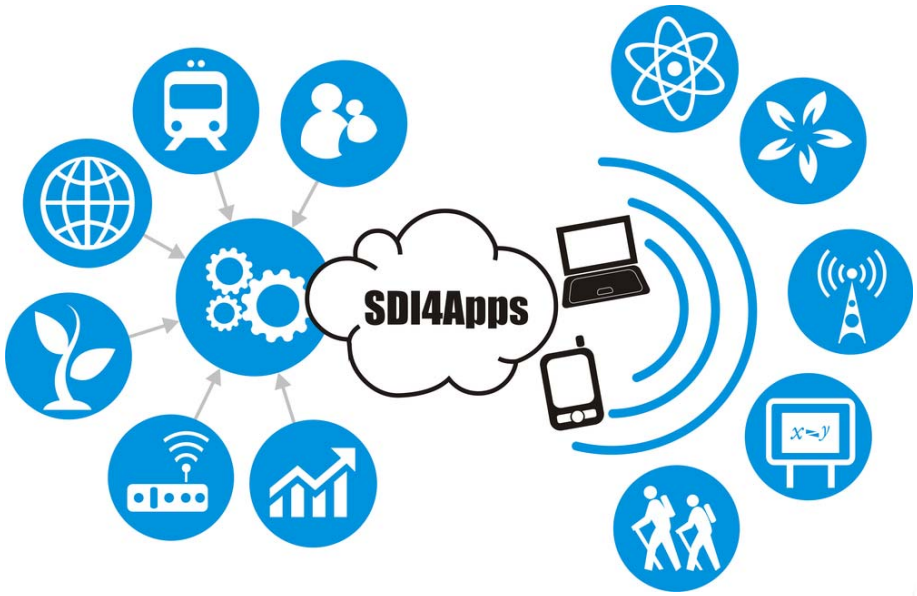
SDI4Apps

Uptake of Open Geographic Information Through Innovative Services Based on Linked Data



JRC Ispra – 22 November 2013

SDI4Apps

Full title: Uptake of Open Geographic Information Through Innovative Services Based on Linked Data

Duration: 36 Months
1st April 2014 – 31st March 2017

Funding: Competitiveness and Innovation FP (CIP-ICT-PSP)
Budget 4 million EUR

Consortium: 19 partners

consortium

Coordinator: University of West Bohemia in Pilsen

Hyperborea s.c.	STEPIM
Asplan Viak Internet as	Uhlava
Czech Centre for Science and Society	Help Service - Remote Sensing
Zemgale Planning Region	SSSA
Masaryk University	Pronatur
Stichting EUROGI	Talos
The National Microelectronics Applications Centre Ltd	
Baltic Open Solution Center	
University of Maribor	
Slovak Environmental Agency	
ERFC	
e-PRO Group	
Vidzeme Planning Region	

19 partners
9 European Countries

SDI4Apps

PLAN4BUSINESS
A service platform for aggregation, processing and analysis of urban and regional planning data

Plan4all
www.plan4all.eu

HUMBOLDT
www.esdi-humboldt.eu

APPS FOR EUROPE

HLanData
HARMONIZATION OF EUROPEAN LAND USE AND LAND COVER DATABASES FOR THE CREATION OF VALUE ADDED SERVICES

SME/SPIRE

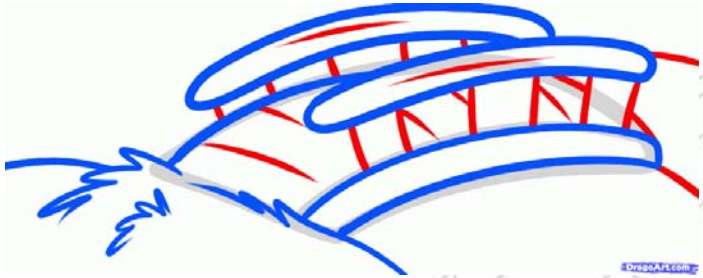
enviroGRIDS

habitats

BRISEIDE

SDI EDU

GEOSS Global Earth Observation System of Systems) and **Copernicus** (previously known as GMES - Global Monitoring for Environment and Security



