



**Geo-Processing Networks
in a
European Territorial Interoperability Study**

IST-1999-14146

**Final
Exploitation Plan**

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1 Introduction

The results from the GETIS project act as clear indications of the convergence between the world of standards, technology, interoperability and the end user. The need for real spatial information within the organizations interested in disaster management and geospatial information services in general clearly emerges.

However, these results represent one step in the process of connecting all interested parties using the modern, fast changing approach offered by Web based Geospatial information Services.

Dissemination of results to the wider community is a key activity of the GETIS project. The concepts and proposed methods require support from all levels of the community with an interest in geospatial information and infrastructure. As such, clear marketing and communication of the project results and follow on intentions are required both within the European context and internationally. The level of interest generated within the GETIS project group, work group members, standards experts and the Geospatial information community in general combined with the specific headline of disaster management suggests a strong interest in the results as well as follow on projects.

Dissemination activities to date show that the results of the GETIS project are of high interest to stakeholders, from data providers to end-users. The exploitation plan is intended to describe an approach to ensure the results from GETIS are carried forward and taken up by the relevant organizations and that a proposed follow on project receives stake holder endorsement and investor interest.

1.1 Relationship between Exploitation and Dissemination

Dissemination of GETIS results in various forums acts as the main mechanism for ensuring organizations, communities and other potential investors are aware and take-up the recommendations found in the GETIS study. The boundary between what constitutes an exploitation activity versus a dissemination activity can sometimes blur, with the exploitation plan determining, to a greater extent, the targets for dissemination. As such, the dissemination plan is a supporting document to the exploitation plan and acts as an annex to this deliverable, as well as the final report.

1.2 The Message

As the GETIS project proceeds and results continue to develop, a series of key points requiring careful and clear communication have emerged. The main concepts are:

- GETIS recommendations connect the world of standards with the end user and act as indications of the convergence between real world problems and data providers through available Standards Architectures.
- The need for efficient, rapid, and easily communicated geospatial information in the disaster manager field is now stronger than it ever has been, specifically in the area of inland flooding.
- Geospatial Information Services for end users are the ultimate goal, not the creation of additional data sources.



- True Standards based Commercial off the Shelf Products (SCOTS) fully supporting open data processing and information sharing approaches are required to avoid proprietary information and data sources.
- End users must play a key role in follow on development of GETIS concepts, both as recipients and participants.
- GETIS results, although presented under the Disaster Management Headline, apply to the Geospatial information infrastructure in General and may be easily applied to other specific information communities.

Recommendation:

A pilot based on GETIS results and developed in-line with a selected real-world scenario is suggested to aid the next steps in ensuring commercial take-up after contract close on the 30th of April 2003. From the pilot installation the next step is a full implementation of geospatial information service nodes in partnership with data suppliers, software and service providers and end-user communities.

2 Approach

Communicating the results of GETIS directly to all interested communities at large is an almost impossible challenge. The GETIS partners have identified key organisations, projects and communities for direct communication. With effective, clear, concise and appropriate targeted messages, each of the communities identified below will act as 'reflectors' to the community:

2.1 EU and Related Programs and Program Managers

Two upcoming programs to begin implementation in the fall of 2003 are seen as potential key investors in follow on work: GMES and the 6th Framework Programme.

The GETIS partners have ensured that relevant conferences, meetings and workshops of the joint initiative of the European Commission and the European Space Agency for Global Monitoring of Environment and Security (GMES) as well as the relevant programs announced within the European Unions Framework 6 program have been and will continue to be attended.

2.2 Other Projects Related Projects

Two other on-going Framework 5 Projects, GENIE and INSPIRE, have been directly addressed in dissemination activities. The GETIS Partners will also search for other relevant on-going projects and initiatives in order to identify likely investors and stakeholders for continued work.

2.3 Standards Authorities and Initiatives

The GETIS Partners, via the OGC Europe participation, continue to use OGC meetings to gain access to a large community of potential qualified stakeholders with an express interest in GETIS results. As such, relevant OGC meetings have been and will continue to be attended. Furthermore, GETIS has utilized the OGC forum to validate results in a formal setting as outlined in the next chapter.



2.4 Disaster Management Community

The GETIS Project team will target the disaster management community on two main levels; specific end users with a demonstrated interest, via the Working Group and general conferences and workshops through such groups as the Global Disaster Information Network and other relevant organization focused primarily on European matters but also international in scope.

