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GINIE (Geographic Information Network in Europe) – Industry Perspectives and Outlook

Author:

Louis Hecht, Director, OGCE
7306 Broxburn Ct.
Bethesda, MD 20817
Office Voice: +1 301.320.5760
Office Fax: +1 301.320.0693
Cell (global): 301-792-1365

GINIE (see www.ec-gis.org/ginie), which began November 1st 2001, is an EC-funded IST Programme Accompanying Measure whose main objectives are to develop, through broad government and industry input, a European Geographic Information Strategy and a permanent, self-supporting Advisory Board on Geographic Information (ABGI). Both will serve as resources for European governments and private sector organizations.

The four GINIE Partners bring together three domains crucial to the development of a European Spatial Data Infrastructure (ESDI, or INSPIRE):

1. National GI associations as represented by EUROGI
2. The European Commission, represented by the JRC
3. Industry, through the European arm of the Open GIS Consortium
4. The project is coordinated by the University of Sheffield.

The GINIE Partners hope to bring European GI community leaders into GINIE programs, to help form the strategy and the ABGI and to monitor European public sector e-government debates and use these debates to raise awareness of GI issues.

GINIE has no legal or statutory standing and it is not chartered to implement the strategy at an institutional or technical level. But, by its example, by its recommendations, and by involving many in its processes and programs, it can raise the level of cooperation and consensus, mutual understanding, harmonization, communication and joint planning that are essential to forming the ESDI.

At GINIE workshops, industry and government participants will draft policy statements/recommendations regarding actions to be taken to encourage the ESDI to go forward. It's a big job: This has to be done in up to 40 European countries, all with different cultural and organisation structures, at different levels of commitment to GI, with different technology and data policies, etc. GINIE's challenge is to ensure that the

ABGI is created and made authoritative and sustainable, and that it becomes influential across Europe. Fortunately, EUROGI is already a central node in the network of more than 20,000 individual members of national associations that represent both the private and public sectors.

GINIE will organize panels, including an Industry Panel and a Government Panel, to provide the ABGI with expert input. GINIE will soon announce events leading to the formation of these panels. OGC will support this effort by holding an open, public "GINIE Industry Panel Organization Meeting" in London in June, coinciding with OGC's bimonthly Technical Committee and Planning Committee meetings. The multi-language GINIE web site will include a mechanism to register persons who wish to participate.

The Industry Agenda

European industry – which refers here to any European organization, public or private, that develops and/or sells geoprocessing software and services and geographic information – will, whether GINIE succeeds or fails, build GI technical capacity as they continue to serve their customers. But by themselves they cannot build a coherent ESDI, because a coherent ESDI will (for reasons well known to European GI professionals) require committed cooperation among the organized ESDI stakeholders: The European Commission, all of Europe's national and local governments and privatized mapping agencies, European businesses and non-governmental organizations who use Geographic Information. Individual citizens and consumers are the final stakeholders, but they must rely on these governments and organizations to establish a working infrastructure. Industry, of course, is also a major stakeholder, and most industry leaders recognize that removing obstacles to the ESDI is good for business.

OGC and its members have committed to making GINIE a success. These members -- both providers and users of software and data -- work together in very practical ways to make technical interoperability a reality. The concrete results of their work -- publicly available engineering specifications for shared interfaces and protocols, implemented in a wide range of commercial products -- are absolutely essential to the ESDI. Most users are not yet aware of how recent advances in interoperability will impact their institutions. GINIE is an excellent forum in which to raise awareness of this progress and to assess its implications. The Web is becoming the core medium for distributed computing, in IT generally and certainly in the domain of geoprocessing. A number of European OGC members are leaders in this field, and their full engagement with European user communities through GINIE-facilitated Interoperability Initiatives will produce results that will startle and delight people who encounter this progress for the first time.

GINIE can help the European geoprocessing industry develop a cooperative agenda that serves companies' individual business goals (and economic development goals of the EU and European nations) while at the same time helping to build the ESDI.

Value of Case Studies

Participants in panels and workshops will likely analyze the work of recent studies sponsored by the EC and National GI Associations and coordinating bodies and prepare comparative analyses of alternative models. There will be expert workshops on the topics of infrastructure, data policy, Registry, and GI capacity building in pre-accession countries and Mediterranean countries. Many of these activities will result in position papers advising how European communities might work together on GI matters. These papers will become part of the communication between the ABGI and the many advisory boards that have formed or are being formed at all levels of government in Europe.

