PROJECT

D4D

Data Warehouse for Danube Waterway

Funding: European

Duration: May 2001 - May 2005

Status: Complete with results

Background & policy context:

D4D was an Interreg III B project within the scope of GIS Forum Danube. The GIS forum was founded in 1997 by the waterway administrations of Germany, Austria and Slovakia. Since 1999, the group is accepted by the Danube Commission and joined the working group, followed afterwards by Croatia, Romania and the Ukraine. The GIS Forum aims at more intensive exchanges of geographical data and closer cooperation in terms of the waterway management for the Danube river.

Objectives:

1. To provide a common and harmonised implementation of European and international standards on the Danube waterway and recomendations for inland navigation.
2. To network national geographic information systems and to ensure an efficient exchange of electronic data between responsible waterway authorities.
3. To create digital navigation charts fo the Danube river in compliance with the European inland ECDIS standard.
4. To set up an infrastructure to improve the accuracy of satellite based positioning systems, according to current international standards.

Methodology:

D4D started with the creation of digital charts and set-up of the infrastructure of differential positioning systems to ensure implementation of River Information Services (RIS). Then, all waterway relative data is stored in a distributed database (data warehouse) and made available to the participating countries. The common database serves as a basis fo a number of additional applications. The first application is the conversion of the data into navigation charts according to the ECDIS standards.

Related Projects:

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Parent Programmes:

INTERREG IIIB - Trans-European cooperation (Community Initiative)

Institute type: Public institution

Institute name: Joint Technical Secretariats for each of the strands, respectively regions.

Funding type: Public (EU)

Partners:

- Waterway and Shipping Directorate South (Germany)
- Austrian Waterway Directorate of the Federal Ministry of Transport, Innovation and Technology (Austria)
- via donau-Österreichische Wasserstrassen-Gesellschaft mbH (Austria)
- Ministry of Transport, Posts and Telecommunications (Slovak Republic)
- EDUVIZIG - Transdanubian Water Authority North (Hungary)
- Ministry of Maritime Affairs, Transport and Communications (Crotia)
- Galai Administration of the Lower Danube (Romania)

- Ministry of Transport (Ukraine)
- Odessa National Maritime Academy (Ukraine).

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Key Results:

1. The Directive EC/2005/44 demands the implementation of River Information Services along the navigable international waterway network. One of the basic standard is the Inland ECDIS standard for navigational charts. These charts have been produced within D4D in Germany and Austria. Since the directive is only binding for member and candidate states, the Danube Commission is urgently asked to recommend the standards to be used in the Ukraine and Serbia-Montenegro as well. This will ensure harmonised implementation along the complete Danube waterway.
2. The usage of the positioning signal is meeting the requirements of inland navigation. The accuracy of better than 3 metres, which is demanded by the International Association of Lighthouse Authorities (IALA) in the maritime field, can be fulfilled.
3. The double usage of navigational positioning signals in the bandwidth of aircraft radio is not possible due to interferences. This combination causes failures in the aeronautic field, which cannot be explained by technicians.
4. The D4D data format as published on the project website fulfils all requirements of the international data exchange and also serves the needs of all Danube countries. It is a description of geo-data, which is all data of interest for waterway maintenance. It serves the needs of the generation of navigation charts as well as the cross-border management of navigable rivers.
5. The exchange of geo-data between national administrations needs legal agreements. Such agreements may be done on basis of bilateral contracts between the providing administrations. Transnational contracts on ministry level are not needed. Nevertheless, this only applies to administrations, which have full copyright of the respective data. Especially in Eastern European countries geo-data is under the responsibility of various bodies and hence, such agreements will be hard to handle.
6. Opinions diverse on the most efficient way of distributing navigational charts. While Austria will continue to provide charts for free in the internet, Germany officially decided to distribute them via contracted distributors. Other countries along the Danube partly will follow mixtures of these two ways. Nevertheless, all partners and observers agree that especially the provision of up-to-date depth information to skippers is a vital information for safety of navigation and shall be provided for free download.

Technical Implications

The implementation of beacons for positioning signals requires international cooperation. The range of these signals is about 200 kilometres in each direction of the beacon. Therefore these signals may reach far into the area of neighbouring countries. At the beginning of this work package all partners designed a Danube-wide concept for the most feasible locations of such beacons.

A document was set up explaining the technical details of the system set-up and its characteristics. As a consequence all partners reached a common level of knowledge for further discussion. In cooperation with the observers from Eastern European countries and experts in the field of positioning signals, a proposal for a Danube wide network plan was worked out and finalized by end of 2002.

In relation to this technical development, the following recommendations for further approach have been made:

- Extend the network of positioning signals to additional countries and work out feasibility studies for such implementation especially in Hungary.
- Implement a pilot operation for the integrity monitoring of the Austrian and German positioning beacons as part of a transnational co-operation. To achieve detailed knowledge about the long-term behaviour of respective signals and the geographical coverage.

Policy implications

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STRIA Roadmaps: Network and traffic management systems

Transport mode: Water transport (sea & inland)

Transport sectors: Freight transport

Transport policies: Digitalisation, Societal/Economic issues

Geo-spatial type: Network corridors