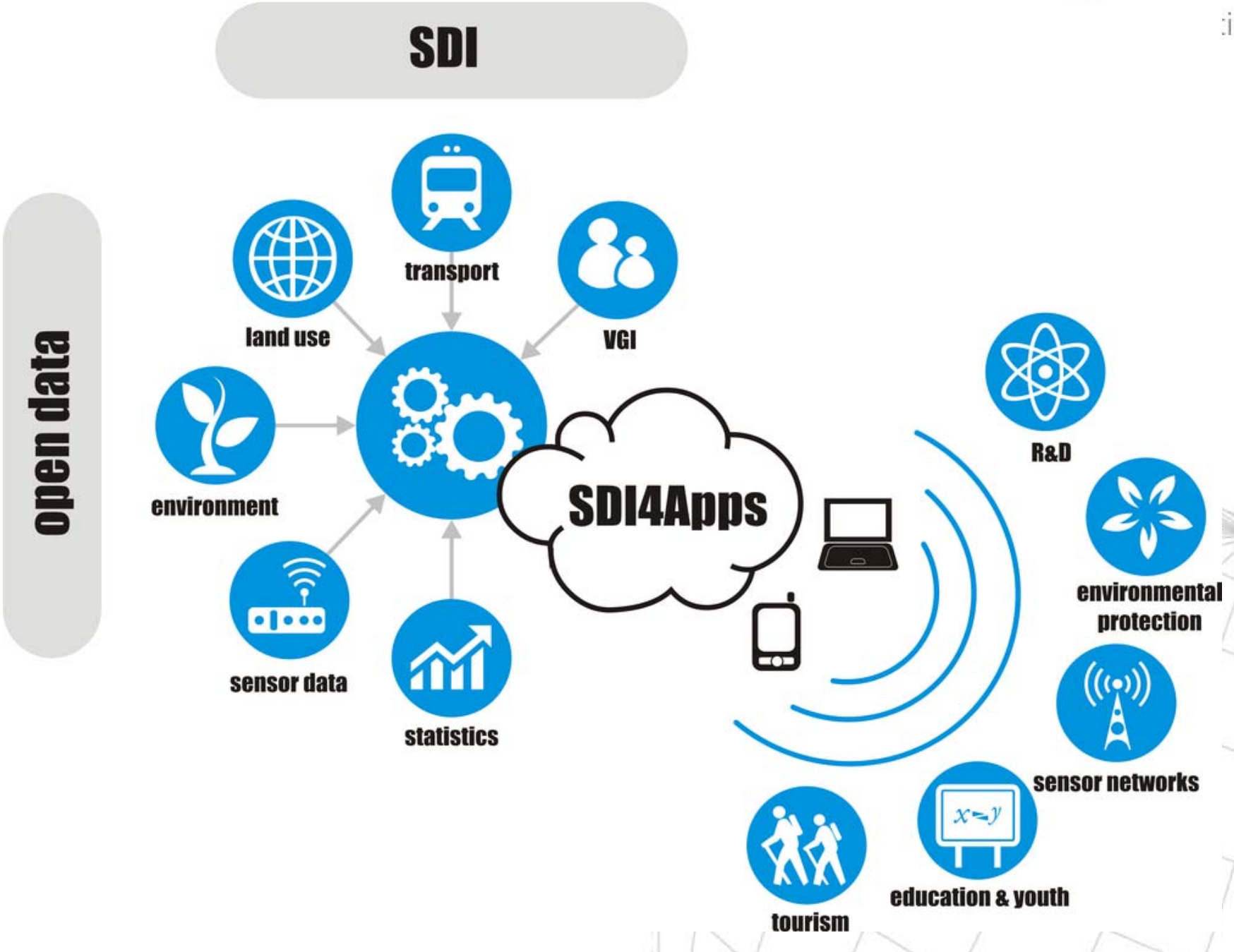
VGI

neogeography

mobile devices

other sensors

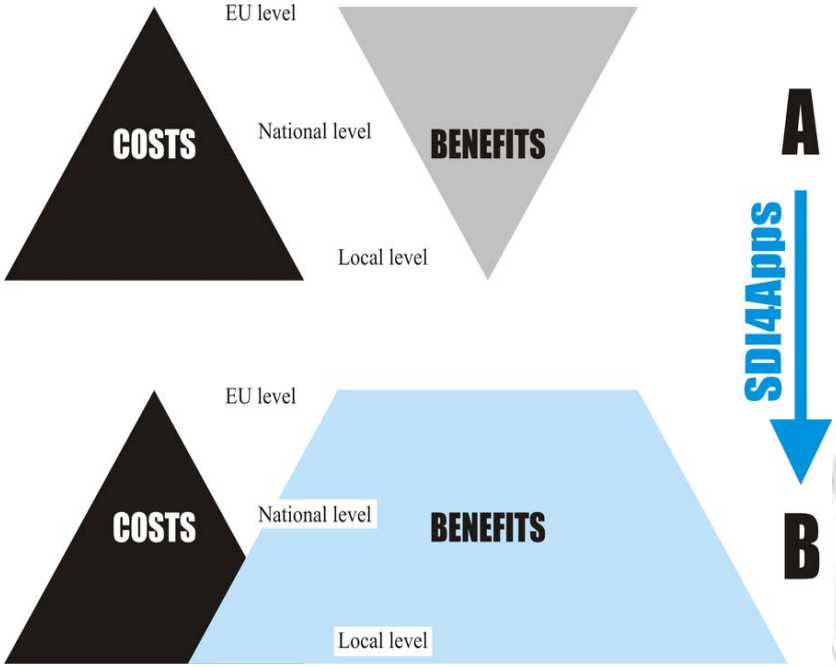
....


SDI
open data
transport
land use
VGI
environment
SDI4Apps
sensor data
statistics
R&D
environmental protection
sensor networks
tourism
education & youth

OBJECTIVES

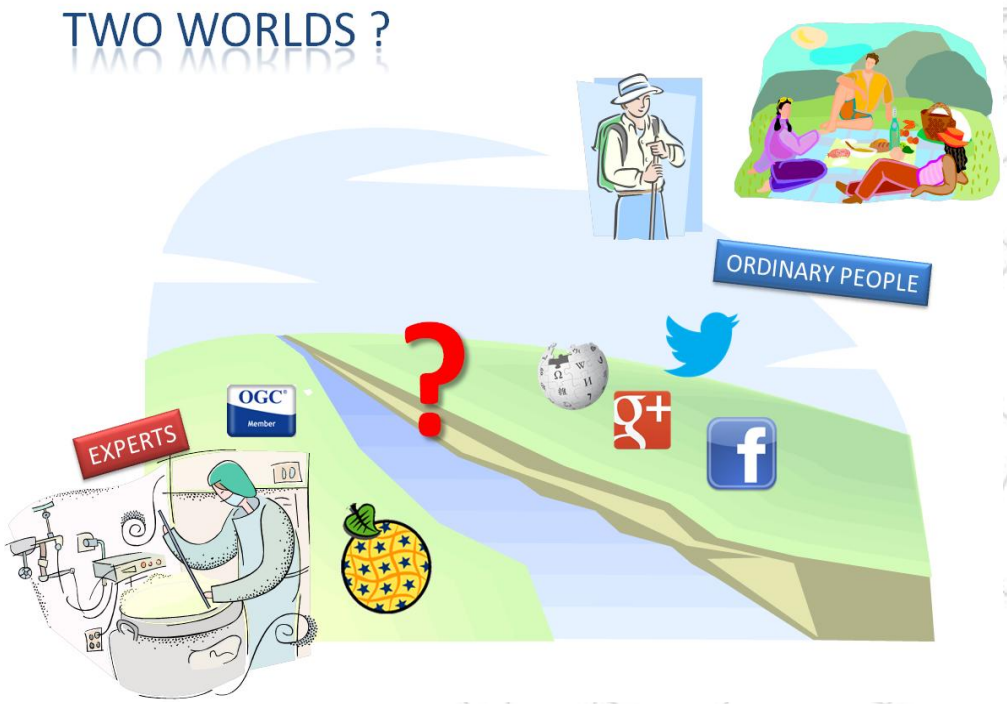
•**SDI4Apps** will provide a solution for strengthening the benefits at national and local levels, which is vital for successful implementation of INSPIRE.

•**SDI4Apps** will demonstrate how SMEs, NGOs, regional developing agencies, municipalities and citizens can benefit from INSPIRE/Copernicus/GEOSS and how INSPIRE/Copernicus/GEOSS can profit from voluntary initiatives.



OBJECTIVES

SDI4Apps will demonstrate:
•how neogeography and VGI principles can be combined with INSPIRE,
•how public sector can profit from voluntary initiatives, and
•how these types of applications can generate business for local SMEs.