Case studies will be generated through some of these activities. The case studies will inform users on the benefits of institutional cooperation, but they will also provide raw material for development of technical interoperability. This is because they can be combined and condensed into generalized scenarios or "use cases" that employ, in a "what if we could..." world, much of the interoperability and functionality that European GI-using organizations need. Such scenarios and use cases are the grist for OGC's interoperability mill:

1. OGC helps Sponsors, perhaps the EC or a consortium of National GI Associations, to formalize scenarios into specific instructions for multi-vendor Testbeds and Pilots that "rapid-prototype" and specify candidate interoperability interfaces.
2. Technology provider Participants in Testbeds and Pilots actualize the interoperability scenarios through development and testing of shared interfaces that are built into commercial products. In Pilots, sponsoring user organizations test these interfaces within their organizations.
3. OGC members work to formalize the candidate specifications as OpenGIS Specifications and ISO standards – in ISO TC 211 (Geographic information/Geomatics) and ISO TC 204 (Mobile computing and Telematics) – and to harmonize OpenGIS Specifications with other standards, such as those of LIF (mobile), W3C (web), and IETF (Internet).
4. OGC promotes the widespread commercial adoption of these interoperability interfaces by, for example, showing organizations how they can save money and reduce risk by insisting on interoperability when they procure new software.

OGCE will serve as OGC's European agent to pass GINIE-collected requirements (and the requirements of Sponsors of OGC Interoperability Initiatives) into the global OGC process. The European requirements will be addressed in European Testbeds and Pilots, but it is also in everyone's interest that these activities be integrated with the OGC Roadmap, because global interoperability enables global cooperation and global commerce. OGC has over 230 members worldwide, from 26 countries and 5 continents, including 84 European members from 16 European countries. It is expected that OGC's European vendor members will play significant roles in Testbeds and Pilot Projects for

Europe and perhaps other kinds of OGC Interoperability Initiatives that are seeded by GINIE and funded by European sponsor organizations, just as these companies play significant roles in OGC's current initiatives.

There are many possible Testbed and Pilot Project themes. For example, 250 projects have been funded by the EC recently which mention as a keyword "catchment" or "watershed". Currently, to compare and analyse them is almost impossible. But if ISO TC/211 and OGC standards were applied in developing metadata, GML name spaces, and registries for a sample of these, and if the data were made available on the web using servers that have interoperability interfaces implementing OpenGIS Specifications, easy comparison and analysis could be demonstrated. Technical interoperability and institutional cooperation make it possible.

Interoperability and Economic Development

The European Commission is supporting GINIE not only because Europe (EU and beyond) needs a coherent spatial information infrastructure. The EC also wants to stimulate economic growth.

Consider one GI and geoservices market that is poised for rapid growth: In the next four years, Location Services revenues are projected to grow from near zero to over US\$5 Billion worldwide (footnote: Report 17, The UMTS Third Generation Market Study Update, UMTS Forum, August 2001.)

Location Services refers to people getting easy answers from their location-aware mobile Internet devices when they need answers to questions about traffic, nearby consumer goods and services, weather, calls for help, in-transit packages, web cam pointing, persons nearby, and as yet unimagined new "where" queries. One layer down, these applications will be layered on top of online services such as electronic yellow page query and display, route determination and display, map/feature interaction and display, device-location service, geocode and gazetteer services, coordinate transformation services, etc. Two layers down, these services will in turn be layered on top of an IT standards infrastructure supporting communication of location and time, route, types of service, etc. across different providers, technology platforms, application domains, classes of products, and national regions.

Economic development in Location Services and in other GI-related markets requires that multiple companies do business together, but it is hard for the links of a value chain to form simultaneously in a business vacuum. For example, Location Services content providers are crucial to new services offered by telecom operators, but until compelling content and revenue models align, operators will not invest in or commit to content providers. Capital flows when risk is reduced, and standards reduce risk. Location services and other spatial IT domains await the creation of shared software interfaces and protocols that provide transparent communication about location, space and time. In the value chain enabled by a richer Information Technology infrastructure, many companies

will do business together, providing complementary goods and services that result in value for end users, and, equally important, new jobs for workers.

EC GI & GIS Workshops

GINIE aims to continue the successful Annual European Commission GI & GIS Workshops. In some of these workshops, OGCE will arrange presentations on European issues relating to the current evolution of GI technologies, standards and marketplaces.

One workshop objective is to continue to provide input into a European GI research strategy in collaboration with AGILE. There is fertile ground here for the research community to engage public and private sector communities in OGC to develop, for example, interoperability approaches in support of complex modeling methodologies that draw on diverse data and processing resources. Another possibility is to build on European universities' leading-edge work in geo-semantics and "semantic translation" to create European catalogs and registries of data and online processing services.

Conclusions

In its 24 month program, GINIE will establish models for cooperation on geographic information infrastructures between public and private sectors, at all levels between local and global. GINIE's success is likely, due to the fact that EUROGI and OGCE are working together in GINIE. Their constituencies must work together to build the ESDI. European geomatics technology providers are already active in OGC and are comfortable with OGC's approach to serving the geoprocessing interoperability needs of institutions. GINIE will capitalize on the wide range of activities and projects undertaken in Europe during the last few years, ensuring that those efforts are not wasted and that a truly European GI Infrastructure takes shape.

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