2.5 Data Providers

Data providers, like end users and the standards bodies, are required to ensure that the critical mass necessary to attract investors for follow on work is attained. Providers will be targeted as part and parcel of conferences, workshops and other mechanisms.

2.6 General Trade Shows and Conferences

As added value, the GETIS Partners, through general marketing initiatives and planned attendance to various trade shows, will disseminate GETIS results to appropriate individuals and groups.

3 Mechanisms

This section lists the primary mechanisms for dissemination of GETIS results:

3.1 Public Web Page

The GETIS public web page acts as a primary point of information about GETIS, current activities and potential follow on work and as such is expected to be maintained well beyond the official lifetime of the GETIS project. Interested parties will be directed to the website as much as possible, which will also act as a direct link to the on-line Proof of Concept, which demonstrates the capabilities and benefits of interoperable information services by using a simplified real world flooding scenario, derived from Working Group discussions.

3.2 The Working Group

The established working group within the GETIS Framework has provided access to selected end users within the disaster Management community, who have expressed a strong interest in investing in follow on work after the completion of the GETIS project. Furthermore, members of the Working Group disseminated the results of GETIS to relevant international organizations and communities.

3.3 Hard Copy

Due to the involved costs, Hard Copy marketing material has not been created on a large scale. At various stages of the project, updated one or two page handouts have been created, specifically aimed at an event audience. However, all public reports and documents are available as digital documents on the public web site, allowing print on demand to interested persons.



3.4 Proof of Concept

Fundamental to disseminating GETIS results is the successful completion of the Proof of Concept, which is a web-based conceptualization of the GETIS Service Architecture, described in detail in the deliverable 'Information Requirements and Data Strategy'. In addition to the online Proof-of-Concept, a limited number of local, CD based "off-line" demonstrations will be manufactured on an as needed basis.

3.5 Conference, Workshop and Standards Meetings

The following conferences and workshops have been attended or organized to date:

1. A GETIS presentation was given to the CYCLEAU FP5 project meeting hosted by Cornwall County Council in Truro in May 2002.
2. A GETIS Introduction was given at the EC-GI&GIS 7th Workshop ETII: Managing the Mosaic was held in Potsdam, Germany on 13-15 June 2001.
3. The first Working Group meeting was held the 18th of February 2002 in Horsham, UK.
4. The second Working Group meeting was held the 15th and 16th of April 2002 in Munich.
5. The first GETIS Validation Meeting was held at the University of London Senate House, London, UK from 1400 to 1600 on June 11, 2002.
6. The International Conference GDIN-Global Disaster Information Network has been attended in Rome, 17 - 21 June 2002.
7. A GETIS presentation was given at the 8th Annual *EC-GI & GIS Workshop ESDI: A Work in Progress* at Dublin Castle, Dublin, Ireland, 3-5 July 2002
8. A 2nd Standards Validation Workshop was held at the OGC September TC Meeting in Noordwijk, NL.
9. A GETIS Introduction was given at the GMES Briefing in Rome, September 2002.
10. The third Working Group Meeting was held October 2002 in Frankfurt, GER.
11. A 5th Framework Concertation Meeting and the 6th Framework Info Day were attended in Luxembourg, October 2002.
12. A brief status update was done for the EUROGI Meeting in December 2002, Apeldoorn, NL.
13. A standards status update has been carried out during the OGC TC Meeting in December 2002 in Thousand Oaks, USA.
14. A brief presentation was given at the GINIE Meeting in January 2003, Munich, GER.
15. A standards status update was carried out during the OGC TC Meeting in February 2003 in Washington DC, USA.
16. A 1-day workshop to evaluate commercial exploitation opportunities and to verify the second version of the Proof of Concept was held with Cornwall County Council in February 2003.



17. A brief presentation has been given at the GINIE Meeting in March 2003, Rome, IT.
18. A brief presentation has been given at the GIS Education Days in March 2003, Munich, GER.
19. A 1-day workshop to refine and verify requirements for a pilot implementation was held with Cornwall County Council in March 2003.
20. Extensive GETIS presentations were delivered to the Ministries Of Land Development, Town and Country Planning, Geographic Information Systems and Technology, Agriculture, Information Communications Technologies, Royal Thai Survey, Mapping and Surveying, in Bangkok, Thailand, March 31st to April 5th, 2003.

