

# Introduction about the adopted approach for interoperability in the context of INSPIRE

Giorgio Saio  
GISIG

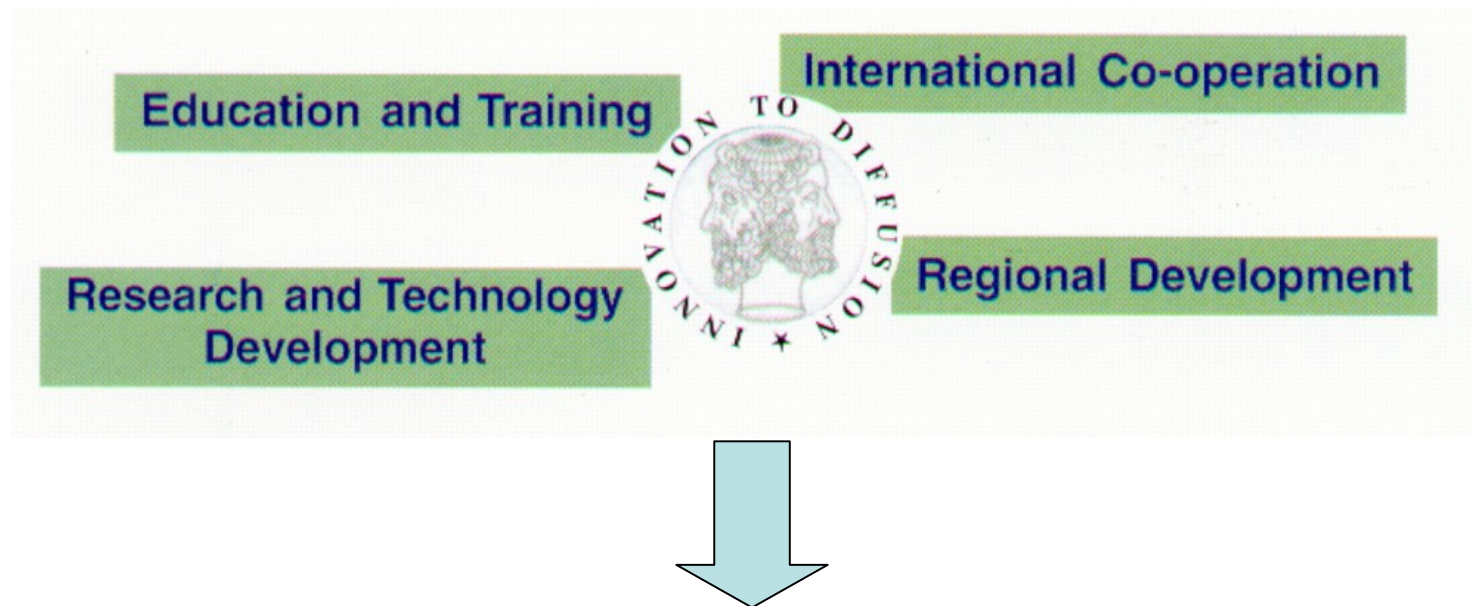
# Objectives of the Association



A European Network for innovation and technology transfer in the GI sector and its application domains (territorial planning, water resources and utility networks, coastal management, nature conservation....) for:

- Sharing experience among universities, companies, National and local Bodies and users
- Promoting and developing projects of common interest, with particular reference to the EU programmes

# Activity → EU Projects – Thematic Networks



- Developed initiatives and EU projects, also with the promotion of thematic networks (participated by several organisations) such as:
  - Water resources Management
  - Coastal Management
  - Nature Conservation
  - .....
- Applications and technical solutions in line with the EU Directives for Geographic Information (INSPIRE, SEIS Communication for a Shared Environment Information System for Europe, etc.)

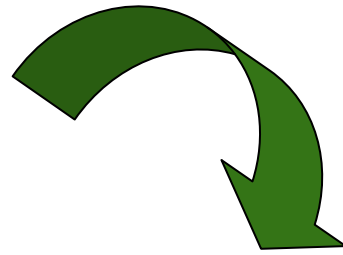
Duration: 01/05/2008 – 31/10/2010

## Main outcomes:

- The document “Towards the ICT implementation of SEIS”, produced after a consultation among the SEIS Community for a better shared common position.
- In a training perspective, an e-Learning training module “Towards the ICT implementation of SEIS” to offer a structured guide about the technical proposals defined by NESIS for the SEIS implementation.
- A Catalogue of Good Practices for Environment Management

