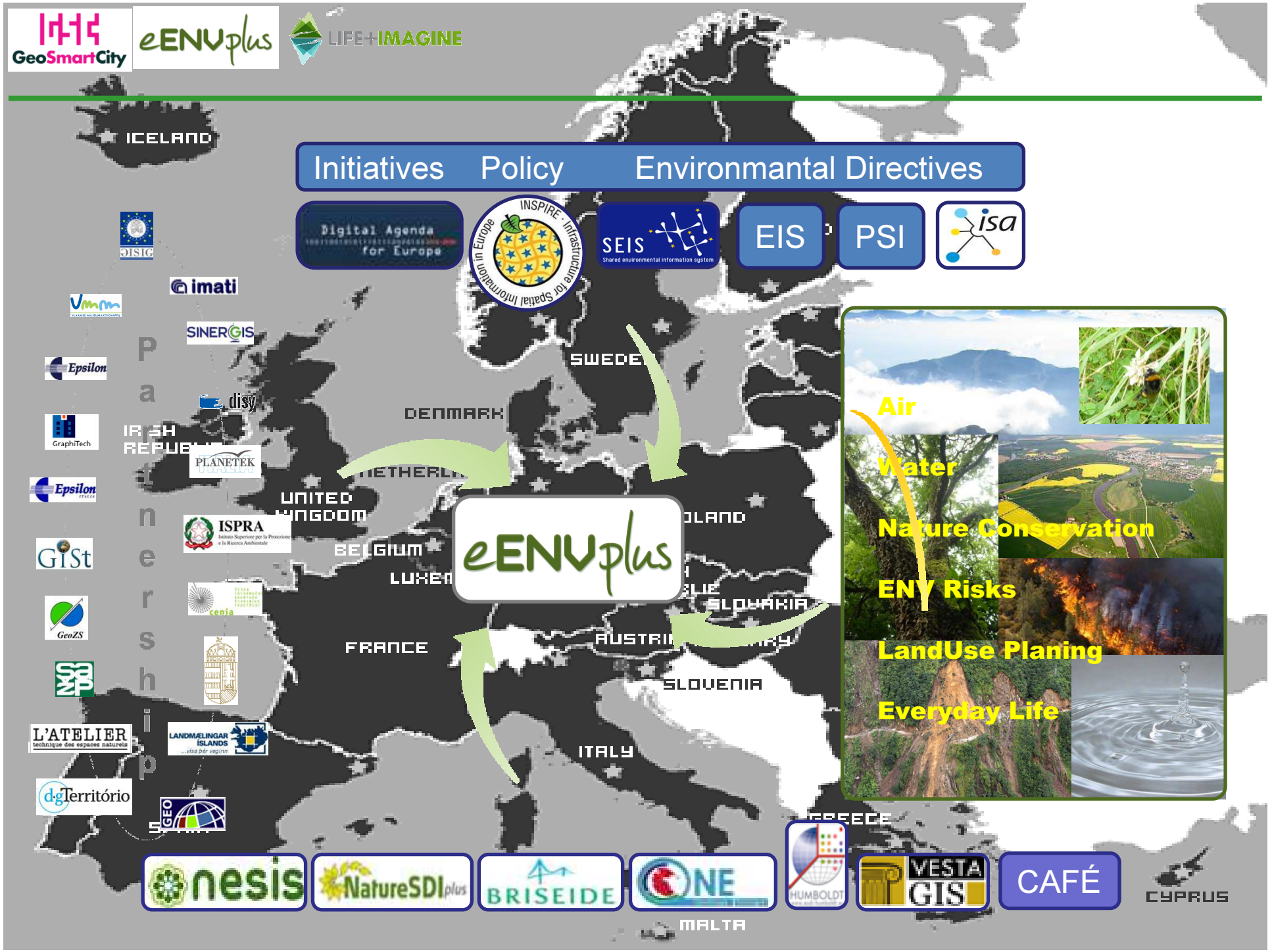
WORKSHOP

(15:30-16:30)

La visione eENVplus per l'infrastruttura di servizi e le politiche europee per l'ambiente

ASITA Conference, Firenze, 15 ottobre 2014

From Objectives to the Concept


GeoSmartCity
eENVplus
LIFE+IMAGINE
ICELAND
Initiatives Policy Environmantal Directives
Digital Agenda for Europe
INSPIRE Infrastructure for Spatial Information in Europe
SEIS
Shared environmental information system
EIS
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ITALY
MALTA
CYPRUS
eENVplus
Air
Water
Nature Conservation
ENV Risks
LandUse Planing
Everyday Life
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NatureSDIplus
BRISEIDE
ONE
HUMBOLDT
VESTA GIS
CAFÉ

GeoSmartCity

eENVplus

LIFE+IMAGINE

Initiatives Policy Environmantal Directives

Digital Agenda for Europe

INSPIRE Infrastructure for Spatial Information in Europe

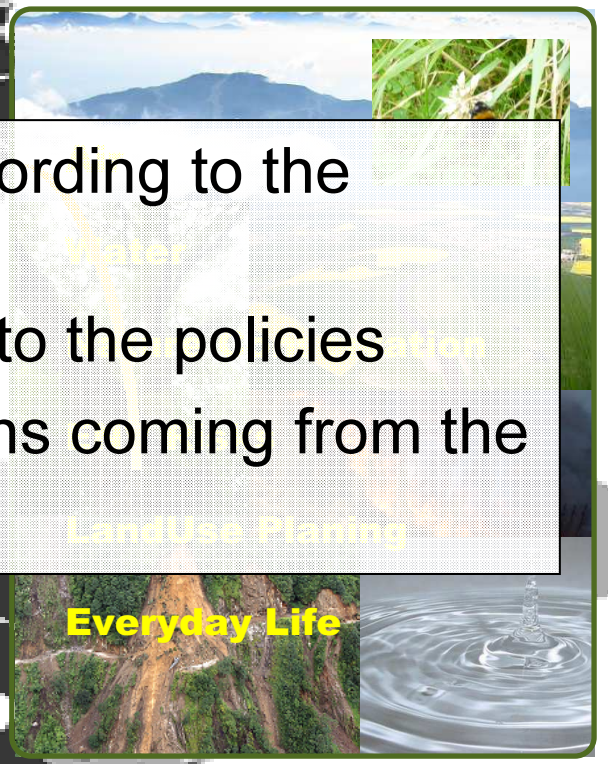
SEIS Shared environmental information system

