SDI4apps Points of Interest Knowledge Base

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Extended Abstract

SDI4Apps – Uptake of Open Geographic Information through Innovative Services Based on Linked Data[1] is an EU-funded project (European Union's ICT Policy Support Programme as part of the Competitiveness and Innovation Framework Programme) coordinated by the University of West Bohemia[2] (link) in Plzen, Czech Republic. The project is being implemented with the concerted effort of 18 organizations (universities, research institutes, private companies, regional authorities, non-governmental organizations) across Europe. SDI4Apps seeks to build a cloud-based framework with open application programming interfaces (APIs) for data integration and sharing focusing on the development of six pilot applications. The project draws along the lines of INSPIRE (INfrastructure for SPatial InfoRmation in Europe), Copernicus and GEOSS (Global Earth Observation System of Systems) and aspires to build a WIN-WIN strategy for building a successful business for SMEs (small and medium enterprises) on the basis of European spatial data infrastructures.

The SDI4apps solution is applied in six pilot applications. One of the pilot applications, the Open Smart Tourist Data pilot, focuses primarily on cycle tourism. In addition to the cycle routes dataset, another crucial knowledge base including points of interest (POI) is being created.

The contemporary version of the SPOI (SDI4Apps Points of Interest) knowledge base (October 2015) contains more than 4,100,000 POI cover-

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[1]http://www.sdi4apps.eu

[2]http://www.zcu.cz

ing European and African countries. Data are kept as RDF triples in the Virtuoso database system. OpenStreetMap is the main data source of the POI knowledge base, but there are integrated other resources such as points from GeoNames.org, experimental ontologies developed at the University of the West Bohemia (European ski resorts and Christian monuments in Rome) or data from the Posumavi region (south-west Bohemia). The original data are transformed to an RDF file through XSLT styles and Saxon XSLT processor. These XSLT styles process structured and valid information such as ontologies as well as non-valid data such as particular web pages of Posumavi region. The data are published via SPARQL endpoint[3] and the SDI4apps geoportal (map application Smart Tourist Data). There is also a web page[4] presenting SPOI data.

The data model follows recommendations for RDF data sets, semantic data, Linked Data as well as the data model published in Points of Interest Core (W3C Editor's Draft published in 2012; this model is used for OGC OpenPOIs.net dataset).

SPOI knowledge base complies with 5-star rating system of Linked Open Data. The data model re-uses several important, respected and standardized formats and vocabularies such as XML, XML Schema, RDF, RDFS, SKOS (Simple Knowledge Organization System), GeoSPARQL or FOAF (Friend of a Friend).

There is a huge space for further development. The next steps will focus on collection and harmonization of new data, solving open questions related to licenses, advanced visualization, modification of IDs to more readable form, interconnection to the INSPIRE specifications (for example addresses), providing data in other formats such as GPX or KML and implementation of new properties of POIs (metadata, spatial relationships or keywords).

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[3]http://ha.isaf2014.info:8890/sparql

[4]http://sdi4apps.eu/spoi/