## Partnership





Follow up

eENVplus



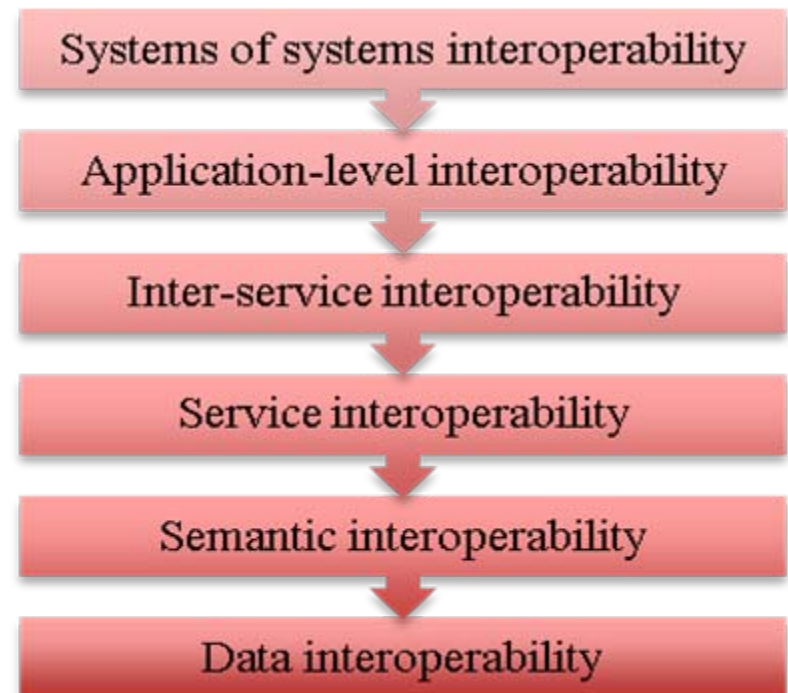
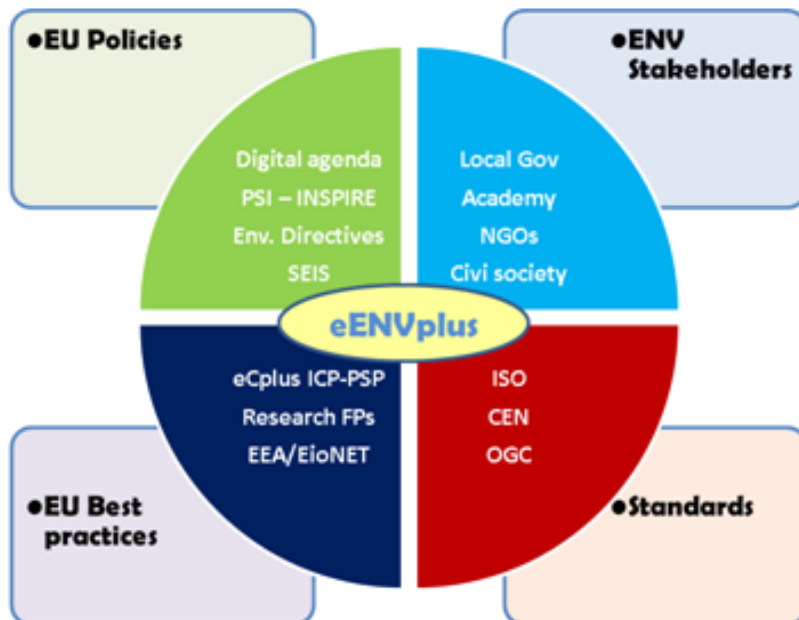
# eENVplus - eEnvironmental services for advanced applications within INSPIRE

CIP – Pilot Actions

Grant agreement no: 325232

Starting date: 01 January 2013

- to support INSPIRE and SEIS implementation
- through deployment and integration of value-added eEnvironment services
- available at national level and through past/on-going key EC-funded project
- eENVplus provides Members State and the GI Communities, with tools addressing a **multi-level interoperability stack**:



# European projects background



- **NESIS** - A Network to enhance a European Environmental Shared and Interoperable Information System (ICT PSP project)
- **NATURE-SDIplus** - Best Practice Network for SDI in Nature Conservation (eContentplus project)
- **BRISEIDE** - Bridging services, information and data for Europe (ICT PSP project)
- **OneGeology Europe** - Making digital geological spatial data more easily discoverable, accessible and useable
- **HUMBOLDT** - Towards the Harmonisation of Spatial Information in Europe (FP6 GMES project)
- **CAFE** - Development and demonstration of technical IT solutions for data exchange and reporting under the CAFE Directive using INSPIRE services"
- **VESTA-GIS** - Development of a training infrastructure (LdV)



## INSPIREd SDI

A set of components performing the overall operational workflow for the design and the deployment of **SDI based on the INSPIRE implementing rules** and standards.

## Harmonisation and Validation

A comprehensive toolkit providing **procedures, guidelines and examples** for data harmonisation and validation as well as an online Validation Service.

## Innovative Services

A set of **innovative added-value interoperable services** aiming to facilitate the development of innovative environmental applications.

# Outcomes

## Metadata Management

A comprehensive, open and scalable infrastructure able to **integrate existing infrastructures and directly accessible from 3rd-party clients**, including the EU INSPIRE geoportal.

