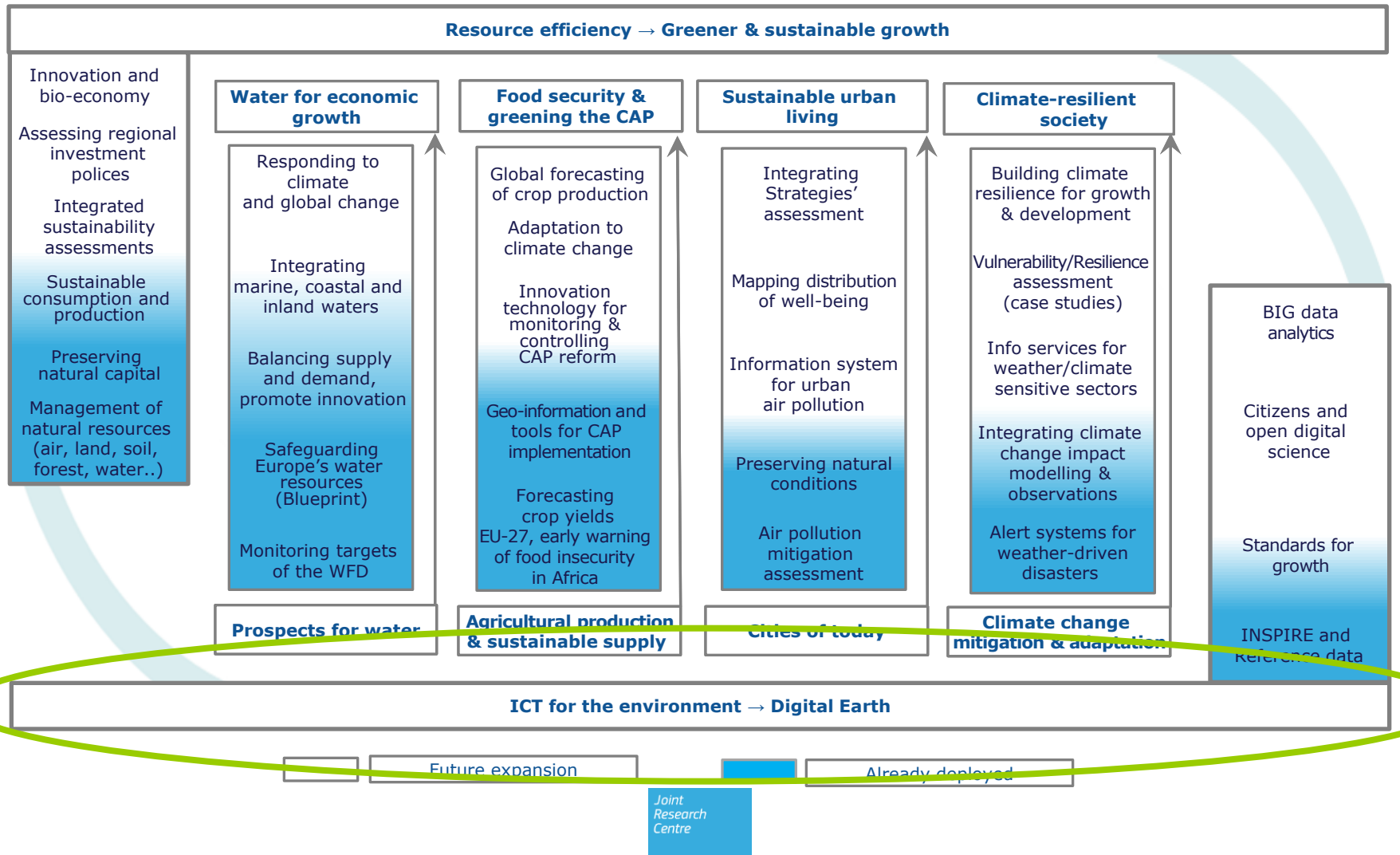
Results

- Environmental sustainability assessments ex. raw materials, processes, products, shale gas;
- Research-based methodological support to SCP policies;
- Environmental footprint.

- Sustainability scenarios and analyses based on the modelling platform;
- Assessing regional development polices.

