



*European Umbrella Organisation
for
Geographic Information*

Towards a strategy for geographic information in Europe

Positive steps are needed to fill the current void with respect to a geographic information strategy at the European level. With this in mind EUROGI sets out a framework for the first stage of this strategy in this paper and outlines a number of measures that will bring it into being.

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1. Context

National and regional governments across the world have taken the decision to lead rather than rely solely upon market forces to gain the economic and social advantages of the Information Age in view of its increasing strategic importance. The Government Information Age programmes that are now underway have tightly monitored timeframes for implementation and as a result are putting into place the hard and soft infrastructures that enable e-government, e-business, and e-citizen to become a reality. Geographic Information (GI) is pervasive in that it is cross discipline and application and is equally applicable within each of these e-domains. As a result geographic information is being carried along on the Information Age Government wave. It also provides some of the core data sets that enable transparent and effective government through joined up geography, these include: land and property, land use, topography, environment, infrastructure and transport. This is particularly apparent within Europe both at the national and at the European Union level where a number of European nations, including France, Germany, Finland and the UK are leading the world with regard to creating the Information Age (see www.citu.gov.uk/intl_menu.htm) as well as investing in national spatial data infrastructures (see www.eurogi.org/links.sdi.html & www.spatial.maine.edu/~onsrud/gsd.html)

The advances in Information and Communication Technologies (ICT) and society's readiness to adopt and exploit ICT to its advantage fuels the Information Age. Such advances open up new opportunities as well as bringing threats, which are the catalyst for cultural change. The worldwide market for GI is substantial. The exploitation of GI within the Modernising Government programmes will further boost the annual growth rate of the GI market.

The potential opportunities for geographic information in the Information Age provide the starting point for this paper. EUROGI feels that positive actions are needed to fill the current void that exists in GI strategy at the European level. With this in mind this paper sets out a framework for such a strategy and outlines a number of actions that can be taken to bring it into being.

2. Elements of strategy

It is important to clarify what is meant by the term GI strategy. In particular it is necessary to distinguish between what is meant here by the use of the term strategy as against other frequently used terms such as GI policy and GI infrastructure.

- GI policy primarily concerns the actions of governments with respect to issues such as access, pricing, privacy, liability, and copyright. In much of this debate GI issues form part of a much broader debate concerning national information policy and open government.
- GI infrastructures (and spatial data infrastructures) deal with matters that are much broader in scope and integrated in nature than GI policy matters. Typically the term 'infrastructure' refers to all the materials, technologies, and people necessary to

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acquire, process, store and distribute such information to meet a variety of needs. There is a strong government dimension to most national spatial data infrastructure initiatives which contain most or all of the following components:

- some form of coordinating mechanism such as the Federal Geographic Data Committee in the US; (www.fgdc.gov)
 - a metadata clearinghouse;
 - a core (reference) data strategy; and
 - the promotion of standards.
- GI strategy encompasses the broader implications of the definition cited above. It includes awareness raising, promoting greater usage and capacity building as well as the more limited set of activities listed above. It also assumes that the main problems to be tackled are primarily political and institutional rather than technical in nature. Because of this it can be argued that the case for GI strategy is best formulated by an independent body that has good connections with government rather than by government itself.

With this in mind the following objectives of a GI strategy at the European level have been identified:

- Encouraging greater use of geographic information in Europe: this is the overarching goal of all GI strategies but in practice its interpretation varies considerably. It is vital to ensure that GI is used as widely as possible in both the public and private sectors as well as by individual citizens in the interests of open government.
- Raising awareness of geographic information and its associated technologies: there is a continuing need to raise awareness in the community as a whole regarding the importance of recent advances in both technology and its potential for an increasing range of applications.
- Promoting the development of strong national GI associations: an important element of any GI strategy must be to create the institutional capacity to take a lead in its formulation and implementation. This is particularly important given the need to maintain some measure of independence from government.
- Improving the European GI infrastructure: Many of the main elements of a European infrastructure are already in place in different countries. What is lacking, however, in many cases is effective mechanisms at the European level to promote greater harmonisation and interoperability between countries in this respect. This is further complicated by the fact that most of the debate has been restricted to EU countries.
- Representing European interests in the global spatial infrastructure debate: In an era of increasing globalisation it is essential that European GI strategy does not evolve in isolation. In this respect Europe must also play an active role in the creation and development of a global spatial data infrastructure.

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3. Encouraging greater use of geographic information in Europe

This is the overarching goal of European GI strategy that effectively subsumes and incorporates the other four objectives. This is because one of the most important indicators of its success is the extent to which it encourages and facilitates the widespread use of geographic information.