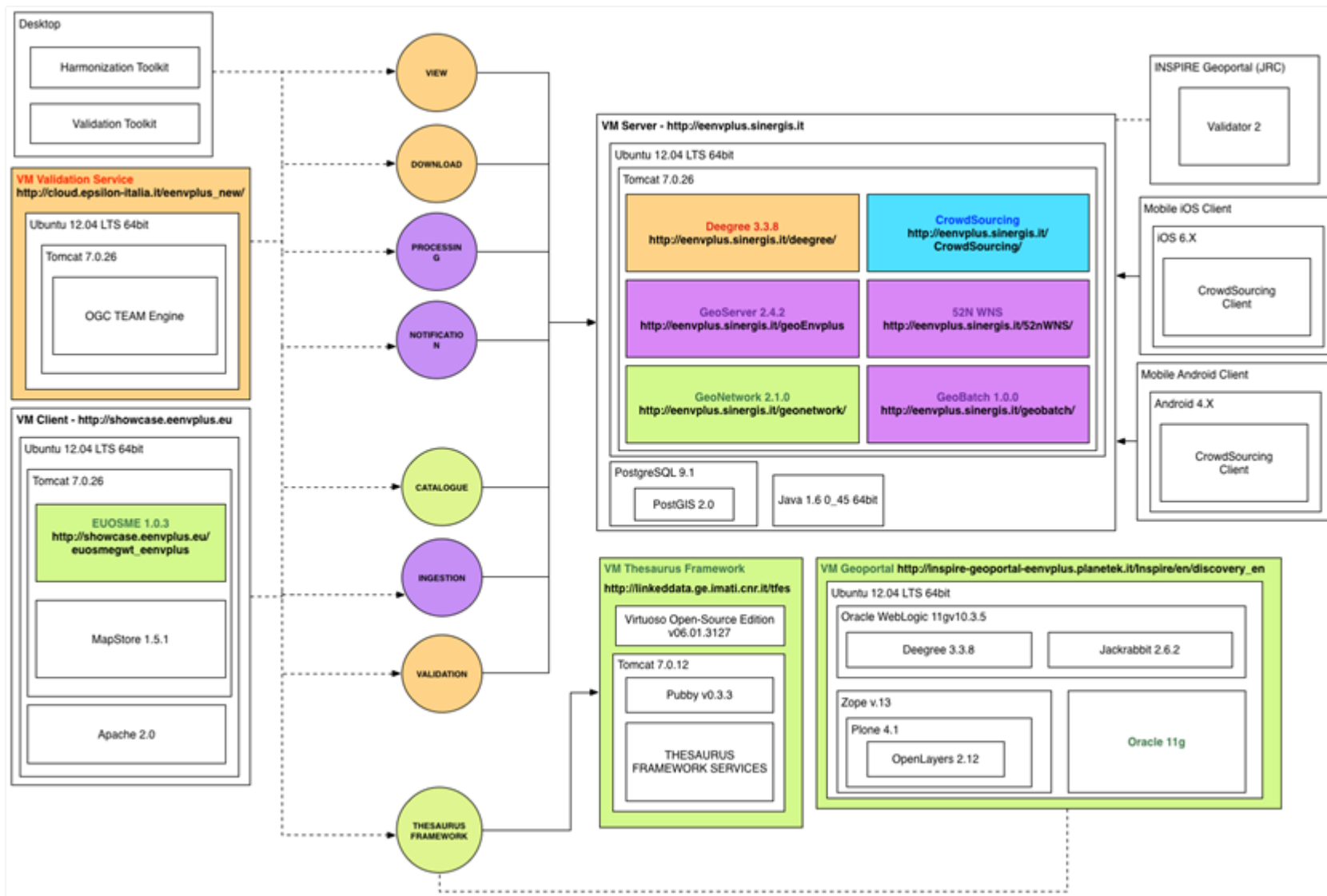
## Environmental Thesaurus

A **Framework of Linked Thesauri** for the Environment providing some of the relevant vocabularies for the Environment via Linked Data and a set of services for its exploitation.

## Training in INSPIRE

A **Training Framework** to support, with eLearning tools, the development of the necessary capacities and knowledge to implement INSPIRE.



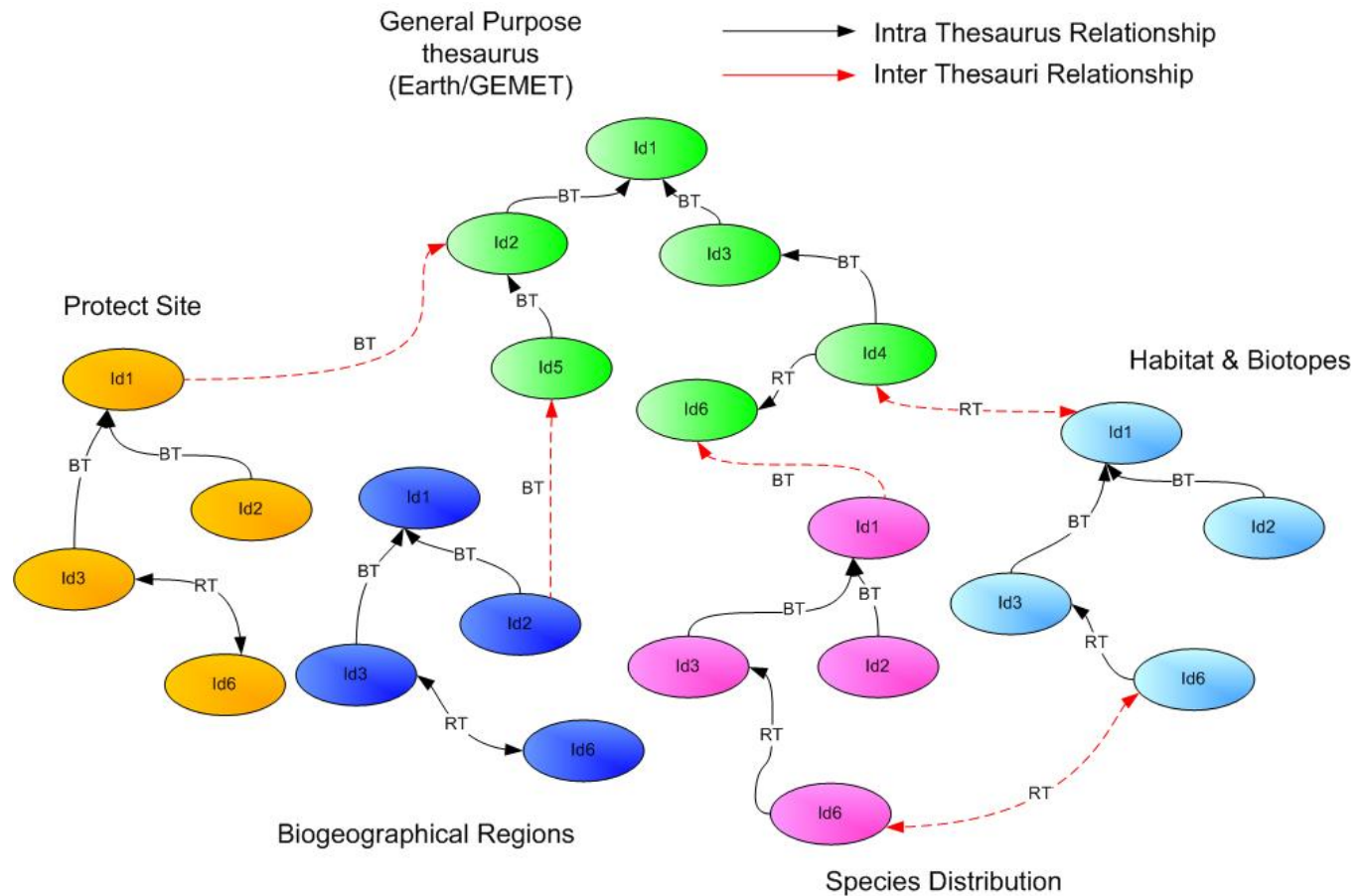


# Underlying content, INSPIRE data Themes

- ❑ Various National datasets related to many INSPIRE Annex I-II-III Data Themes, are considered for eENVplus (some are under IPR, many are Open Data)
- ❑ After the 1<sup>st</sup> data analysis, not all of them have been harmonised