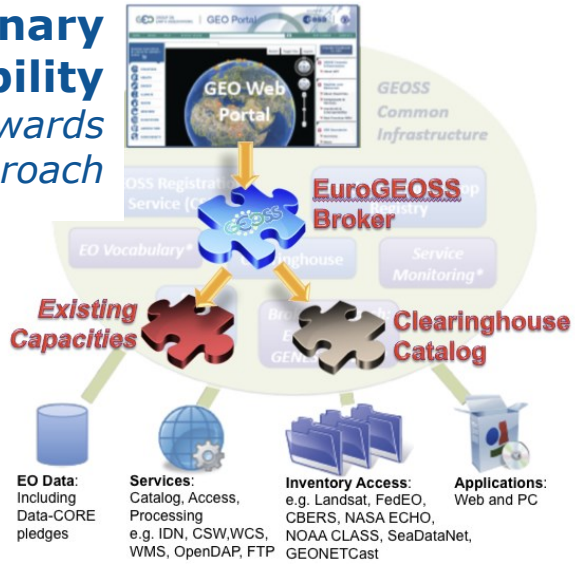
- Environmental impact including impacts from trade;
- Bioeconomy Observatory.

Priorities


Resource efficiency → Greener & sustainable growth
Innovation and bio-economy
Assessing regional investment polices
Integrated sustainability assessments
Sustainable consumption and production
Preserving natural capital
Management of natural resources (air, land, soil, forest, water..)
Water for economic growth
Responding to climate and global change
Integrating marine, coastal and inland waters
Balancing supply and demand, promote innovation
Safeguarding Europe's water resources (Blueprint)
Monitoring targets of the WFD
Prospects for water
Food security & greening the CAP
Global forecasting of crop production
Adaptation to climate change
Innovation technology for monitoring & controlling CAP reform
Geo-information and tools for CAP implementation
Forecasting crop yields EU-27, early warning of food insecurity in Africa
Agricultural production & sustainable supply
Sustainable urban living
Integrating Strategies' assessment
Mapping distribution of well-being
Information system for urban air pollution
Preserving natural conditions
Air pollution mitigation assessment
Cities of today
Climate-resilient society
Building climate resilience for growth & development
Vulnerability/Resilience assessment (case studies)
Info services for weather/climate sensitive sectors
Integrating climate change impact modelling & observations
Alert systems for weather-driven disasters
Climate change mitigation & adaptation
BIG data analytics
Citizens and open digital science
Standards for growth
INSPIRE and
ICT for the environment → Digital Earth
Future expansion
Already deployed
Joint Research Centre

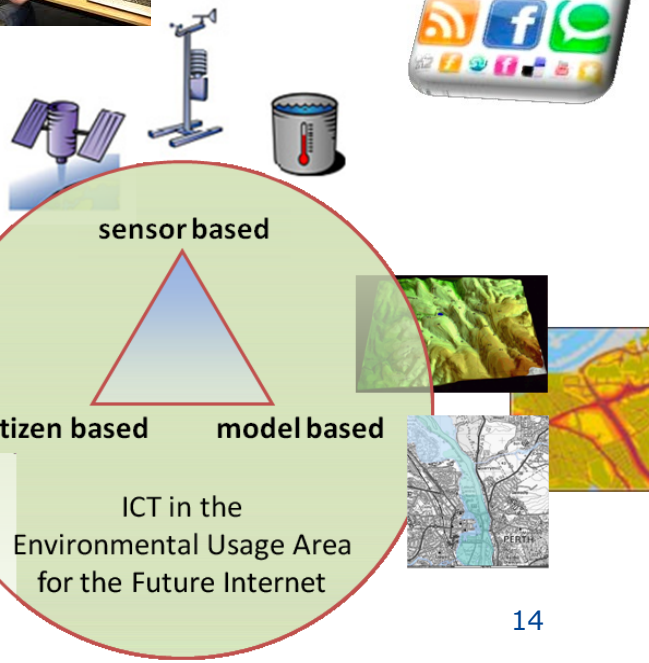
Digital Earth

Multi-disciplinary interoperability
from standard towards brokering approach



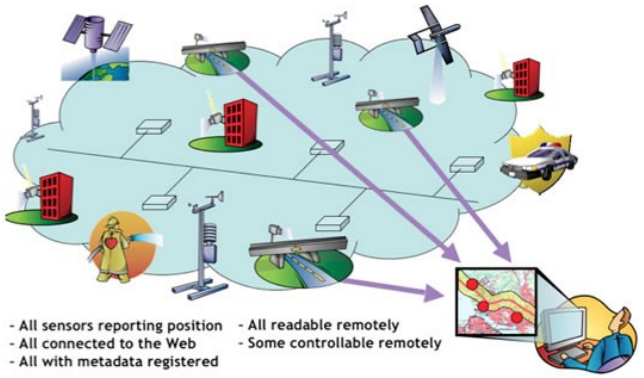
Big data
the next frontier for innovation, competition and productivity