EIS

PSI

isa

- to solve daily operational needs according to the policies directives
- adapting the operational processes to the policies
- aligning the policies with contributions coming from the operational experiences



nesis

NatureSDIplus

BRISEIDE

ONE

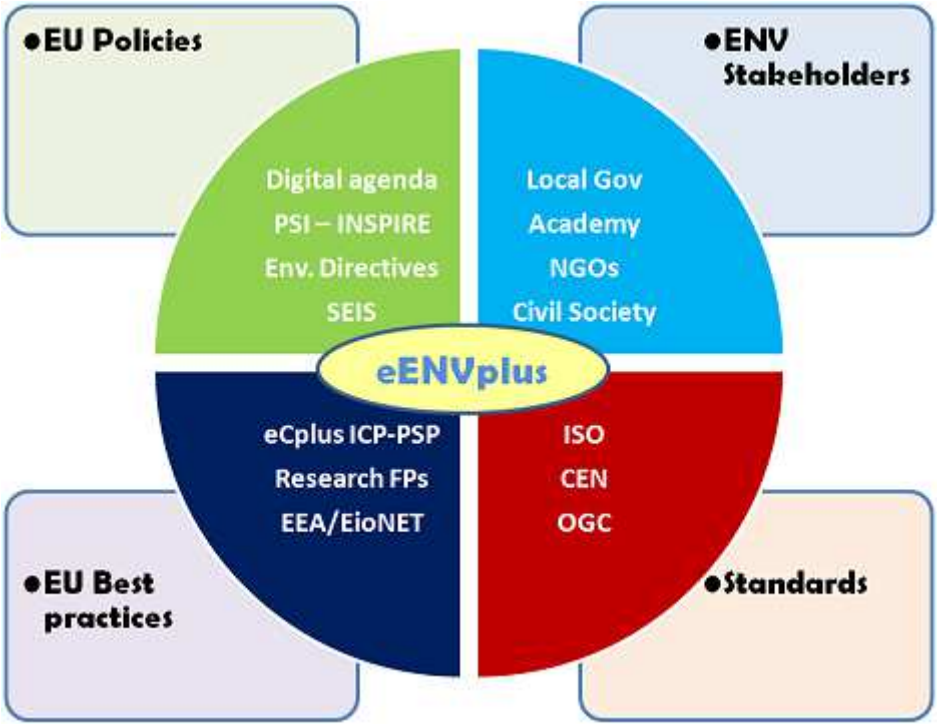
HUMBOLDT

VESTA GIS

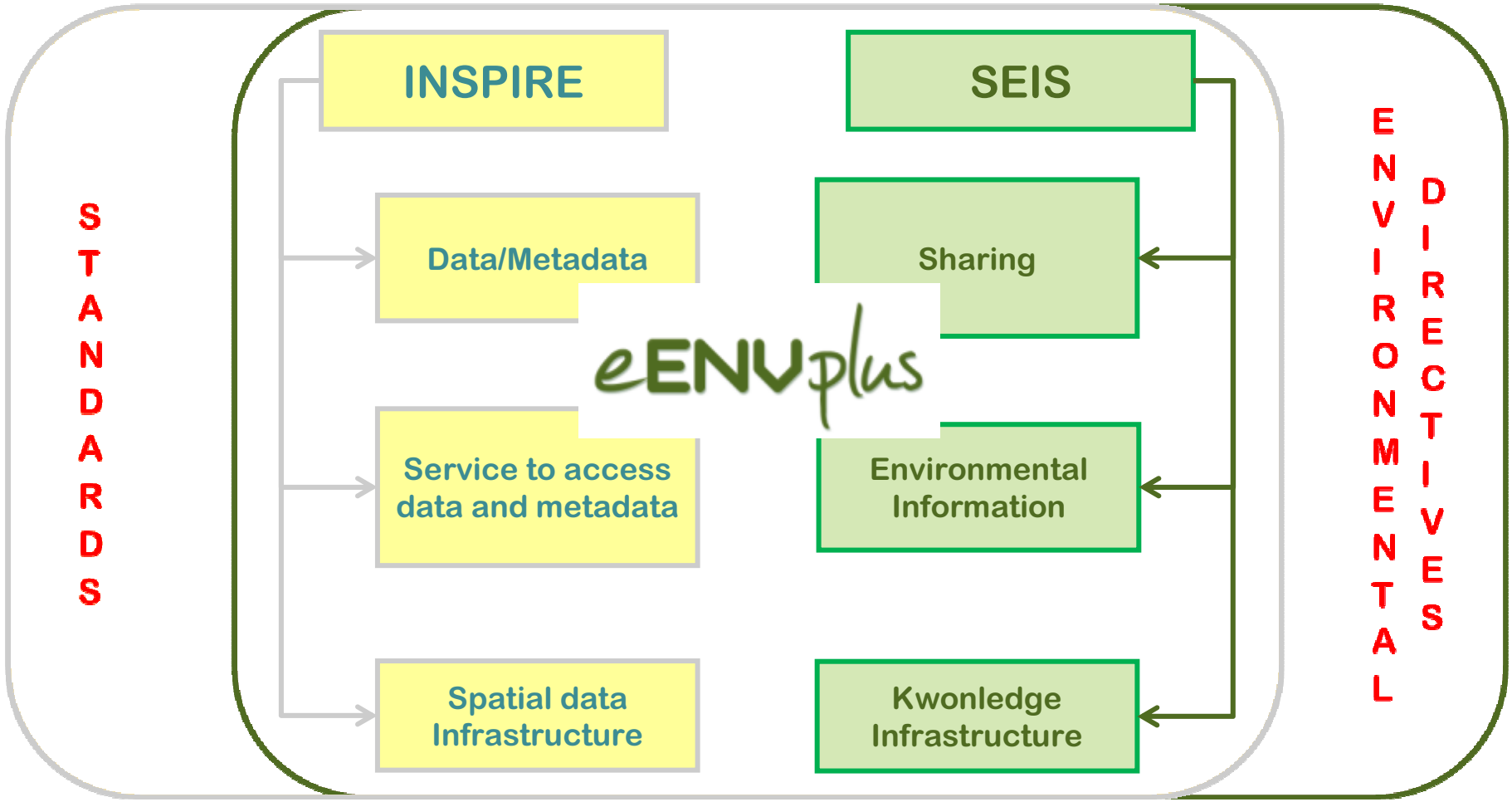
CAFÉ

Key objective

- 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.



Contribution to the EU policy



Operational requirements

Metadata / data harmonisation(1/2)

METADATA

- IR for metadata from 2008
- Good awareness between stakeholders
- consolidated solutions (INSPIRE geoportal tools)

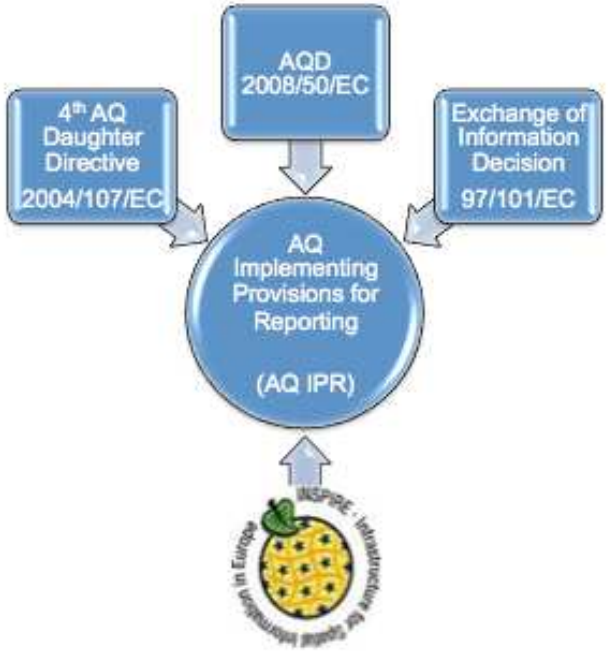
DATA

- the complexity for understanding the models
- the physical building of the harmonised data through tools often complex and with not sufficient support
- the validation processes of the produced data which until now cannot be objectively and uniquely defined.

Operational requirements

Metadata / data harmonisation(2/2)

- implementing the environmental monitoring and reporting processes by the integration and adaptation of the existing EU directives (INSPIRE, ISA, eGov) and their implementing rules and guidelines, driving the process by the requirements and the constraints coming from the **operational application** of the directives in regional, national and European context.



Operational requirements

Services requirements (1/2)

- Five main classes of services has been identified
  - Ingestion, harmonisation and validation services
  - Data access services
  - Processing services
  - Metadata services
  - Advanced services