Nevertheless a number of general measures are also required to encourage greater usage in addition to the more specific initiatives outlined in the next four sections of this paper. These include:

- Disseminating information about applications through publications, and presentations at workshops and conferences. It is also essential that full use is made of the potential of the World Wide Web for this purpose.
- Stimulating investment in Research and Development activities. In particular there is a need for a greater emphasis on geographic information related research topics in the European Commission's Framework Programmes for Research and Technology Development.

4. Raising awareness of geographic information and its associated technologies

One of the most significant characteristics of geographic information is its pervasiveness through a very wide range of potential applications. It is often claimed that more than 80 per cent of all public sector information has a geographic dimension in that it is referenced by either address or location. For this reason one of the main objectives of a European GI strategy must be to raise overall levels of awareness among the population as a whole of the opportunities opened up by geographic information and its associated technologies and to keep them informed about any new developments that will effect the future development of this field. Of particular importance in this respect are the key decision makers in the political arena and the senior government officials at both the national and European levels whose actions can stimulate or inhibit the overall take up of the technologies.

With these considerations in mind it can be argued that an effective European GI strategy must contain both an active component that seeks to influence leading decision makers and a passive component that aims to inform the population at large:

- Influencing key decision makers. A task for all those concerned is to target leading decision-makers with a view to raising their awareness as to the opportunities opened up by recent developments in handling geographic information and its associated technologies. Such a task requires the development and implementation of an integrated lobbying strategy of the kind advocated by EUROGI (box 4.1).

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4.1 Integrated Lobbying Strategy

The EUROGI integrated lobbying strategy involves putting into place and then maintaining a logistical infrastructure that supports a sustainable coordinated lobbying programme. This programme complements that of the EUROGI members at the national level and that of other pan European representative bodies. The implementation is both:

- vertical where by lobbying at the European level is undertaken by EUROGI with its members concurrently lobbying their MEP's and European Institutions at the national level. and
- horizontal where by EUROGI and its members actively work closely with other sectors within the Information Age society with the objective of producing and implementing a co-ordinated lobbying programme. This programme deals with the core issues that impact all categories of information such as access to data, availability of data, copyright, human rights, freedom of information, and data protection.

- Informing the population as a whole. European GI strategy must seek to facilitate the diffusion of knowledge and experience between different countries and between different professional groups and different application fields. To some extent these activities can be regarded as part of the broader dissemination goal outlined in the last section. However their impact can be substantially influenced by the creation and dissemination of an extensive library of examples and case studies of particular applications which highlight their various and differential benefits for society as a whole (box 4.2).

4.2 Strategy for developing a GI Case Study Service

EUROGI has an incremental strategy towards the construction and maintenance of an internet based virtual Case Study portfolio whereby case studies collected and maintained by EUROGI and its members are easily accessible to all via the EUROGI web site (www.eurogi.org/geoinfo/cases.html).

The case study service integrates the case study portfolios compiled by EUROGI members and that of the EUROGI/CERCO *Value for Society* project. These case studies are available on the web (www.statkart.no/cerco) and include active case studies. e.g. Road Transport which highlights the benefits of GI in a number of scenarios. (<http://www.vegvesen.no/elveg/engelsk/>) The case study service uses a standard template with minimal use of text combined with images that are easy to understand and help transcend language differences. Each case study details the benefits enjoyed from the application and the data sources used. Information on the technology and its implementation are not included.

5. Promoting the development of strong national GI associations

During the first six years of its existence EUROGI has been instrumental in the establishment of national GI associations in more than 20 European countries. These organisations have a major role to play in the formulation and implementation of a European GI strategy in that they provide forums for the exchange of ideas and experiences for each of the national GI communities in Europe. They also provide an important channel of communication between the national and the European levels of GI activity. Their combined membership represents a potential resource that has yet to be fully exploited in connection with the European level of operations.

It must be recognised that it takes a long time to fully build up the capacity of these organisations. Few of the current national GI associations in Europe have more than ten years operational experience and their administrative structures and range of activities are still evolving. Although each national association reflects specific national needs and institutional circumstances a great deal can be learnt from the experiences of other

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countries in this respect. For this reason an important component of any European GI strategy must be to assist capacity building by fostering this learning process. This should focus on two different sets of issues:

- Promoting the comparative analysis of national GI policies. EUROGI has already done a great deal in this respect by commissioning comparative studies of copyright and commercialisation in various European countries. More recently it organised, together with the JRC, a Data Policy workshop that brought together contributions from 12 different countries (box 5.1).