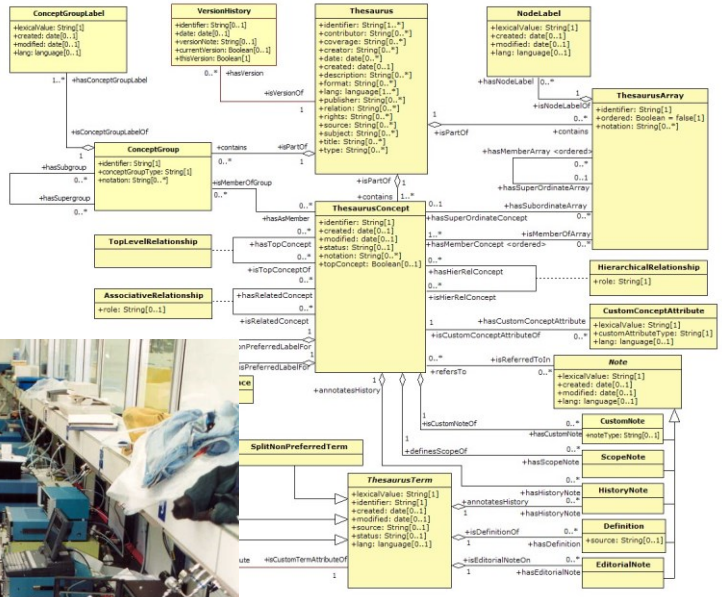
Sensor web, citizen science, Future Internet

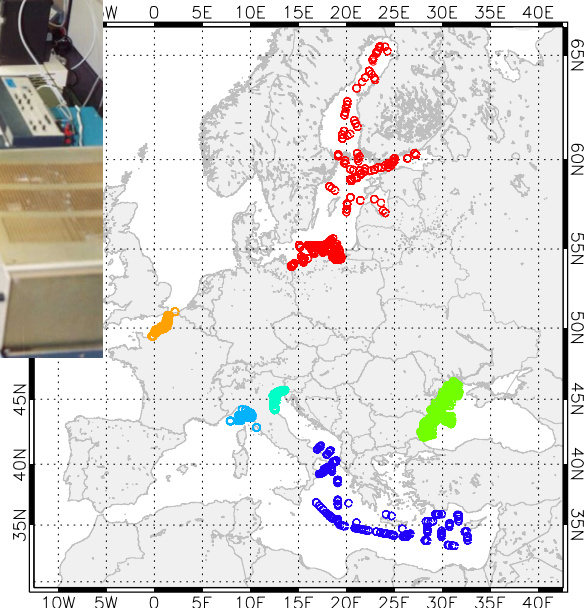


Environmental standards

- **Geo-spatial data**
  - INSPIRE data specifications
- **Location based services**
  - Toward a EU Location Framework
- **ERLAP intercomparison facility**
  - harmonised air quality measurements
- **Validation of Earth Observation**
  - standardized in situ measurements across for validation of satellite ocean color missions







