

SDI4Apps

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

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Type of presentation: Impact contribution

Abstract

The main objective of this contribution is to present the way how the SDI4Apps project foresees wider uptake of Open Data and Geographic Information in Europe. The contribution tackles the main aspects for creating an impact for decision making in several areas (pilot applications) by using principles of Open Data and Linked Data in combination with cloud infrastructure supporting spatial services.

The main target of SDI4Apps is to bridge the 1) top-down managed world of INSPIRE, Copernicus and GEOSS built by SDI experts and 2) the bottom-up mobile world of voluntary initiatives and thousands of micro SMEs and individuals collecting Open Data and developing applications. SDI4Apps will secure that users profit from Open Data and Open Data profit from different voluntary initiatives. SDI4Apps will build a WIN-WIN strategy for building a successful business for hundreds of European SMEs on the basis of Open Linked Data, INSPIRE, Copernicus and GEOSS.

PROJECT IDEA AND GOALS

Current society requires easy, reliable and quick access to environmental information published by various organisations and initiatives. The environment questions cover many activities that produce various sorts of data. They are connected with natural risks and hazards (e.g. floods, forest fires), pollution and contamination of air, soil or water, degradation of landscape (e.g. deforestation, erosion, slide processes), scientific research (ecology, geographical sciences), historical landscape memory (landscape ecological research), education and raising public awareness and business activities (e.g. eco-tourism, ecological farms, ecological food production).

Raw GI data published by public administration or private sector are not easy to be interpreted or (re)used by third parties without deep knowledge of data structure, data specifics and underlying technologies. There are several EU initiatives aiming to improve this situation mainly through establishment of Spatial Data Infrastructures (SDIs). The main goal of SDI is to provide access to geospatial data in a country, across a given area or a domain. Data are provided from various sources through a distributed environment.

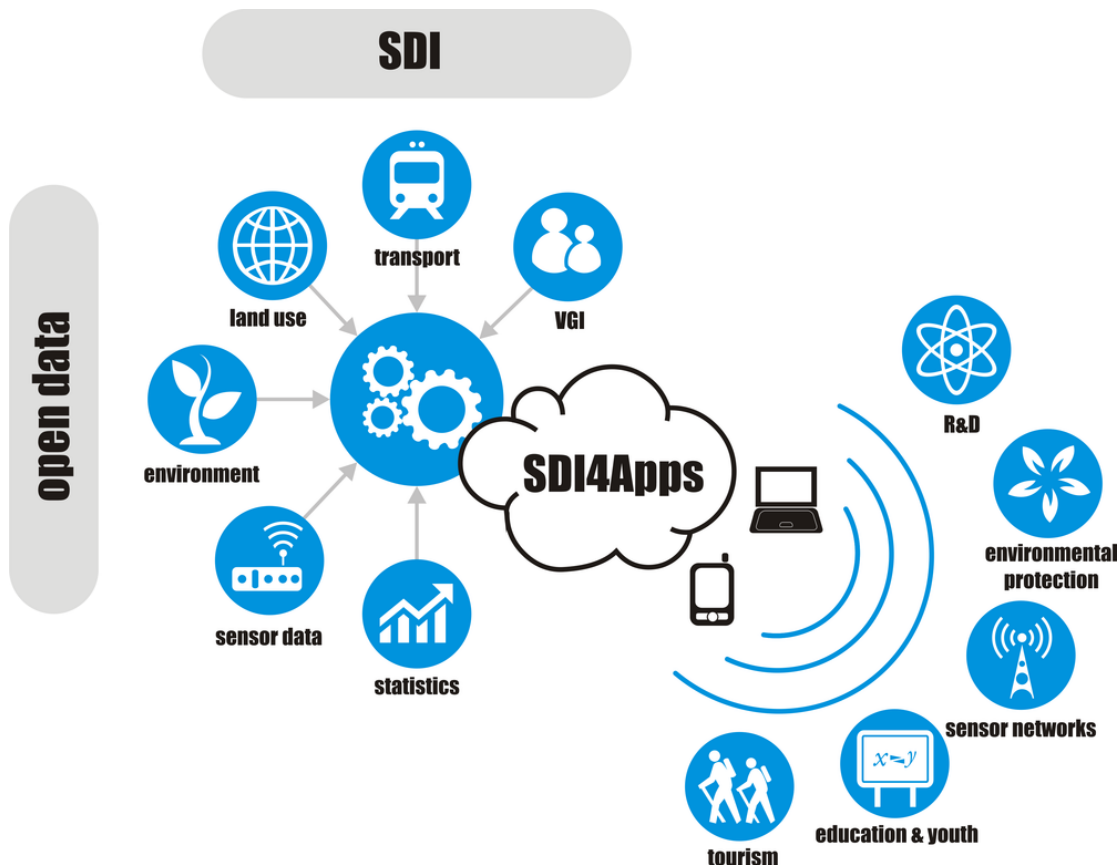
The Internet, as an enabler of SDI, allows making geospatial data available from local to global level. More and more user driven information services become available. Information coming from users, social network sites, sensors and other data providers can be made accessible and reused for other purposes. Spatial data, sometimes referred to as geographic data, geodata or geospatial data, can serve as a reference layer for non-spatial data. The spatial context enables to locate information and to perform various analyses.

