Intergraph Solutions and Integration of Diverse Geospatial Data

Intergraph and European SDI's

The four-year EU HUMBOLDT project contributes to the implementation of an ESDI that integrates the diversity of spatial data available for a multitude of European organizations. It is the aim of this project to manage and advance the implementation process of this ESDI. Intergraph is now engaged in the HUMBOLDT research project to explore advanced solutions and define operational processes in applying spatial data infrastructures.

By Johann Jessenk

Whether it's providing protection from natural disasters or establishing administrative boundaries, accurate and usable geospatial information is crucial for decision makers. As administrative boundaries play a less important role in the face of complex international relationships or natural phenomena, a seamless exchange of geospatial information is crucial in making better decisions. However, geospatial data is often provided in different formats and systems. For example, the continued development of the European Union (EU) and its 27 member states brings together a wealth of geospatial information. Without data harmonization, international cooperation to support monitoring and planning is difficult. The information is often not accessible, and if it is accessible, various system platforms and even language and semantic differences can create more barriers. To support its policies and environmental objectives, as well as citizen security and economic growth, the EU is focusing on making digital spatial information more easily accessible and usable. The creation of the European Spatial Data Infrastructure (ESDI) is at the core of these endeavors.

The Project Objectives are as follows: Conform geospatial data to the Infrastructure for Spatial Reform in Europe (INSPIRE) standards and major European initiatives, harmonize data to improve decision making in security and environment applications, and provide users with access to accurate, current, and reliable data.

The Solution

With the INSPIRE directive as the driving legal force, the EU is seeking means to promote the creation of the ESDI. One approach is to enable and support cooperation among research firms, various industries, academia, and geospatial data users to pave the way for implementing the ESDI by developing best-practice examples. Intergraph is leveraging this pan-European cooperation and is now engaged in the HUMBOLDT research project to explore advanced solutions and define operational processes in applying spatial data infrastructures. Data harmonization is the primary issue addressed by the project. The HUMBOLDT project manages key parts of the ESDI implementation process, with the primary goal of enabling organizatio to document, publish, and integrate the geospatial information. Common HUMBOLD data models include land cover and vegetatio water resources, ocean and marine enviro ments, atmosphere, risk management, ar security. These data models will be based c the upcoming INSPIRE data specifications. Tl project relies on a technical infrastructure th is based on standards and services, and th provides the means to harmonize multiple sp tial information sources and fuse them into application-specific information source.

Intergraph, with more than 20 partners from European countries, investigated how data a service providers, as well as users such regional planners, will profit economically fr the ESDI. Part of this state-of-the-art analy included existing processes and tools for da harmonization. Now Intergraph and the t consortia are establishing the steps needed achieve interoperability for data and metada A software framework and diverse tools v support the development and integration standardized geospatial information, includi data models, formats, quality, availability, s vices, and languages. HUMBOLDT plans develop, validate, and provide open and fle ble software frameworks.

The Future

An essential element of the HUMBOLDT p ject is the development of scenarios in wh different components of the framework a applied and tested under realistic conditio Intergraph is involved with two of the scen ios. The European Risk Atlas scenario colle and combines existing data concerning ris and vulnerabilities, including severe weatl phenomena that cause natural hazards su as floods. The objective is to support r management in a cross-border flood event making integrated data sources easily av able. The Border Security scenario aims enable effective border control and secu on the EU external border by providing tools to analyze hot spots of illegal trespa ing. Integrating new sensor technology i further challenge in this scenario.

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