Pilot Applications: EP01 EP02 EP03 EP04 EP05 EP06 EP07 EP08 EP09 EP10									
<b>ANNEX I</b>									
1. RS: Coordinate reference systems									
4. AU: Administrative units									
6. CP: Cadastral parcels									
8. HY: Hydrography									
9. PS: Protected sites									
<b>ANNEX II</b>									
2. LC: Land cover									
3. OI: Orthoimagery									
4. GE: Geology									
<b>ANNEX III</b>									
1. SU: Statistical units									
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									
11. AM: Area mng/rest/reg zones & rep. units									
12. NZ: Natural risk zones									
13. AC: Atmospheric conditions									
14. MF: Meteorological geographical features									
17. BR: Bio-geographical regions									
18. HB: Habitats and biotopes									
19. SD: Species distribution									

# Thesaurus Framework



- integration of different available thesauri
- cross walking from a thesaurus to another

- eENVplus infrastructure is composed by a set of components combined into the nodes of the infrastructure

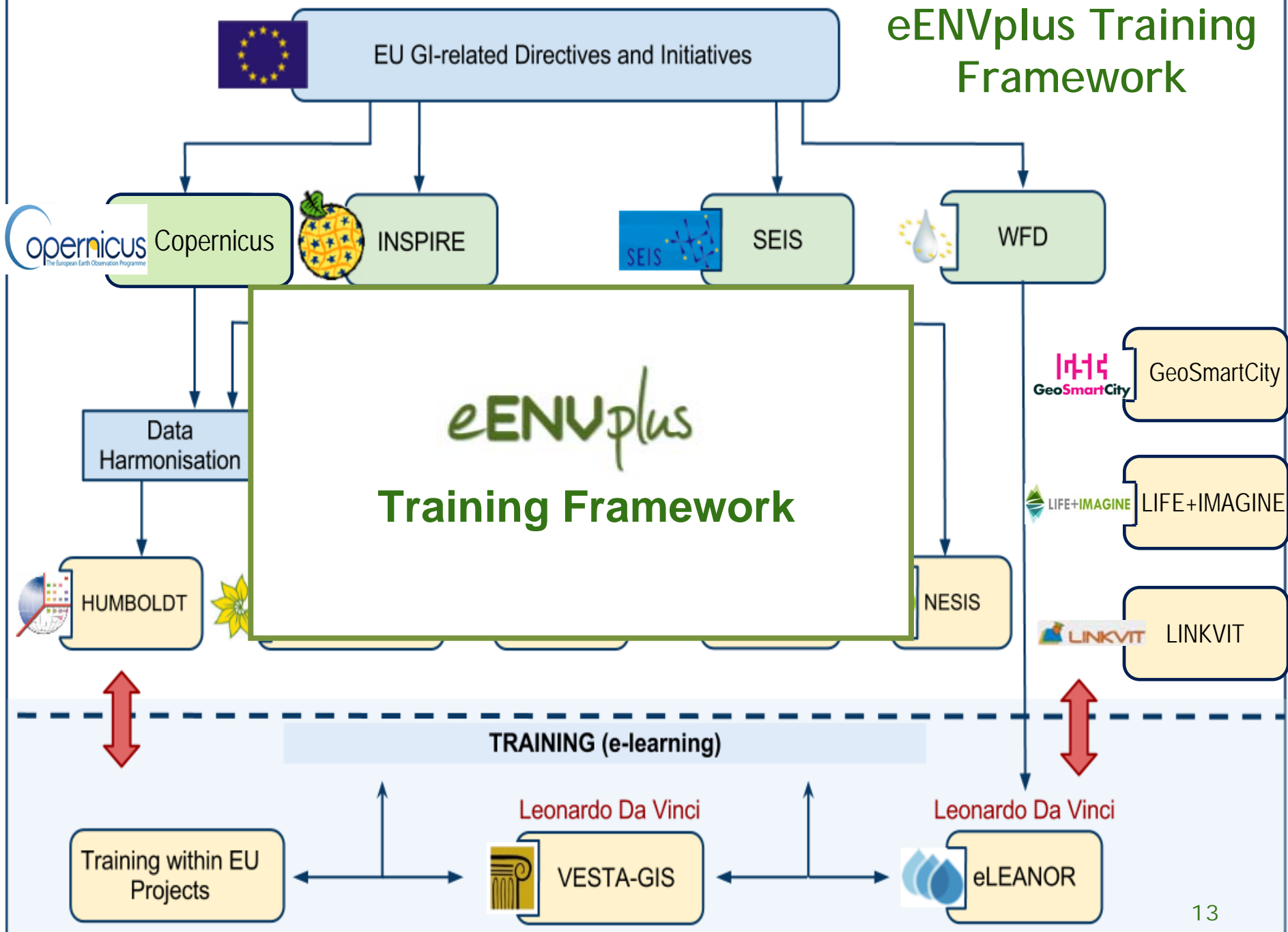
## Software components



## Data structure components



# eENVplus Training Framework





## ■ National Agencies:

- ❑ Environmental Agencies: VMM (BE), ISPRA (IT), CENIA (CZ), SAZP (SK), MRD (HU) with support of GEO (HU); moreover, EPSILON in close cooperation with GR EA
- ❑ Mapping Agencies: DGT (PT), NLSI (IC, in close cooperation with IC EA)
- ❑ Thematic Agencies: Geological (GeoZS, SLO), Nature (ATEN, FR)

■ **Technical partners:** CNR-IMATI, Epsilon, Sinergis, Graphitech, disy, EPSIT, PKH

■ **University:** GEO

■ **Standardization Body:** GIST (Secretary of CEN TC/287 Geographical Information)