Local and community activities capture local knowledge in multimedia forms including videos,

photos or oral histories. The collected information can contribute to up-to-date data. Volunteered geographic information (VGI) is the harnessing of tools to create, assemble, and disseminate geographic data provided voluntarily by individuals. Some examples of this phenomenon are WikiMapia, OpenStreetMap, and Google Map Maker. VGI can also be seen as an extension of critical and participatory approaches to geographic information systems and as a specific concern within online or web credibility. These sites provide general base map information and allow users to create their own content by marking locations where various events occurred or certain features exist. In the context of voluntary data collection, an important part is the way how data are processed. An example can be Neogeography (New Age Geography) focused on combining geotagged data (e.g. KML) with a map interface for contextualised exploration. In Neogeography data can be from volunteers (VGI) or from professionals and can be open or with restricted access. Neogeography is closely related to Application Programming Interfaces (APIs), Web 2.0 and mapping capabilities of the geospatial web.

SDI4Apps demonstrates:

- 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.

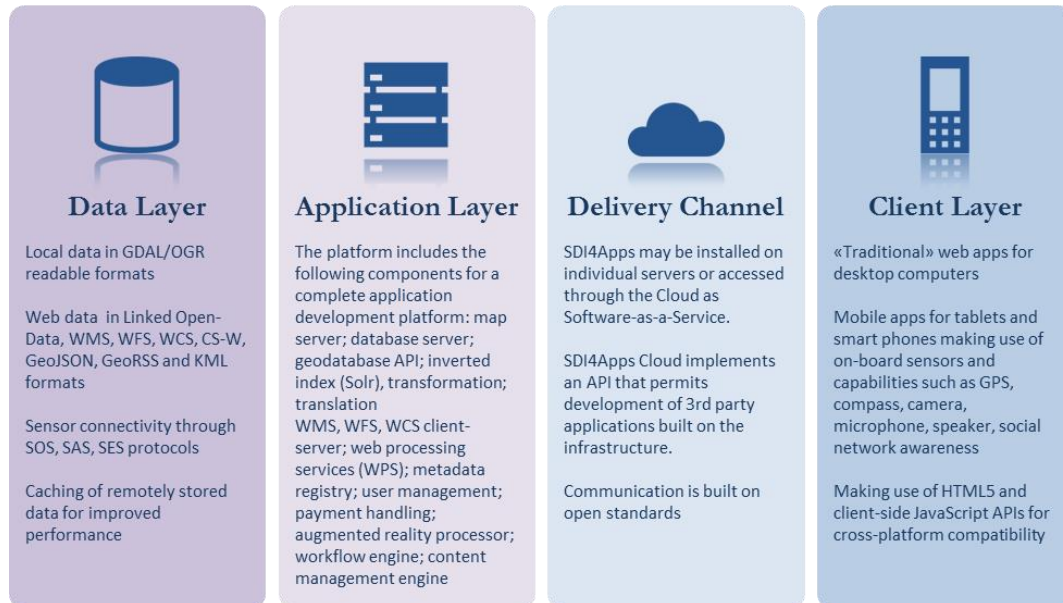
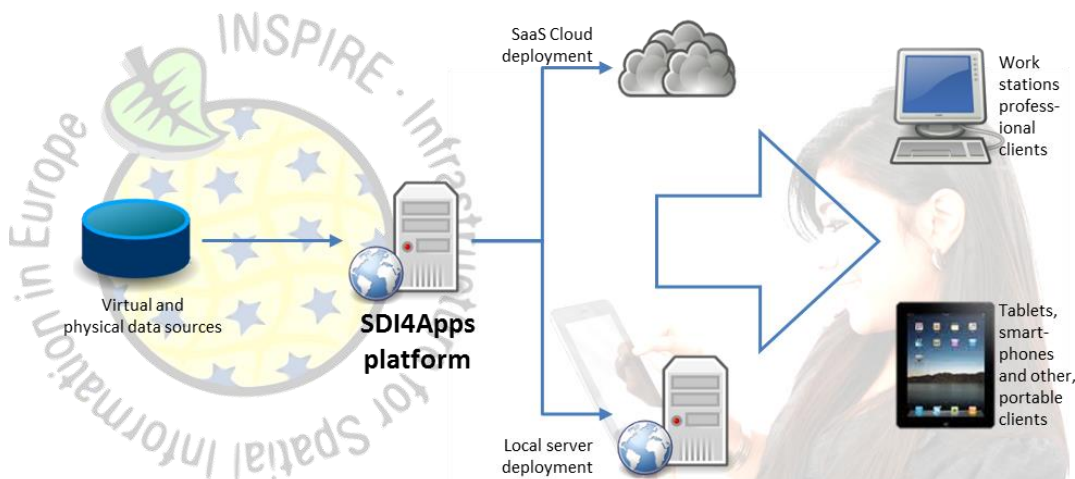


