

# **TIM-online**

## **A part of the eGovernment strategy by the Federal State North-Rhine Westphalia**

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### **SUMMARY**

*1999 North-Rhine Westphalia (NRW) started its regional spatial data infrastructure initiative GDI NRW. The goal of the GDI NRW was defined to stimulate the geoinformation market which is only at 15 % of its potential.*

*Nowadays OGC Web Map Services (WMS) are established as the state of the art technology to use, visualize and combine maps via the Internet. Nevertheless, the use of these services in concrete applications outside of the classic geoinformation sector is still underdeveloped. This is one of the reason that the parties involved in the GDI NRW, municipalities, research bodies, IT-enterprises and the users of GI data, started the so called "joint project GDI NRW 2004" (Verbundprojekt GDI NRW 2004) to show the benefit of SDI-services. As the major provider of reference data the Surveying and Mapping agency of NRW is participating in several projects as part of the "joint project GDI NRW 2004".*

*As part of the topographic information management a notifying service was currently established on the base of a WMS to notify topographic changes by local users. The Feedback of the user community has shown a high interest in the use of the service. The web-server-statistics for TIM-online has counted 34.000.000 successful requests in 2 months (starting October 2004). An Internet television program has judged this application with "five stars" (best rating). So this WEB-Service, called TIM-online ([www.tim-online.nrw.de](http://www.tim-online.nrw.de)) is an example for "living eGovernment" in Germany/North-Rhine Westphalia.*

*On the federal level for Germany (GDI-DE) and on the European level (INSPIRE), in the process of eGovernment Geodata Infrastructures are currently growing up. The development of TIM-online is based on international standards, developed by the Open Geospatial Consortium (web map services). In respect to the principle "Some for all" TIM-online will become a role model for co-operation on the federal and European level.*

### **KEYWORDS:**

WMS, up to dateness

### **INTRODUCTION**

Realizing geoinformation as a basic economic good, North-Rhine Westphalia has begun to set up a Geodata Infrastructure – the GDI NRW. Oriented to international examples, this project shall be based upon the relevant international norms and industrial standards. It is intended to activate and stimulate the market for geodata in NRW with the help of this initiative.

To guarantee an organized development of GDI NRW, a permanent decision-body has been appointed by the Minister President's office. This "GI-Committee NRW" (Committee for Geoinformation in North-Rhine Westphalia) designs strategies for the creation of GDI, judges incoming project proposals referring to GDI, and gives advice to the Minister President's office concerning all questions about geoinformation. Members of the committee are representatives from all NRW ministries being concerned with geographical information

The goal of the GDI NRW on the state level and GEOBASIS.NRW on the local level is to stimulate the geoinformation market which is only at 15 percent of its potential. GDI NRW will provide the users, including private industry, access to available public and private spatial data holdings over a homogenous infrastructure easily available over the internet. Currently legal regulations are revised in NRW in order to give the legal reference frame for GDI NRW. The following goals are formulated:

- Reference data of cadastre and national mapping are the official public reference sources to be used by all state authorities.
- These reference data should be easily accessible to the general public and all possible user groups.
- The access to public data sets is only limited if defined privacy information (for example information about the names of the owners of property) is concerned.

To insure interoperability, both GDI NRW and GEOBASIS.NRW are based on a common reference model. All participating institutions (state agencies, private GIS-companies, universities, GIS-users) have agreed on a common manifesto to apply uniform standards fixed in the reference model and based on international standards.

#### **CENTER FOR GEOINFORMATION CEGI**

The CeGi Center for Geoinformation based in Dortmund is a communication and coordination platform for the development of innovative spatial information applications for the economy, science and public authorities.



The goals of CeGi GmbH are to communicate general fields of utilisation as well as the potential activity of geo-based products and applications and, furthermore, to identify application needs of respective branches. As a nationally operating communication and coordination platform for innovative spatial information applications CeGi GmbH forms an interface between users and developers.