Joint Research Centre

Standards for growth

Formal and de-facto Standards Developing Organizations

Word-wide re-use of expertise, experience, and networks

INSPIRE standards

Training offer for SME's

Best Practices for SME's

Geo-ICT SME's database

SME's Discussion Forum

SME SPIRE

isa

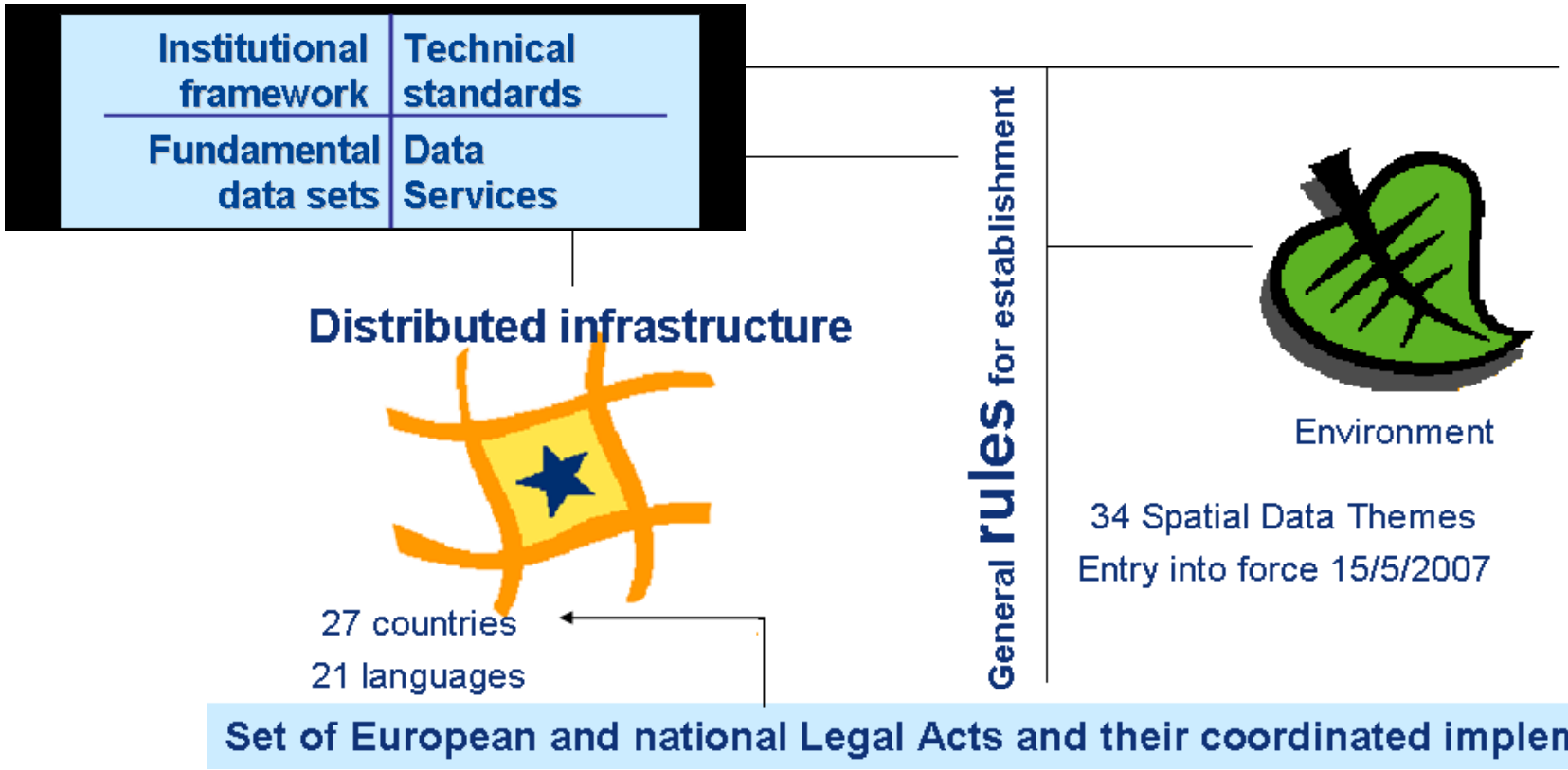
e-Government Core Vocabularies, W3C

Semantic Assets: Asset Description Metadata Schema

Joint Research Centre

What is INSPIRE?