The following meetings and activities were scheduled at the time of compiling this document:

- The final standards status update will be carried out during the OGC TC Meeting in April 2003 in Orleans.
- A GETIS presentation will be given to the European Union Satellite Centre, Madrid, Spain, on April the 23rd.
- A GETIS presentation will be given at AGILE, in Lyon on April 24th.
- The Team will attend a GMES preparation workshop, April 28-29th, held by the Canadian Space Agency near Montreal, Quebec, Canada.
- A 1-day workshop is scheduled with Canadian Government representatives to evaluate joint commercial exploitation opportunities in early May 2003 in Toronto, Canada. Results will be reflected in a section on joint exploitation opportunities with non-EU member states.
- A 5-day workshop addressing the requirements and technical specifications for the installation of an information services pilot at a potential customer site is scheduled for June 2003.
- Preparations for a follow-on project proposal under the 6th Framework are under way and forthcoming meetings in support of this will be attended.



4 **Results to Date**

The sub-sections below outline the results from GETIS relevant to continued uptake and exploitation. Specific details on the following points may be found in the related deliverables and will also be discussed, as required, in the project final report. The points below act as a foundation for directing dissemination of results, targeting potential investors in a next step project as well as synthesizing selected results from all work packages.

4.1 **User Requirement Analysis**

Rather than finding new sources of data, the provision of geospatial information services has emerged as the primary requirement from end users. Any follow on work must involve end user organizations with real-world geospatial information requirements and needs. In short, the connection between the end user, and information sources must be as simple as possible, and not necessarily require extensive data conversion expertise.

4.2 **Relevant Base Line Information Domains**

In the context of disaster management, results from GETIS show that there is a minimum set of baseline information (extracted from Data) required by the community. For follow on work and exploitation, this baseline data set must be provided in a form where end users can easily ask questions such as 'show me all hazardous objects at risk' rather than having to analyze a series of layers that may contain only vectors, points and EO data. These data sets are generally in proprietary formats and require extensive end user processing to produce the required information.

4.3 **Standards Assessment and Interoperability**

Ensuring interoperability of data and information along the supply chain is answered by a combination of SCOTS technologies and appropriate metadata handling abilities inherent in the use of Geography Mark-up Language (GML) as detailed in deliverable 3.4.3. This means that as part and parcel of the follow on exploitation, care must be taken to ensure that the continued development of GML takes into account the specific requirements of relevance e.g. to the disaster management information community.

4.4 **Interface Development**

It is clear that full exploitation will require operationalization of the internationally recognized Web Services approach advocated by the OpenGIS Consortium and its members. GETIS has proposed an Interface Architecture (see deliverable 3.4.2) that acts as an important enabling structure in the information supply chain.

4.5 **Application Areas**

Disaster Management is a large field of study and work, and contains almost limitless application areas. For example, areas range from emergency practitioners to academics working on better ways to model areas at risk. As such, and to ensure a good strong focus for the projects to come, the GETIS consortium will move forward on the elaboration and exploitation as determined by existing use case scenarios, with an initial focus on inland flooding. It is important to note, however, that the approach taken will not limit the results to the specific chosen event scenario. The approach allows for the creation of multiple nodes with different application areas, including, ultimately, those with a headline other than Disaster Management.



4.6 Conclusions

The GETIS consortium settled on Disaster Management as a headline at the beginning of the project (April 2001). Through interaction with experts and by monitoring actual real world events, associated geospatial information needs and careful analysis of the use case scenarios, it is clear that a need for applying the results of GETIS is of ever-growing importance.

5 Key Themes and Assumptions

Exploitation of the results from GETIS must take into account the current state of the market, technologies, government policies and other areas. The section below discusses some of the important themes and assumptions that must be respected in order to ensure greater success.

5.1 Rapid Technological Change

Technological change, especially as it pertains to web based technologies and approaches, is rapid and dynamic. In order to ensure that follow on work accounts for this evolution, it is necessary to not only monitor but implement standards based commercially available off the shelf solutions. One-off implementations of new technology to support GETIS results are not appropriate.

5.2 Convergence of Standards and Operational Activities

The development of standards, protocols, and resultant technologies can sometimes appear, to the end user and vendors, as not meeting their organizational or commercial needs. However, at this point in time, the needs of the end user community and the efforts of the standards and interoperability community (as evidenced by the Open GIS consortium and ISO efforts) to build the necessary approaches, methodologies and background Information technologies are beginning to converge. Evidence for this can be seen e.g. in the significant international investment in such programs as the recent Critical infrastructure Protection Initiative.