5.1 Geographic information policies in Europe workshop

A workshop was organised by EUROGI in partnership with the Joint Research Centre and the General Directorate "Information Society" of the European Commission at the offices of its Dutch national member organisation (RAVI) in Amersfoort in November 1999. The main task of the workshop was to identify similarities and differences in geographic information policy initiatives that are taking place across Europe, and to highlight key issues that need addressing at the supra-national level. A further objective was to define gaps in current knowledge where additional information is required, and suggest ways in which these gaps could be filled. Contributions to the workshop were made by participants from 12 European countries and also by CEC staff. The findings of the workshop have been distributed widely in both hardcopy form and via the Web (www.ec-gis.org). This is seen as a starting point of an ongoing project and EUROGI is currently taking steps to extend the range of national coverage and also to update the material itself.

- Pooling the experience of the national associations themselves as an instrument for capacity building. A great deal can be learnt from the positive (and negative) experiences of the different national associations. This is particularly valuable from the standpoint of recently established associations in Europe and elsewhere who are still trying to find their feet. For this reason EUROGI has commissioned a study of each of its component member associations (box 5.2).

5.2 Representing Geographic Information at the National level

EUROGI since its inception has had a strategy to encourage the formation of national bodies that represent geographic information within each European nation. The objective of this strategy is to ensure that geographic information plays its full and proper role at both the national and European level. To further this objective EUROGI will publish in December 2000 an analysis of the national organisations across Europe. Once published the analysis will assist EUROGI with its implementation of the strategy set out in this document and also provide a compendium of best practice with regard to raising the awareness and promoting the benefits of geographic information at the national level.

Special attention must also be given in any European GI strategy to the needs of those European countries that have yet to create national GI associations. This is particularly the case with respect to those central and east European countries that are currently preparing for accession to the European Union (see next section).

6. Improving the European geographic information infrastructure

Although many of the elements of a European GI infrastructure such as topographic mapping facilities are already in place there are important differences between countries with respect to their currency and the national conventions that are used. This creates particular problems for applications involving several countries or in the border regions that account for 15 per cent of the total land area of Europe and 10 per cent of its

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population. For this reason it can be argued that a concerted effort at the European level is required to improve its overall GI information infrastructure.

This case has been made by DG Information Society of the European Commission in its working document entitled 'GI2000: towards a policy framework for Geographic Information' that was published in 1996 following extensive consultations with all the main stakeholders in the field. In this document it was argued that ' a European policy for geographic information is needed by the European information society. The policy will contribute to providing better and more efficient government, more effective management of scarce resources, and new business opportunities. The policy is necessary to ensure cross border initiatives are nurtured and managed cost effectively.'

Notwithstanding the underlying strength of these arguments the European Commission has not given this document the priority that it deserves although it has taken an important first step in this direction by setting up an inter Directorate level Committee on Geographic Information within the Commission itself. Consequently it is necessary to take steps to achieve this objective by taking advantage of other Commission initiatives in the Information Society field, which have a geographic information component. These include the follow up activity to the Green Paper on Public Sector Information that contains substantial reference to geographic information issues and the recently announced eEurope initiative.

In addition to these Commission initiatives there are a number of activities that can be undertaken by the European geographic information community to improve the overall European GI infrastructure. These include:

- Creating a forum for the candidate nations for EU membership to discuss their accession requirements in terms of geographic information. An initial joint EUROGI/JRC workshop on this topic will be held in Brussels in November 2000 (box 6.1).

6.1 GI policy issues arising out of the proposed enlargement of the European Union

In twenty years time there may be more than twenty-five countries in the European Union. The enlargement of the Union on this scale has massive implications for the structure of decision making at the European level as well as the management of key elements of its infrastructure such as geographic information. One of the strategic objectives of EUROGI is to promote the growth of strong national GI associations throughout Europe. This has important implications for capacity building particularly in those central and eastern countries that are seeking to become members of an enlarged European Union. With this in mind EUROGI and the Joint Research Centre organised a workshop in Brussels in November 2000 on GI policy issues arising out of the proposed enlargement of the European Union. A report on the proceedings of the workshop has been prepared for widespread distribution to the European GI community (URL).

- Working with other pan European organisations to improve the quality of existing metadata services, given that lack of information as to what data is available in different European countries on particular topics is a major barrier to many transnational applications (box 6.2).

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6.2 European Territorial Management Information Infrastructure project (ETeMII)

This two-year project is an Accompanying Measure funded by the European Commission under its Information Societies Technology programme. The project is coordinated by Associazione GISFORM. EUROGI, together with a number of other stakeholders in GI such as the EU JRC, OGC Europe and AGILE as well as the French, German and Portuguese national GI associations are partners in this project. Its main objective is to build up a network of excellence among the stakeholders of the Territorial Management Information market, coming from research, industry and public sector. This network also seeks to establish a consensus on the most important technical issues that are the foundation of an ETeMII www.ec-gis.org/etemii

- reference data, data access policy
- interoperability, standards implementation;
- research and development challenges;
- integration of space tools: positioning systems (GNSS), earth observation and telecommunications
- Active participation in global initiatives.