- The data access services represent the entry point for data processing ➔ an easy-to-use solution for setting data access services according to the reference standards

Operational requirements

Services requirements (2/2)

- The processing services should be based as much as possible on standard interfaces that means to use the data access services as input/output interface protocols.
- the processing services are required to be open to standard data model (INSPIRE data themes) but also to consume service exposing not INSPIRE compliant data

Operational requirements

Semantic interoperability

- the need to have at disposal a shared understanding on terms and meanings related to the different environmental themes. This is driven:
  - at top level by the INSPIRE directive but, overall,
  - by the harmonisation processes requested in operational analysis of heterogeneous datasets and services.

- ➔ shared terminologies and services to drive
  - the harmonisation of the data content
  - the provision of semantic services exploiting the harmonised content of the exposed data.

Operational requirements

Strategic requirements (1/2)

- the feasibility to replicate the developed services in different thematic contexts as well as location contexts
  - to drive the design of the processing services to be independent by the data format and extent,
  - to separate the data ingestion by the data processing but respecting the IPR on data.
- The re-use needs ➔ open software development trend **minimizing the use of licensed tools** and components **to guarantee the re-usability** of the produced tools with low cost and low licences constraints.
- scalable design ➔ to modulate and to distribute the infrastructure components in distributed computational resources