"Infrastructure for Spatial Information in the European Community"



INSPIRE Legal Acts published in the Official Journal of the EU

Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) *14.03.2007*

INSPIRE **Metadata** Regulation *03.12.2008 (corrigendum 15.12.2009)*

Commission Decision regarding INSPIRE **monitoring and reporting** *05.06.2009*

Regulation on INSPIRE **Network Services** *19.10.2009 (View and discovery)*

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 list)*

European law affecting 30+ countries, 21+ languages

INSPIRE Thematic Scope

Annex I

1. Coordinate reference systems
2. Geographical grid systems
3. Geographical names
4. Administrative units
5. Addresses
6. Cadastral parcels
7. Transport networks
8. Hydrography
9. Protected sites

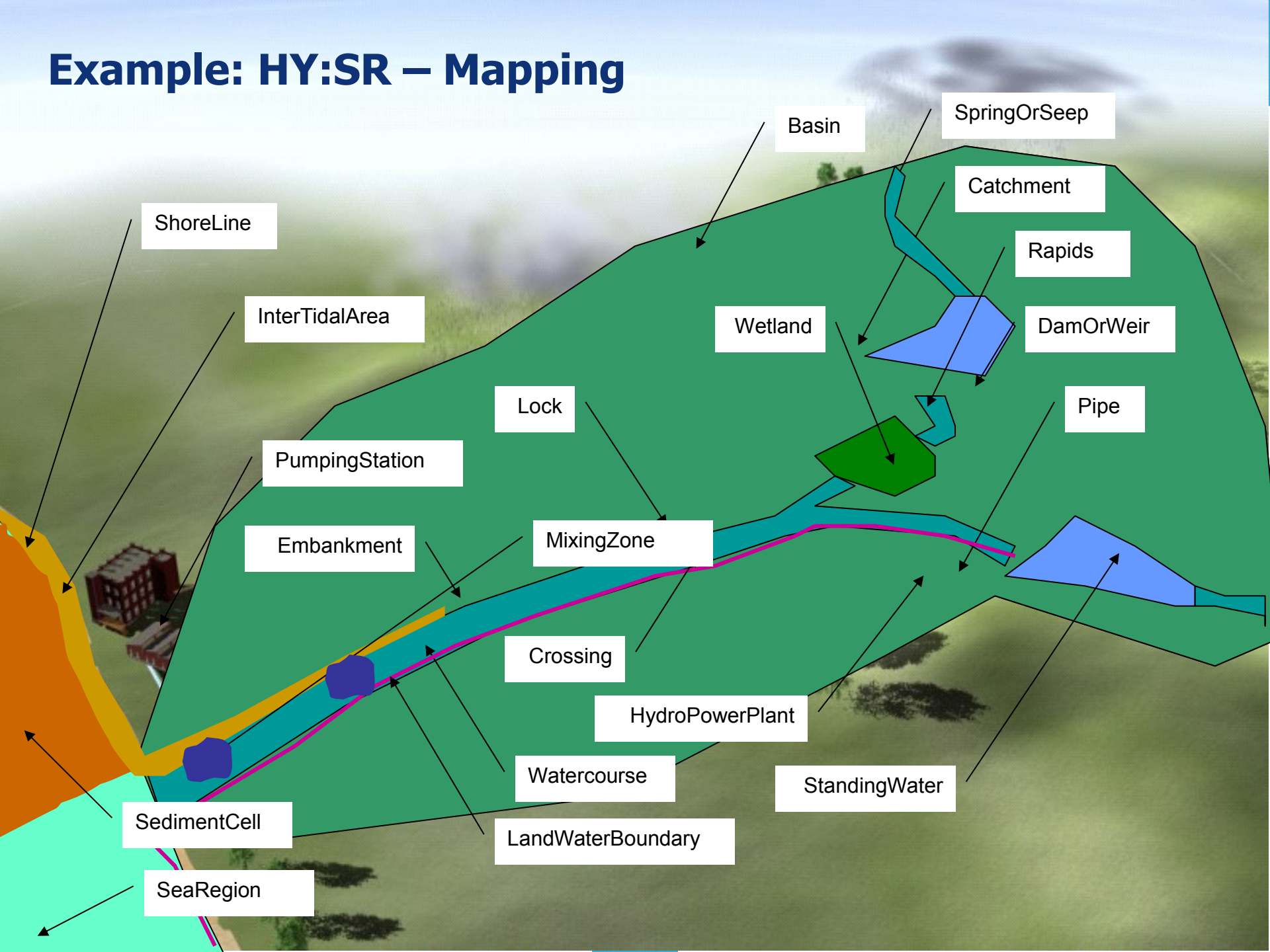
Annex II

1. Elevation
2. Land cover
3. Ortho-imagery
4. Geology

Annex III

1. Statistical units
2. Buildings
3. Soil
4. Land use
5. Human health and safety
6. Utility and governmental services
7. Environmental monitoring facilities
8. Production and industrial facilities
9. Agricultural and aquaculture facilities
10. Population distribution – demography
11. Area management/ restriction/regulation zones & reporting units
12. Natural risk zones
13. Atmospheric conditions
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