7. Representing European interests in the global spatial infrastructure debate

At a time of growing globalisation in the GI field organisations such as EUROGI, together with its sister organisations in the Americas and in Asia and the Pacific, have become increasingly important as channels of communication between their regions and the rest of the world. EUROGI has a mandate not only to represent European interests at the global level but it also has a major role to play in disseminating information about what is happening at this level to the European geographic information community.

Of particular importance in this respect is the Global Spatial Data Infrastructure (GSDI) initiative. This began in Europe in September 1996 when the first GSDI conference was held in Bonn. Since that time further GSDI conferences have been held in Chapel Hill, N.C. (1997), Canberra (1998) and Capetown (2000). The fifth GSDI conference will take place in Cartagena in Colombia in May 2001 and the GSDI Steering Committee has already accepted EUROGI's bid to host the sixth GSDI conference in one of its member countries in autumn 2002. This will provide a unique opportunity for EUROGI and its member organisations to highlight their achievements in the field.

EUROGI plans to focus its attention on the following issues:

- Playing a full role in the organisation of GSDI activities. The GSDI structure is loosely organised around the periodic rotation of responsibilities between its regional bodies. This can be seen in the choice of conference locations. EUROGI also took over the maintenance of the GSDI web site up to June 2000 and it will take over the running of the GSDI secretariat after the 2002 conference.
- Participating in GSDI working groups. Several Working Groups have already been set up under the auspices of the GSDI. These groups are essentially virtual Working Groups in that they rely on the exchange of information and opinions over the Web rather than face to face meetings. They include:
 - a Technical Working Group which has already brought together contributions from all over the world in the first edition of its SDI Cookbook that is downloadable at www.gsdi.org (box 7.1); and

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7.1 SDI Cookbook project

The SDI Cookbook project is a collaborative effort by members of the GSDI Technical Working Group to document some of the key elements of this rapidly developing field. Work began on the Cookbook following the 3rd GSDI conference in Canberra in October 1998 and the first edition was distributed to participants at the 4th GSDI conference in Capetown in March 2000. This consists of ten outline chapters on various aspects of GSDI including metadata, online mapping and outreach and capacity building. Contributors from all over the world were selected to organise and send in materials in electronic form for each of these chapters. The Cookbook is seen as a living and dynamic document that can be updated and expanded as new principles and technologies are adopted. For this reason the editors welcome ongoing contributions from the whole of the global GI community. The Cookbook is intended primarily for distribution via the Web (www.gsdi.org) but electronic copies will also be made available on other media such as CD-ROM and printed text for audiences that are not well connected with this source.

- a Legal and Economic Issues Working Group which is currently documenting the experiences of all those countries who have embarked on the creation of a Spatial Data Infrastructure.

EUROGI also has an important role to play, together with its sister regional organisations, in other global strategic initiatives such as the Digital Earth programme and the Global Mapping project.

8. Required actions

A concerted effort on the part of both individuals and organisations from the public and private sector members of the European GI community is needed to implement the strategy set out above. EUROGI has an important role to play in this respect, as do its national and pan European member organisations. The activities of the European Commission are also of considerable significance as are those of the government of its member countries and the other European countries. This initiative also requires the active participation of European level sectoral organisations such as Eurogeographics and the Working Party for Land Administration (WPLA) which represent the mapping and cadastral communities respectively. Also important in this respect, given the R and D funding mechanisms of the EU, is the Association of Geographic Information Laboratories in Europe (AGILE) which represents the interests of the European geographic information research community.

It must also be recognised that the elements of the strategy that are set out above represent only the first stage in the development of a European GI Strategy and EUROGI recommends that:

- EUROGI disseminates this document as widely as possible to raise awareness and to encourage debate;
- EUROGI consults widely but in particular with the bodies mentioned in this document;
- EUROGI in light of the consultations draws up an Action Plan for implementing the strategy by the end of this calendar year.

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EUROGI is the umbrella organisation for more than 20 national and pan European GI associations. In this capacity it represents over 3000 separate organisations in 20 different countries. Its mission is to maximise the effective use of geographic information for the benefit of the citizen, good governance and commerce in Europe and to represent the views of the geographic information community in discussions with the EU and other bodies. Further information on EUROGI and its activities can be found at www.eurogi.org or from the EUROGI secretariat, Jean Monnetpark 1, 7336BA Apeldoorn, Netherlands.