Another aspects addressed by SDI4Apps are those related to Open Data. The Open Data movement covers many issues of using existing data sets without any limits or restrictions – “A piece of data is open if anyone is free to use, reuse, and redistribute it — subject only, at most, to the requirement to attribute and/or share-alike.” Open Data activities mean open-source, open-content and open-access. They are focused above all on technical solutions (open APIs, standardised formats etc.) or on legal issues. Open Data sets are often provided by governmental bodies, but also by scientists or international organisations and bodies (e.g. European Commission, World Bank).

THE TECHNICAL APPROACH

The establishment of SDIs has largely been driven by the “traditional” geo-information community and the national and European policies governing this sector. In 2013 GI is no longer a separate information space but finds itself part of a larger European information space where the ultimate objective is the creation of value-added services based on use and re-use of public sector information as defined by the PSI and INSPIRE Directives rather than exchange of “layers” between different GIS software.

Establishing an infrastructure to meet this new and wider objective puts even greater strain on local authorities and institutions that traditionally were users of GI but now find themselves in an environment where they are expected to be data and service providers, a role that is far more demanding in terms of technical knowledge – and resources.



Pilots applications

The integration of the platform will be supported by pilot applications demonstrating the innovative features of the platform and serving as a space for validation and testing. The following pilots are foreseen:

- **PILOT I: Easy Data Access** – an Open API which will support easy integration of new

applications with existing SDIs.

- **PILOT II: Open Smart Tourist Data** – an interesting, attractive and credible information provided from various sources using of information with the following heterogeneities - various data models, data formats, types of information, level of detail, semantics (terminology), portrayal rules, geometry, coordinates and coordinate systems and updating frequency.
- **PILOT III: Open Sensor Network** - an environment where different groups of volunteers (for example farmers) will be able to integrate low cost sensors (meteorological, quality of air, etc.) into local and regional web sensor networks.
- **PILOT IV: Open Land Use Map Through VGI** – a voluntary initiative for Open Land Use Mapping.
- **PILOT V: Open INSPIRE4Youth** – using Open Data coming from the INSPIRE portal for young generation representing smart phone users. Open INSPIRE4Youth will support creativity, technical capabilities, skills, knowledge and also relations, through the sharing the spatial based content around environment. Using new methods of digital cartography enables to go beyond linguistic frontiers.
- **PILOT VI: Ecosystem Services Evaluation (ESS Evaluation)** - identification of spatial patterns in the ESS Evaluations coming from various areas on national and international levels.

SHORT BIOGRAPHY OF THE AUTHORS

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