

PROJECT MIDAS

Metainformation System MIDAS

On-line catalogue of geodata of public administration - www.cagi.cz/midas

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ABSTRACT

The contribution presents an overview of results from the two years' operation of the system MIDAS as a metainformation system of public administration guaranteed and co-ordinated by the Office for Public Information Systems. It shows significant milestones that affected the content and the development of the system to meet the requirements of public administration. It deals with phases of entering metadata of governmental agencies and district offices into the system, including a brief summary of results of the analysis being aimed at evaluating the status of geodata in district offices and at helping in making decisions on the next applications of this data in relation to public administration reform. The paper points to the inclusion of the system MIDAS into the National Geoinformation Infrastructure of the Czech Republic and to relevant projects helping achieve the required loading of the system MIDAS with information on geodata in the Czech Republic.

HISTORY HAS BROUGHT A LOT OF EXPERIENCE (EDIFICATION?)

In the nineties the Czech Republic underwent rapid development in the area of information technologies. At the beginning of the nineties, information technologies began to penetrate all industries thanks to breaking artificial boundaries in the form of an embargo.

To fast-developing technologies, geographic information systems have belonged as well. A stimulus to their rather wide introduction to public administration was, in the first stage, especially extensive investments to HW and SW accompanied by the purchases and mainly by the creation of digital spatial data. An effort to obtain data required for the operation and the development of their own systems led particular organisations and offices to individual solutions either at their purchases or creation.

In public administration, district offices became important users and also creators of digital spatial data. The digital spatial data of district offices represent ten years' work of many people and a large volume of invested funds. However, insufficient co-ordination from the side of the state in the area of geographic information systems resulted in places even in the chaotic growth of these systems and the non-coordinated purchases and acquisitions of data required.

As a result of the absence of any over-all national concept of GIS operation as a tool for the performance of public administration activities, particular district offices were obliged to proceed to GIS building at their workplaces separately without any interrelation and co-ordination. In this atmosphere and under these conditions, GISs with different contents and database structures were formed; incompatible data was created, which was connected with various levels of the collection methodology, classification, data structure, position accuracy, and others. In addition, the created digital spatial data was not documented throughout; any metadata on geodata was not created.

Already in the first half of the nineties, above all specialists of GIS workplaces of district offices drew attention to the mentioned deficiencies by means of the Czech Association for Geoinformation (CAGI).¹ They required both the development of a uniform concept of GIS building in public administration (standardisation of the data content, data flows, a methodology for data processing and evaluation, and the like) and the ensuring of an overview of already available geodata in the framework of public administration, including its basic characteristics from the point of view of possibilities of use and availability. To this second requirement, the leadership of CAGI reacted, in the year 1998, with a decision to create a metainformation system in the framework of CAGI, which would supply an overview of existing data sets of geodata in the Czech Republic. The system was named MIDAS later. It is necessary to state that the geodata and geographic information systems created in the course of last decade are, undoubtedly, of great significance, and the situation described corresponds to the development of human cognition, and does not differ markedly from developments in the other countries.

DEVELOPMENT STAGES AND THE PRESENT ROLE OF MIDAS IN PUBLIC ADMINISTRATION

The creation of the metainformation system MIDAS of the Czech Association for Geoinformation (CAGI) began in the year 1999, when the introductory study was prepared and work on the creation of the system started. The pilot version of the system was launched in the same year. The next development was possible thanks to close co-operation with the Office for Public Information Systems and other governmental agencies of public administration.

In the framework of CAGI, a special commission was formed designed for the gradual development of the system, and especially for entering metadata on geodata available in the Czech Republic both in the framework of public administration and the private sphere into the system. Co-operation in the framework of a joint group was of importance; the group being

¹ CAGI is a professional association the goal of which is especially development in geoinformation technologies in the Czech Republic. The mission and objectives of CAGI can be defined, under conditions in the Czech Republic, as follows:

- The creation of preconditions for all-round development in spatially-orientated information systems and for a wide range of utilisation of geoinformation in all areas,
- Support to and the ensuring of close working contacts between all entities concerned, the exchange of information, knowledge and experience between the members (meetings, seminars, conferences, purposeful materials and publications) and the formulation of common interests and attitudes,
- Perspective participation in solving specific tasks of common interests, such as the initiation and preparation of projects, proposals and studies on chosen themes conditioning the development of spatially-orientated information systems and the utilisation of relevant information technologies (comparative and evaluation studies, pilot projects, project of national geoinformation infrastructure, geoinformation standards, etc.),
- Representation of the Czech geoinformation community in relation to the central government authorities, support to activities of government authorities in areas concerned and the ensuring of effective working co-operation with them in spatially-orientated information system development and the utilisation of relevant information technologies in the public sector (participation in co-ordination and working groups, attitudes to key issues, proposals and measures, the submission of its own initiatives, etc.),
- Consulting and expert activities for the organs of the national information system,
- Consulting and expert activities for the members of CAGI,
- Foreign experience transfer and dissemination,
- The creation of preconditions for the universal availability of fundamental infrastructure data of the geoinformation character,
- The creation and management of the metainformation system of geoinformation sources,
- The mediation of international contacts in relation to European and world organisations in the area concerned – especially to the European Umbrella Organization for Geographical Information (EUROGI) – and support to their activities, and the representation of national interests in these organisations.

composed of representatives of CAGI, Ministry for Local Development (MLD), Ministry of Agriculture (MA), Ministry of the Interior (MI), Ministry of the Environment (ME) and the Office for Public Information Systems (OPIS).