The goals of CeGi GmbH find support through a number of shareholders who represent all value added sectors of the spatial information branch. Along with the State of NRW, as major shareholder of CeGi, it is represented by small and well-known companies of the international GIS-software industry as well as by medium-sized service providers and solution offices.

Through market analyses and the development of market strategies dependent upon them, CeGi can identify business segments of a spatial data market and aim to stimulate it. CeGi's neutrality allows it to consult different market players of particular branches and thus to arrange relevant measures.

In addition to the elaboration of concepts for spatial data certification, personal qualification, spatial information services and information transfer, CeGi GmbH offers consulting and project support for innovative practical appliances in the GI-Trendscouting field.

## JOINT EGOVERNMENT STRATEGY „DEUTSCHLAND-ONLINE“

In June 2003, the heads of the federal and of Land governments, backed by national associations of local authorities, adopted a joint strategy called Deutschland-Online. On the basis of successful joint projects, the federal government, Land governments and municipalities are intensifying co-operation in eGovernment.

Good eGovernment requires the comprehensive integration and optimisation of administrative processes - on and across all administrative levels. This is the reason why the federal government, Land governments and municipalities have agreed to a joint eGovernment strategy - Deutschland-Online.

The joint strategy Deutschland-Online is divided in five pillars:

- The service portfolio
- Network on administrative portals
- Infrastructure
- Standards and process models
- Co-ordination and transfer

The content of geoinformation, Geographic data and Geodata infrastructure is situated in pillar one, service portfolio. To push the development in different individual public agencies and administration levels, the Surveying and Mapping Agency of North - Rhine Westphalia has accepted the lead unit for the cluster “Geographic data”. Practical work started in September 2003; first results are presented at the Intergeo 2004 in Stuttgart.

### Starting situation:

Geographic information has a vital role to play in the economic and social development of a modern state. However, geographic data available at federal, federal-state and municipal governments is very heterogeneous and frequently incompatible on a national scale.

### The aim:

The aim of the geographic data project is, by co-operating on all three administrative levels (federal, federal-state and municipal), to demonstrate on the basis of concrete projects in the geographic information landscape that success is possible through joint effort when it comes to harmonising geographic data. Another aspect is the opening up of market potentials as well as standardisation.

### Benefits:

Widespread availability of geographic data and hence the utilisation of new opportunities on the market for geographic information.



## THE JOINT PROJECT GEODATA INFRASTRUCTURE NRW 2004

The joint project Geodata Infrastructure GDI NRW 2004 (Verbundprojekt Geodateninfrastruktur NRW 2004) intends the goal to develop the operational core of the GDI North - Rhine Westphalia. The emphasis of the association project is the conversion of the GDI North-Rhine Westphalia standard in marketable geo information offers and their lasting supply (min. 3 years) for users of the GDI NRW.



With this association project the initiative GDI NRW introduces a new phase. In the past work, the ongoing process was focused on common specifications and the development of components of the GDI NRW; now the step takes place for the operational conversion of these concepts.

The Surveying and Mapping Agency of North - Rhine Westphalia is playing an important role in this project:

- The subject of the contribution is the supply of reference data in the format of conformal Web Mapping Services over the Web servers of the national agency for data processing and statistics (LDS North-Rhine Westphalia). The use of the Web Mapping Services is free of charge for not-commercial applications. In a later phase for certain applications there will be a repay if necessary.
- TIM-online realizes the free entrance to the reference data for everyone. With TIM-online the internet-user takes part in the topicality safety device of the reference data. The user can notice discrepancies between topography and the map directly online in the Internet and communicates the information via E-Mail to the Surveying and Mapping Agency of North - Rhine Westphalia. The change information is verified by the the staff of the agency and transferred into the data base.

### **THE UPDATING PROCESS OF DIGITAL MAPS**

The highest good of maps is represented by the quality, the relevance and the topicality of the content. In this way, Up-to-dateness is the slogan for all users basing their projects on digital maps. In the past, the up-to-dateness of maps was represented by a period of several years. In the meantime of cyclic updating, important features like streets, airfields or bridges can be realized, without noticing in the maps.