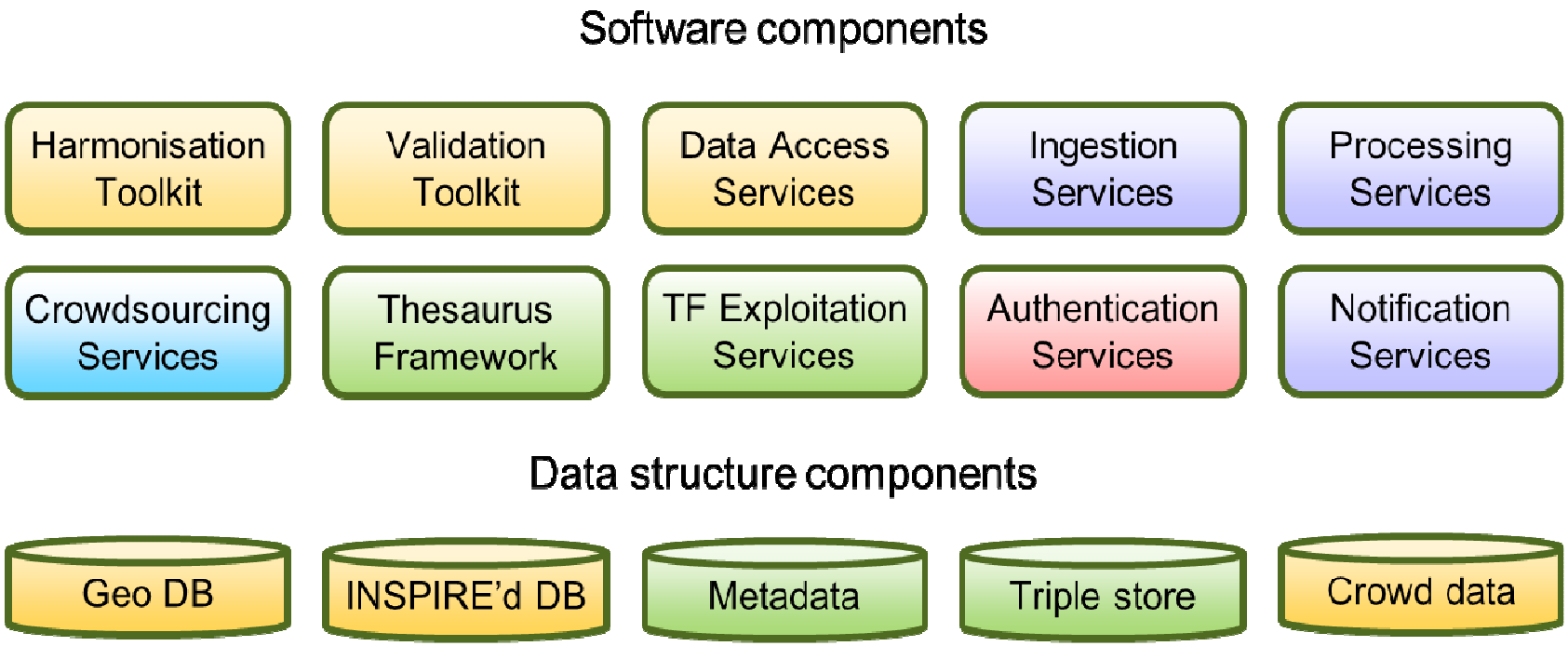
Operational requirements

Strategic requirements (2/2)

- Making the eENVplus services operational means to make operational also the involved stakeholders which have to manage and exploit the designed technological solutions
- ➔ to support the stakeholders for building the capacity in organizing, managing and exploiting these new technologies through a set of actions focused on:
  - Increasing the awareness
  - Sharing the knowledge
  - Stimulating the cooperation and collaborations
- ➔ the exploitation of the Training framework