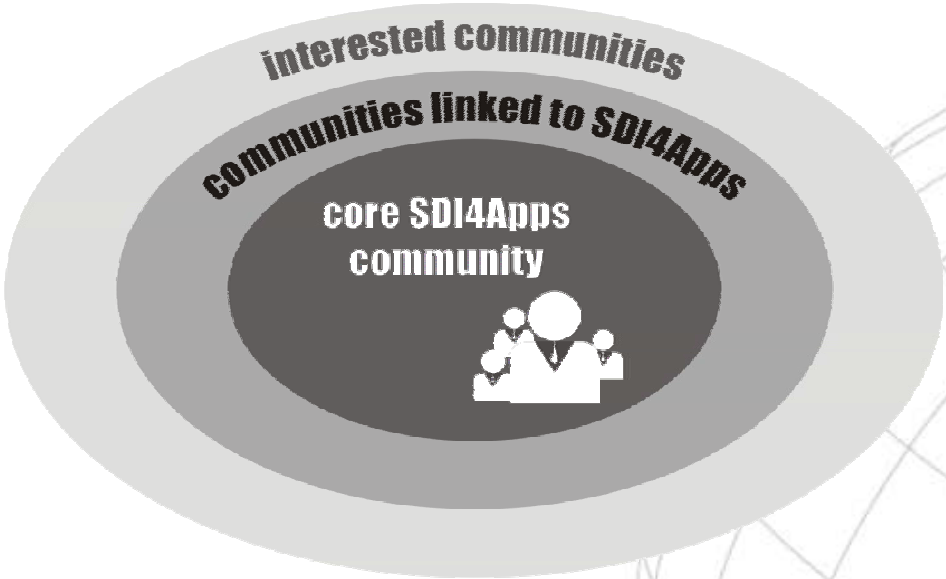
OBJECTIVES

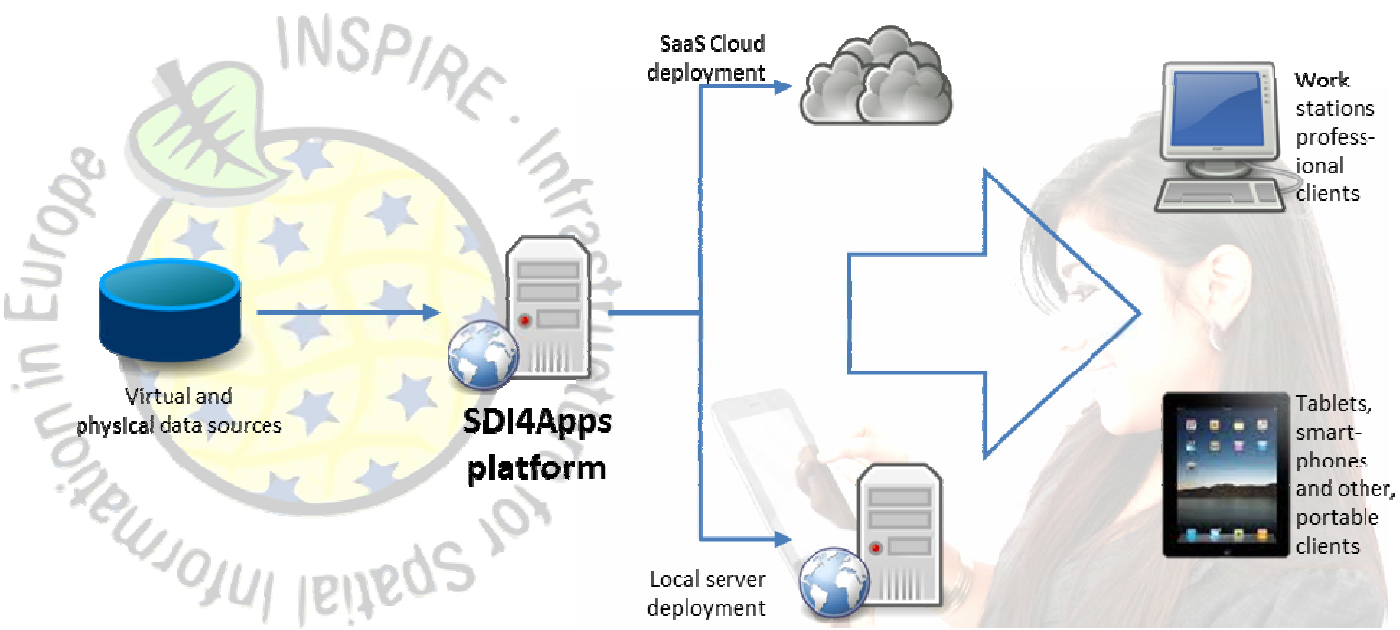
SDI4Apps will demonstrate that **Cloud Computing and Open Source development can converge** by integrating open and scalable Cloud SDI using Open Source software.

