Development of the InGeo-Forum Information Center

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German Abstract

Das InGeoForum hat es sich zur Aufgabe gemacht, Anbieter und Nutzer von Geodaten zusammenzubringen. Dies geschieht mit Hilfe ganz verschiedener Mechanismen und Werkzeuge. Im Mittelpunkt stehen dabei moderne Informationstechnologien, wie das Internet und darauf basierende Dienste, wie WWW-Server, Metadaten-Server sowie E-Mail-Anfragen und -Bestellungen. Innerhalb des Projektes »Entwicklung des InGeo-IC« wird prototypisch das Metadaten-Informationssystem des InGeoForum (InGeo-MIS) entwickelt. Dieses enthält -im InGeo-Browser vereint- solche Dienste zum Auffinden, Vergleichen und Bewerten von Geodaten. Desweiteren wird der Browser in ein webbasiertes GIS-Softwareprodukt integriert und dort fachschalenbasiert zur Optimierung von Arbeitsabläufen mit Geodaten eingesetzt.

Overview

In Germany innumerable geodata exist which represent a great economic value but lie idle to a great extent with (public and private) data suppliers so that they cannot be disposed of by potential geodata appliers. This is why a platform or turntable must be found connecting the groups belonging to the geodata market: geodata providers and appliers as well as GIS service providers. The information and cooperation forum for geodata (InGeoForum) has taken over to create such a platform and make it available to all groups.

Within the development of the InGeo Information Center (InGeo-IC) project (cf. Figure 1) methods and concepts have been prepared allowing to find, compare, and access geodata by means of the metadata technique. Furthermore, a link has been installed to the GIS software products GeoMedia and GeoMedia WebMap of Intergraph so that the functionality prepared within the InGeo-IC can be directly accessed from these GIS applications and suiting data can be integrated.

Metadata Information Systems

The present situation on the geospatial data market could be characterized as follows: On the one side, there are data suppliers who want to provide as much geospatial data as possible, on the other side, there are users who are insufficiently informed to benefit from the data. Typical lacks of information on the users' side are: Which data are really needed, which data are available, how and where to get these data, which GIS systems are best suited for an application and how to integrate the data into a GIS application. The data suppliers' interests are to advertise their data and to improve their presence on the geospatial market.

A solution for these demands are metadata information systems or catalogue systems like the InGeo-MIS which is part of the InGeo-IC project.

The more data are produced by the information society, the more important mechanisms and systems become which organize these data and supply meta-information about, e.g. where to find which data. Most popular examples of such information systems are metadata information systems (MIS) and catalogue systems (CS).

Figure 2 presents the scenario of a metadata information system and the different steps on the way from a metadata query to the access of the respective geospatial data.

The general starting point for the usage of a metadata information system is a user looking for geodata in the context of a certain project. He needs information about existing geospatial

