

# Open GIS and Interoperability in Europe

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## Abstract

Interoperability is crucial for the future viability of the European GIS industry. The industry however seems to lack sufficient organisation and access to the international interoperability specification. Full participation and integration of European interests into the process is the best chance to gain competitiveness.

This fact is recognised, among others, by the European Commission, who put much effort into stimulating developments in this field. Both Directorate General III (Industry) and Directorate General XIII (Telecommunications, Information Market and Exploitation of Research) from the European Commission are funding projects in the domain of GIS development, under respectively the ESPRIT and the GI2000 programmes.

This paper focuses mainly on the GIPSIE project, which promotes interoperability for the European GI community. Also, some attention will be given to related European GI projects such as Panel-GI and the European Spatial Metadata Initiative (ESMI).

## 1. GIPSIE

### 1.1 What GIPSIE stands for

GIS Interoperability Project Stimulating the Industry in Europe (GIPSIE) is a DG III (ESPRIT programme) funded project in the field of GI.

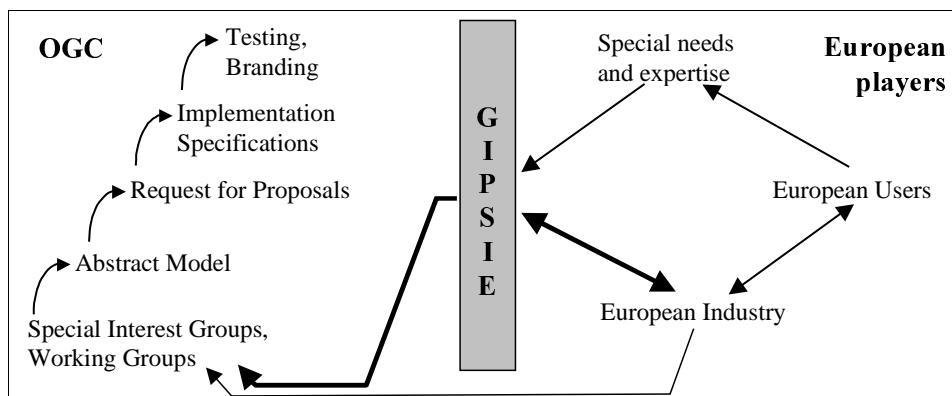
GIPSIE's aim is to promote interoperability in the field of GI for European companies, as well as to participate actively in OGC. GIPSIE will help European industry to co-operate, and it will contribute specific European demands and expertise into the OpenGIS process.

GIPSIE is established as a working group, co-ordinated by the TU Vienna. The partners of the working group are partly from industry, partly from research:

- SICAD Geoinformatics (D)
- Intergraph Europe (NL)
- Laser-Scan Ltd. (UK)
- Space Applications Institute of the Joint Research Center (I)
- Institute for Geoinformatics of the University Münster (D)
- Department of Geoinformation of the Technical University Vienna (A)

- Open GIS Consortium (USA).

The motivation of the industrial partners is to develop a common market and to seek co-operating companies. The research partners will contribute mostly by disseminating information, by collecting and preparing input, and by managing the project in an impartial, industry independent manner. All groups are OGC members who are actively engaged in the OpenGIS specification process.



**Figure 1:** The role of GIPSIE as a stimulator of interoperability for the European GI industry: GIPSIE will unite the industry for co-operation and information transfer, and GIPSIE will contribute to the OpenGIS process (left hand: the OGC process).

## 1.2 Motivation

Interoperability and OpenGIS concern Europe. On the one hand, the GI market is, also for European companies, a world-wide market. On the other hand, it is to be expected that Europe has special demands or interests, which should influence a world-wide standard. One may think on multi-language support, on catalogue services, on adaptability to various national mapping standards, and so on. Last but not least, Europe offers highly developed applications, which represent interesting and useful business cases for the international OpenGIS movement.

OpenGIS offers market chances especially for small and medium enterprises (SMEs). That is a consequence of modularization and the concept of configurable components. But only a small number of European companies is actually represented in OGC, especially the bigger ones. SMEs often feel overcharged to participate actively in the process, with its frequent meetings all over the world. GIPSIE will disseminate information about the ongoing OpenGIS specification process to stimulate participation in OpenGIS.