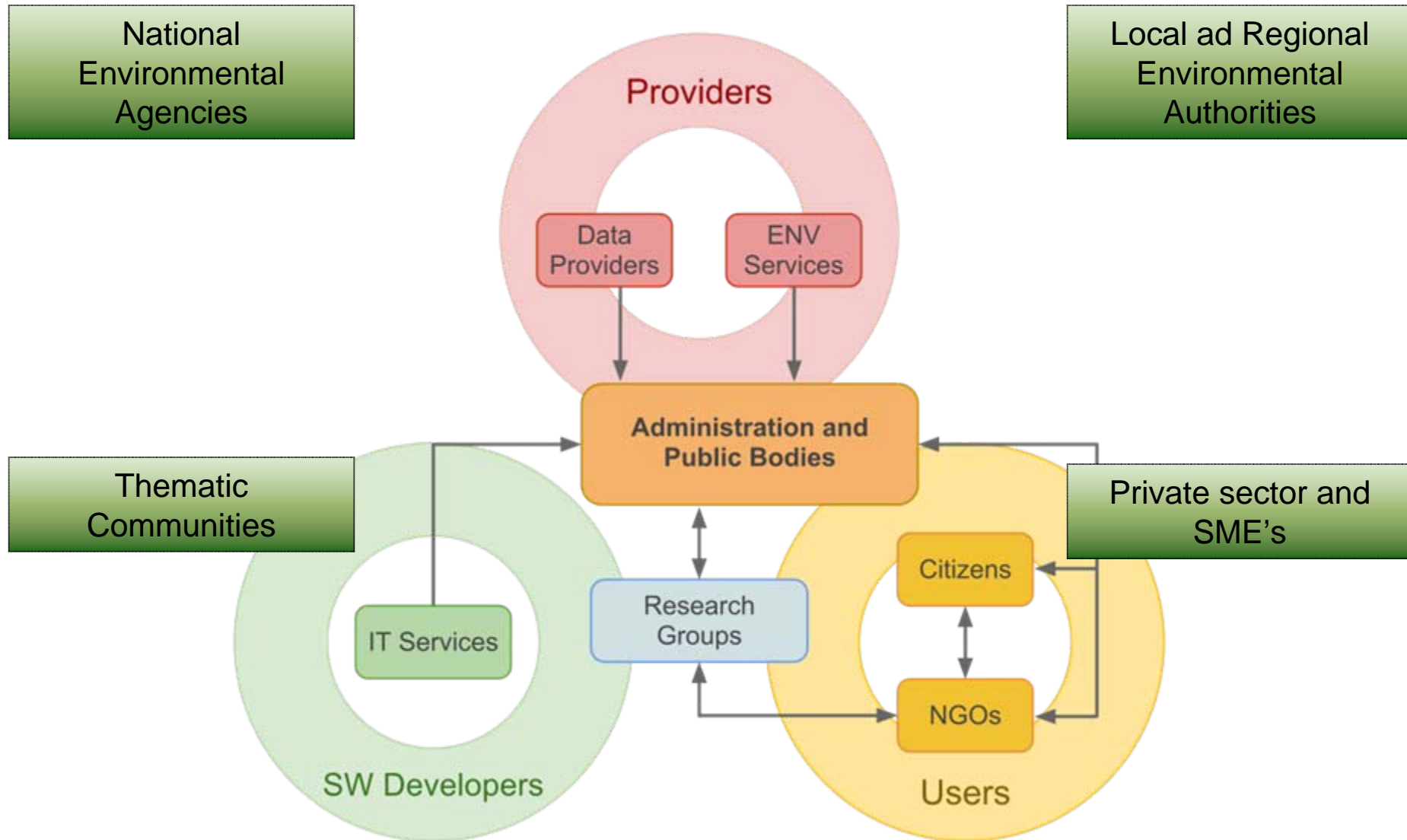
■ **European Association:** GISIG (eENVplus Coordinator)

- In 10 pilots, 9 Scenarios, 3 cross-border
- Pilots (10): the actual implementation of the scenarios in a geographical area
- Scenarios (9): the different use cases considered by eENVplus, which the applications correspond to
- Use Case (26): a methodology used in system analysis to identify, clarify, and organize system and user requirements
- Offering examples on how the eENVplus outcomes can be utilized in a variety of different situations (ENV aspects) and users' needs
- Providing streamline of the tools available to the project into the main flow of INSPIRE compliance
- Proposing interoperability among the applications (existing or planned)
- to create a more complete thematic (integration among complementary issues) or regional example (integration among cross-border cases)



- ❑ Implementation of a SEIS for air quality data, pilots in **Belgium and Italy**
- ❑ Providing INSPIRE-compliant access to utility services: the case of sewage networks in Flanders, pilot in **Belgium**
- ❑ CSspire - Everyday life issues connected to Environmental aspects in **Czech Republic and Slovakia**, cross-border pilot
- ❑ Natural Areas INSPIRE Compliance Toolbox, pilot in **France**
- ❑ Forest Fire Management, pilot in **Greece**
- ❑ Window on the Protected Areas - Mobile Conservation Map in **Slovakia and Hungary**, cross-border pilot
- ❑ INSPIRE Geoportal - Nature conservation data in **Iceland**, pilot in **Iceland**
- ❑ Geological Map Harmonization in **Italy and Slovenia**, cross-border pilot
- ❑ Urban Landuse Planning: in **Portugal**