SDI4Apps will define and adapt **open API** for all SDI components to allow easy development of new apps by non-GI specialists.

OBJECTIVES

SDI4Apps will build **a community around the SDI4Apps Cloud**, which will be based on core community represented by the project partners. This community will be extended by other related communities and through organising sprint code workshops and developers' contests.





geomatika FAV

Data Layer

Local data in GDAL/OGR readable formats

Web data in Linked Open-Data, WMS, WFS, WCS, CS-W, GeoJSON, GeoRSS and KML formats

Sensor connectivity through SOS, SAS, SES protocols

Caching of remotely stored data for improved performance

Application Layer

The platform includes the following components for a complete application development platform: map server; database server; geodatabase API; inverted index (Solr), transformation; translation
WMS, WFS, WCS client-server; web processing services (WPS); metadata registry; user management; payment handling; augmented reality processor; workflow engine; content management engine

Delivery Channel

SDI4Apps may be installed on individual servers or accessed through the Cloud as Software-as-a-Service.

SDI4Apps Cloud implements an API that permits development of 3rd party applications built on the infrastructure.

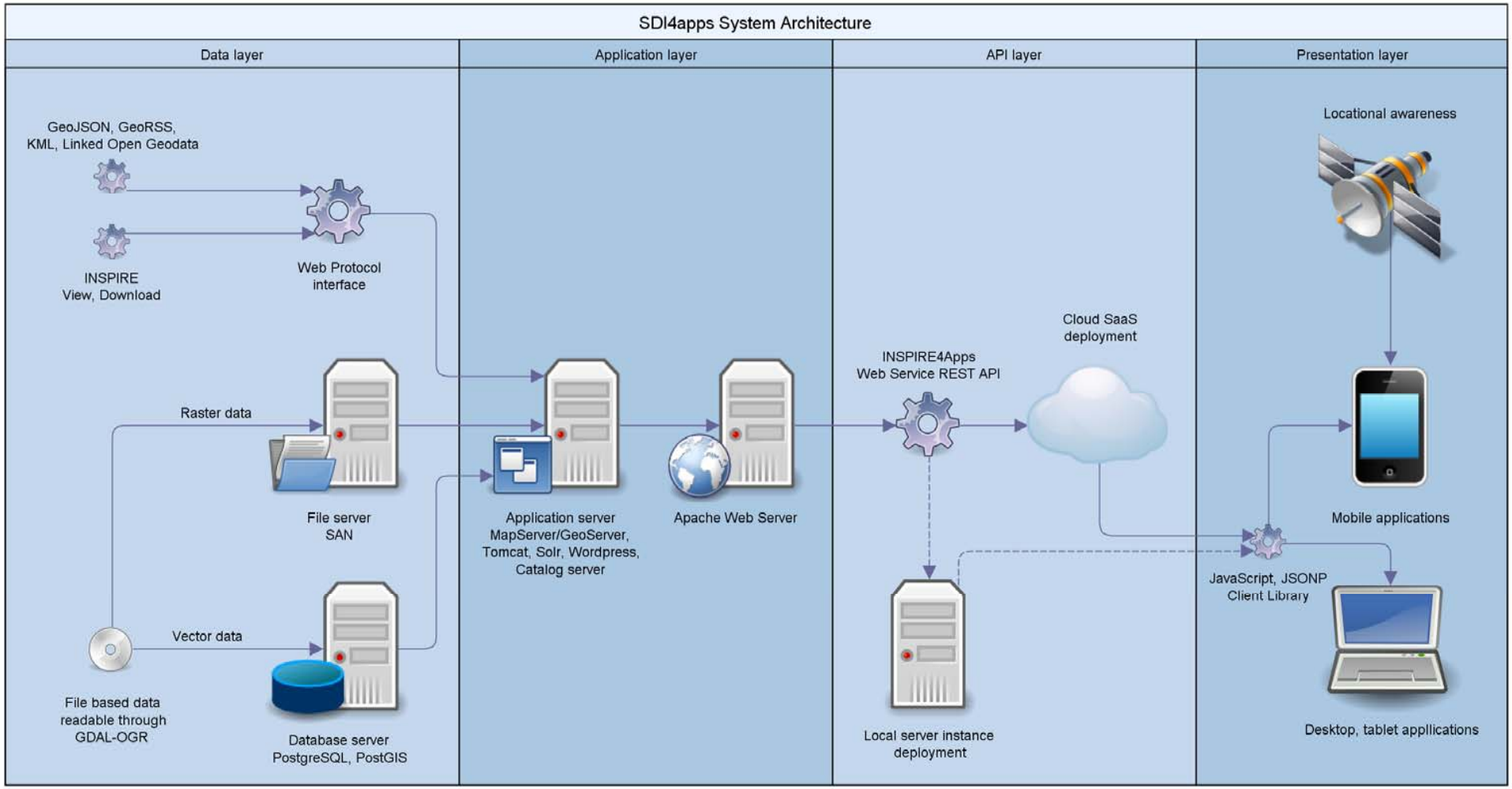
Communication is built on open standards