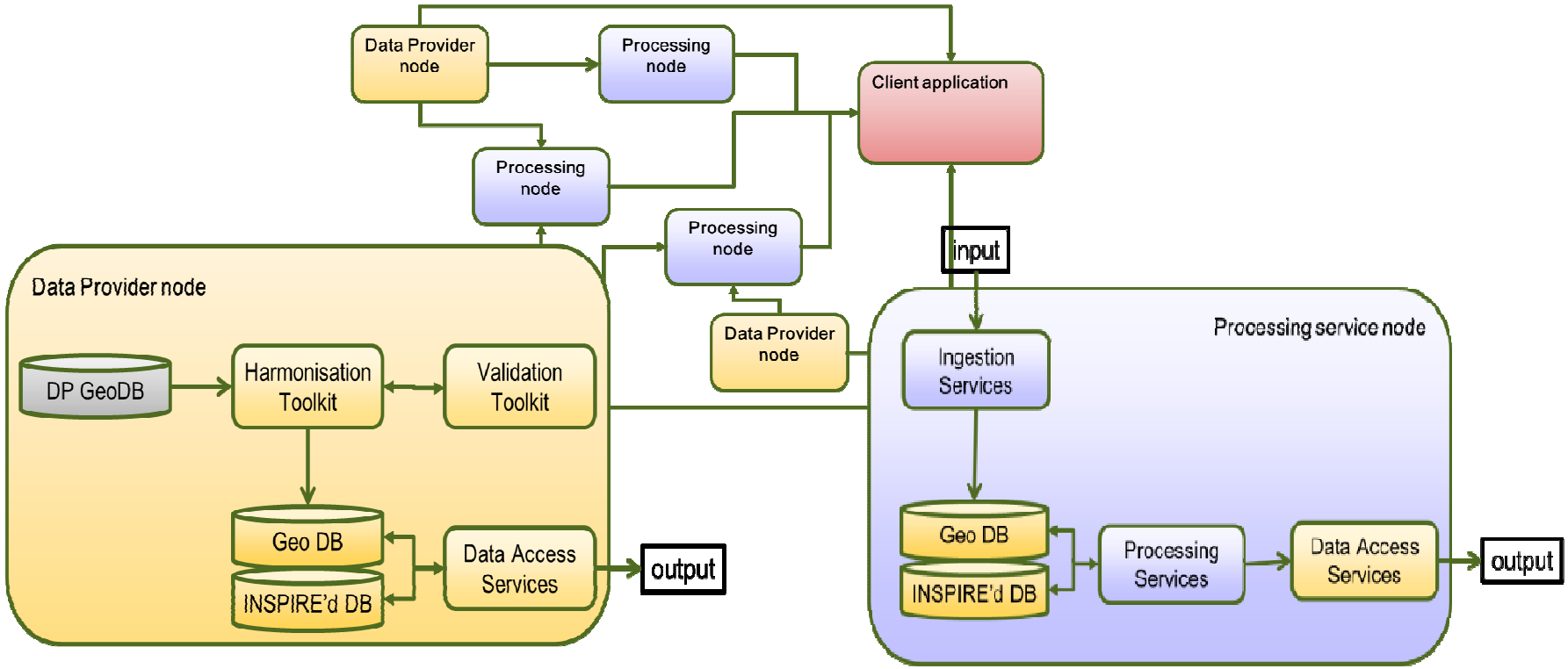
Technological solution

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

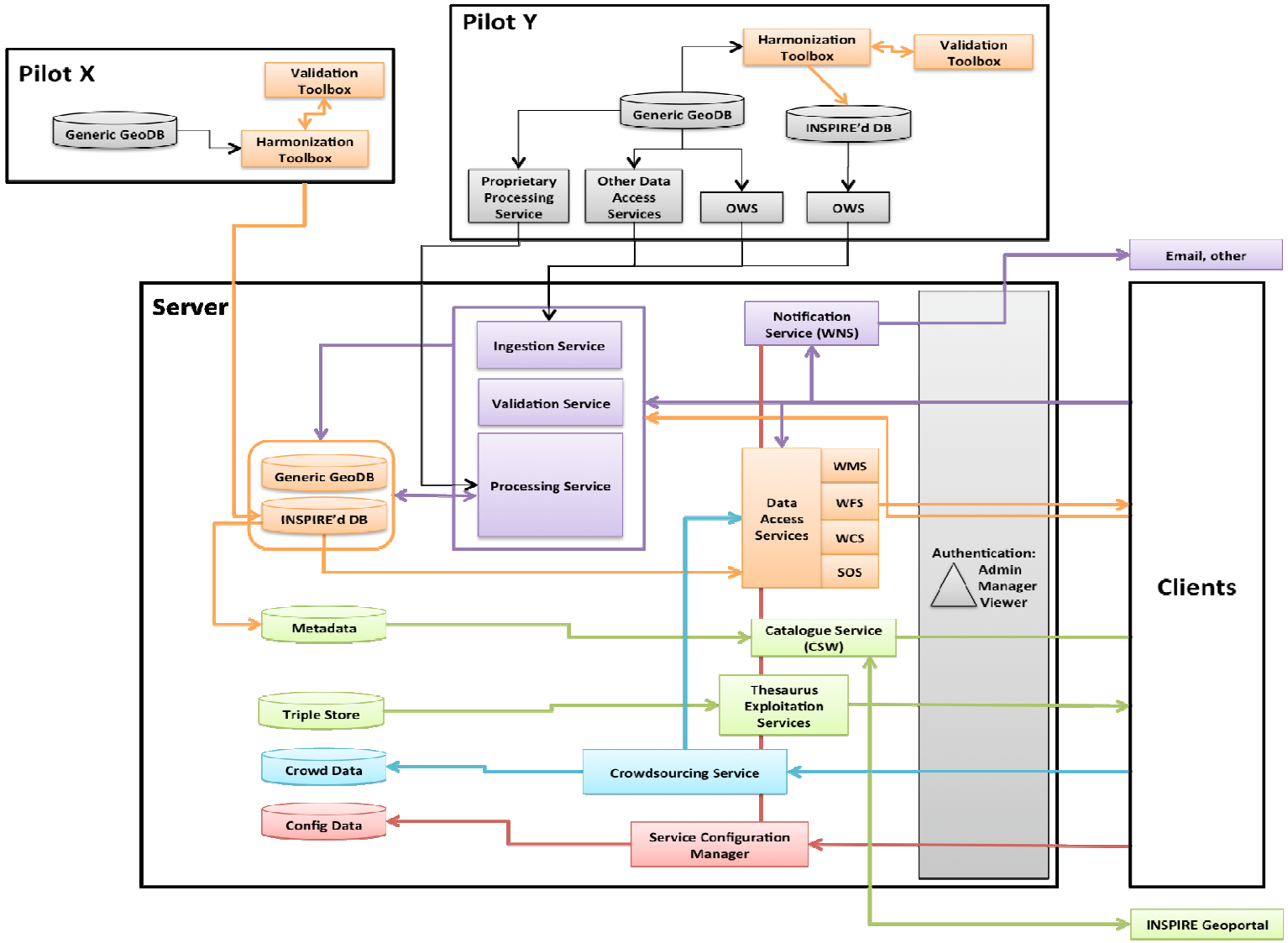


Technological solution

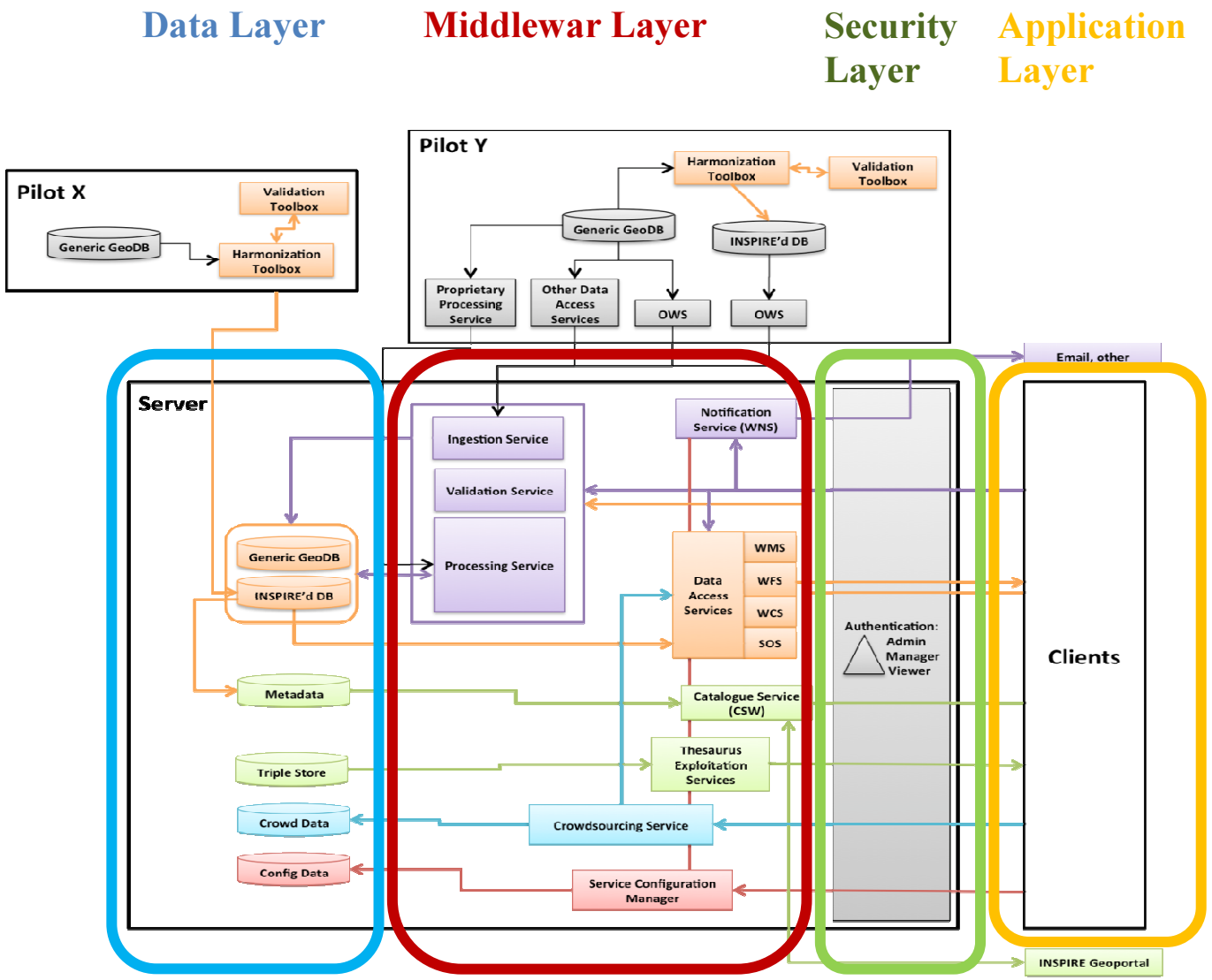
The eENVplus infrastructure is composed by different nodes which are linked between them through input/output interface protocols realised by the ingestion services (input) and data access service (output).