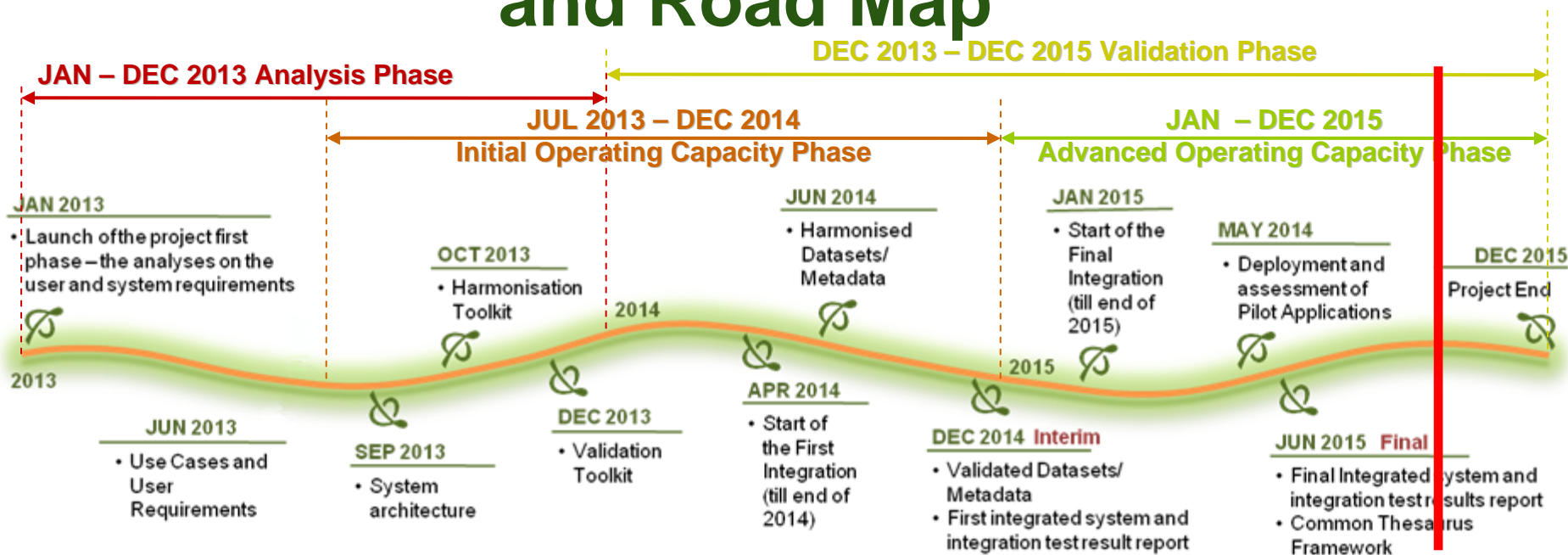
# Target Groups



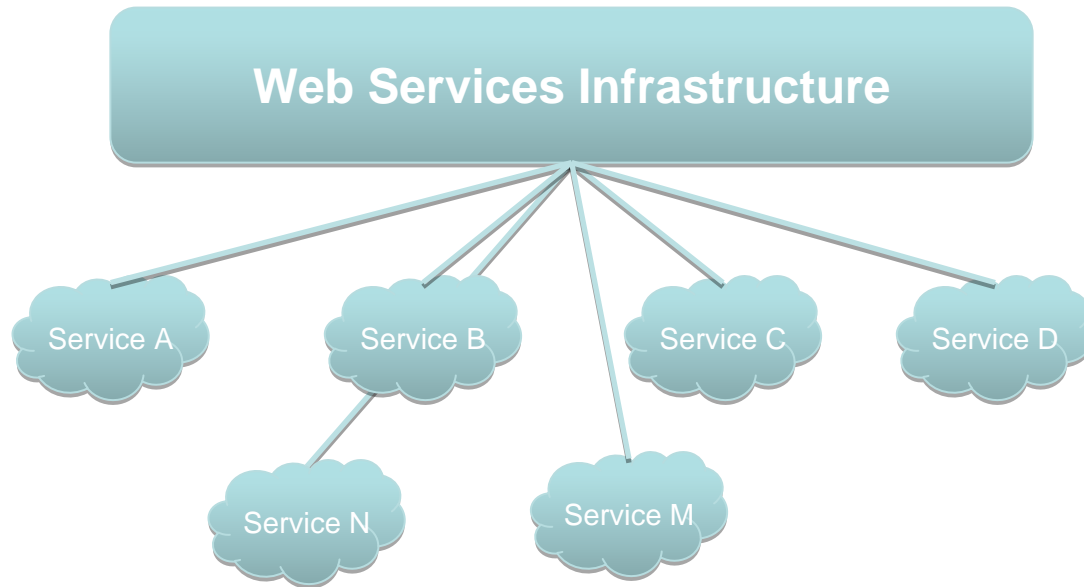
# Macro-actions foreseen by eENVplus



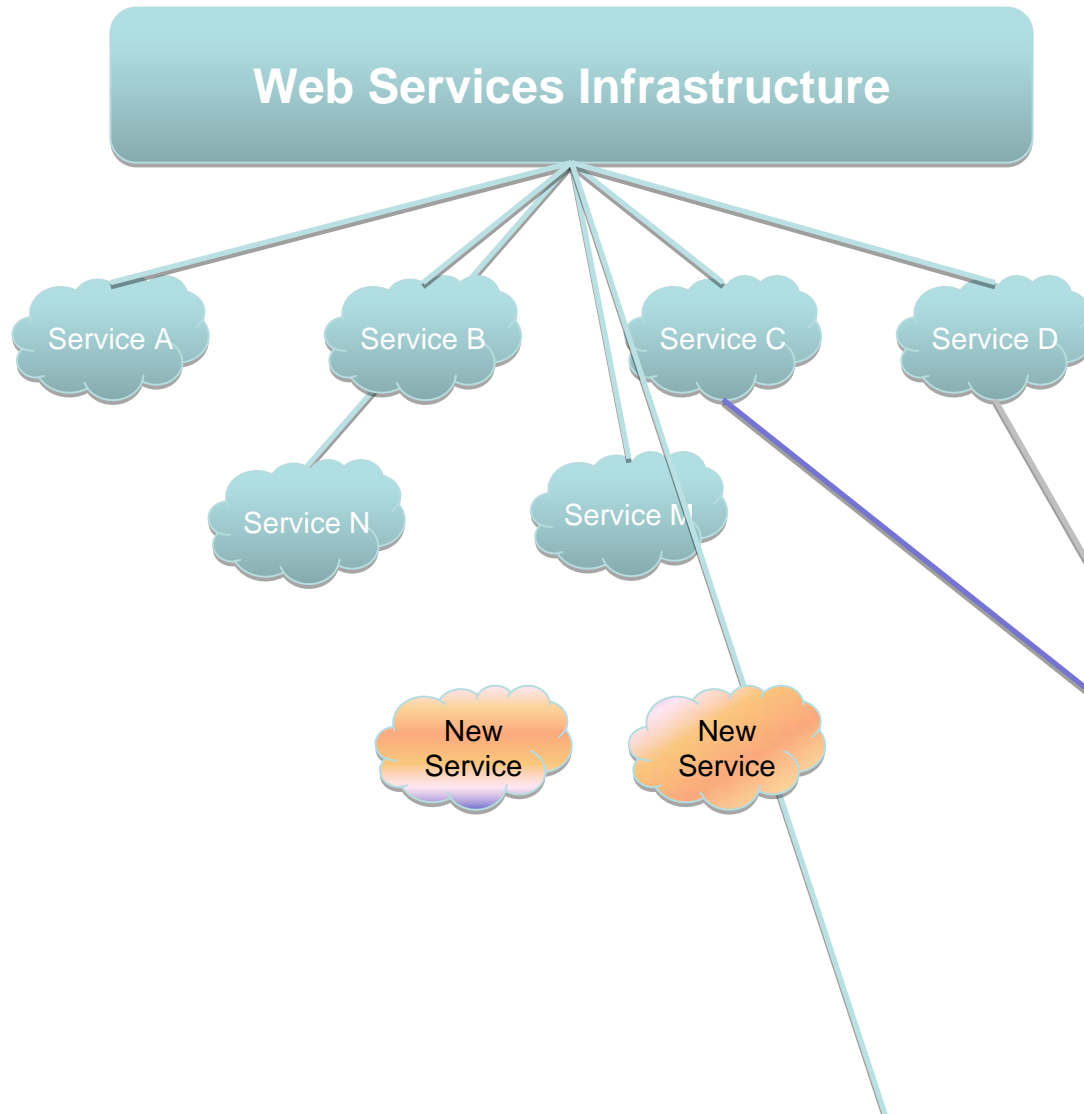
## and Road Map



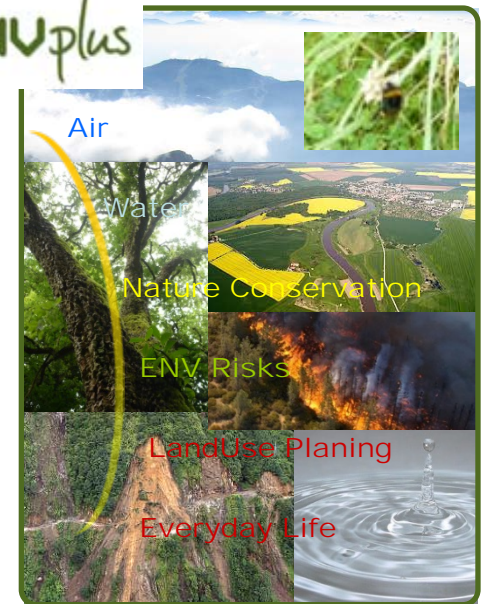
- New scenario applications
- eENVplus bricks to be used and to support other initiatives
- Enhance and support capacity building