Client Layer

«Traditional» web apps for desktop computers

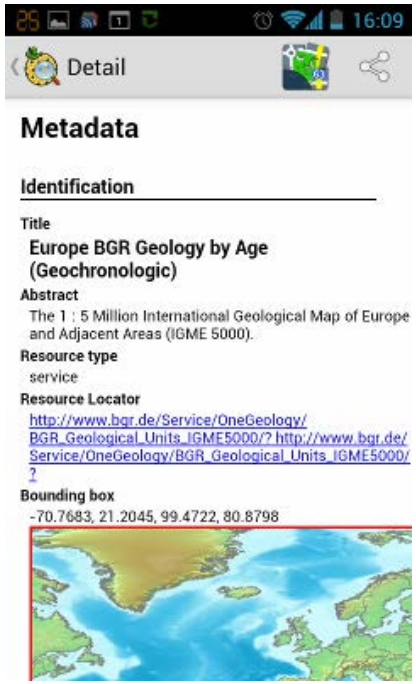
Mobile apps for tablets and smart phones making use of on-board sensors and capabilities such as GPS, compass, camera, microphone, speaker, social network awareness

Making use of HTML5 and client-side JavaScript APIs for cross-platform compatibility


SDI4apps System Architecture
Data layer
Application layer
API layer
Presentation layer
GeoJSON, GeoRSS,
KML, Linked Open Geodata
INSPIRE
View, Download
Web Protocol
interface
Raster data
File server
SAN
Vector data
File based data
readable through
GDAL-OGR
Database server
PostgreSQL, PostGIS
Application server
MapServer/GeoServer,
Tomcat, Solr, Wordpress,
Catalog server
Apache Web Server
INSPIRE4Apps
Web Service REST API
Cloud SaaS
deployment
Local server instance
deployment
Locational awareness
Mobile applications
JavaScript, JSONP
Client Library
Desktop, tablet appllications