Proposed Architecture



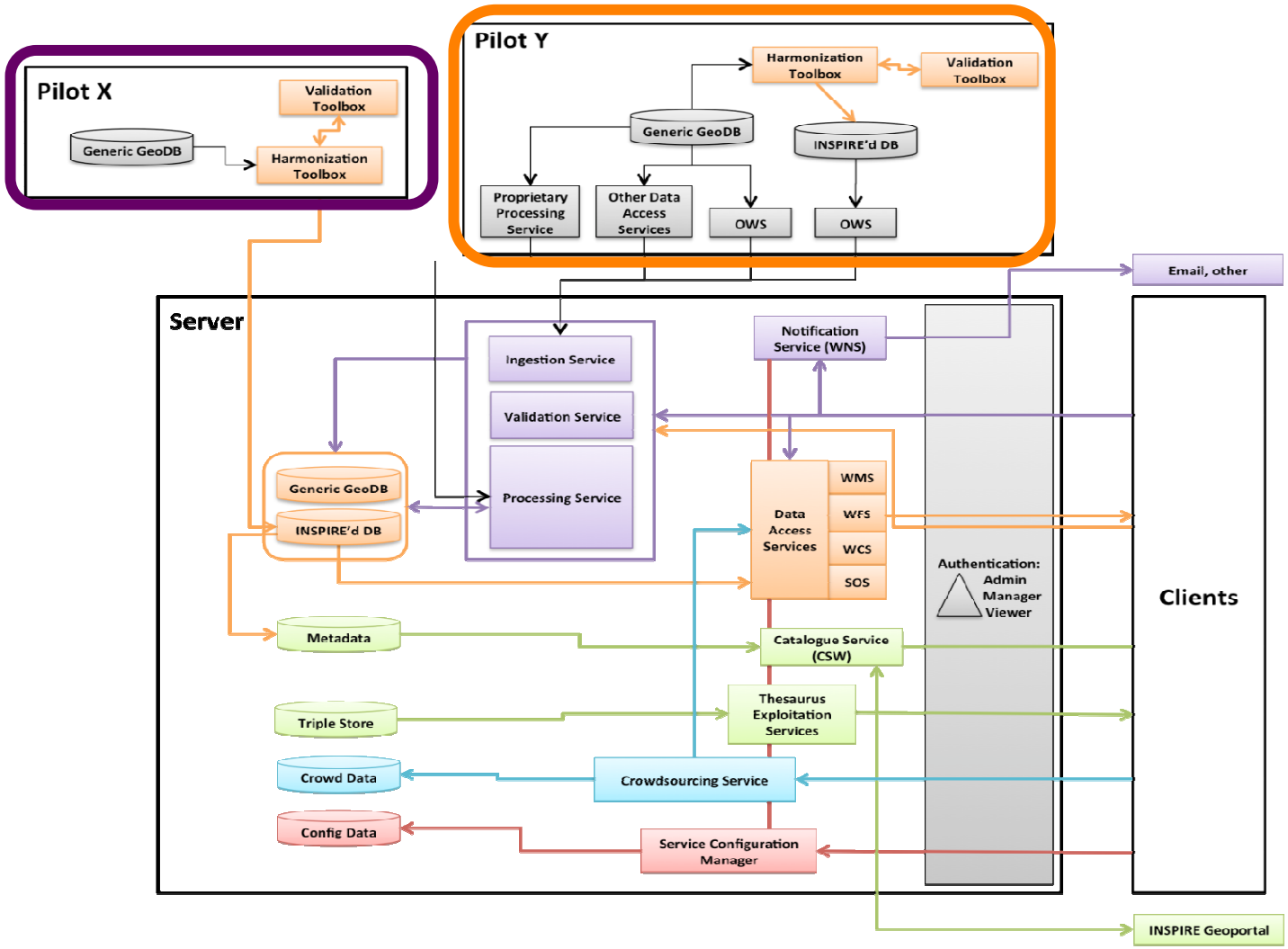
eENVplus Infrastructure



Architecture Layers

- Data Layer: set of databases that have to be set up to store provided data
- Middleware Layer: core of the infrastructure, contains the set of components used to ingest and expose data
- Security Layer: intermediate layer that manages access to resources
- Application Layer: contains the eENVplus client applications

