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Presentation: The EU Humboldt project - networking of spatial data

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Session: The visualisation of regional and urban data

Abstract

Weather, rivers and conservation areas are inherently international and take no account of national borders. The necessary political decisions and challenges resulting from natural disasters or concerning the protection of conservation areas consequently also have a transboundary dimension. The spatial data required for this in Europe, however, shows extensive heterogeneity. The EU Humboldt project, a framework for geodata harmonisation and service integration, started in October 2006 and will facilitate the harmonisation of spatial data between countries. Under the coordination of the Fraunhofer IGD and with the contribution of the INI GraphicsNet Stiftung, 27 partners from 14 European countries are working on the four-year project with a total budget of 13.5 million euros.

Vision

The primary aim of Alexander von Humboldt (1769 –1859, a Prussian naturalist and explorer and one of the last universal scholars) was to integrate the knowledge of his time to gain new insights and to further all areas of science. Following the path of its eponym, the Humboldt project aims to advance the process of implementing a European Spatial Data Infrastructure (ESDI). This integrated network of systems providing data and services will allow the sustained use of existing services as well as the development of entirely new applications and business models. For research, this availability of data is – despite ongoing efforts – still highly scattered and heterogeneous. Unification can contribute to the creation of new knowledge by combining data that was previously not integrable – or only with prohibitive effort. Also, new processes that replace complicated existing activities and have a much higher efficiency can be developed on the basis of the envisaged system.

Objectives of the project

In this context, Humboldt’s most important goal is the harmonisation of existing data. This includes the provision of a basis for GMES (Global Monitoring for Environment and Security) application services by meeting their requirements, supporting the harmonisation process and creating the basis for sustained use of spatial data. The core of the project marks the creation of a software framework covering the harmonisation of data and services on the syntactic, schematic and semantic levels.

Creating such a framework also involves finding solutions to open research issues such as the efficient connection of legacy systems providing important data, the visualisation of
huge amounts of data, the handling and processing of 3D urban models and the design of new user interfaces for complex conceptual systems. In all these areas, the Fraunhofer IGD department for Graphic Information Systems contributes extensive experience from previous developments such as the CityServer3D technology. Fraunhofer IGD also has the leading role in the specification of the Humboldt framework. In this sense, the framework is a set of software modules that enables providers and users of geospatial data to create their applications with minimal effort. This assumes the solving of many typical problems present in heterogeneous environments and providing extension points to these components.

An essential element of the project is the development of scenarios in which the different components are applied under realistic conditions.

The scenarios show – among other things – applications for effective border control and security in rural regions, for risk management in weather disasters, for the protection of cross-border forests or for the management of nature reserves. The variety of scenarios also shows how many different areas will benefit from harmonisation of the spatial data.

The organisational structures and sub-structures have already been established and work has started on the prototype specification and on the dissemination plan. The last-mentioned functions as a strategic roadmap to ensure the visibility and long-term sustainability of the project. This is being managed by the INI–GraphicsNet Stiftung over the whole duration of the prestigious EU project, including user involvement strategies, cost and process analysis, and marketing plans using the foundation's expertise in calculating, evaluating and demonstrating short-term and medium-term measures for IT projects, as well as their effects.

Further information: www.esdi-humboldt.eu

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