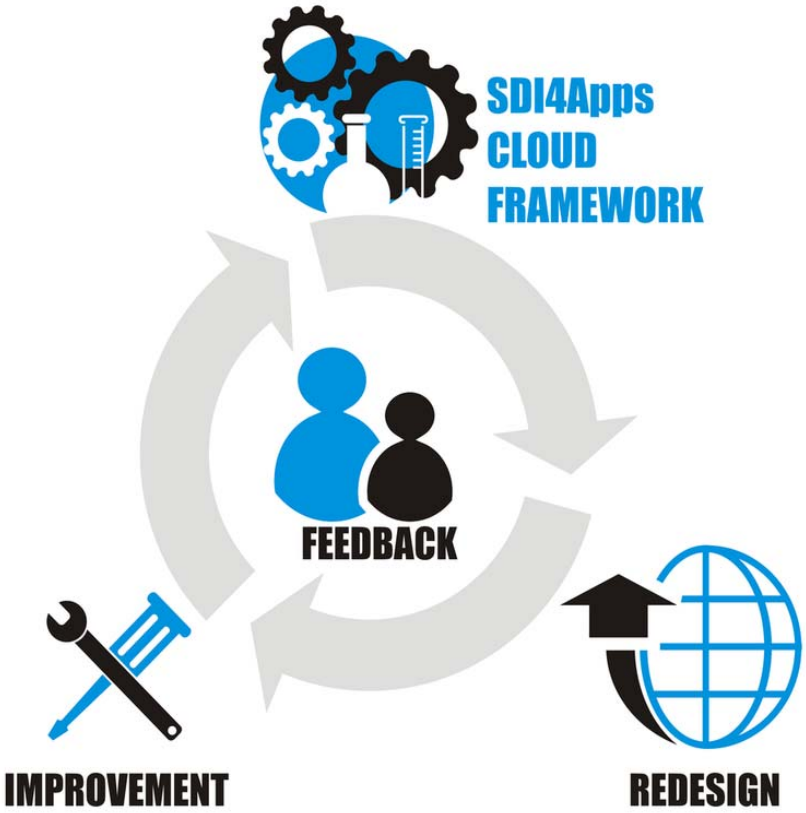
PILOT APPLICATIONS

PILOT I: Easy Data Access – metadata, HS-CAT
PILOT II: Open Smart Tourist Data – including VGI
PILOT III: Open Sensor Network
PILOT IV: Open Land Use Map Through VGI
PILOT V: Open INSPIRE4Youth
PILOT VI: Ecosystem Services Evaluation (ESS Evaluation)



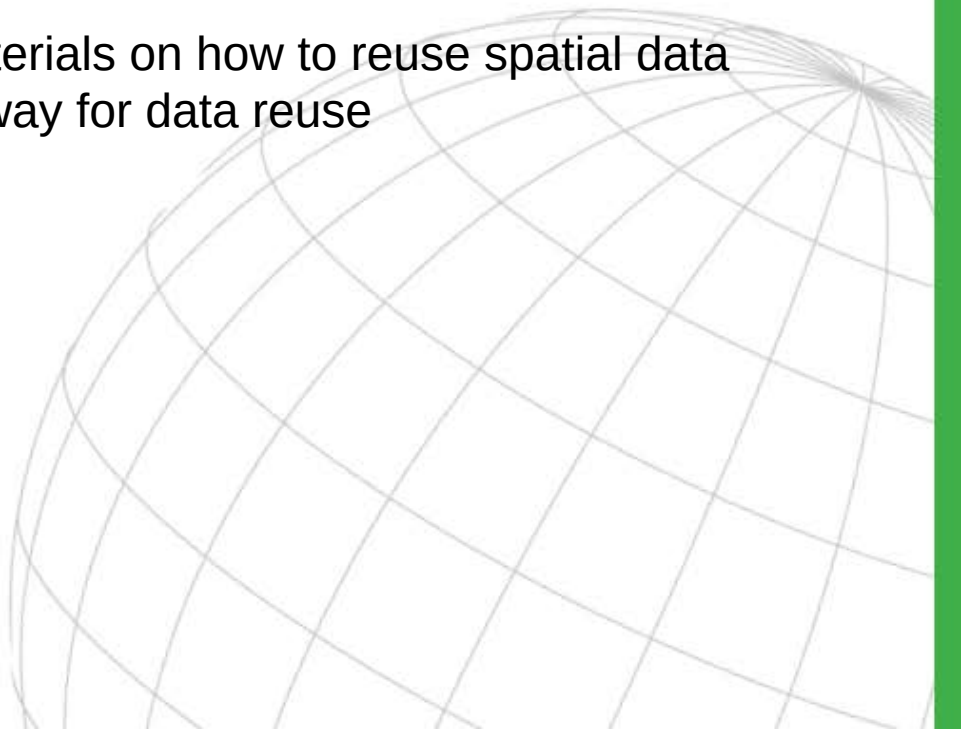
IMPLEMENTATION

(1)Deployment of the basic SDI4Apps Cloud Framework
(2)Validation & Feedback
(3)Deployment of extended functionality (language, LOD, ...)
(4)User experimentation and social validation through pilots
(5)Feedback to the SDI4Apss community
(6)Redesign
(7)Improvement of the SDI4Apps Cloud Framework
(8)User experimentation and social validation in real-world contexts



CORE RESULTS

- a new generation of SDI
- tools for easy access to spatial and non-spatial data
- mechanisms for linking spatial and non-spatial data
- multilingual support for spatial data
- cloud based infrastructure
- data pool of open and commercial data for further reuse
- API designed for app developers
- a set of tutorials and educational materials on how to reuse spatial data
- a set o pilot applications paving the way for data reuse
- a network of SDI4Apps stakeholders
- a sustainable business model



EXPLOITATION

•business opportunities for developers and SMEs
•support for public authorities and other stakeholders through existing and newly created networks
•interoperable data provision for app development