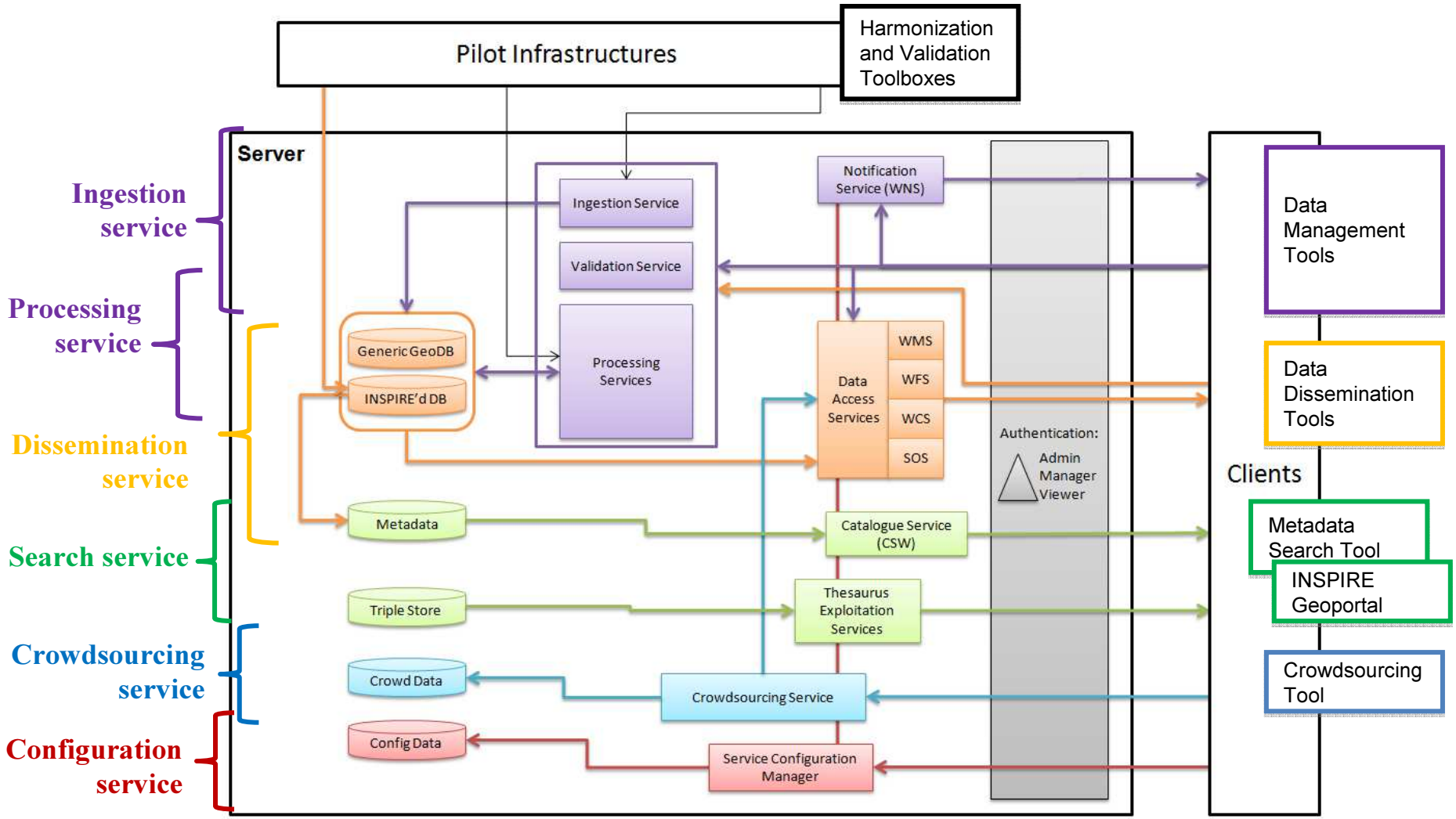
eENVplus Infrastructure



Architecture Layers

- Pilot X: pilot who haven't its own SDI and it is not able to expose data.
- Pilot Y: pilot who is able to expose data in some way (OWS – INSPIRE web services – proprietary web services).

Service Layers



Service Layers

- Ingestion Service: contains the set of software components used to manage the ingestion of data provided by pilots in the eENVplus infrastructure
- Processing Service: contains the set of web services used to fulfill the requirements about processing (WPSs)
- Dissemination Service: contains the software components that allows users to access data by the use of INSPIRE compliant web services

Service Layers

- Search Service: contains the software components used to perform semantic search in the metadata catalog
- Crowdsourcing Service: data and software structure that allows users to enrich the set of data available by giving theirs contribution

Contribution to the EU policy

DIGITAL AGENDA FOR EUROPE

A Europe 2020 Initiative

Open up public data resources for re-use

European Union Location Framework

Re-usable INSPIRE Reference Platform

Improving semantic interoperability in EU eGov system

EULF: EU Location Framework

to create a European Union Location Framework addressing the EU-wide, cross-sector interoperability framework for the exchange and sharing of location data and services.

a package of legal acts, methodologies, specifications (and standards), guidelines, and training materials required by public administration and stakeholder communities to facilitate the implementation, use and the generalisation of INSPIRE to a wider location context independently of the thematic sector (as part of e-government programmes).