To devoid these disadvantages and to prove the up-to-dateness, the Working Committee of the Surveying Authorities of the States of the Federal Republic of Germany has implemented a working group to build up a common concept for Germany. This working group has given the following recommendations to ensure the topicality of digital maps (ATKIS):

The Surveying and Mapping Agencies have to guarantee, that for a small, but strongly inquired quantity of features and attributes of the ATKIS a high-level up-to-dateness is reached by few months by constant actualisation (continuous updating). All other features are updated to a general cyclic actualisation of five years (cyclic updating).

The major task was to define these selected features, which are included in the table of continuous updating, e.g. :

- street and square,
- railway, airport and airfield,
- border check point
- tunnel and bridge
- overhead cable and canal.

For these features, in dependence of importance of the data, a various time-period is fixed from 3 months to 12 months. To fulfil these requirements, concrete compliments of organisational and technical steps are described for realisation in the agencies:

### Co-operation with Initiators

Most of all changes in topography are caused by active dealing of human being. These information are often available in digital form and shall be transmitted to update digital maps. Personal contacts to the initiators of changes promote the readiness for Co-operation. In this way, cost-intensive local collections are avoidable.

### Operating with district topographers

Certain change information will have to be procured however only at own local expenditure. For these local collections a team of district topographers is going to establish. The district topographer stays in contact in a firmly assigned region to the initiators of changes and maintains it. Beyond that the district topographer is responsible for the examination and collection of data, which cannot be announced by the Initiators. The team of district topographers is called Topographic information service.

### Setting up a Topographical Information Management (TIM)

To deal with these requirements, a Topographical Information Management System (TIM) is necessary. TIM is representing the interface between acquisition of information, storing the information in Data bases and processing the information to update the ATKIS. All organisations, participating at the updating process, will have access via Internet to this system.

## **THE APPLICATION TIM-ONLINE**

The Surveying and Mapping Agency of North-Rhine Westphalia has realised the application TIM-online ([www.tim-online.nrw.de](http://www.tim-online.nrw.de)) for the access to all topographic maps and digital Orthophotos of North-Rhine Westphalia (reference data). In order to facilitate Internet- and final users the entrance into the modern GDI technology the WMS service TIM-online is free accessible.



Over Internet and with access to the available WMS services the user is able to look at the reference data in different scales and to locate the target using an address specification. Additionally to the presentation of the reference data the user can merge also further geodata (WMS-Services) into the presentation. All data are supported, which correspond to the WMS profile of the joint project Geodata Infrastructure GDI NRW 2004.



For the first time the user will have the possibility of supporting the actualisation process of the reference data. The user can announce contradictions between reality and the maps, which were noticeable to him, by Internet directly to the office of the Surveying and Mapping Agency of NRW. The uncovered contradiction can be registered with simple indication functions into the map and supplemented by text explanations. The district topographers verify this messages and update as fast as possible the reference data.

TIM-online was realized in co-operation with the company [con terra](#). The Feedback of the user community has shown a high interest in the use of the service. The web-server-statistics for TIM-online has counted 34.000.000 successful requests in 2 months (starting October 2004). An Internet television program has judged this application with five stars (best rating). So this WEB-Service is an example for "living eGovernment" in Germany/North-Rhine Westphalia.

## CONCLUSION

North-Rhine Westphalia is implementing Geodata Infrastructure (GDI NRW) at the state level to increase the access to existing spatial data across the state.

In the beginning years, the development was focused on testbeds, to create interoperable solutions for GDI, strictly following the available OGC-standards. In 2004, the joint project Geodata Infrastructure GDI NRW 2004 (Verbundprojekt Geodateninfrastruktur NRW 2004) has started to develop the operational core of the GDI North - Rhine Westphalia. As the major provider of the joint project, the Surveying and Mapping agency of NRW is participating in several projects.

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