Example: HY:SR – Mapping



INSPIRE's evolving policy context

*7th Environmental Action Plan (**EAP**)*

'Living well, within the limits of our planet'

Provision and improvement of structuring and disseminating ***environmental knowledge*** in particular, for all key EU obligations in the environmental field

Priority objective 5: To improve the evidence base for environment policy

Shared Environmental Information System (SEIS), INSPIRE, GMES

"… The potential contribution of bottom-up approaches to data and information gathering and dissemination should also be recognized and promoted, such as **voluntary citizen science** initiatives which are also important in engaging and informing the public…"

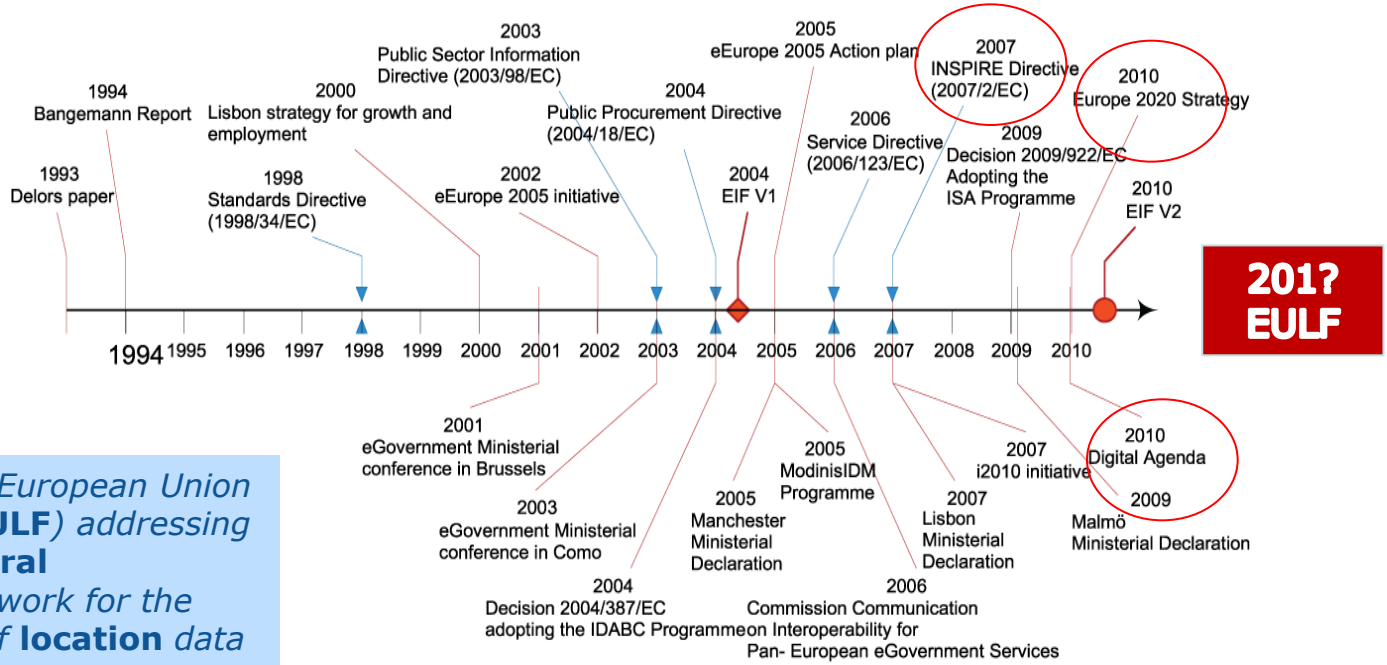
Digital Agenda for Europe

a flagship initiative 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

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

*Objective is to create a European Union Location Framework (**EULF**) addressing a EU wide, **cross-sectoral interoperability** framework for the exchange and sharing of **location** data and services*


European Commission
Thank you for your attention!
Welcome to the INSPIRE Conference 2013!
Florence, 23-27 June 2013
Inspire-info@jrc.ec.europa.eu
http://inspire.ec.europa.eu
Joint Research Centre