## 1.3 GIPSIE's Goals

GIPSIE's mission is to create an interest group of European GI industry members, to confront them with the international GI interoperability movement. European competitiveness shall be increased, by helping to develop products compliant with OpenGIS specifications.

The strategic goals are at two levels: at organisational level GIPSIE will strengthen the co-operation of the European GI industry, and at the content level, GIPSIE will identify

and resolve European interoperability issues, producing substantive contributions to the OpenGIS specification process.

## **1.4 GIPSIE's Work Packages**

### *1.4.1 Establish an OpenGIS Interest Group*

The first work package is to establish an interest group to unite the European industry and to establish communication to the OGC. This means to distribute information about GIPSIE as well as to promote the ideas of, and the possibility to participate in OGC. Also, GIPSIE will host OGC meetings in Europe, the first one of which has taken place in Vienna in October 1998. Last but not least, GIPSIE will act as a contact and information broker for European newcomers at OGC meetings.

An address data-base of GI-related companies and users is being set up; we expect a potential of about 300 related companies in Europe. They will be invited to GIPSIE's activities, and be kept up-to-date on interoperability developments. Apart from that a web site will inform continuously about GIPSIE. The general aim is to increase the participation of European companies at OGC meetings substantially.

### *1.4.2 Substantive Participation in OGC's Technical Work*

GIPSIE will collect and discuss a set of specific European topics, i.e. issues in the OpenGIS specification that are of particular interest for the situation in Europe. Initial ideas are the support for multi-language dictionaries, for catalogue services, or for adaptability of map output to various (national) standards. GIPSIE will contact the related European GI programs, such as MEGRIN, ESMI, and others to define the input for this task. A list of items will be published, and facilities to collect comments, suggestions, etc. from users as well as from vendors will be established. The identified issues will be incorporated into the OpenGIS process. GIPSIE aims to finalise the list of European topics in the first quarter of 1999.

GIPSIE partners will substantially contribute to the OpenGIS specification. The topics will be prepared individually, and in case of joint interests partners will co-operate. GIPSIE will act as a clearinghouse. Additionally, GIPSIE research partners will take leadership in some of OGC's specification processes.

### *1.4.2 Dissemination of OpenGIS Specifications to the European GI Industry*

General information days will be open for the whole interest group. They are intended for higher level management to inform about OpenGIS and interoperable GIS components. At least half of the meetings will cover non-technical information in the national or regional language. The aim is to inform the GI industry, users and potential users about benefits from participation in OpenGIS, and to collect special regional requirements to feed back into the OGC process.

Debriefings are planned as (technical) reports and possibility of asking questions immediately after the OGC TC meetings. The level of detail will be limited to respect OGC's confidentiality of documents.

## **1.5 GIPSIE achievements in 1998**

GIPSIE started on June 1<sup>st</sup>, 1998. Its intended duration is until June 2000. Although GIPSIE has been

active for only six months now, considerable progress has been made:

- The first GIPSIE information day was held in Vienna in October '98, in combination with OGC's Technical Committee Meeting. Many interested representatives from the European GIS community showed up, the bulk of which were non-OGC members;
- The GIPSIE web page has been created, providing information about the OpenGIS process, interoperability in Europe etc.
- GIPSIE set up its first 'debriefing' of the OGC Technical Committee meeting in December 1998. This debriefing provides interested parties from the European GIS community with insight in the development of the OGC process.
- GIPSIE established a "European Special Interest Group" within the Management Committee of OGC. Among its tasks are bringing European issues into the OpenGIS process. A first issue that was successfully addressed is the communication problem for non-native English speakers within OGC.
- More GIPSIE information events have been held (Bolzano-Italy), or are being planned (Münster-Germany and Enschede-Holland).

## 1.6 Contacts

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Check out the GIPSIE web page:

<http://gipsie.uni-muenster.de>

Any kind of question or suggestion you can send by email to

[gipsie.info@geoinfo.tuwien.ac.at](mailto:gipsie.info@geoinfo.tuwien.ac.at)

## 2. Some Other Initiatives

### 2.1 European Spatial Metadata Initiative (ESMI)

The ESMI project aims to create a single European access gate to linked Internet services describing (and providing) Geographic Information. This single gate thereby gives users access to a wealth of information about geographic data, from an abundance of spatial data services.

