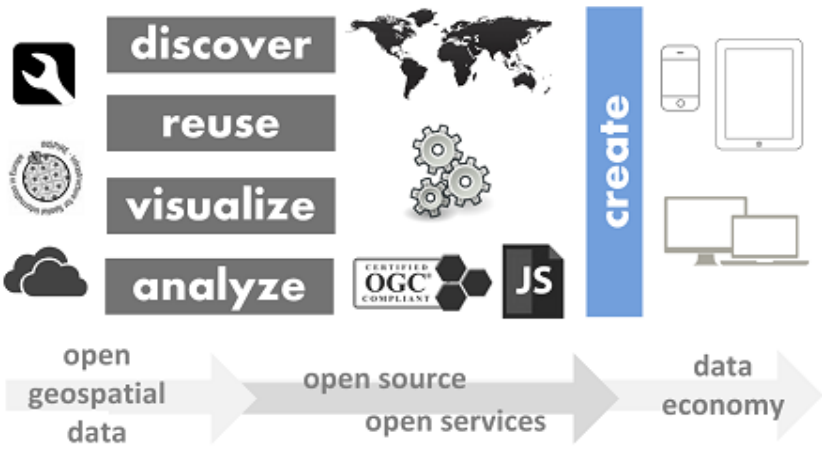
Introduction

PublicaMundi

Scalable and reusable open geospatial data

PublicaMundi aims to democratize open geospatial data publishing and reuse, making easier for publishers to share data and for developers to discover and reuse data

PublicaMundi is a research project originating from everyday problems faced by open data publishers and data consumers. Simply stated, open geospatial data are cumbersome to easily publish and consume for non-GIS experts. While most data publishers and developers are familiar with handling and using typical data (e.g. csv), they are not familiar with the intricacies of geospatial data. Coordinate reference systems, geospatial databases, map servers, special APIs are some of the tools and know-how required to publish and reuse open geospatial data



We will research and develop scalable, reusable tools and technologies to facilitate the **publication, discovery and reuse of open geospatial data**:

- Extend open data catalogues to fully support the publishing, curation and management lifecycle of geospatial data
- Develop and integrate tools enabling the interlinking of geospatial data
- Provide scalable technologies to create and reuse on-demand maps
- Develop analytics services to monitor the usage of open geospatial data
- Develop scalable technologies and reusable data APIs supporting querying, processing, and analysis of open geospatial data

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Challenges

Geospatial-agnostic catalogues

Open data catalogues provide limited support for geospatial data. Simply stated, geospatial data is treated as second class citizens, with insufficient capabilities in publishing methodologies and tools, limited technical foundations to support value added services, and simplistic non-scalable support for geospatial data visualization.

Non-interlinked data

Open geospatial data are rarely interlinked with other geospatial data, as well as with other relevant data sources. Because of this problem frequently a disambiguation issue arises regarding geospatial entities and as a consequence cleansing, curation and fusion become hard processes relying mainly on manual labor. As a result, data cannot be efficiently and immediately used by the private sector and especially SMEs undermining their efforts to build value added services.

Inefficient map provision

The foundation of geospatial applications is the visualization of information on interactive web maps where information is overlayed. Currently, map provision support in open data catalogues is extremely limited, not allowing custom of on-the-fly thematic maps by combining various datasets, nor APIs for integrating web maps to third-party services. Moreover, maps are not optimized for multimodal delivery, being resource intensive for mobile applications.

Inefficient processing

Due to their nature, querying and processing geospatial data is inherently resource-intensive. Open data catalogues provide support for typical tabular data but lack support for geospatial data. In particular they do not support Web Processing Services (WPS) which extend a web mapping server to provide efficient geospatial processing and analysis services.

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SEVENTH FRAMEWORK PROGRAMME

PublicaMundi

Scalable and reusable open geospatial data

Goals

PublicaMundi will provide reusable tools and technologies for comprehensive, sophisticated and scalable publishing of open geospatial data, with emphasis on streamlining and maximizing their reuse in value added services and applications. In particular we will deliver:

- A sustainable, efficient, traceable and easy to use publishing methodology, fully supporting the entire lifecycle of open geospatial data.
- An open geospatial data catalogue with full support for open geospatial data curation and management, integrating the advanced data interlinking, multi-linguality, processing, analysis, mapping, and visualization software components developed.
- Technologies and tools to assist in interlinking and multilingual support of open geospatial data in order to increase their value, relevance, and applicability for value added applications.
- Reusable software components implementing mapping and analytics services for demand-aware visualization of open geospatial data, enabling rapid integration in multimodal and value added applications.
- Reusable software components implementing processing and analysis services for demand-aware processing and analysis of open geospatial data, enabling rapid integration in multimodal and value added applications.
- Comprehensive, real-world validation through geodata.gov.gr, of the project's methodologies and software components regarding usability, sustainability and purposefulness for developing valued added applications
- A showcase of EU innovation for open geospatial data, mobilizing EU members states, SMEs and individuals towards realizing the EU data economy

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Impact

The project's impact will be to accelerate the establishment of a **Data Economy** in the EU for open geospatial data, and the materialization of its tangible benefits:

- innovative and lower cost products
- value added services and applications
- new business models based on data-intensive applications and analysis

The project addresses the specific needs of the data economy stakeholders in relation to open geospatial data reuse.

Private sector

The private sector and specifically SMEs, will have access to high value open geospatial data and reusable, cost effective software components and services, readily available for integration in value added applications

This can lead to significant efficiency gains, reduced implementation time, lower product/services costs, and overall higher quality services. Moreover open geospatial data can lead to new commercial activities and services, focused on large scale, data-intensive innovation

Public sector

For the public sector on an EU, national, and regional level, the application of efficient geospatial data publishing methods and tools can lead to economical, efficiency, and policy benefits

Easier discovery and reuse of open geospatial data can result to increased administrative efficiency, de facto technical and semantic interoperability, increased quality of information, and overall reduced costs

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Partners

Athena is a leading RTD institution active in research on all aspects of open data with specific emphasis on geospatial data. Athena developed and maintains **geodata.gov.gr**, Greece's **open geospatial data catalogue**. Operating since 8/2010, it was one out of eight national open data portals worldwide. It has led to direct savings of 20M€ for the public sector alone and is actively used by 1.000 users/day.
http://www.imis.athena-innovation.gr/

Rasdaman is a high-tech SME leading the development of **rasdaman**, an open source exascale big geospatial data analysis server. Rasdaman is a raster database system developed in the context of various RTD projects and provides fast, scalable, flexible and open standards **web-based big data analysis for geospatial data**.
http://www.rasdaman.com/

GeoLabs is a high-tech SME leading the development of numerous open source geospatial projects, among which the ZOO-Project, a web processing framework for geospatial data. ZOO provides a WPS-compliant developer-friendly framework to create, manage, chain, and execute WPS.
http://www.geolabs.fr/

GET is a high-tech SME active in the entire lifecycle of geospatial data. It produces, maintains and curates geospatial data and develops high-value geospatial applications. GET has significant market experience, networking ties, and exploitation channels, with emphasis in cost effective open-source based services.
http://www.getmap.gr/

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Contact

Institute for the Management

of Information Systems

“Athena” Research Center

imis.athena-innovation.gr

info@imis.athena-innovation.gr

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