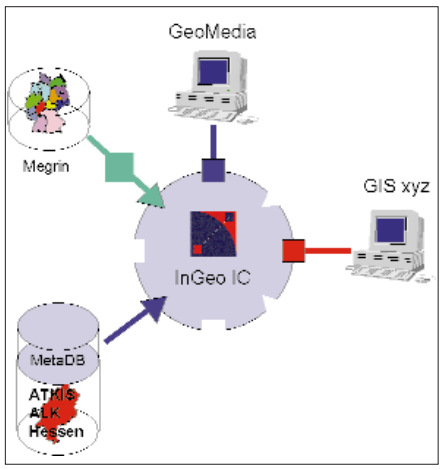

Figure 1: InGeo-IC overview

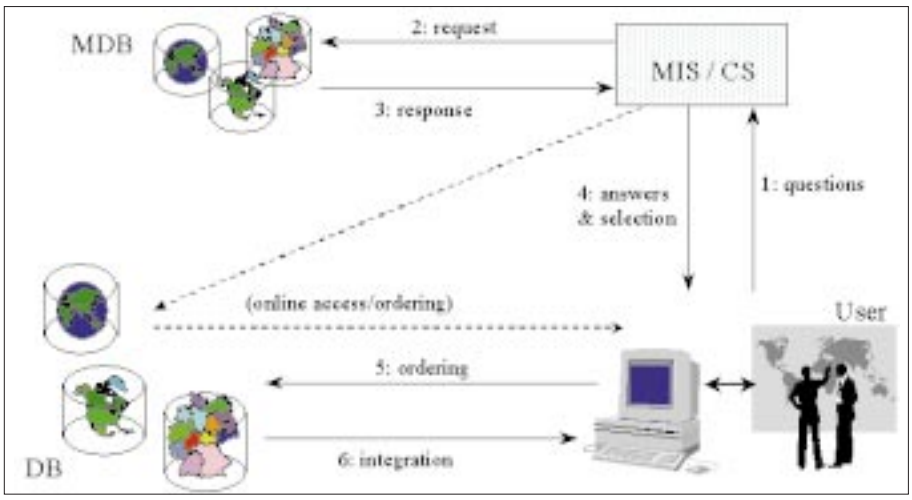

Figure 2: Scenario of a metadata information system

data and where to get it. The user sends a query to a MIS which translates his lingual query into a valid request. The MIS sends the request to one or more meta-databases, collects the results and prepares an adequate presentation/visualization. The user compares these results and decides which one meets best his requirements. Finally, he may contact the data supplier to order the topical geospatial data (not metadata) and to integrate them into a GIS.

Another possible ordering process could be the online access to data servers containing both metadata and original datasets. In this case, the complete interaction (from metadata query to geodata retrieval) could be handled between user and MIS.

The main difference between the existing systems is the extent of the information spectrum covered by these systems. Whilst e.g. catalogues for department stores or phone directories/books are typical representatives of CS covering a relatively clearly outlined information spectrum (address, phone number, article no., price, etc.), other systems cover a quite larger spectrum. Examples are environmental MIS such as the UDK (German: Umweltdatenkatalog, Engl.: environmental data catalogue; for definition and terms of UDK look at http://udk.bmu.gv.at/info/dokumente/begriffe.html).

Ingeo-MDF

In a first step within the InGeo-IC project the InGeo-MDF (InGeoForum-Metadatenformat) was developed. The InGeo-MDF does not only serve as a basis for modeling the InGeo-MDB but also the whole InGeo-MIS. The contents of the InGeo-MDF is based on the ISO standard CD 15046-Metadata, is compatible to it and thus covers the complete geodata information spectrum: geo-basisdata, aerial views and satellite images up to any thematic spatial data. As there are also other formats used in Germany like UDK or CEN, methods are to be developed within the InGeo-IC project which allow to find also the data stored in these formats. Figure 3 shows a first frame architecture plotting the interplay between input and output component of the InGeo-MIS. To give the user a maximum support, there are offered not only searching machines to formulate the queries and find the suiting geodata but also mapping tools (to find metadata that do not directly correspond to InGeo-MDF), different thesauri for catchwords and a geo gazzetteer (list of geographic names) for formulating a spatial relation.

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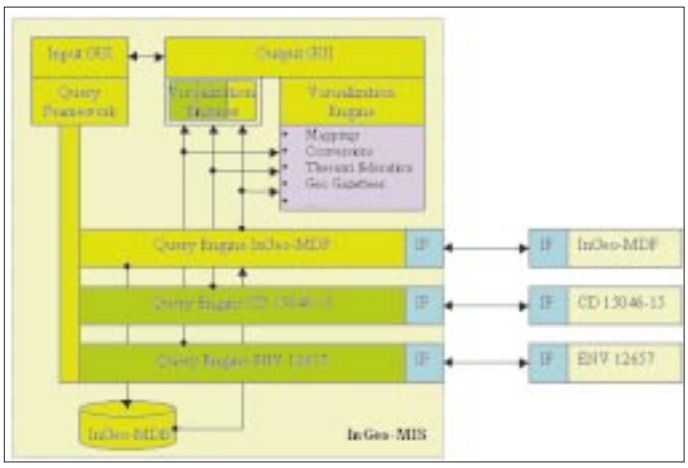

Figure 3: Architecture of InGeo-IC

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INTERGRAPH

Hessische Technologie-stiftung

InGeoForum