Metadata - information about data - is a first step towards easier access to data: from metadata to data, from data to information and from information to knowledge. The ESMI project will create a European Spatial Metadata Infrastructure by providing mechanisms to link users of geographic information directly with metadata services using the Internet. A single access to the service will allow access to existing, connected metadata servers. The web-based interface will accommodate different languages and will link metadata services, using a common profile. Software tools will be available for metadata creation, maintenance and searching.

The project is part-funded by DG XIII-E of the European Commission, for a period of two years as of January 1<sup>st</sup> 1998, within the framework of the INFO2000 programme. It is one of five Geographic Information projects selected to receive continued support from the Commission from the 13 definition phase projects of 1997. The projects are supported with the aim of improving access to European geographic information.

ESMI project partners are (for the implementation phase):

- Geodan, the Netherlands - project co-ordinator
- Centro Nacional Informação Geográfica - CNIG, Portugal
- EUROGI, the Netherlands
- LISITT, Universidad de Valencia, Spain
- MEGRIN, France

Further information on the project can be found at <http://esmi.geodan.nl/>

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## **2.2 Panel-GI: “Pan European Link for Geographical Information”**

In the last few years a wide debate has begun among the European Geographical Information Community and various initiatives are in process in order to create a European Geographical Information Infrastructure (EGII): a stable, European-wide set of agreed rules, standards and procedures for creating, collecting, exchanging and using GI.

In general, a GI infrastructure assumes a working system to exchange data that requires a technical infrastructure, a set of standards for the exchange and the interpretation of data and organisational arrangements, including economic and legal agreements.

The PANEL-GI project is constituting a GI European Network aimed at involving partners from the Central and Eastern European Countries (CEEC) in the process of creation of a Pan European Geographical Information Forum. This network is considered to give an important contribution to realise in perspective a full and integrated European GI context.

The wider goal of the project is to contribute to the establishment of the foundations of the Information Society in CEEC, in the particular area of GIS, as defined in the Prague Information Society Forum.

To act in such direction the Network intends to cover a number of GI issues that make possible to classify the project in a mainstream enclosing keywords as European Geographical Information Infrastructure (EGII), GIS Inter-Operability and Open GIS, metadata, data availability, GIS Applications and European dimension.

The objectives of the project are characterised in the following strands:

- Networking, to create the EU-CEEC framework.
- Tutoring, that is the production a “PANEL-GI” package which aims at assessing and producing guidelines on the above mentioned GI issues.
- Technology transfer, that is the exploitation of the established network.

The first part of the training “PANEL-GI” package is a survey on the main issues to be covered in the field of EGII, interoperability and Open GIS. The second part has an approach more application oriented: the presented projects should help as a powerful demonstration of GIS efficacy and give to CEEC partners indications for rational and efficient use of GIS tools.

The target audience, coming mainly from the CEE countries, will consist of variety of people (managers, administrators, researchers, scientists) different in their knowledge, interest and backgrounds. The package will be arranged as a series of issues each of them dedicated to a different theme.

The project tasks are:

- A Communication Network and a WWW PANEL-GI Homepage to supply a wide awareness tool to the GI Community.
- The implementation of the PANEL-GI package. This will be the leading outcome of the PANEL-GI network, committing all the Partners in giving their contributions as regards the different expertise and knowledge.
- Workshops in the CEEC to present and discuss the PANEL-GI issues as well as the national emerging GI problems. The workshops will pursue a tutoring objective as exploitation of the potentialities of the network with special reference to the expertise let available by the EU Partners.
- Mobility of researchers from CEEC to EU. During the project, short term mobility will be organised for a closer co-operation
- Technology transfer and networking to disseminate the network towards the GI Community. The CEEC Partners are committed to promote the establishment or the consolidation of National Geographic Information Associations (NGIAs).

The expected overall result is a significant improvement of a common awareness and a share of the most important GI issues on the table at a European level. In general, the major result will be the transfer of knowledge and a contribution for a solution for building an effective GI infrastructure.

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