GETIS input to OGC activities has contributed to this direction in addition to other, parallel influences from the international community. The commercial exploitation of the GETIS proposal will continue to help drive the standards activities towards the needs of the end user, even after the official project end.

5.3 Information versus Data

The ultimate need for the end user is information, not data, new technologies or new standards. Providing the means to manage the information supply chain, create new information on a demand basis and allow the end users to determine how they want to handle the information ultimately builds an “in-context” method for dealing with Geospatial information. Thus, the development of the Information Society is furthered, rather than the proliferation of varied and proprietary data sources.

5.4 Plethora of Technologies, Few solutions

As it stands today, there are large numbers of complex, data centric technologies that provide powerful and useful tools and toolkits to the end user community. However, it is still up to the end user to make certain that these tools are appropriately applied and, as well, that tools from different vendors function efficiently on proprietary and often difficult to convert data sources. In short, the tools are present, the data is present, but end-to-end solutions to connect disparate geospatial information are few.



5.5 International Dimension

The drive to enable interoperability by focusing on Geospatial information and services crosses not only the boundaries of Europe, but also the world at large. Follow on work from GETIS must take into account and create institutional linkages within the international community. Given that over two-thirds of the world remains without adequate or any digital geospatial information, there are significant long-term benefits to emerging nations as well.

5.6 Role of the User Community

The user community has a key role to play in the context of GETIS exploitation and the information society. Traditionally, users have taken what data was available, if they knew about it, and literally spent hours, days and sometimes months attempting to create information, only to repeat this cycle with every new or different geospatial information requirement. The user community and the GETIS partners must act as advocates to the data vendors, providers and technology manufacturers to ensure ease of Geospatial information creation. This applies to local, regional, national and international agencies, stakeholders and organizations. The GETIS follow on work will focus on a local and regional scale, and identify an end user to drive the process.

5.7 Continuing Challenges in Disaster Management

Simply put, the requirements for geospatial information services for disaster management are critical. Timely provision of geospatial information allows for faster response time and assessment, ultimately saving lives, infrastructure and other critical items. In the case of disasters, continued climate change on a global basis creates potential difficulties on the local level, requiring better and more accurate information for management.

5.8 Continued European Community Investment

The European community, through Framework 6 as well as programs such as GMES (ESA/ESRIN) continues to invest in infrastructure development and Information Societies specifically relevant to the geospatial industry. The results from GETIS require further investment to implement a pilot stage, after which point finding full investors for multiple operationalizations becomes simpler. In short, the Proof of Concept resultant from GETIS is enough for academic and technological conceptual uptake; but it is not enough for full operational investment.

5.9 Policies and Legislation

Recommendations for policy and legislation within the EU are outside the scope of the GETIS project. As a direct result of interaction with end users and the challenges they face on a daily basis, the following out of scope points arose on multiple occasions. The points below are intended to influence other, more relevant projects and approaches (such as INSPIRE), and must be mentioned since they are valid results from the user requirements work package, out of scope or not.



5.9.1 Opening the Data Vaults

GETIS is oriented towards adding geospatial service aspects to help establish and support Information Society, not Data communities. However, at the bottom of the information supply chain sits a large quantity of data that is not currently shared. At a minimum, certain data sets should be considered as “basic needs” and priced and connected appropriately. It is also anticipated that demand for geospatial information products will be stimulated in the long run by making baseline information readily available, helping to move the application and use of geospatial information from the expert skills corner towards mainstream.

In the context of disaster management, the message from the working group was strongly stated; for applications that affect Human well being and critical infrastructure, Baseline Data/Information should be provided and treated as vital foundation information, and be provided at a minimum, on an at cost basis, or at a maximum, as freely available.

5.9.2 No Shortage of Geospatial Data

Data scarcity is definitely not a problem in the context of GETIS. The difficulty is data sets are available at different prices, scales, formats, locations, and providers and deliverable methods to the point that users may not even be aware of a given sources existence or are required to be technical experts in order to discover where the data resides. From a policy perspective, a unifying catalog service of information sources with appropriate meta-information is strongly recommended as a key building block of an interoperable pan-European Information Network.

5.9.3 Variable Capacity

The capacity for different organizations across European Member states to perform simple tasks on available data and information varies widely. The inclusion of candidate states broadens this variability. This question of IST implementation means that trans-boarder cooperation is required, for example, in coastal applications and that the basic sharing of information may not occur without appropriate policy implementation at local, regional and national scales.