- Support INSPIRE Thematic Clusters



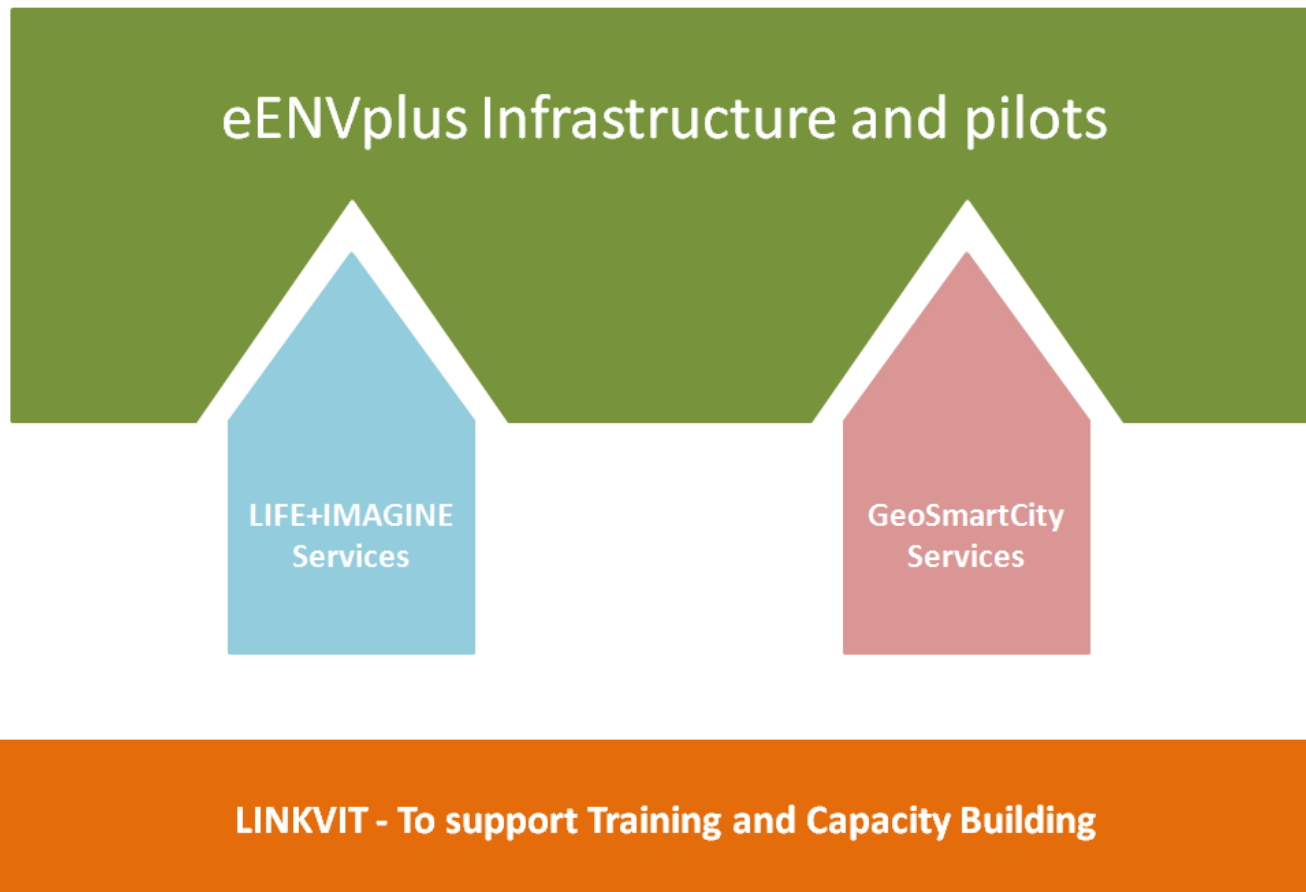
- eENVplus Infrastructure is the base for including new applications and new services also within future projects at a European and National level
- eENVplus is the Framework for implementing/use/sharing eEnvironmental services
- That is part of the long term sustainability plan after the project conclusion