Since the very beginning of system creation, the special commission of CAGI put a great emphasis on maintaining the Europe-wide valid standards and guidelines. The absence of any similar binding rules in the Czech Republic was another reason.

From the technical point of view, the metainformation system of CAGI underwent, in the course of its development, changes in accordance with new technological trends, rules and recommendations adopted and applied to practice. It was the requirements of public administration that affected the creation of the system in a decisive degree.

At present, CAGI supported financially and organisationally by OPIS operates the only subject metainformation system in the Czech Republic that provides the public with information on about 3 500 data sets of geodata and data on tens of other information sources from various organisations of the public and private sectors.

Nowadays MIDAS serves as the central catalogue of geodata of public administration supervised and guaranteed by OPIS, and till the building of a metainformation system ISVS also as the catalogue of information sources of public administration. The project Operation and Development of the Metainformation System on Geodata Sources MIDAS is encompassed in the document titled National Geoinformation Infrastructure of the Czech Republic, Program of Development in the years 2001-2005 (article 7) discussed and supported by the Government Council for the National Information Policy (NIP) on the 6th September 2001.

The document defined the present state and the goal as follows (translated from the Czech quotations):

State: At present any tool making it possible to find quickly and unambiguously what geodata exists and with whom and on what conditions is available is missing. The Czech Association for Geoinformation creates the Metainformation system of data sets of geodata MIDAS for this purpose. This metainformation system also serves the needs of information systems of public administration even in the area of data that has not the spatial character (OPIS gestion). Some authorities of public administration build their own metainformation systems also on the level of entry structures for purposes of various fields, often also for wider public informedness (ME, MA, and others). Co-ordination of development is ever-improving.

Goal: To support the operation of the Metainformation system of data sets of geodata MIDAS, especially to ensure the complete and quality loading of the system with data. To ensure the interconnection of it with metainformation systems purpose-orientated or those on the level of lower resolution. Simultaneously to respect needs and duties of the metainformation system ISVS under preparation.

THE PRESENT STATE OF THE REGISTRATION OF PUBLIC ADMINISTRATION GEODATA

The present state of loading the system MIDAS has been achieved by passing through the following two main phases:

In the first phase that began at the end of the year 2000, the collection of selected field metadata on geodata not under gestion of central organs was executed. The collection was co-ordinated by OPIS. About 250 data sets on geodata were registered. After obtaining experience in the framework of this project, we can state that the absence of clearly defined rules and mechanisms, which would unambiguously prove the competences, duties, flows and processes at acquiring and giving the metadata on geoinformation sources of public administration, was unambiguously proved. The obtaining and furnishing the metadata still depend on the arbitrariness and willingness of officers.

The second stage was orientated towards the collection of metadata from district offices. A need to register these sources was developed by changes under preparation in connection with public administration reform, and thus the closure of district offices on December 21, 2002. In the course of holidays till almost the end of November of the year 2001, an extensive nation-wide registration of geodata in district offices was done under guidance and co-ordination of MI.

The objects of registration were, in addition to geodata described in about 3200 data sets, also data on GIS workplaces of district offices. The objects of registration of these workplaces were data on their software and hardware, data on staffing concerning GIS specialists, including their workloads as for specialised work in the geoinformation area, and another supplementary data, including basic identification data of district offices.

The data accumulated during the registration in district offices was analysed, and results in the form of a final report "GIS analysis in District Offices" were given to OPIS and MI. The report is available on the worldwide web pages of MIDAS <http://gis.vsb.cz/midas/Dokumenty/formular2.htm>. At present, the results of the analysis serve as part of underlying materials for decision making in the area of GISs in the framework of public administration transformation taking place in the Czech Republic.

Results of the Analysis of Geodata Status in District Offices

The registration of geodata in district offices and the analysis of metadata made subsequently confirmed and proved a long-standing non-conceptual approach to GISs as a tool for the execution of public administration.

From the analysis of metadata it is obvious how non-coordination of GIS workplaces of district offices affected the quality of data and its applicability in different fields. It is possible to say that an effort and money were, with regard to the next applicability of these systems under conditions of public administration transformation, exerted considerably uneconomically.

As far as the introduction as well as the building of the GIS technology is concerned, nowadays it is regional offices that are in a position similar to that of district offices about ten years ago. Until the conception of GIS building in public administration is made, we shall face non-coordinated development here again.