5.10 Sustainable Development

As one potential node on a European Geoprocessing Information Network, GETIS in itself is not enough to sustain long term development within (or without) of Europe. In order to ensure that best efforts are made to produce a sustainable result there are technological and business aspect that must be taken into account.

5.10.1 Technological

As previously noted, technology changes rapidly, especially in the area of Information Communications Technology and protocols. In order to enable sustainable technological development over the long term, the following points must be respected:

- Standards Based Commercial Off The Shelf (SCOTS) Software
It is clear that in order to ensure that the base software technology required to support interoperability and geoprocessing nodes continues to keep pace with change, that organizations with a long term commercial interest in technology provision must continue to ensure that, at least, the core of their technology takes into account standards and the resultant protocols, file encoding and metadata aspects that have, will or are about to be proposed for the handling of Geospatial data and information.
- Linkages with Other Relevant Projects
Continued efforts to link the results of GETIS to the community take into account innovations and changes that result from related on going and planned efforts. Programs, such as the Critical Infrastructure Protection Initiative currently on-going within the OGC context, for example, will affect important aspects of the GETIS service architecture and the resultant uptake.
- Development of easily modified, re-usable technologies
Simply put, development of custom, one-off fully proprietary technological innovations to support the proposed GETIS service architecture is not appropriate. The technology proposed must easily take into account new information/data formats and present the end user with simple means and methods to customize process and production flows as well as presenting a simple, standard interface for extensibility.
- Avoidance of technologies aimed at “early adopters”
Any technological development following on from the GETIS project must avoid being uniquely targeted at ‘early adopters’. Indeed, end users (government and private), data providers, service providers and similar organizations that have a daily need for rapid movement of geospatial information across the supply chain is of interest to GETIS and result longer term.
- Emerging Communication Technologies
Follow on work designed to exploit GETIS results must include technological provisions for serving information to a variety of devices designed for both central office applications and in-field end users. Proprietary solutions linked to specific hardware manufacturers generally result in difficulties when the next generation of communication devices become available.



5.10.2 Business Models

Sustainable long term exploitation of GETIS results requires a clear and flexible business model in order to ensure that the greater market accepts the results, sees evidence of long term commitment and fully understands the value proposition. This ensures downstream investment in the technology and standards that will result in the operationalization of framework recommended by the project results.

A full business model is outside the scope of the GETIS project, since no products are resultant from the work to date. Full business model analysis and creation falls squarely into the realm of follow on work, although sections 4.0 (The Market) and 5.0 (Proposed Approach for Follow on Work) do address this area at a high level.

On a generalized scale, the GETIS business concept aims at transforming proprietary data processing systems into nodes on an information framework by using latest interoperability standards in a web environment. It will enable owners of these systems and the inherent data to define which *information* they want to share with defined user groups through secure web-services. Thus it eliminates the need to hand out any actual datasets whilst at the same time ensuring that the information provided is up-to-date and accurate.

In addition to enabling real-time access to primary data-sources in departments or agencies, for certain information types it may be preferable to host a secondary set of data, which may be modified or restricted for sharing, e.g. to comply with data privacy requirements. However, rather than disseminating various copies of this dataset, it is suggested that the derivable information be disseminated by channelling it through a web-services hub.

The outlined set-up provides a win-win situation by creating new value chains for existing data and service providers and by eliminating to some degree data management and expert skills requirements on the end-users side, streamlining processes for more efficiency.

First projects to implement a pilot stage and to apply and refine a scalable business model in mutual agreement with end-users and data providers are currently initiated and have so far been received positively and with great interest by the addressed user-groups. Unfortunately details cannot be given yet due to contractual obligations.

6 The Market

This section is intended to present a brief outline describing trends and opportunities in the European Union as well as abroad that contribute to effective uptake of the GETIS recommendations.

6.1 Trends and Opportunities

This section is not intended to provide a complete market analysis of current conditions within and without of the European Union. It is intended to characterize aspects of relevance to GETIS exploitation:

6.1.1 E-Gov Initiatives

E-Gov initiatives are on going throughout the European Union, covering all aspects of the development of the Information Society at an infrastructure level. The need for ensuring that geospatial information is included in the E-Gov initiatives is a priority, especially for security, environmental monitoring and emergency planning.



6.1.2 EU Expansion

Candidate states for EU expansion have a very clear need for reform and, in some cases, creation of geospatial infrastructure. Without available and nominally accurate maps of, for example, hazardous objects, effective governance is inhibited.