### Pilot Applications



# Interrelation between eENVplus, LIFE+IMAGINE, GeoSmartCity and Linkvit projects





**LIFE+IMAGINE** supports the environmental and data management policies related to the coastal planning and governance

**LIFE+IMAGINE**, through methodologies for environmental analysis, the integration and the harmonization of multi-sources data, provides **new and hands-on information** to support the planning, the decision making and the environmental reporting, with particular reference to two scenarios:

- **Soil consumption in coastal zones (2 pilot sites)**
- **Landslides in coastal zones (2 pilot sites)**

**LIFE+IMAGINE** implements a web services infrastructure for environmental analysis and planning, integrating in its own architecture specifications and indications of **INSPIRE** and **SEIS** and the **data from Copernicus**



Integrated coastal area Management Application implementing GMES, INSPIRE and SEIS data policies.

[Project profile](#)

GeoSmartCity implements a platform to share and public geographical open data coming from different sources, such as Public Administrations, Multi-utilities, Companies, Citizens and Crowd-sourcing.

The platform includes specialized web services to integrate public geographical data with other geo-referenced data (public or private) useful for the smart management of urban infrastructures and public services in the context of the Smart City initiative and the Digital Agenda for Europe. GeoSmartCity provides also support to the implementation of the the Covenant of Majors.

The project implements two application scenarios:

- Underground (5 pilot cases in EU)
- Green Energy (5 pilot cases in EU)

## Partnership



TURUN AMMATTIKORKEAKOULU  
TURKU UNIVERSITY OF APPLIED SCIENCES



# Leveraging INspire Knowledge into Vocational Innovative Training

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[Partner Area](#)


## The project

LINKVIT is based upon the results of several European initiatives in the field of Geographical Information and the implementation of the INSPIRE Directive. At first, LINKVIT is based upon results of the ...

[Read more »](#)


## Training Modules

LINKVIT will leverage in harmonized Training Package the complementarity of different modules about: the Context Knowledge to operate in INSPIRE; technical procedures to manage the datasets considered ...

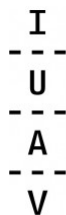
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## Communication

All the events and dissemination material of the project is available here.

[Read more »](#)

## Partners



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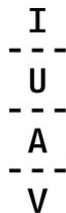
## Leveraging INspire Knowledge into Vocational Innovative Training

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21 Modules linked to the INSPIRE Directive, classified into:

- a) Context Knowledge for INSPIRE
- b) Advanced technical Modules
- c) Modules addressed to the stakeholders of Nature Conservation
- d) Modules addressed to the stakeholders of Geology and Civil Protection
- e) Technological trends and innovative solutions

### Partners



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## INSPIRE MARINE PILOT and eENVplus bricks

The aim of the INSPIRE marine pilot is to help **improve the understanding of INSPIRE** in the **management** of Marine Strategy Framework Directive (MSFD) related **spatial information**, and to provide guidance and tools that facilitate the mentioned obligations

The pilot provides methodologies and sample tools (exposed in the project sandbox) for the operational implementation of the INSPIRE rules, from metadata/data harmonisation to the discovery, view and download services.

Some **components of eENVplus** (i.e. metadata production and validation tools, data harmonisation methodologies, download services...) have been re-used for the **Sandbox** of the Marine Pilot



## Eionet Action Group on Land monitoring in Europe

In the frame of the EAGLE project

- eENVplus has developed the land-cover theme-specific schematron file
- the eENVplus Validation Service has been used in the dataset validation process.

Moreover the **eENVplus** Validation Service and Protected Sites theme-specific schematron have been used for the Common Database on Designated Areas (**CDDA**).

## Agenda 11:00 - 12:30

- ❑ Introduction about the adopted approach for interoperability in the context of INSPIRE (Giorgio Saio, GISIG)
- ❑ INSPIRE thematic data harmonisation (Land Cover, Natural Risk Zones, etc.) (Carlo Cipolloni, ISPRA)
- ❑ INSPIRE metadata management, including semantic interoperability through Thesaurus Framework services
- ❑ INSPIRE data validation with focus on Protected Sites and INSPIRE data specification extension (Stefania Morrone, Epsilon Italia)
- ❑ INSPIRE Training and Capacity Building (Giorgio Saio, GISIG)
- ❑ Discussion