- **eENVplus** - eENVplus is similarly a CIP ICT PSP funded project which aims to integrate infrastructures and create an operational framework for cross-border sharing of environmental data, compatible with INSPIRE. The project will include a series of pilots to support various environmental scenarios and will develop a multi-lingual thesaurus framework, tools for data harmonisation and validation and a series of e-learning modules. **All of these will be relevant in their own right to the EULF. The eENVplus concept may also be applicable to other policy areas and scenarios.**

Reusable INSPIRE reference platform

ARe³NA

Identify and develop common components for the successful implementation of the INSPIRE Directive in relation to European e-government.

Collaboration, identification of best practices, guidance and the **sharing of components** relate to various aspects of INSPIRE

- Inventory of existing platforms and tools spanning multiple policy areas;
- Support existing or initiate new open source projects to address identified gaps;
- Produce extended multilingual documentation to help create an INSPIRE node based on existing Member States' relevant initiatives;

•The contribution of eENVplus for Are3NA is evident: the outcomes will be reference best practices to be included in the common platform in term of open tools, methodologies, guidelines, training materials, etc.

Semantic interoperability

Semantic interoperability is an important element in many eGovernment and interoperability national agendas.

This ISA action takes care about the divergent interpretation of the data, the lack of commonly agreed and widely used metadata, the absence of universal reference data (e.g. code lists, taxonomies), the multilingual challenge, and so on.

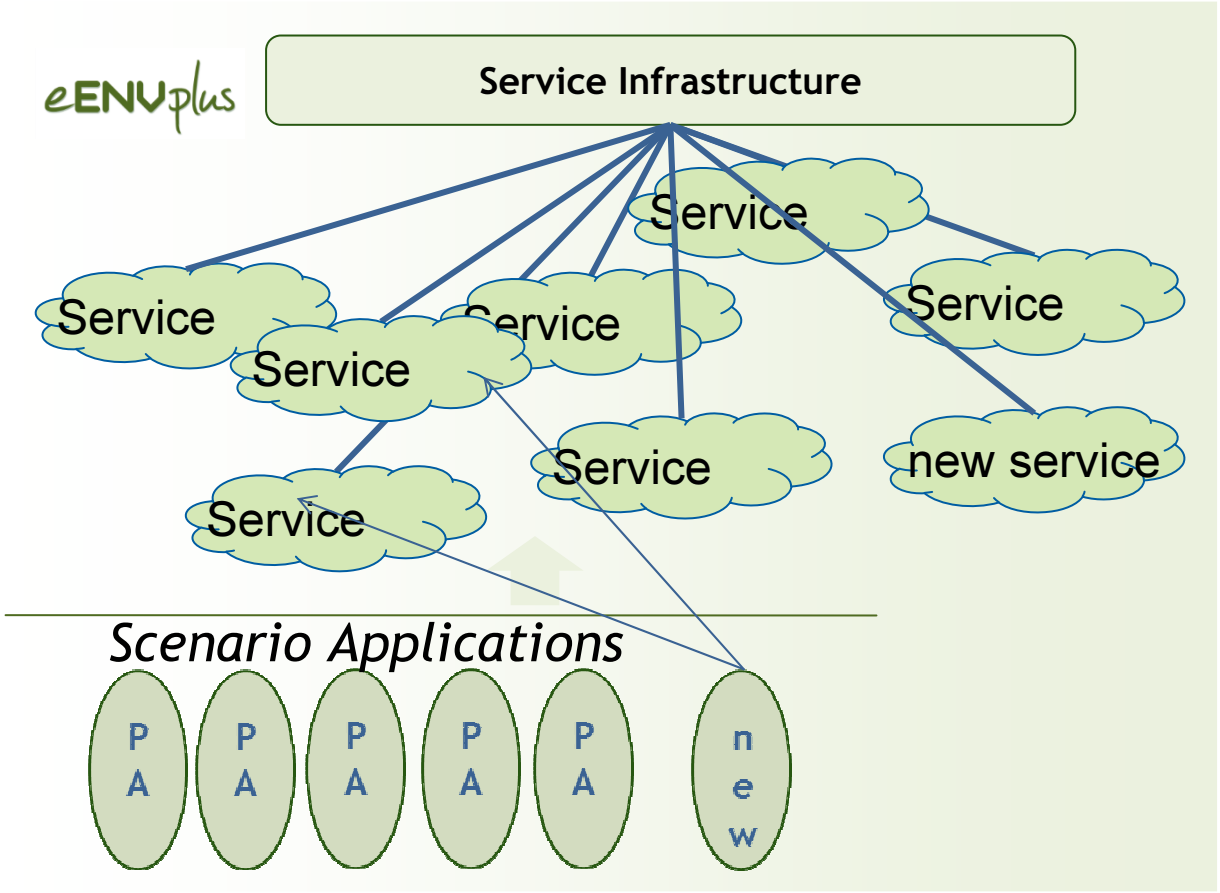
•eENVplus can contribute to the alignment of semantic definitions, metadata and reference data sources promoting, sharing and re-using of sematic asset, experiences and tools and facilitating agreement in key areas.

Main eENVplus goals

- The provision of an **interoperable** solution to share and process geo-spatial data in order to provide added value information and services to be shared in a cross-language, cross-scale and cross-thematic environment
- The provision of **re-usable** solutions, in term of open data, open services, open components, open infrastructures, open applications
- The **contribution to the European policies** and international standards in the frame of the European eGovernment actions, with a special attention to the EU Directives like INSPIRE, PSI, the Environmental Directives (Air, Water, Habitas, Flood, Waste, etc.) based on the best practices coming from the application in real and heterogeneous contexts of the eENVplus infrastructure.

In Perspective

- eENVplus Infrastructure is the base for including new applications and new services also within future projects at a European and National level



- eENVplus will be then the Framework for implementing/use/sharing eEnvironmental services

new service

- That will be part of the long term sustainability plan after the project conclusion

Grazie!

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