6.1.3 IT Convergence

In some ways, geospatial information and the supporting IT technologies are, essentially, identical to any other type of information traditionally required by governments and entities in European nations. As stated earlier in this document, geospatial data sources are plentiful, in the form of layers, linked topologies, digital terrain models, to name a few. Mainstream perception of geospatial information has inhibited acceptance and implementation due to the apparent complexity of field of study. However, with a Geospatial Information Service approach, this barrier is beginning to be overcome. Stated in a simple form, people understand maps that indicate where the flood will hit next, but not multiple data layers with points, features, orthorectified SPOT imagery and different geographic projections.

6.1.4 Continued EU Investment

It is clear that security, environment and supporting IST are a priority within EU policy. The upcoming 6th Framework Programme as well as the ESA/ESRIN GMES Programme currently underway are examples of the commitment and underline the importance of linking geospatial information into an overall information services network.

6.1.5 Emerging Nations

Perhaps the strongest, long term need for Geospatial Information Technologies and capacity that would result from GETIS follow on work is found in emerging nations. The United Nations has identified exactly this sort of capacity as being critical to governance in emerging nations. The key point here is, after follow on work is complete in the EU to create a series of thematic nodes, export to emerging nations is the next logical step, especially those require remediation of environmental damage resultant from conflict (for example location of land mines).

6.1.6 Data providers

Selected data providers, especially in the EO field, are beginning to show an indication that they understand that simply sending Geospatial data is not enough and that the greater market is in need of Information. Both SPOT Image and Radarsat International offer "value added" information products to the market place. However, these are stand-alone products and do not currently exist in forms that easily support information interoperability from an end-users point of view.

6.1.7 Information Providers

Value added organizations, both public and private, that take raw data and produce information such as Indicative Flood Plains and Hazardous Object Maps, currently continue to provide this information via multiple disconnected distribution systems in difficult to ingest and proprietary formats. Providing common, standards based thematic nodes for end users requiring specific information via the approach proposed by the GETIS team allows for the beginning of the creation of efficient methods for servicing a given information community.



7 Exploitation Approach

The approach taken by the GETIS team shows that the market is some distance away from investing in operational projects based on GETIS results. As mentioned in previous sections, uptake of the results of GETIS continues to be successful. In order to stimulate further uptake and investment, a pilot node on the Geoprocessing Network requires prototyping and implementation to prove the value to the community at large. From this point, operations of multiple Nodes can be attained.

The specific steps proposed or being taken by the GETIS Team is briefly described below:

7.1 **Dissemination of Proof of Concept**

Taking into account all the sections above, the targets of dissemination are quite clear. In order to ensure continued uptake of results, institutional linkages continue to be established between relevant standards bodies, managers in relevant EU programs, international standards bodies and other entities. It is very clear, however, that the end user community must become more involved in the process to ensure that follow on work results in appropriately useful IST. As such, the GETIS partners in full concert with end users in the Working Group have participated in dissemination activities and will continue to do so in the future.

7.2 **Conversion of Proof of Concept to Pilot Stage**

As discussed, creation of a functioning prototype is required to prove the value of the proposed approach to the community at large, before the community will be willing to invest. As such, the GETIS partners intend to approach both the GMES program and relevant FP 6 programmes to allow for the implementation of a follow on project in the near term, with positive signals for support already being given from the working group and potential piloting partners.

Exploitation and dissemination of results from prototype development will include a significant portion dedicated to ensuring the next phase, Pilot to Operations, is attained.

7.3 **Other Activities**

In parallel with EU programmes activities, there are a series of other initiatives underway in both the EU and international bodies. The GETIS Partners will continue monitor these opportunities, disseminate GETIS results outside the EU as required, and evaluate potential projects.

8 Outlook

The need for improvements and development of infrastructure enabling Geospatial Information Services is, in certain ways, more urgent than it was during the original conception of the GETIS project. In addition, the overall environment within the EU and the international community has evolved to the point where the need to create real world needs based pilot information services and technologies has a high profile.

The results from GETIS are in line with this evolution and, in the case of standards bodies, have helped to accelerate the interest in building actual infrastructure. As a first exploitation activity it is the intent of the partners to pursue a follow on project targeted at the geospatial information service needs of the disaster management community in general, with the specific application area being highly influenced by the end user community. Next steps shall then ensure that geospatial contents are practically linked into emerging information services to help build an interoperable information network, truly supporting the business processes of user communities in the Information Society of Europe and beyond.