From the point of view of the next development of GISs in the framework of public administration in the Czech Republic, the following must be standardised clearly:

- data flows (i.e. who lies under an obligation to create the data and to whom it is to be transferred. Each organisation should be obliged to create and furnish data on its decisions, and not to duplicate other organisations, if, for some reason, the rights are not delegated under clear rules,
- a methodology for geodata gathering,
- geodata content and structure,
- the mode of geodata supply.

Problems of the registration of geodata and also other information sources of public administration derive from the long-standing non-conceptual approach of the state to the establishment of binding regulations and process mechanisms ensuring the regular registration of public information sources. At present, consequences of this absence manifest themselves in loading the metainformation system MIDAS as a central source of this information.

With reference to the present activities of MI, OPIS and other central organs together with regional offices, where co-operation exists with effort to co-ordinate the development of ISVS, it can be expected that we have learned from the past development of district offices.

CAGI supports the existing efforts and steps of OPIS and other central organs to formulate and force through the conception of geodata creation and furnishing in public administration in relation to valid legislation defining particular administrative acts in public administration. It supports and helps by all means the preparation and the enforcement of new legislative modifications relating to the legal definition of basic registries.

The following table documents the existing state and the forming support in the form of the legislative framework.

<i>Need</i>	<i>Approach to solving</i>
standardisation of geodata of public administration (data incompatibility on the level of data collection methodology, classification (domains), data structures and spatial accuracies)	Uniform rules for the whole public administration Act on VS Registries Act on ZRUIN
standardisation of GIS content in public administration (chaotic development of GISs in the 90's caused by non-coordination from the side of governing bodies – non-conceptuality of GIS creation within particular organisations of public administration)	Act on RGI following laws and regulations, ...
documentation (metadata) and central registration	Embedding the legal obligations to record the GI registries and geodata of public administration in the central records of MIDAS

PILOT PROJECT “MIDASKRAJ”

At present, the Czech Republic is undergoing the reform of public administration, the results of which will be fundamental changes in the division of public administration into administrative units, i.e. also redivision of competence and scopes of administrative duties from the existing district offices to entities established newly. The district offices in the Czech Republic will be dissolved on December 31, 2002, and on January 1, 2003 public administration will commence activity in the area concerned being arranged in new structures. Activities and functions, which are still ensured by district offices at present, will be taken on by regional offices, in a higher degree by municipalities charged with the broadened execution of public administration, and a lesser part of competence will pass to the autonomous state authorities.

As a result of the changes mentioned above, the transfer of information and communication technologies and data occurs in the Czech Republic as well.

In accordance with the stated changes, it was necessary to implement organisational changes in the process of collecting metadata and loading the system MIDAS with the metadata of public administration.

An effort to ensure the updating of existing metadata and the publishing of new metadata in the central storage of MIDAS leads to close co-operation with especially regional offices and municipalities, with which after dissolving the district offices the largest volume of geodata may be expected.

It is why in co-operation with the Regional Office in Zlín, a pilot project “MIDASKraj” was launched having been prepared by CAGI and guaranteed by OPIS.

The goal of the project is to create such technical and organisational conditions in the Regional Office in Zlín that will ensure effective gathering of metadata on information sources of the region and its transfer to the central storage of MIDAS. The Regional Office in Zlín will utilise a modified version of MIDAS designated MIDASKraj. MIDASKraj will be

designed for the creation and registration of public and internal sources of the region; public data transfer to MIDAS will be ensured simultaneously. A methodology will be elaborated for metadata creation, the exact specification of information sources and their classification into relevant metadata classes. A duty to collect and entry descriptive data on the information sources of the Office will be fixed by an internal order of the Regional Office.

More information can be found in a separate contribution that is another one of contributions to the 3rd MIS Conference.

MIDASLITE – LOCAL META INFORMATION SYSTEM, A TOOL FOR DATA GATHERING FOR MIDAS

In the year 2001 the application MIDASLite was prepared and given for the purposes of public administration. MIDASLite is a local meta information system designed for the gathering and administration of metadata and its transmission to the central storage – MIDAS system.

A reason for the creation of the off-line application MIDASLite was to provide organisations of public administration preferring a local system over a solution requiring to have remote access to the system via the Internet (MIDAS) with a local meta information system, by means of which metadata may be gathered and transmitted to the central database of the system MIDAS. The second reason of no lesser importance was to furnish the organisations with a simple meta information system intended for the gathering, administration and browsing of proper metadata on data sets either spatially-localised or without spatial localisations.

The application makes it possible to create, edit and update metadata and to carry out basic searching. Metadata is entered to the relational database (MDB file) that corresponds wholly by its structure and content to the valid ISVS Standard for the structure and the exchange format of information source metadata (OPIS gazette).

Furthermore, the application is designed for ensuring that metadata gathered and updated in the organisations of public administration will be transferred in an adequate form to the meta information system MIDAS. At obeying the rules for publishing these sources, it will be at public disposal by means of the system MIDAS.

The application is available on the web pages of the system MIDAS, www.cagi.cz/midas.

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